



Weatherford

**CML MESSENGER SHUTTLE
COMPACT PHOTO DENSITY
COMPENSATED NEUTRON LOG**

COMPANY			SANDRIDGE EXPLORATION AND PRODUCTION LLC		
WELL			JENNY 3404 2-18H		
FIELD			BLUFF		
PROVINCE/COUNTY			SUMNER		
COUNTRY/STATE			USA / KANSAS		
LOCATION			SE SE SW NW 2440' FNL & 1100' FWL		
PERMIT NUMBER			AFE # DC13850		
SEC 18	TWP 34S	RGE 4W	Other Services		
Latitude	37.103828		MAI		
Longitude	97.797923		CMI		
API Number	15-191-22740-01				
Permanent Datum GL, Elevation 1249 feet					
Log Measured From KB					
Drilling Measured From KB @ 18' AGL					
Date	16-JUN-2014				
Run Number	ONE				
Service Order	3648-90113851				
Depth Driller	9352.00		feet		
Depth Logger	9352.00		feet		
First Reading	9250.00		feet		
Last Reading	2850.00		feet		
Casing Driller	5121.00		feet		
Casing Logger	5124.00		feet		
Bit Size	6.125		inches		
Hole Fluid Type	WATER				
Density / Viscosity	8.60 lb/USg	27.00 CP			
PH / Fluid Loss	10.00	26.00 ml/30Min			
Sample Source	FLOWLINE				
Rm @ Measured Temp	0.06 @ 84.0	ohm-m			
Rmf @ Measured Temp	0.048 @ 84.0	ohm-m			
Rmc @ Measured Temp	0.072 @ 84.0	ohm-m			
Source Rmf / Rmc	CALC	CALC			
Rm @ BHT	0.035 @ 151.0	ohm-m			
Time Since Circulation	16 HOURS				
Max Recorded Temp	151.00	deg F			
Equipment / Base	18108	OKC			
Recorded By	GUTHMUELLER				
Witnessed By	T BOARDMAN				

BOREHOLE RECORD			Last Edited: 17-JUN-2014 23:10
Bit Size inches	Depth From feet	Depth To feet	
12.250	0.00	567.00	
8.750	567.00	5124.00	
6.125	5124.00	9352.00	

CASING RECORD				
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURF	9.625	0.00	567.00	36.00
INTER	7.000	0.00	5121.00	26.00

REMARKS
LOGGED WITH WLS_14.01.3220
LOGGED USING MESSENGER METHOD OF DEPLOYMENT AND MEMORY LOGGING SYSTEM
LOGGED WITH ADVANTAGE DEPTH SYSTEM, CORRECTED BACK TO PIPE STRAP, COMPARED TO MWD LOGS
LOGGING STRING: SRT-079,SKJ-169,MBSG-119,MMSF-262, MTI-151,MGS-135,MCL-069, SKJ-476,SHA-594,MISD-816,MDN-480,MPD-512,MISD-817,SHA-438,SKJ-472, MISE-789,MFE-396,MISD-333, MIM-233,MIE-254,MISD-606,SKJ-469,MISE-564,MAI-394
HARDWARE: MAI: MISE 0.5 INCH STANDOFF ABOVE AND 0.5 INCH STANDOFF BELOW MIE:CENTRALIZED ABOVE MIM AND BELOW MIE MISE 0.5 INCH STANDOFF ABOVE THE MFE MPD: 4" PROFILE PLATE, MISD SINGLE BOWSPRING DECENTRALIZER BELOW MDN: MISD DOUBLE BOWSPRING DECENTRALIZER ABOVE

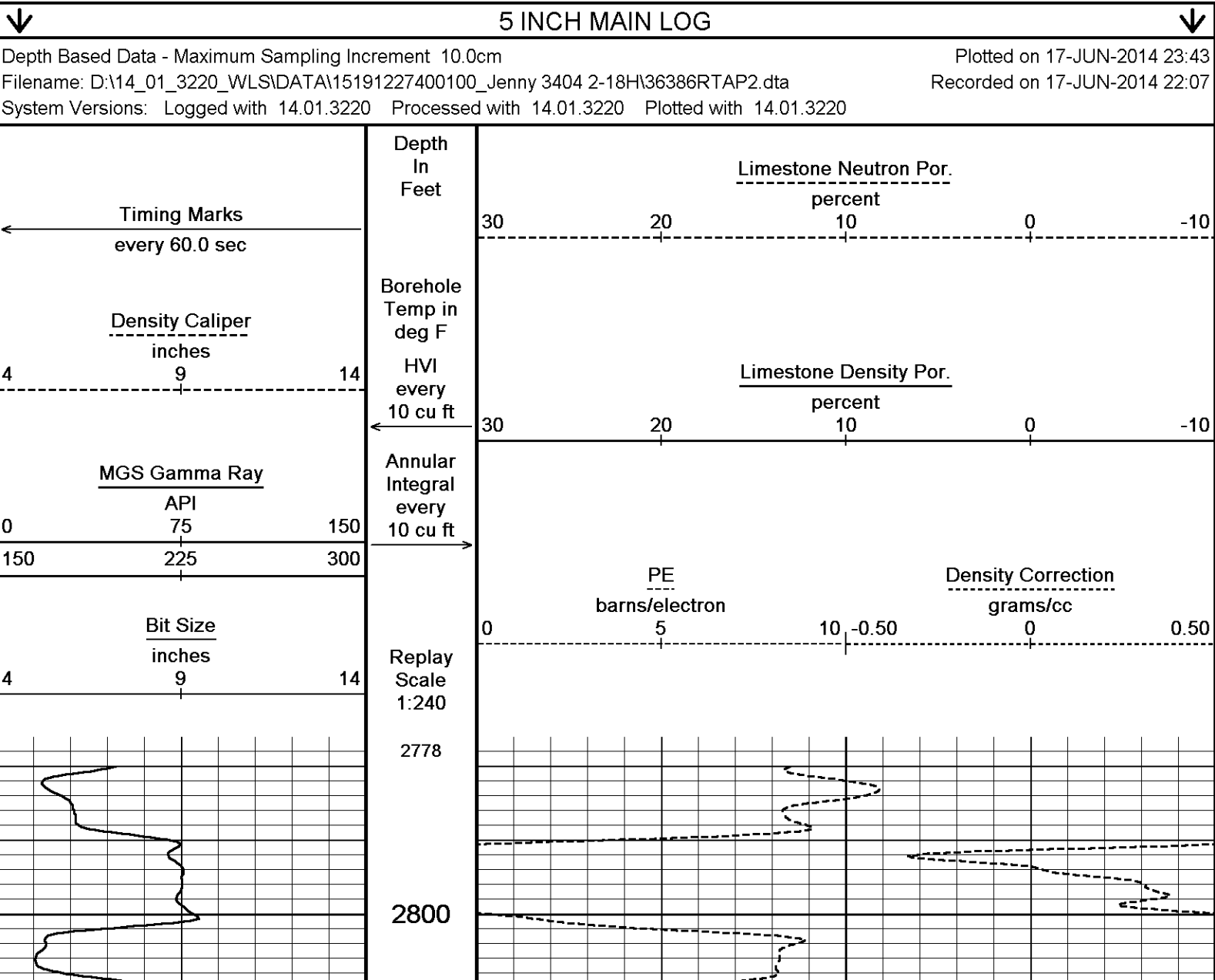
2.71 G/CC DENSITY MATRIX USED TO CALCULATE DENSITY POROSITY
ALL INTERVALS LOGGED AND SCALED PER CUSTOMER REQUEST
CHLORIDES = 27000 PPM

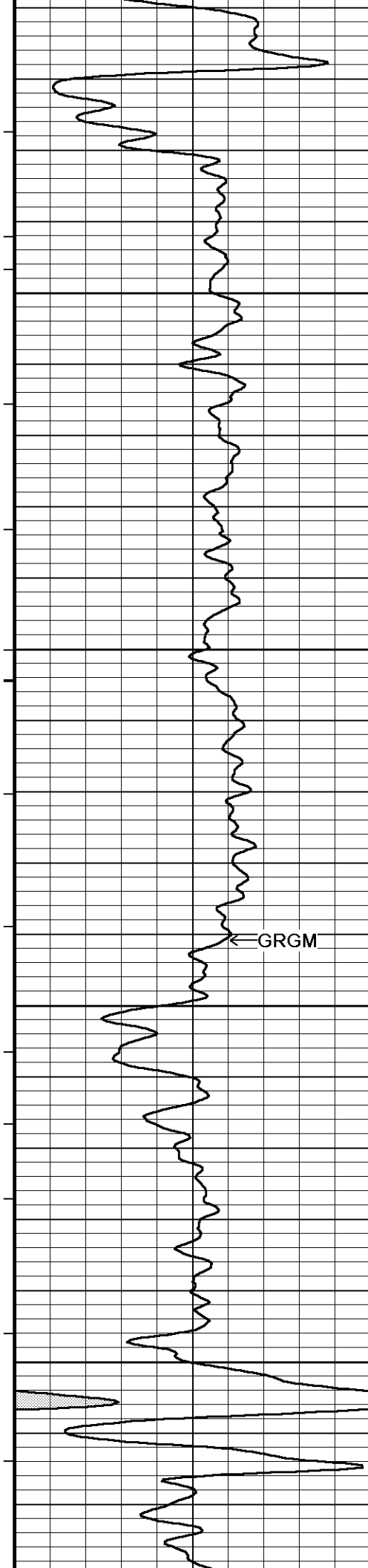
DRILL PIPE DEPTH DURING DEPLOYMENT - 9220
LOGGING TOOL DEPTH AFTER DEPLOYMENT - 9324

RIG: NOMAC 52

OPERATORS: J TURNER, S WORLEY

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.





122°

2850

123°

2900

123°

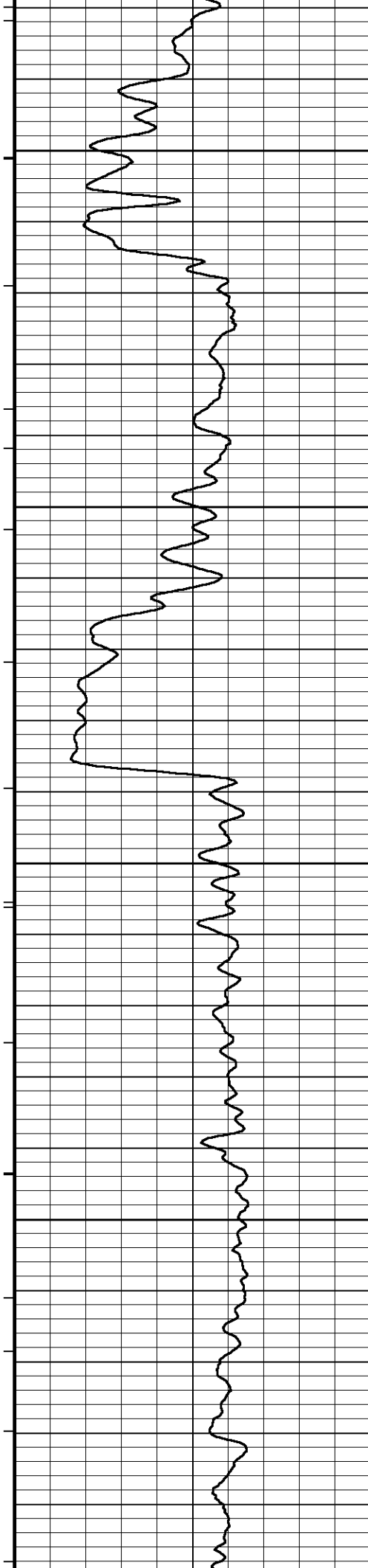
2950

124°

3000

← GRGM

NPRL →



125°

3050

126°

3100

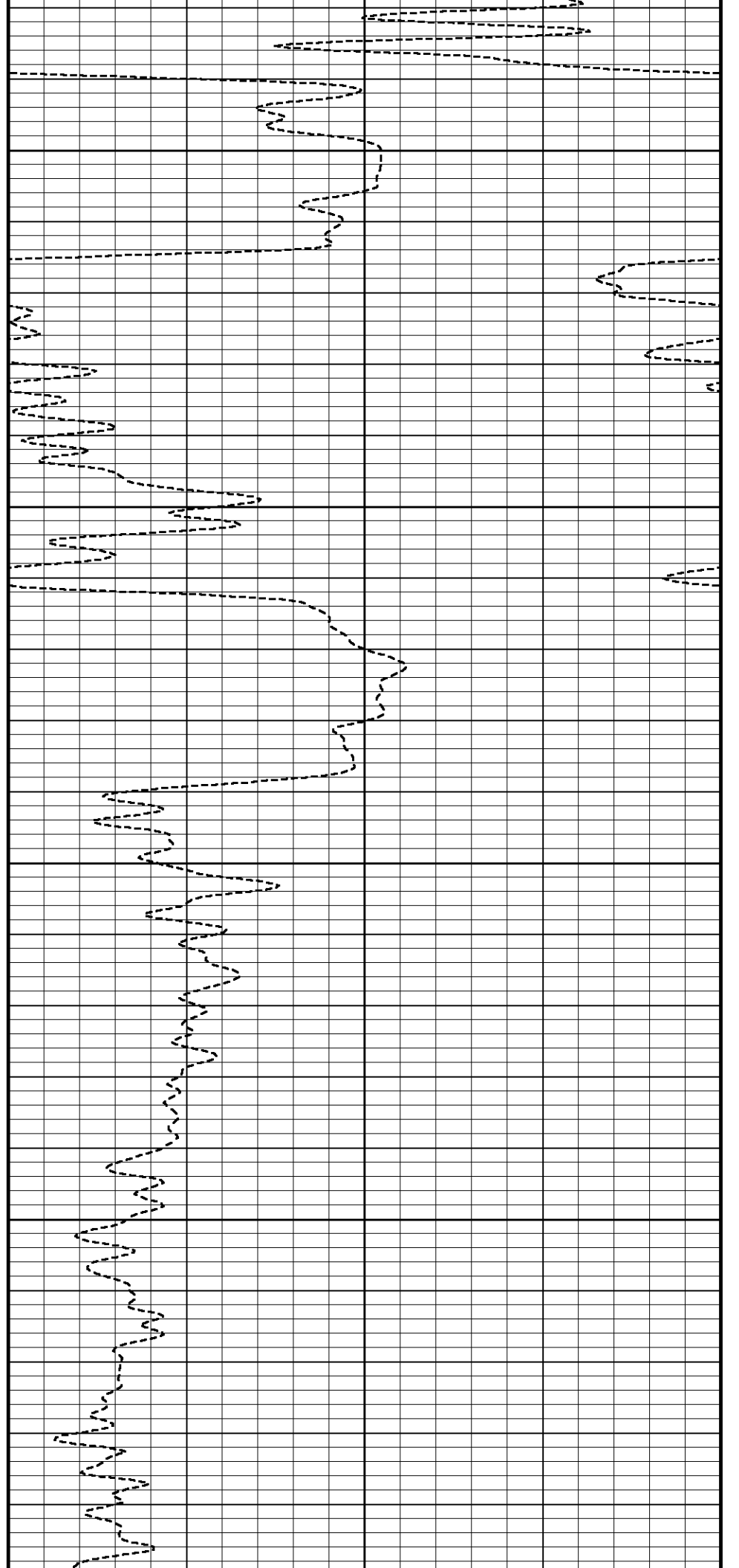
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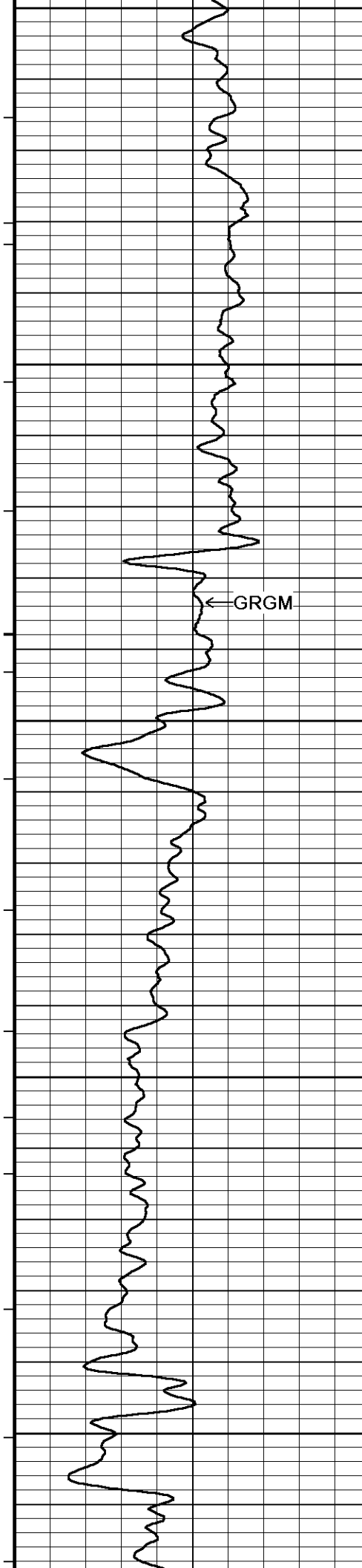
3150

127°

3200

128°





3250

129°

3300

129°

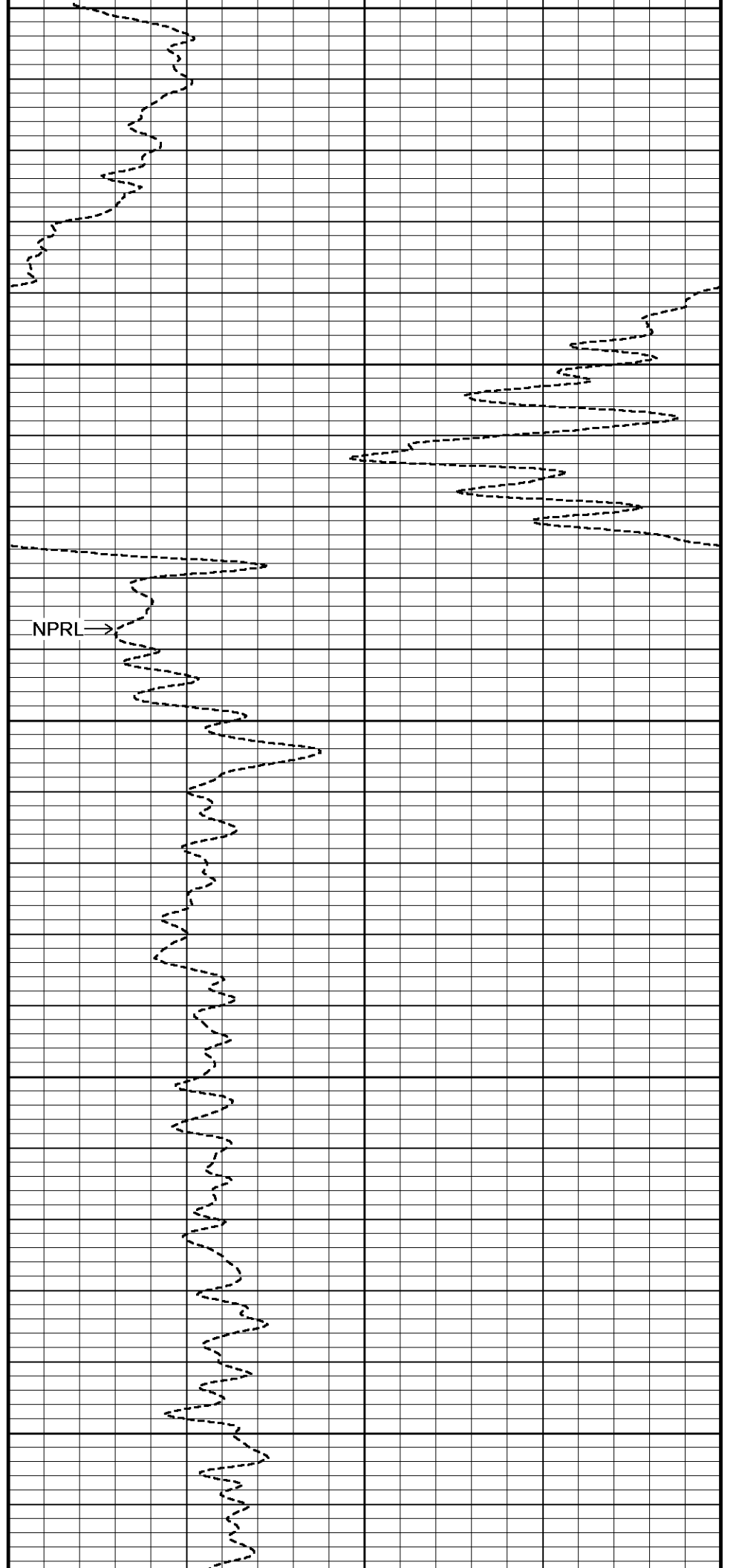
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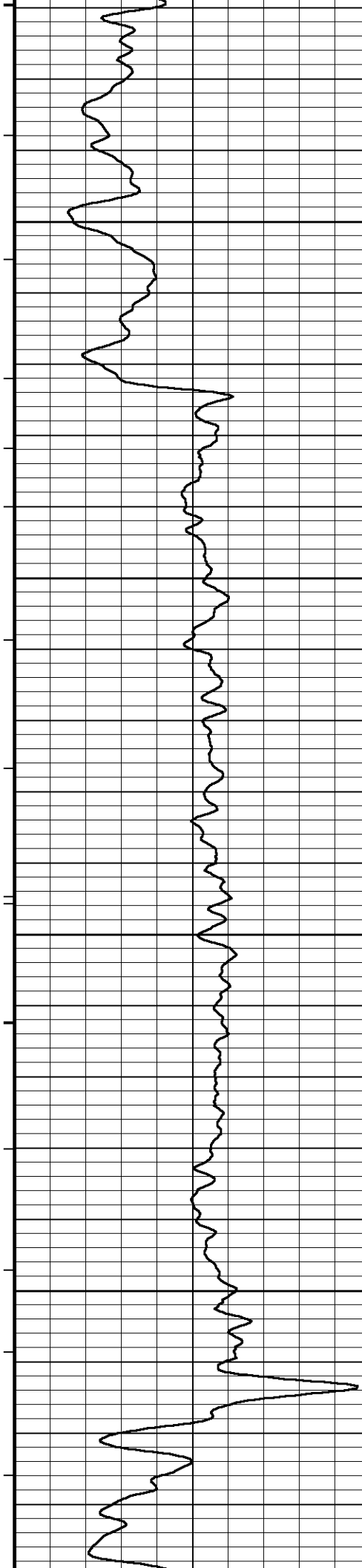
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3400

131°

3450





131°

3500

132°

3550

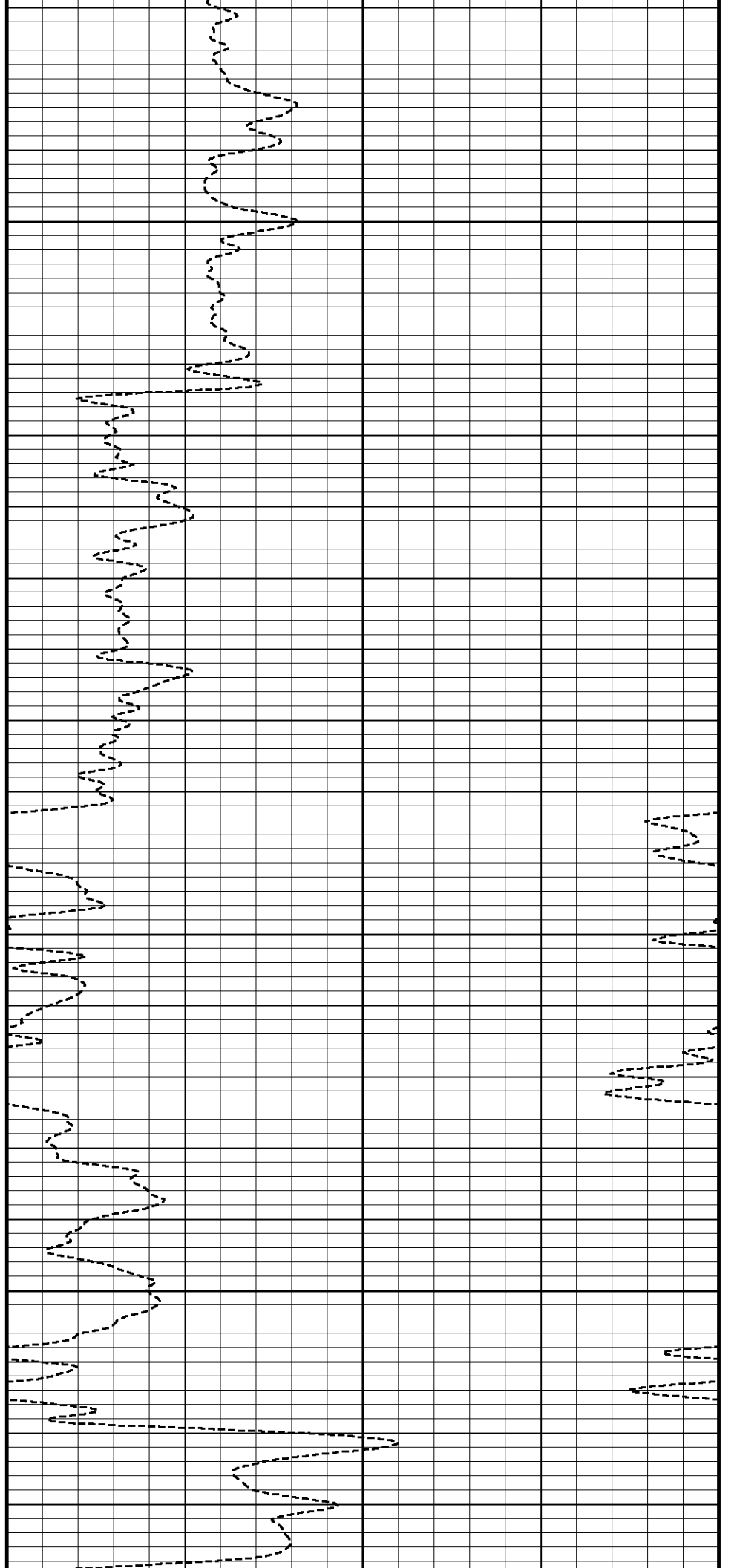
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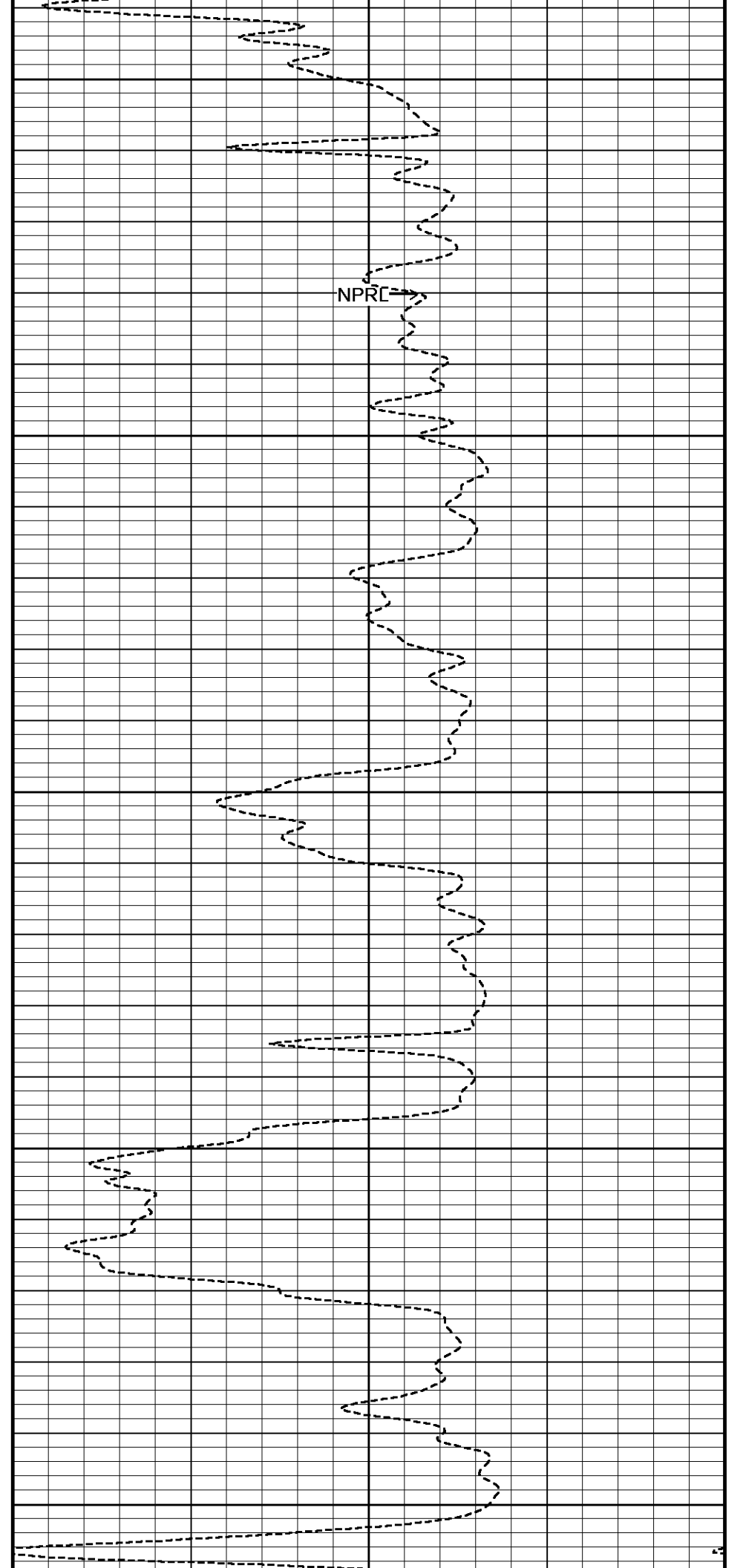
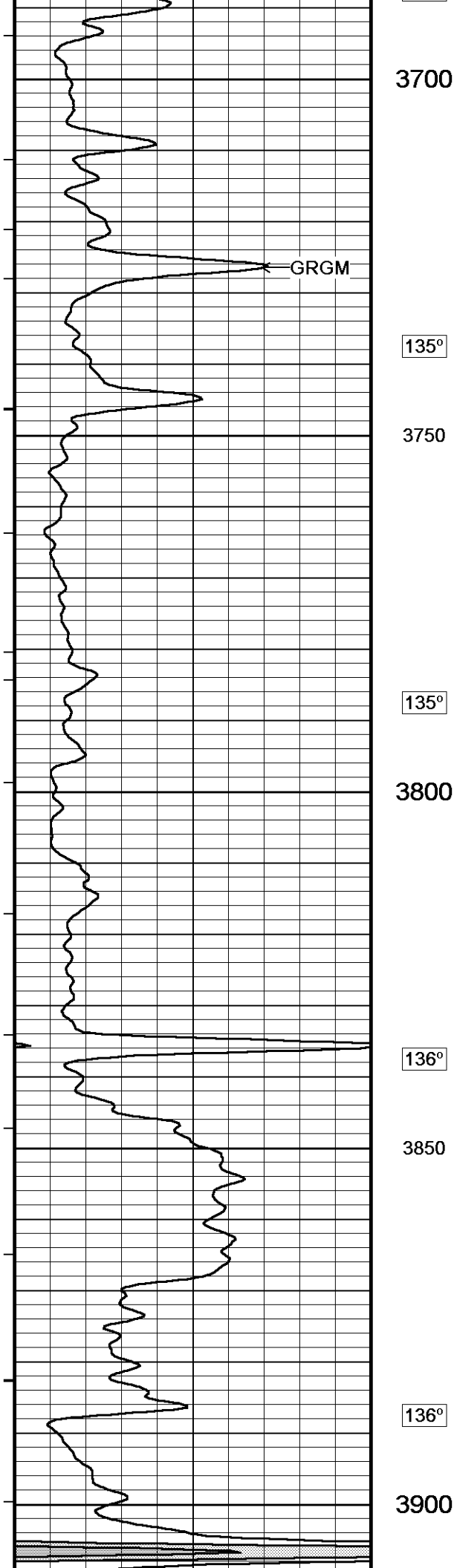
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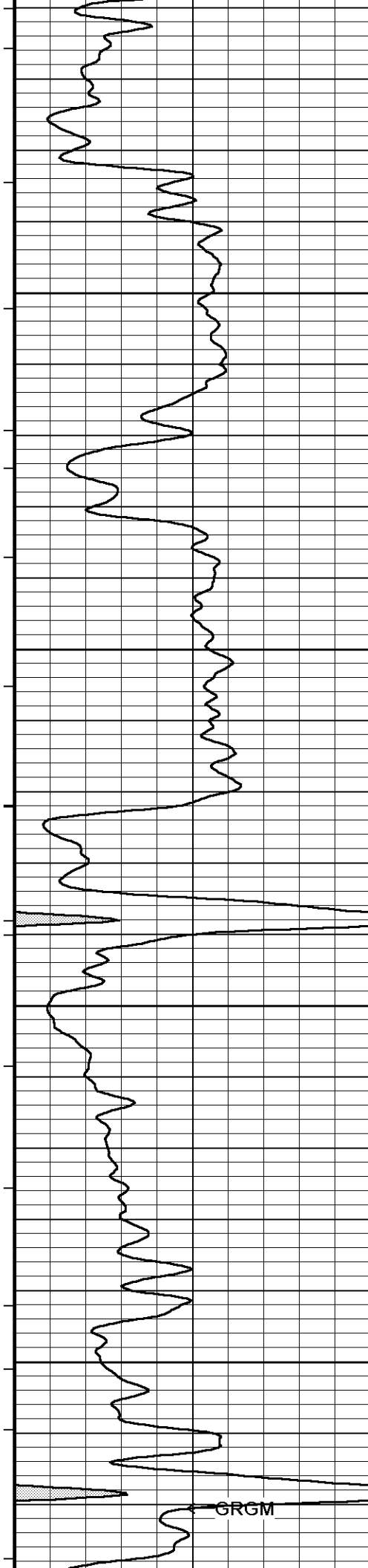
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3650

