PRECISION ENERGY SERVICES

Compact

DUAL LATEROLOG - GR
DENSITY - NEUTRON
1:200 MD

COMPANY	ESSO AUSTRLIA PTY LTD
WELL	BREAM A5A
FIELD	BREAM
PROVINCE/COUNTY	BASS STRAIT
COUNTRY/STATE	AUSTRALIA
LOCATION	S 38 29 58.778, E 147 46 20.334
	N 5738461.680 m, E 567345.000 m

FINAL PRINT

LSD	SEC	TWP	RGE	Other Services
				COMPENSATED SONIC

API Number
Permit Number

Permanent Datum MSL , Elevation 0.0 metres
Log Measured From RT @ 32.82m above Permanent Datum
Drilling Measured From RT

Elevations:

KB		metres
DF	32.82	metres
GL	-59.40	metres

Date	16-JUN-2005			
Run Number	ONE			
Depth Driller	2810.00	metres		
Depth Logger	2803.90	metres		
First Reading	2790.10	metres		
Last Reading	895.00	metres		
Casing Driller	895.50	metres		
Casing Logger	895.00	metres		
Bit Size	8.50	inches		
Hole Fluid Type	KCl/POLY/GYL			
Density / Viscosity	10.10 lb/USg	28.00 cP		
PH / Fluid Loss	9.10	2.80 ml/30Min		
Sample Source	FLOWLINE			
Rm @ Measured Temp	0.115 @ 25.0	ohm-m		
Rmf @ Measured Temp	0.089 @ 25.0	ohm-m		
Rmc @ Measured Temp	0.181 @ 25.0	ohm-m		
Source Rmf / Rmc	PRESS	PRESS		
Rm @ BHT	0.052 @ 83.0	ohm-m		
Time Since Circulation	27 HOURS			
Max Recorded Temp	83.00	deg C		
Equipment Name	CWS/CML			
Equipment / Base	1	SALE		
Recorded By	R. TENCH, B. MOSS			
Witnessed By	TREVOR LOBO			
CIRC STOPPED	16:30 15-Jun			

BOREHOLE RECORD

Bit Size inches	Depth From metres	Depth To metres
8.500	895.00	2810.00

CASING RECORD

Type	Size inches	Depth From metres	Shoe Depth metres	Weight pounds/ft
K-55	13.375	0.00	895.00	54.50

REMARKS

RIG: NABORS 453

5" SHUTTLE/MEMORY COMPACT OPERATION.
CREW: R TENCH , B MOSS , B GOODWIN, K LUCIEER.

ALL LOGS DEPTH CORRELATED TO ANADRILL GAMMA LOG.

DURING TRIP IN, DRILL PIPE BRIDGED AT 2071m, REQUIRED 30RPM AND 10BLS FLOW TO REACH TD

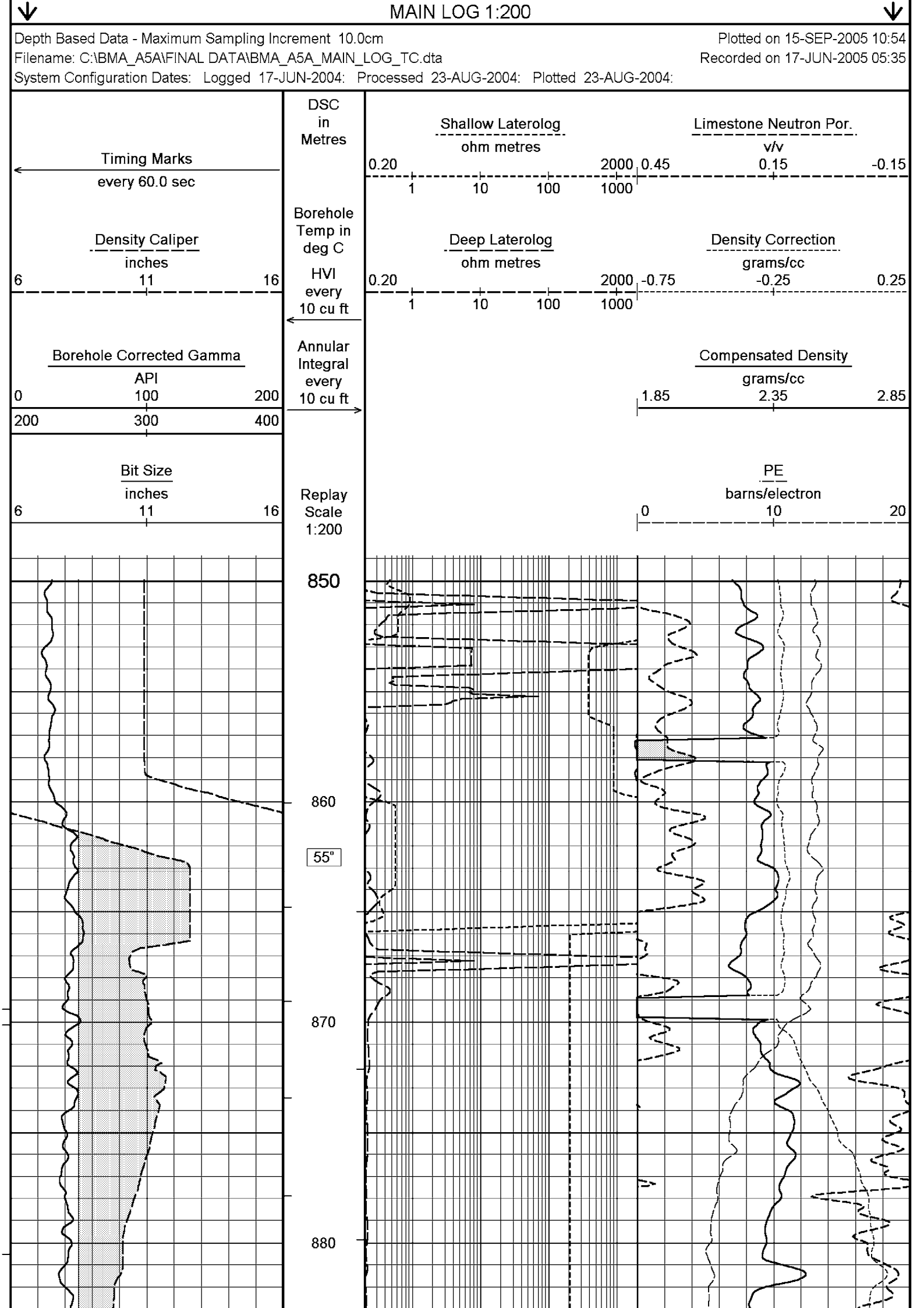
MAX. TEMPERATURE: 83 DEG C AT 2763m MD
MAX. INCLINATION: 58.40 DEG AT 2810.0m MD
MAX. DOGLEG SERVERITY: 6.21 DEG/30m AT 1160.6m MD
DEPLOYMENT ANGLE: 58 DEG

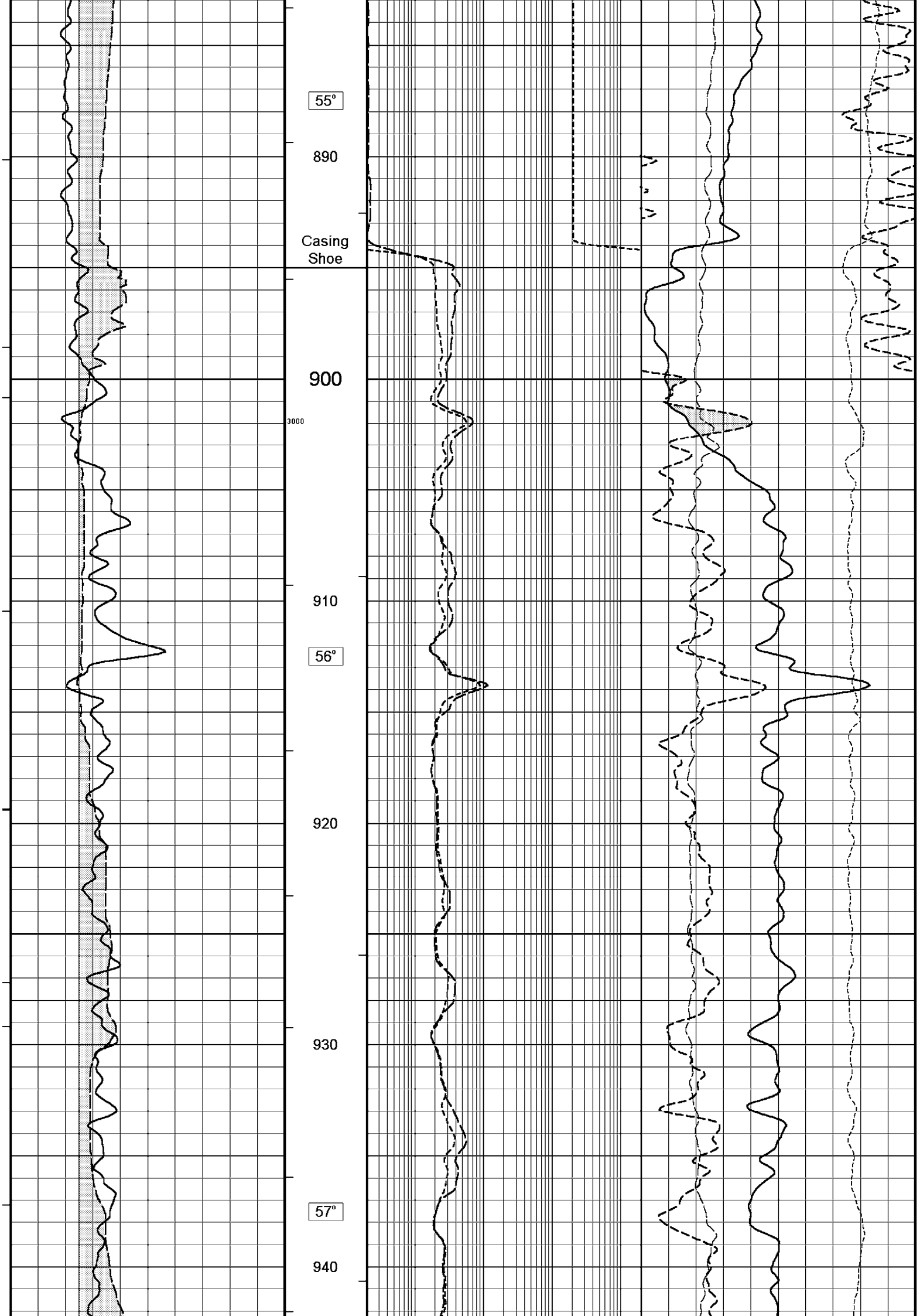
HVOL: 3000 FT^3
AVOL: 1330 FT^3

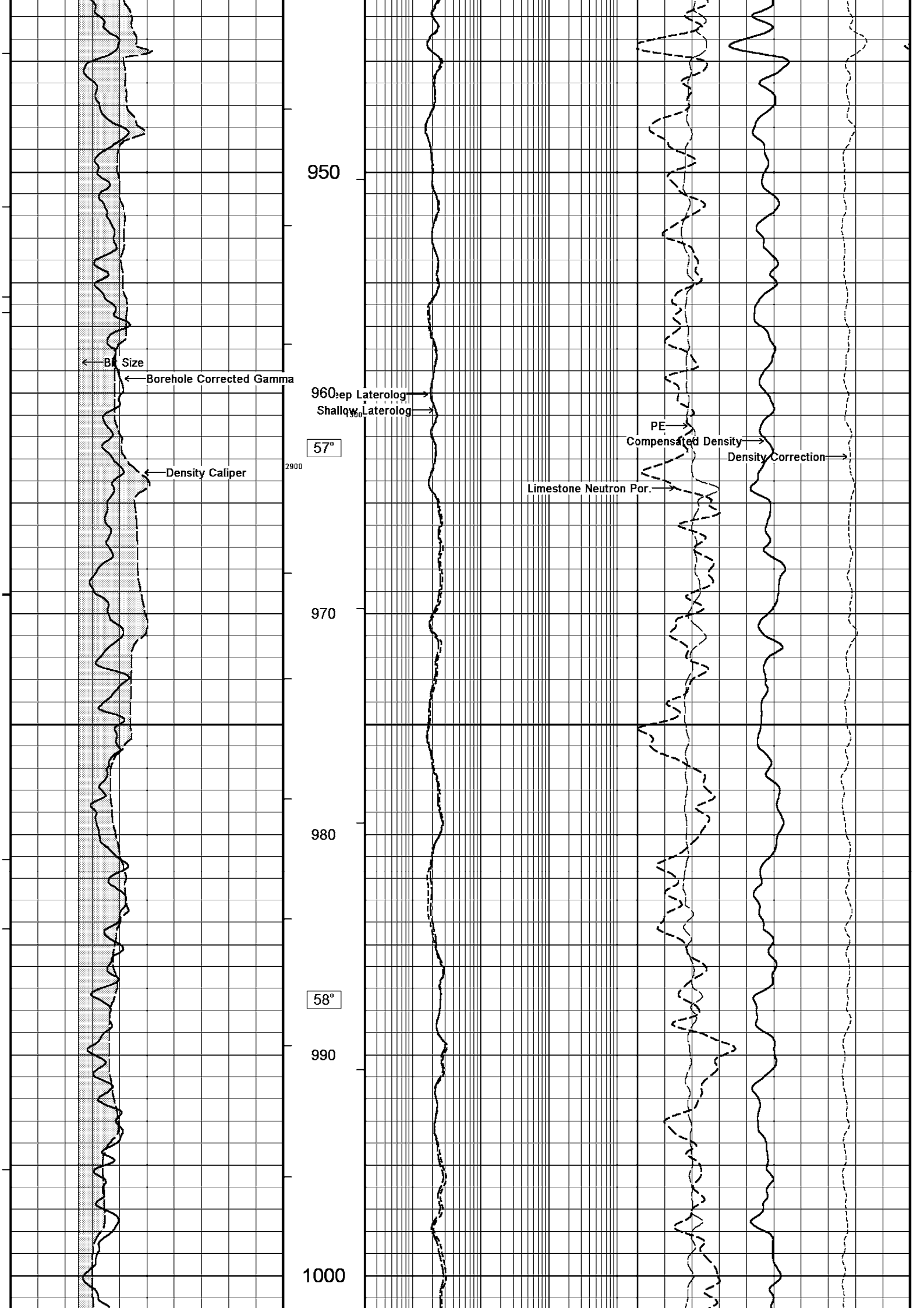
MAIN LOG 1:200

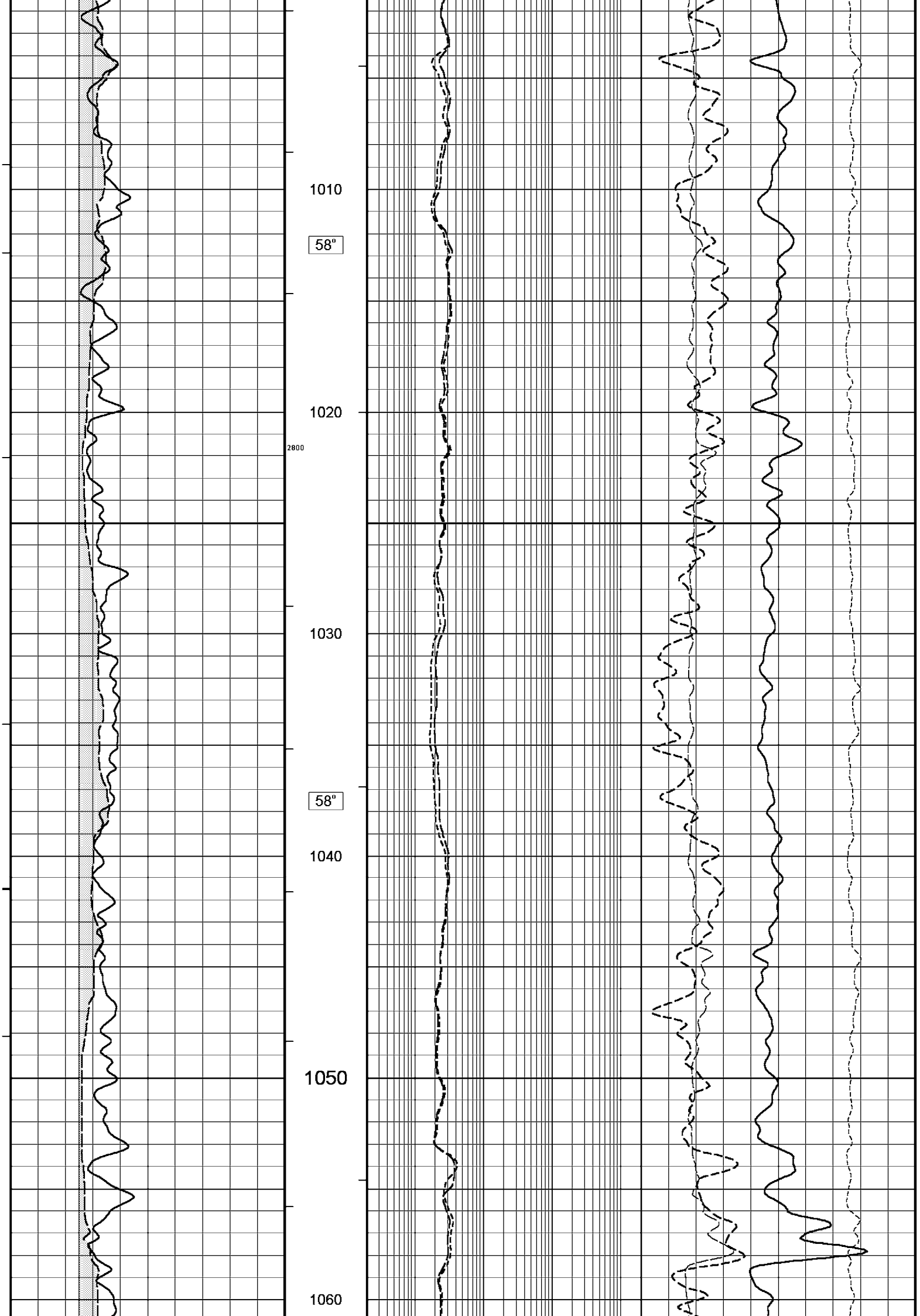
Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\BMA_A5A\FINAL DATA\BMA_A5A_MAIN_LOG_TC.dta
System Configuration Dates: Logged 17-JUN-2004: Processed 23-AUG-2004: Plotted 23-AUG-2004:

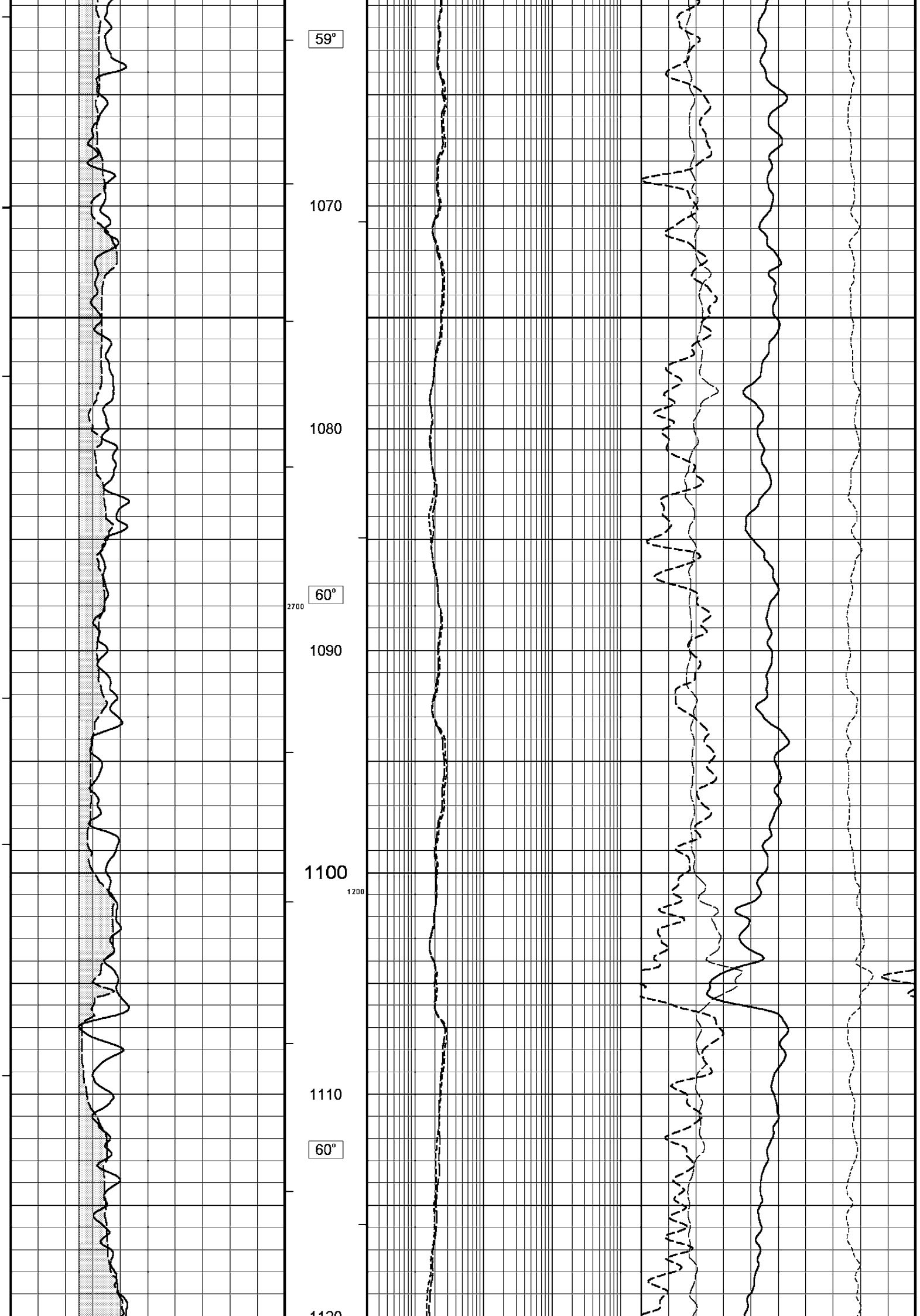
Plotted on 15-SEP-2005 10:54
Recorded on 17-JUN-2005 05:35




55°
890
Casing
Shoe
900
3000
910
56°
920
930
57°
940


950
960
970
980
990
1000
57"
58"
2900
Bit Size
Borehole Corrected Gamma
Density Caliper
Deep Laterolog
Shallow Laterolog
PE
Compensated Density
Density Correction
Limestone Neutron Por.


1010
58"
1020
2800
1030
58"
1040
1050
1060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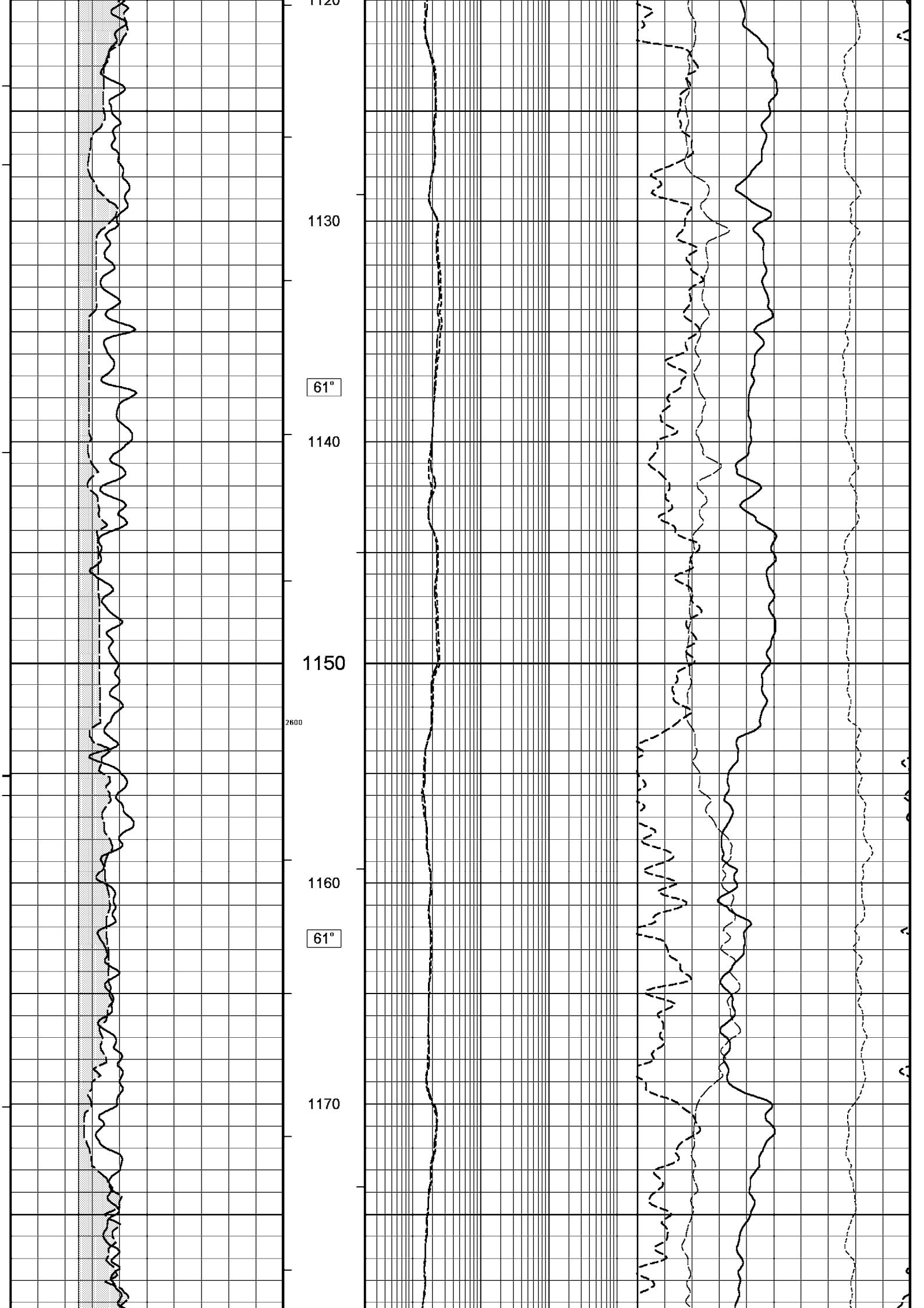
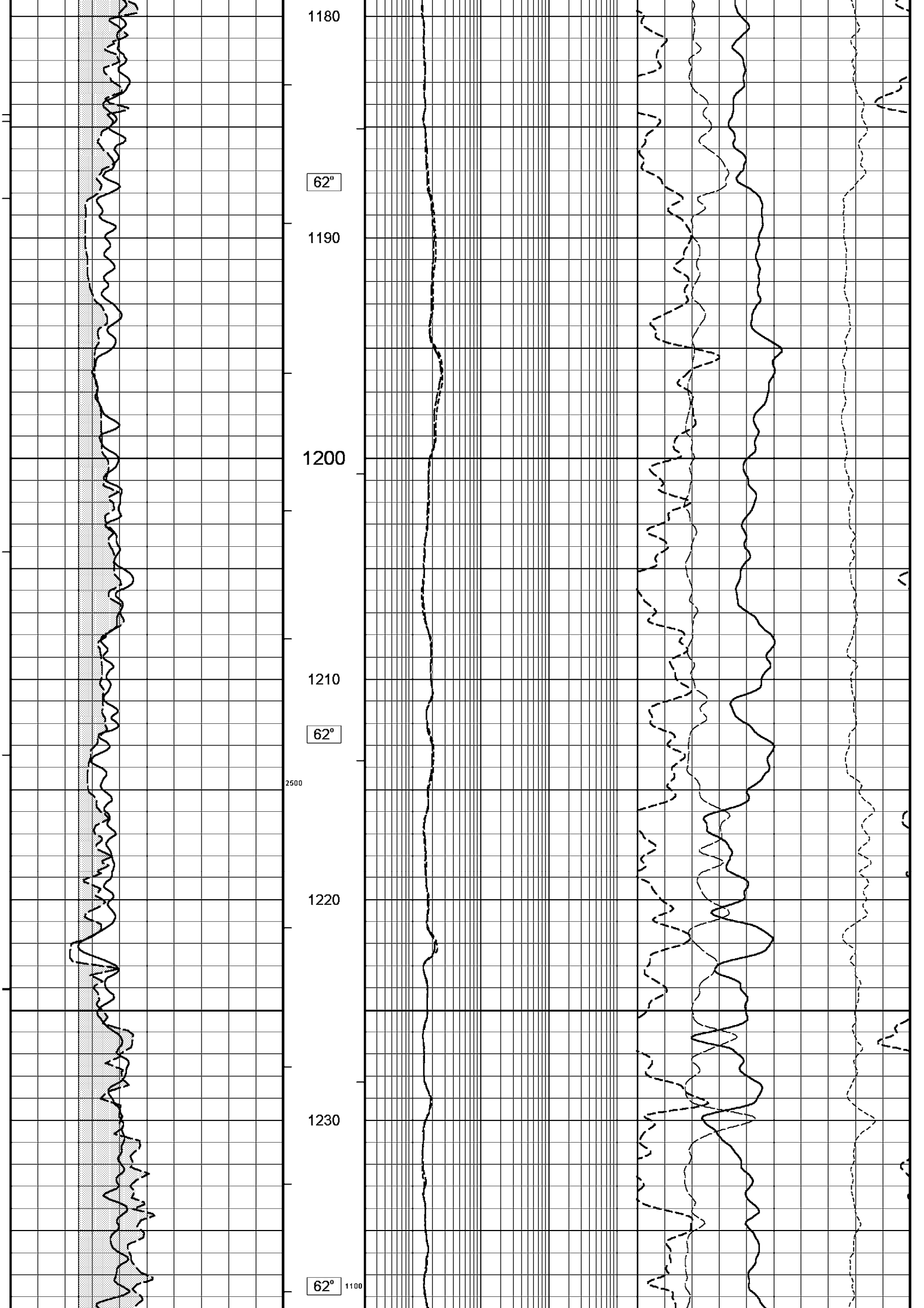
1070
1080
60°
2700
1090
1100
1200
1110
60°


