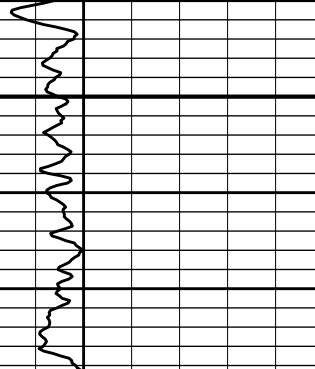
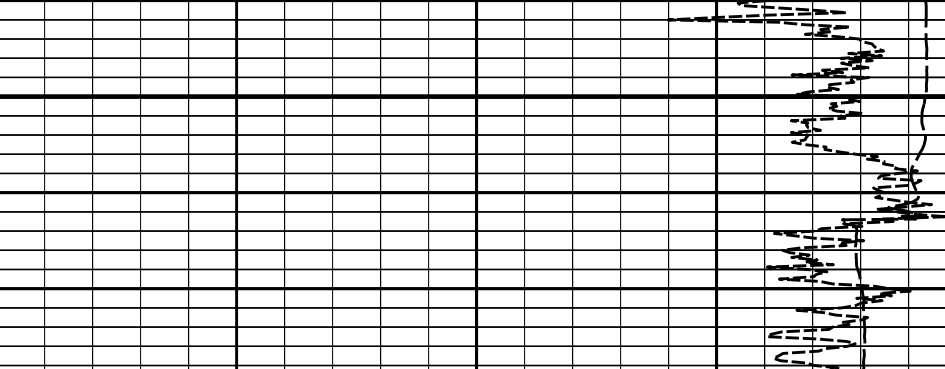
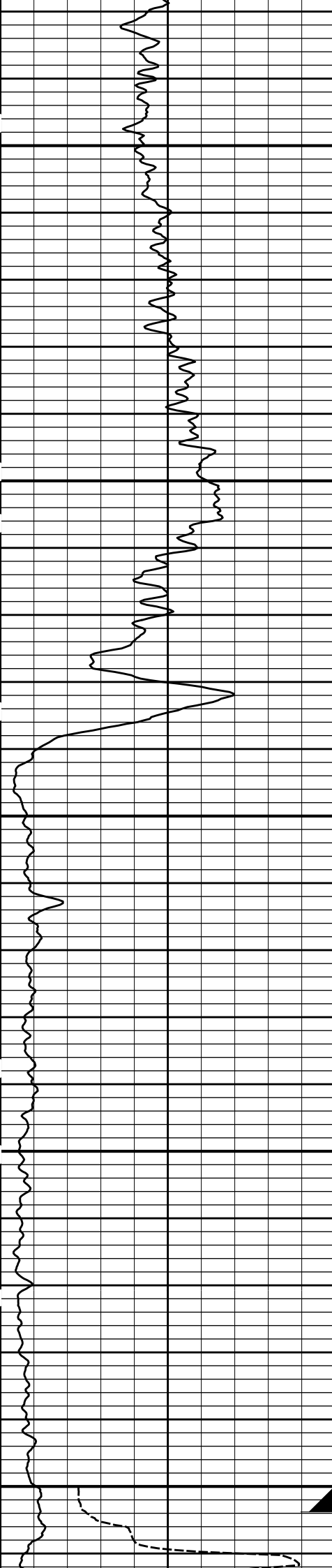


HALLIBURTON				SPECTRAL DENSITY DUAL SPACED NEUTRON LOG			
COMPANY		SHELBY RESOURCES LLC		COMPANY		SHELBY RESOURCES LLC	
WELL		BRUBAKER 1-17H		WELL		BRUBAKER 1-17H	
FIELD/BLOCK		WILDCAT		FIELD/BLOCK		WILDCAT	
COUNTY		PRATT		COUNTY		PRATT	
STATE		KANSAS		STATE		KANSAS	
Permanent Datum Log measured from Drilling measured from	GL	API No. 15-151-22474-01-00 Location (SHL) 1800' FSL & 299' FEL SE NW NE SE		Other Services: GTET DSNT SDLT ACRT			
	Elev. 1888.0 ft						
	KB						
	KB						
	KB						
Date	13-Aug-18						
Run No.	ONE						
Depth - Driller	10799.0 ft						
Depth - Logger	10779.0 ft						
Bottom - Logged Interval	10751.0 ft						
Top - Logged Interval	4590.0 ft						
Casing - Driller	7.000 in	@ 4861.0 ft				@	
Casing - Logger	4854.0 ft						
Bit Size	6.125 in					@	
Type Fluid in Hole	Water Based Mud						
Density	8.8 ppg	33.00	s/qt				
PH	8.50 pH	16.8	cpm				
Source of Sample	MUDPIT						
Rm @ Meas. Temperature	2.08 ohmm	@ 75.00 degF				@	
Rmf @ Meas. Temperature	1.66 ohmm	@ 75.00 degF				@	
Rmc @ Meas. Temperature	2.50 ohmm	@ 75.00 degF				@	
Source Rmf	MEAS	MEAS					
Rm @ BHT	1.06 ohmm	@ 154.0 degF				@	
Time Since Circulation	37.14 hr						
Time on Bottom	15-Aug-18 02:36						
Max. Rec. Temperature	154.00 degF	@ 10779.0 ft				@	
Equipment	12147634	EL RENO, OK					
Recorded By	SEAN WOLTEMATH	RICK WHITLOCK					
Witnessed By	JASON GOSS	KENT BLAYLOCK					

Service Ticket No.: 904936929						API No.: 15-151-22474-01-00						PGM Version: WL INSITE R5.6.0 (Build 2)													
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE												RESISTIVITY SCALE CHANGES													
Date		Sample No.										Type Log		Depth		Scale Up Hole				Scale Down Hole					
Depth-Driller																									
Type Fluid in Hole																									
Density		Viscosity																							
Ph		Fluid Loss																							
Source of Sample												RESISTIVITY EQUIPMENT DATA													
Rm @ Meas. Temp				@				@				Run No.		Tool Type & No.		Pad Type		Tool Pos.		Other					
Rmf @ Meas. Temp.				@				@				ONE		ACRT		N/A		ECEN		N/A					
Rmc @ Meas. Temp.				@				@						I-11026095											
Source Rmf		Rmc										S-11005908													
Rm @ BHT				@				@																	
Rmf @ BHT				@				@																	
Rmc @ BHT				@				@																	
EQUIPMENT DATA																									
GAMMA						ACOUSTIC						DENSITY						NEUTRON							
Run No.		ONE				Run No.						Run No.		ONE				Run No.		ONE					
Serial No.		10971172				Serial No.						Serial No.		10865873				Serial No.		11020487					
Model No.		GTET				Model No.						Model No.		SDLT				Model No.		DSNT					
Diameter		3.625"				No. of Cent.						Diameter		5.5"				Diameter		3.625"					
Detector Model No.		GTET				Spacing						Log Type		GAM-GAM				Log Type		NEU-NEU					
Type		SCINT										Source Type		Cs-137				Source Type		Am241Be					
Length		8"				LSA [Y/N]						Serial No.		5471GW				Serial No.		DSN-424					
Distance to Source		10'				FWDA [Y/N]						Strength		1.78 Ci				Strength		15.0 Ci					
LOGGING DATA																									
GENERAL						GAMMA				ACOUSTIC				DENSITY						NEUTRON					
Run		Depth		Speed		Scale		Scale		Matrix		Scale		Matrix		Scale		Matrix							
No.		From		To		ft/min		L				R				L				R		L		R	
ONE		TD		CSG		REC		0		150				30		10		2.71 g/cc		30		10		TIME	

[illegible]

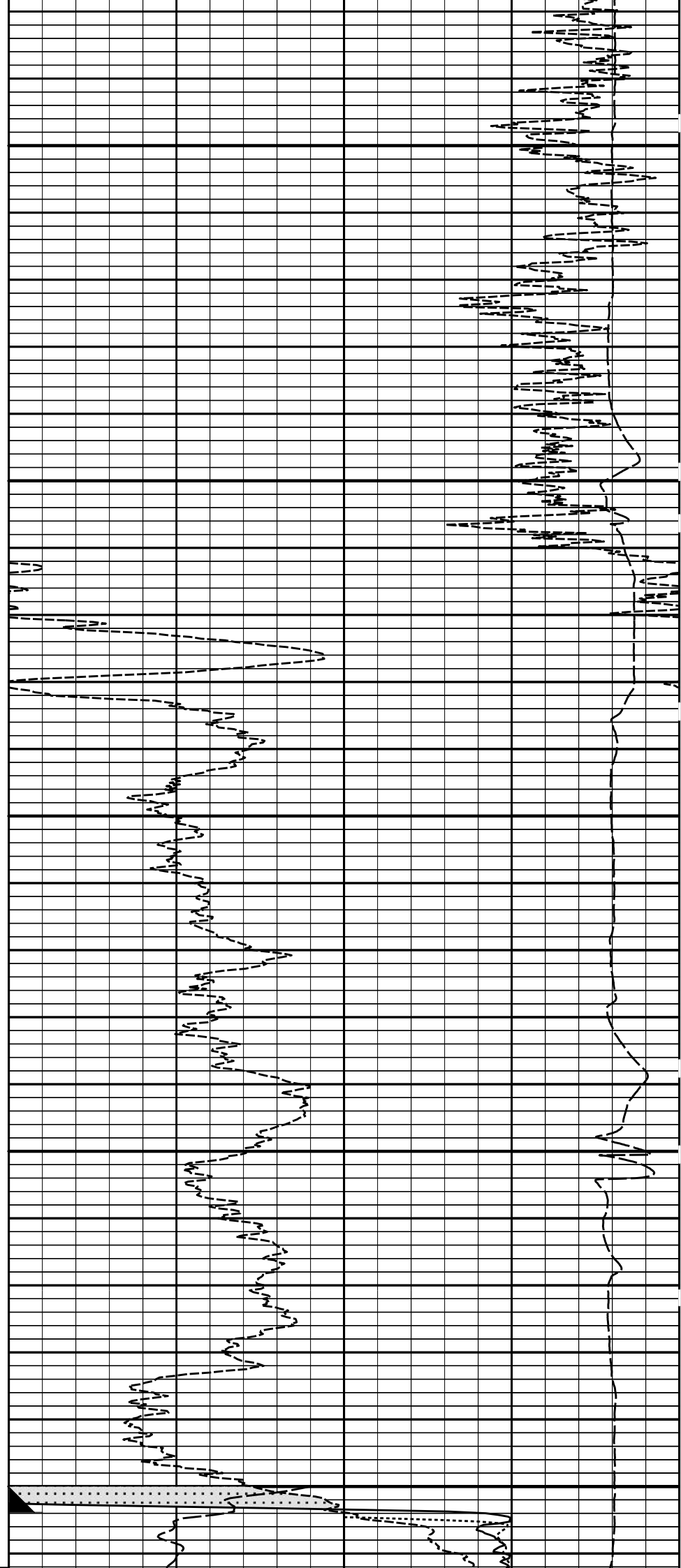
HALLIBURTON	Plot Time: 15-Aug-18 16:32:41 Plot Range: 4590 ft to 10779.3 ft Data: BRUBAKER_1-17H\Well Based\MAIN_TD-4590\ Plot File: \\PORO\Porosity_IQ_5_MAIN_LIB					
5 INCH MAIN LOG						
MEASURED DEPTH MAIN SECTION 5" PER 100'						
		CROSSOVER				
		Neutron Porosity -10%				
		%				
		DensityPorosity -10%				
		%				
SHALE		BHVT				
Gamma API 150		AHVT	Tension 0			
api			pounds			
Caliper 14		MD 1 : 240 ft	DensityCorr 0.25			
inches			gram per cc			
		4600				