134°







137°

3950

137°

4000

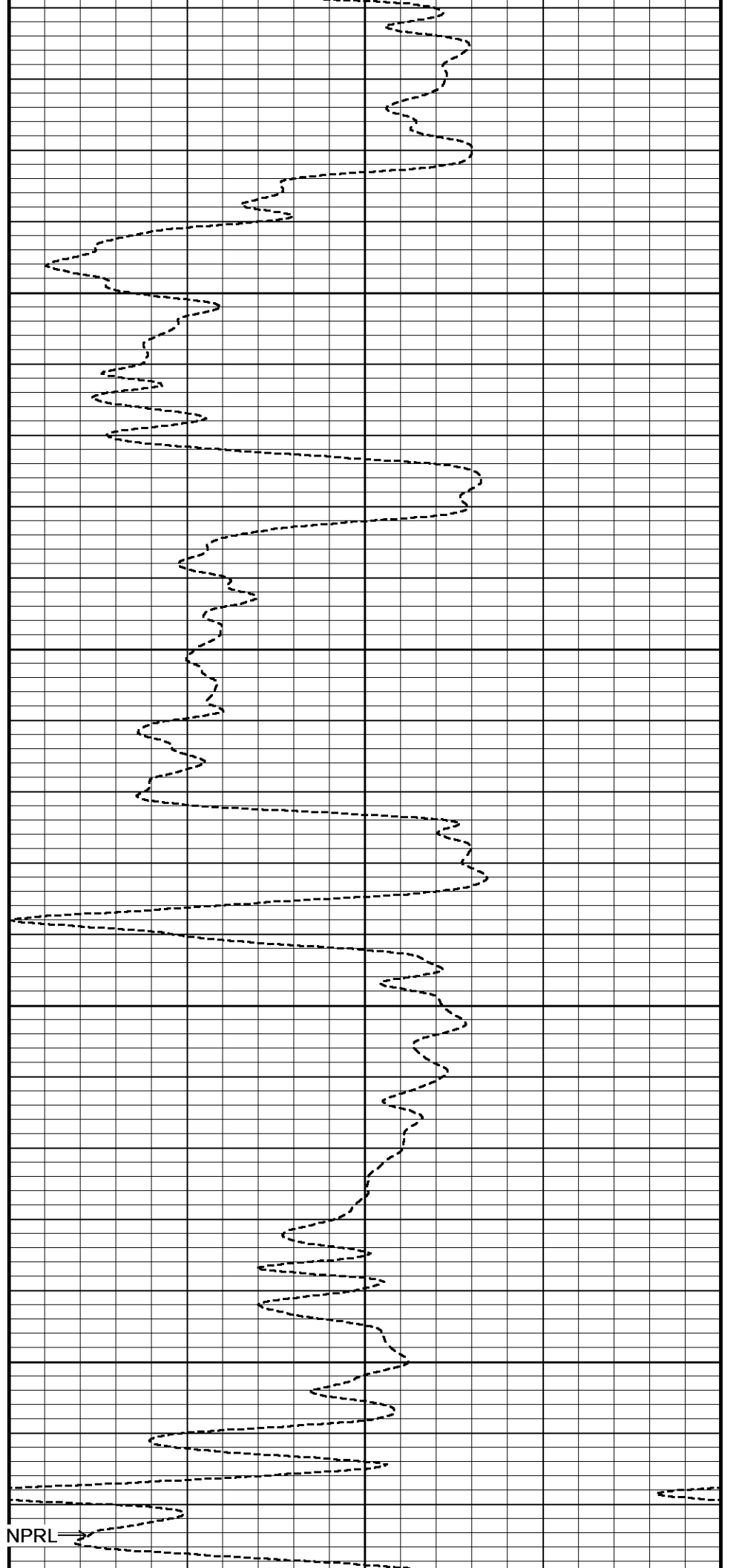
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4050

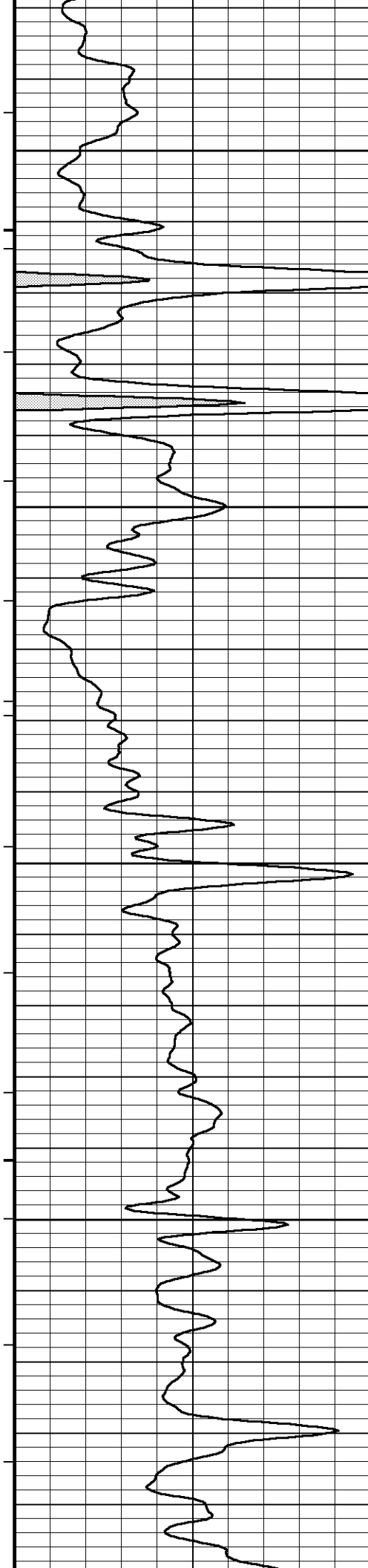
138°

4100

GRGM



NPRL



139°

4150

140°

4200

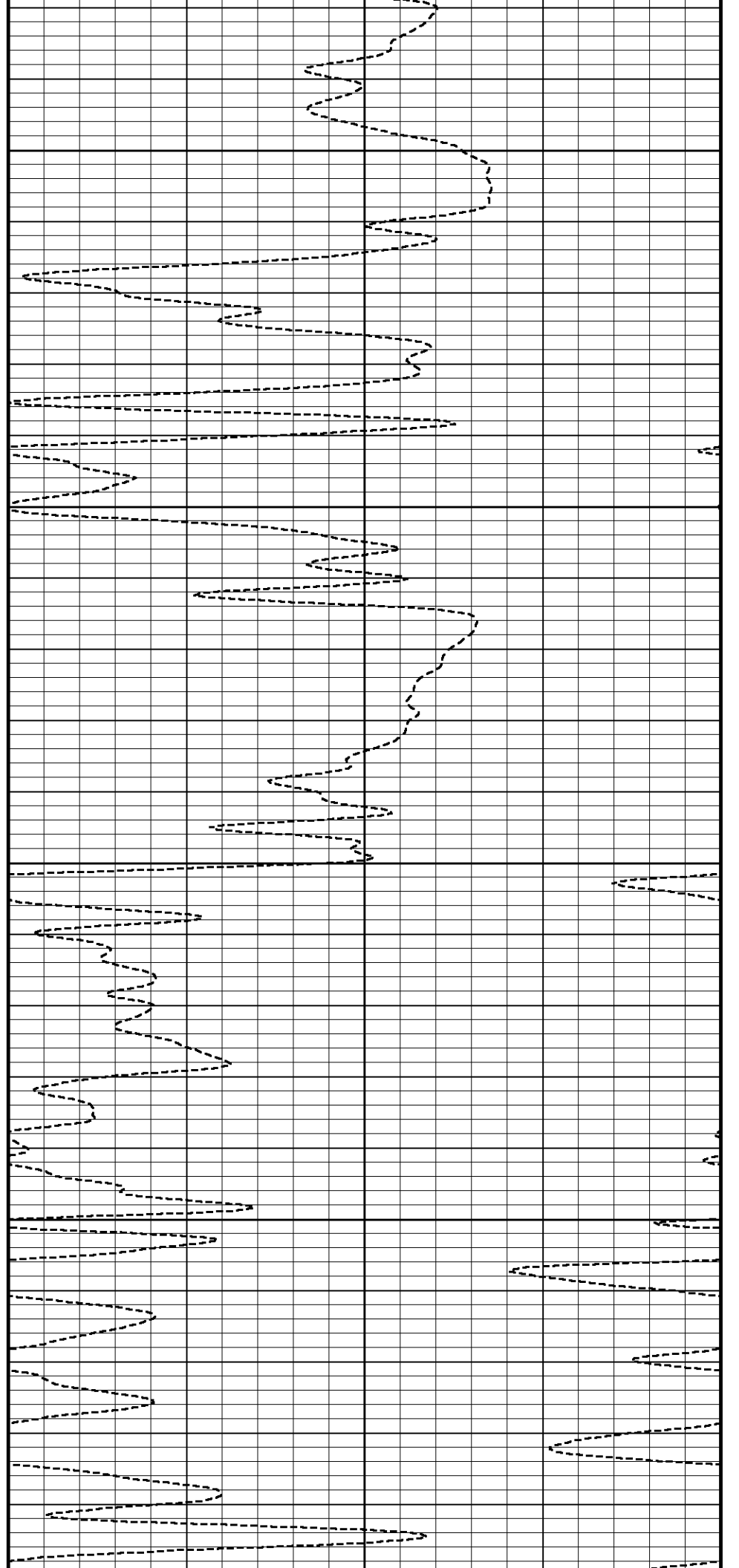
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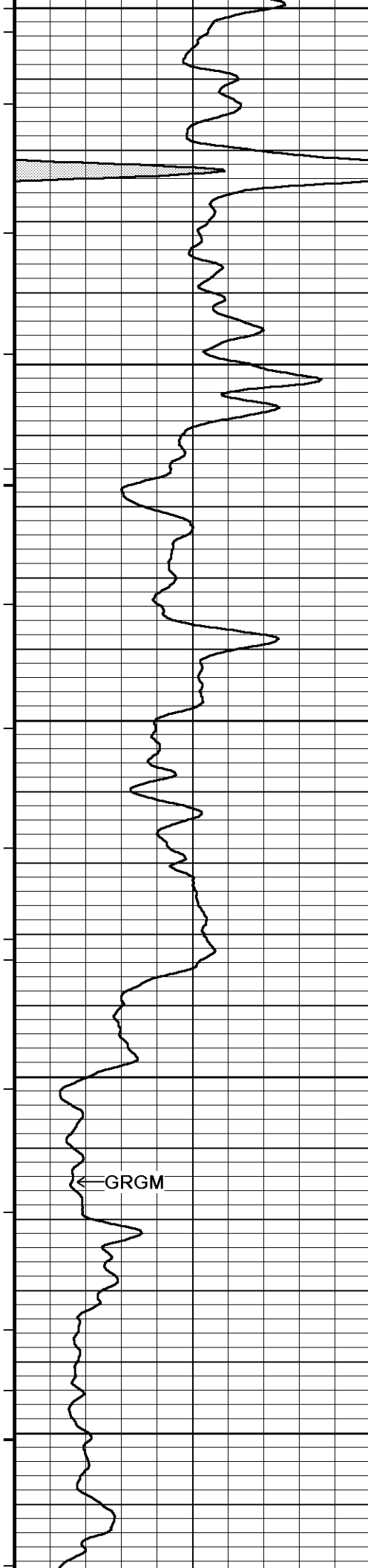
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141°

4300

141°





4350

141°

4400

142°

4450

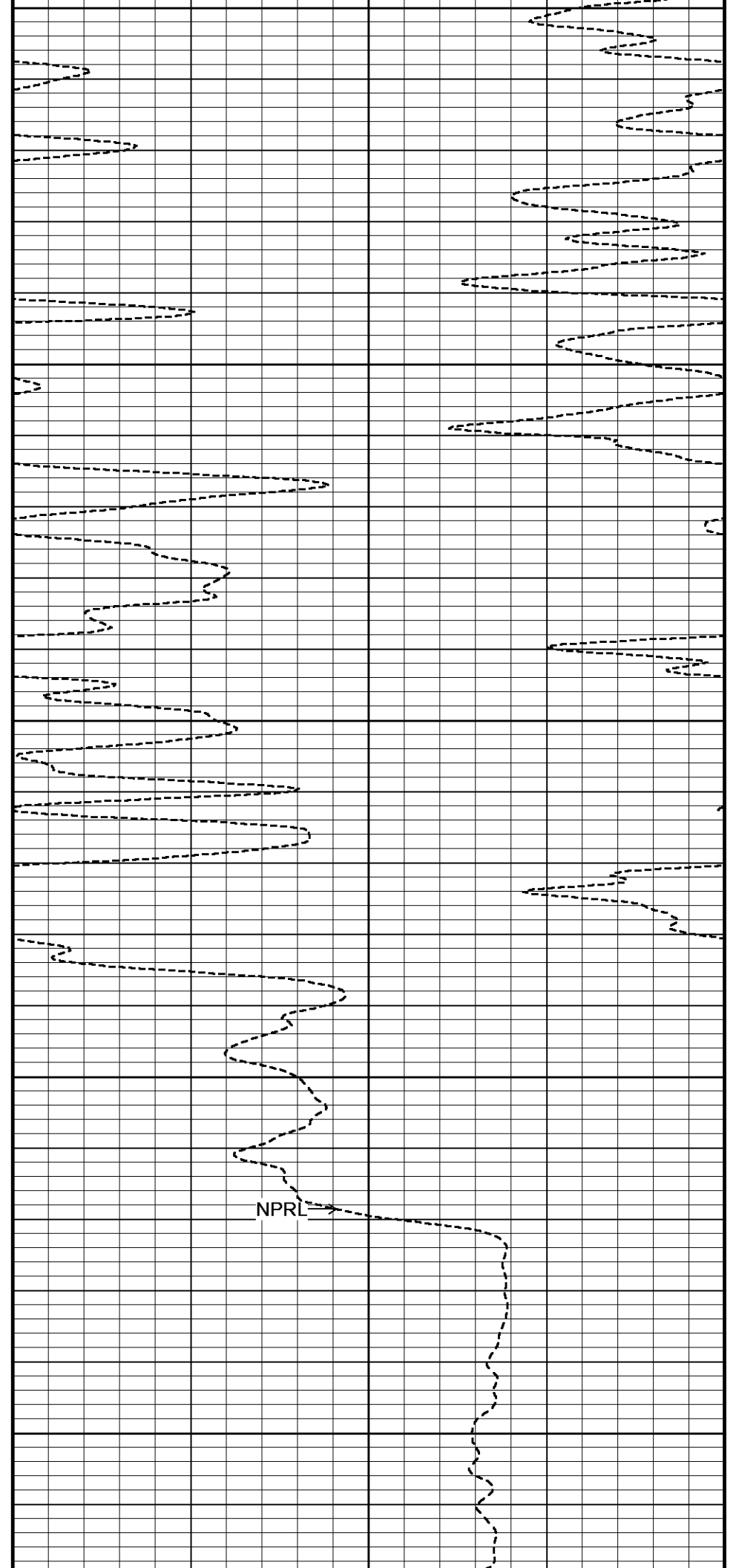
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4500

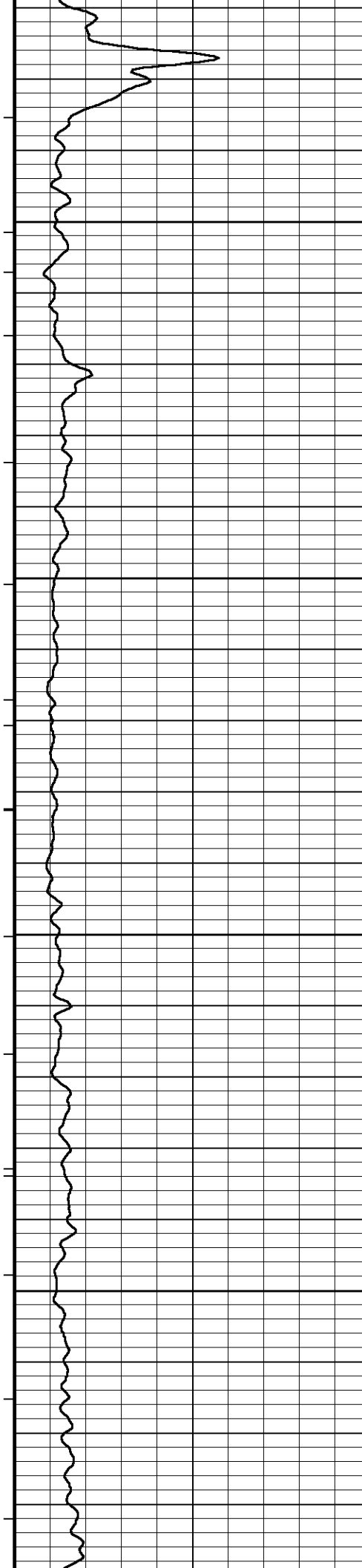
GRGM

142°

4550



NPRL



143°

4600

143°

4650

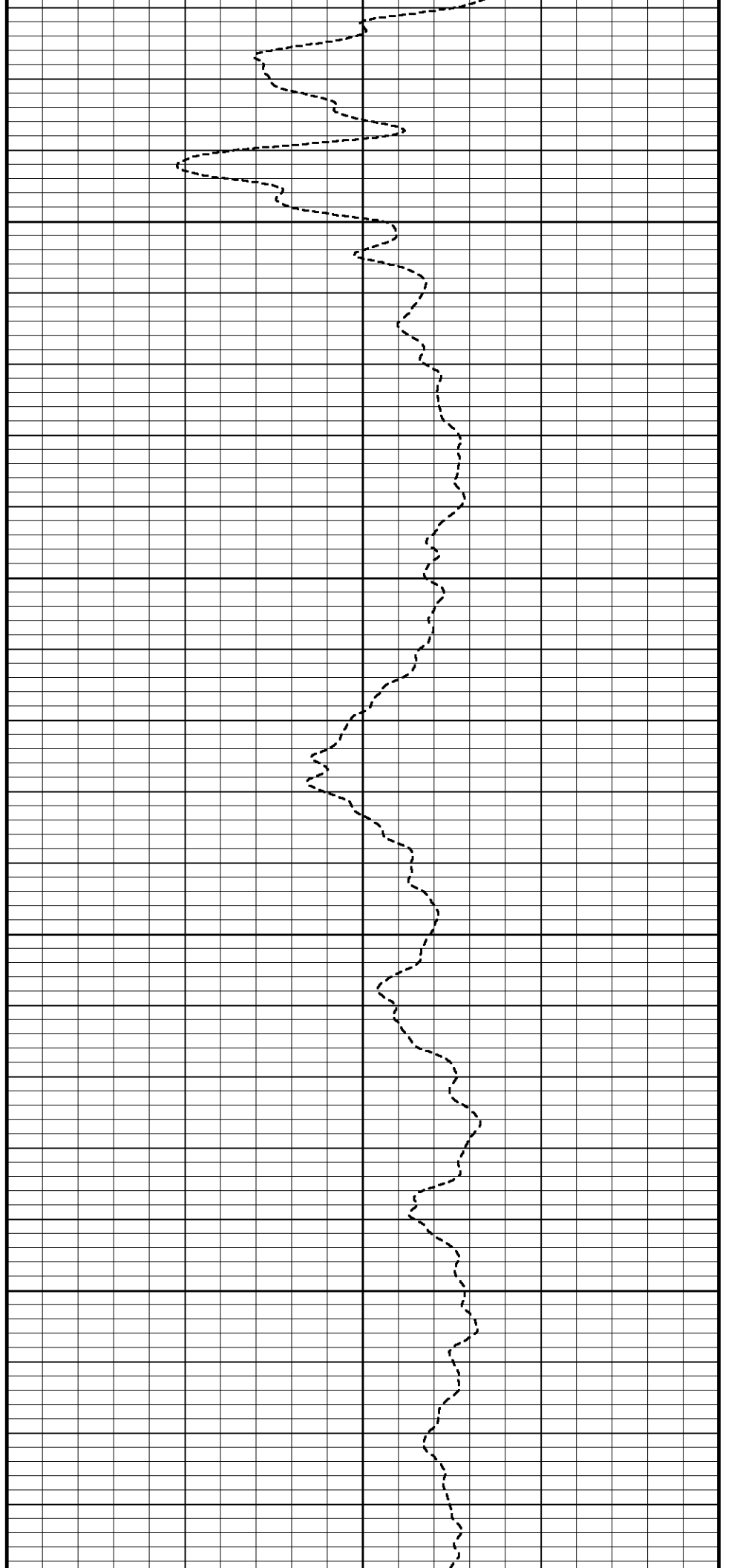
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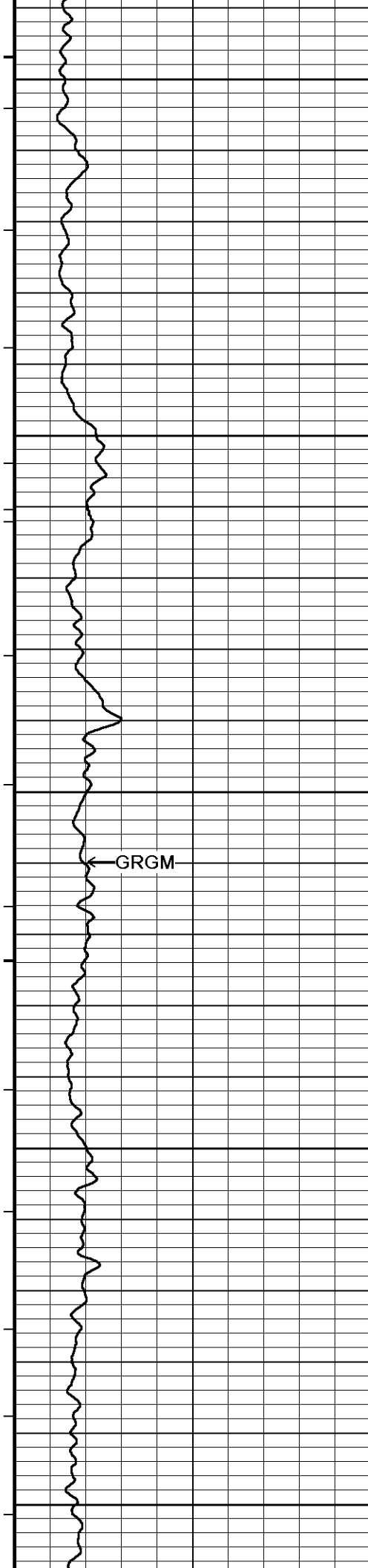
4700

143°

4750

144°





4800

144°

4850

144°

4900

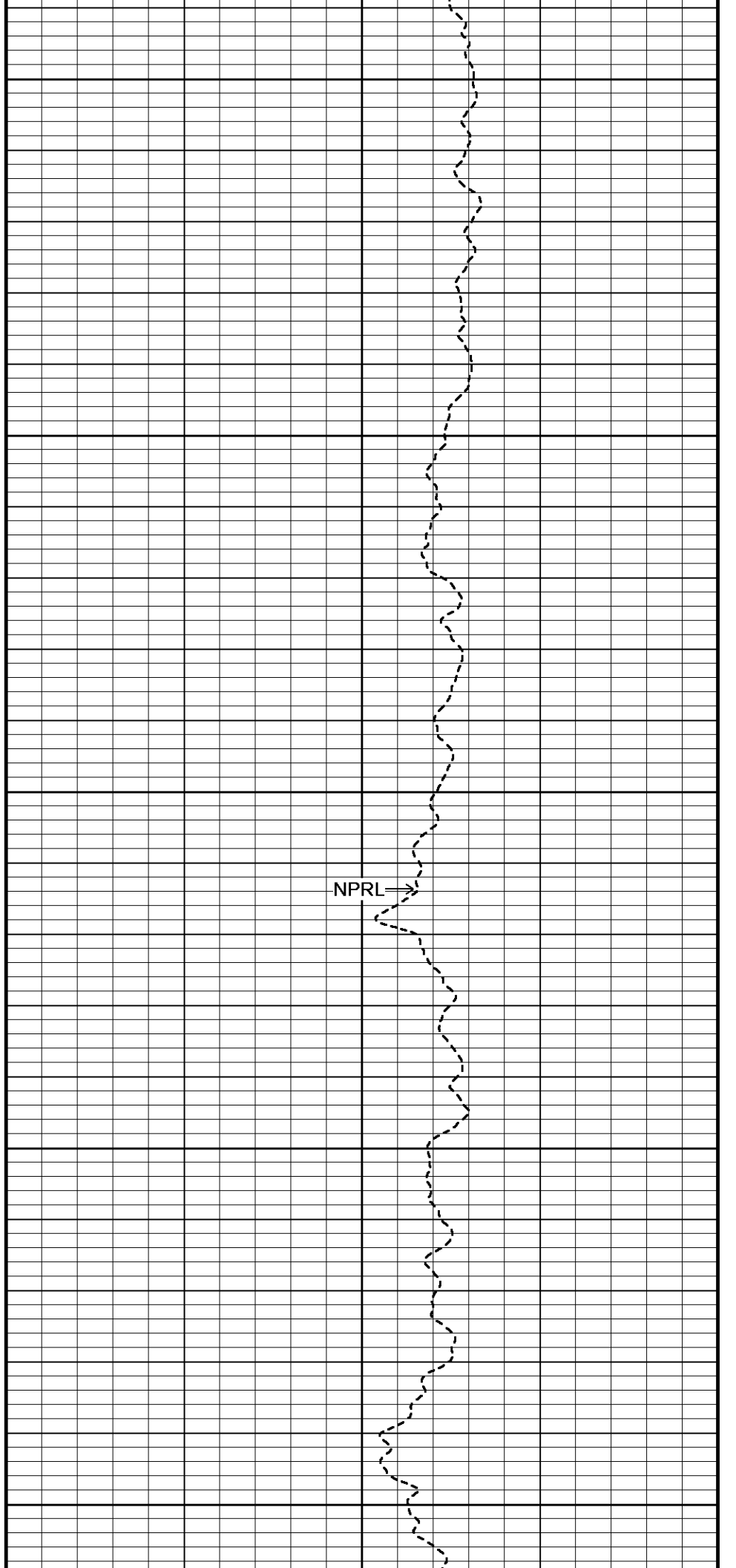
GRGM

144°

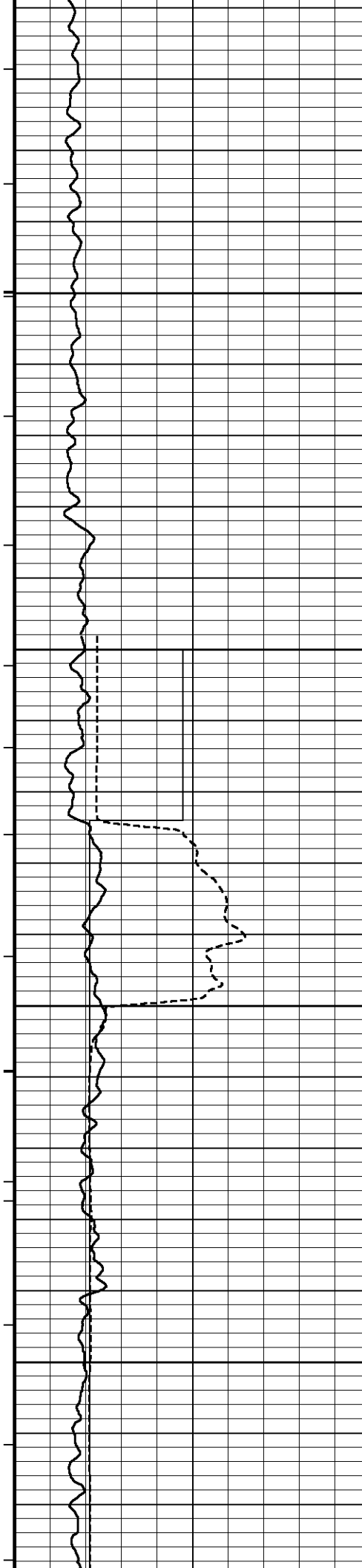
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144°