1120
1130
61"
1140
1150
2600
1160
61°
1170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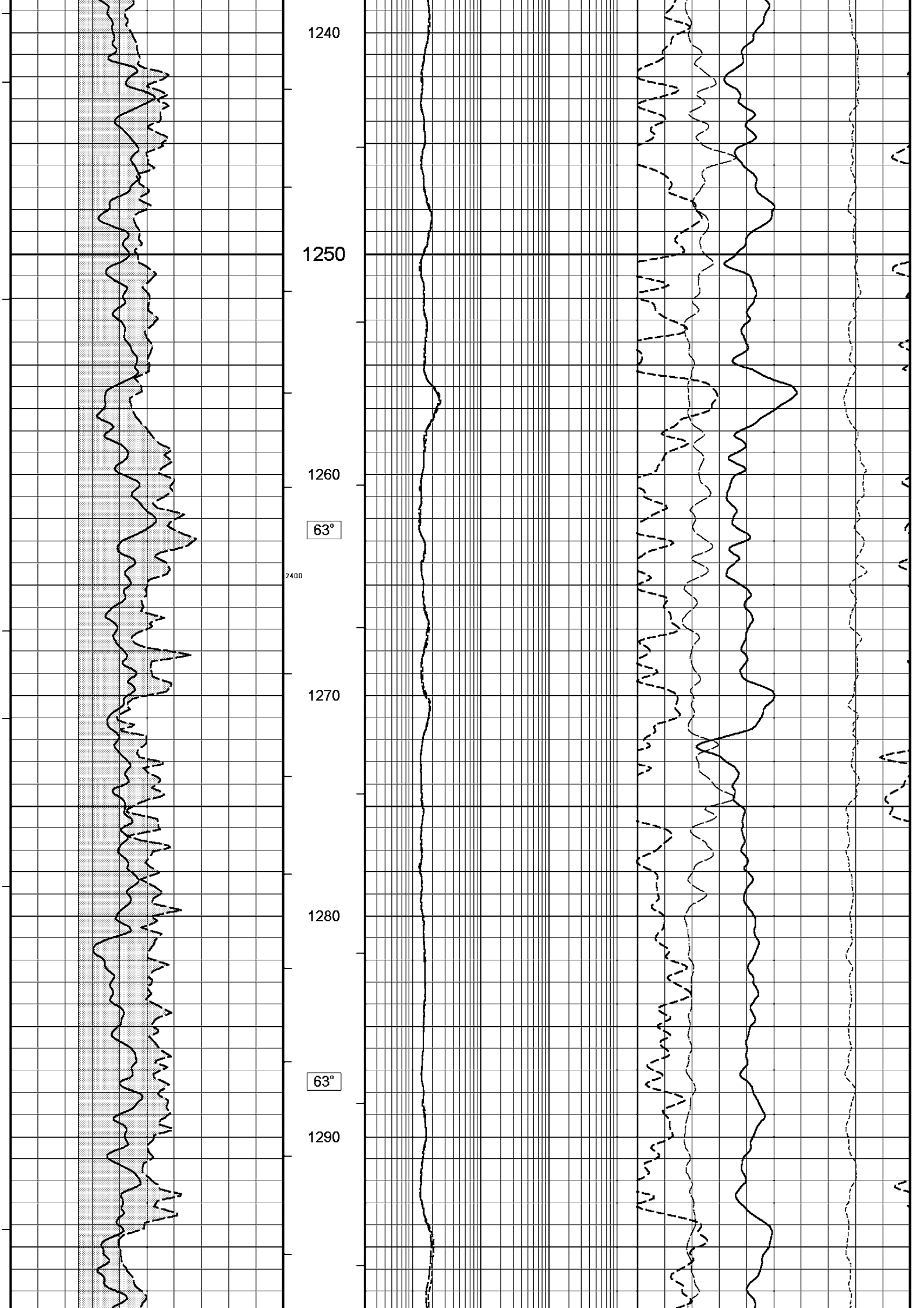
62°
1190
1200
1210
62°
2500
1220
1230
62°
1100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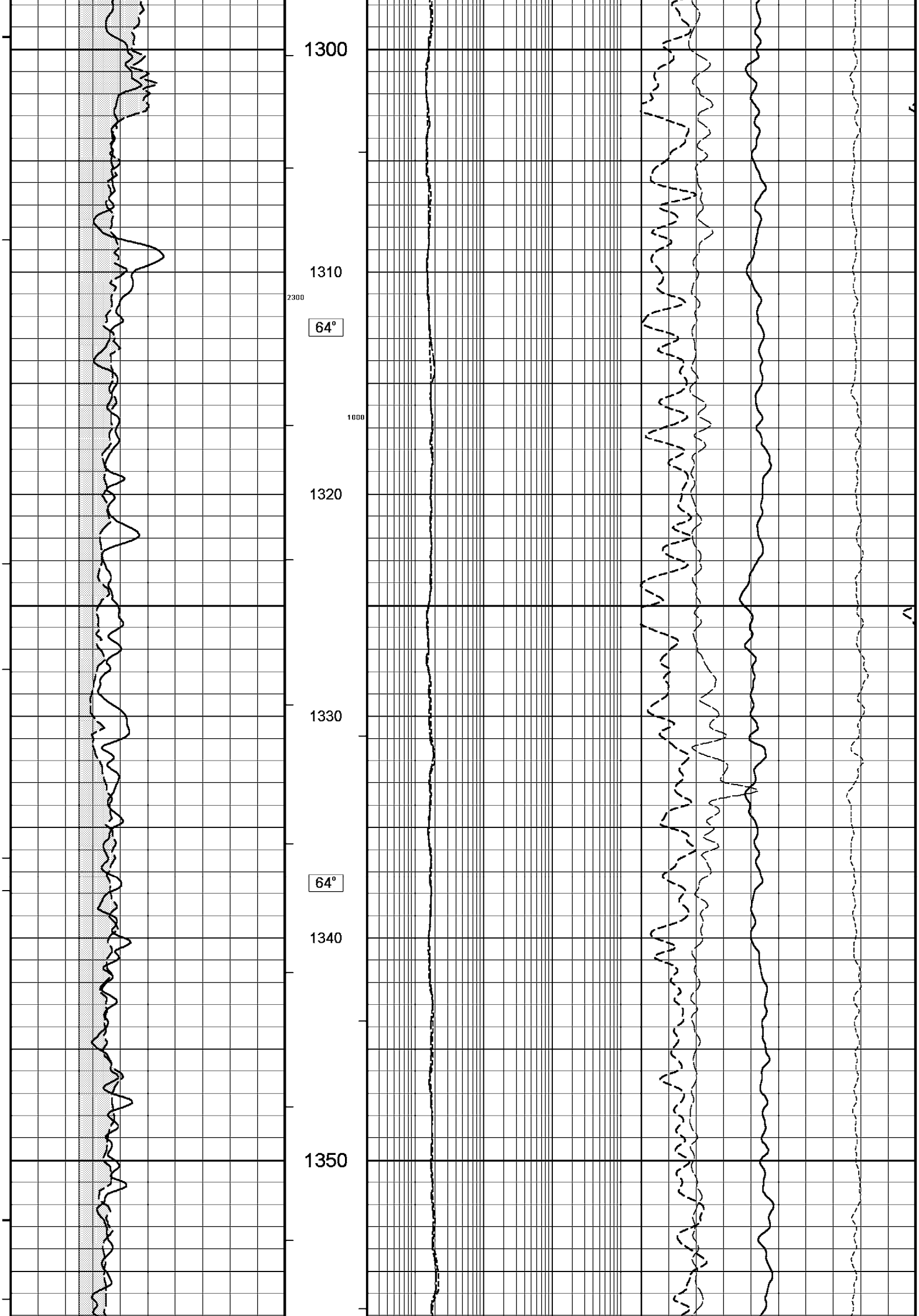
1250
1260
63°
2400
1270
1280
63°
1290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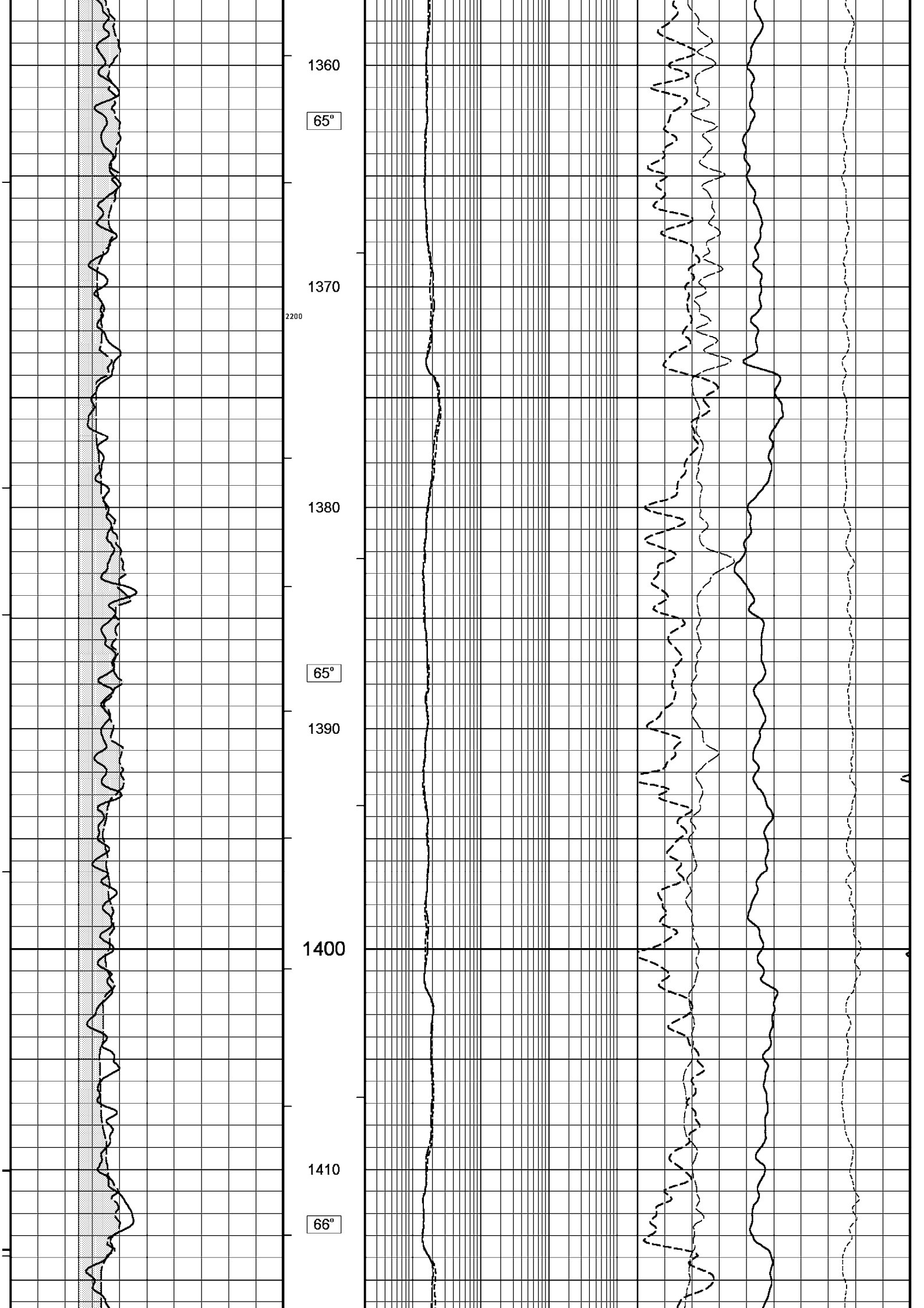
1310
2300
64°
1000
1320
1330
64°
1340
1350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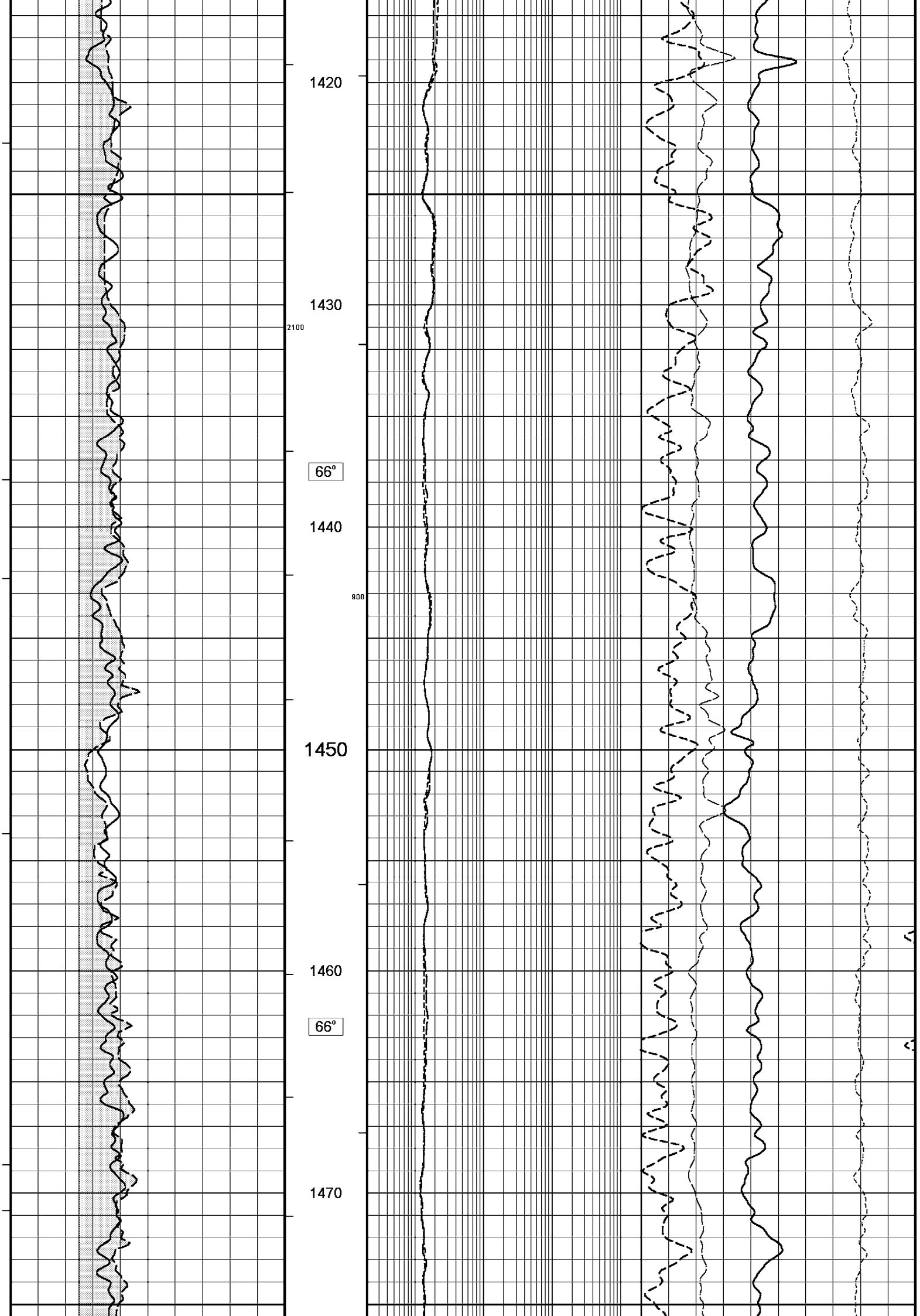
65°
1370
2200
1380
65°
1390
1400
1410
66°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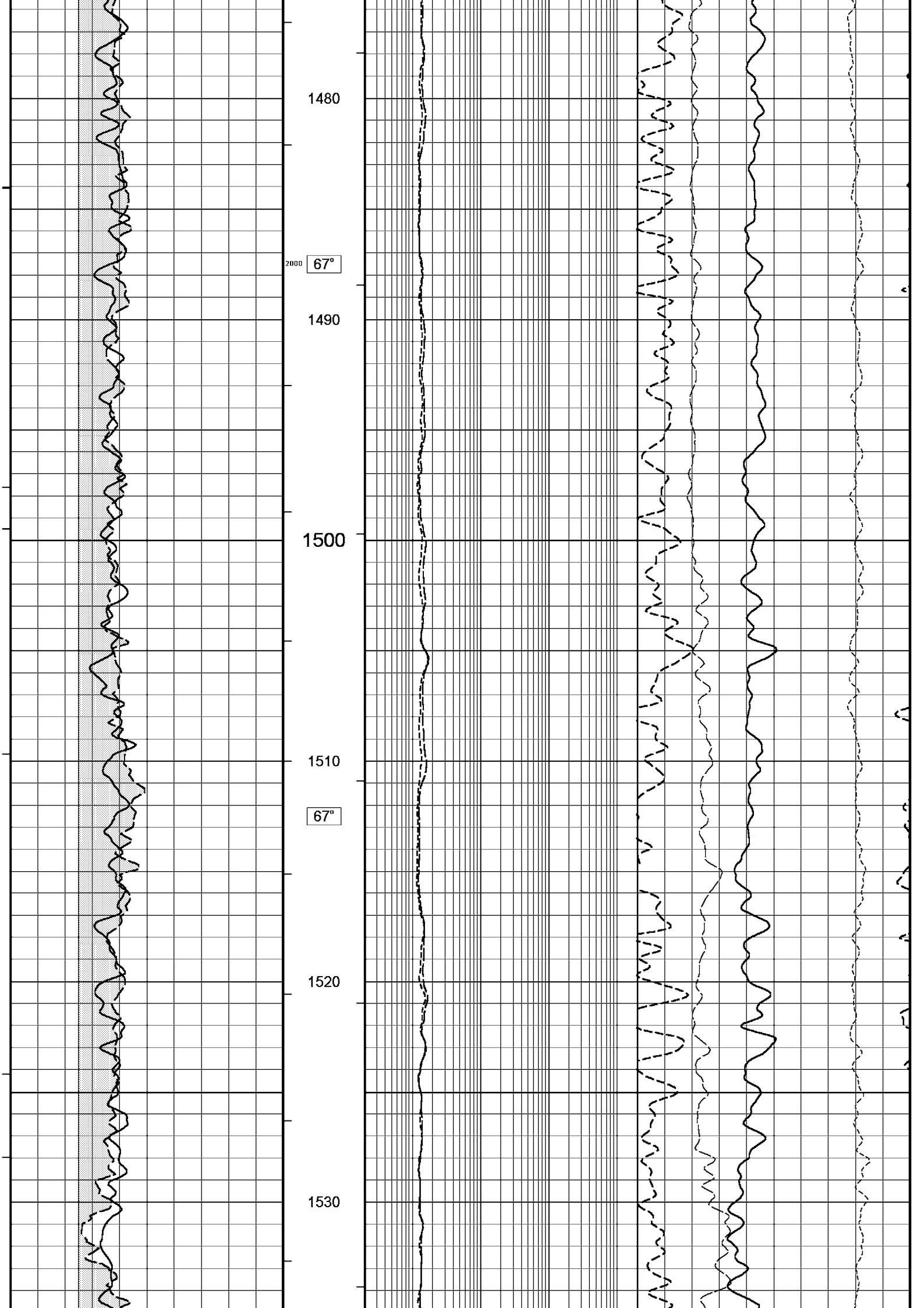
1430
2100
66°
1440
900
1450
1460
66°
1470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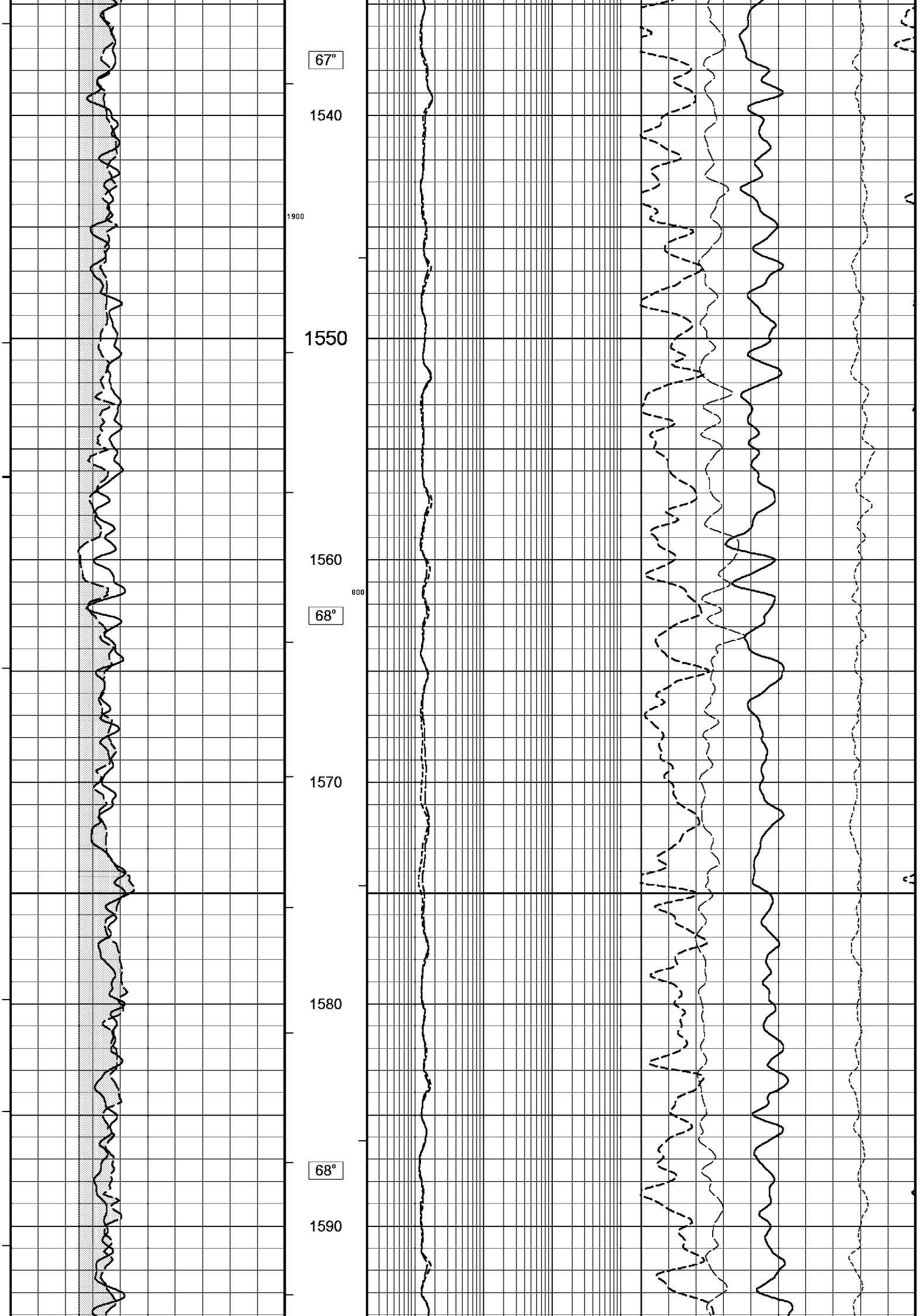
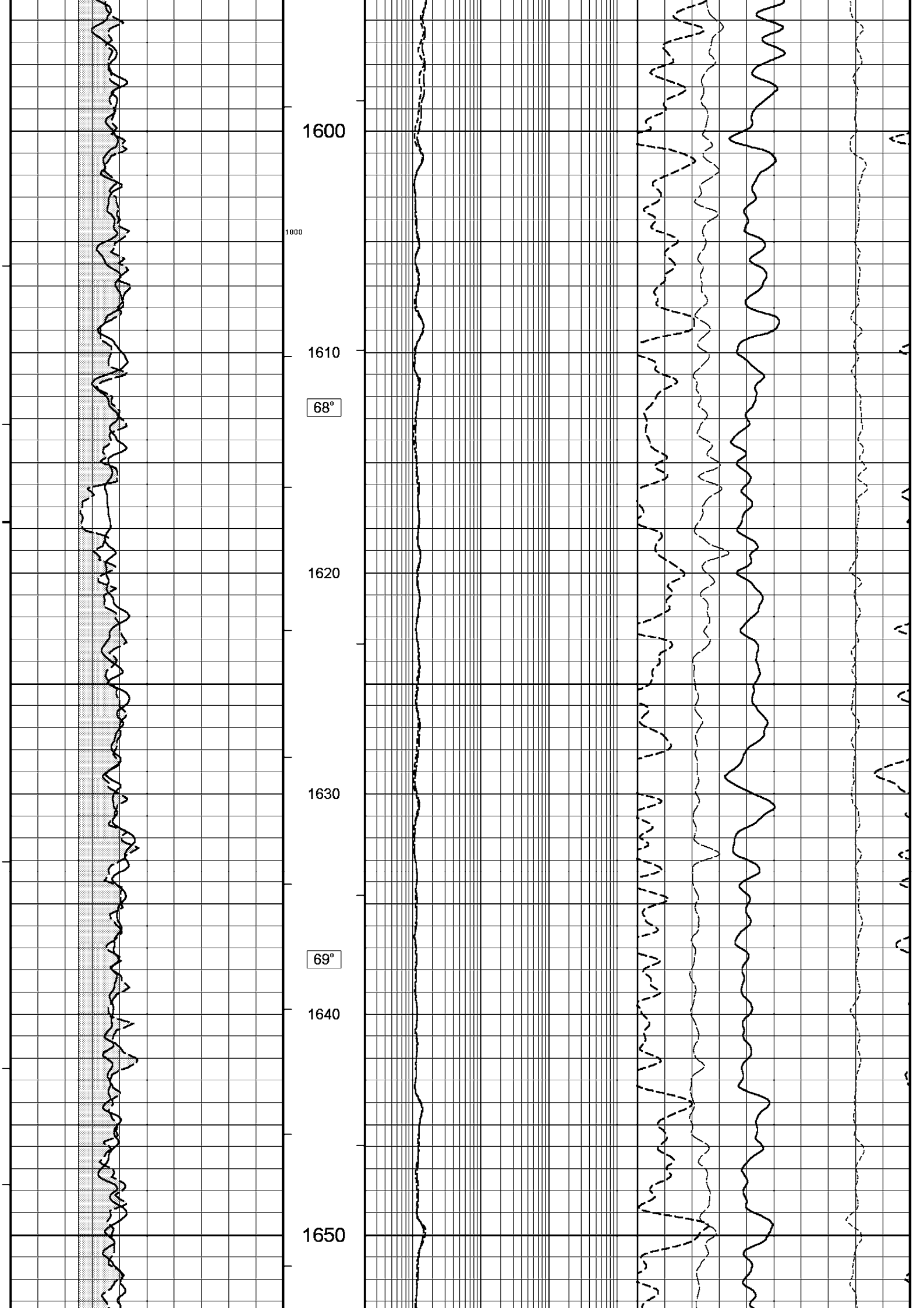
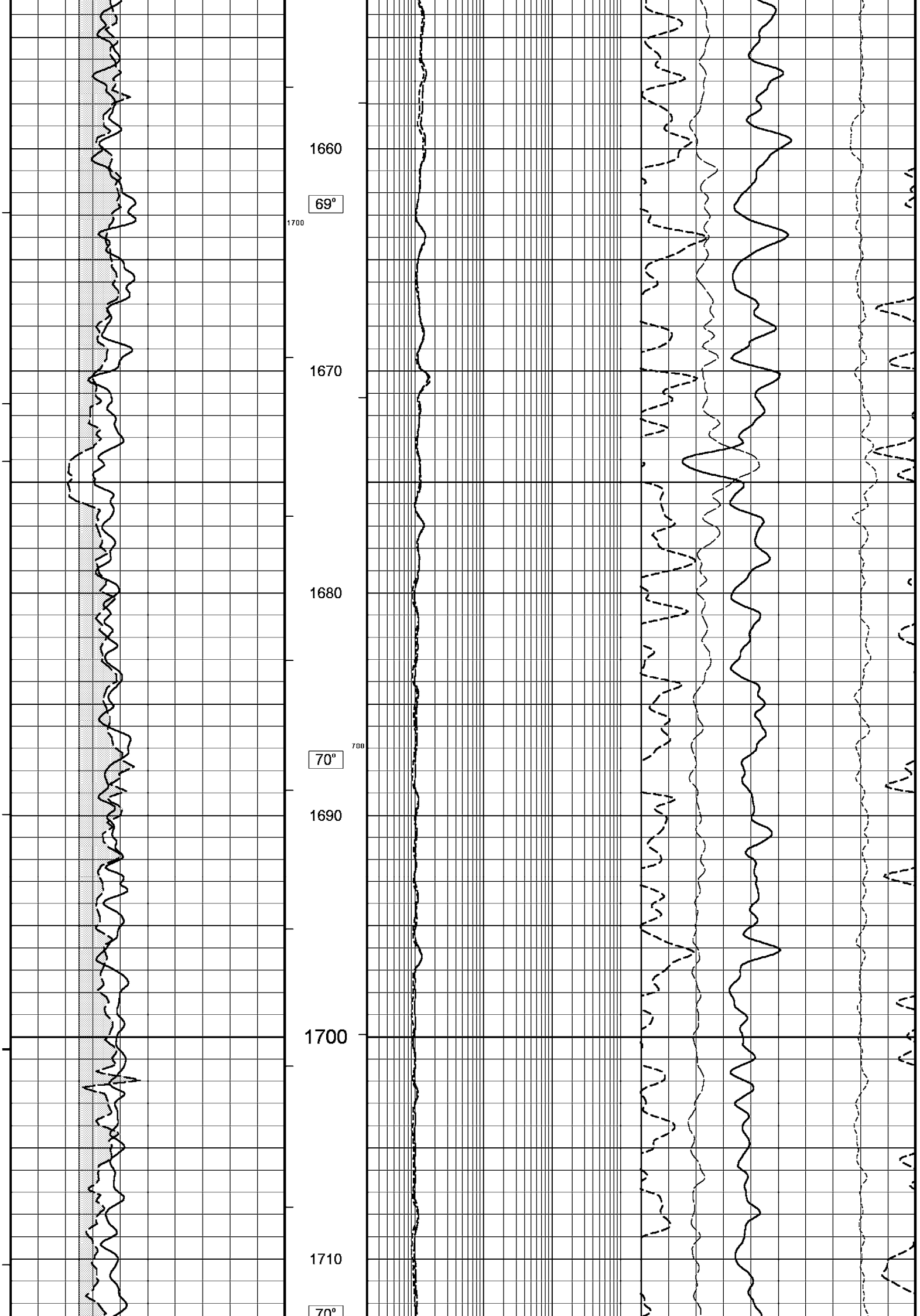
2000
67°
1490
1500
1510
67°
1520
1530