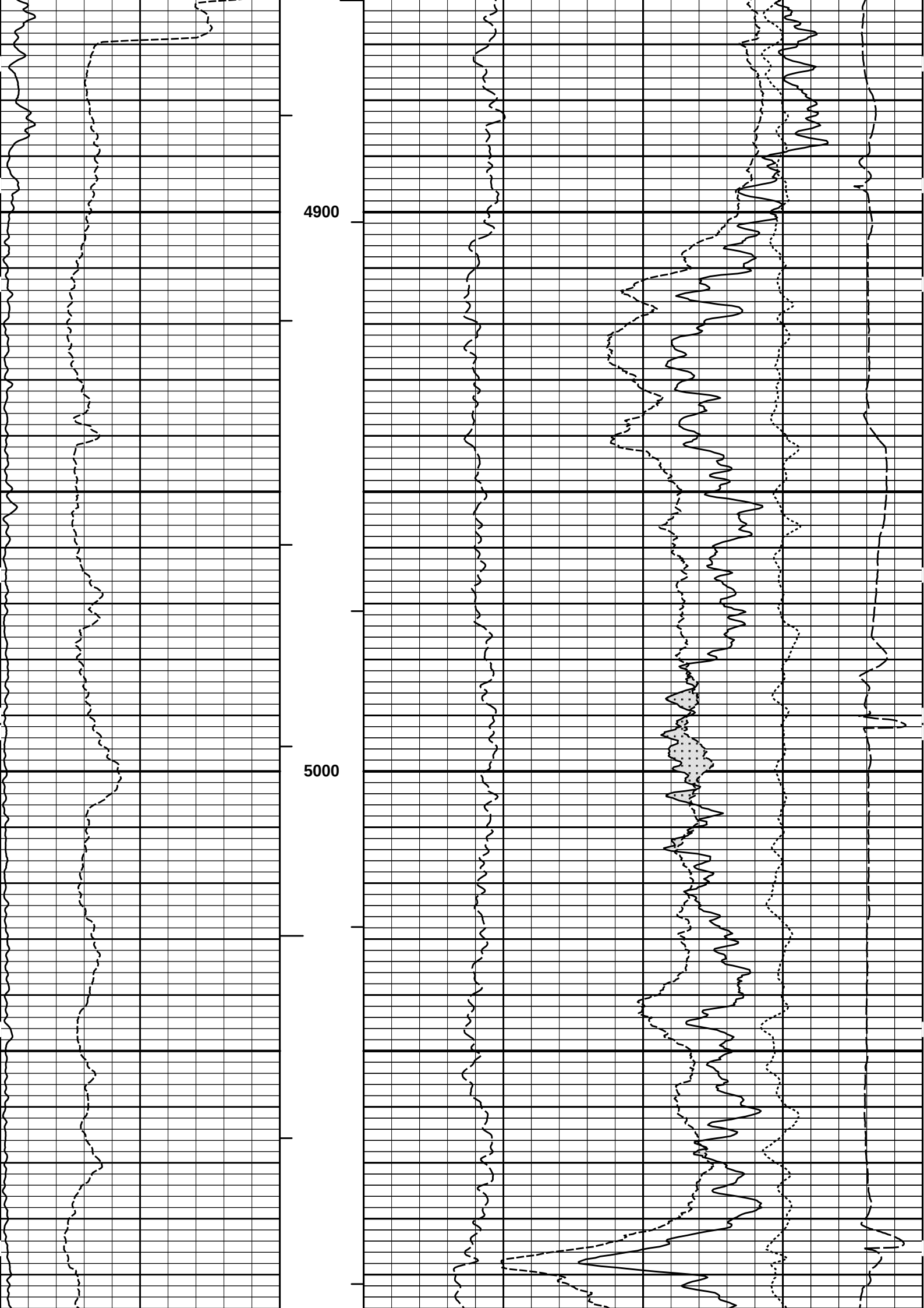


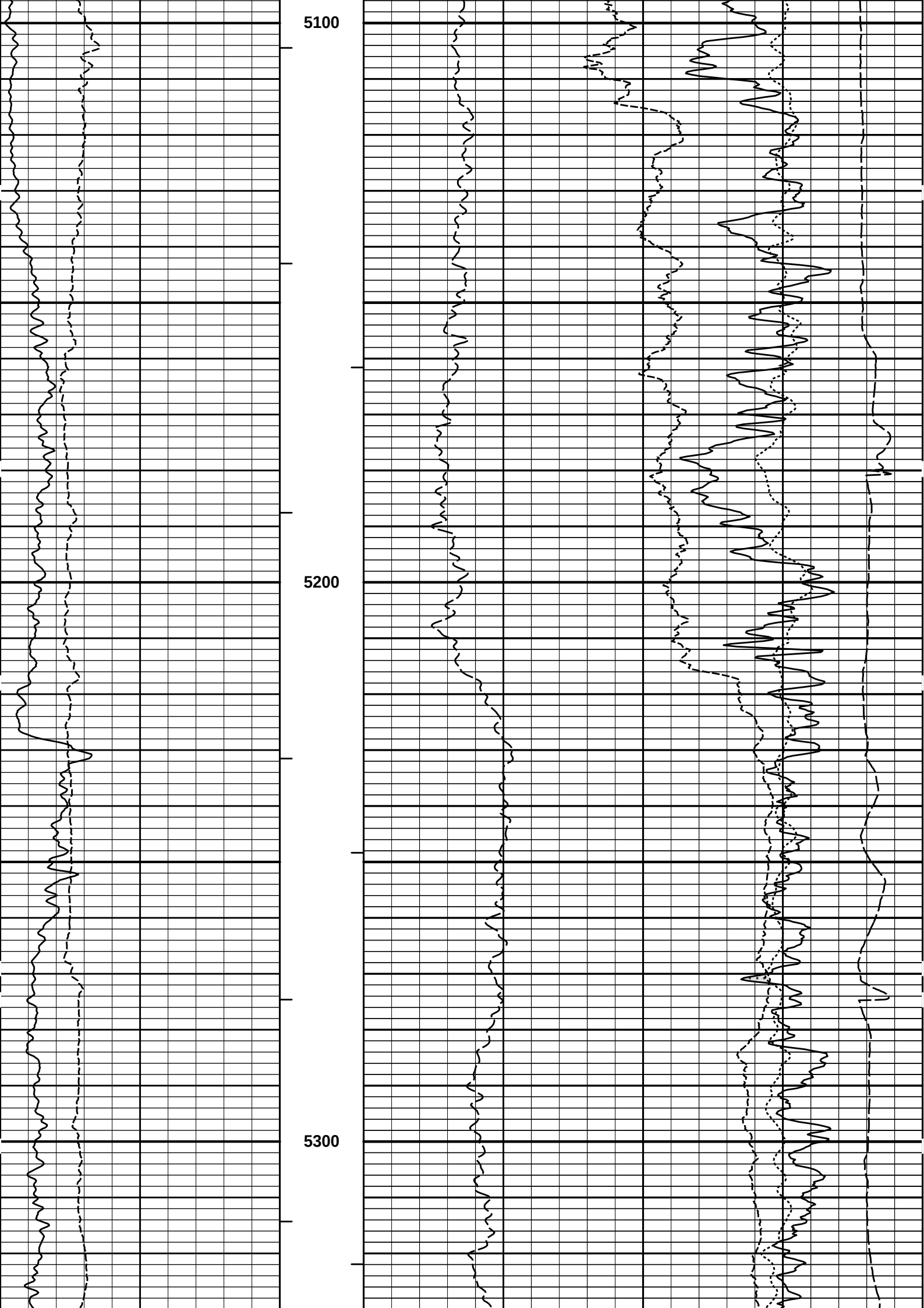
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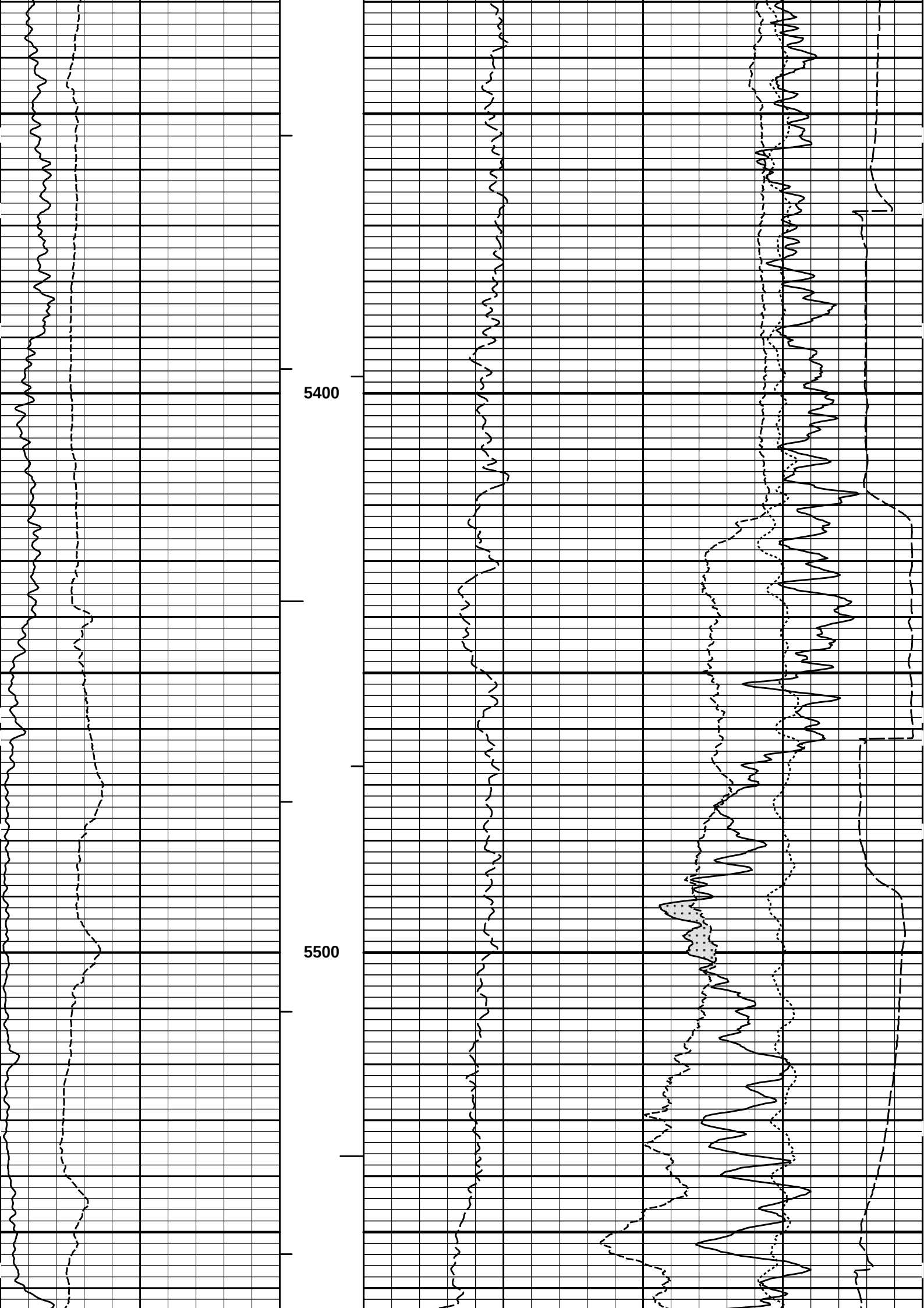
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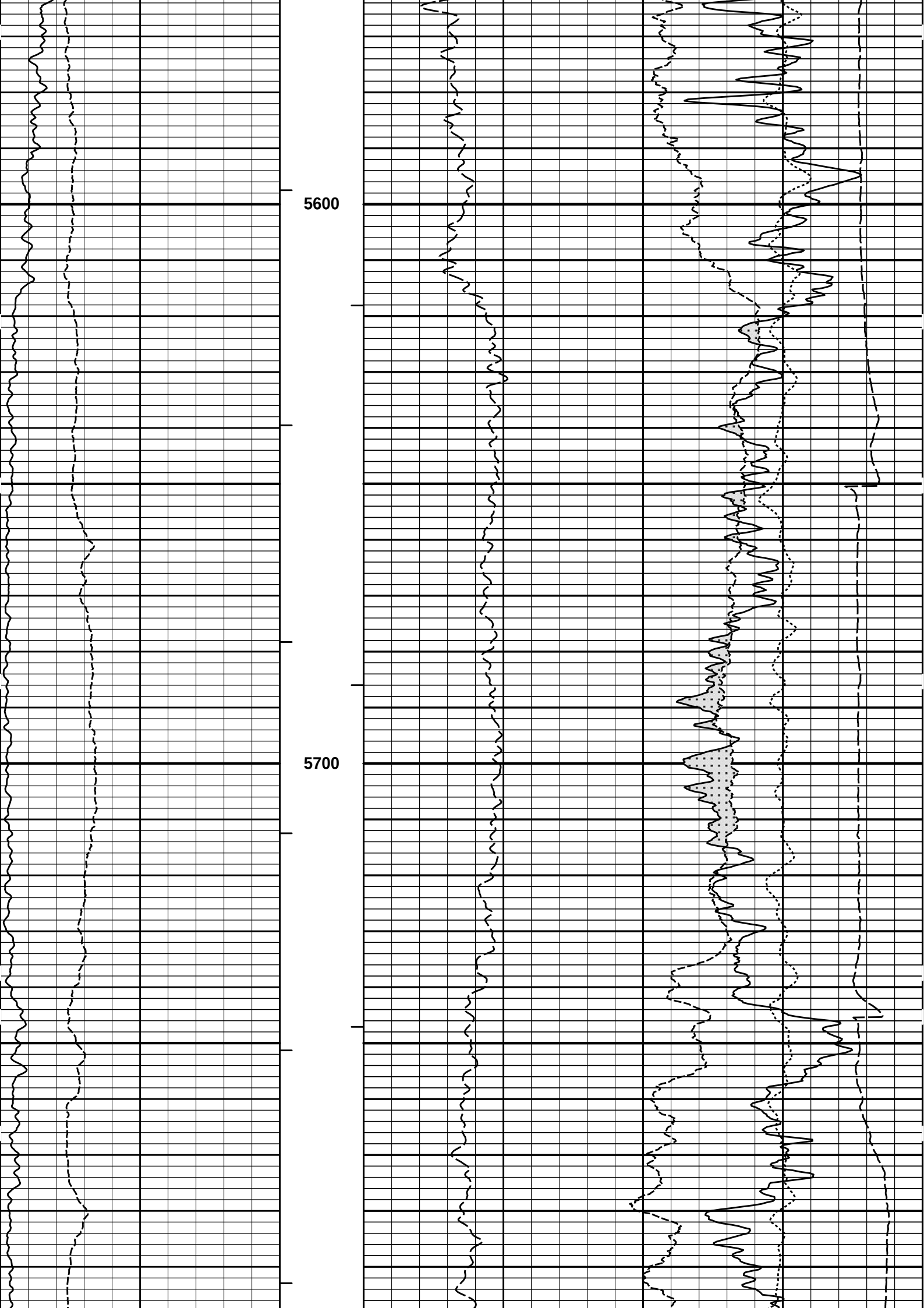
CSG