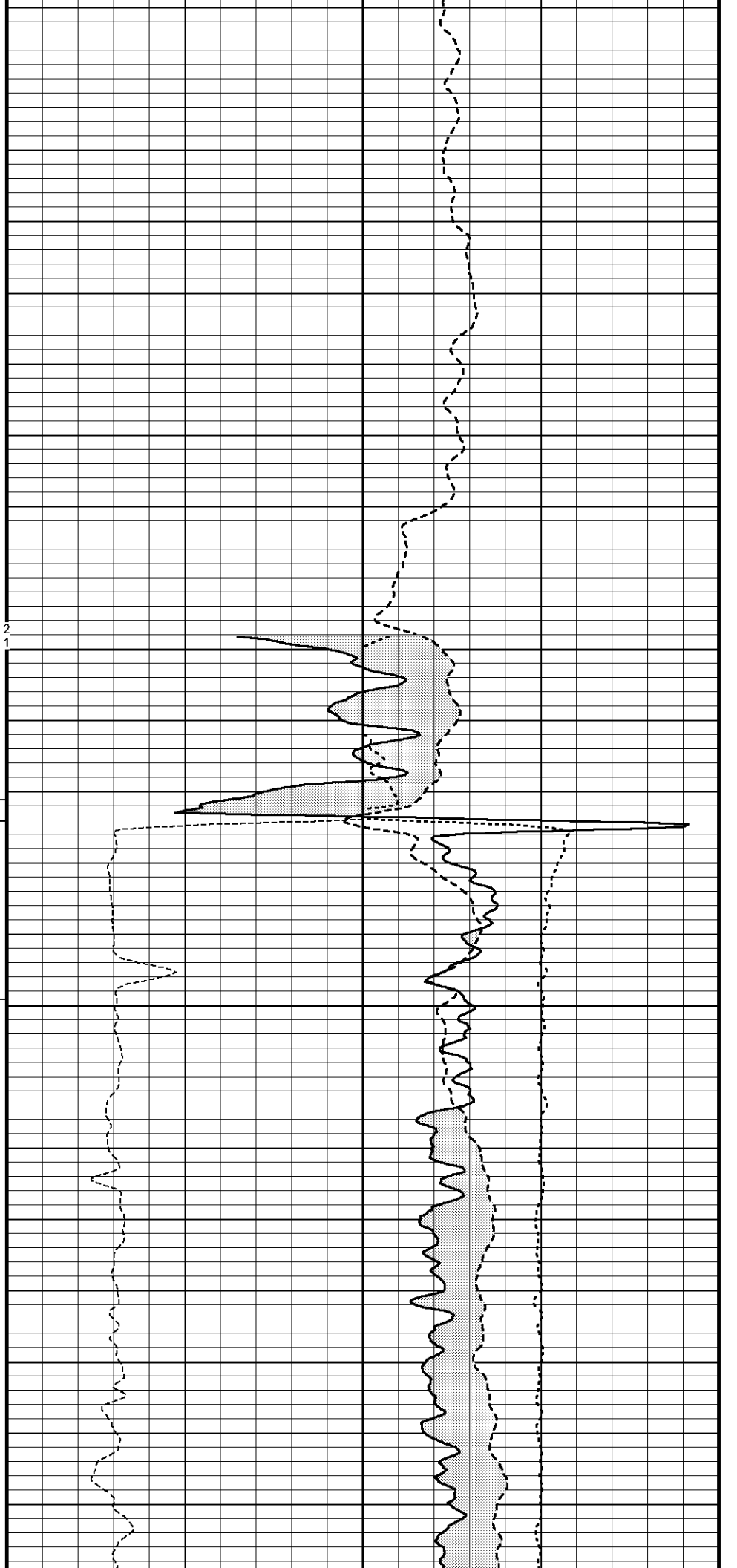
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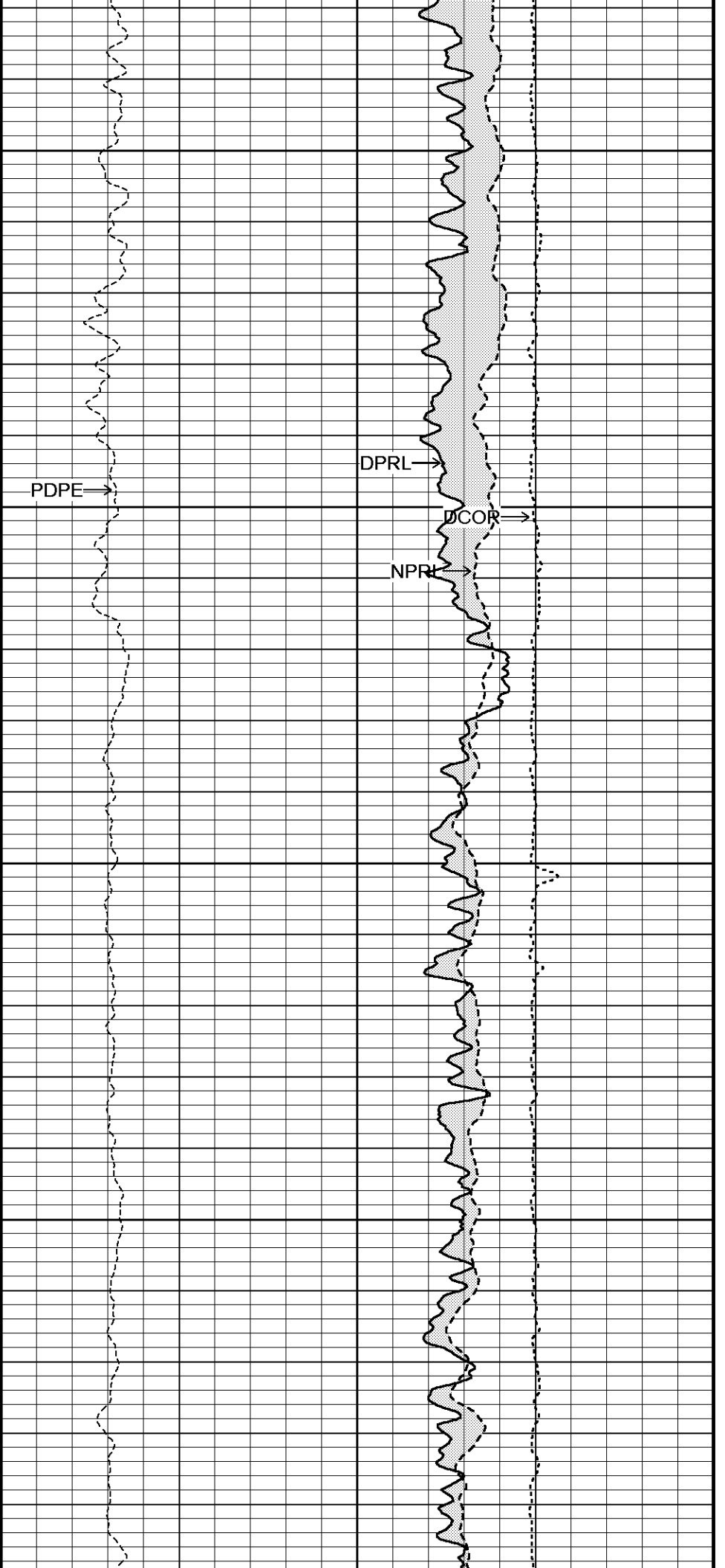
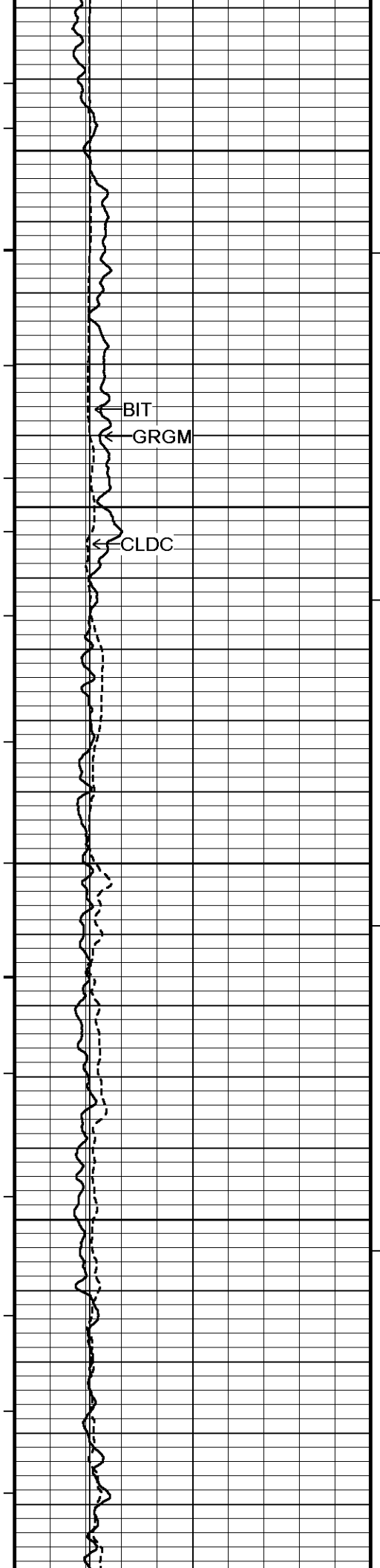


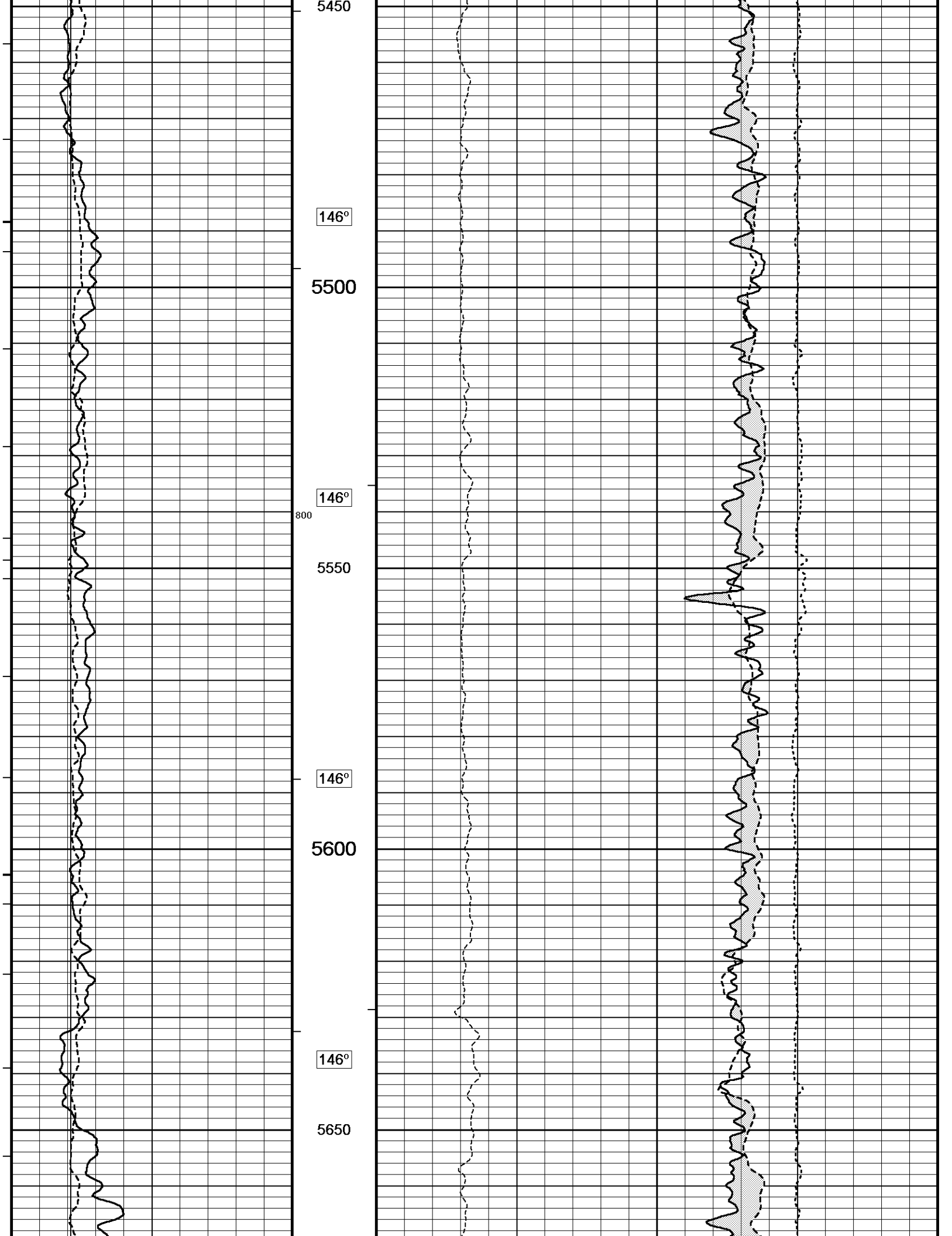
NPRL

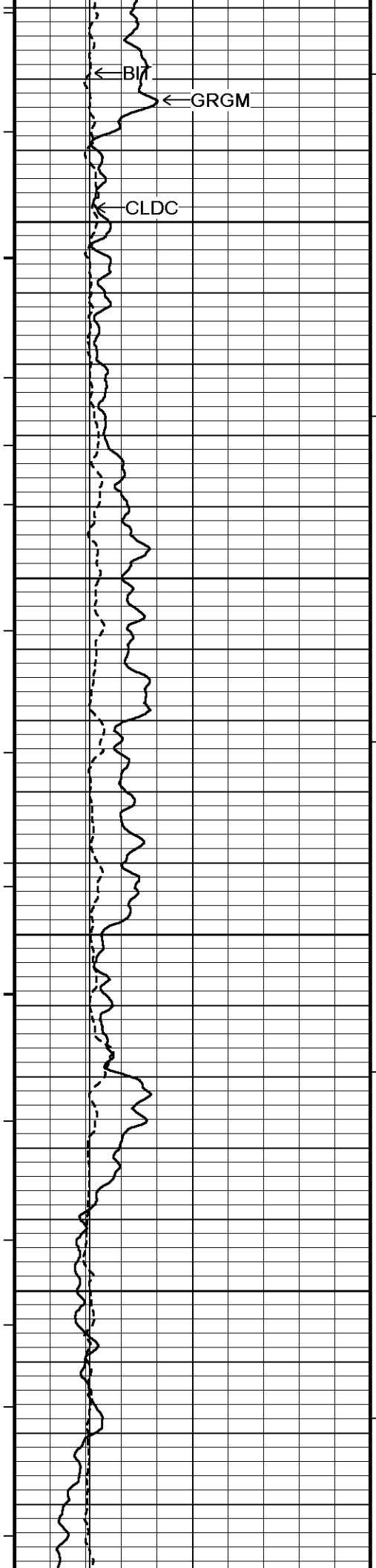


144°
5050
145°
5100
900
Casing Shoe
144°
5150
145°
5200









146°

5700

146°

5750

146°

5800

146°

5850

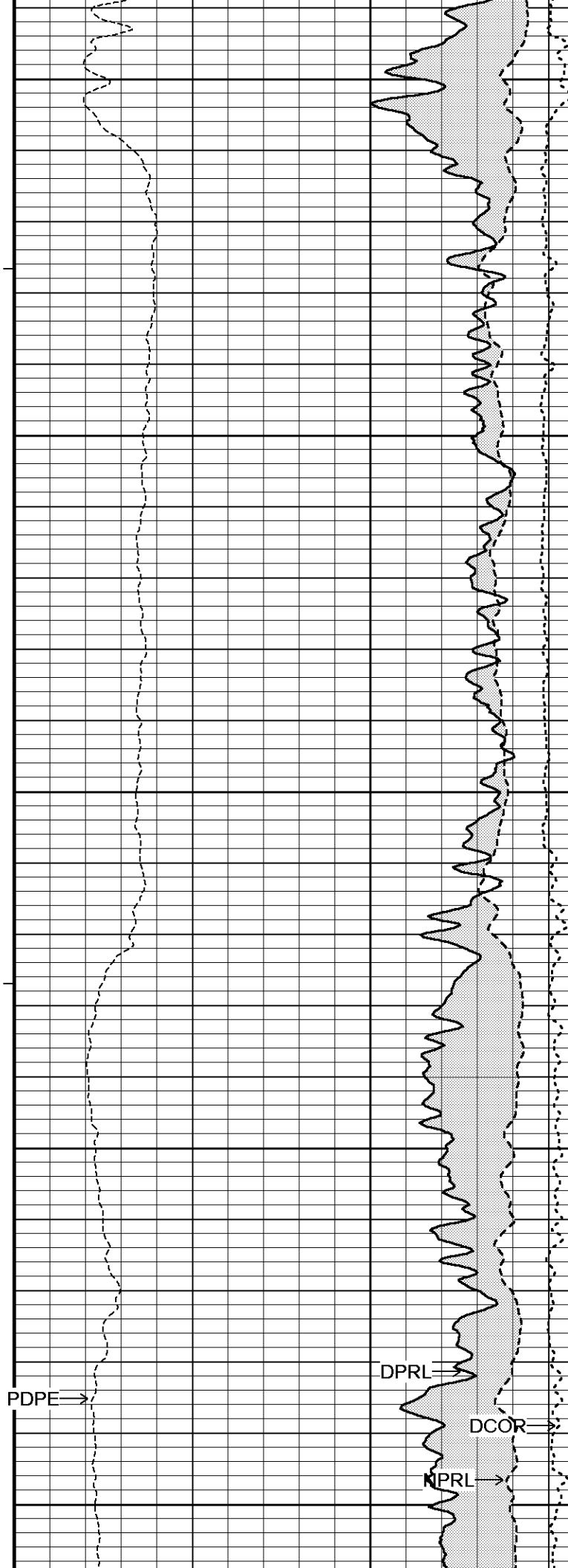
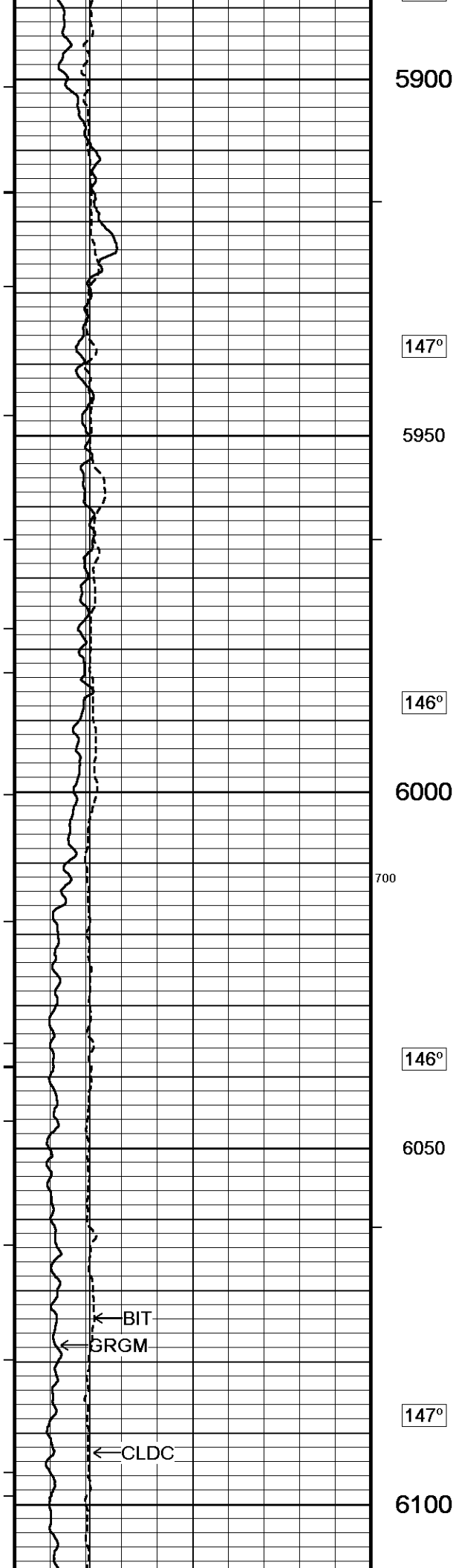
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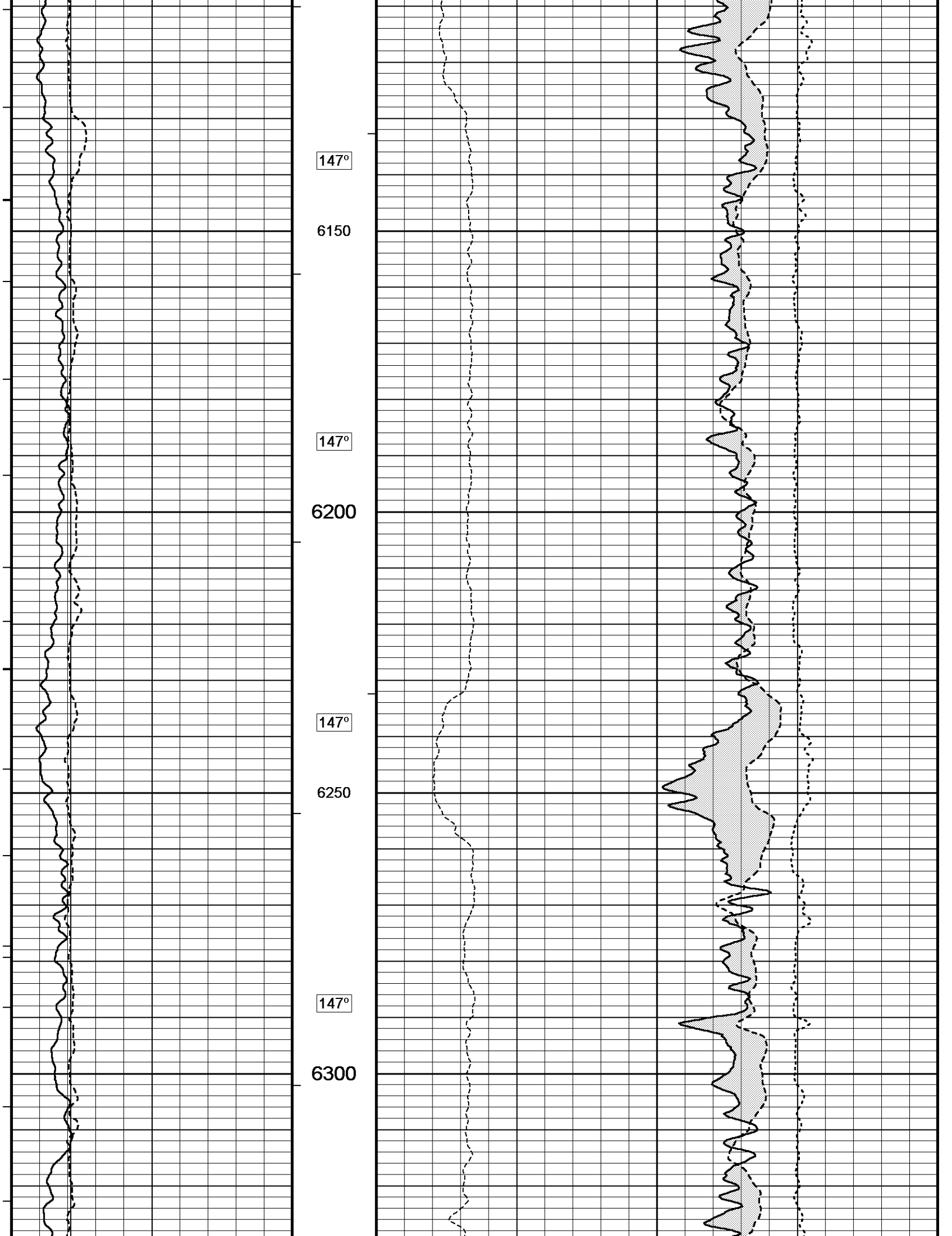
PDPE