67°
1540
1900
1550
1560
800
68°
1570
1580
68°
1590


1600
1800
1610
68°
1620
1630
69°
1640
1650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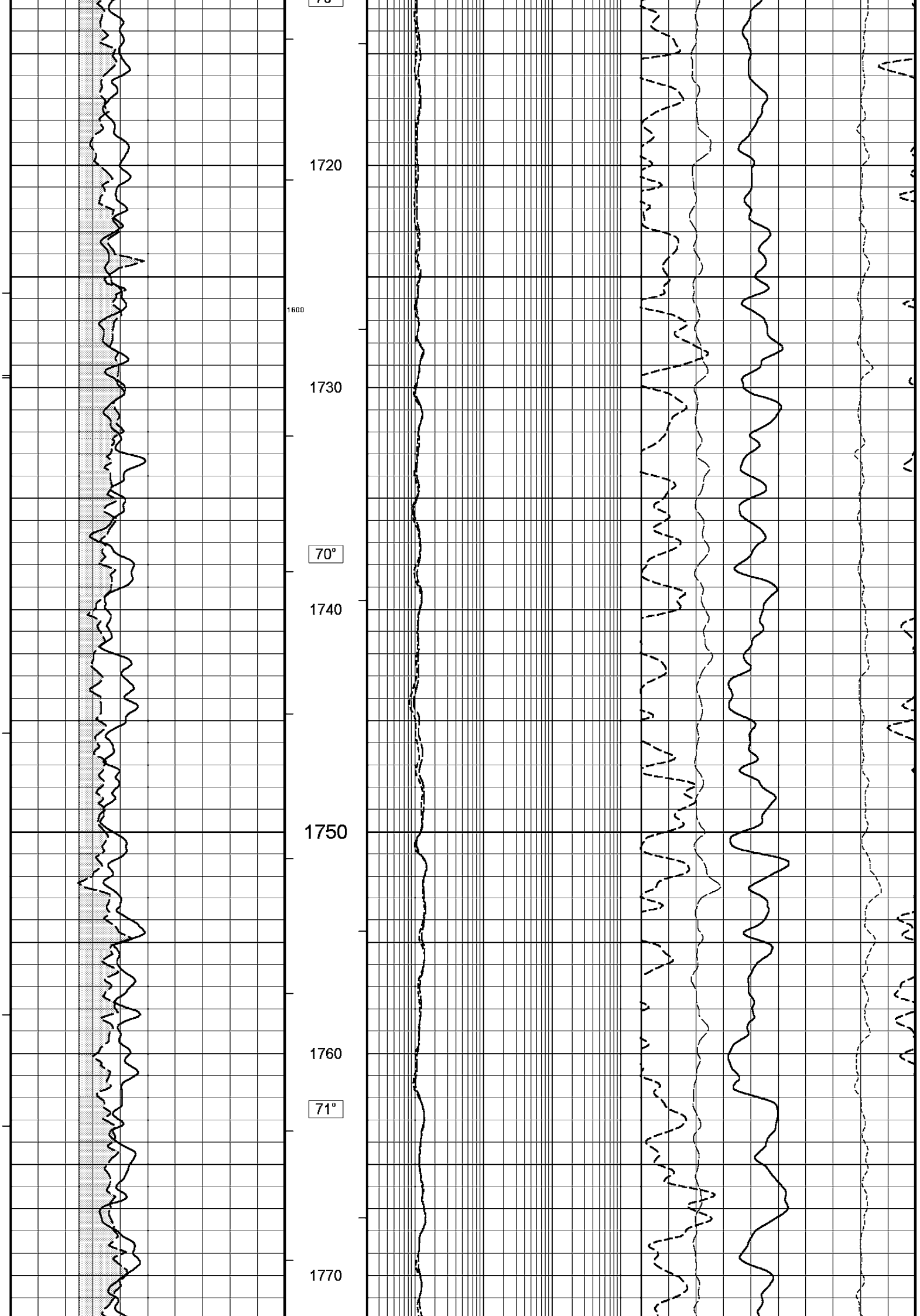
69°
1700
1670
1680
70°
700
1690
1700
1710
70°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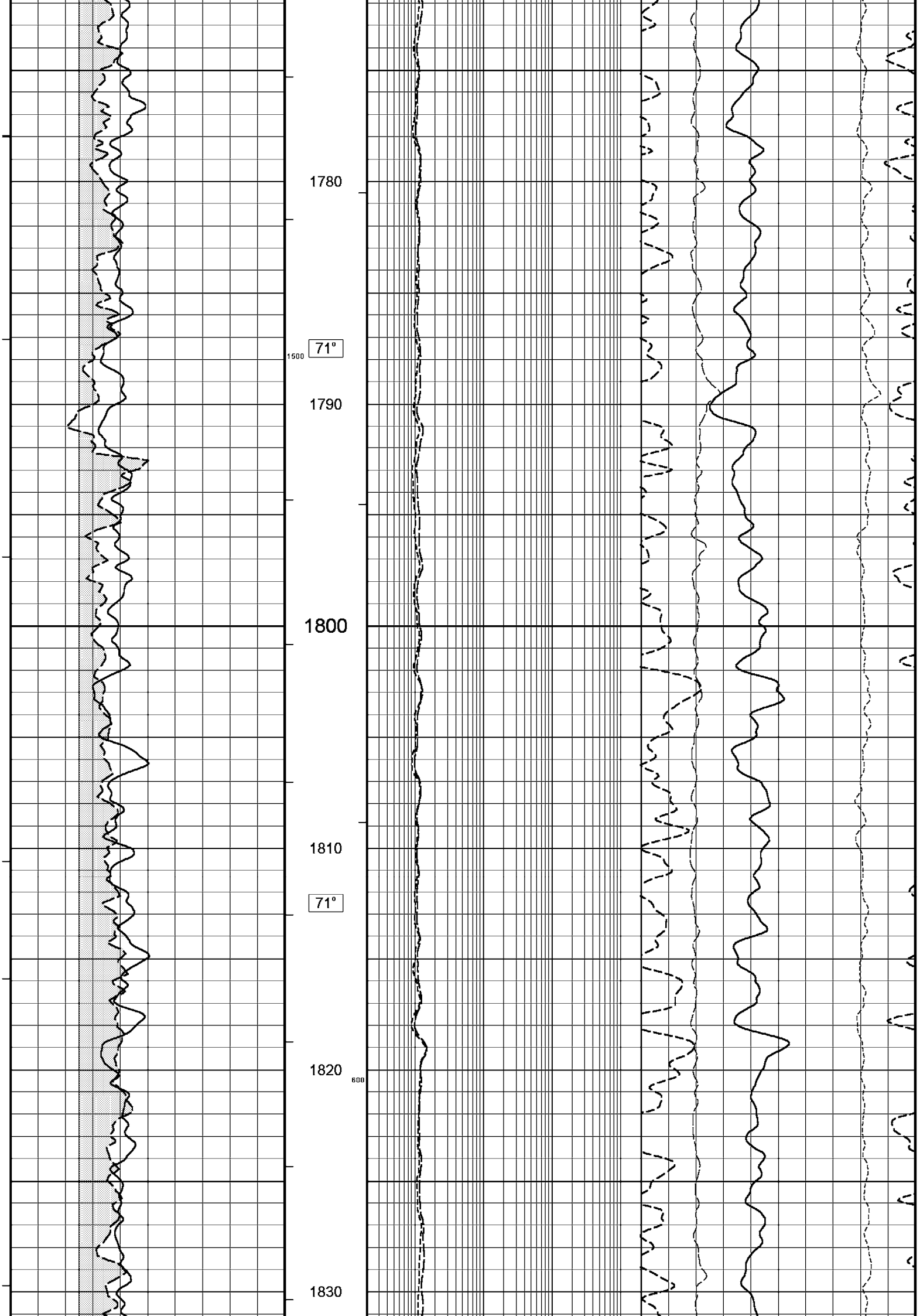
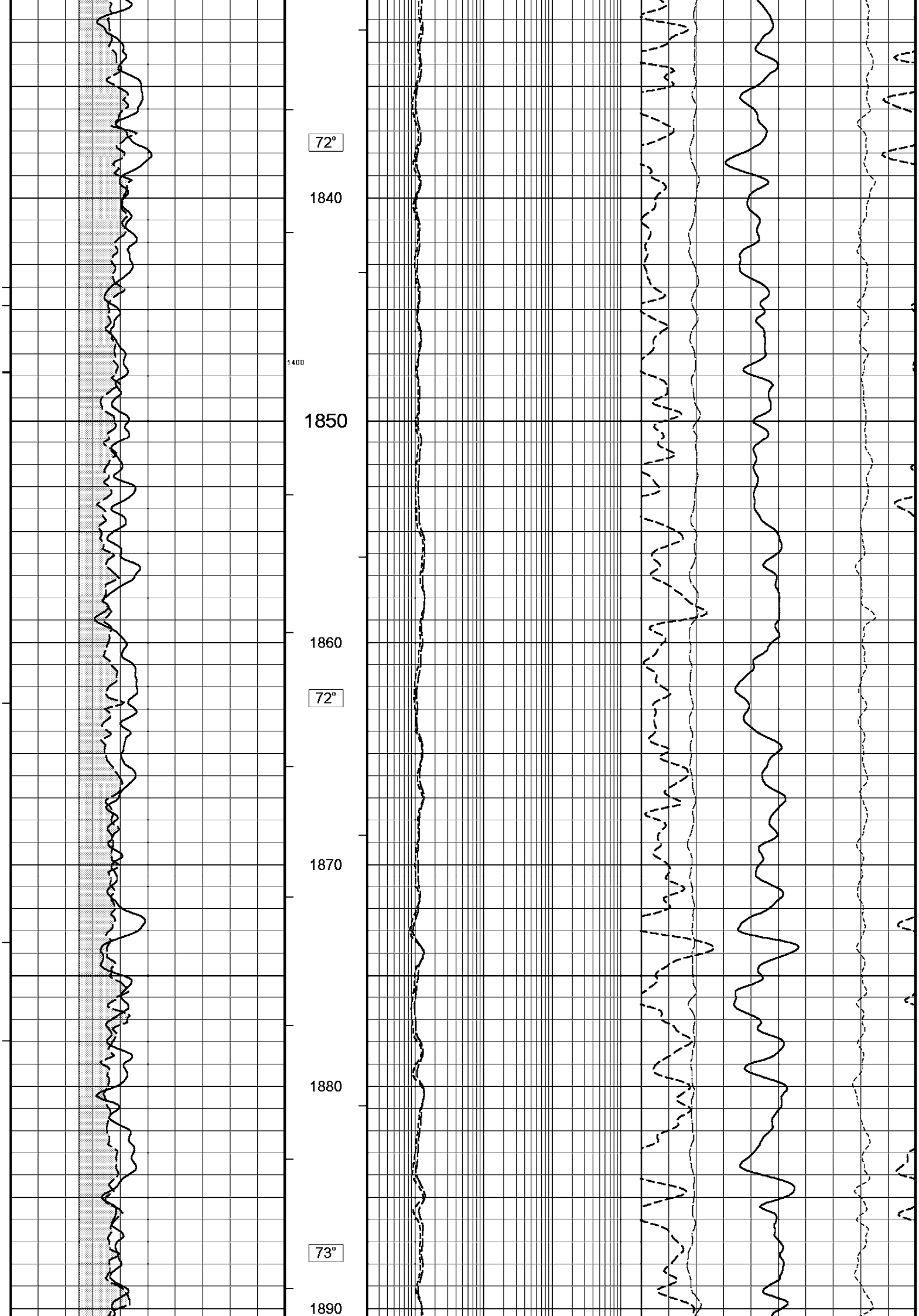
1600
1730
70°
1740
1750
1760
71°
1770