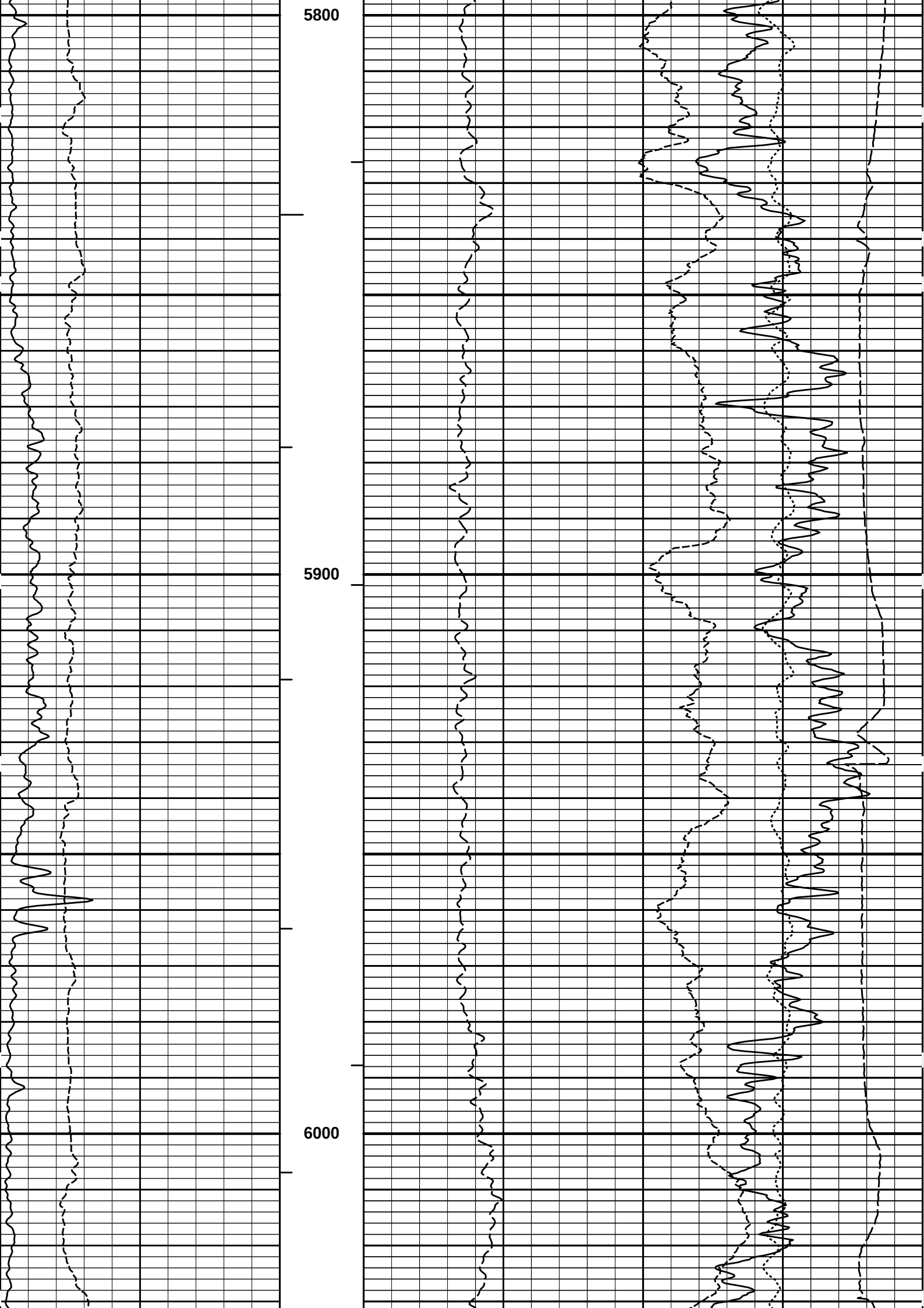


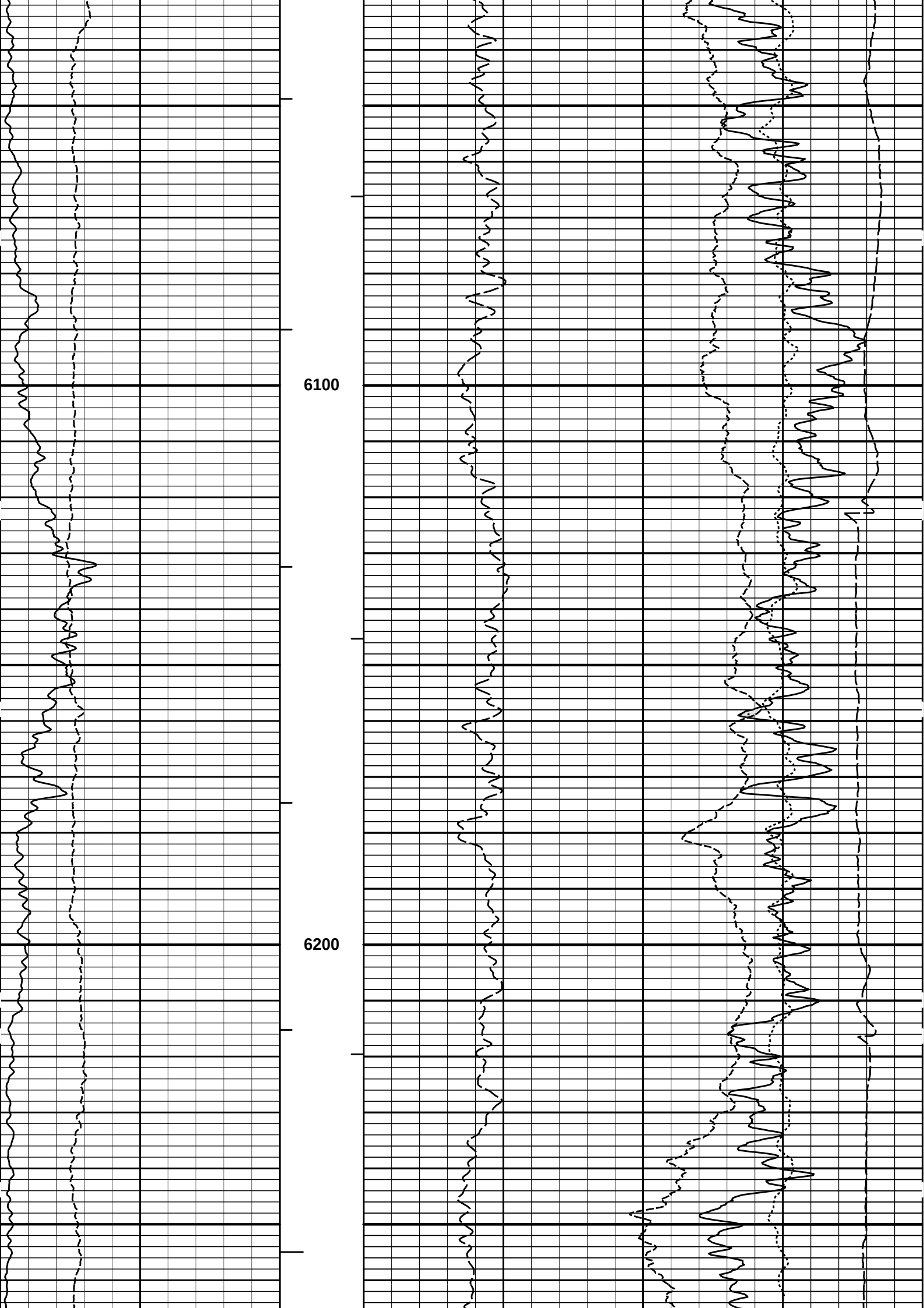


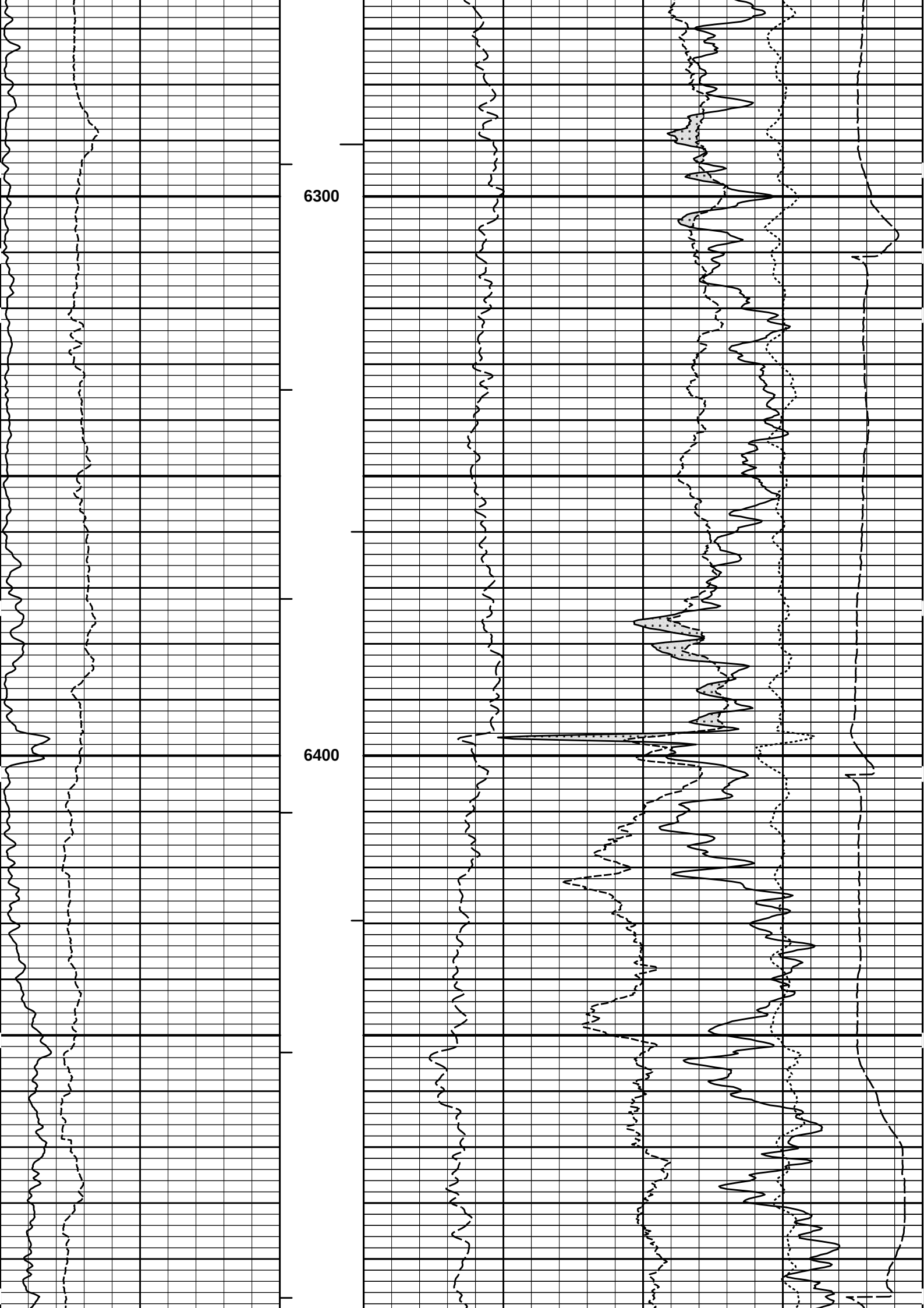


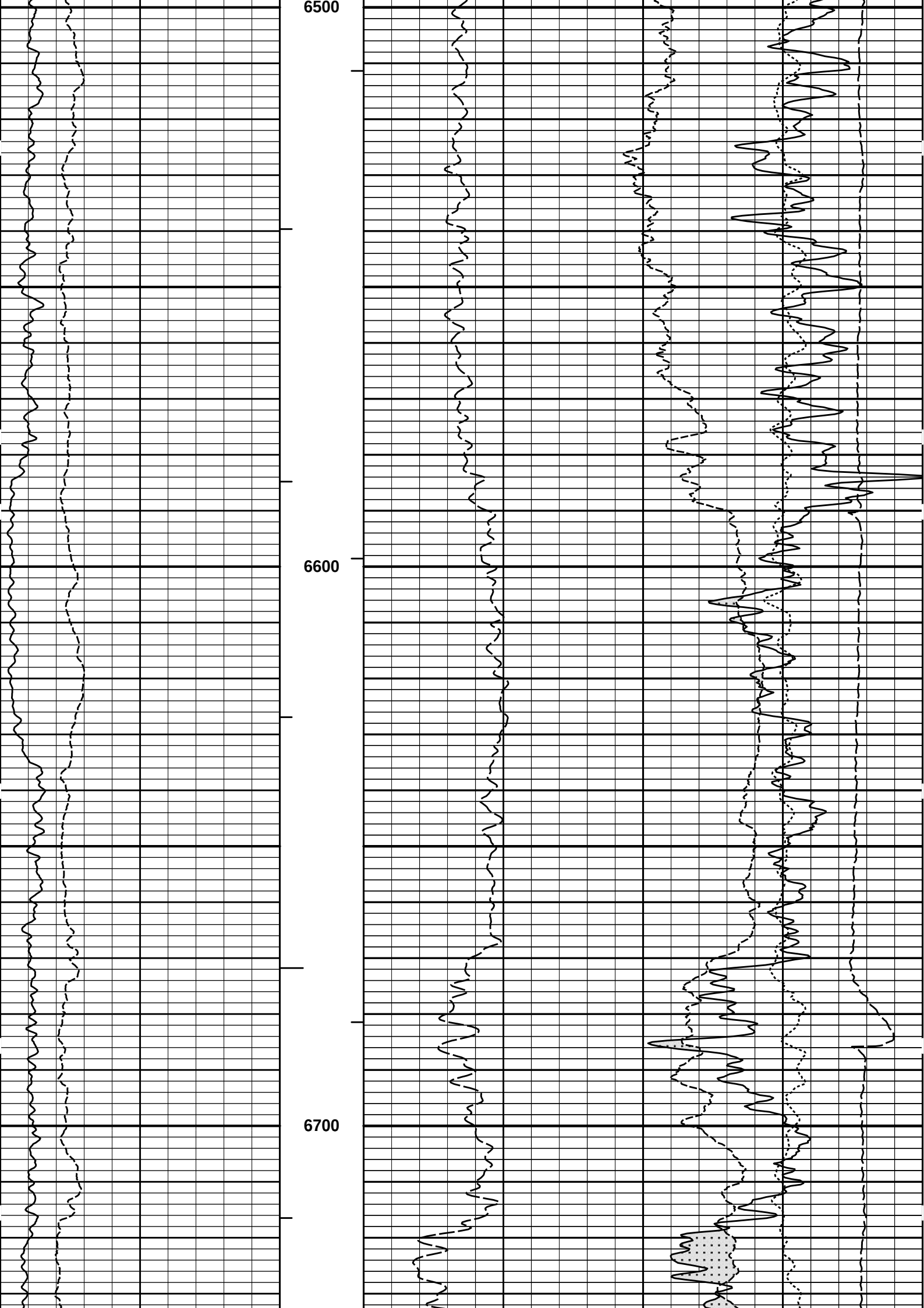


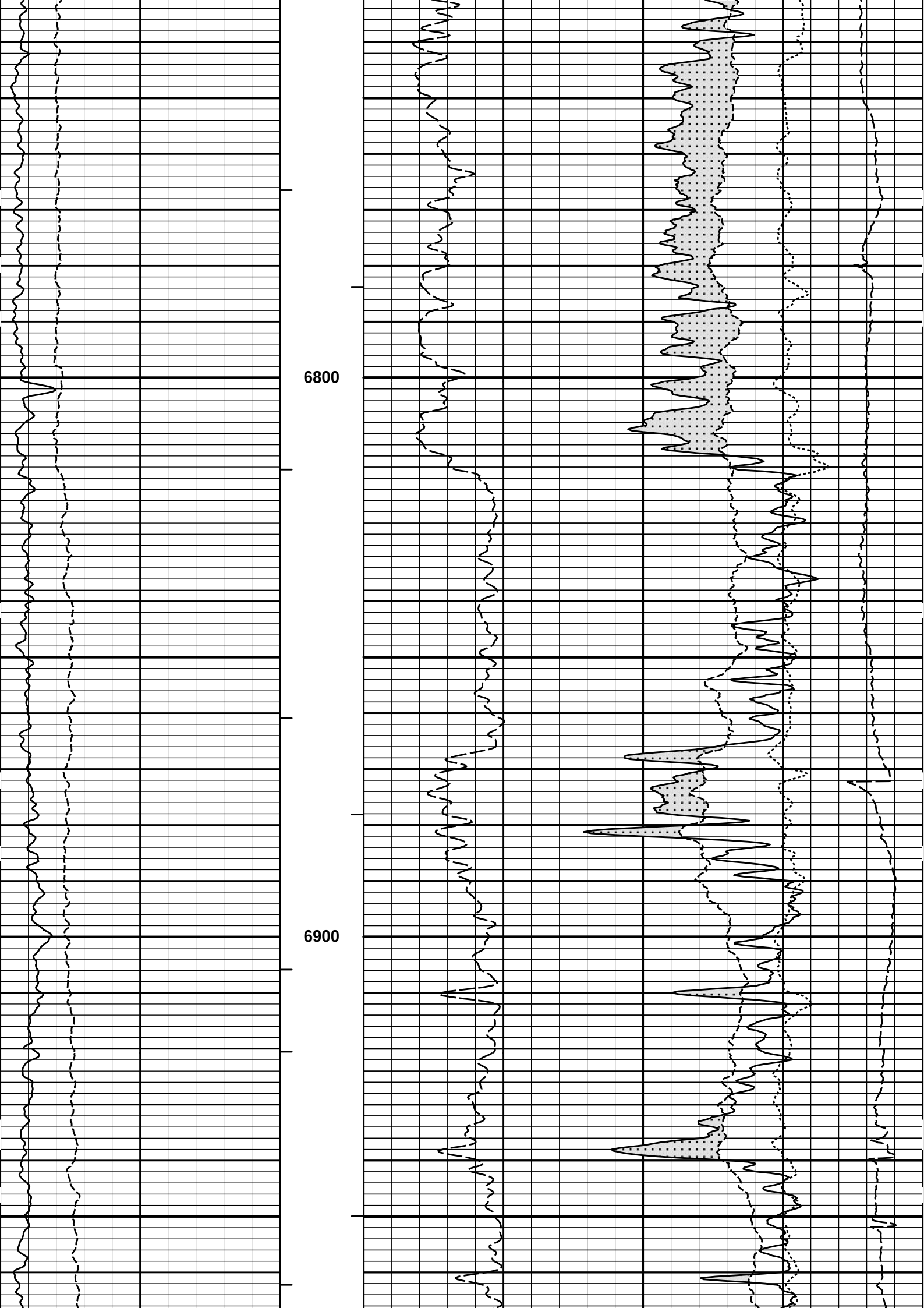


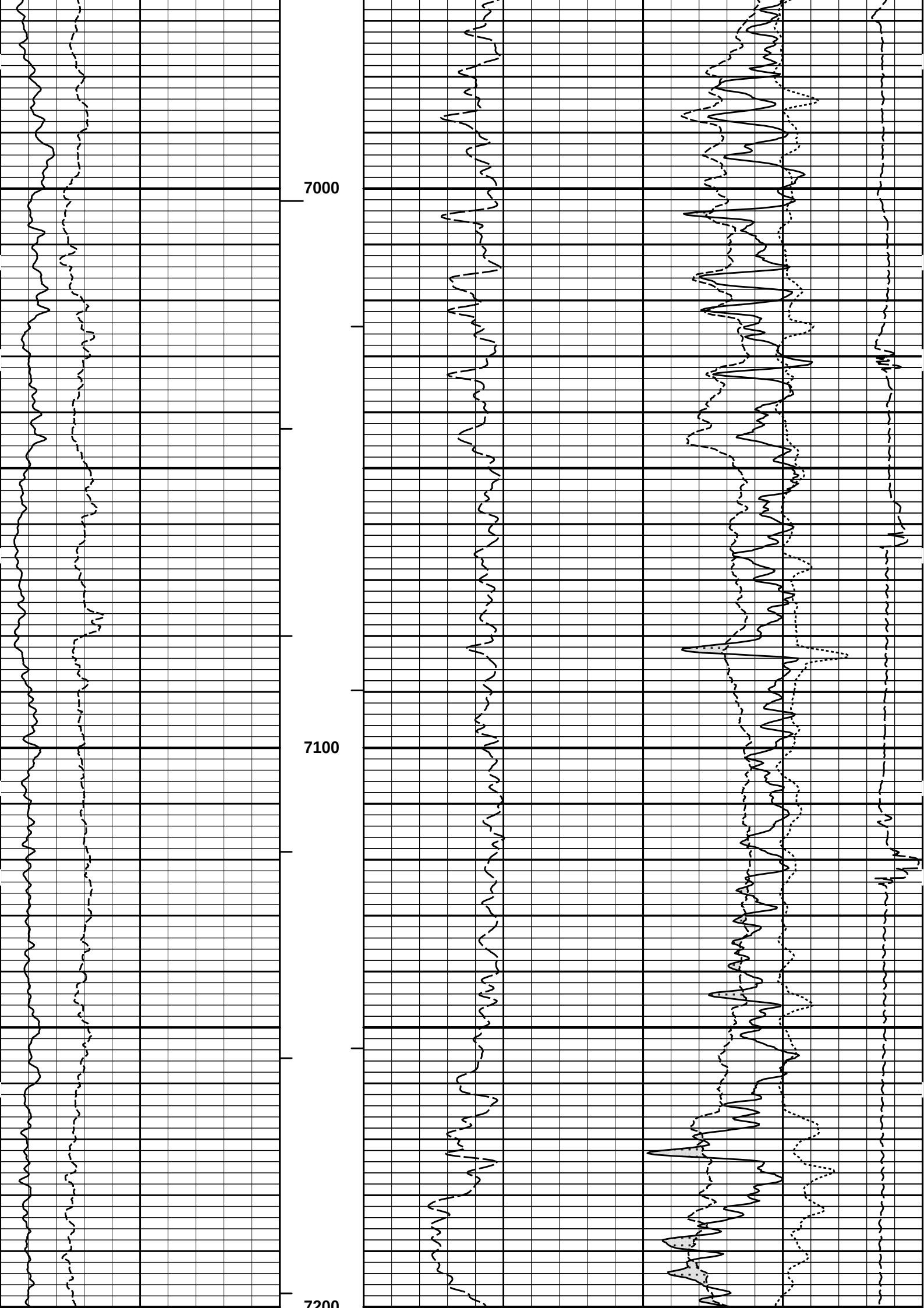


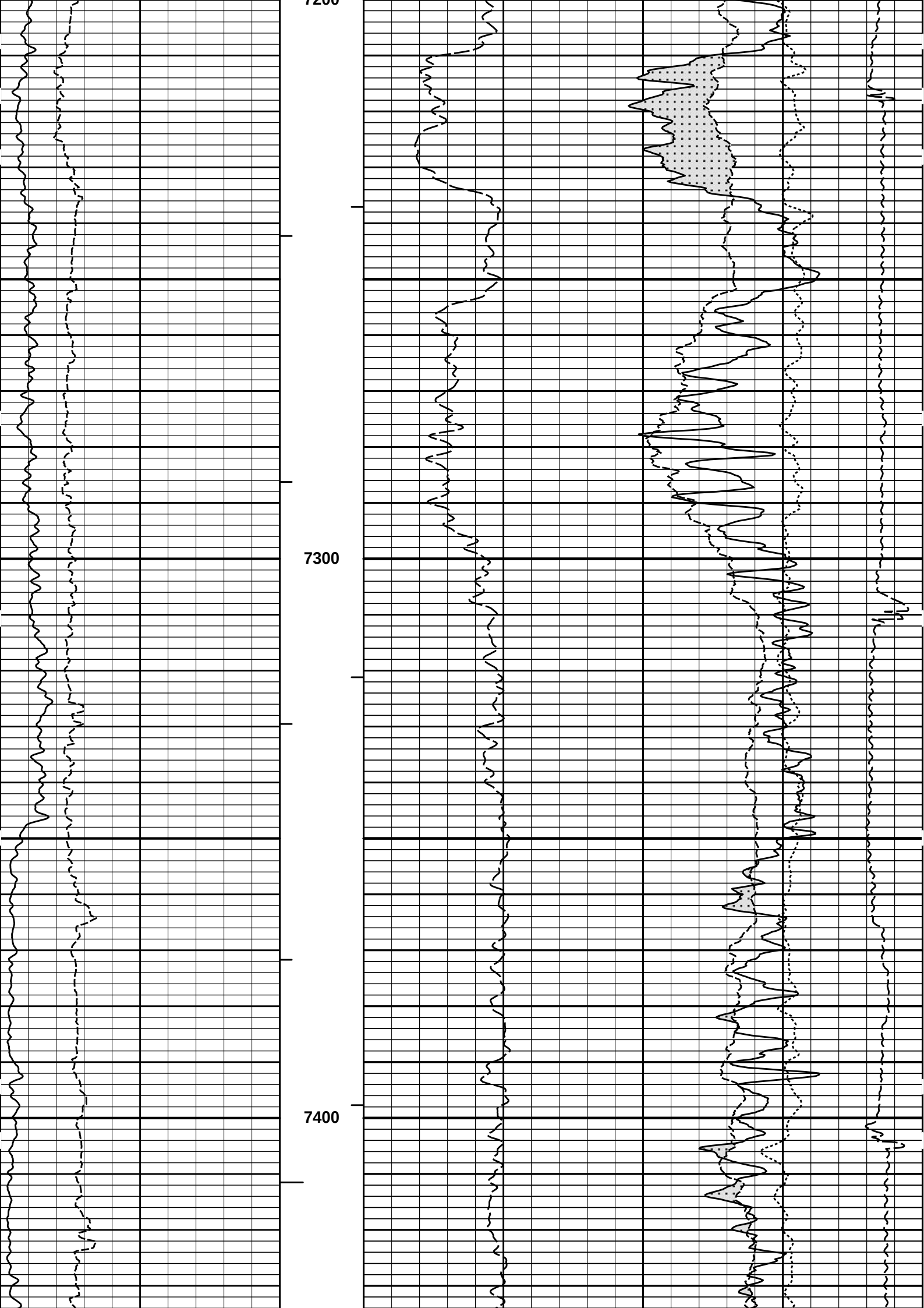


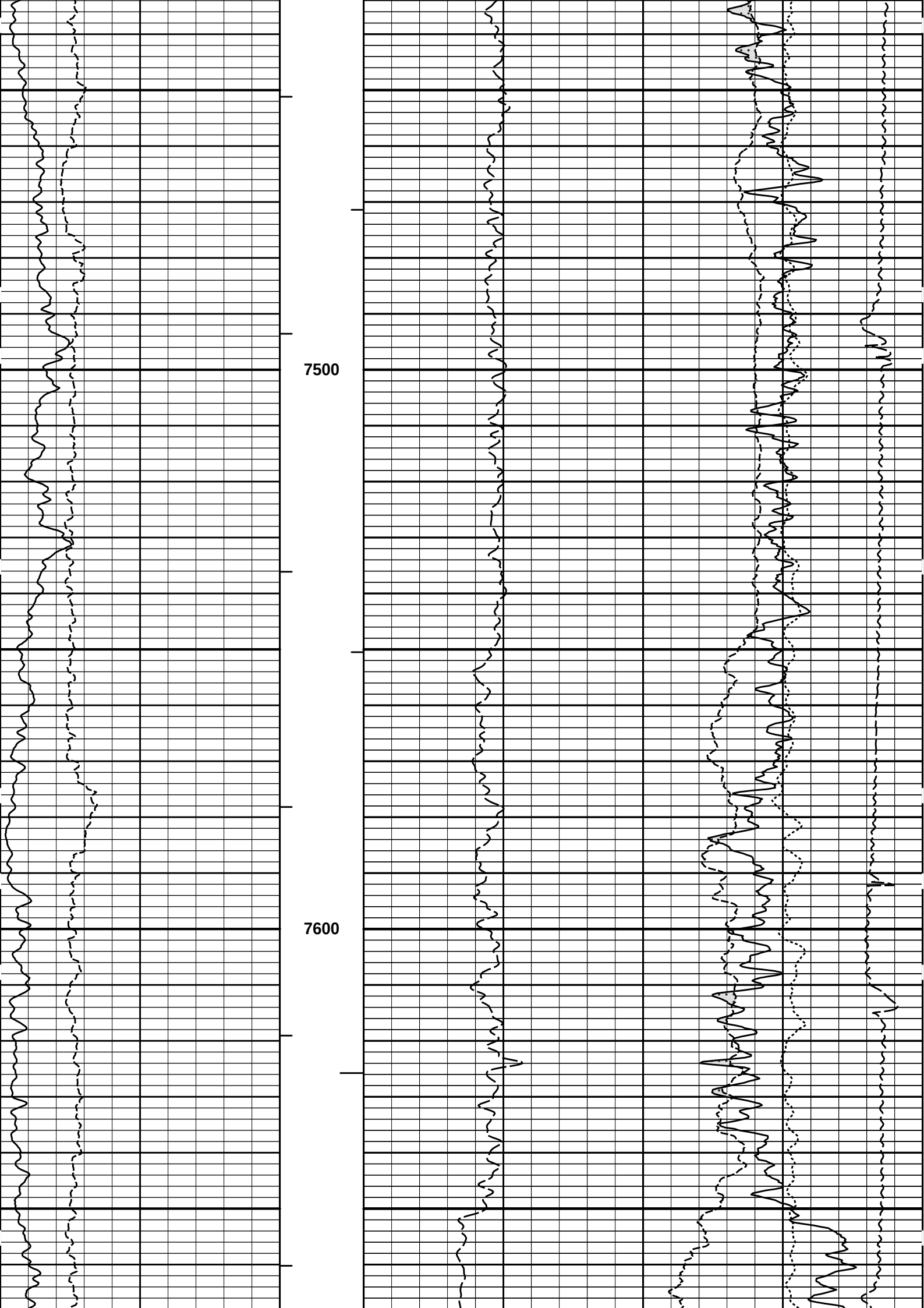