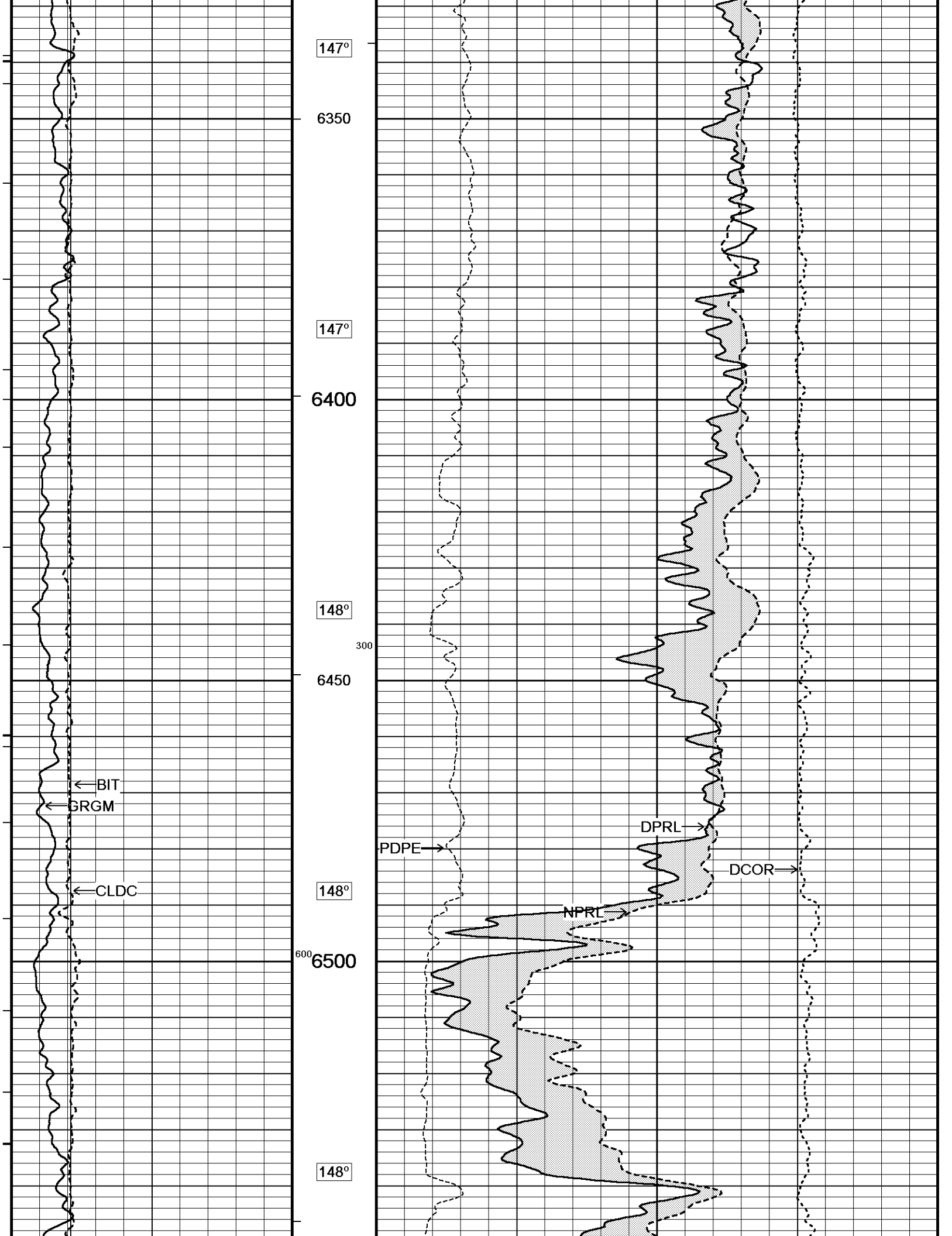
DPRL

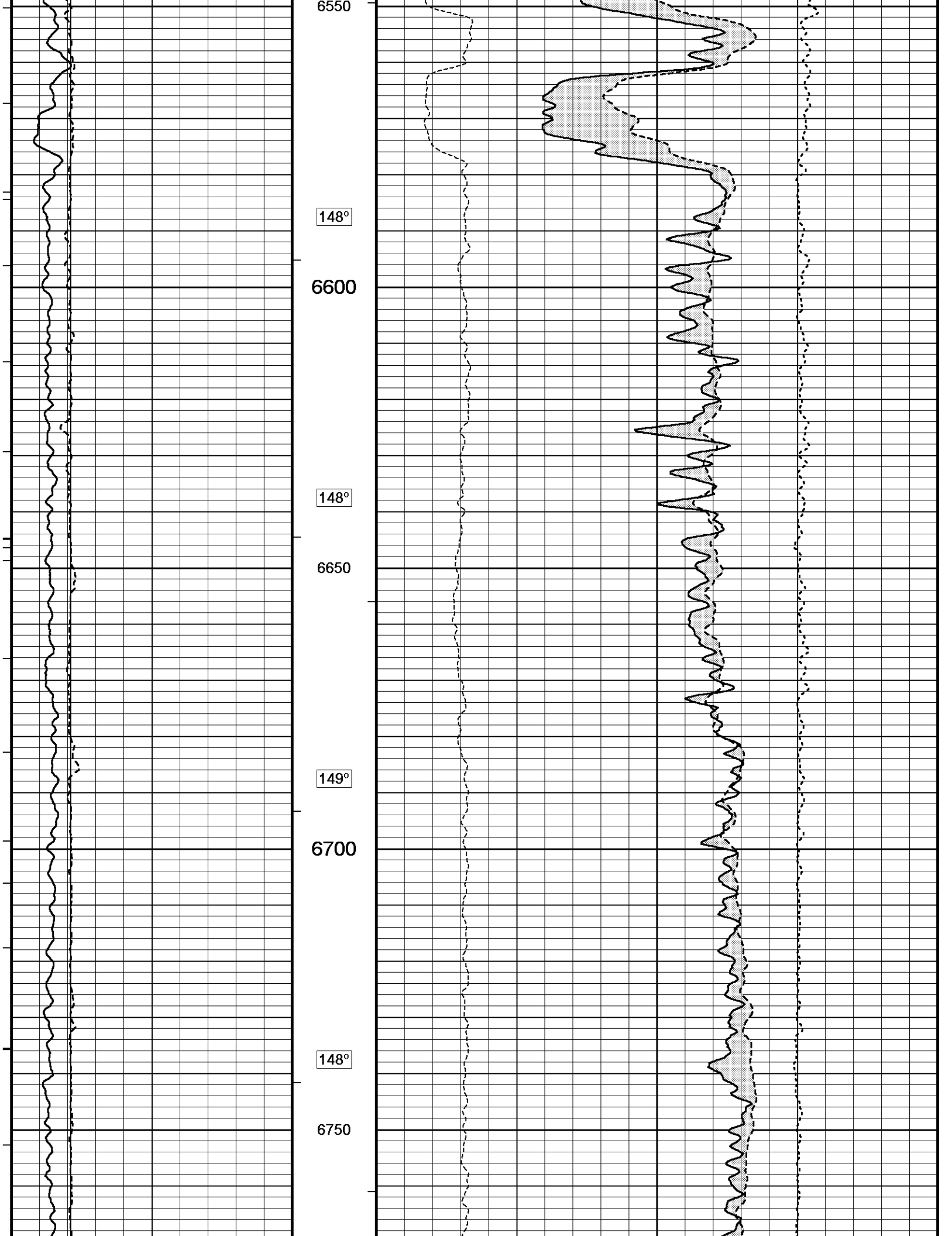
DCOR

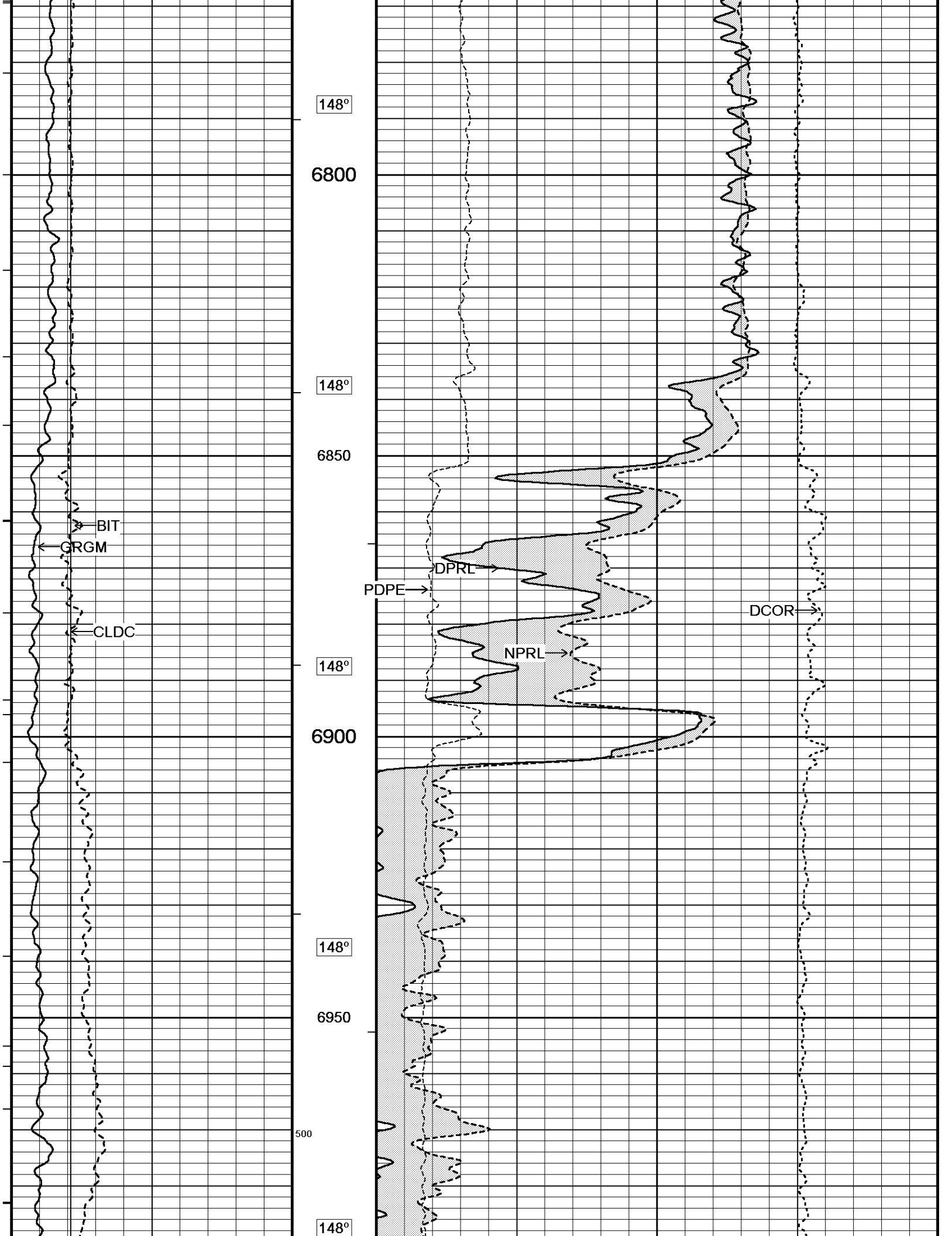
NPRL

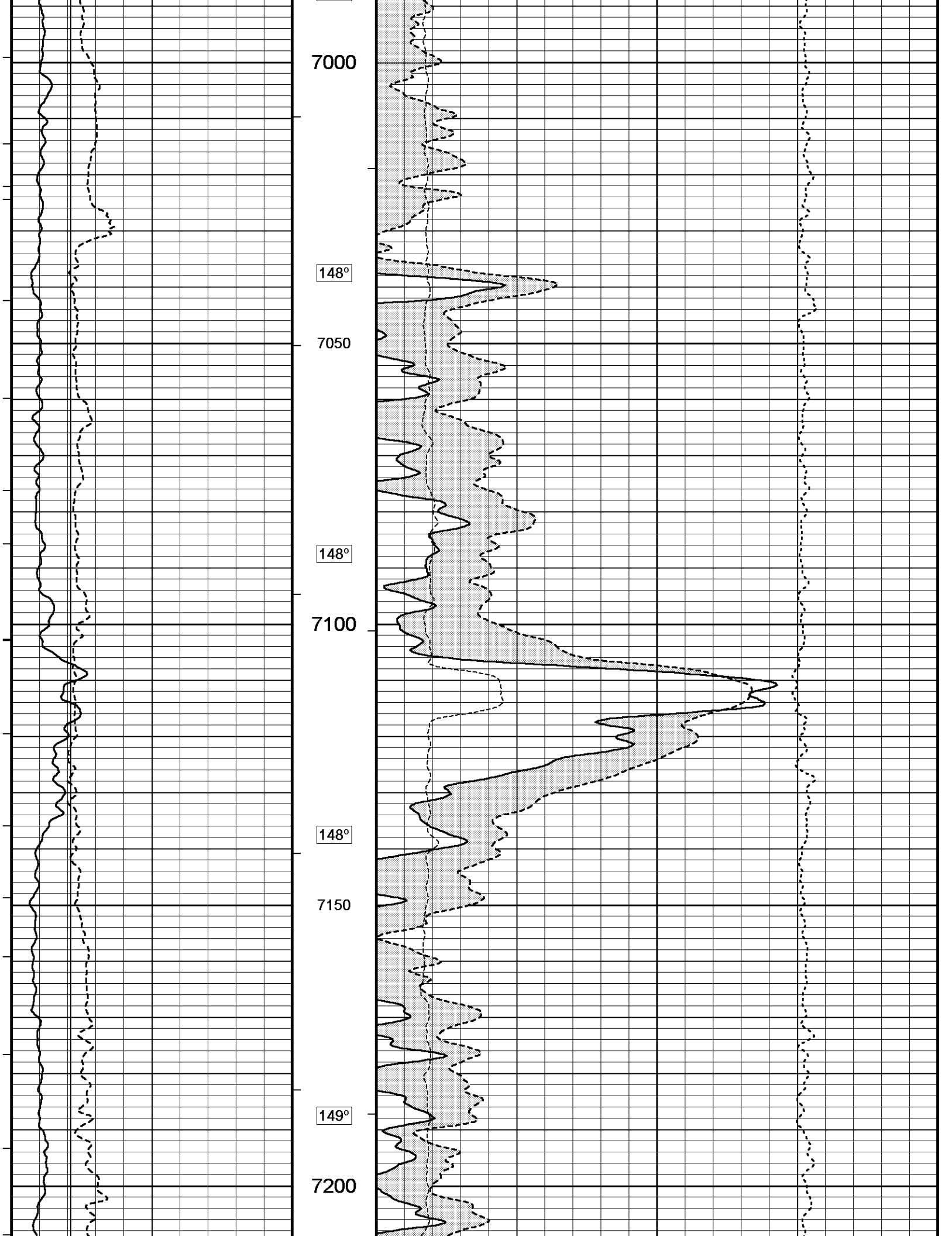


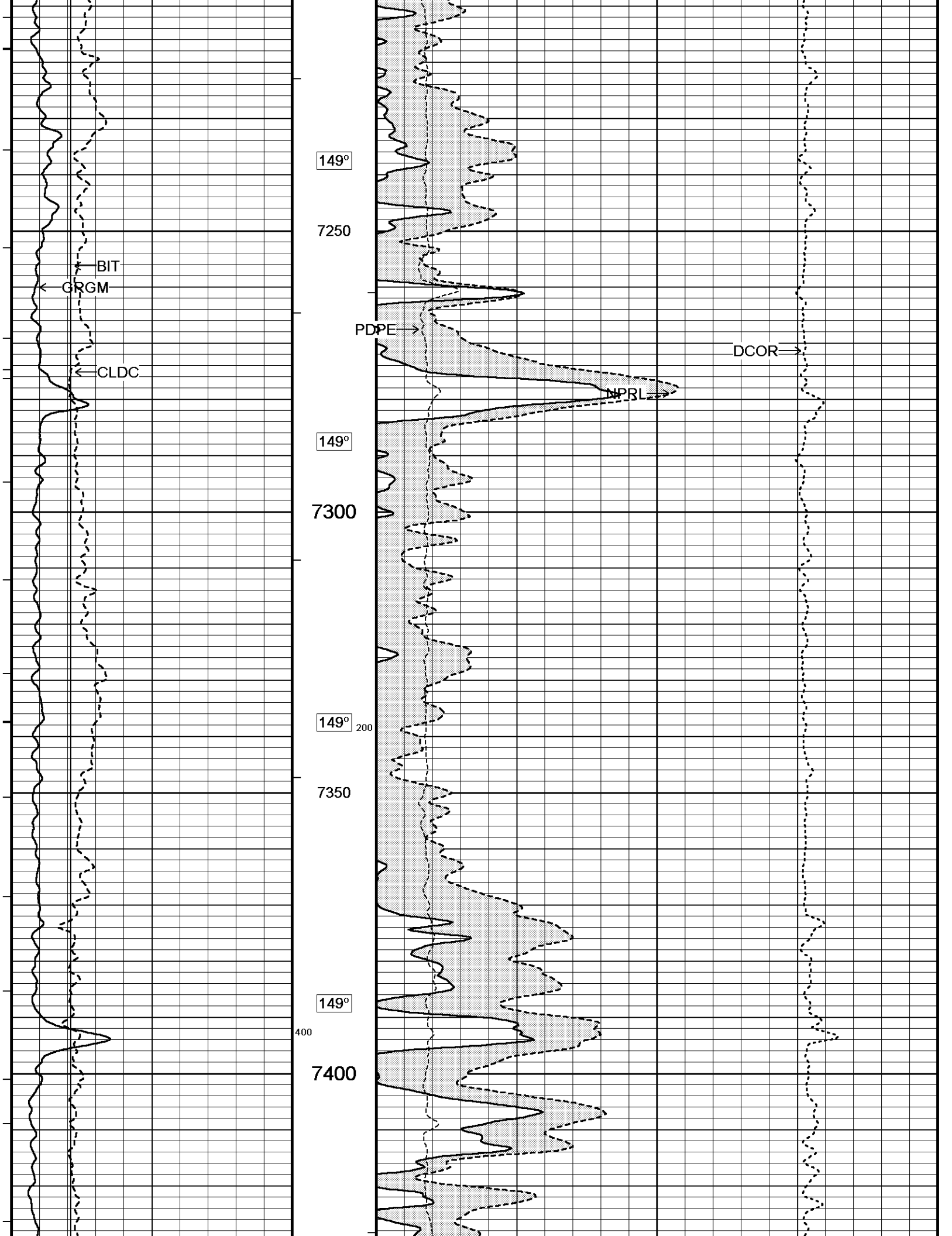


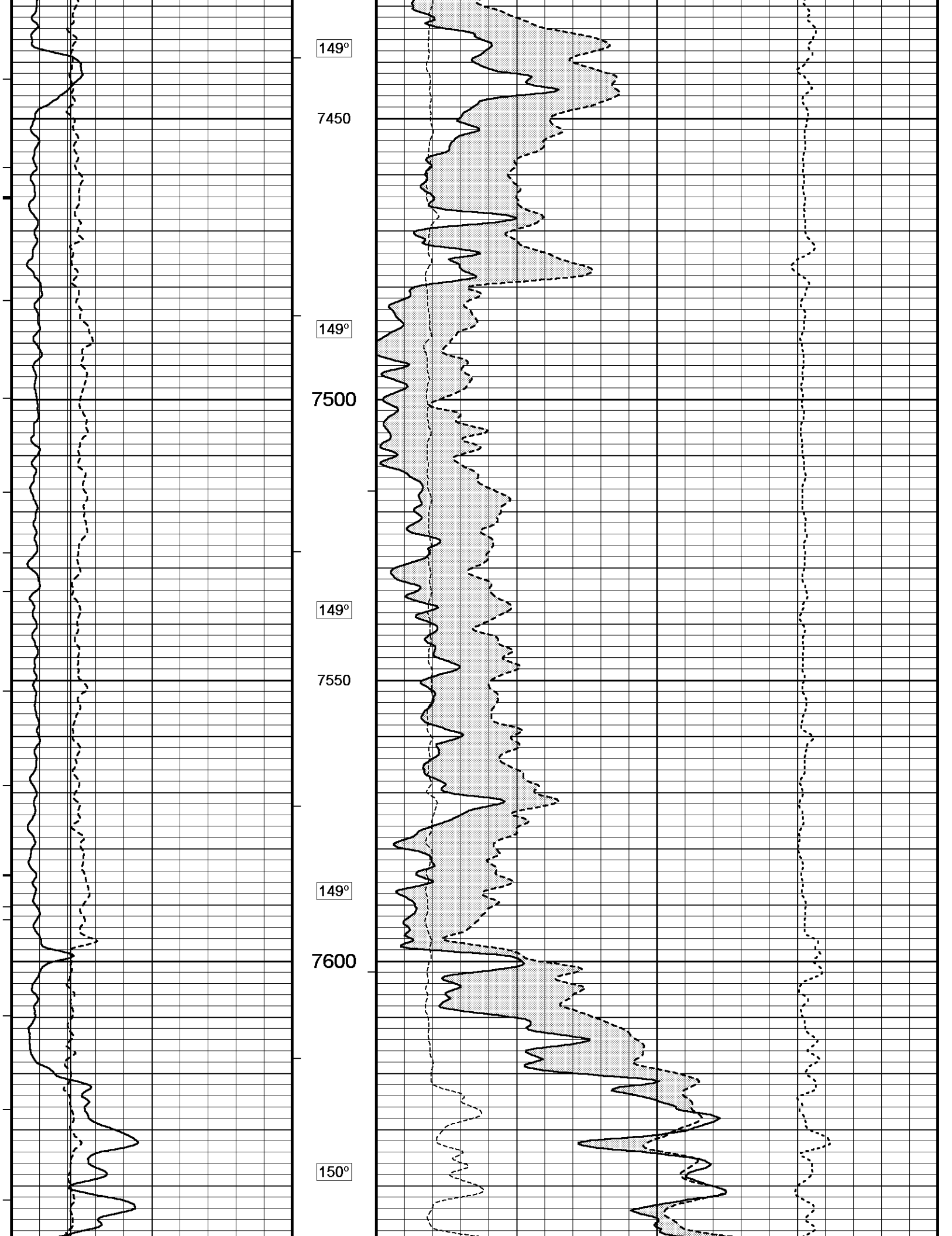


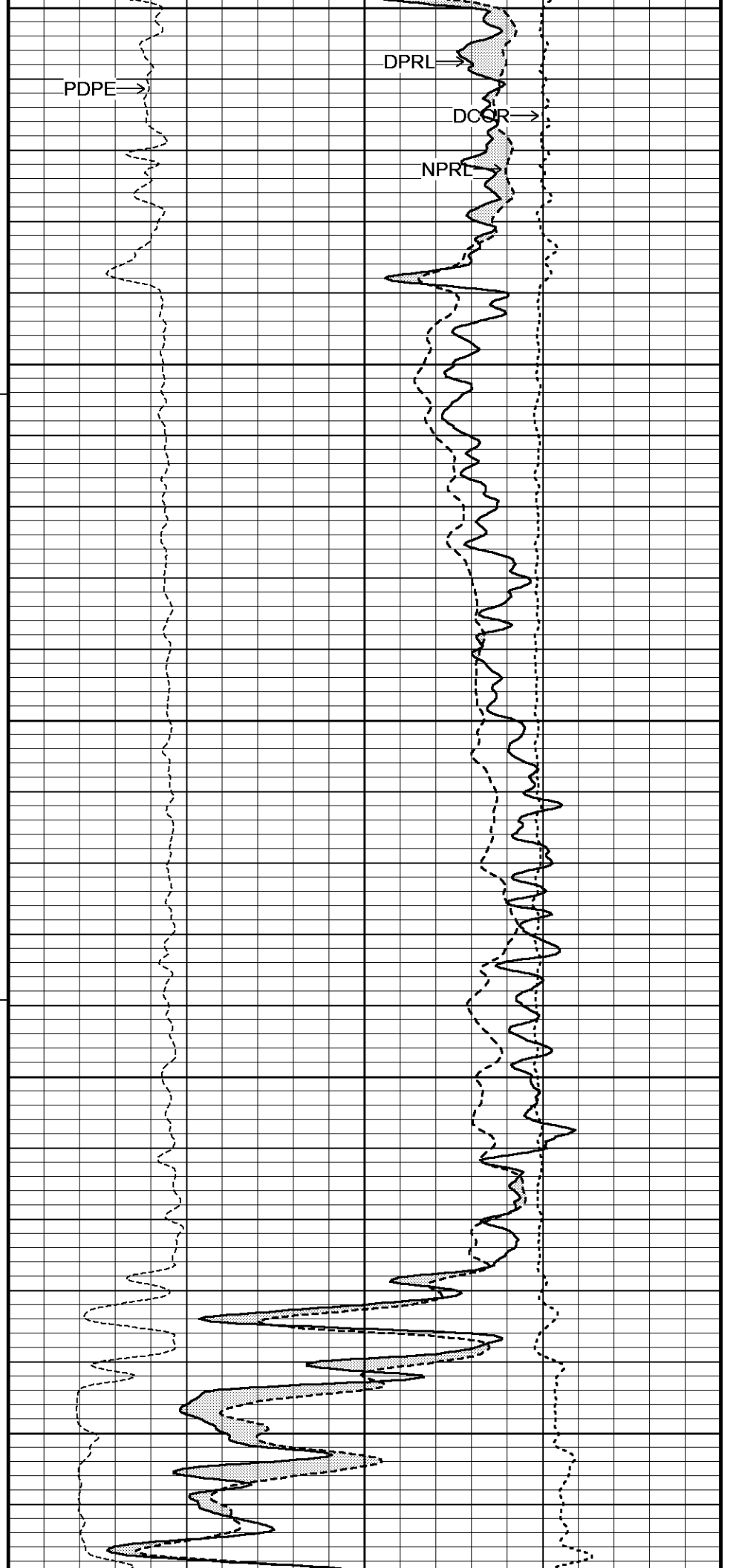
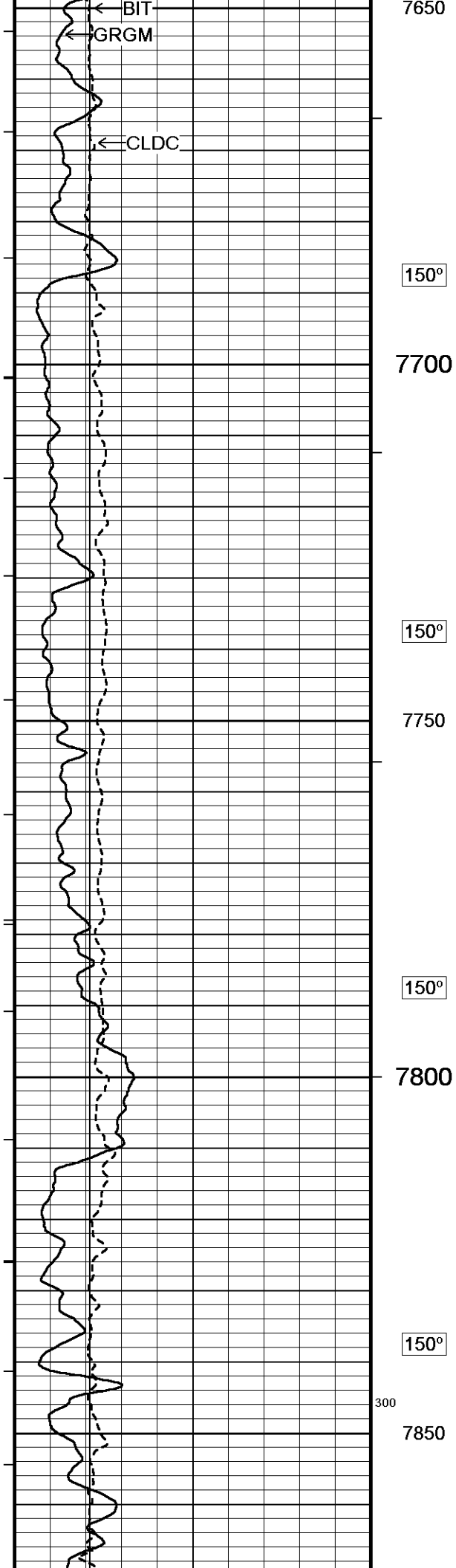


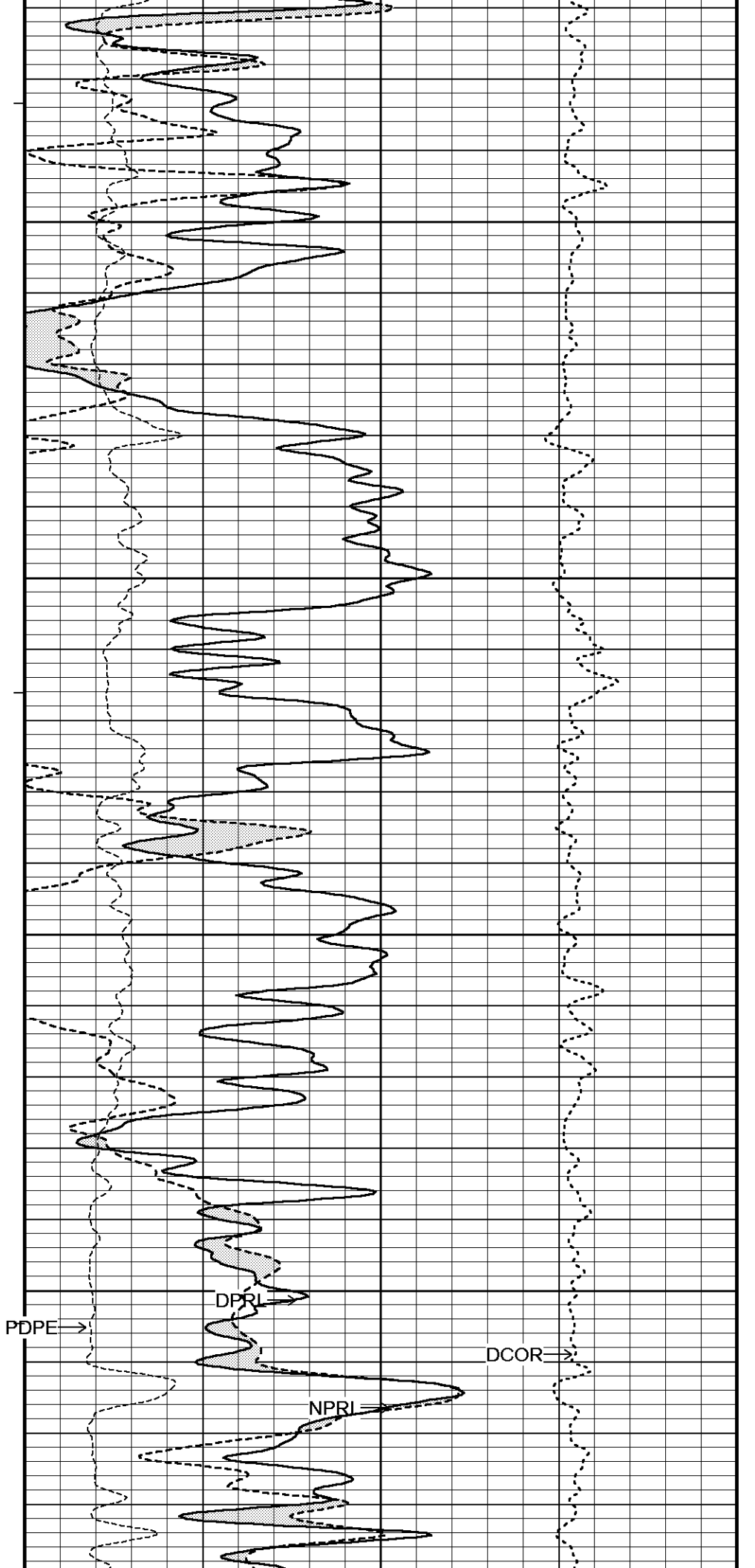
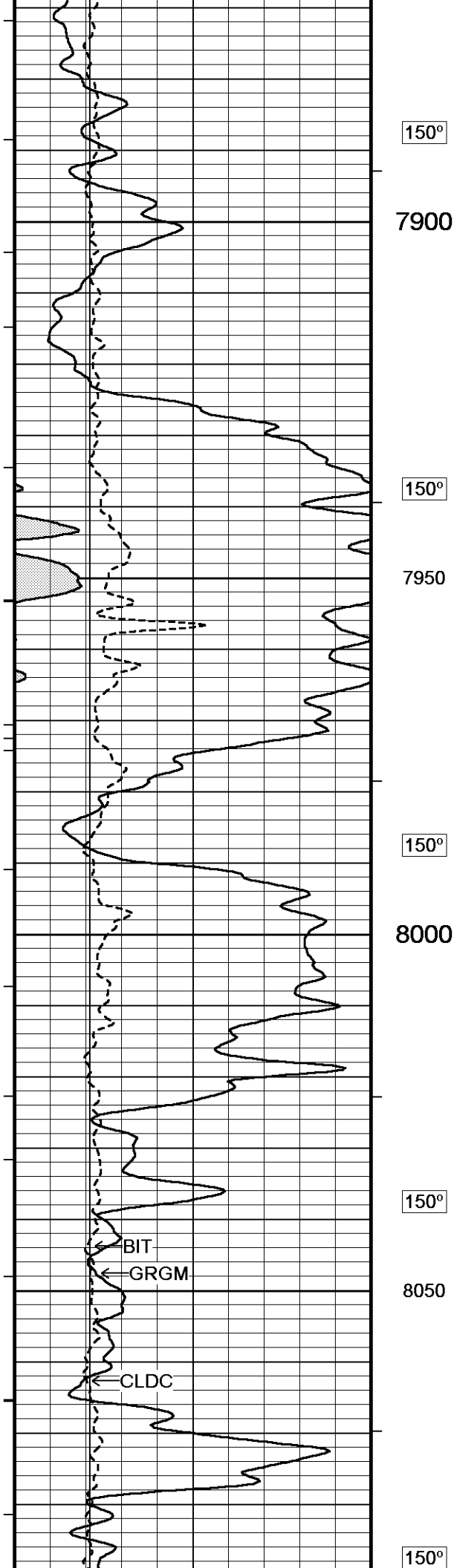


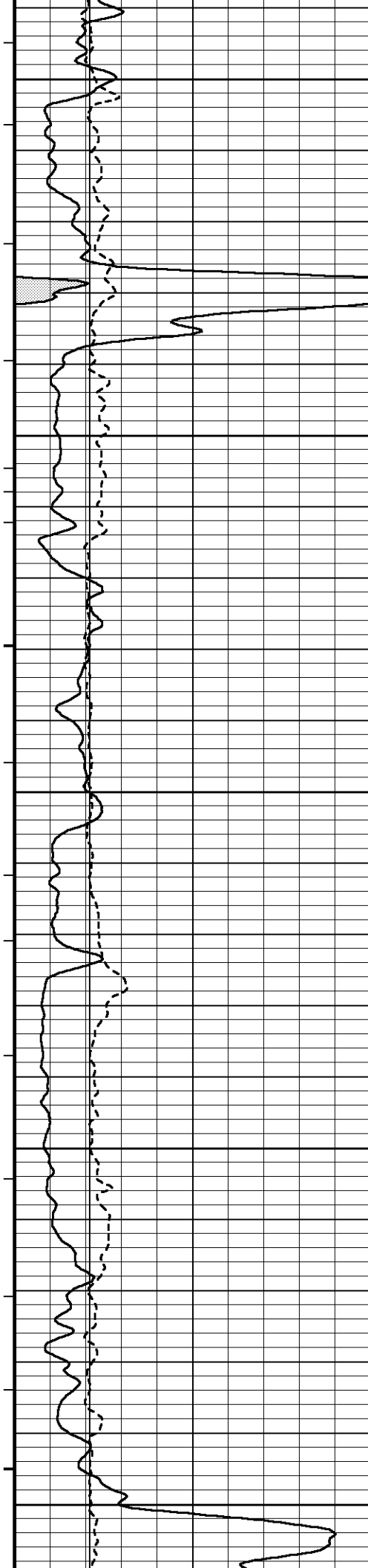




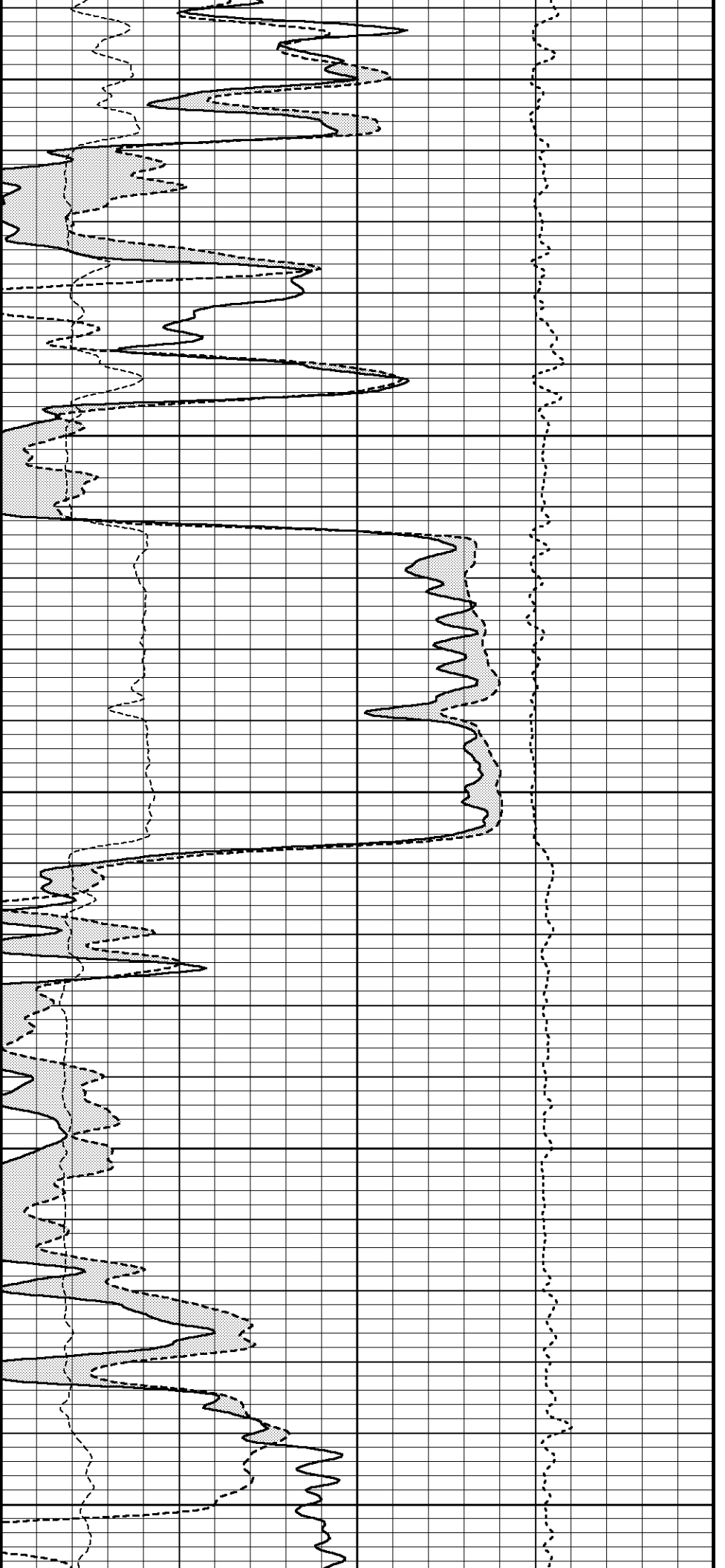


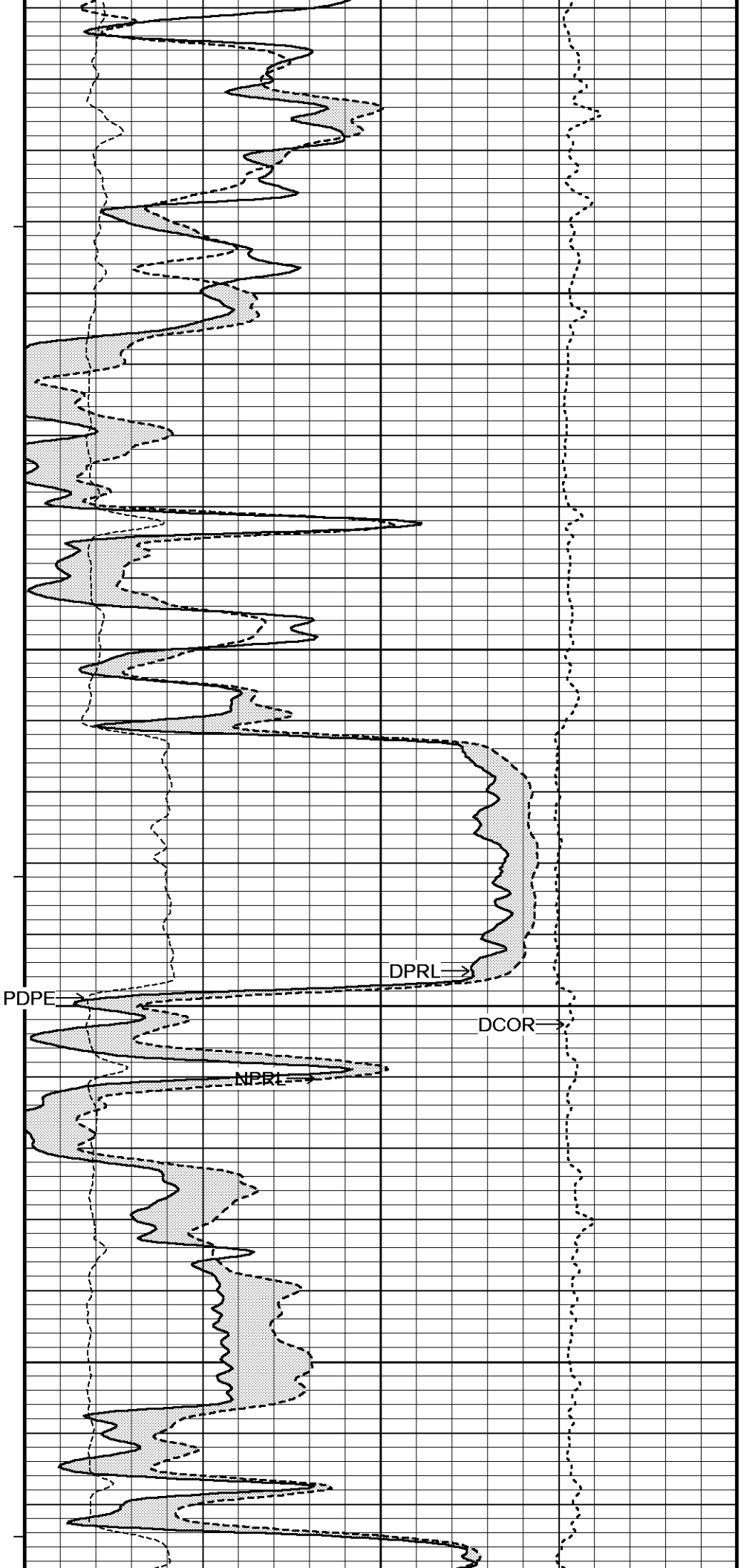
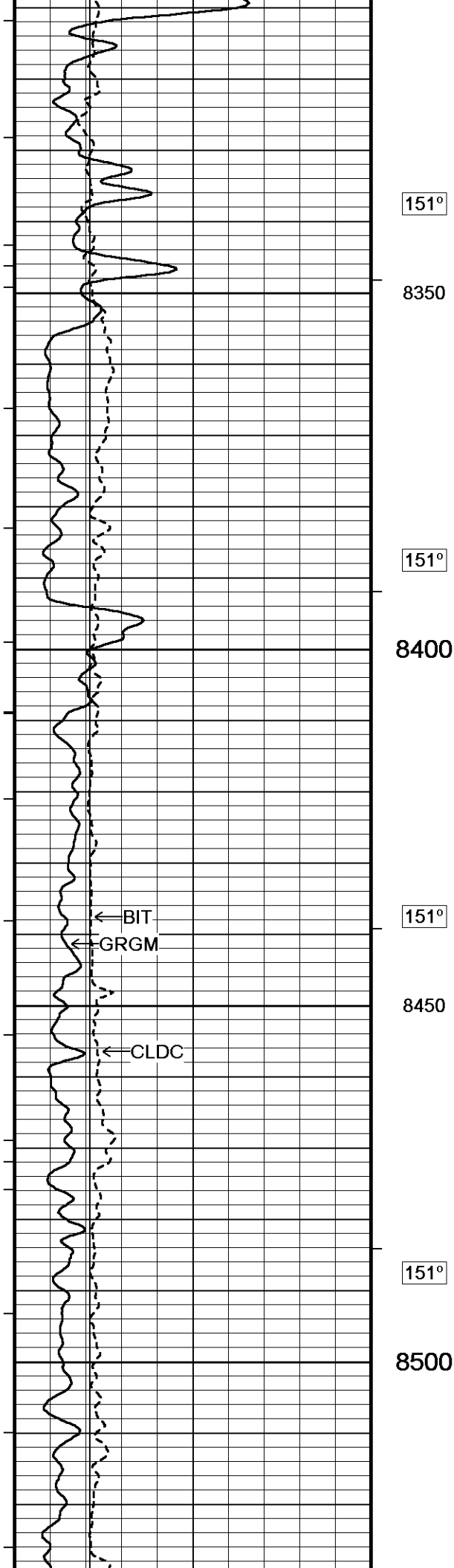