1780
1500
71°
1790
1800
1810
71°
1820
600
1830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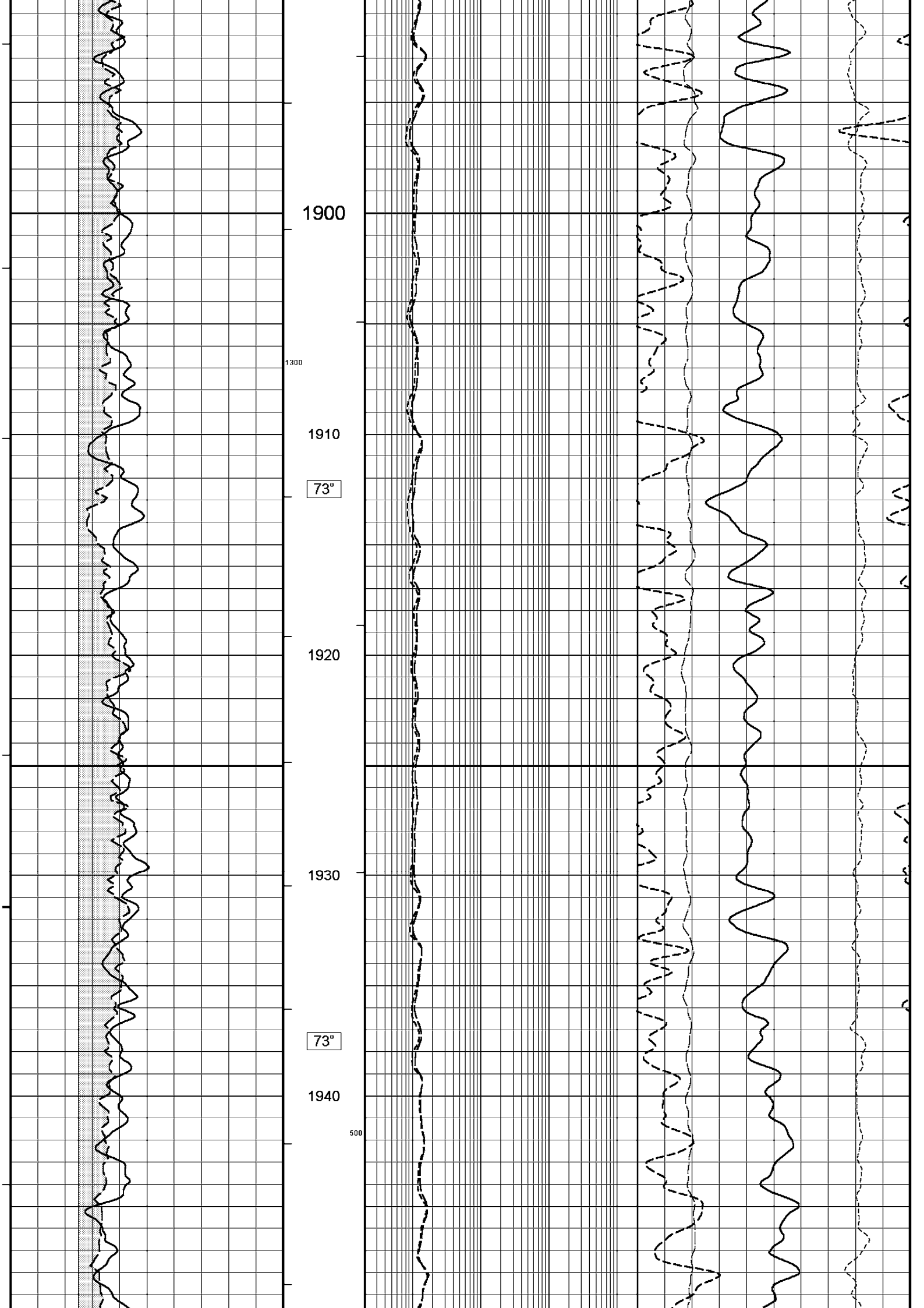
1840
1400
1850
1860
72°
1870
1880
73°
1890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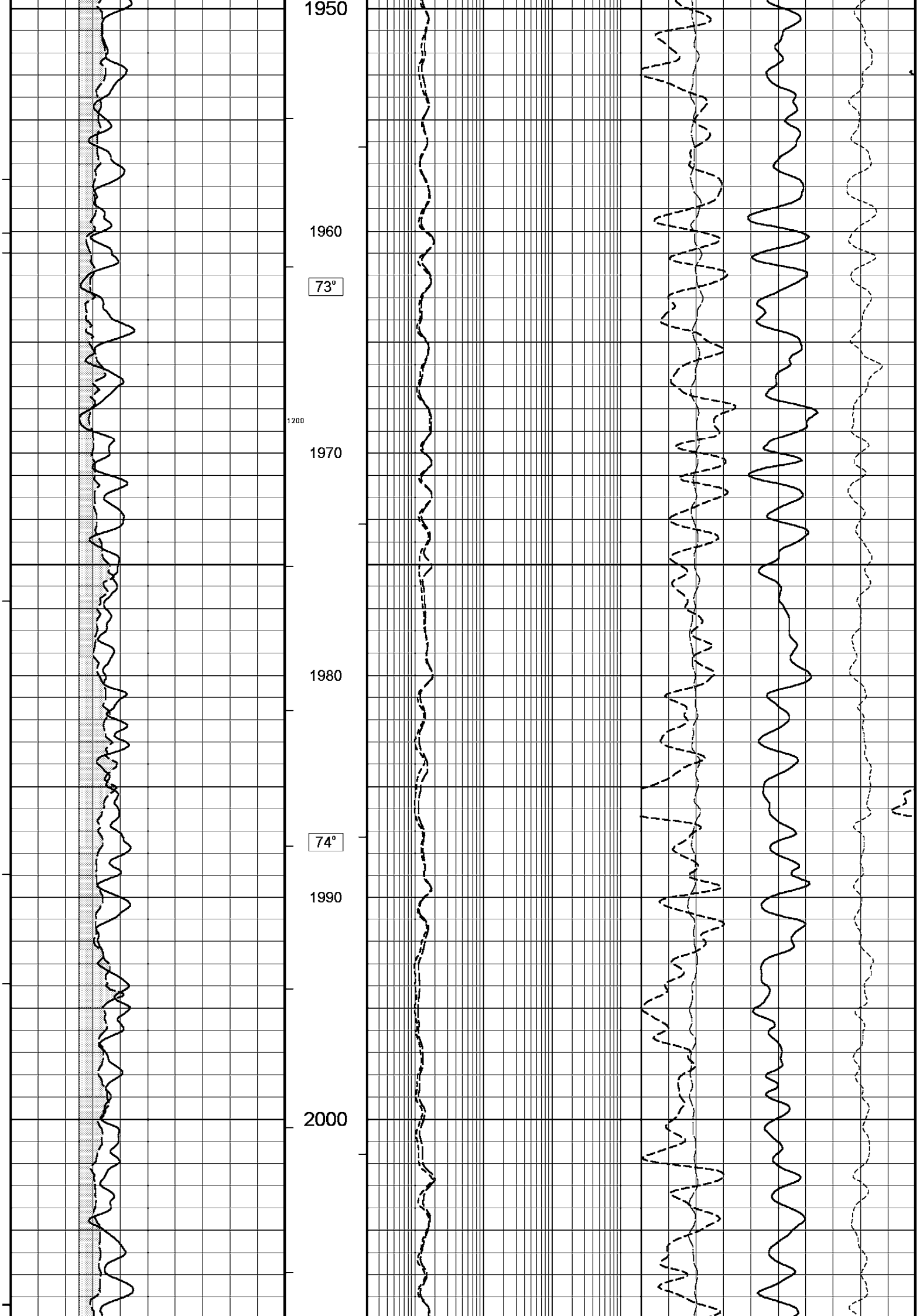
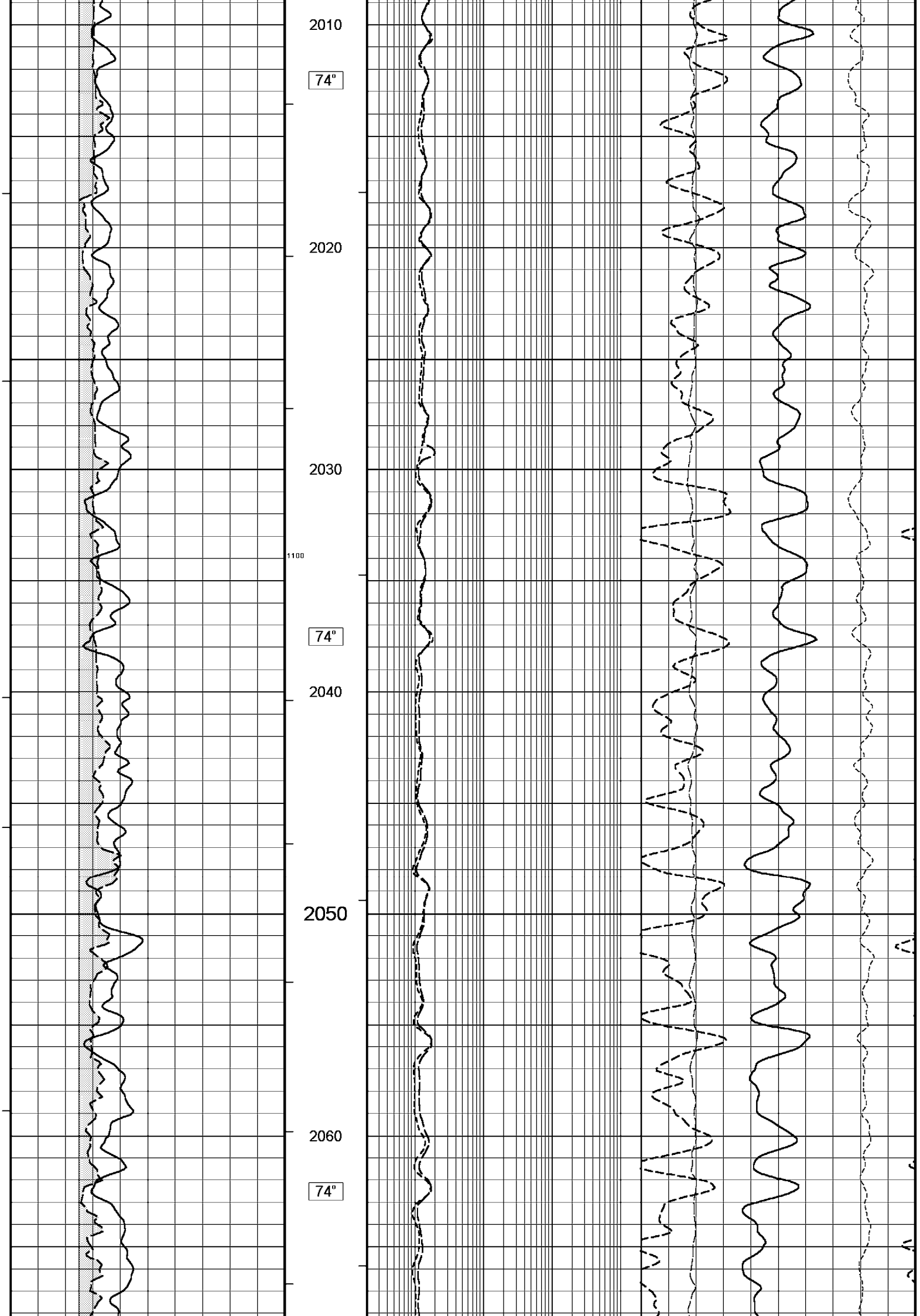
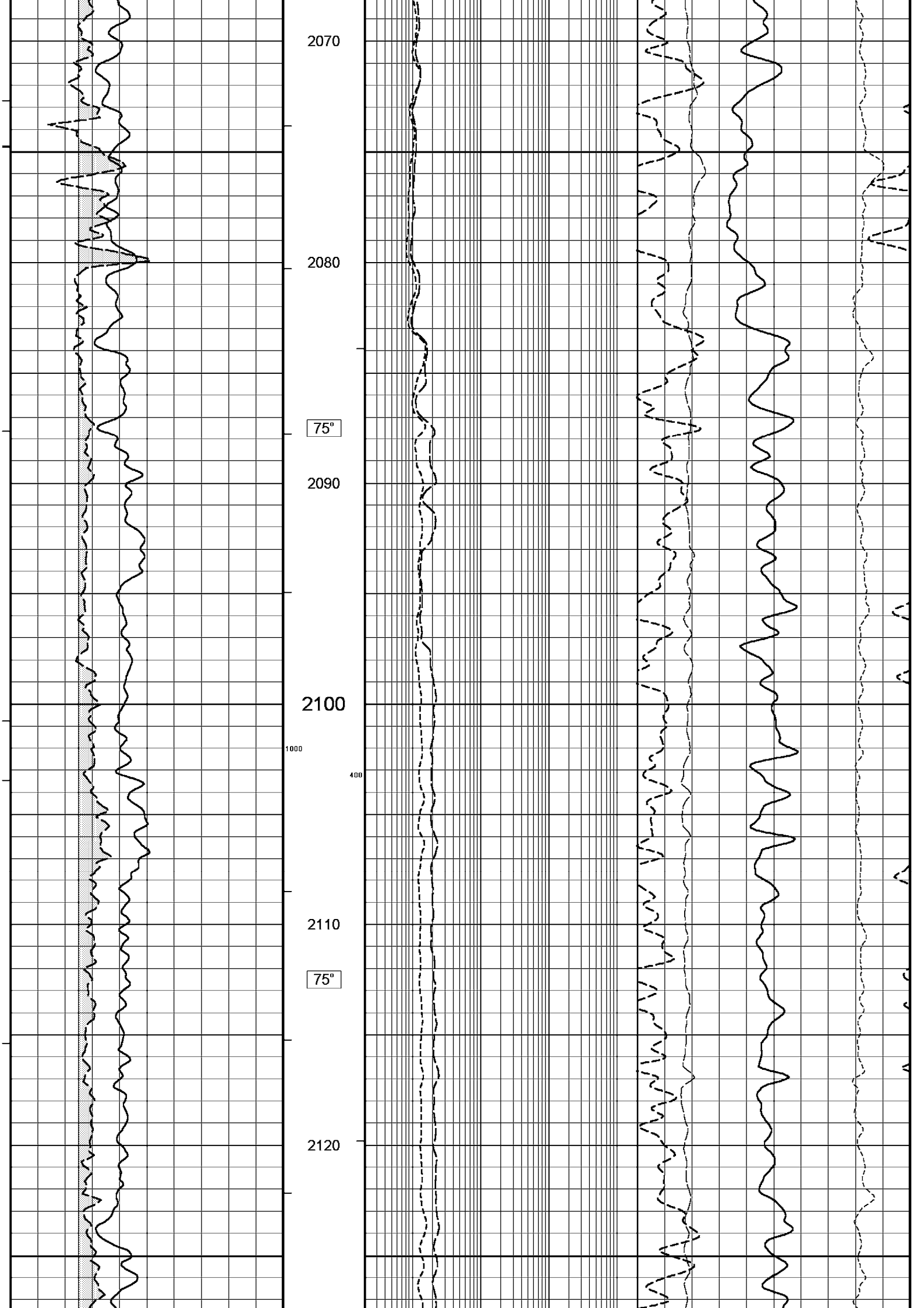
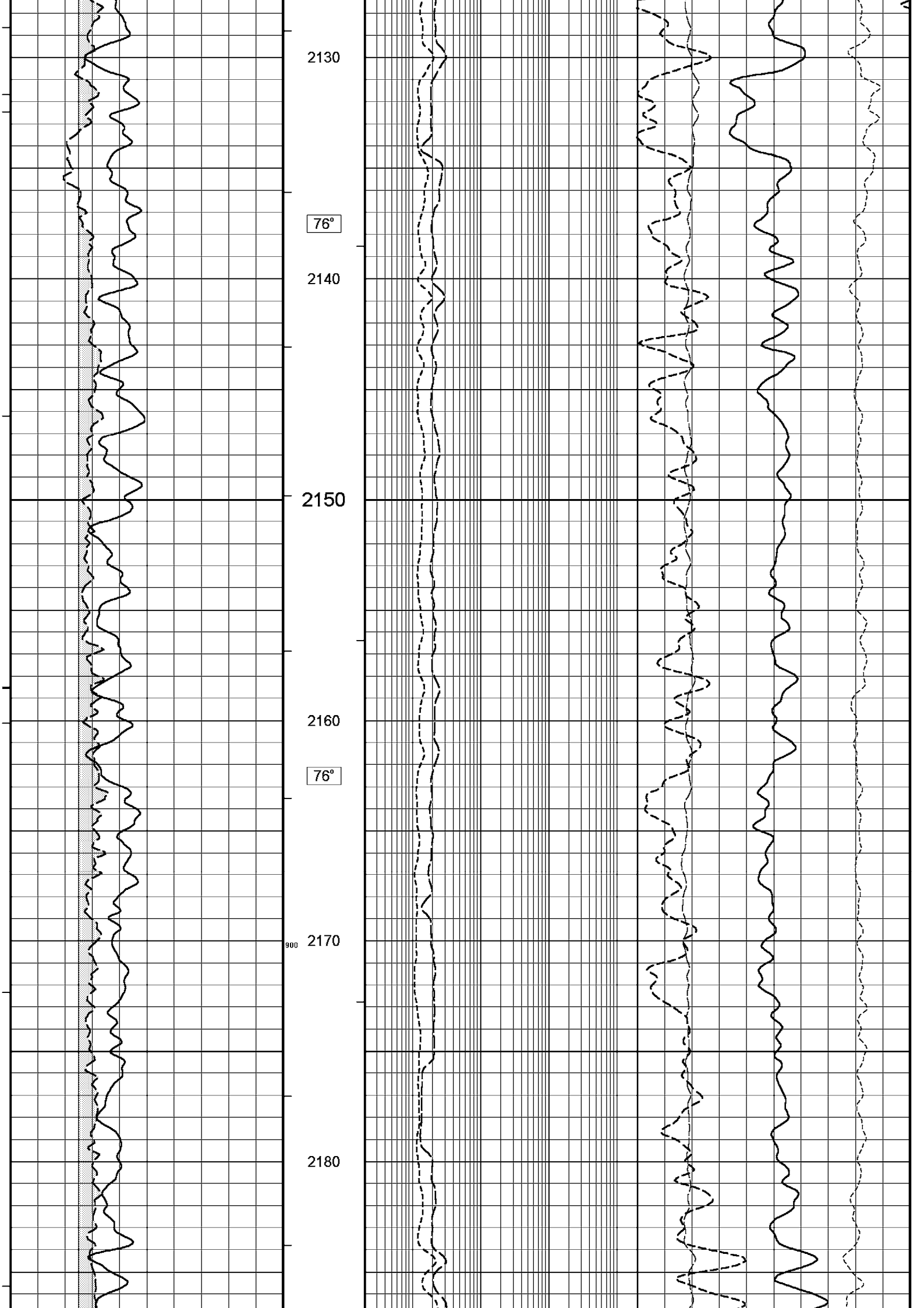
1300
1910
73°
1920
1930
73°
1940
500