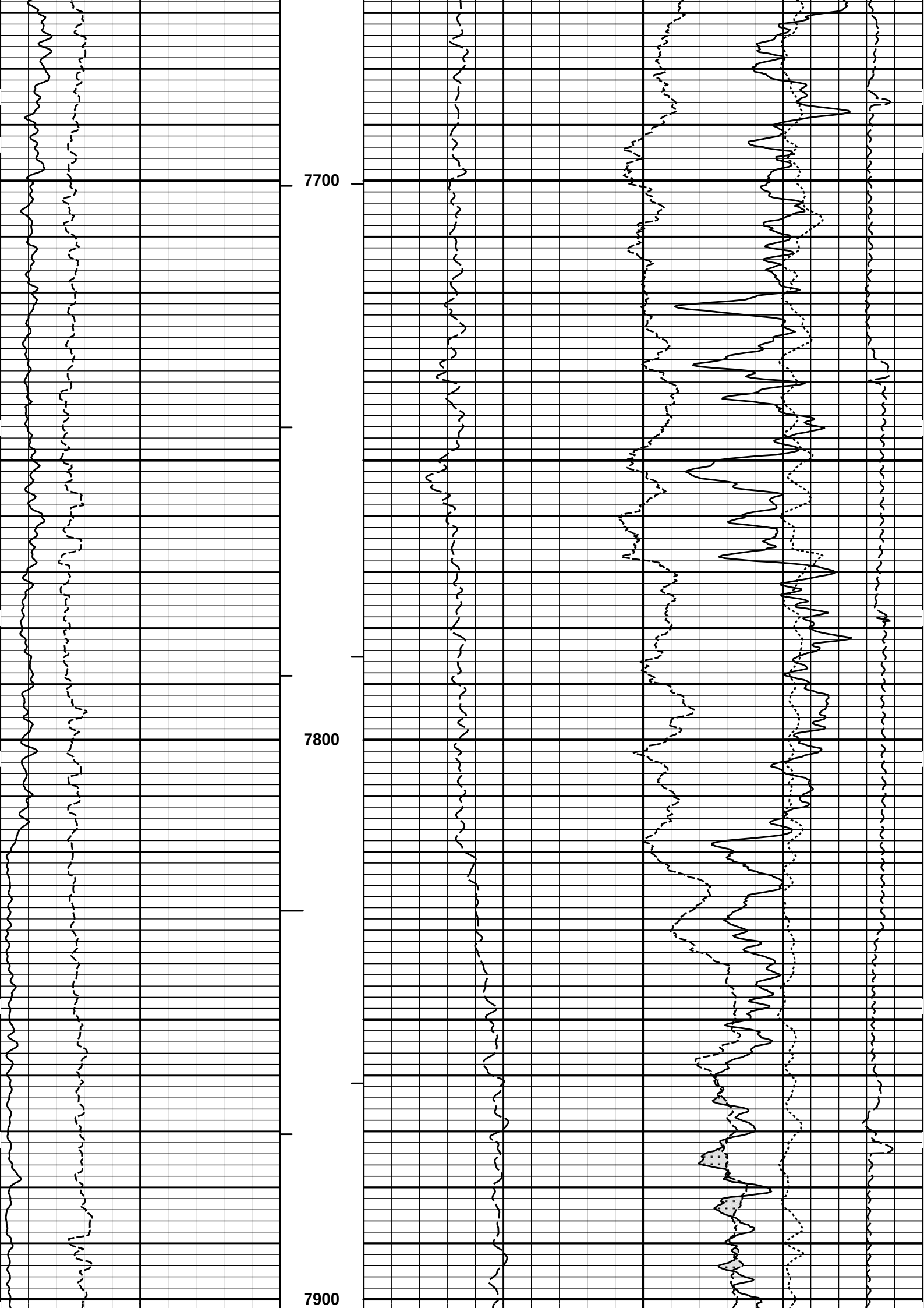


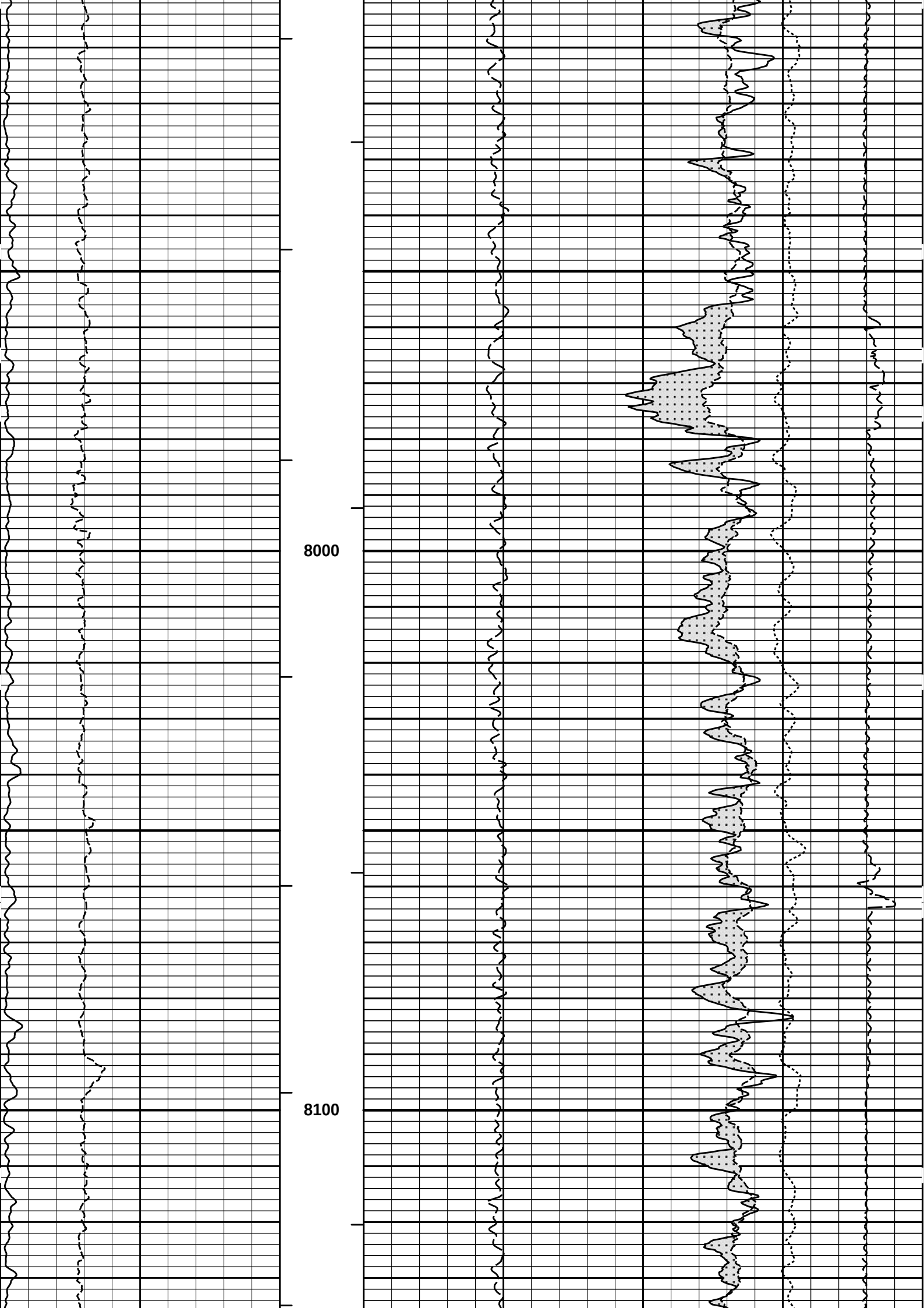


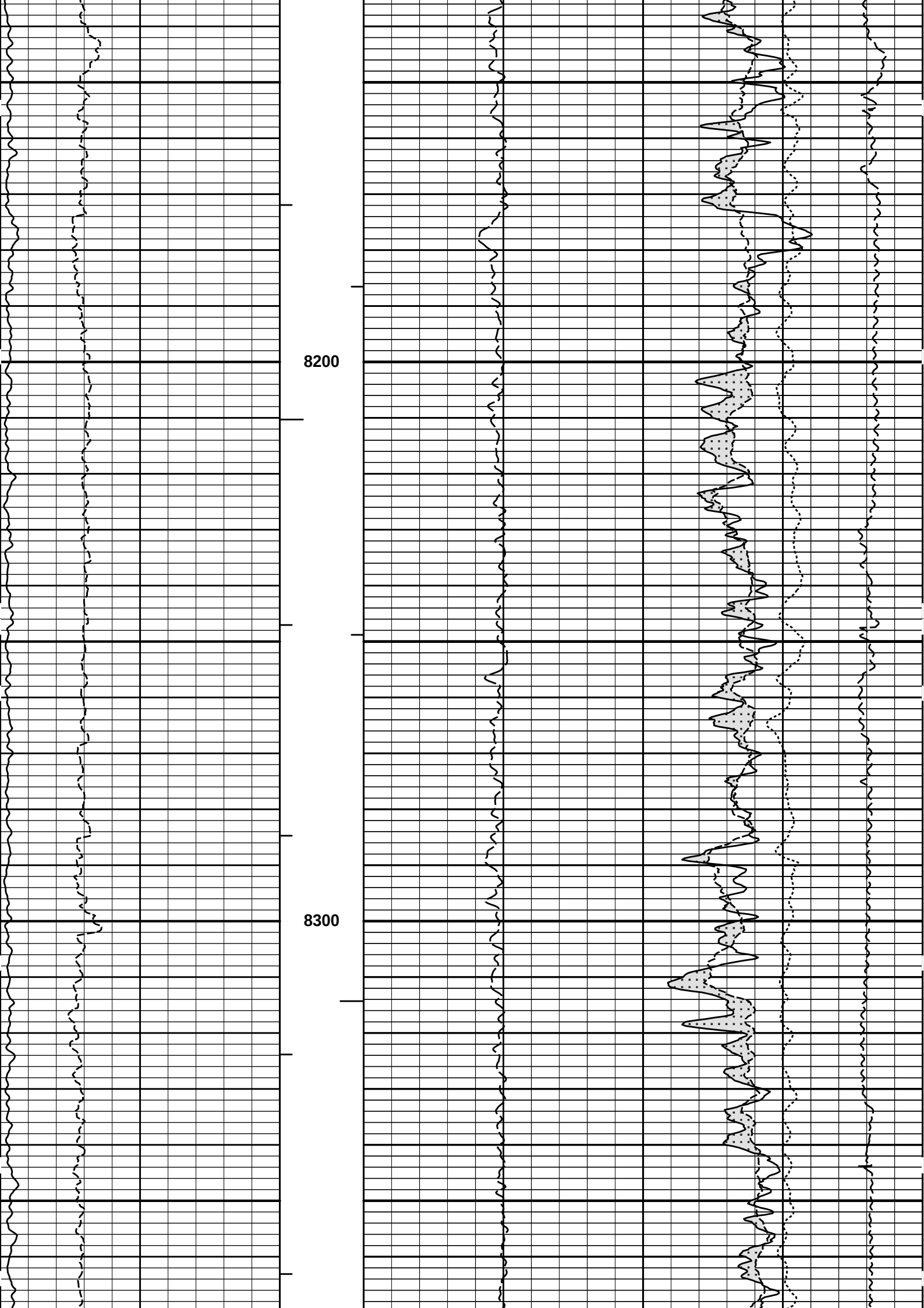


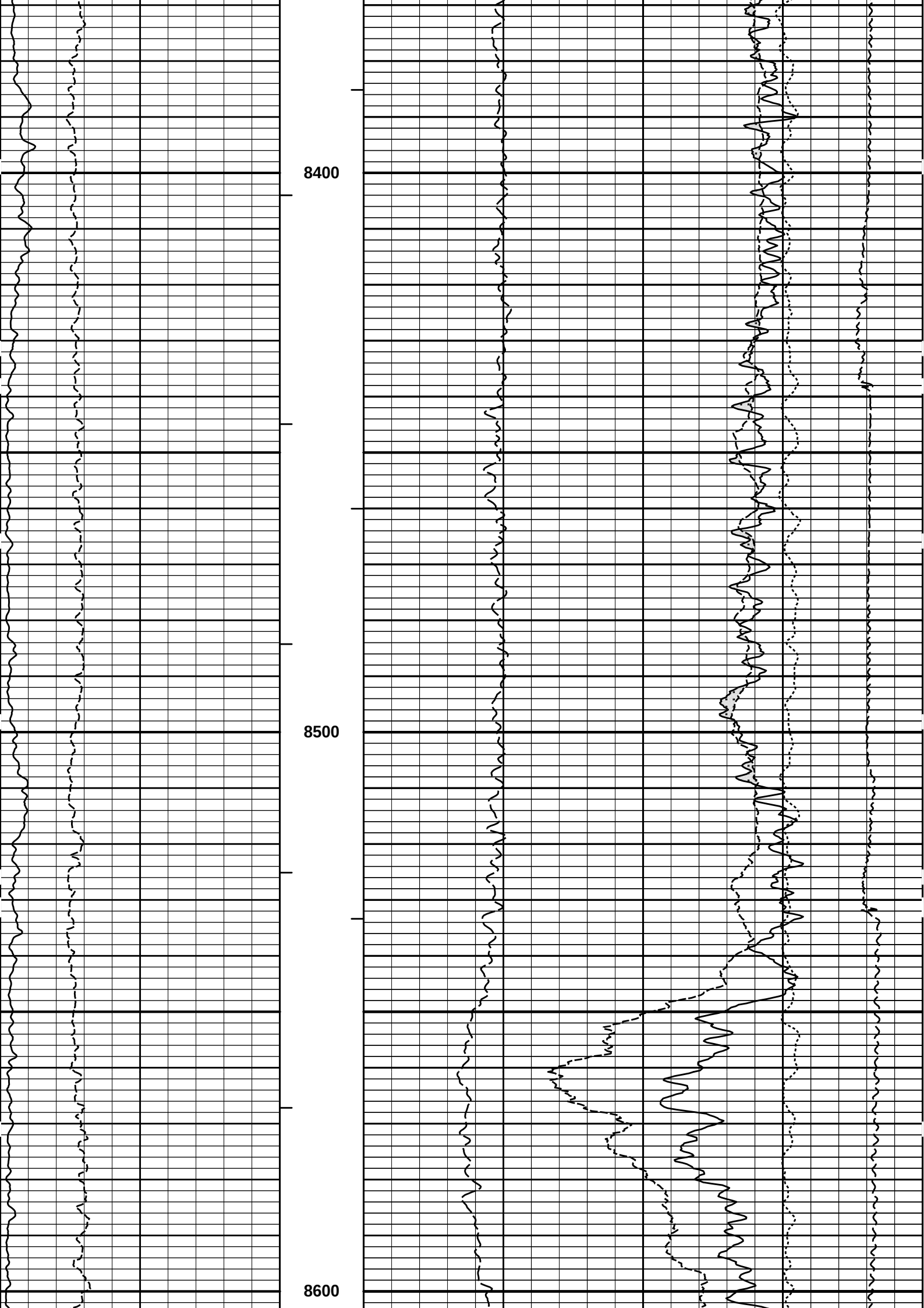


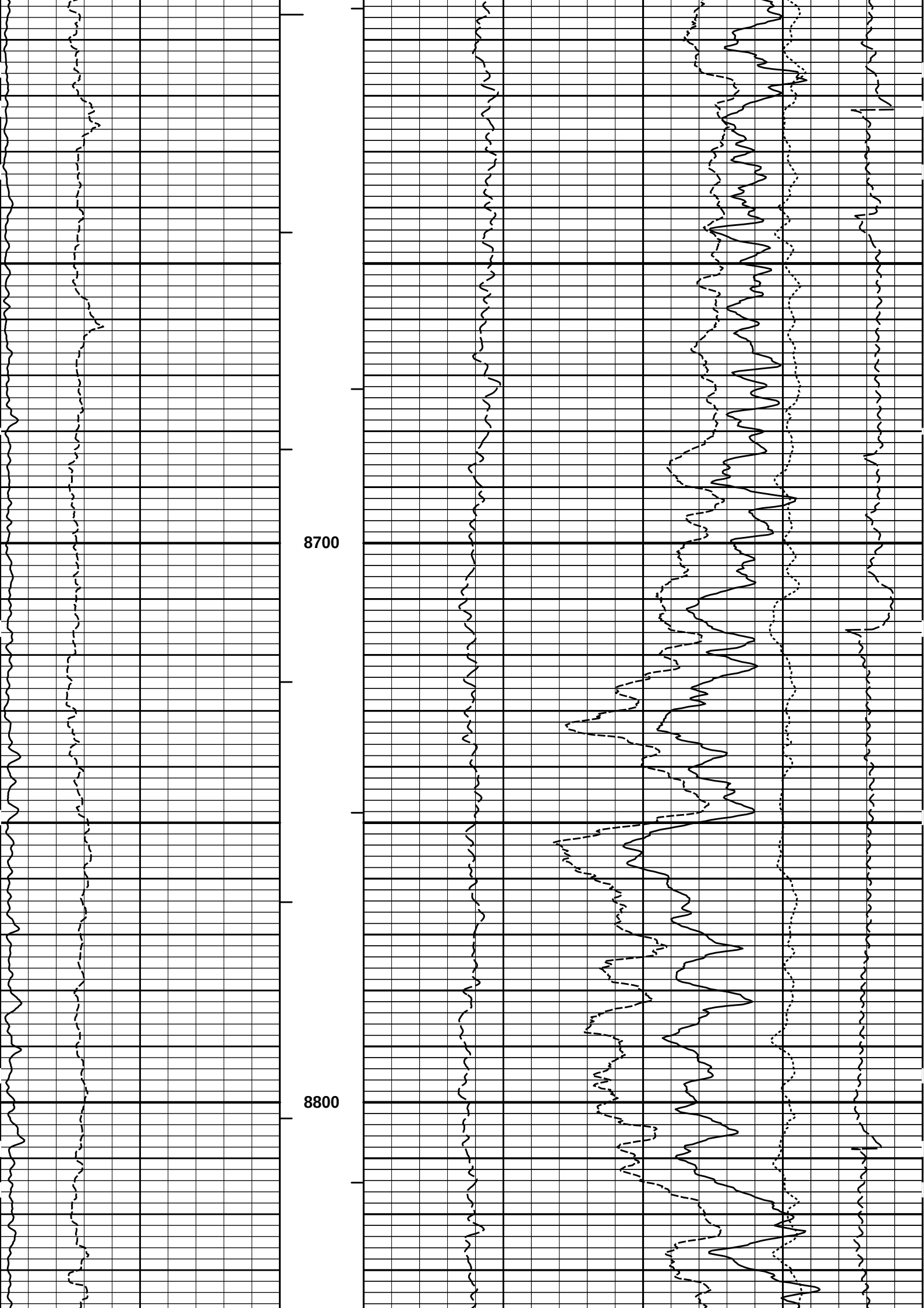


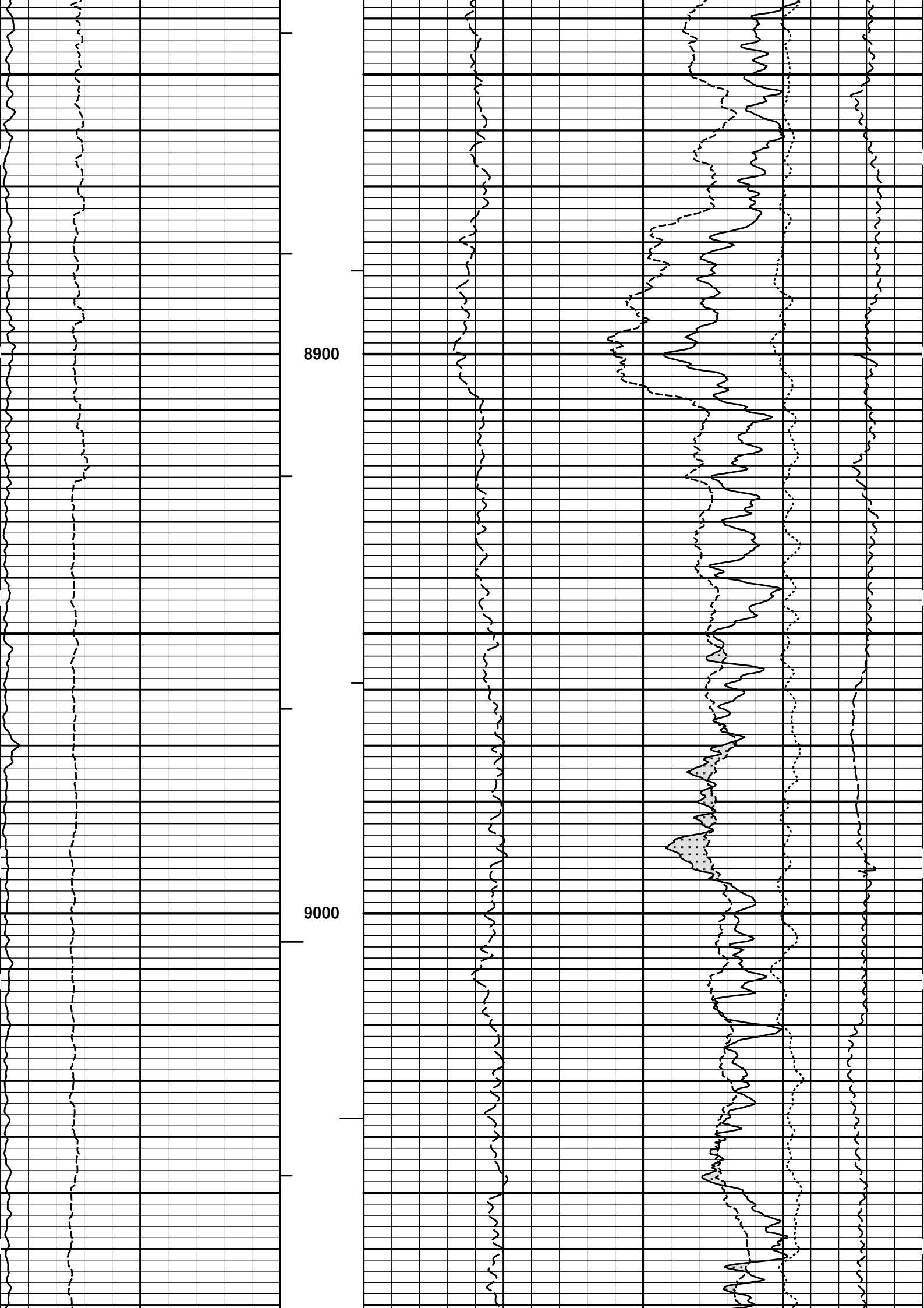


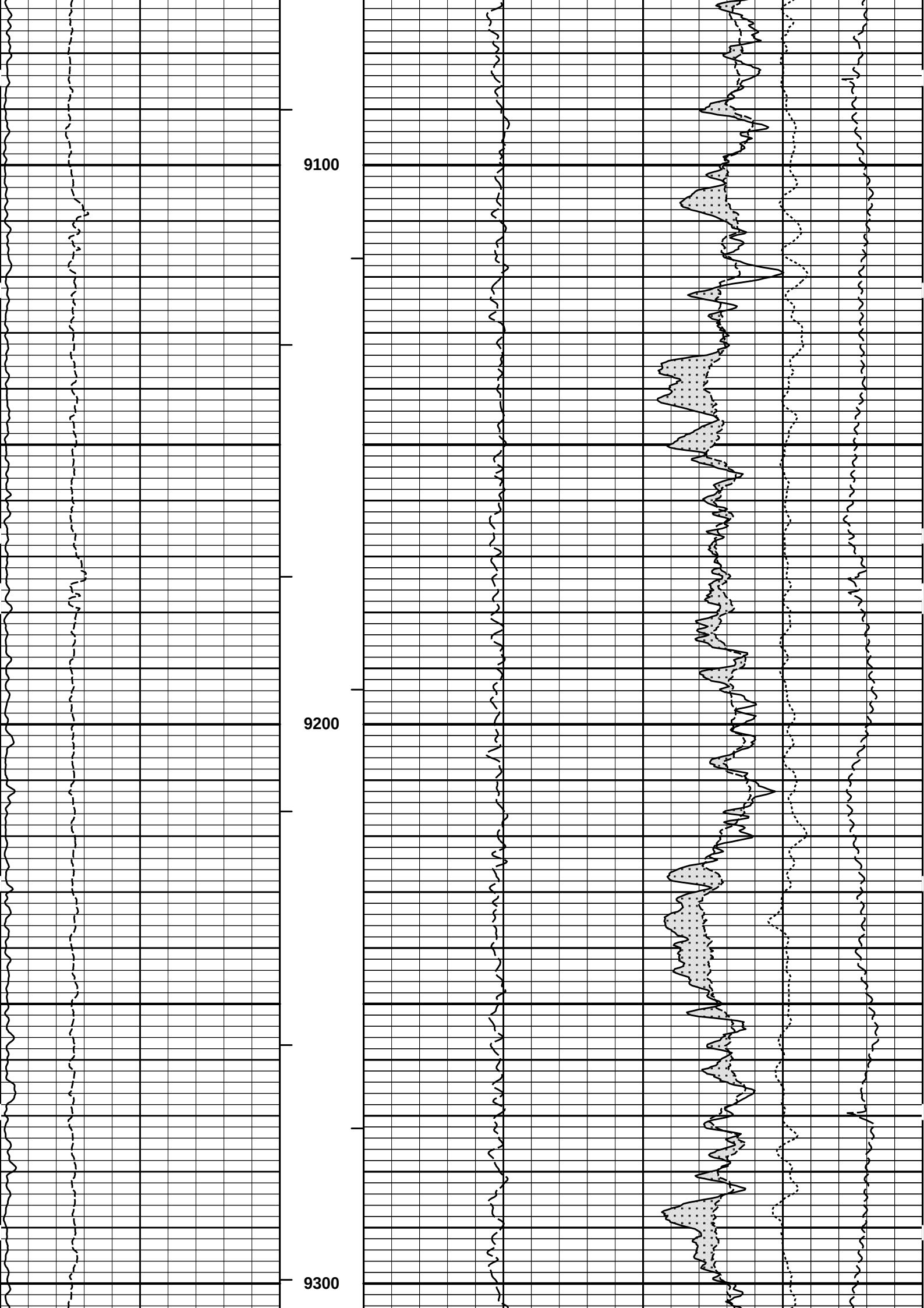


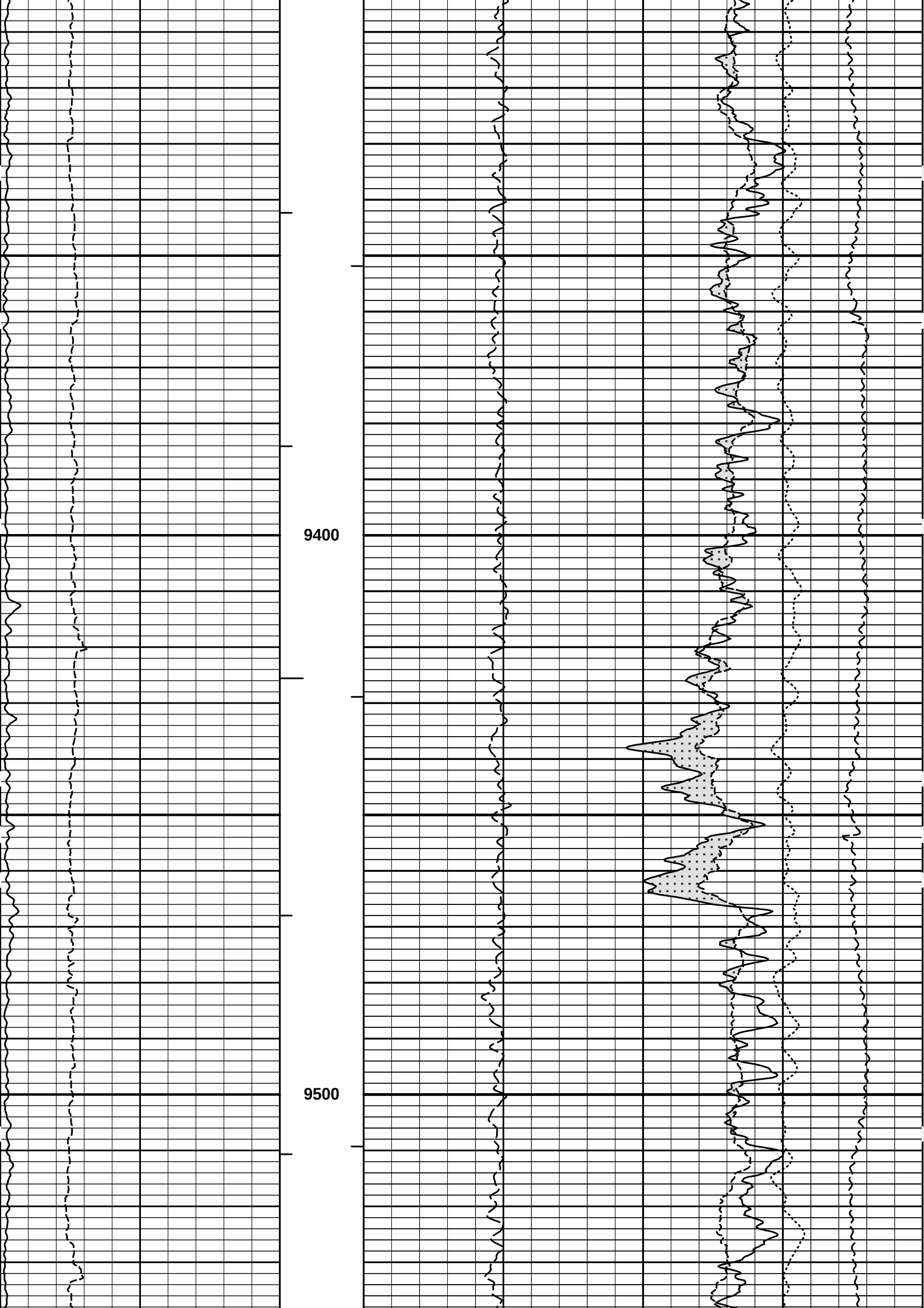


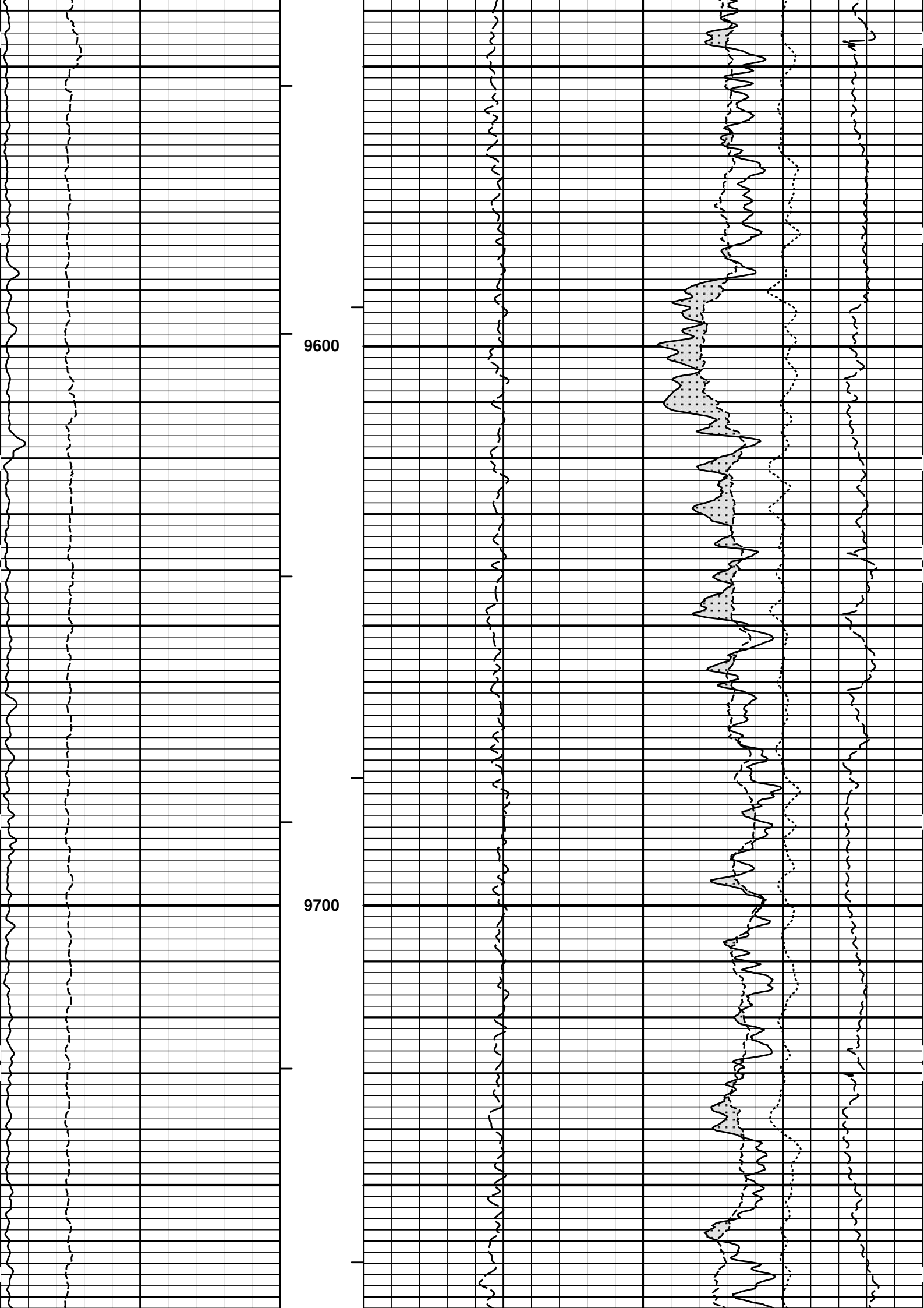