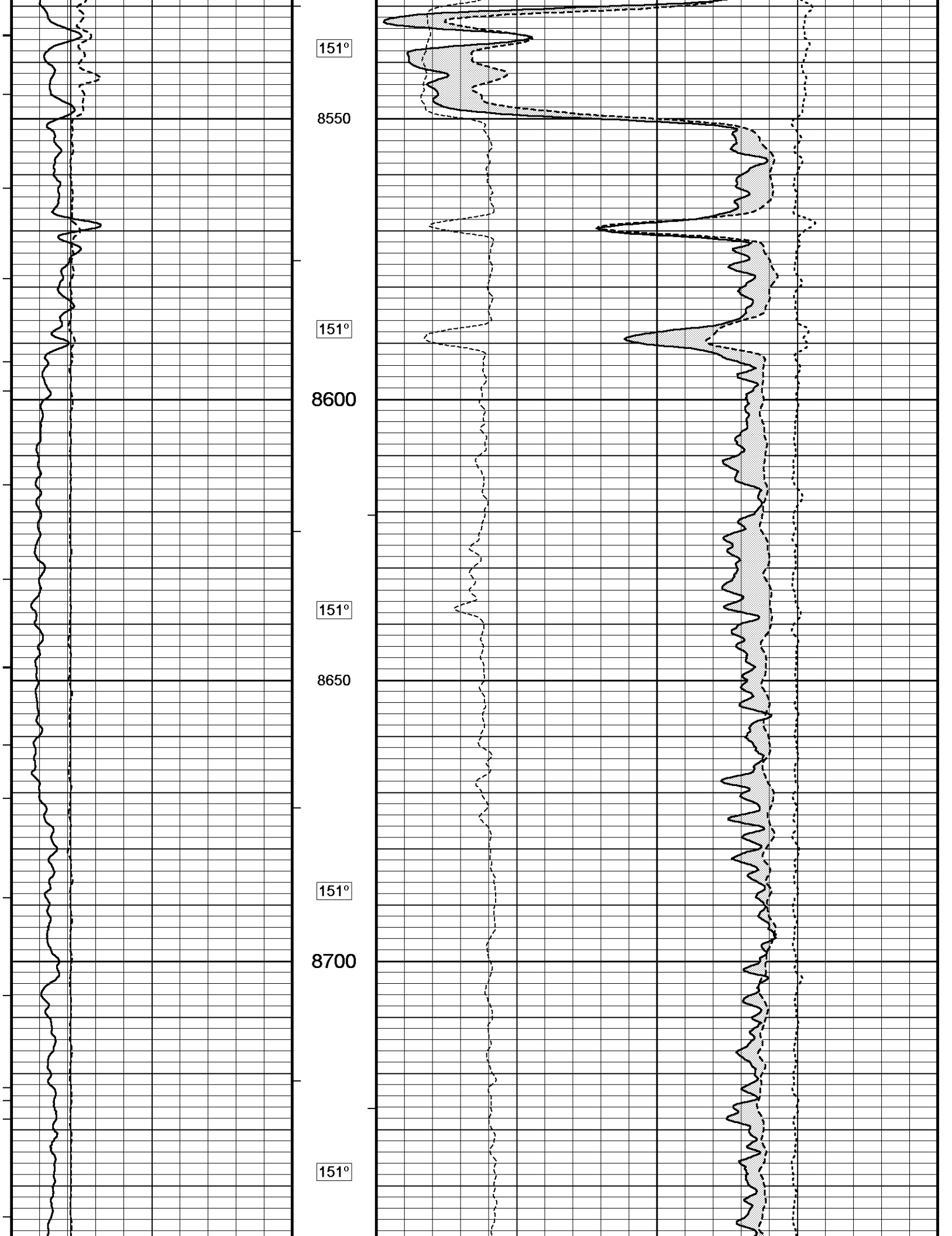


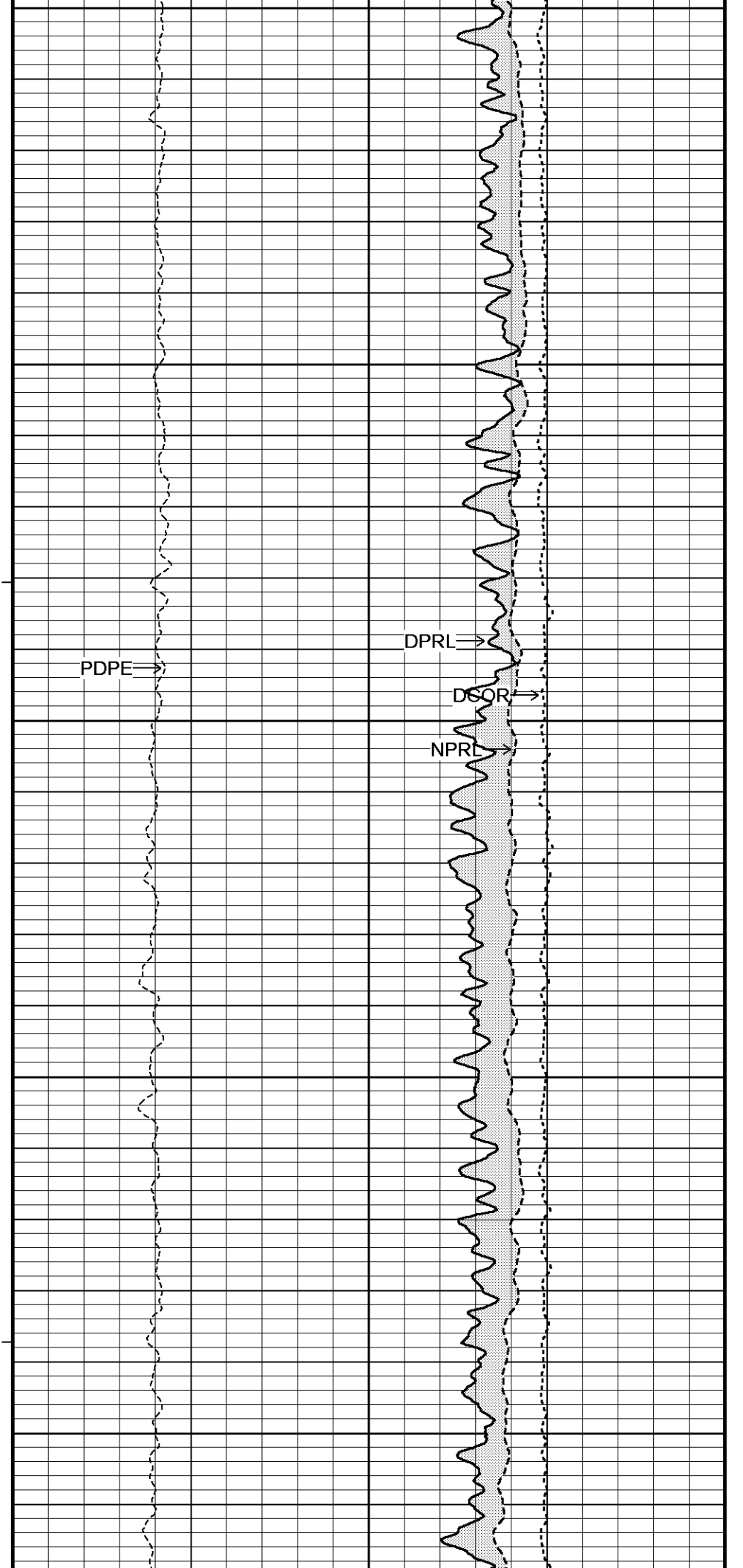
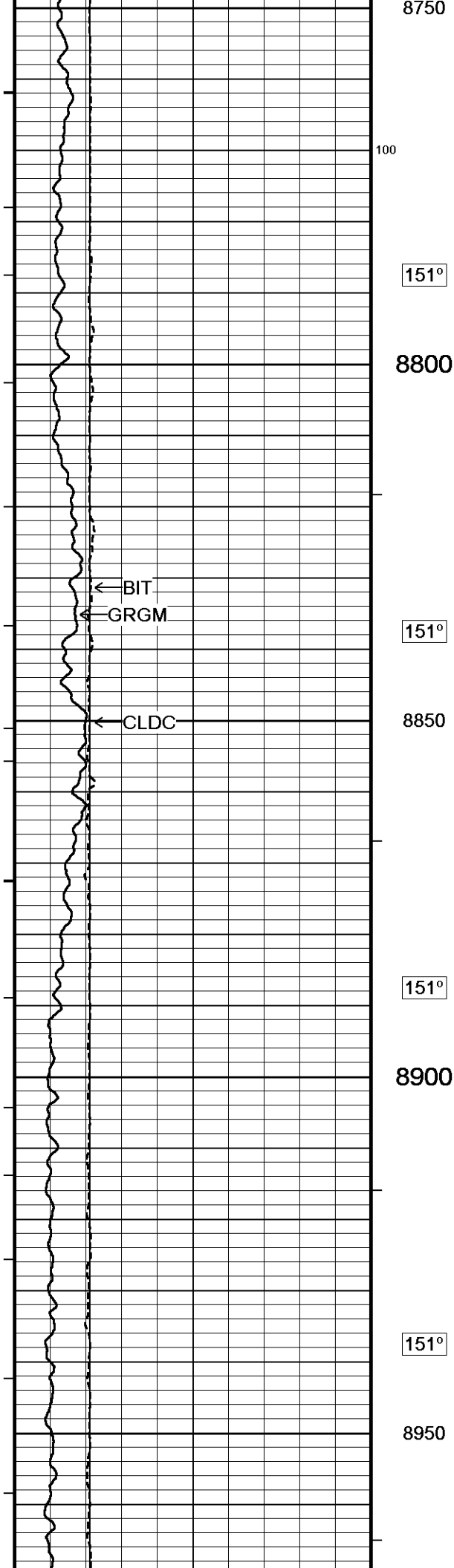


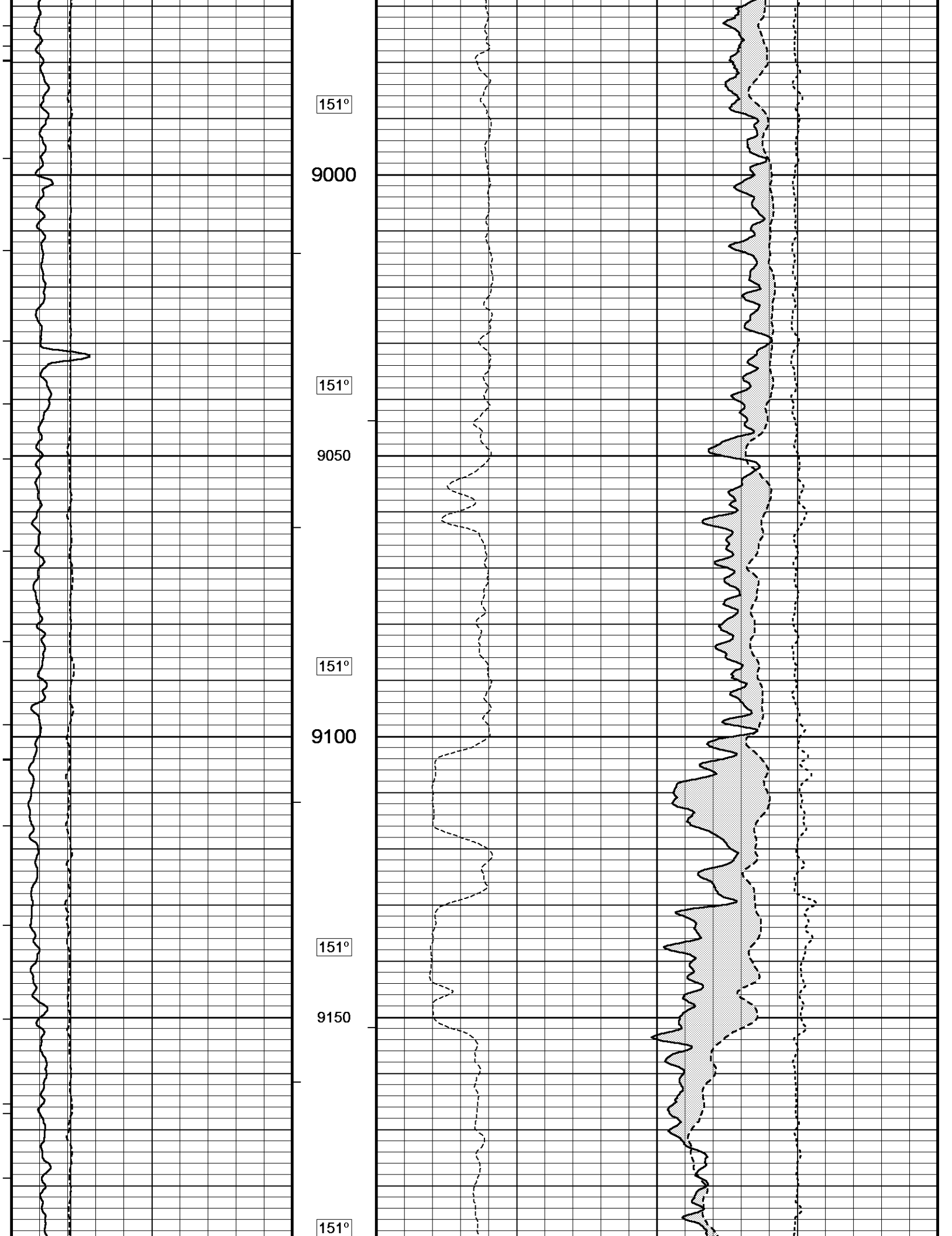
8100
150°
8150
150°
8200
150°
100
8250
150°
200
8300

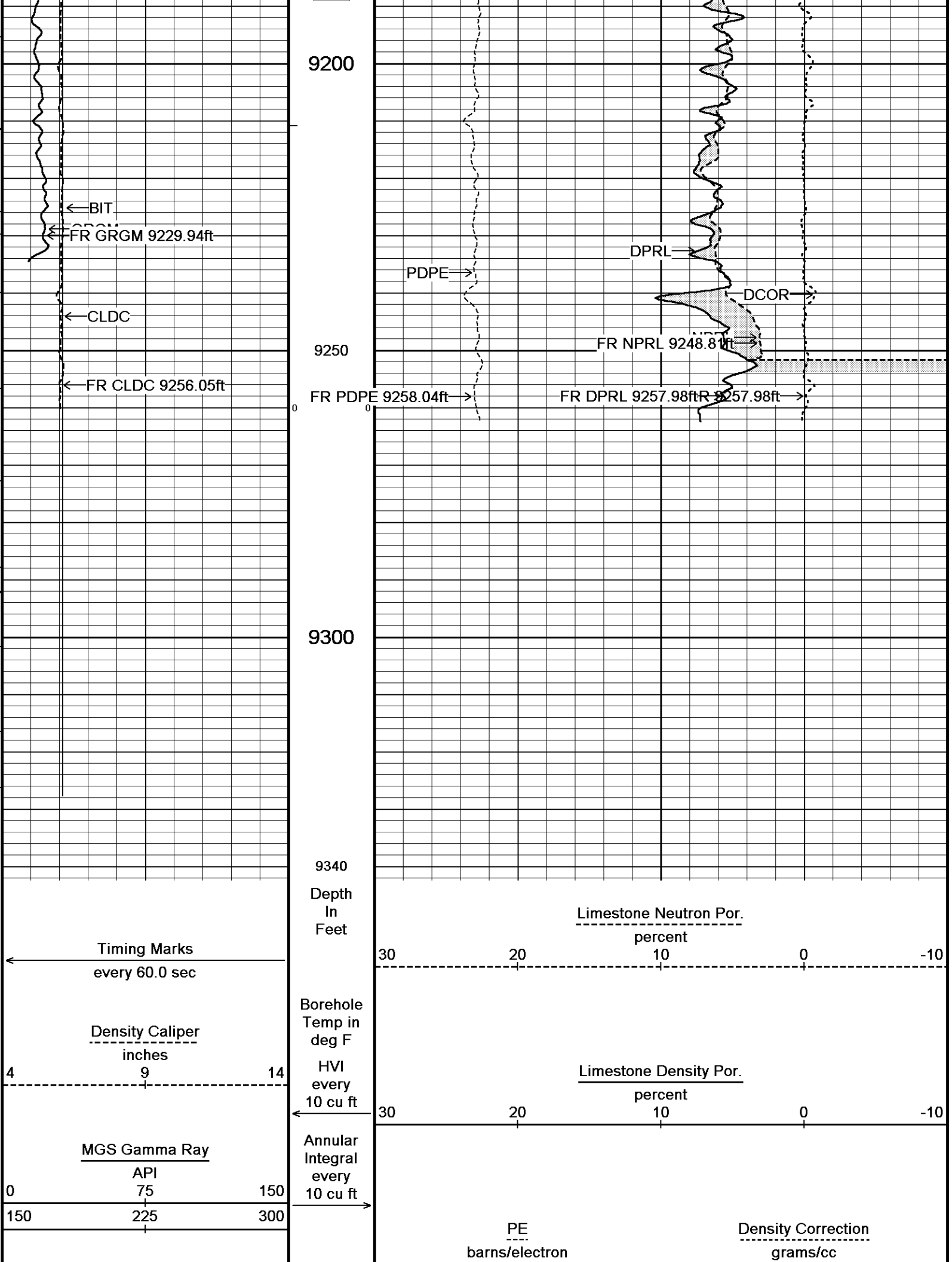












9200

9250

9300

9340

Depth
In
Feet

Timing Marks
every 60.0 sec

Density Caliper
inches

4 9 14

MGS Gamma Ray

API

0 150 75 225 300

Borehole
Temp in
deg F
HVI
every
10 cu ft

Annular
Integral
every
10 cu ft

PDPE

DPRL

DCOR

FR NPRL 9248.81ft

FR PDPE 9258.04ft

FR DPRL 9257.98ft

Limestone Neutron Por.
percent

30 20 10 0 -10

Limestone Density Por.
percent

30 20 10 0 -10

PE
barns/electron

Density Correction
grams/cc

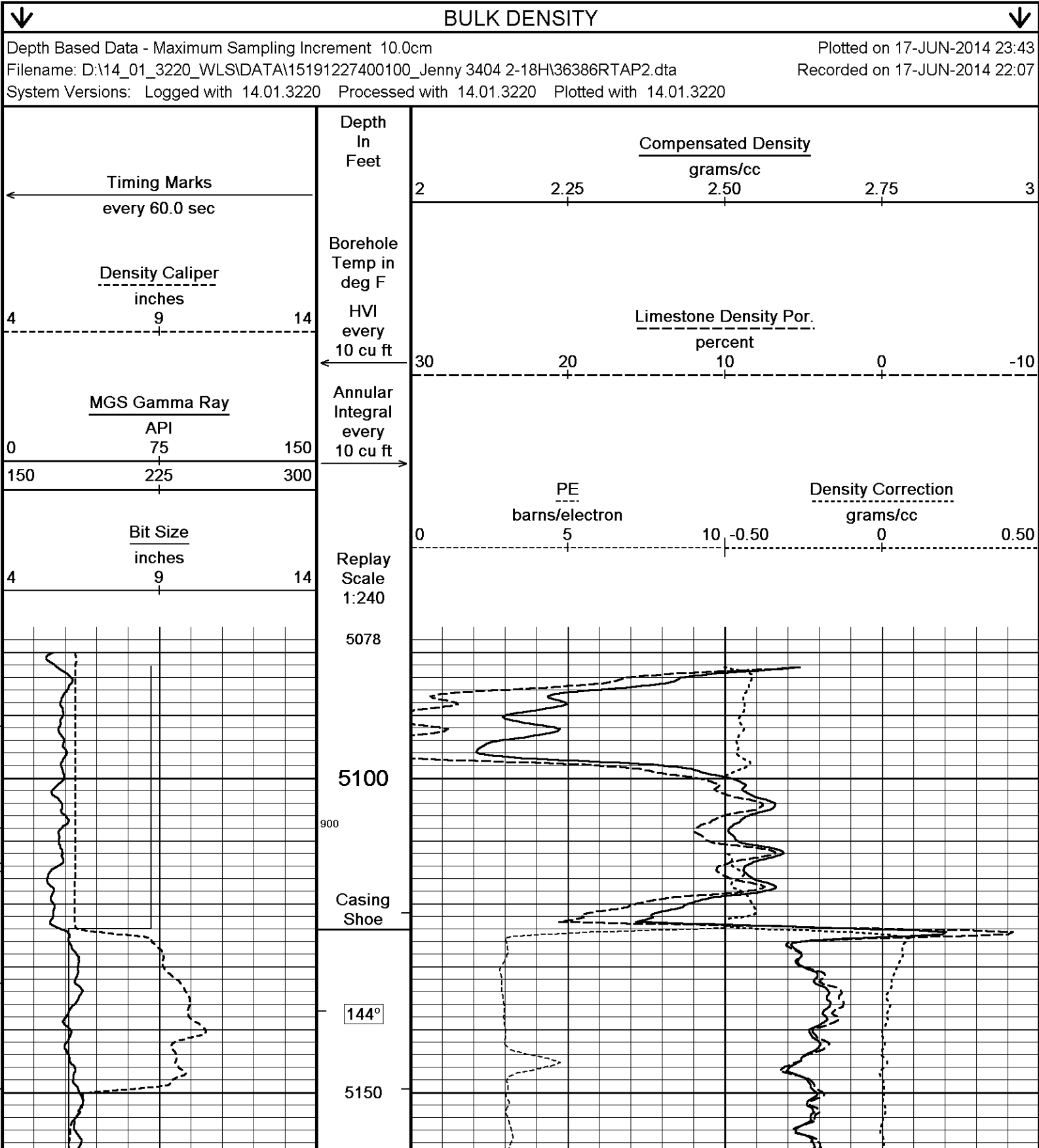
Bit Size
inches
4 9 14

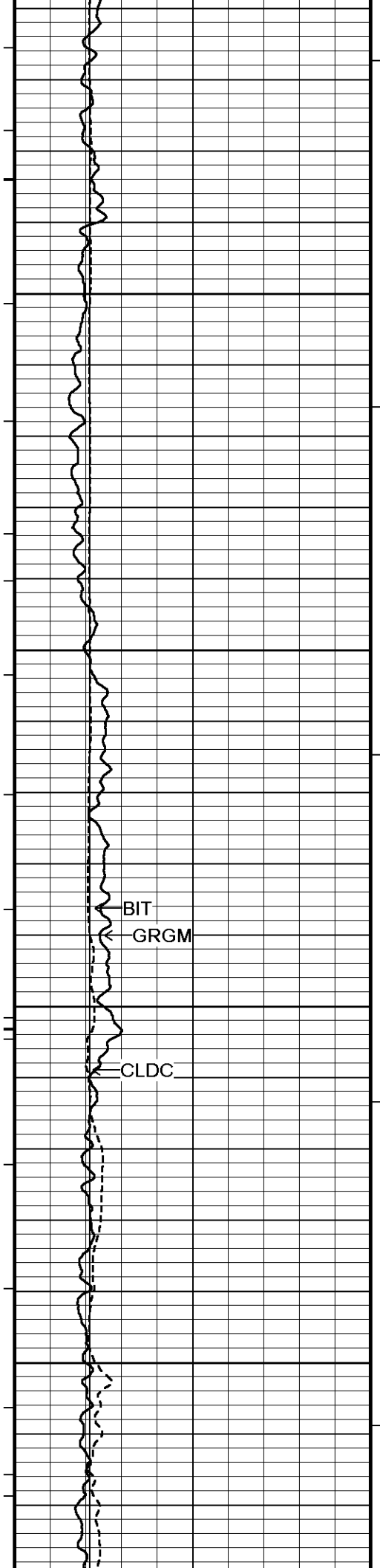
Replay
Scale
1:240

0 5 10 -0.50 0 0.50

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: D:\14_01_3220_WLS\DATA\15191227400100_Jenny 3404 2-18H\36386RTAP2.dta
System Versions: Logged with 14.01.3220 Processed with 14.01.3220 Plotted with 14.01.3220