1950
1960
73°
1200
1970
1980
74°
1990
2000


2010
74°
2020
2030
1100
74°
2040
2050
2060
74°


2070
2080
75°
2090
2100
1000
400
2110
75°
2120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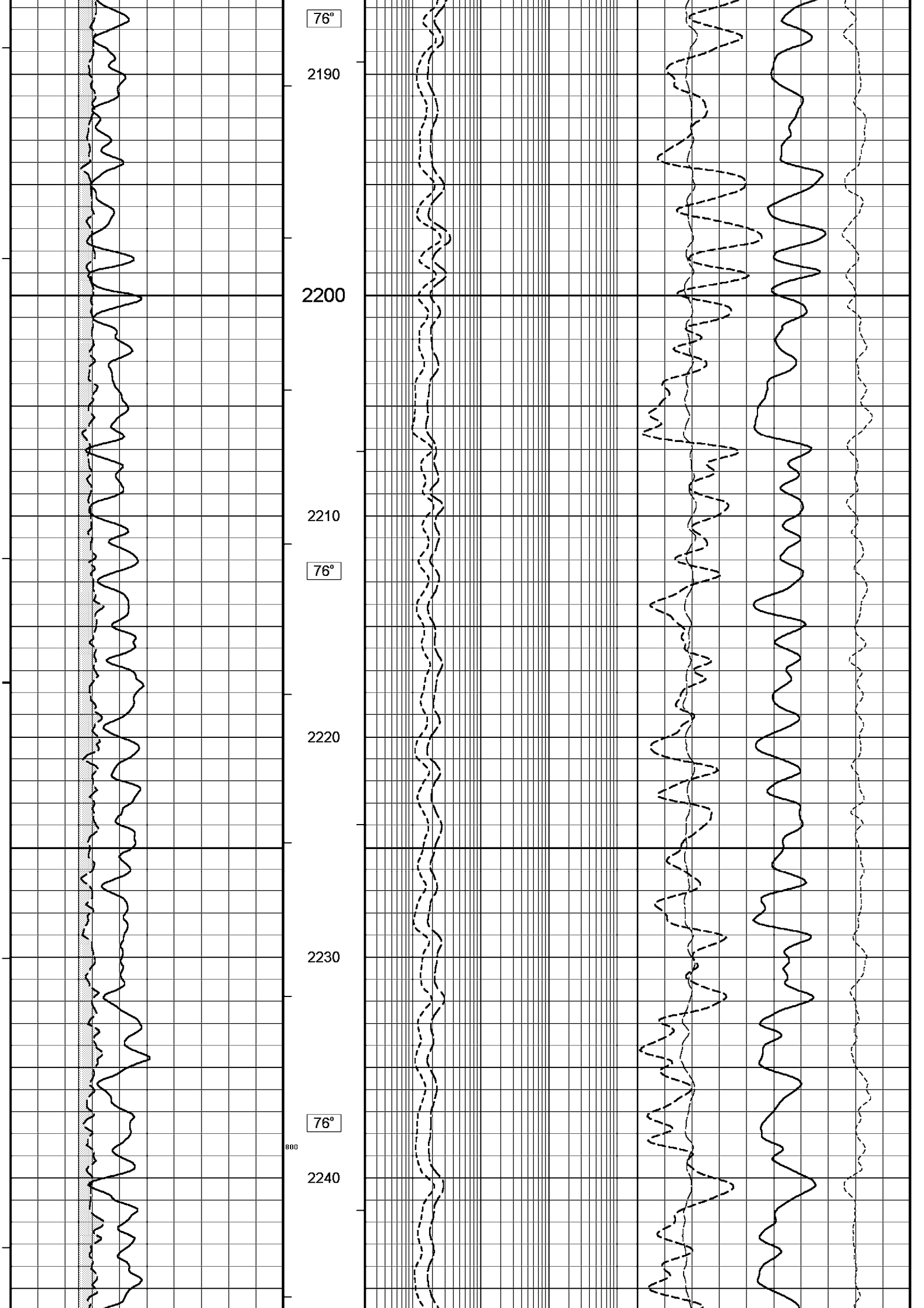
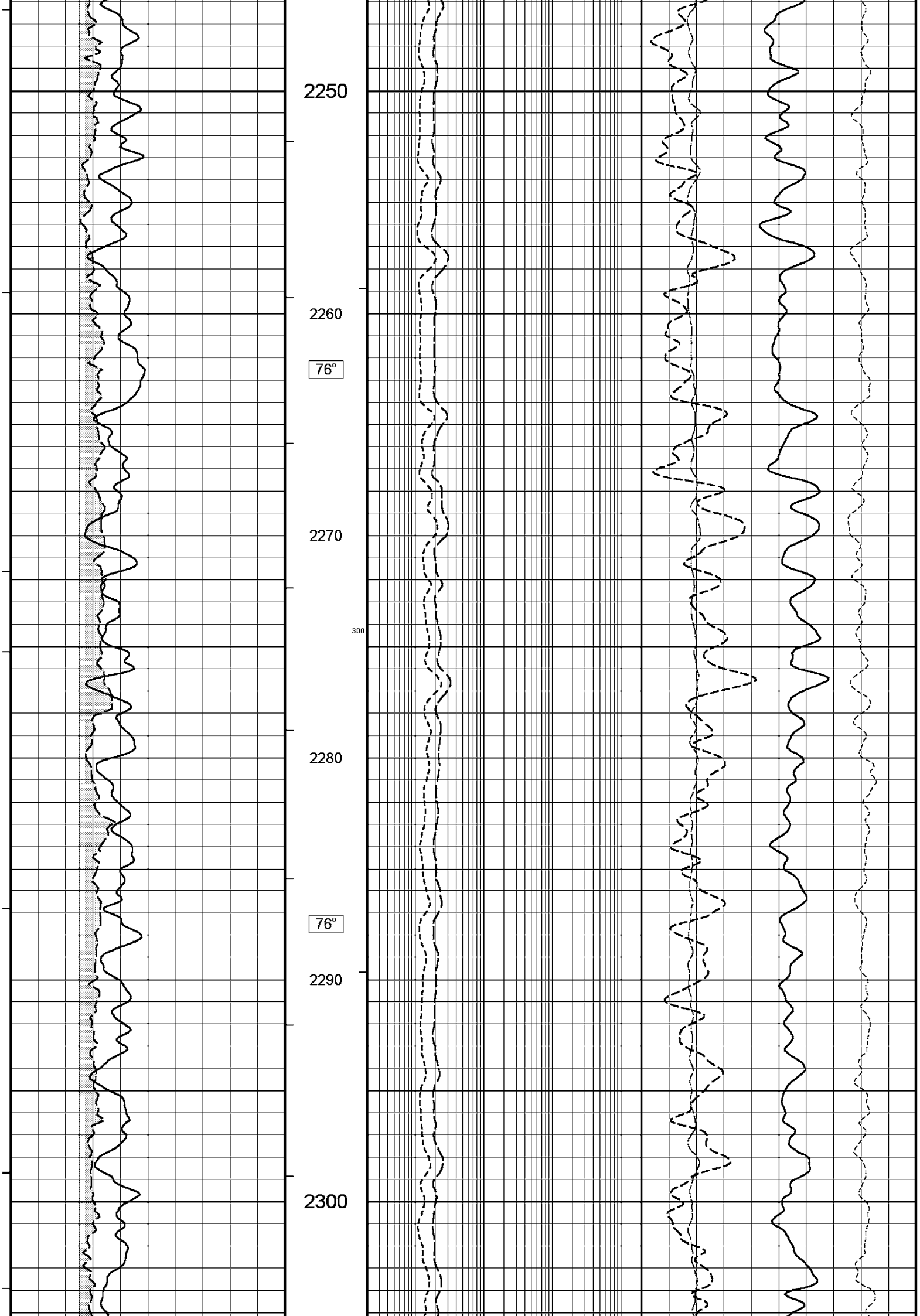
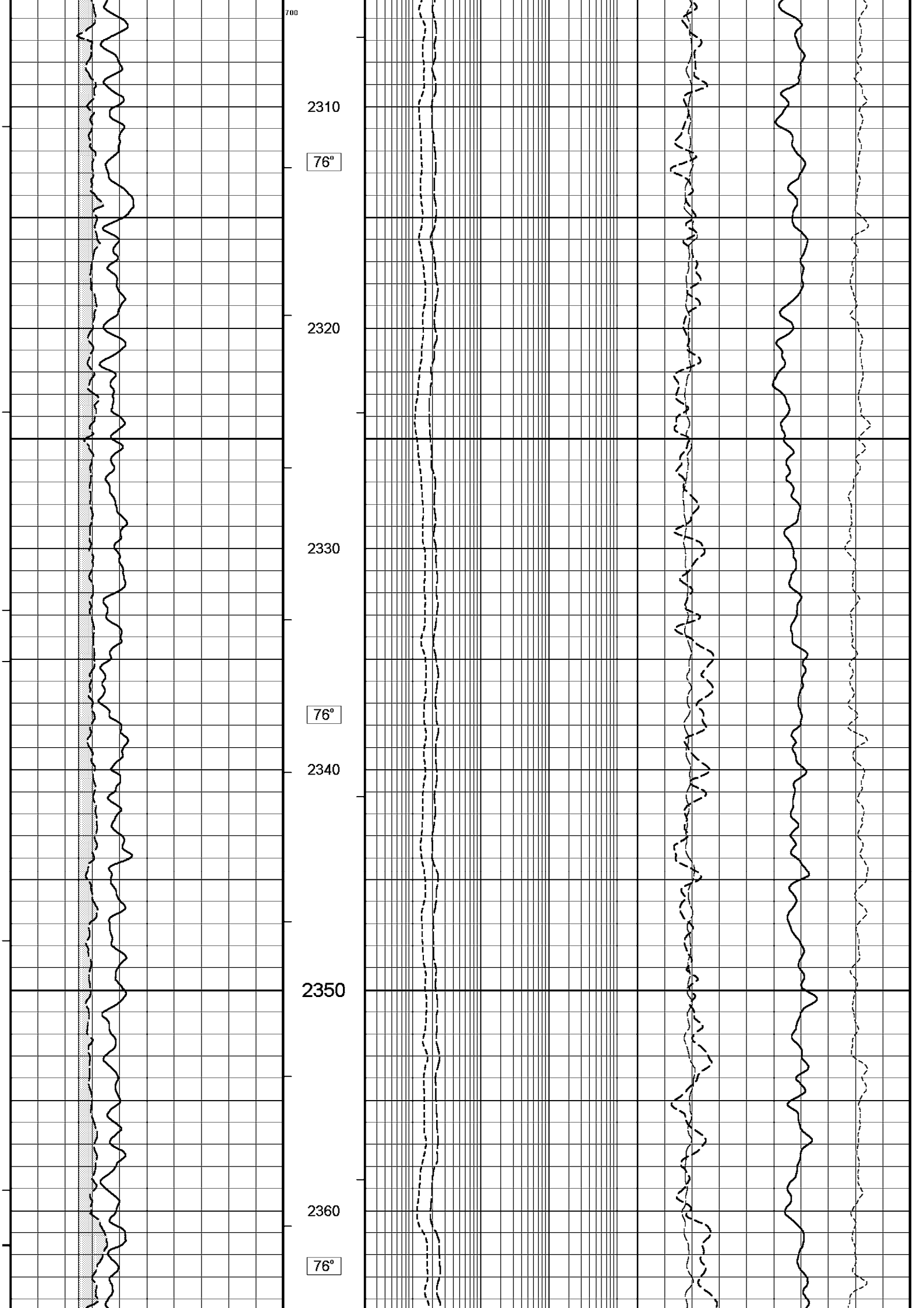
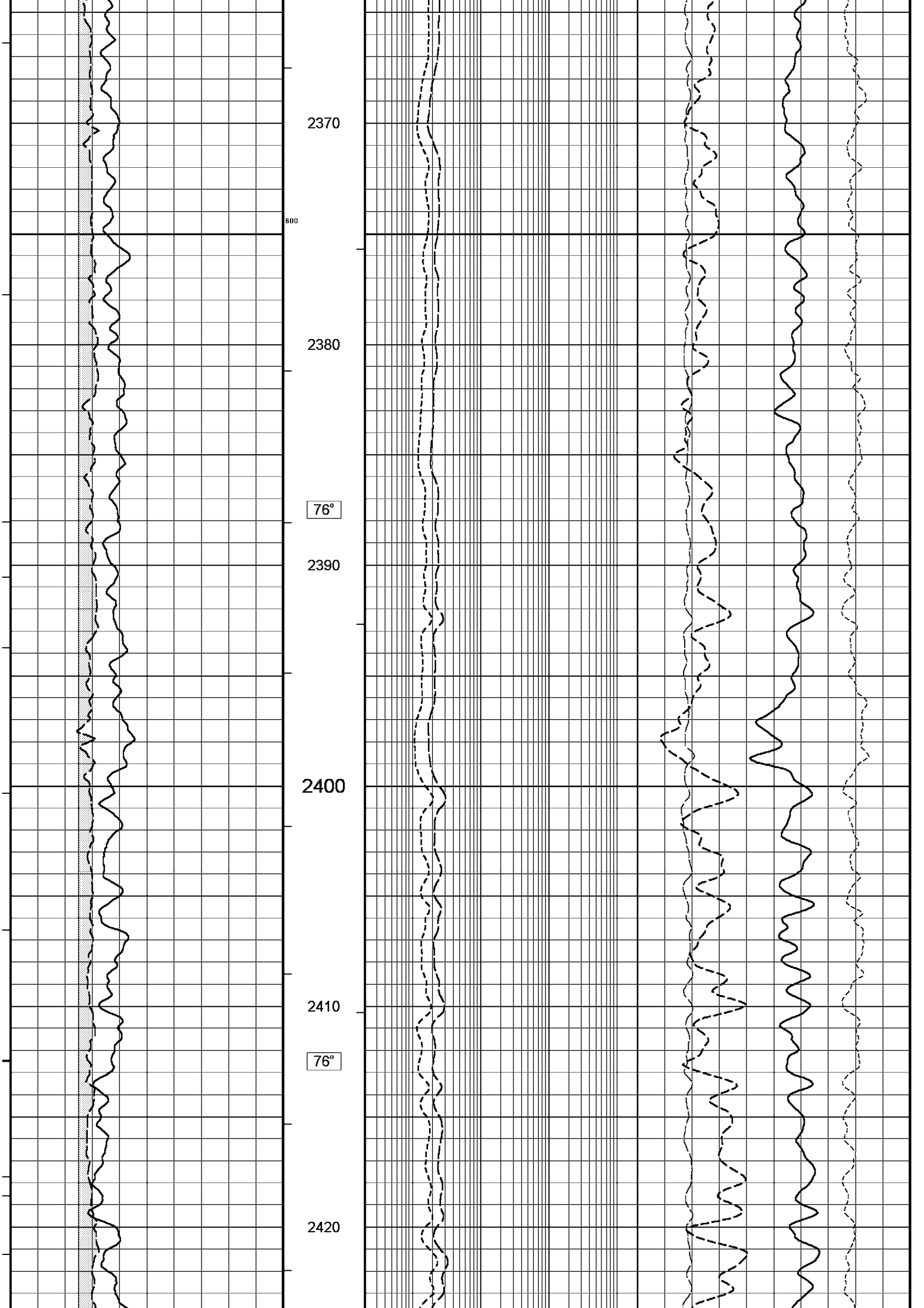
76°
2140
2150
2160
76°
900
2170
2180