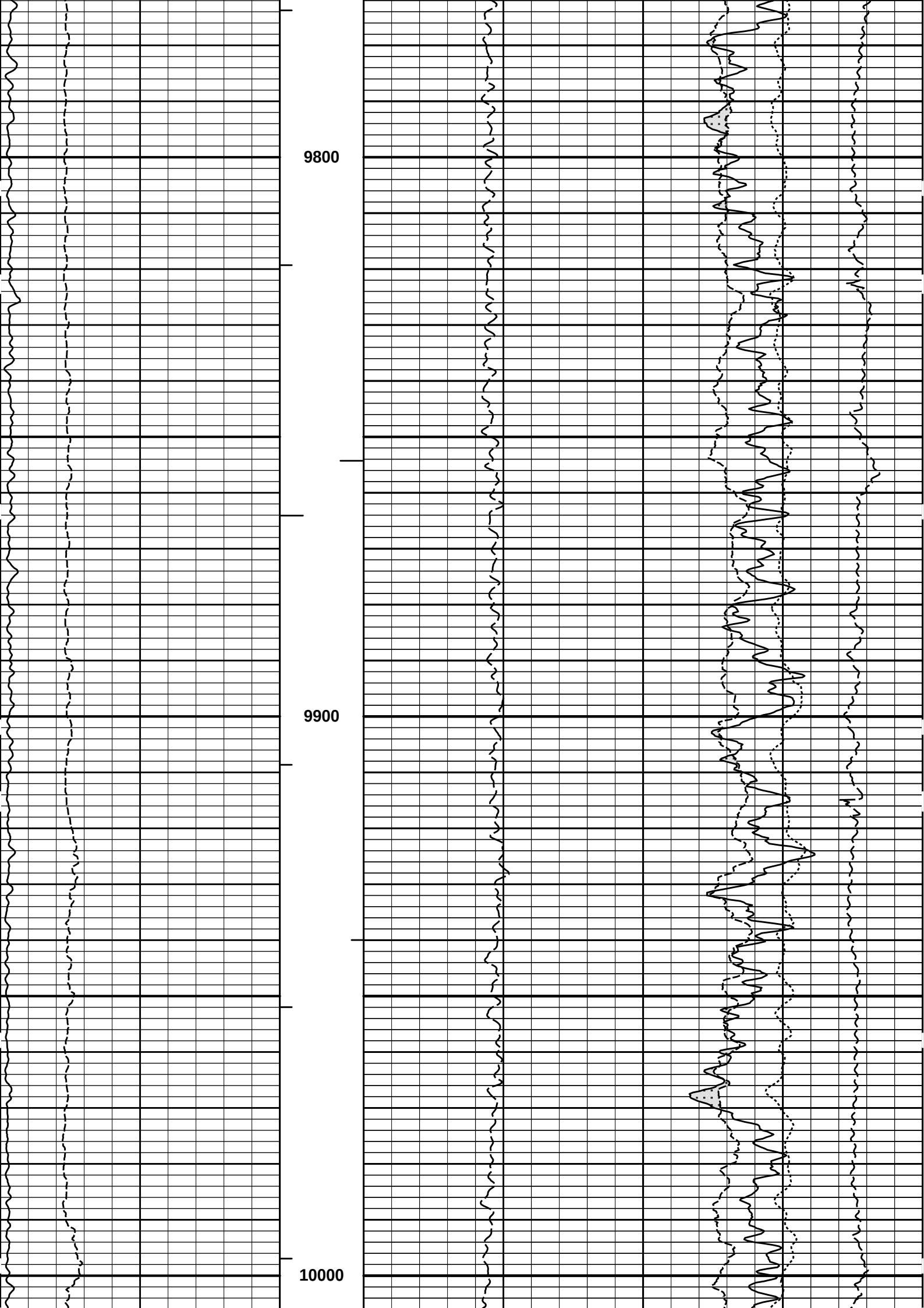


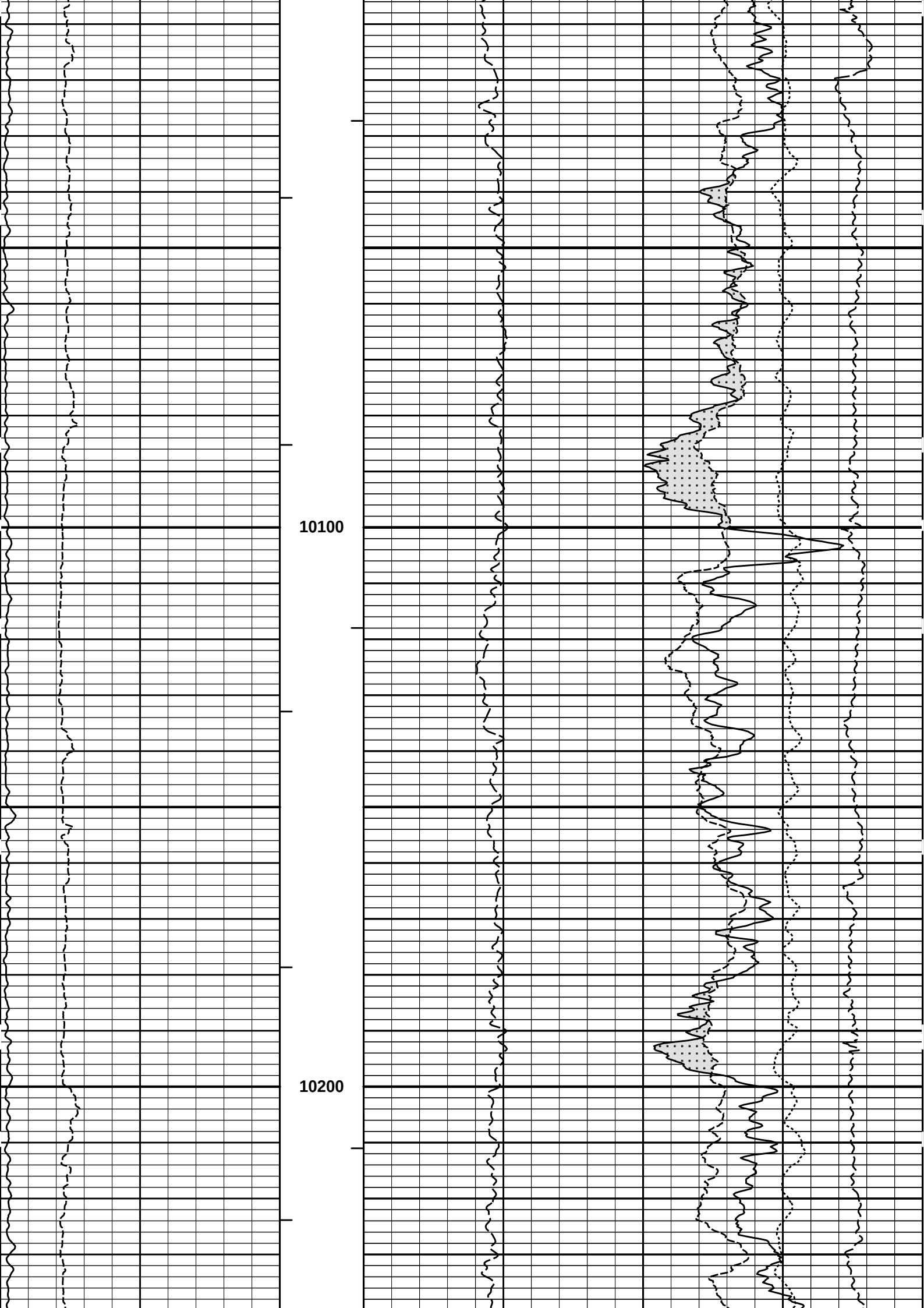


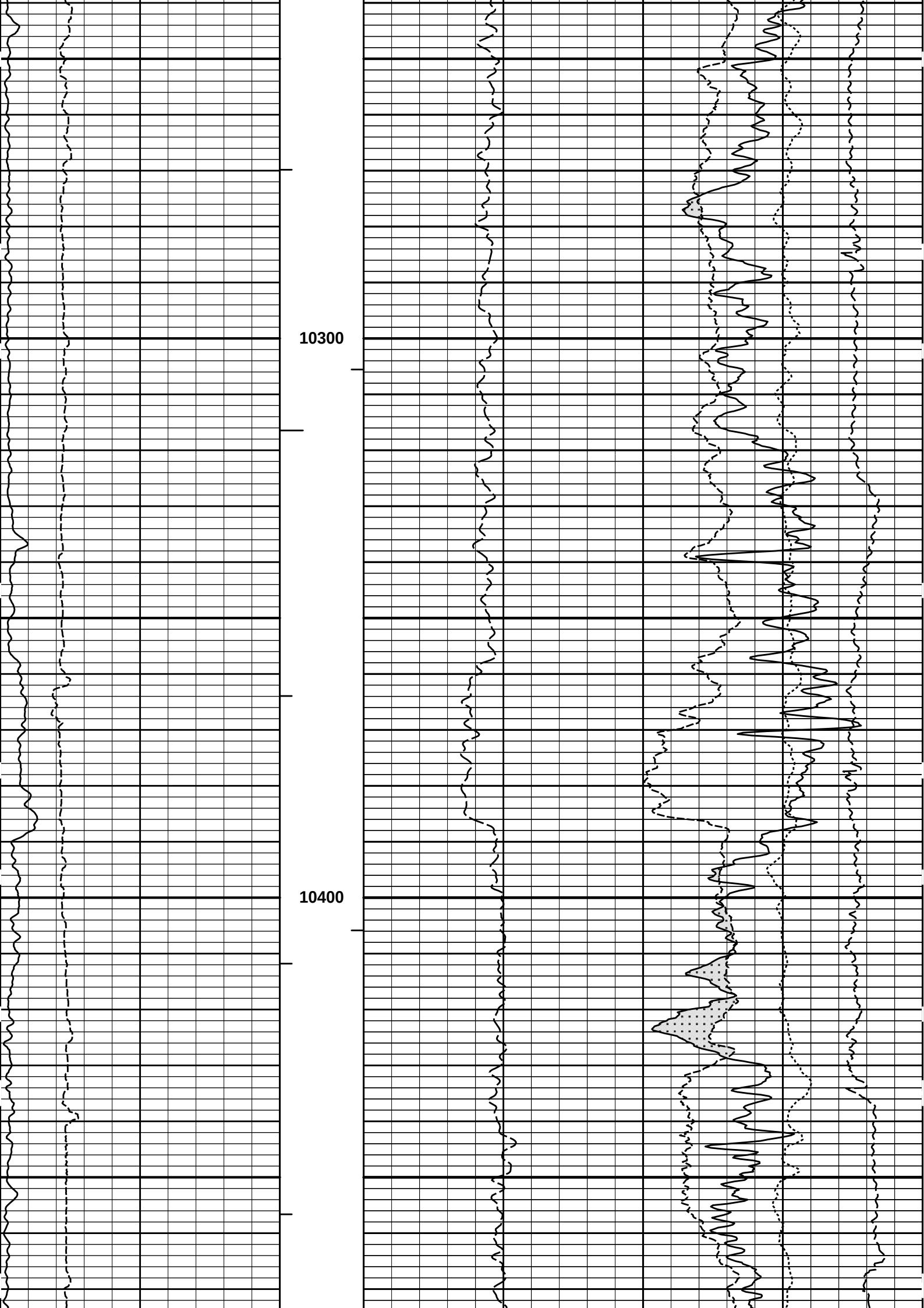


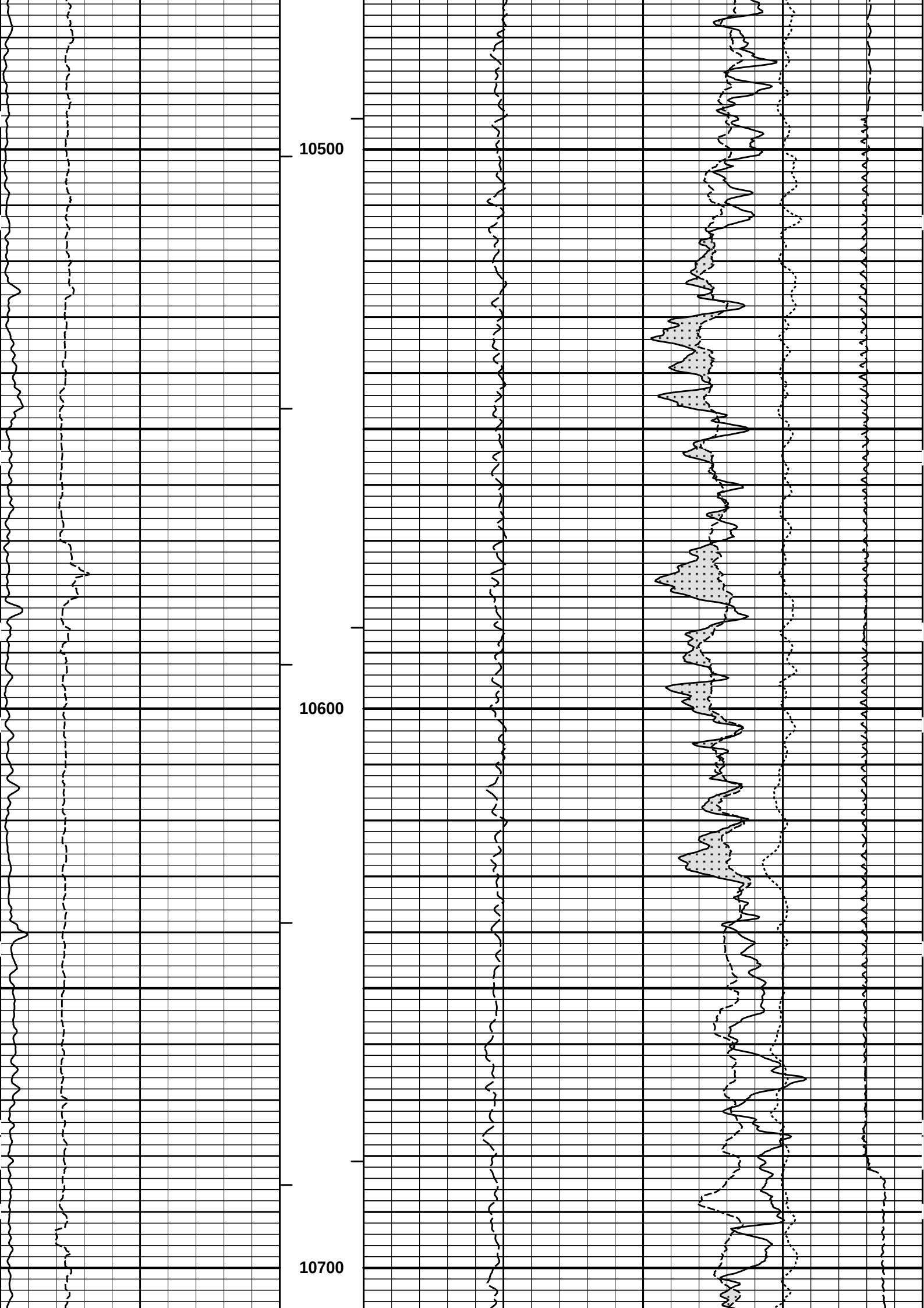


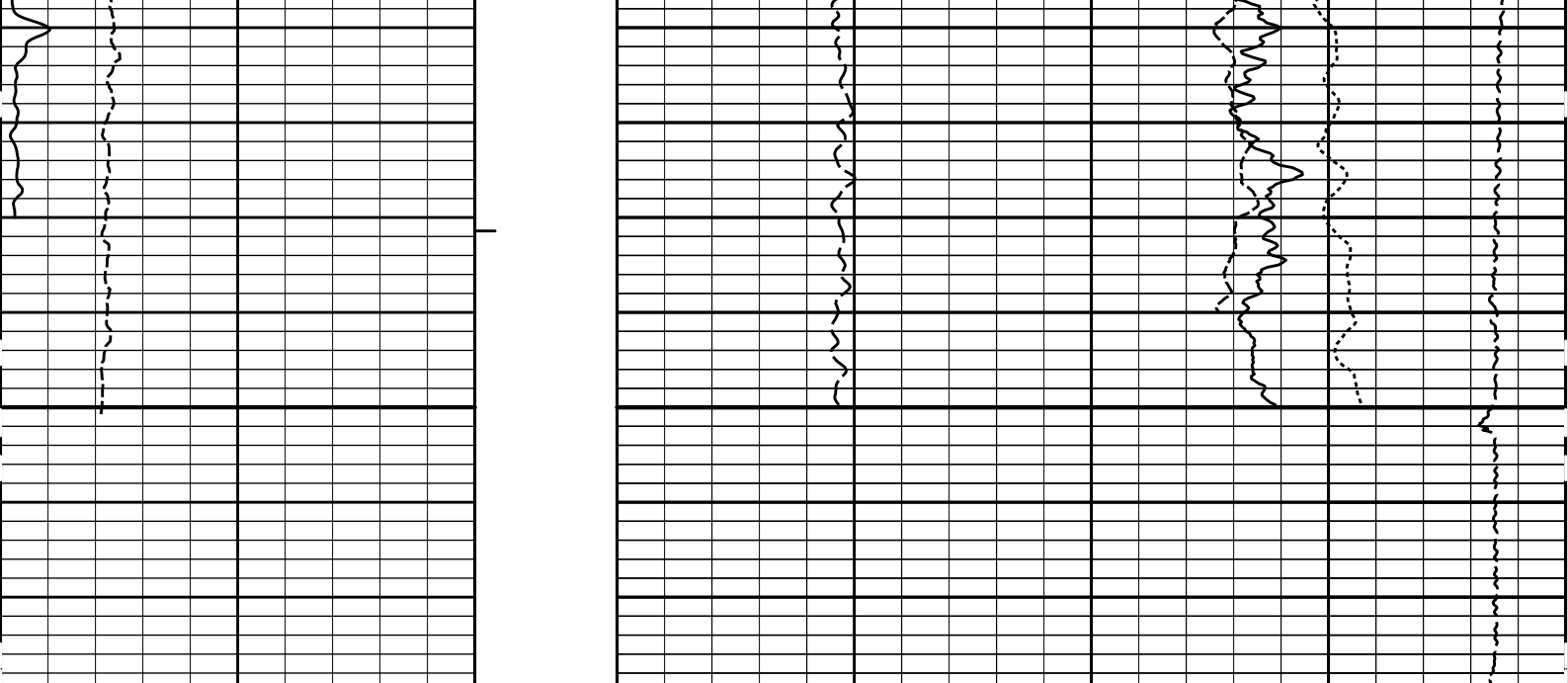












4	Caliper	14	MD	0	Pe	10	-0.25	DensityCorr	0.25
	inches		1 : 240					gram per cc	
0	Gamma API	150	AHVT				15K	Tension	0
	api							pounds	