5 INCH MAIN LOG





145°

5200

145°

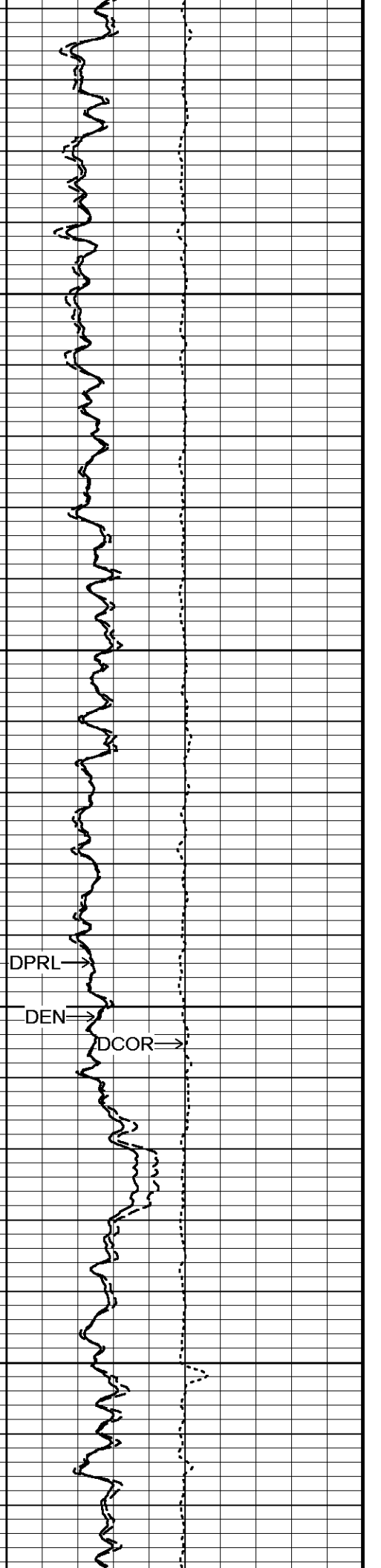
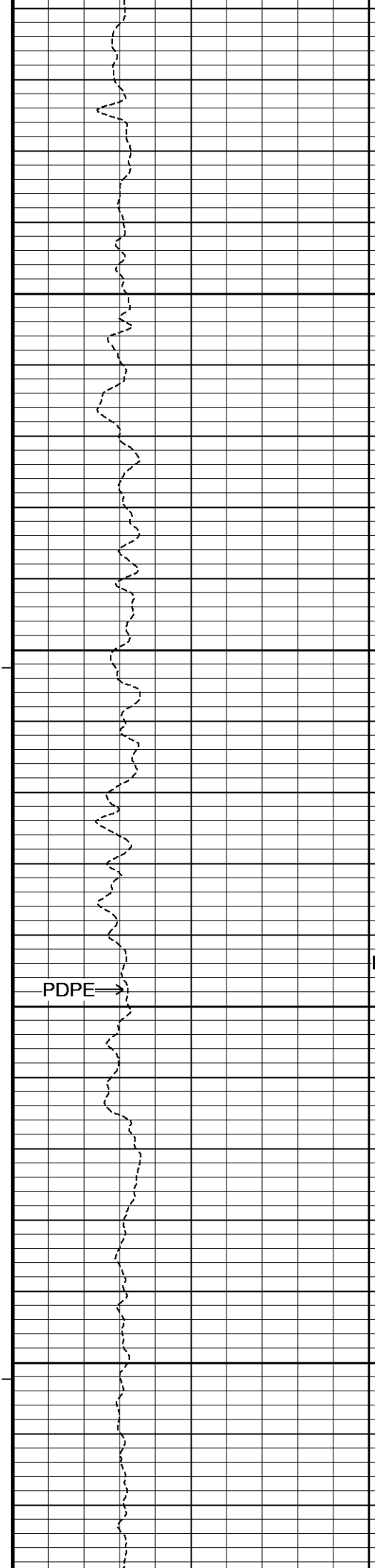
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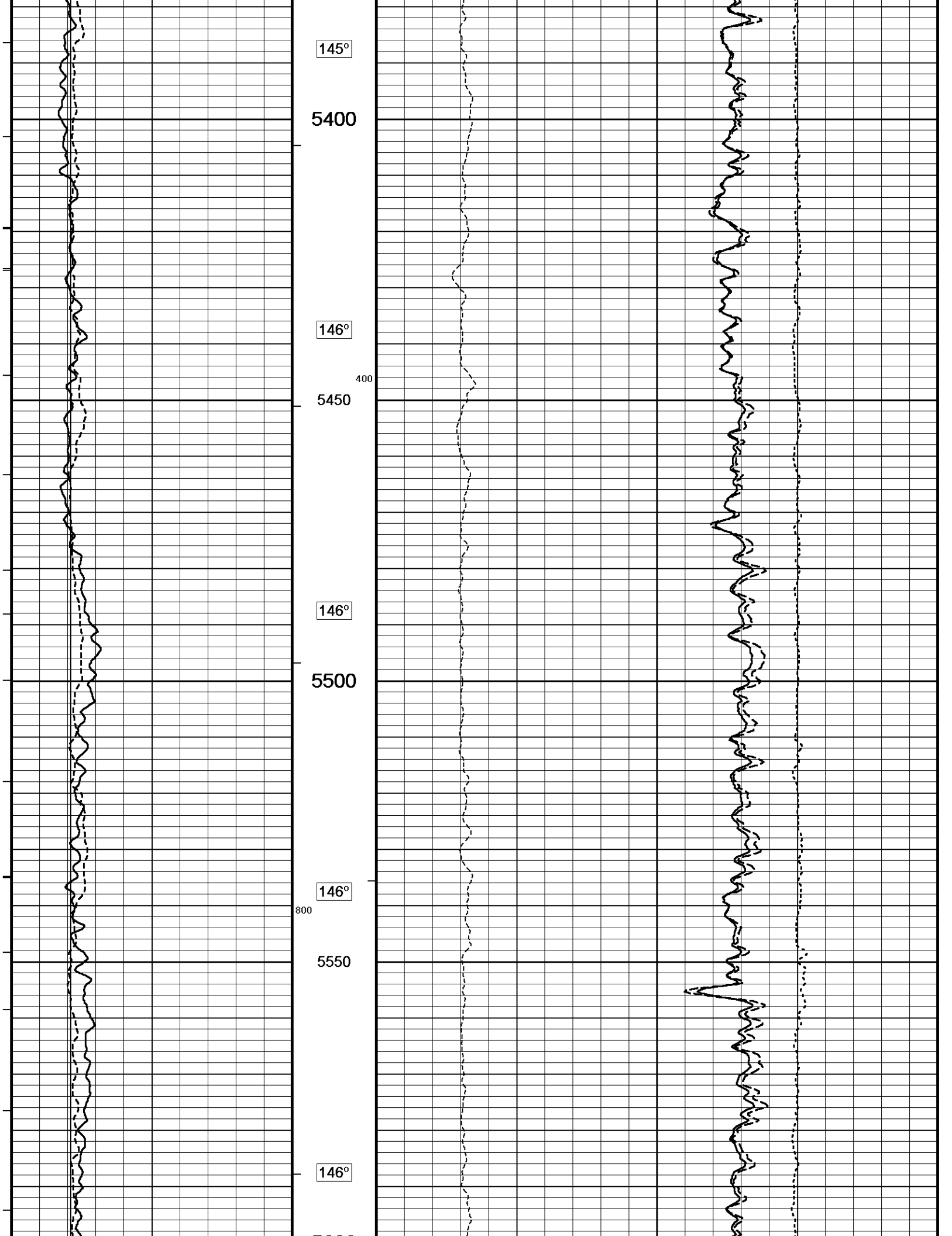
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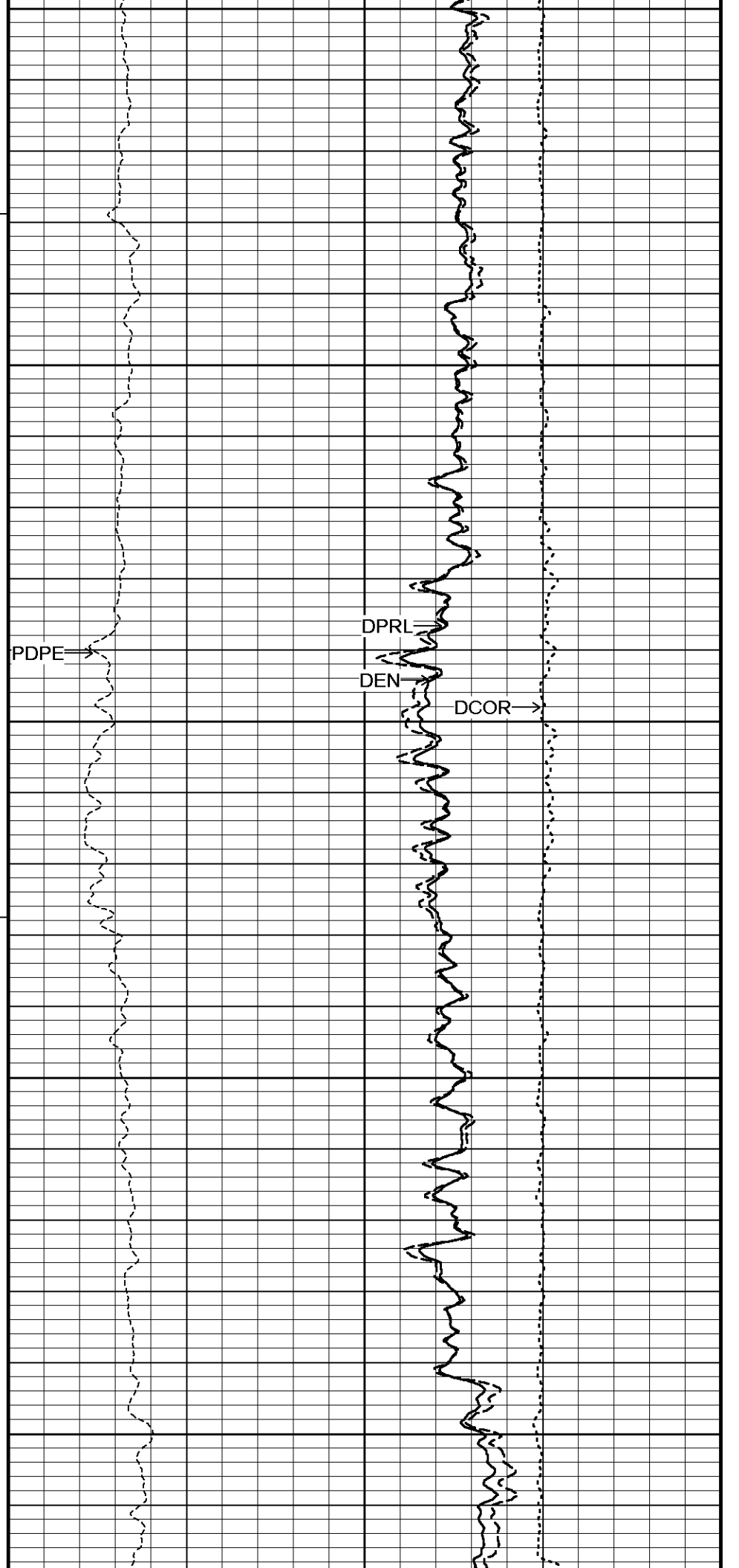
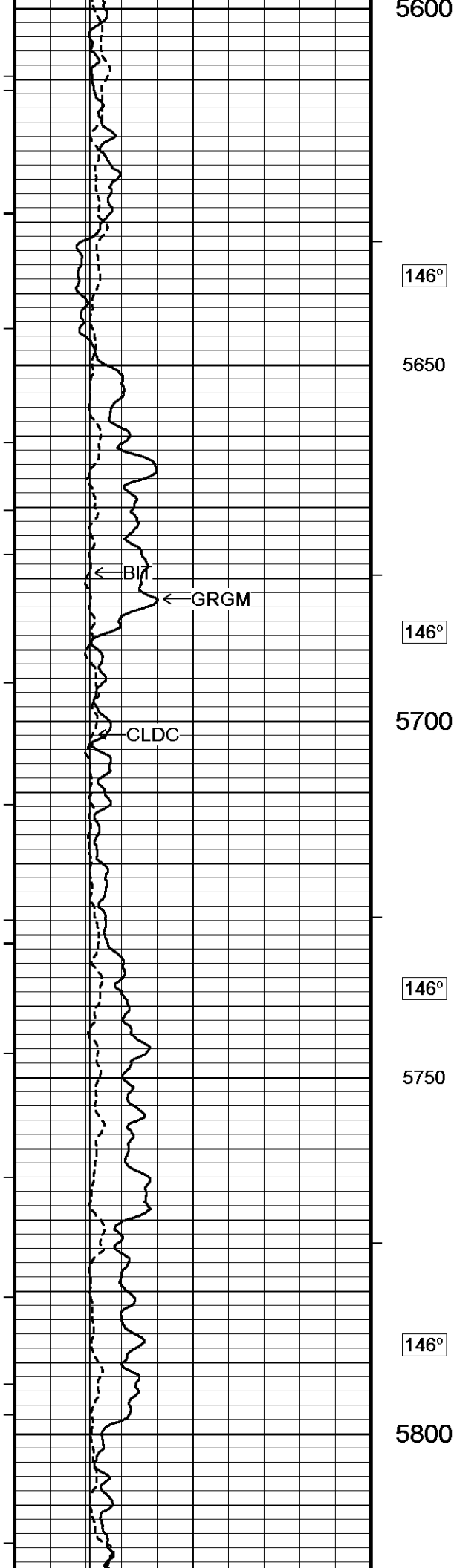
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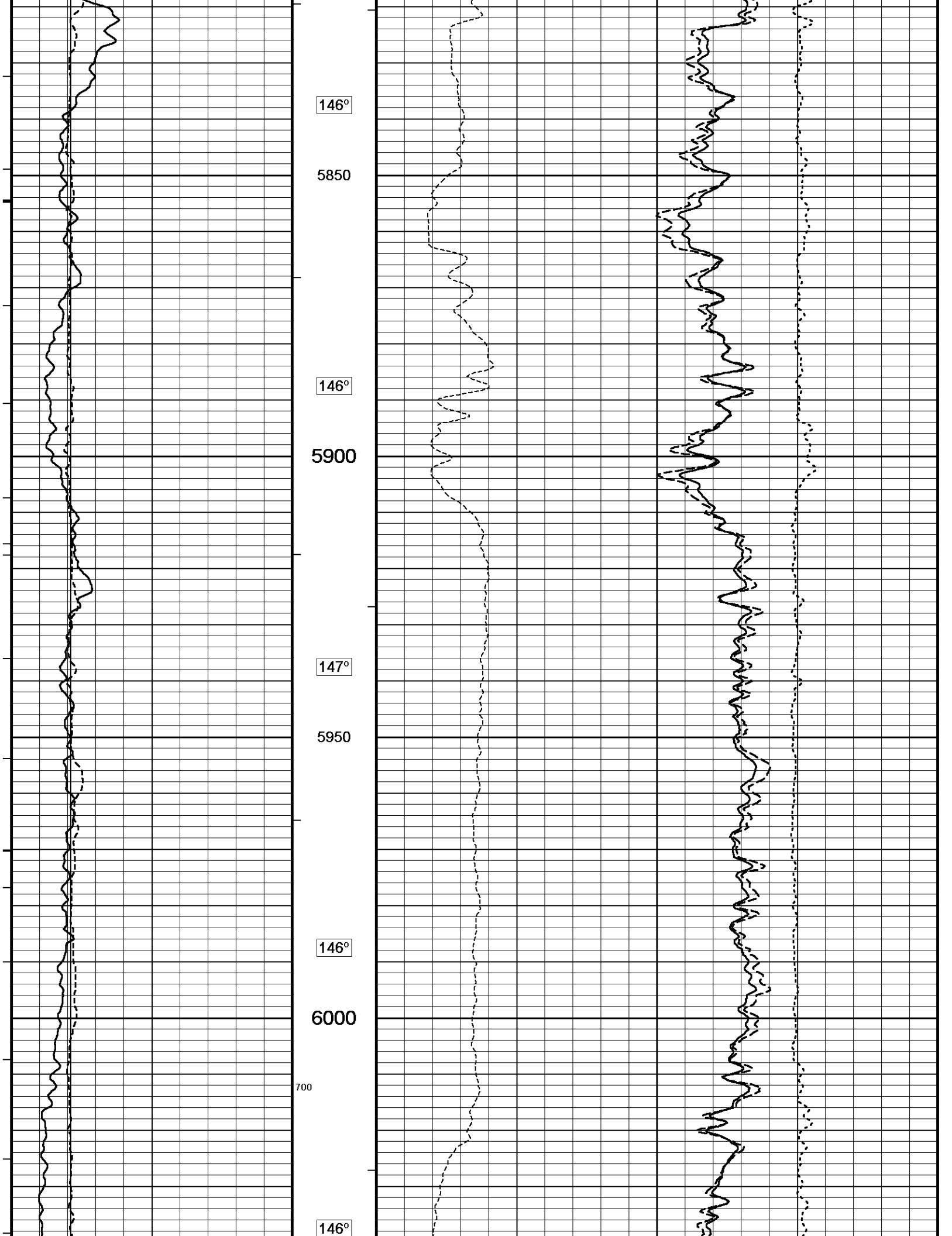
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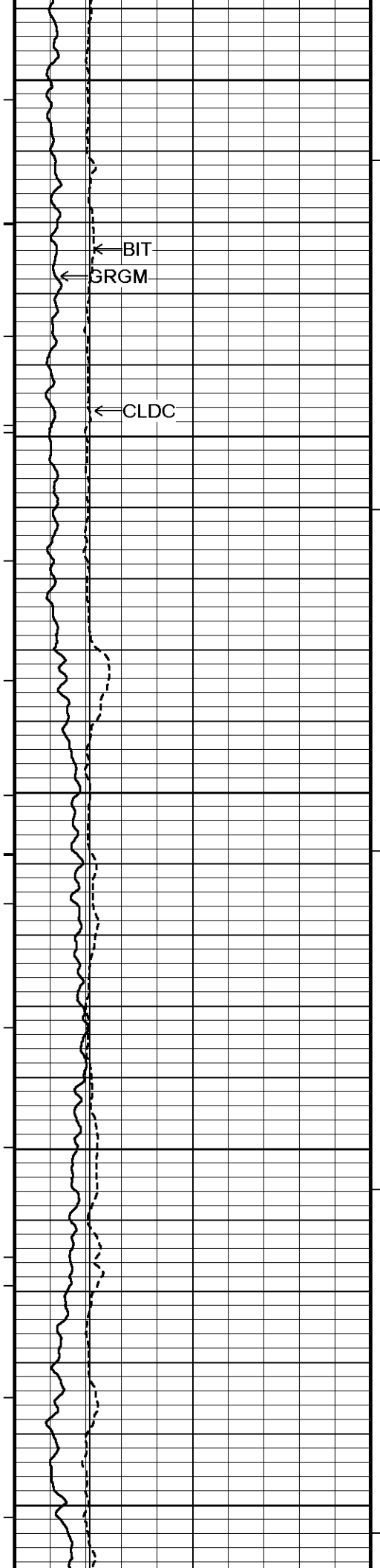
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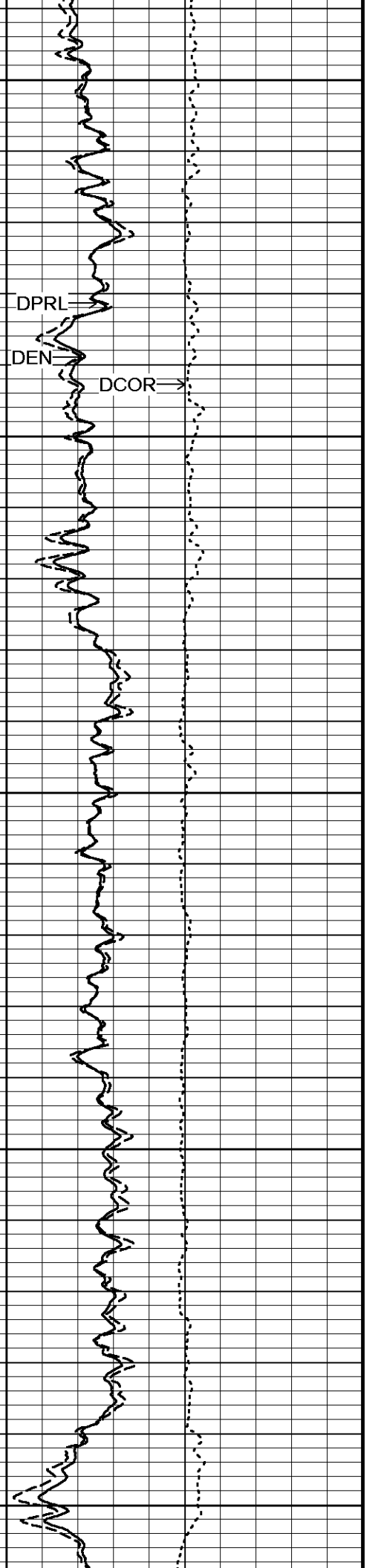
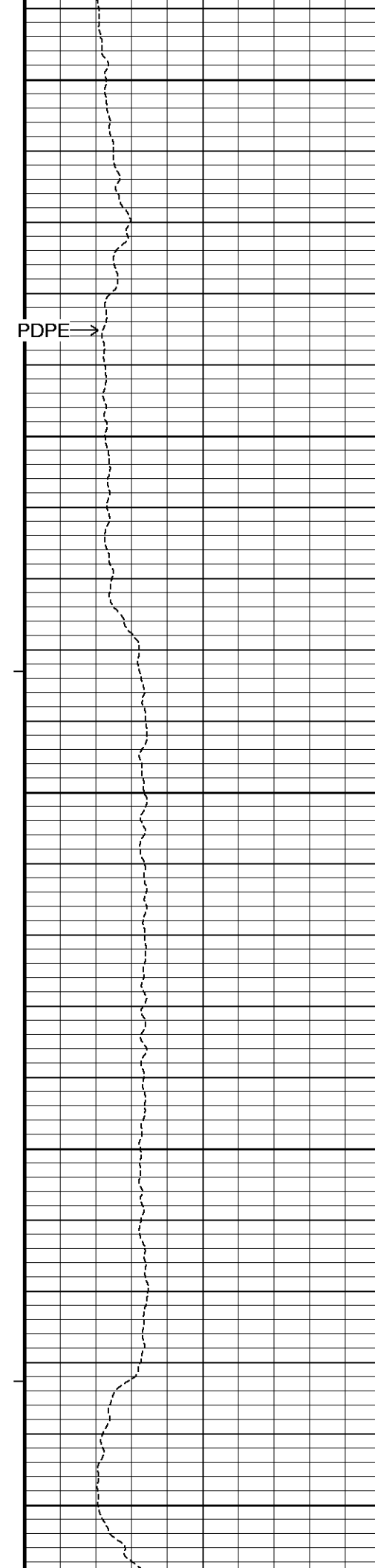


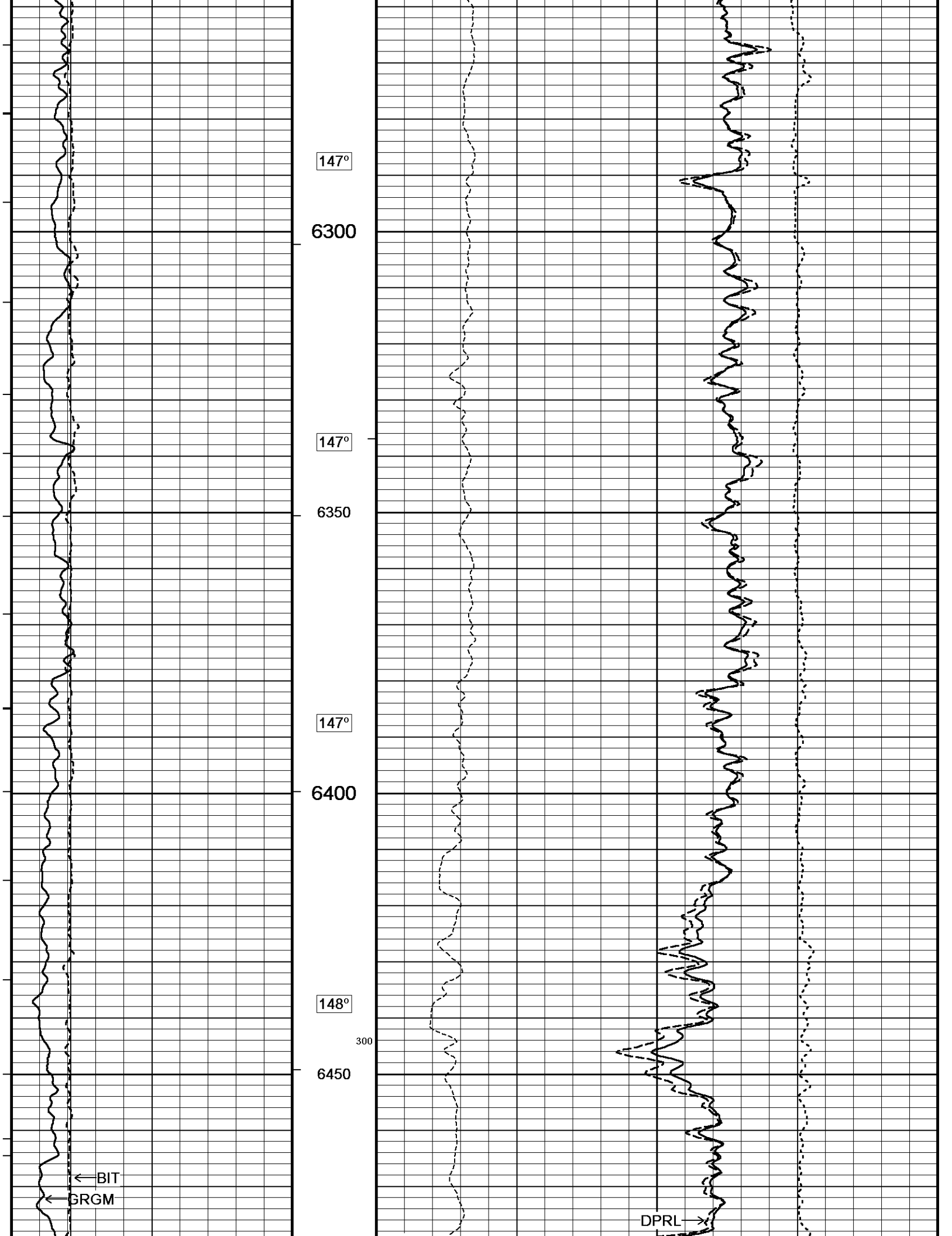


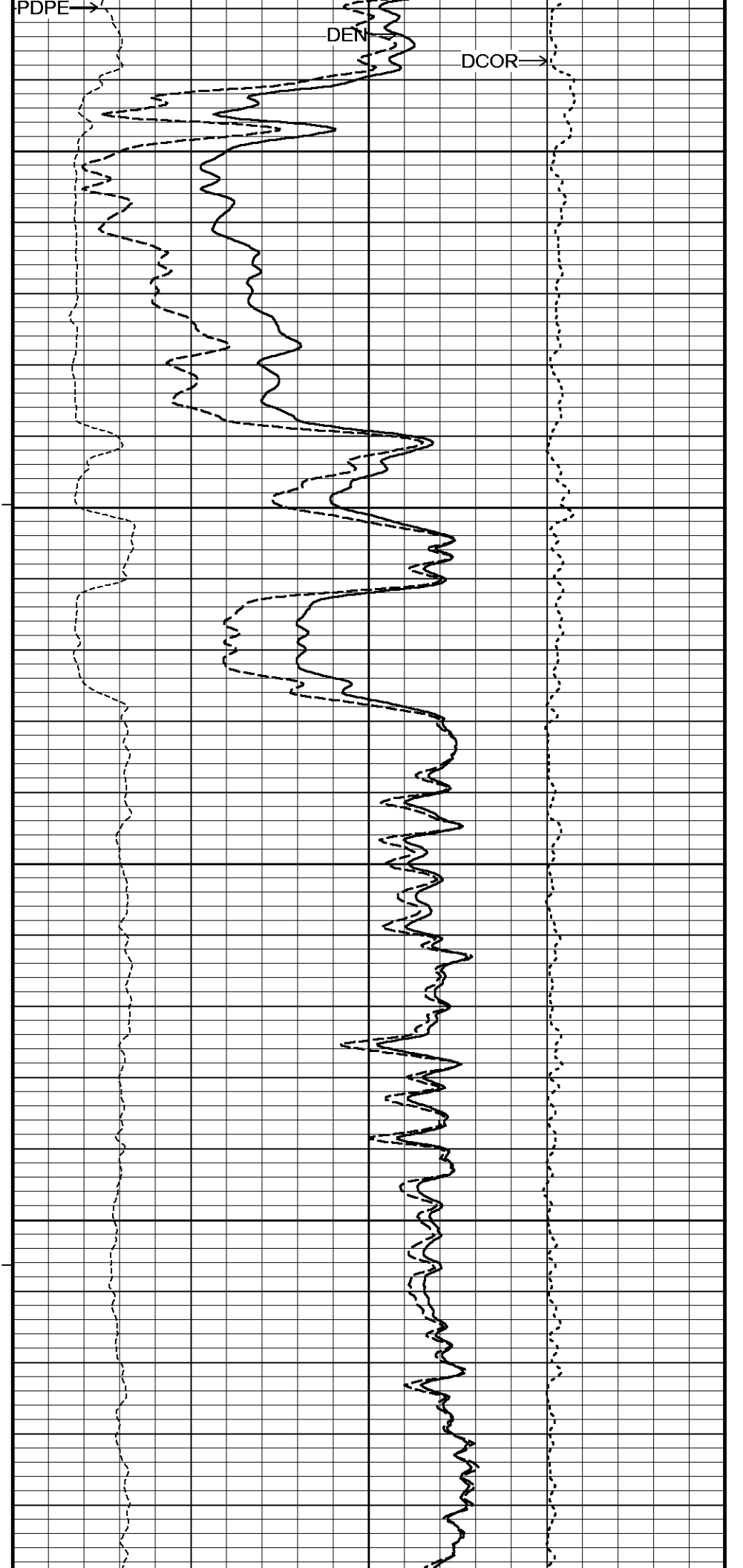
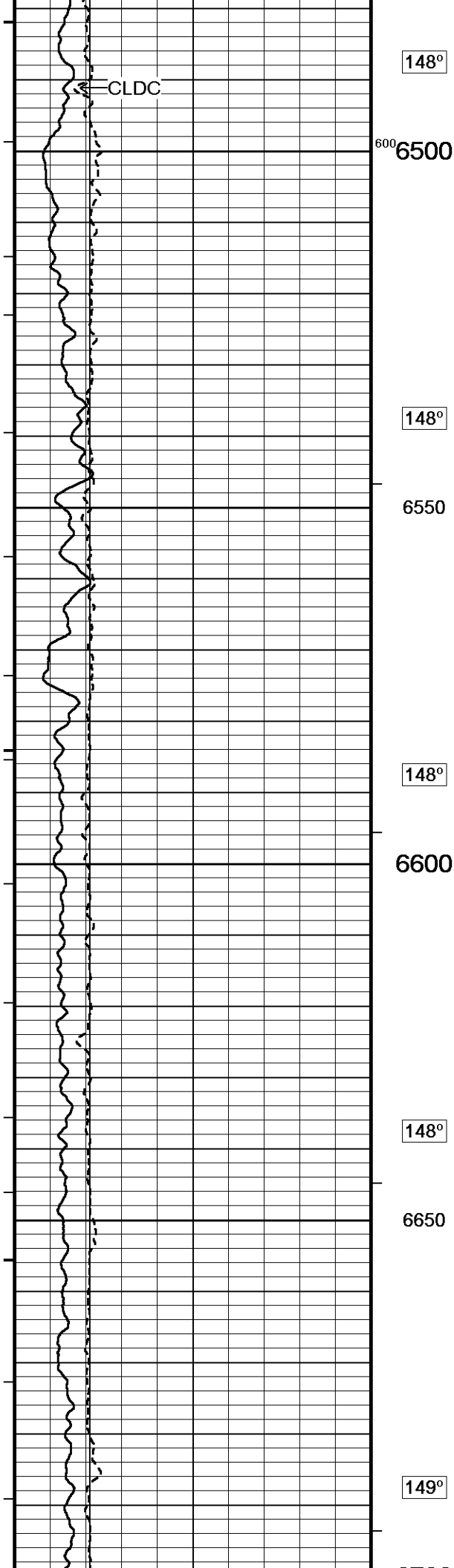


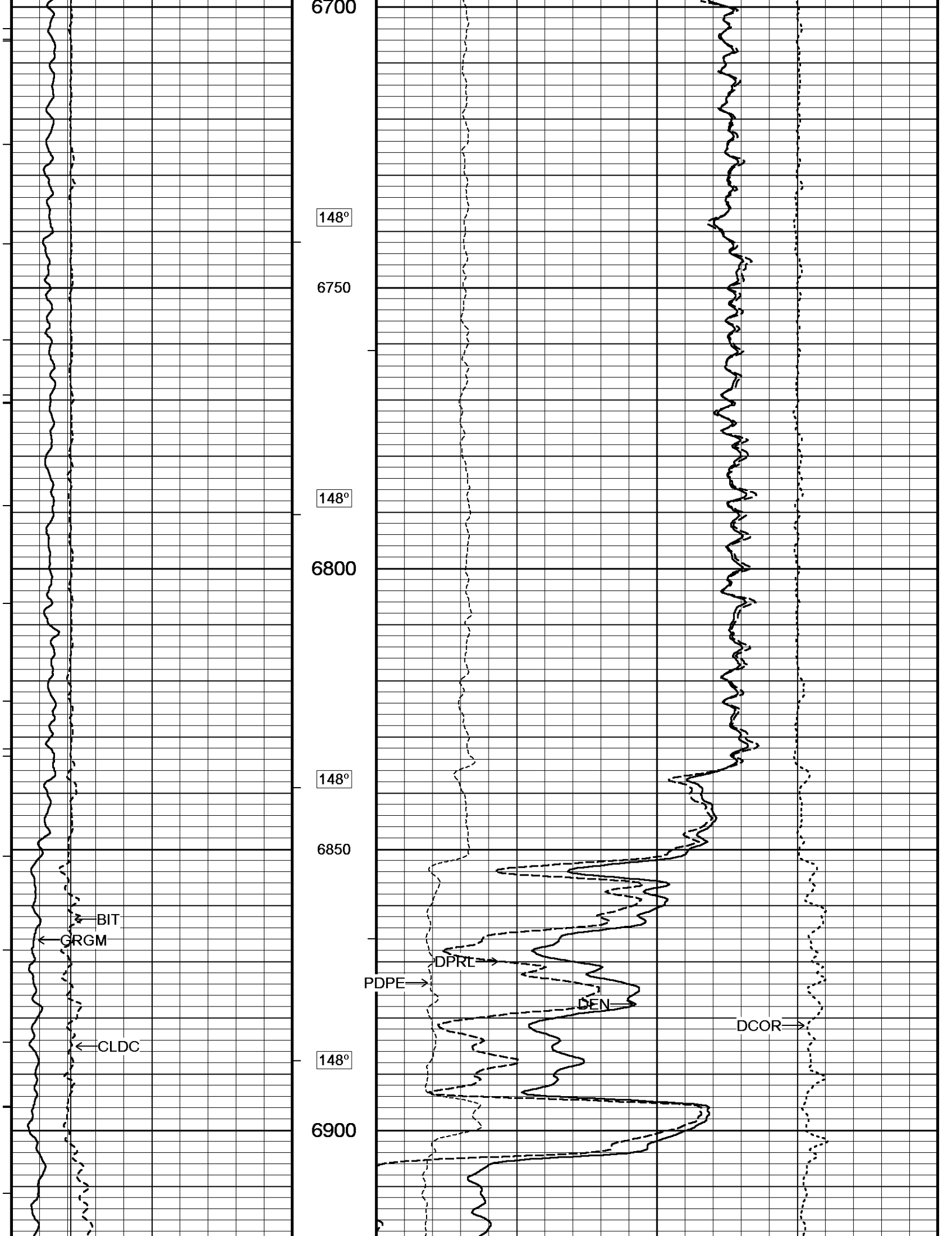


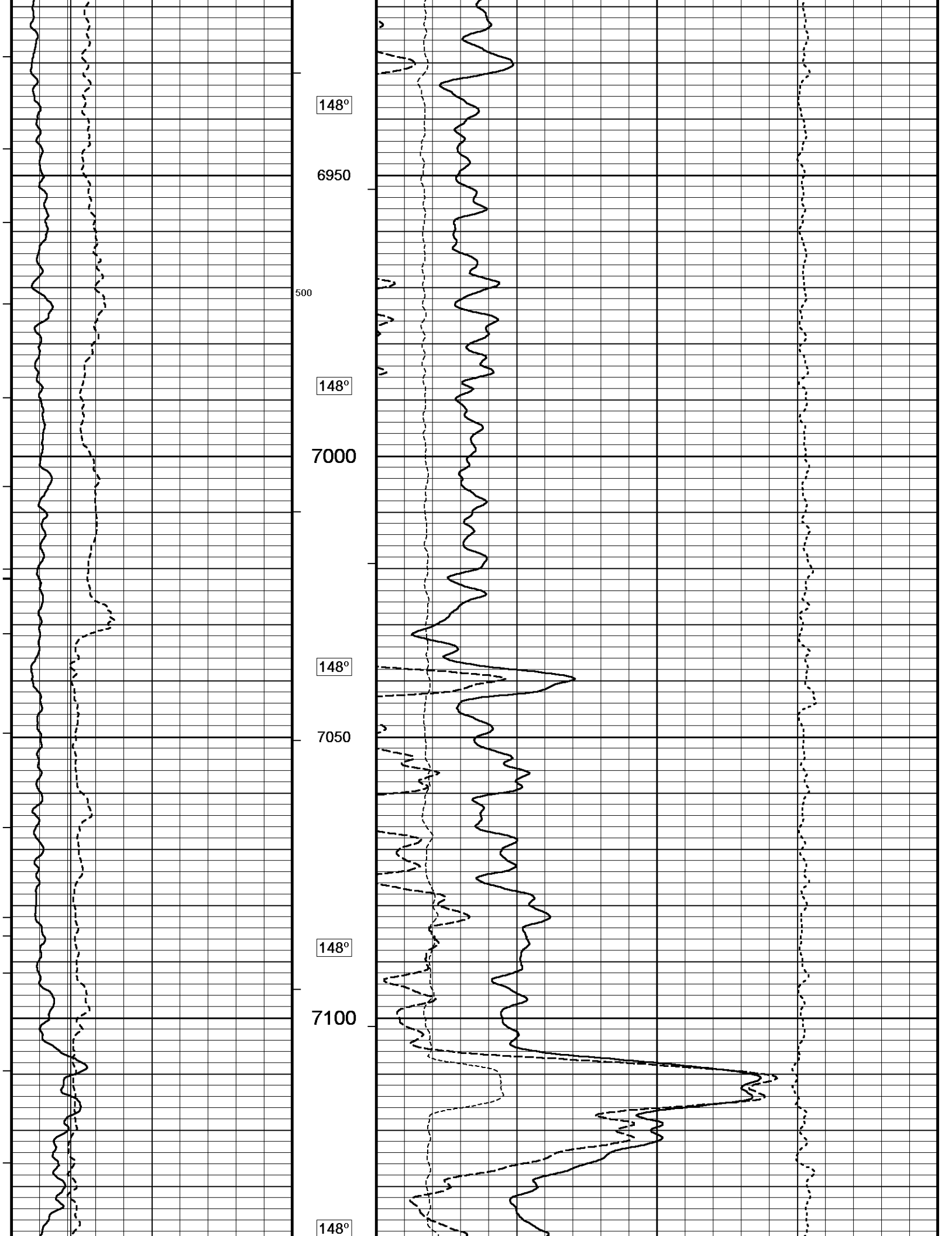
6050
147°
6100
147°
6150
147°
6200
147°
6250