76°
2190
2200
2210
76°
2220
2230
76°
800
2240


2250
2260
76°
2270
300
2280
76°
2290
2300


700
2310
76°
2320
2330
76°
2340
2350
2360
76°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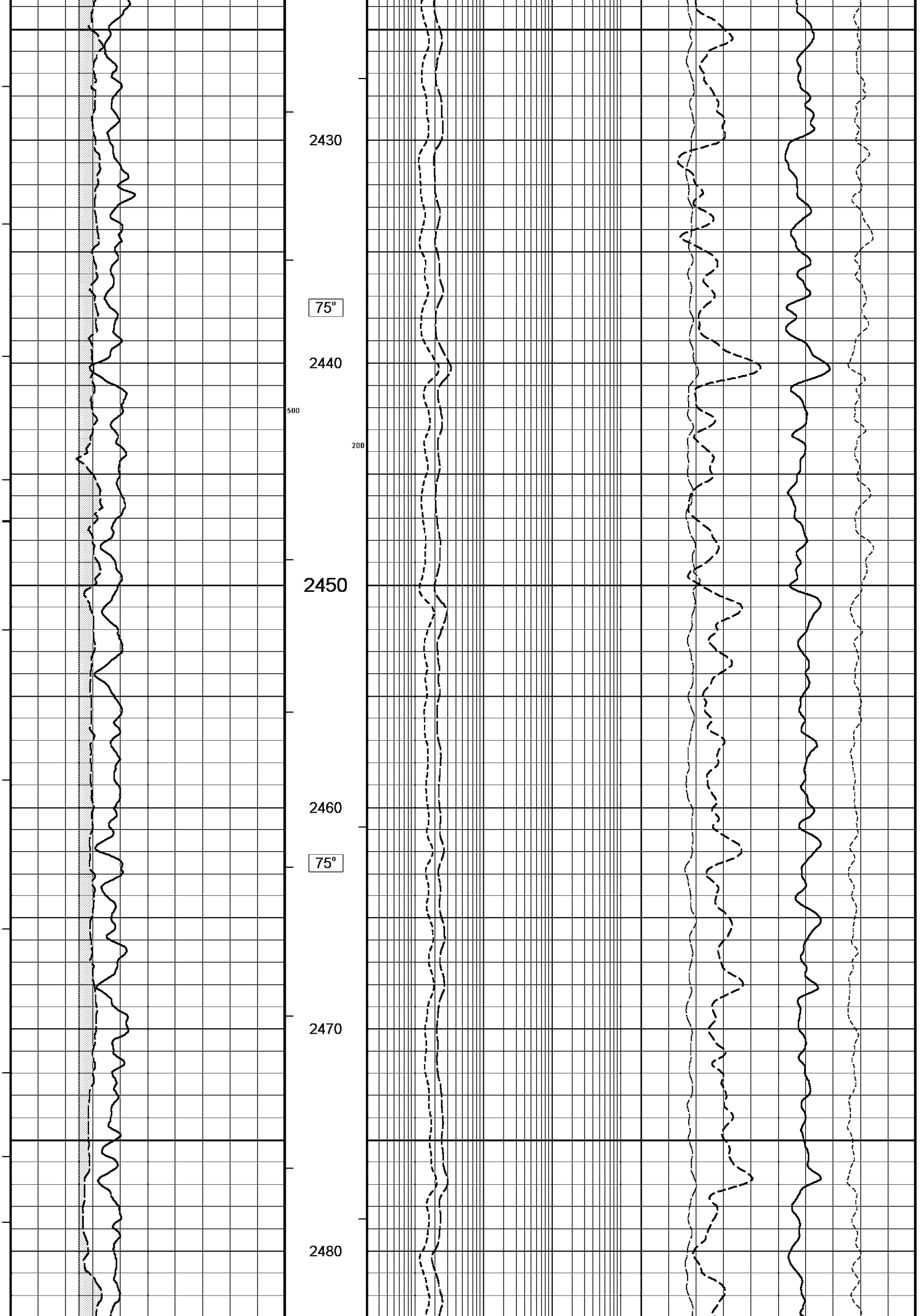
600
2380
76°
2390
2400
2410
76°
2420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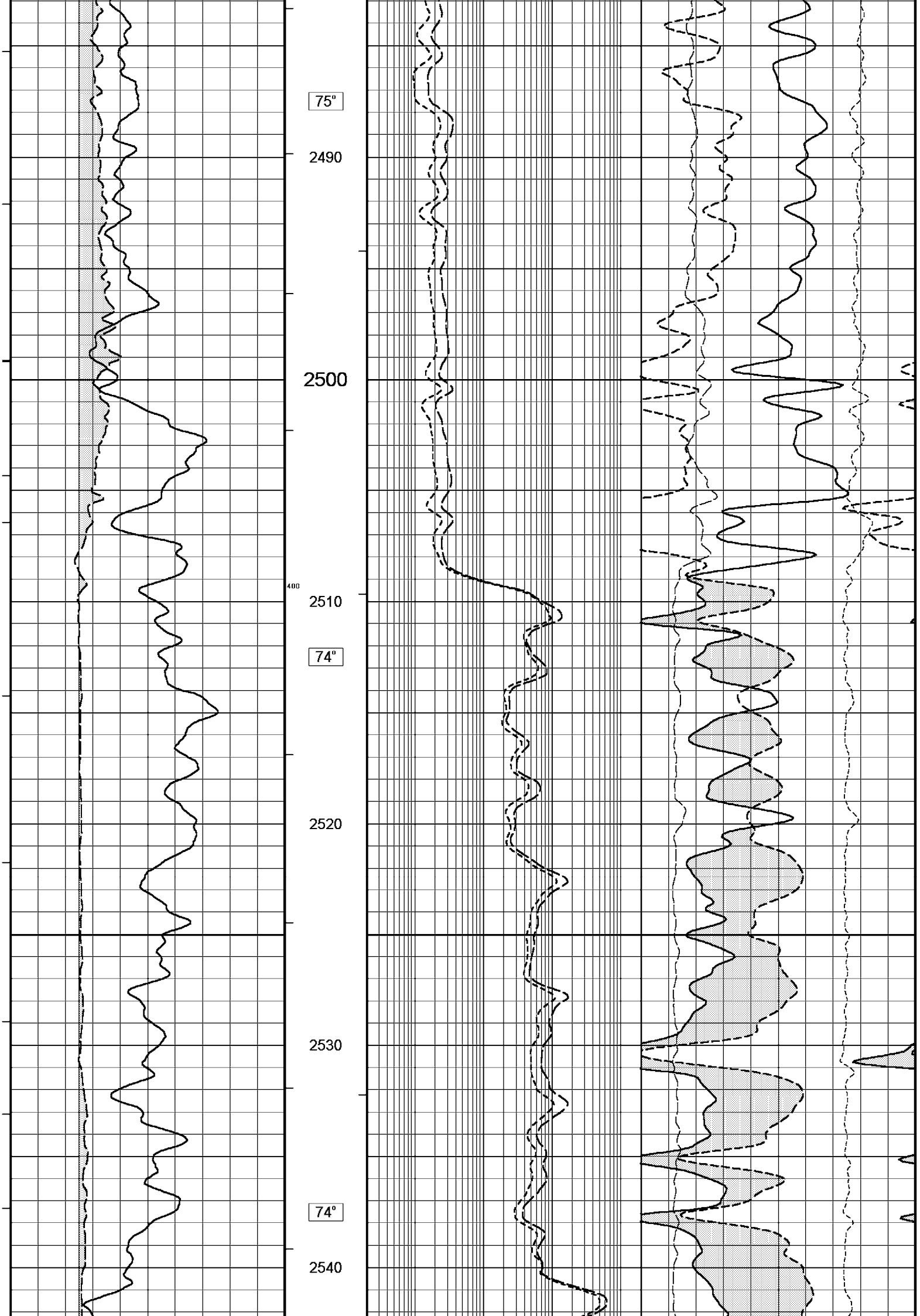
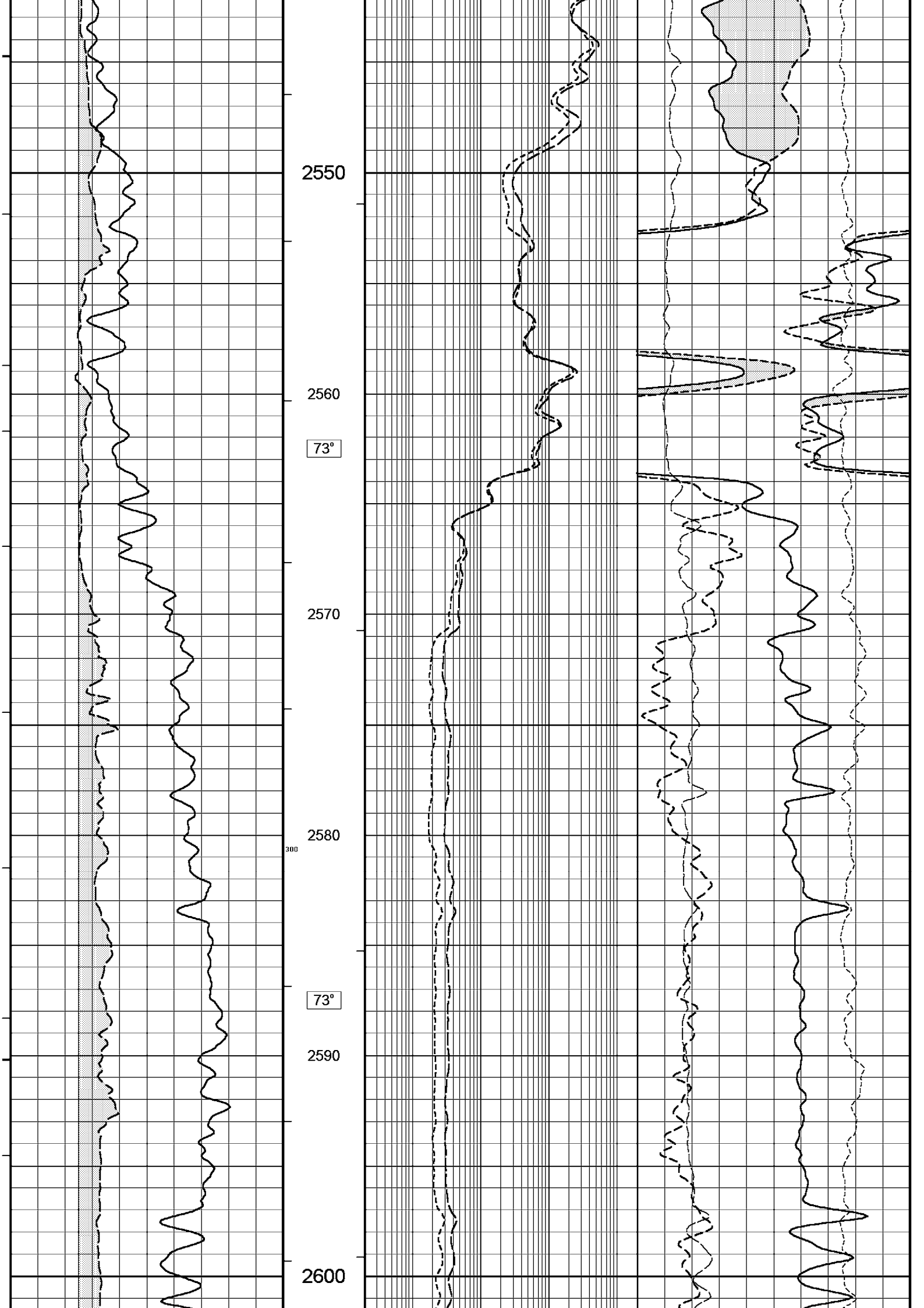
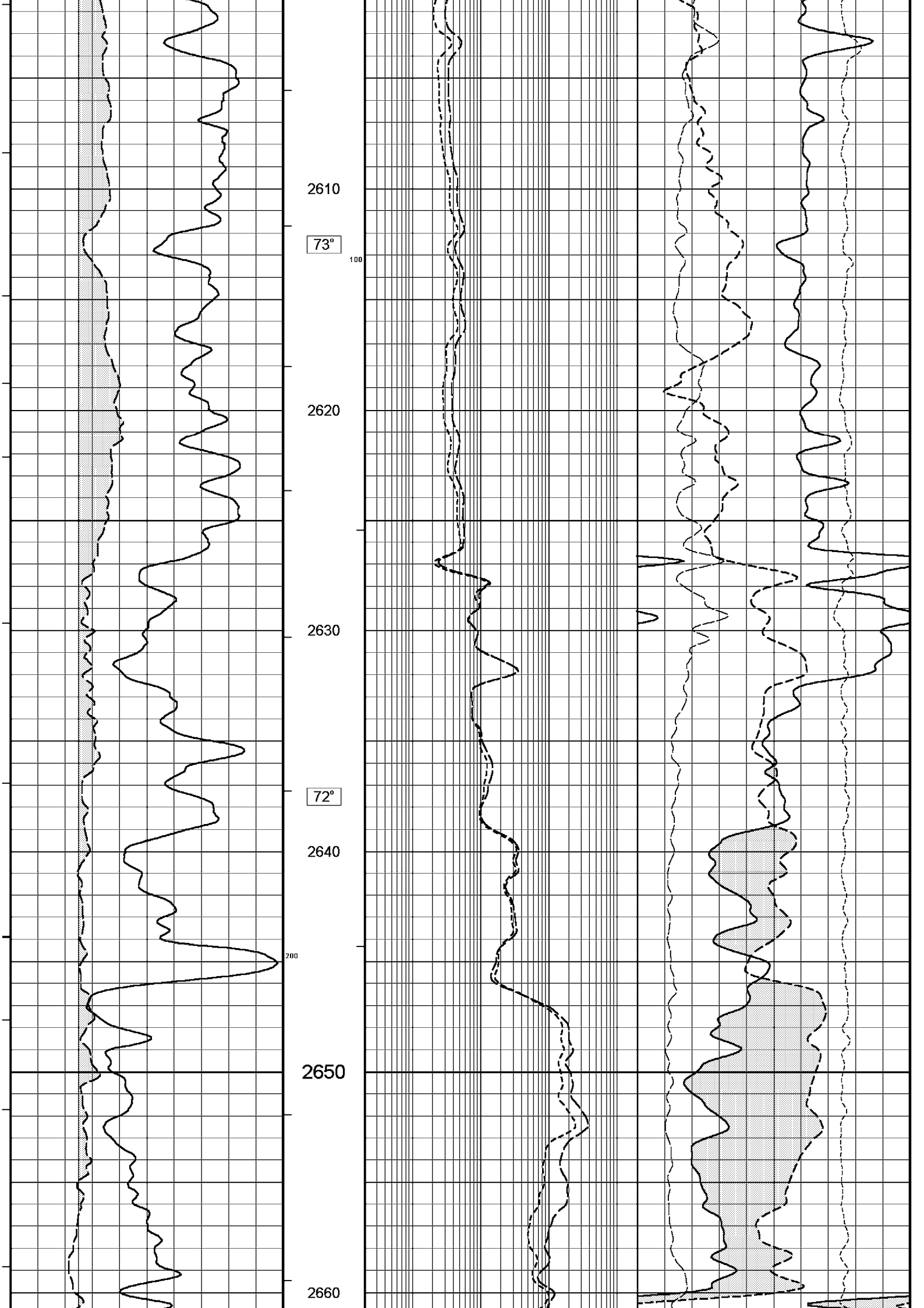
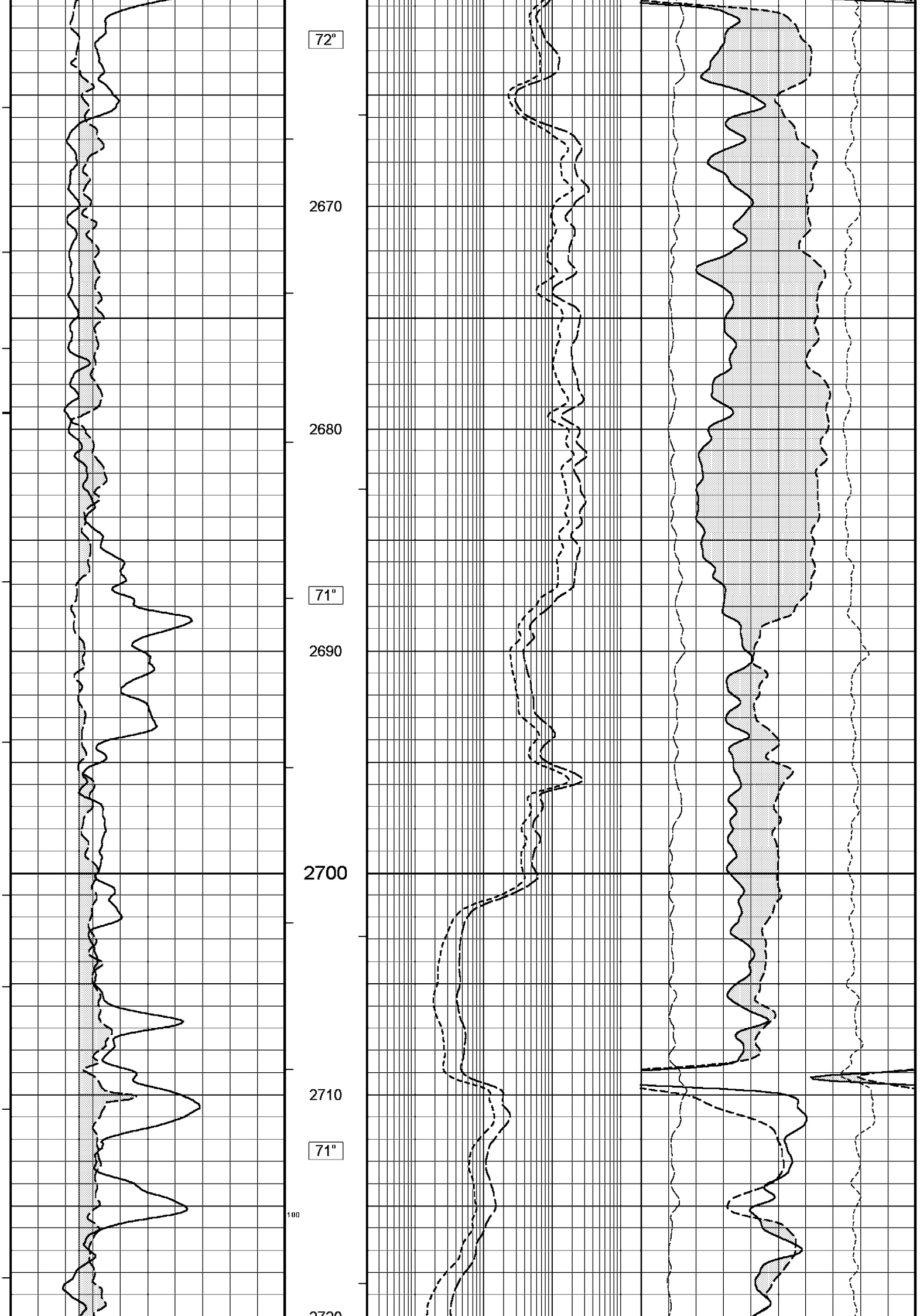
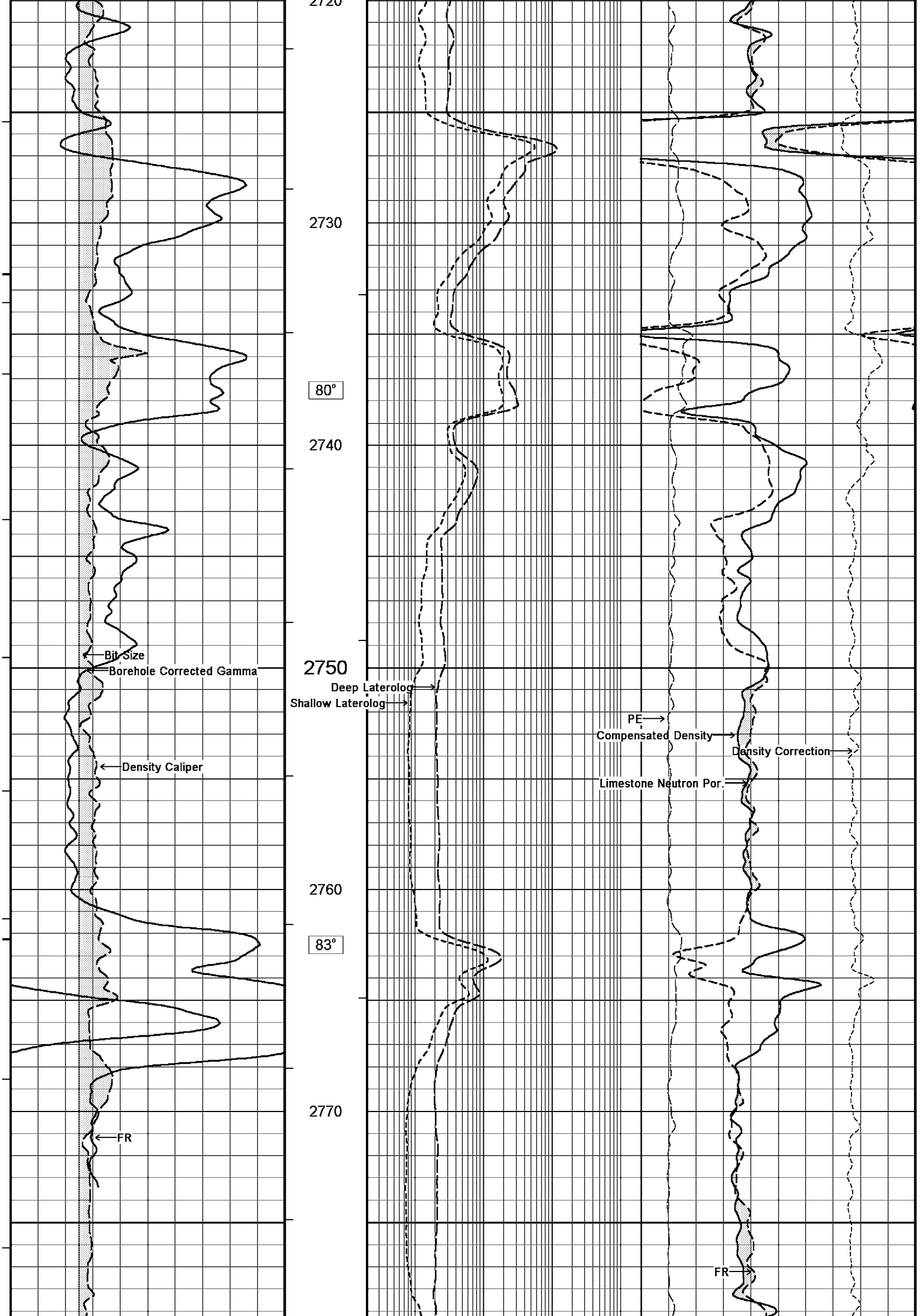
75°
2440
500
200
2450
2460
75°
2470
2480