	SHALE		BHVT	30	DensityPorosity				-10
					%				
				30	Neutron Porosity				-10
					%				
					CROSSOVER				

HALLIBURTON

Plot Time: 15-Aug-18 16:32:50
Plot Range: 4590 ft to 10779.3 ft
Data: BRUBAKER_1-17H\Well Based\MAIN_TD-4590\
Plot File: \\PORO\Porosity_IQ_5_MAIN_LIB

5 INCH MAIN LOG

MEASURED DEPTH
MAIN SECTION 5" PER 100'

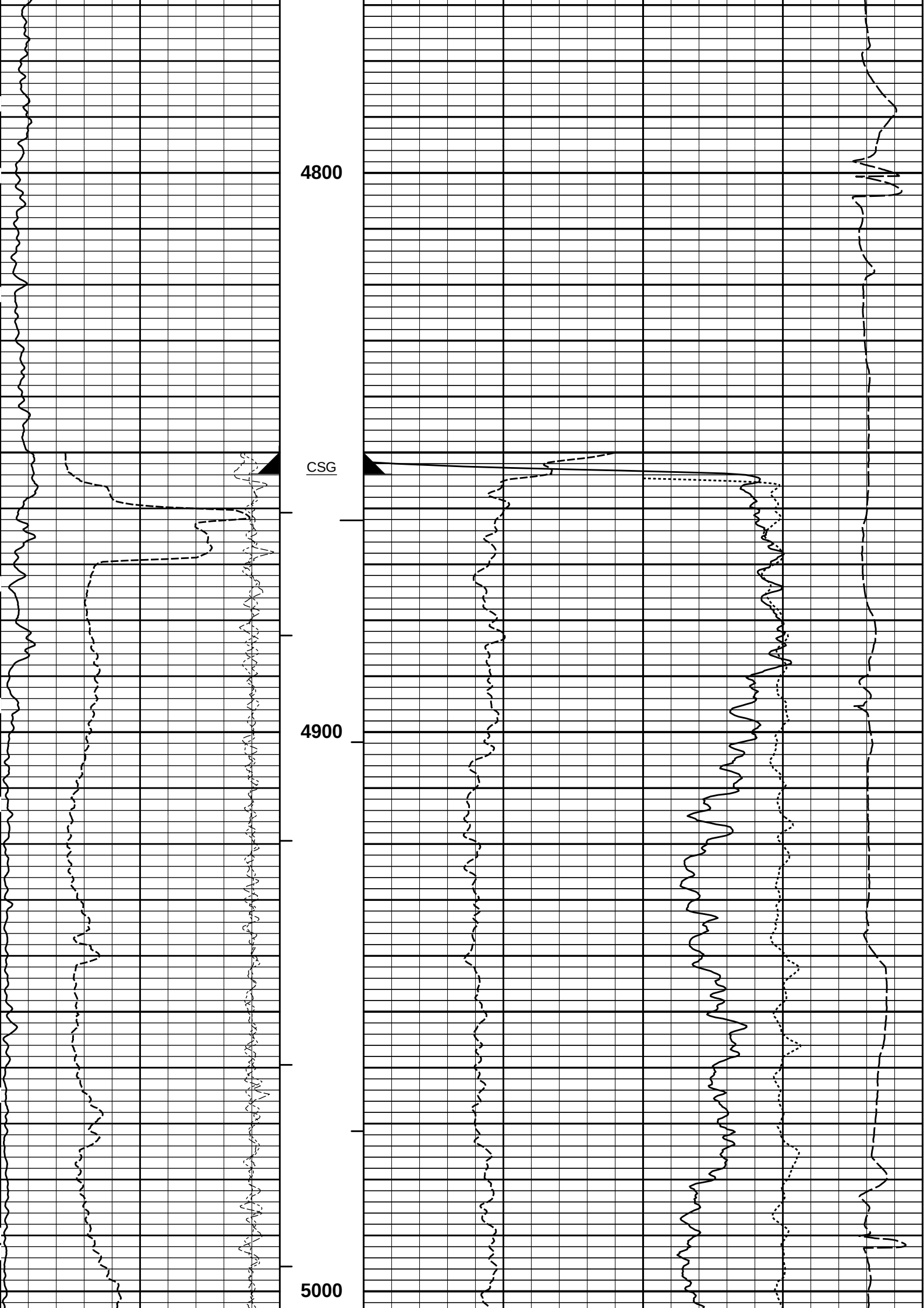