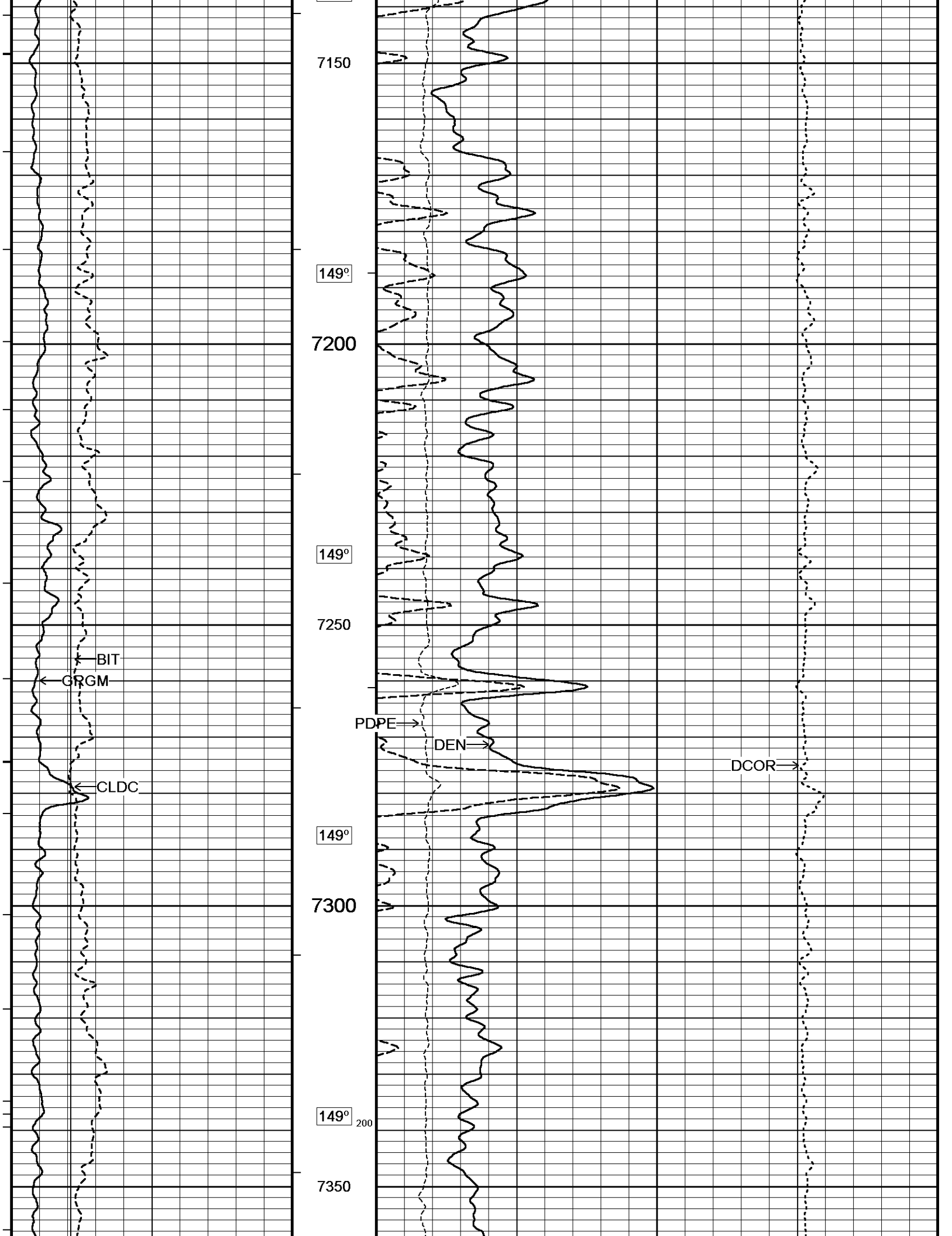


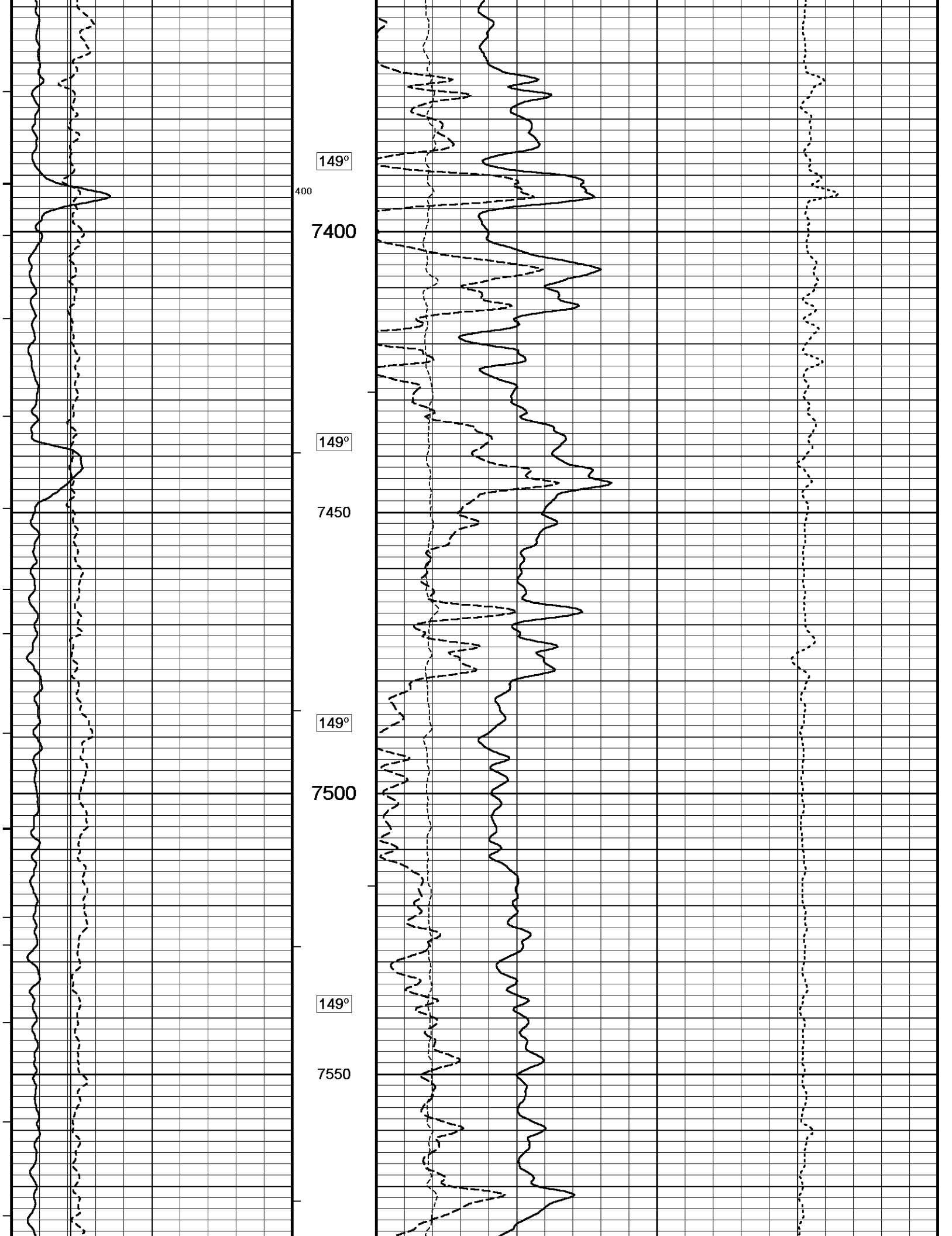


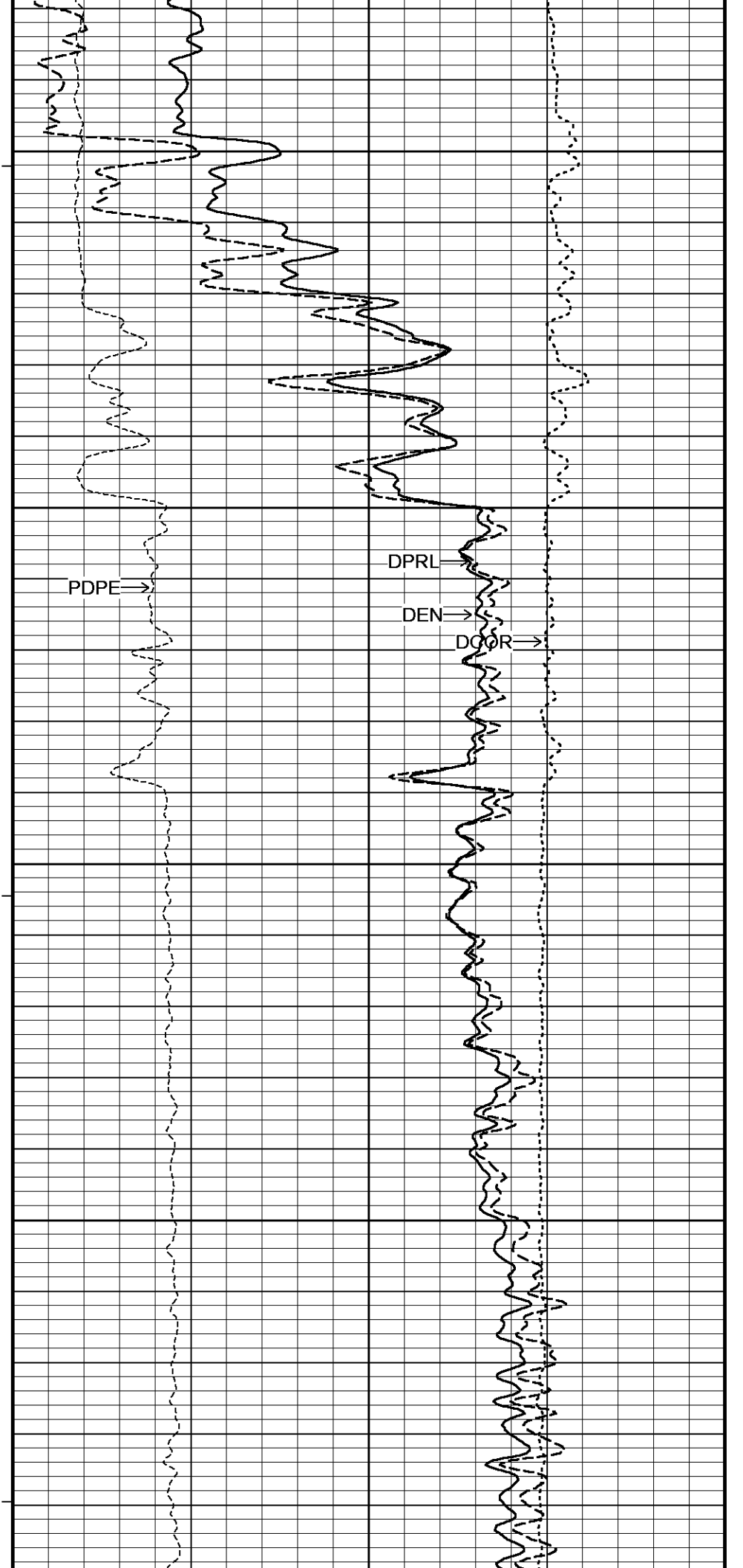
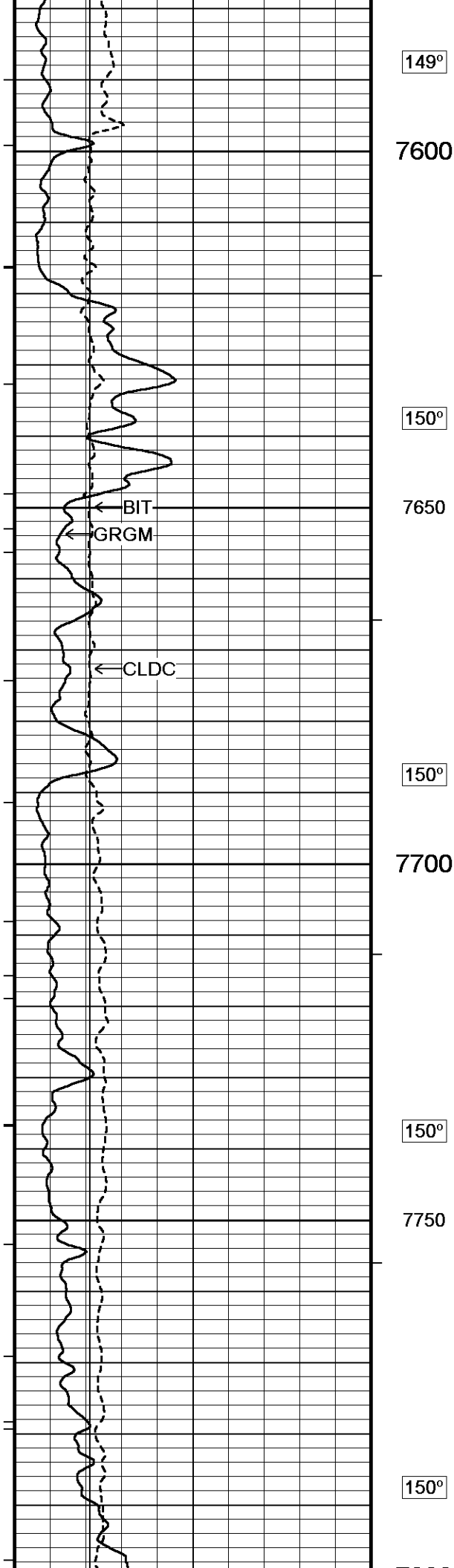


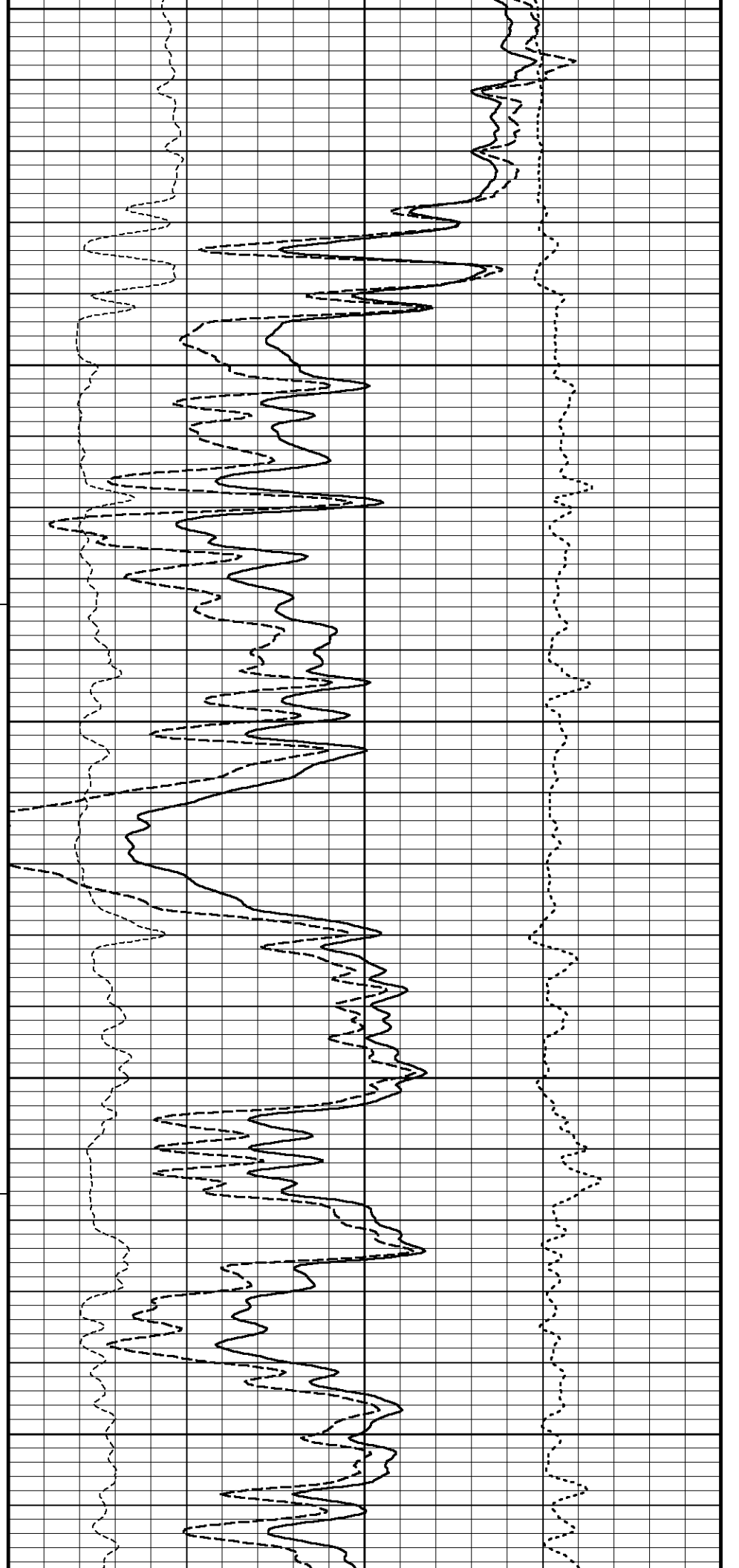
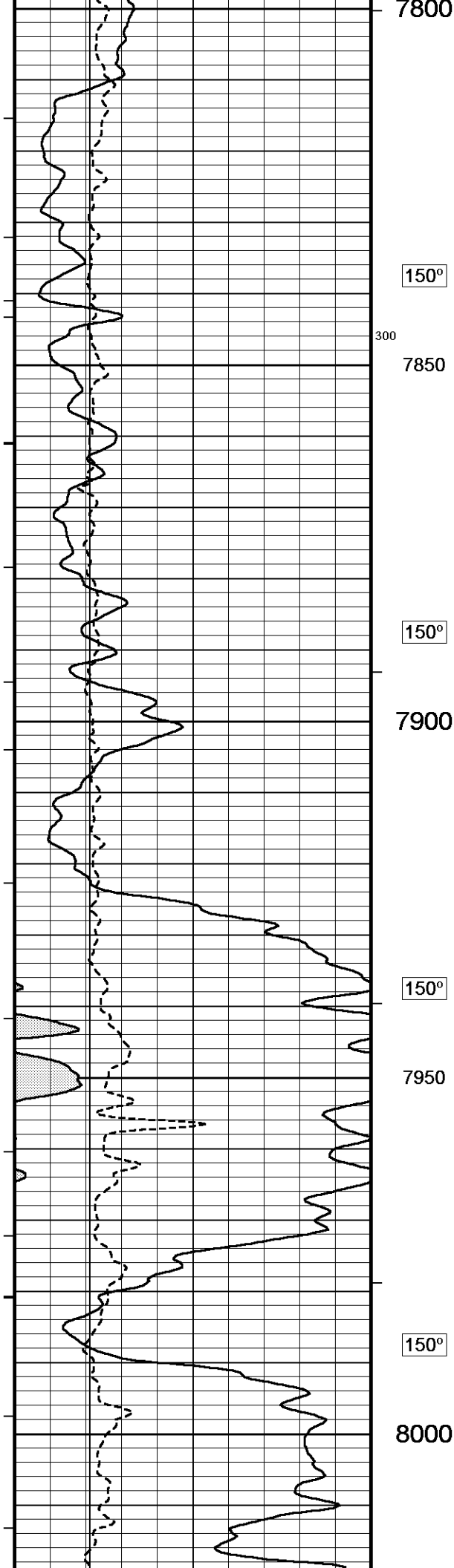


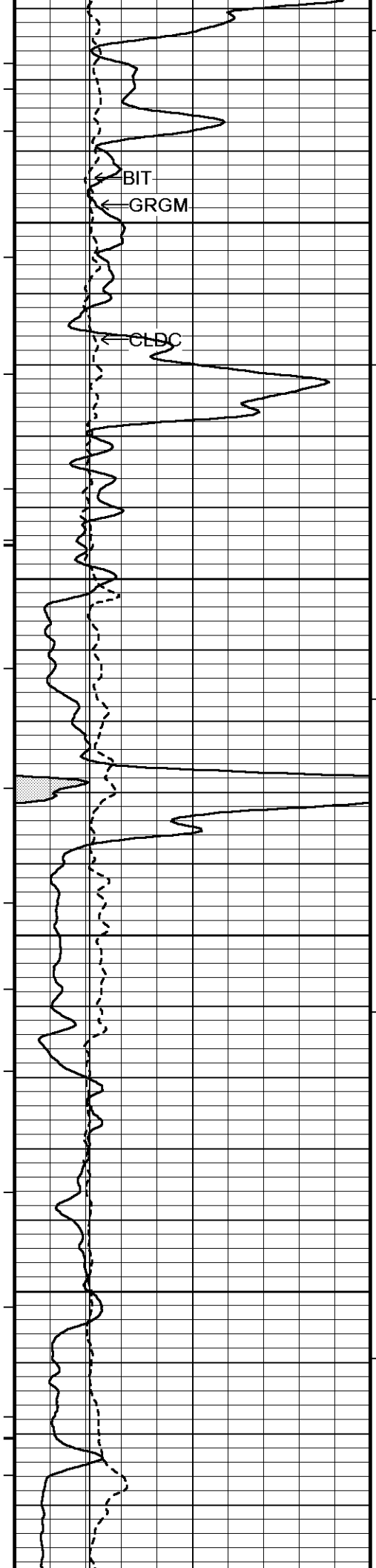




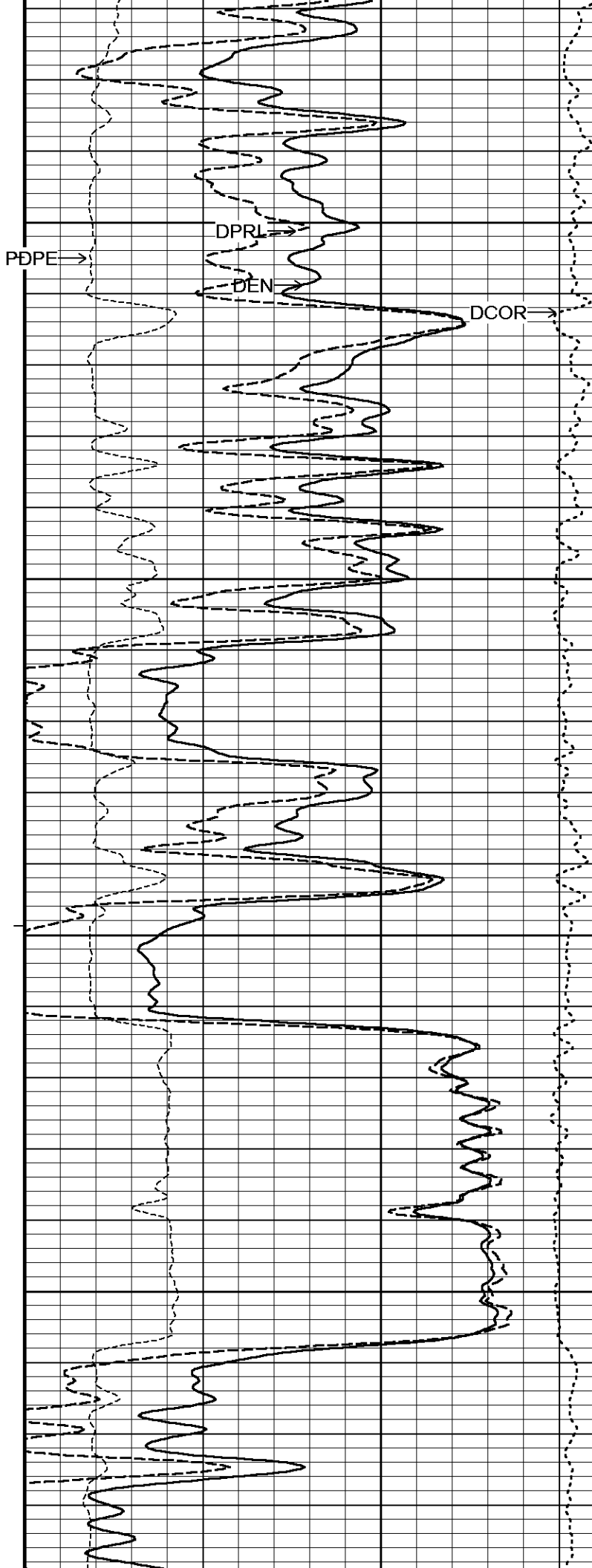


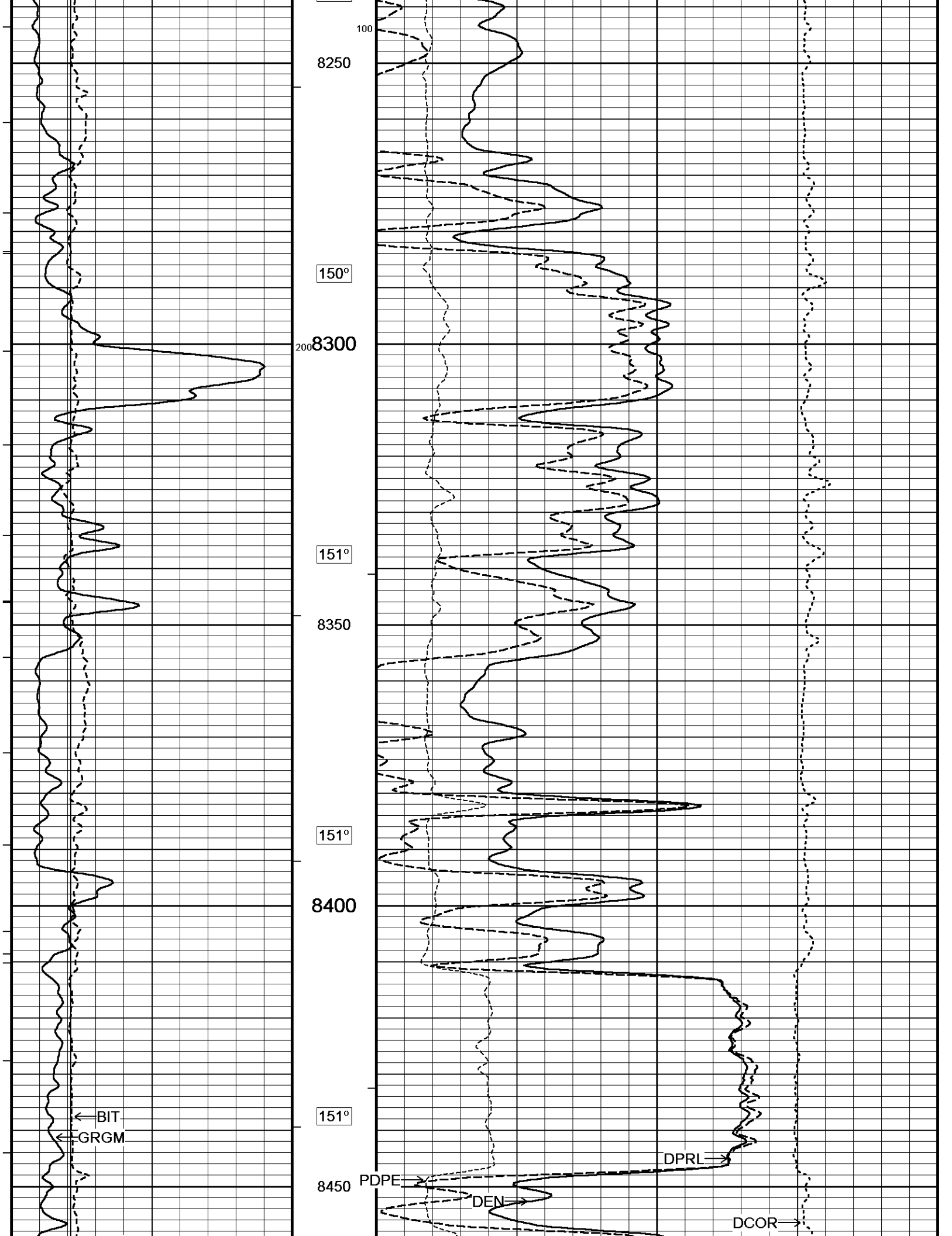


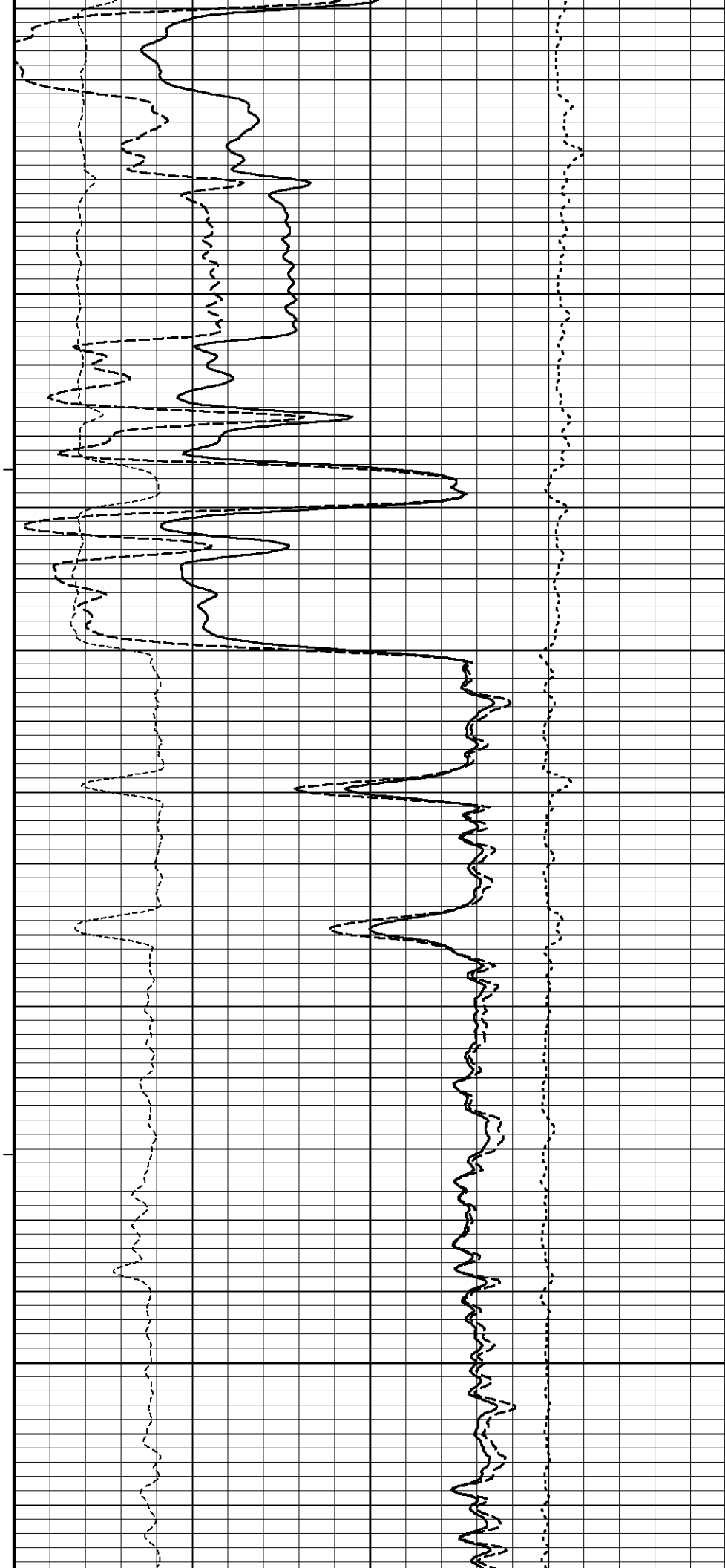
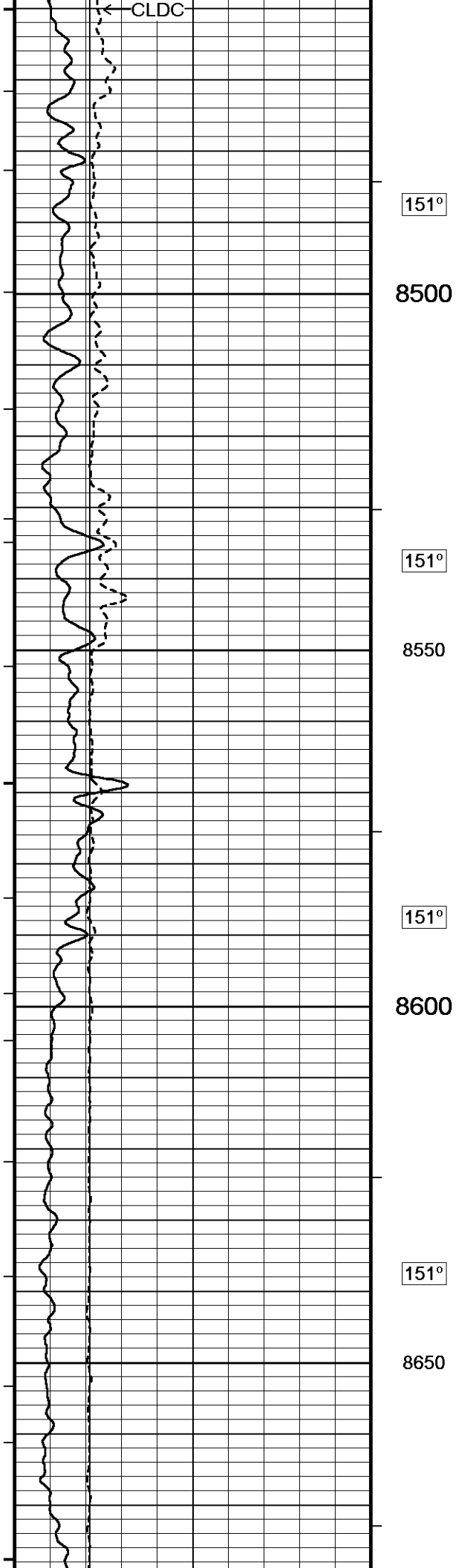