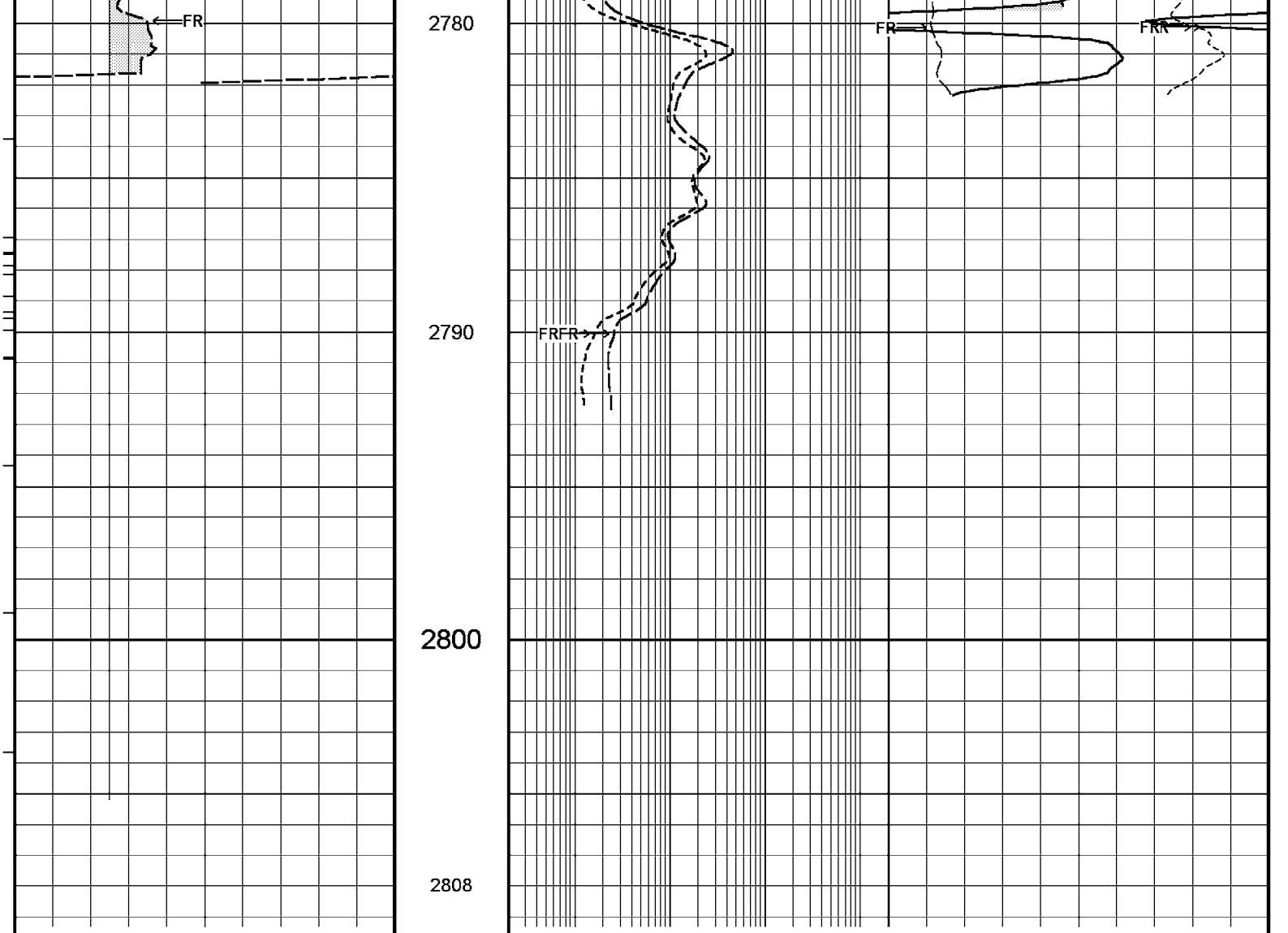

75°
2490
2500
400
2510
74°
2520
2530
74°
2540


2550
2560
73°
2570
2580
300
73°
2590
2600


2610
73°
100
2620
2630
72°
2640
200
2650
2660


72°
2670
2680
71°
2690
2700
2710
71°
100


2720
2730
80°
2740
2750
2760
83°
2770
Bit Size
Borehole Corrected Gamma
Density Caliper
FR
Deep Laterolog
Shallow Laterolog
PE
Compensated Density
Density Correction
Limestone Neutron Por.
FR



DSC in Metres

Timing Marks
every 60.0 sec

Shallow Laterolog
ohm metres
0.20 2000
1 10 100 1000

Limestone Neutron Por.
v/v
0.45 0.15 -0.15

Borehole Temp in deg C

Density Caliper
inches
6 11 16

HVI every 10 cu ft

Deep Laterolog
ohm metres
0.20 2000
1 10 100 1000

Density Correction
grams/cc
-0.75 -0.25 0.25

Annular Integral every 10 cu ft

Borehole Corrected Gamma
API
0 100 200
200 300 400

Compensated Density
grams/cc
1.85 2.35 2.85

Bit Size
inches
6 11 16

Replay Scale 1:200

PE
barns/electron
0 10 20

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 15-SEP-2005 10:54
Filename: C:\BMA_A5A\FINAL DATA\BMA_A5A_MAIN_LOG_TC.dta
Recorded on 17-JUN-2005 05:35
System Configuration Dates: Logged 17-JUN-2004: Processed 23-AUG-2004: Plotted 23-AUG-2004:

MAIN LOG 1:200

BEFORE SURVEY CALIBRATION
C:\BMA_A5A\FINAL DATA\BMA_A5A_MAIN_LOG_TC.dta

General Constants All 000

General Parameters		
Mud Resistivity	0.115	ohm-metres
Mud Resistivity Temperature	25.000	degrees C
Water Level	0.000	metres
Density/Neutron Processing	Wet Hole	
Hole/Annular Volume and Differential Caliper Parameters		
HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	Density Caliper	
Annular Volume Diameter	7.000	inches
Caliper for Differential Caliper	Density Caliper	
Rwa Parameters		
Porosity used	Base Density Porosity	
Resistivity used	Deep Induction	
RWA Constant A	0.610	
RWA Constant M	2.150	

High Resolution Temperature Calibration MCG 098

Field Calibration on 15-JUN-2005,19:09

	Measured	Calibrated(Deg C)
Lower	0.00	0.00
Upper	100.00	100.00

High Resolution Temperature Constants MCG 098

Pre-filter Length	11

Gamma Calibration MCG 098

Field Calibration on 15-JUN-2005 19:08

	Measured	Calibrated (API)
Background	12	8
Calibrator (Gross)	1353	917
Calibrator (Net)	1341	909

Gamma Constants MCG 098

Gamma Calibrator Number	060	
Mud Density	1.21	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

Neutron Calibration MDN 085

Base Calibration on 8-JUN-2005,17:33
Field Check on 15-JUN-2005 17:51

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	3147	97	3714	110
Ratio	32.530		33.764	

Field Calibrator at Base

	Calibrated (cps)	
	1655	2423
Ratio	0.683	

Field Check

	Calibrated (cps)	
	1533	2252
Ratio	0.681	

Neutron Constants MDN 085

Neutron Source Id	NSN-E-739	
Neutron Jig Number	NEC-C-052	
Epithermal Neutron	No	
Caliper Source for Processing	Density Caliper	
Stand-off	0.00	inches
Mud Density	1.21	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	MCG External Temperature	
Temperature	N/A	degrees C
Mud Salinity	58.30	kppm

Formation Fluid Salinity Source	None	
Formation Fluid Salinity	N/A	kppm
Barite Mud Correction	Not Applied	

Caliper Calibration MPD 083

Base Calibration on 8-JUN-2005,17:33
Field Calibration on 15-JUN-2005 17:39

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	13504	4.01
2	21630	5.99
3	30082	7.98
4	38559	9.94
5	48000	12.01
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
8.00	7.99

Photo Density Calibration MPD 083

Base Calibration on 8-JUN-2005,17:32
Field Check on 15-JUN-2005 17:38

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	54308	18863	53111	19310
Reference 2	25580	2509	24951	2530

Field Check at Base

960.0	1111.9

Field Check

951.7	1109.8

PE Calibration

Base Calibration	Measured			Calibrated
	WS	WH	Ratio	Ratio
Background	181	824		
Reference 1	17282	54115	0.321	0.320
Reference 2	6883	25434	0.272	0.273

Field Check at Base

181.5	823.9

Field Check

180.9	819.0

Density Constants MPD 083

Density Source Id	242	
Nylon Calibrator Number	536	
Aluminium/Fe Calibrator Number	536	
Density Shoe Profile	4 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.21	gm/cc
Mud Density Z/A Correction	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

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

Laterolog Calibration MLE 016

Base Calibration on 9-JUN-2005,19:41
Field Check on 15-JUN-2005,19:44

Base Calibration

Channel	Measured		Calibrated (ohm-m)	
	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Shallow	0.7	999.9	10.0	1001.0

Shallow	9.7	960.9	13.2	1321.0
Deep	9.7	985.3	7.5	755.0
Groningen	9.7	966.7	8.5	854.0

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Shallow	49.4	49.4
Deep	27.7	27.7
Groningen	254.2	254.2

Laterolog Constants MLE 016

Squasher Start	40000	ohm-m
Shallow Laterolog K Factor	1.3210	
Deep Laterolog K Factor	0.7550	
Groningen Laterolog K Factor	0.8540	
Interference Rejection	50 Hz	
SP Connection	SP Bridle Electrode	
Groningen Connection	Groningen Electrode	

DOWNHOLE EQUIPMENT

C:\BMA_A5A\FINAL DATA\BMA_A5A_MAIN_LOG_TC.dta

Compact Swivel Head Adaptor F
SHA 71 Length: 0.83 m Weight: 26.5 lb

Compact Knuckle Joint
SKJ 100 Length: 0.66 m Weight: 24.3 lb

Compact Battery Sub.
MBS 99 Length: 4.41 m Weight: 90.4 lb

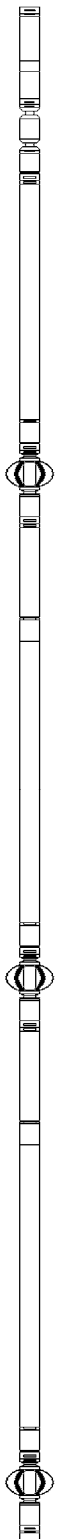
Compact Inline Standoff B
MIS 73 Length: 0.65 m Weight: 15.4 lb

Compact Stiff Bridle Electrode Sub.
MBE 18 Length: 3.76 m Weight: 94.8 lb

Compact Inline Standoff B
MIS 139 Length: 0.65 m Weight: 15.4 lb

Compact Stiff Bridle Electrode Sub.
MBE 19 Length: 3.76 m Weight: 94.8 lb

Compact Inline Standoff B
MIS 136 Length: 0.65 m Weight: 15.4 lb



MBE 21 - THIRD BRIDLE
MLK 111 Length: 3.76 m Weight: 30.9 lb

Compact Gamma
MCG 98 Length: 2.65 m Weight: 63.9 lb

32.22 m GGCE - Borehole Corrected Gamma
31.33 m CGXT - MCG External Temperature

Compact Memory Sub A.C
MMS 38 Length: 0.95 m Weight: 22.0 lb

Compact Knuckle Joint
SKJ 46 Length: 0.66 m Weight: 24.3 lb

Compact Swivel Head Adaptor F
SHA 64 Length: 0.83 m Weight: 26.5 lb

Compact Inline Bowspring A
MIS 94 Length: 1.74 m Weight: 33.1 lb

Compact Neutron
MDN 85 Length: 1.53 m Weight: 50.7 lb

26.17 m NPRL - Limestone Neutron Por.

Compact Density/Caliper
MPD 83 Length: 2.92 m Weight: 90.4 lb

23.48 m AVOL - Annular Volume
23.48 m HVOL - Hole Volume
23.48 m CLDC - Density Caliper
23.27 m DEN - Compensated Density

Compact Inline Bowspring A
MIS 24 Length: 1.74 m Weight: 33.1 lb

23.27 m DCOR - Density Correction
23.25 m PDPE - PE

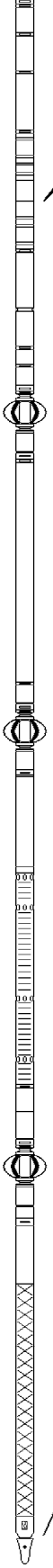
Compact Swivel Head Adaptor
SHA 28 Length: 0.83 m Weight: 26.5 lb

Compact Knuckle Joint
SKJ 110 Length: 0.66 m Weight: 24.3 lb

Compact Inline Standoff B
MIS 140 Length: 0.65 m Weight: 15.4 lb

Compact Upper Guard Sub.
MUG 20 Length: 2.74 m Weight: 68.3 lb

Compact Inline Standoff B
MIS 129 Length: 0.65 m Weight: 15.4 lb



Compact Laterolog Electrode Sub.
MLE 16 Length: 3.76 m Weight: 92.6 lb

13.35 m DSLL - Shallow Laterolog
13.35 m DDLL - Deep Laterolog

Compact Inline Standoff B
MIS 127 Length: 0.65 m Weight: 15.4 lb

Compact Lower Guard Sub.
MLG 7 Length: 2.44 m Weight: 55.1 lb

Compact Inline Standoff B
MIS 133 Length: 0.65 m Weight: 15.4 lb

Compact Sonic
MSS 66 Length: 3.82 m Weight: 72.8 lb

Compact Inline Standoff B
MIS 128 Length: 0.65 m Weight: 15.4 lb

Compact Induction
MAI 39 Length: 3.29 m Weight: 48.5 lb

Tool Zero (0.44m from bottom)

Induction Standoff
HFS 4 Length: 0.40 m Weight: 6.6 lb

All measurements relative to tool zero.

Total Length: 53.36 m Weight: 1223.6 lb

COMPANY	ESSO AUSTRLIA PTY LTD
WELL	BREAM A5A
FIELD	BREAM
PROVINCE/COUNTY	BASS STRAIT
COUNTRY/STATE	AUSTRALIA

Elevation Kelly Bushing		metres	First Reading	2790.10	metres
Elevation Drill Floor	32.82	metres	Depth Driller	2810.00	metres
Elevation Ground Level	-59.40	metres	Depth Logger	2803.90	metres

PRECISION

DUAL LATEROLOG - GR

PRECISION ENERGY SERVICES

Compact

DENSITY - NEUTRON

1:200 MD