HALLIBURTON

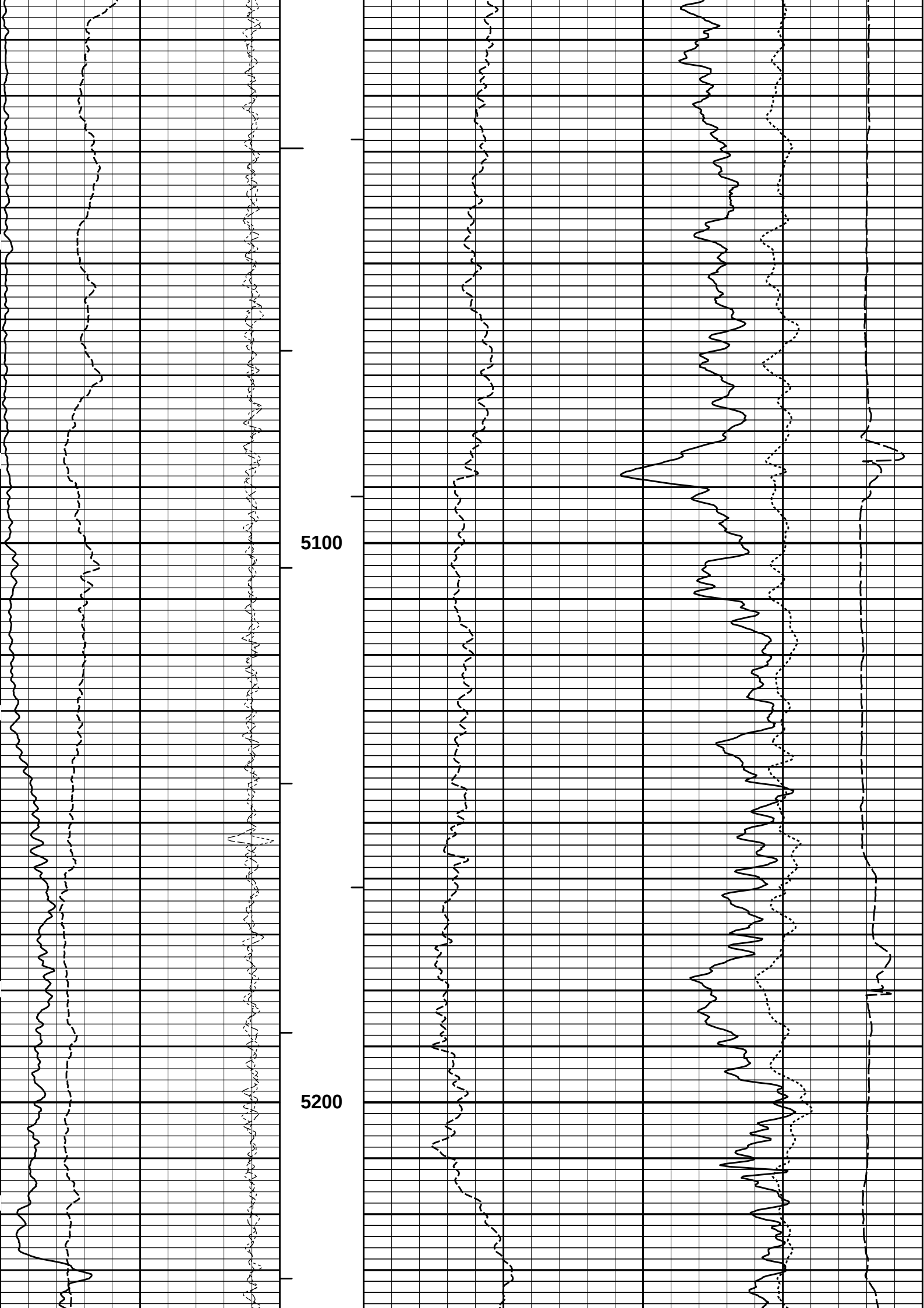
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Plot Range: 4590 ft to 10779.3 ft
Data: BRUBAKER_1-17H\Well Based\MAIN_TD-4590\
Plot File: \\LOCAL-BRUBAKER_1-17H\Well Based\PORO\BULKD_5_MAIN_LIB

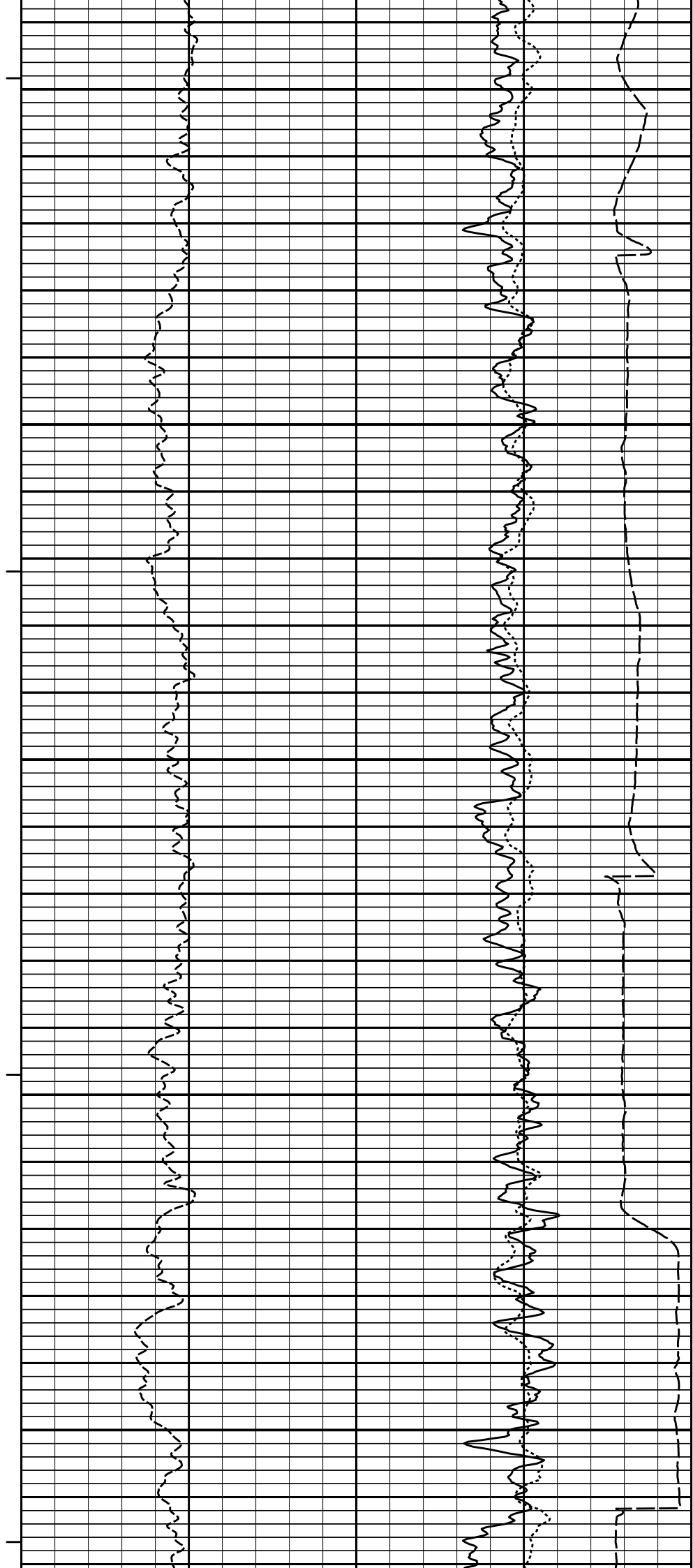
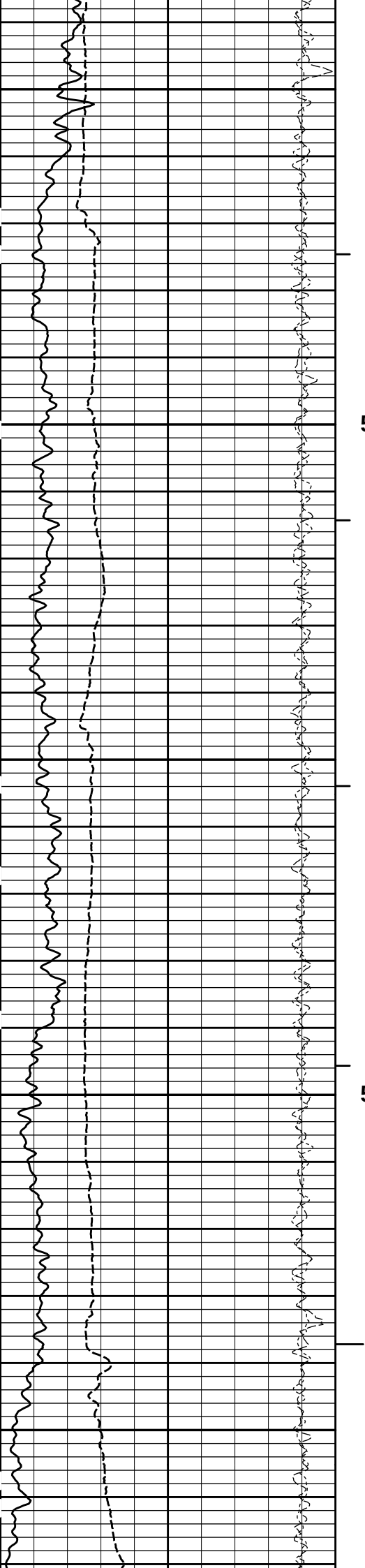
5 INCH MAIN LOG