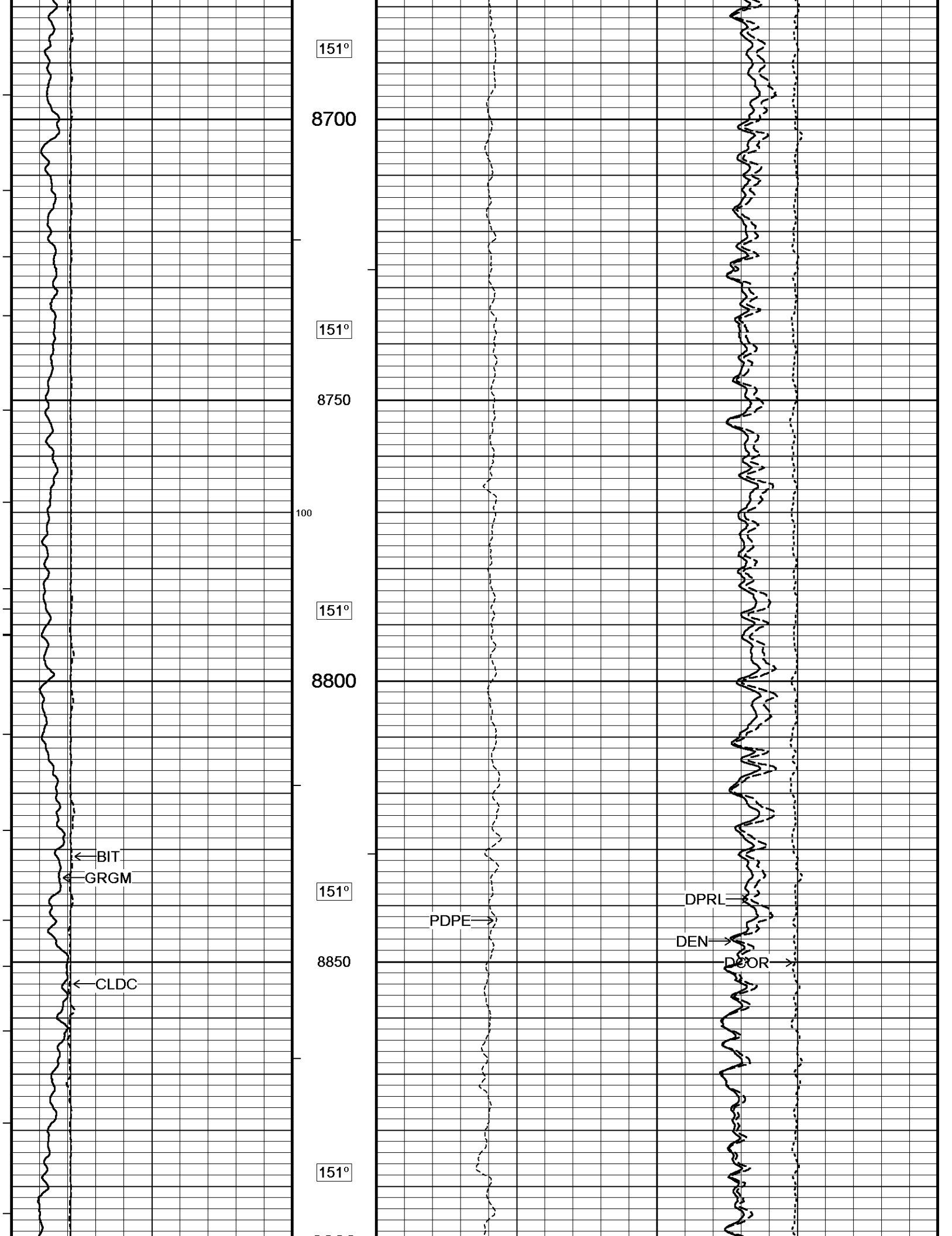


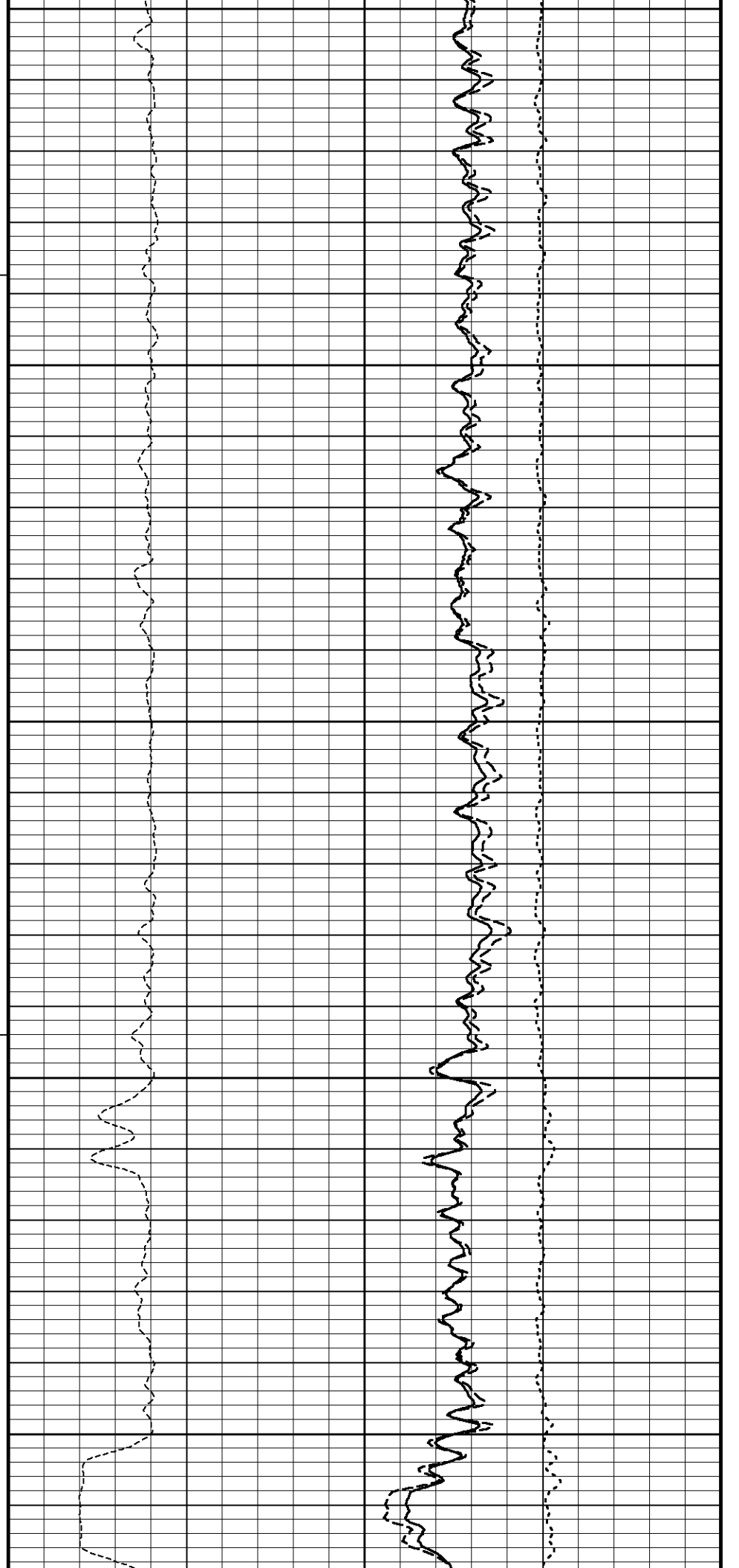
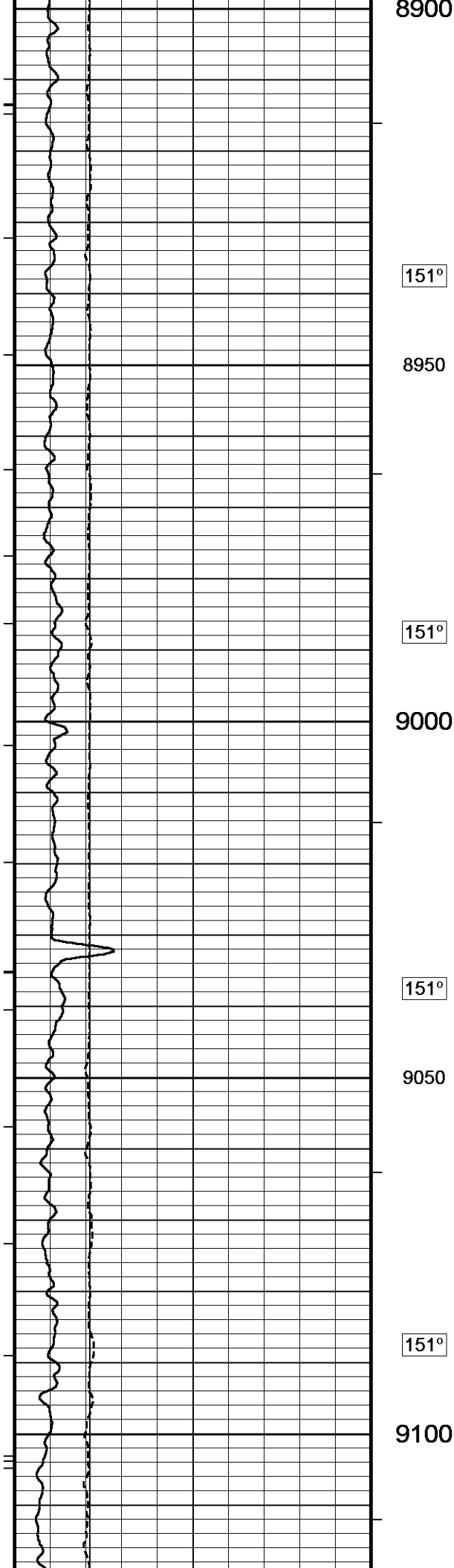
150°
8050
150°
8100
150°
8150
150°
8200
150°

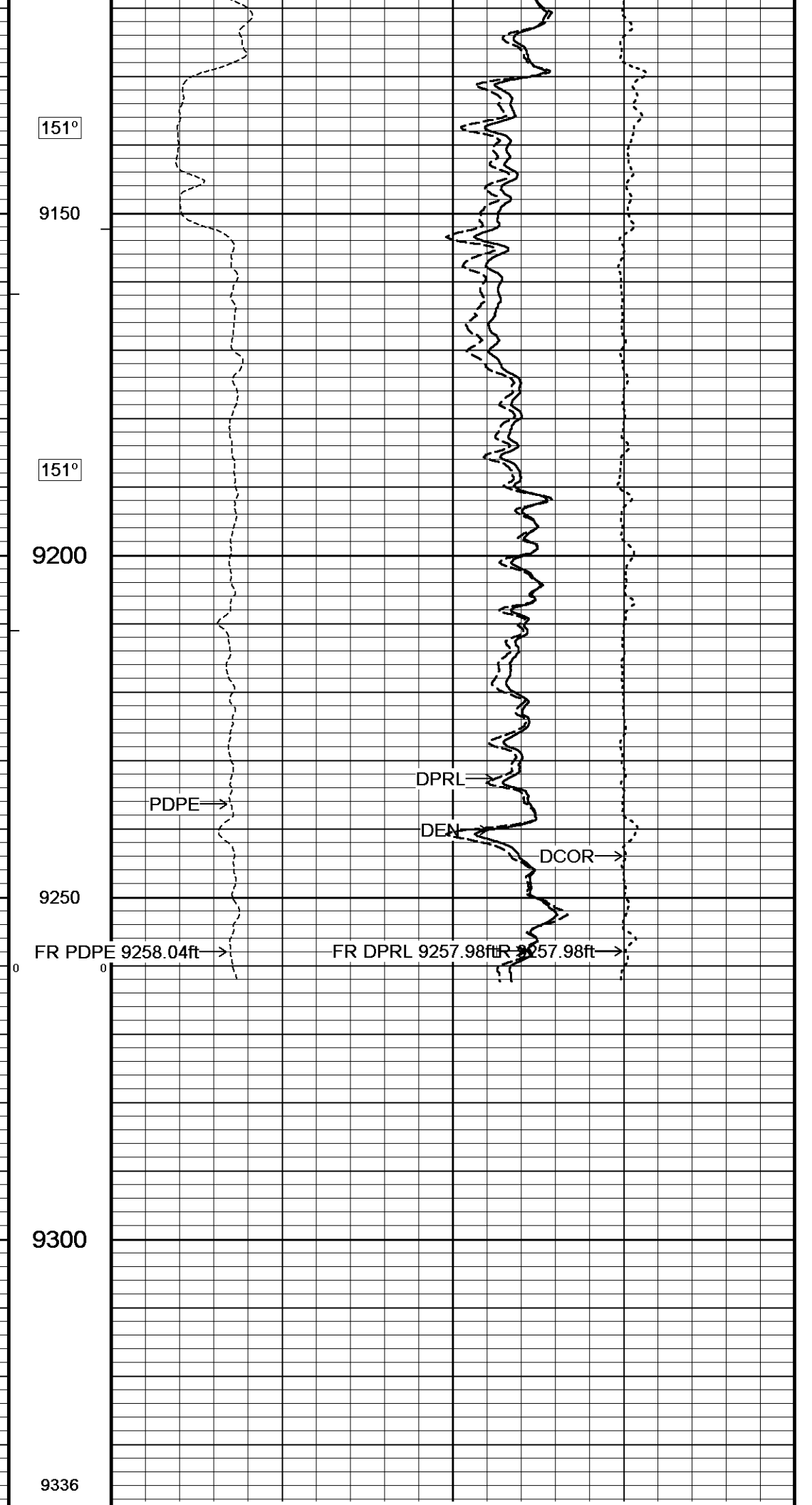
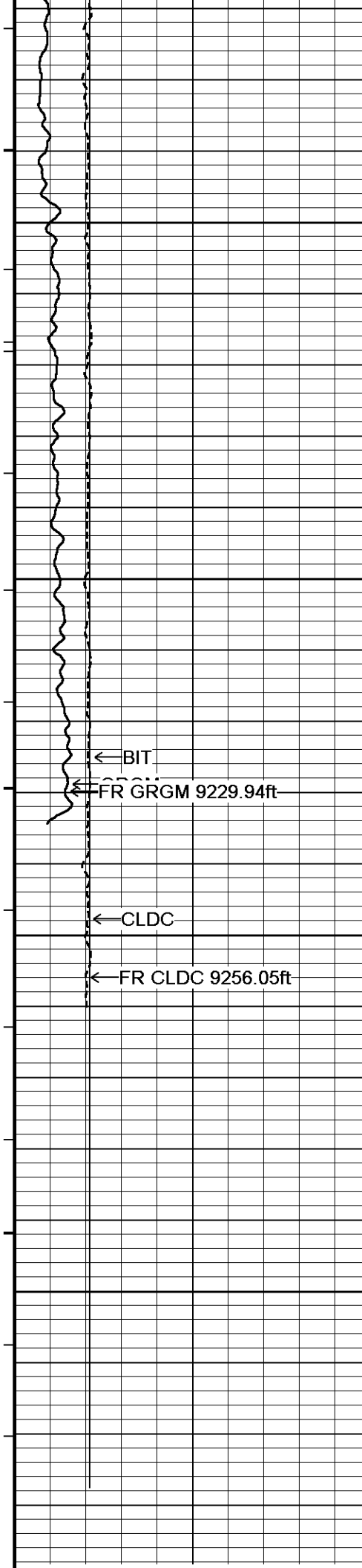












5000.0	3.062	3.064	3.072	3.073	3.072	3.072	3.036	3.036
6000.0	10.254	10.256	10.265	10.267	10.266	10.268	10.251	10.253
9000.0	15.457	15.460	15.470	15.473	15.472	15.476	15.458	15.461
12000.0	20.673	20.675	20.688	20.690	20.692	20.695	20.679	20.682
15000.0	25.901		25.919		25.926		25.916	

Gamma Calibration MGS-C.J 135				Field Calibration on 16-JUN-2014 10:01				
		Measured		Calibrated (API)				
Background		130		90				
Calibrator (Gross)		1367		947				
Calibrator (Net)		1238		857				

Gamma Constants MGS-C.J 135				Last Edited on 17-JUN-2014,15:53				
Gamma Calibrator Number		GRCG073						
Mud Density		1.02		gm/cc				
Caliper Source for Processing		Density Caliper						
Tool Position		Eccentred						
Concentration of KCl				kppm				
K Mud Type		Chloride						
K Mud Concentration		0.00		%				

SP Calibration MGS-C.J 135				Field Calibration on 16-JUN-2014,09:36				
		Measured		Calibrated (mV)				
Reference 1		100.0		100.0				
Reference 2		-100.0		-100.0				

High Resolution Temperature Calibration MGS-C.J 135				Field Calibration on 16-JUN-2014,09:35				
		Measured		Calibrated(Deg F)				
Lower		0.00		0.00				
Upper		0.00		0.00				

High Resolution Temperature Constants MGS-C.J 135				Last Edited on 16-JUN-2014,09:35				
Pre-filter Length			11					

Neutron Calibration MDN-C.A 480				Base Calibration on 13-JUN-2014 11:46 Field Check on 16-JUN-2014 10:07				
Base Calibration								
		Measured		Calibrated (cps)				
	Near	Far		Near	Far			
	2945	90		3714	110			
Ratio		32.678			33.764			
Field Calibrator at Base				Calibrated (cps)				
				2349	3592			
Ratio					0.654			
Field Check				Calibrated (cps)				
				2319	3529			
Ratio					0.657			

Neutron Constants MDN-C.A 480				Last Edited on 17-JUN-2014,15:52				
Neutron Source Id		HN553						
Neutron Jig Number		N639						
Air Hole Processing		Legacy						
Caliper Source for Processing		Density Caliper						
Stand-off		0.00		inches				
Mud Density		1.02		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				
Salinity Correction		Not Applied						
Formation Fluid Salinity Source		Constant Value						
Formation Fluid Salinity		0.00		kppm				

Formation Fluid Salinity	0.00	ppm
Barite Mud Correction	Not Applied	
FE Calibration MFE-C.A 396		Base Calibration on 15-MAY-2014 10:59 Field Check on 16-JUN-2014 09:08
Base Calibration		
	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	963.8	126.8
Base Check		281.1
Field Check		281.2

FE Constants MFE-C.A 396			Last Edited on 16-JUN-2014,09:35		
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.		MGS External Temperature			
Stand-off		0.5		inches	

Accelerometer Parameters MIE-B.A 254			
Date Of Last Accelerometer Calibration	15-JAN-2014,18:48		
	X Accelerometer	Y Accelerometer	Z Accelerometer
Slope	-1.110273	-1.098533	-1.112225
Offset	0.004286	0.006386	0.008361

Accelerometer Constants MIE-B.A 254			Last Edited on 16-JUN-2014,09:03	
Accelerometer Calibrator Number		000		
Accelerometer Temperature Characterisation				
X Accelerometer				
Serial Number	1252			
Calibration Date	30-Jan-2013			
	B0	B1	B2	B3
Bias(g)	0.00000e+000	9.98033e-006	-2.73699e-008	2.67348e-010
	SF0	SF1	SF2	SF3
Scale Factor(mA/g)	3.00000e+000	2.71471e-004	2.19072e-007	1.39504e-009
Y Accelerometer				
Serial Number	1258			
Calibration Date	31-Jan-2013			
	B0	B1	B2	B3
Bias(g)	0.00000e+000	1.91337e-006	5.08774e-010	2.82876e-010
	SF0	SF1	SF2	SF3
Scale Factor(mA/g)	3.00000e+000	2.66835e-004	2.99454e-007	9.78949e-010
Z Accelerometer				
Serial Number	1096			
Calibration Date	29-Jun-2011			
	B0	B1	B2	B3
Bias(g)	0.00000e+000	1.18445e-005	-1.40013e-009	1.45484e-010
	SF0	SF1	SF2	SF3
Scale Factor(mA/g)	3.00000e+000	2.85296e-004	2.19938e-007	1.07369e-009

Magnetometer Parameters MIE-B.A 254			
Date Of Last Magnetometer Calibration	31-JAN-2014,09:10		
	X Magnetometer	Y Magnetometer	Z Magnetometer
Slope	-1.000000	-1.012249	-0.996520
Offset	0.000654	-0.016487	-0.005244

Magnetometer Constants MIE-B.A 254		Last Edited on	
Magnetometer Calibrator Number	000		

Imager Pad Check MIE-B.A 254			Field Check on
Pad 1	Pad Not Tested	Pad 5	Pad Not Tested

Pad 1	Pad Not Tested	Pad 5	Pad Not Tested
Pad 2	Pad Not Tested	Pad 6	Pad Not Tested
Pad 3	Pad Not Tested	Pad 7	Pad Not Tested
Pad 4	Pad Not Tested	Pad 8	Pad Not Tested

Compact Micro Imager Constants MIE-B.A 254

Last Edited on 16-JUN-2014,09:03

Sonde Configuration	Imager Mode
Arm-Pad Kit	Normal Pads (12.25 in)
Arm-Pad Kit Serial Number	N/A
Centre Pad 1 Rotational Offset	0.00 degrees
Image/Borehole Ovality Reference	Azimuth of Pad 1
Non Active Buttons	Omit
Search Angle	0.00 degrees
Correlation Interval	3.28 feet
Correlation Step	1.64 feet
Current Offset	0.0000 mAmp
Squasher Start	0.0500 mAmp
Image Processing	Enabled

Caliper Calibration MIE-B.A 254

Base Calibration on 16-JUN-2014 09:29

Field Calibration on 16-JUN-2014 09:34

Base Calibration

Reading No	Pads 1-5 Meas.	Pads 3-7 Meas.	Calibrator Size (in)
1	29239	27425	6.00
2	39185	37907	8.01
3	49433	48435	10.01
4	61507	60595	12.13
5	0	0	0.00

Reading No	Pad 2 Meas.	Pad 4 Meas.	Pad 6 Meas.	Pad 8 Meas.	Calibrator Size (in)
1	26097	26940	25881	26204	6.00
2	35139	35258	34166	34795	8.01
3	43717	44115	42995	43465	10.01
4	54123	54571	52862	53541	12.13
5	0	0	0	0	0.00

Field Calibration

Measured Pads 1-5 Caliper(in)	Measured Pads 3-7 Caliper(in)	Actual Caliper(in)		
6.01	6.06	6.00		
Measured Pad 2 Caliper(in)	Measured Pad 4 Caliper(in)	Measured Pad 6 Caliper(in)	Measured Pad 8 Caliper(in)	Actual Caliper(in)
3.03	3.00	2.98	3.00	6.00

Caliper Constants MIE-B.A 254

Last Edited on 16-JUN-2014,09:04

Caliper Difference for BRKT	0.120 inches
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Navigation Constants MIE-B.A 254

Last Edited on 17-JUN-2014,15:52

Magnetic Declination	4.18 degrees East
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Induction Calibration MAI-B.J 394

Base Calibration on 04-OCT-2010,19:10

Field Check on 16-JUN-2014 09:06

Base Calibration

Test Loop Calibration	Measured	Calibrated (mmho/m)
Channel	Low High	Low High
1	16.7 473.5	9.3 966.2
2	5.6 368.9	7.6 821.4
3	3.3 256.4	5.2 566.0
4	1.8 133.4	2.6 279.2

Array Temperature	22.1 Deg F
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Channel	Base Check (mmho/m)	Field Check (mmho/m)
	Low High	Low High
1		14.4 3834.7
2		32.3 3652.4
3		29.2 3084.3
4		19.6 2069.2
Deep		16.4 1912.3
Medium		43.5 4145.1

Medium	Shallow	40.0	4140.1
		50.4	5540.1
Array Temperature		76.8	Deg F

Induction Constants MAI-B.J 394				Last Edited on 17-JUN-2014,22:35	
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		6.0000			
Stand-off Fin Angle		60.00		degrees	
Stand-off Fin Width		0.5000		inches	
Borehole Corr. Rm Source		Temperature Corr			
Temp. for Rm Corr.		MGS External Temperature			
Squasher Start		0.0050		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-B.J 394		Field Calibration on 10-JUN-2014,13:25	
	Measured	Calibrated(Deg F)	
Lower	10.00	10.00	
Upper	100.00	100.00	

High Resolution Temperature Constants MAI-B.J 394		Last Edited on 10-JUN-2014,13:25	
Pre-filter Length	11		

Caliper Calibration MPD-D.A 512		Base Calibration on 13-JUN-2014 14:03 Field Calibration on 16-JUN-2014 09:10	
Base Calibration			
Reading No	Measured	Calibrator Size (in)	
1	18248	4.00	
2	27930	5.97	
3	37808	7.96	
4	47542	9.86	
5	58659	11.88	
6	N/A	N/A	
Field Calibration			
	Measured Caliper (in)	Actual Caliper (in)	
	5.92	5.97	

Photo Density Calibration MPD-D.A 512		Base Calibration on 13-JUN-2014 13:56 Field Check on 16-JUN-2014 09:15	
Density Calibration			
Base Calibration	Measured	Calibrated (adu)	

Base Calibration	Near	Measured	Far	Near	Far
Background	1328		1515		
Reference 1	58743		29103	59494	30754
Reference 2	24501		2866	24557	2522

Field Check at Base

1327.7 1514.6

Field Check

1326.3 1516.4

PE Calibration

Base Calibration	WS	Measured	Ratio	Calibrated
		WH		Ratio
Background	251	1191		
Reference 1	24772	58530	0.428	0.367
Reference 2	7270	24351	0.303	0.271

Field Check at Base

250.6 1191.2

Field Check

249.0 1188.7

Density Constants MPD-D.A 512

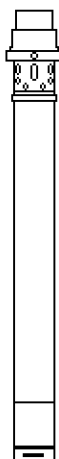
Last Edited on 17-JUN-2014,15:52

Density Source Id	P74840B
Nylon Calibrator Number	756
Aluminium Calibrator Number	633
Density Shoe Profile	4 inch
Caliper Source for Processing	Density Caliper
PE Correction to Density	Not Applied
Mud Density	1.02 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 (m)
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

DOWNHOLE EQUIPMENT

D:\14_01_3220_WLS\DATA\15191227400100_Jenny 3404 2-18H\36386RTAP2.dta

Shuttle Running Tool 3.5"
SRT-A.A 79 LG: 6.62 ft WT: 37.5 lb OD: 2.520 in



SKJ-E.A Compact Knuckle Joint
SKJ-E.A 165 LG: 2.17 ft WT: 24.3 lb OD: 2.240 in

Short Spacer
MLK-E.A 105 LG: 7.84 ft WT: 99.2 lb OD: 2.240 in

MBS-G.A 200v Compact Battery Sub
MBS-G.A 119 LG: 17.06 ft WT: 123.5 lb OD: 2.240 in

Compact Memory Sub F.A
MMS-F.A 262 LG: 5.20 ft WT: 37.5 lb OD: 2.244 in

Compact Tool Isolator sub.
MTI-C.A 151 LG: 1.54 ft WT: 13.2 lb OD: 2.244 in



Compact Short Gamma
MGS-C.J 135 LG: 3.41 ft WT: 24.3 lb OD: 2.244 in

93.93 ft GRGM - MGS Gamma Ray

Compact Collar Locator
MCL-B.J 60 LG: 3.17 ft WT: 26.5 lb OD: 2.244 in

91.94 ft GSXT - MGS External Temperature

SKJ-E.B Compact Knuckle Joint
SKJ-E.B 476 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in

89.92 ft GCSL - MCL C. Collar Locator

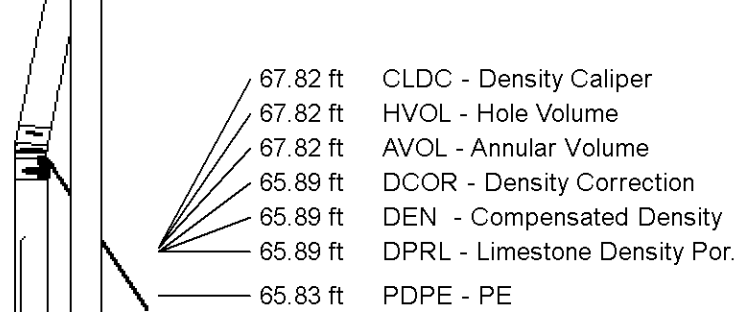
SHA-J.B Compact Swivel Head Adaptor
SHA-J.B 594 LG: 2.30 ft WT: 22.0 lb OD: 2.244 in

MIS-D.B Compact Inline Bowspring sub
MIS-D.B 816 LG: 5.70 ft WT: 33.1 lb OD: 2.240 in

Compact Neutron
MDN-C.A 480 LG: 5.04 ft WT: 50.7 lb OD: 2.240 in

75.06 ft NPRL - Limestone Neutron Por.

Compact Density/Caliper
MPD-D.A 512 LG: 9.59 ft WT: 90.4 lb OD: 2.244 in



MIS-D.B Compact Inline Bowspring sub
 MIS-D.B 817 LG: 5.70 ft WT: 33.1 lb OD: 2.240 in

SHA-J.A Compact Swivel Head Adaptor
 SHA-J.A 438 LG: 2.30 ft WT: 22.0 lb OD: 2.244 in

SKJ-E.B Compact Knuckle Joint
 SKJ-E.B 472 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in

MIS-E.B Compact Inline Standoff sub
 MIS-E.B 789 LG: 2.14 ft WT: 15.4 lb OD: 2.244 in

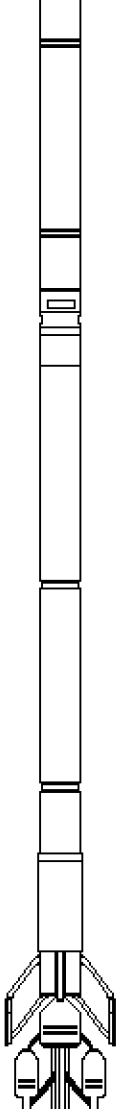
Compact Focussed Electric
 MFE-C.A 396 LG: 6.05 ft WT: 48.5 lb OD: 2.240 in

48.22 ft FEFE - Shallow FE

MIS-D.A Compact Inline Bowspring sub
 MIS-D.A 333 LG: 5.70 ft WT: 33.1 lb OD: 2.240 in

Compact MMI Memory Section
MIM-A.J 233 LG: 4.65 ft WT: 26.5 lb OD: 2.244 in

Compact MMI Electrode Section
MIE-B.A 254 LG: 13.96 ft WT: 99.2 lb OD: 4.094 in



- 23.05 ft IECX - MIE Caliper X
- 23.05 ft IECY - MIE Caliper Y
- 22.54 ft IEC2 - MIE Caliper 2
- 22.54 ft IEC6 - MIE Caliper 6
- 22.54 ft IEC8 - MIE Caliper 8
- 22.54 ft IEC4 - MIE Caliper 4

MIS-D.B Compact Inline Bowspring sub
MIS-D.B 606 LG: 5.70 ft WT: 33.1 lb OD: 2.240 in



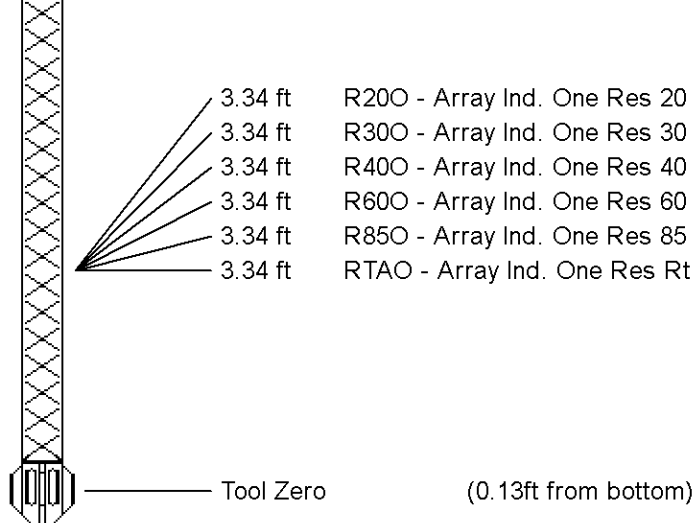
SKJ-E.B Compact Knuckle Joint
SKJ-E.B 469 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in



MIS-E.B Compact Inline Standoff sub
MIS-E.B 564 LG: 2.14 ft WT: 15.4 lb OD: 2.244 in

Compact Induction
MAI-B.J 394 LG: 10.81 ft WT: 48.5 lb OD: 2.240 in





Total Length: 135.27 ft Weight: 1029.6 lb All measurements relative to tool zero.

COMPANY	SANDRIDGE EXPLORATION AND PRODUCTION LLC		
WELL	JENNY 3404 2-18H		
FIELD	BLUFF		
PROVINCE/COUNTY	SUMNER		
COUNTRY/STATE	USA / KANSAS		

Elevation Kelly Bushing	1267.00	feet	First Reading	9250.00	feet
Elevation Drill Floor	1267.00	feet	Depth Driller	9352.00	feet
Elevation Ground Level	1249.00	feet	Depth Logger	9352.00	feet



Weatherford®

CML MESSENGER SHUTTLE
 COMPACT PHOTO DENSITY
 COMPENSATED NEUTRON LOG