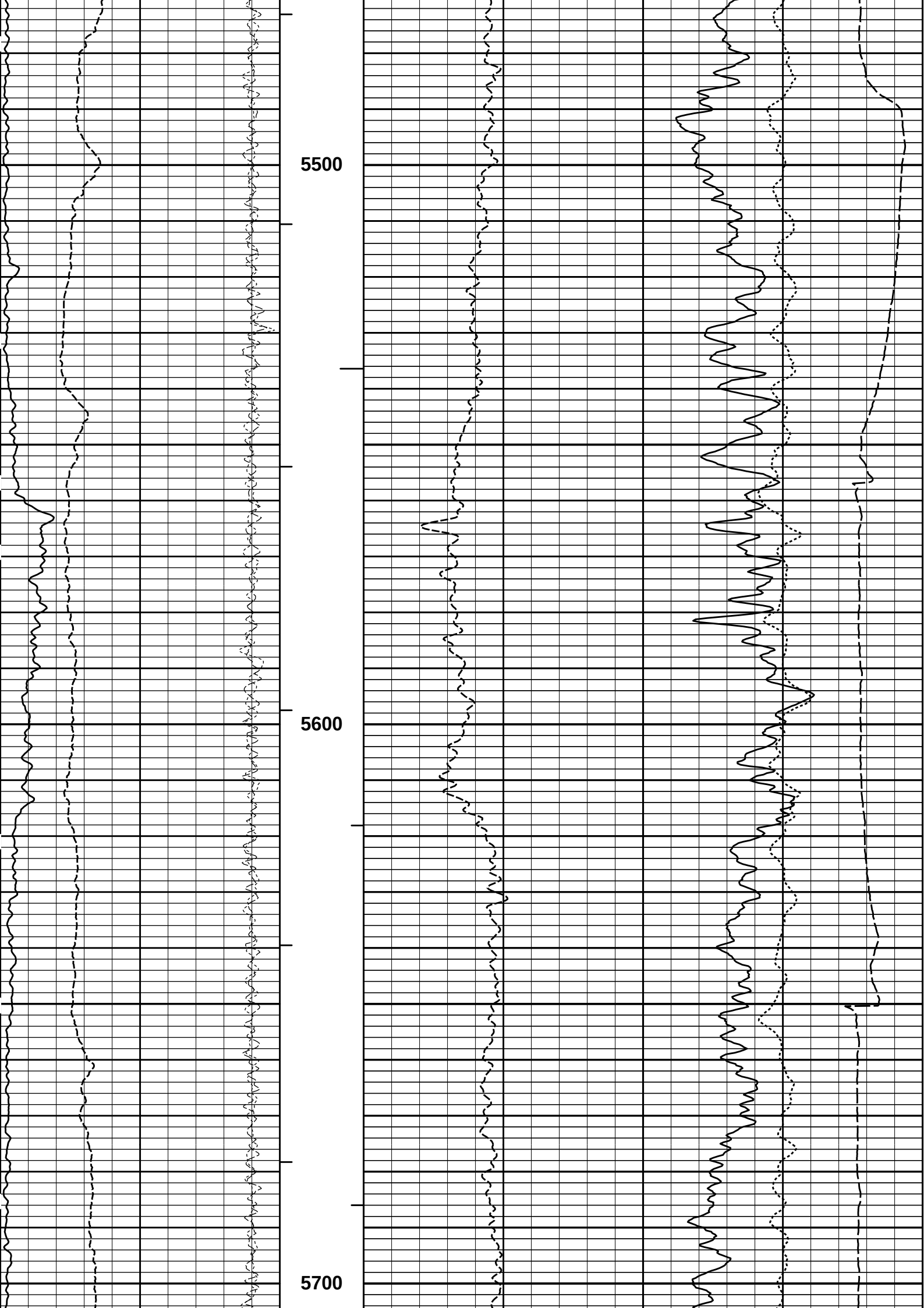
MEASURED DEPTH
MAIN SECTION 5" PER 100'

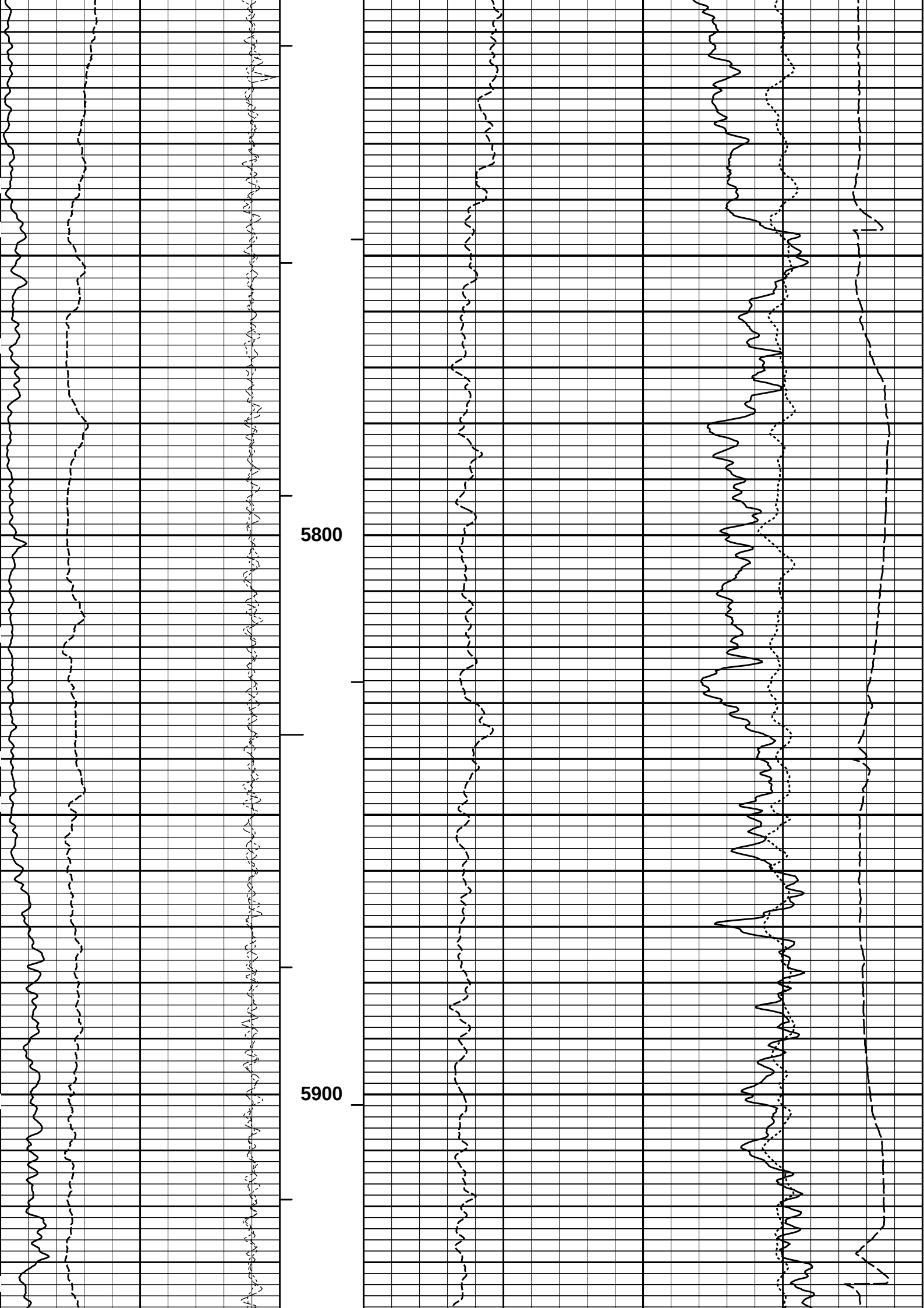
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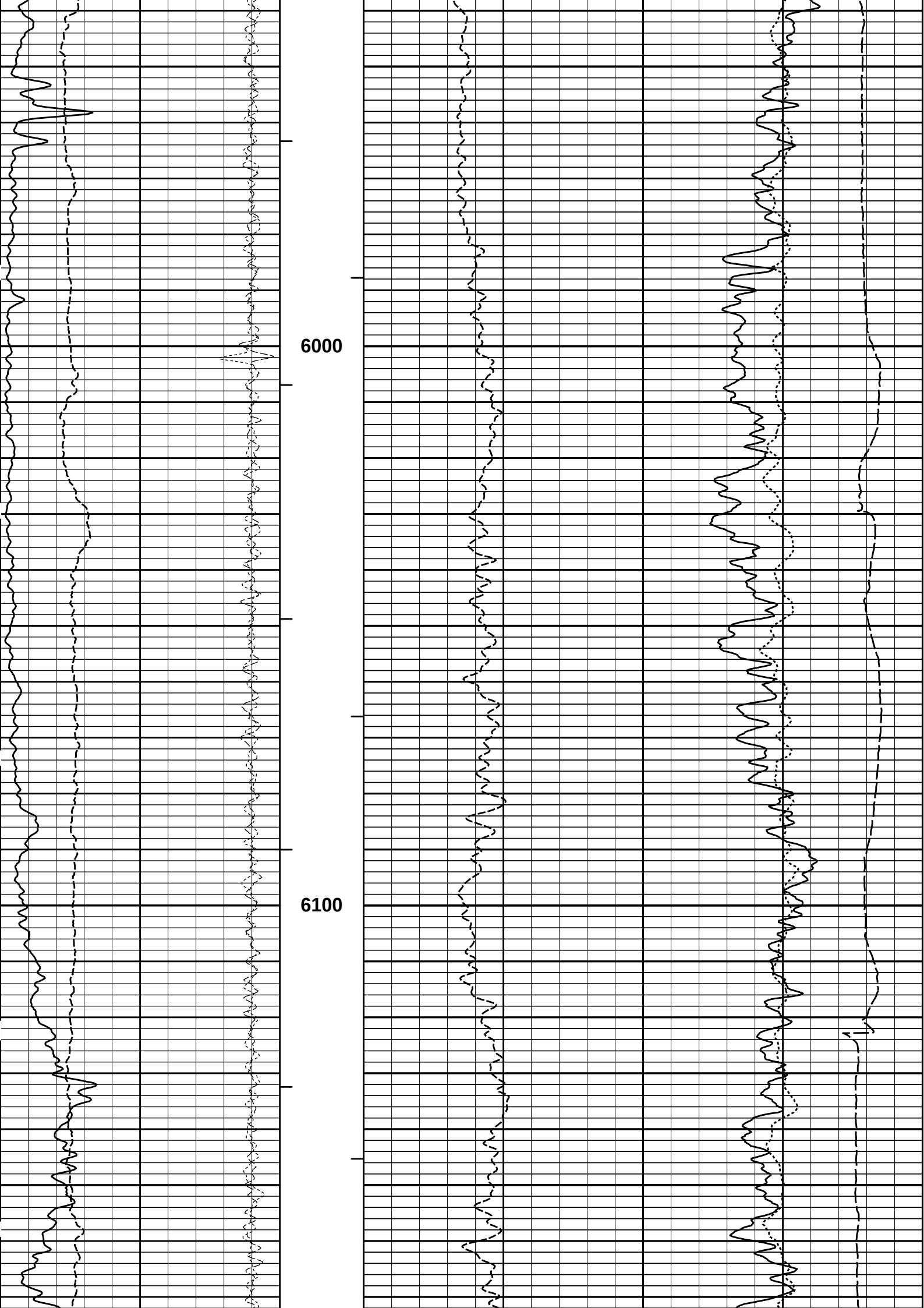


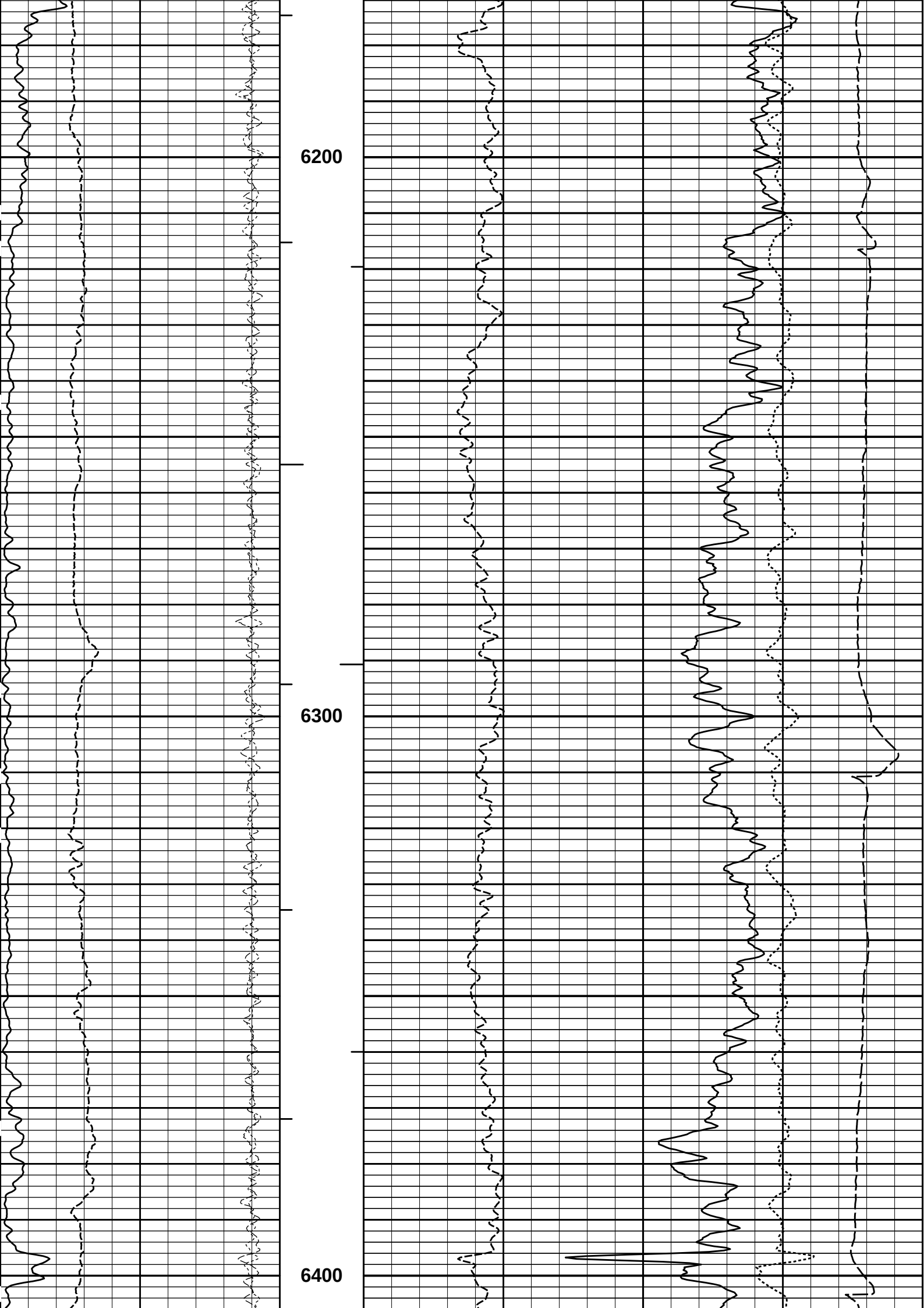


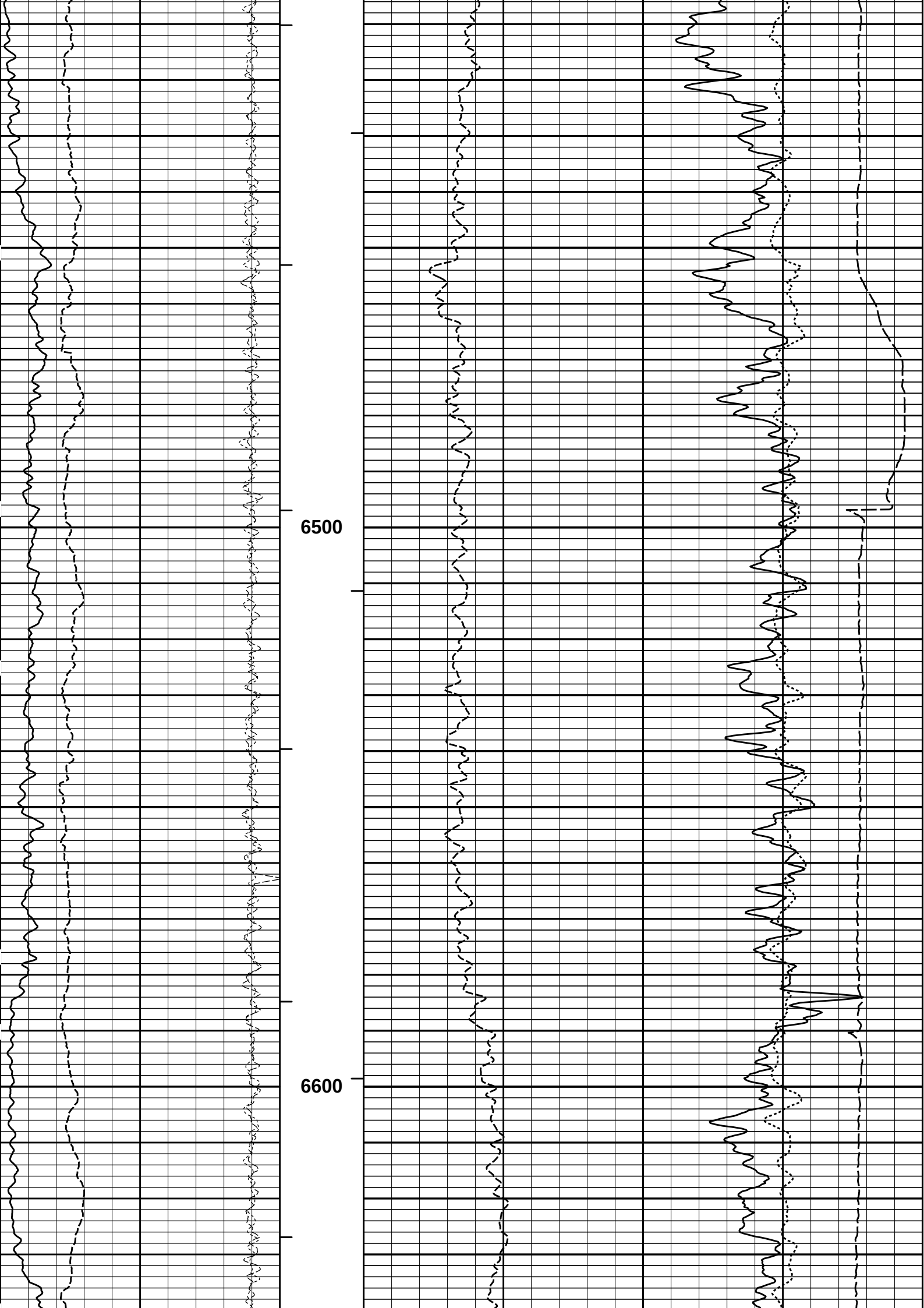


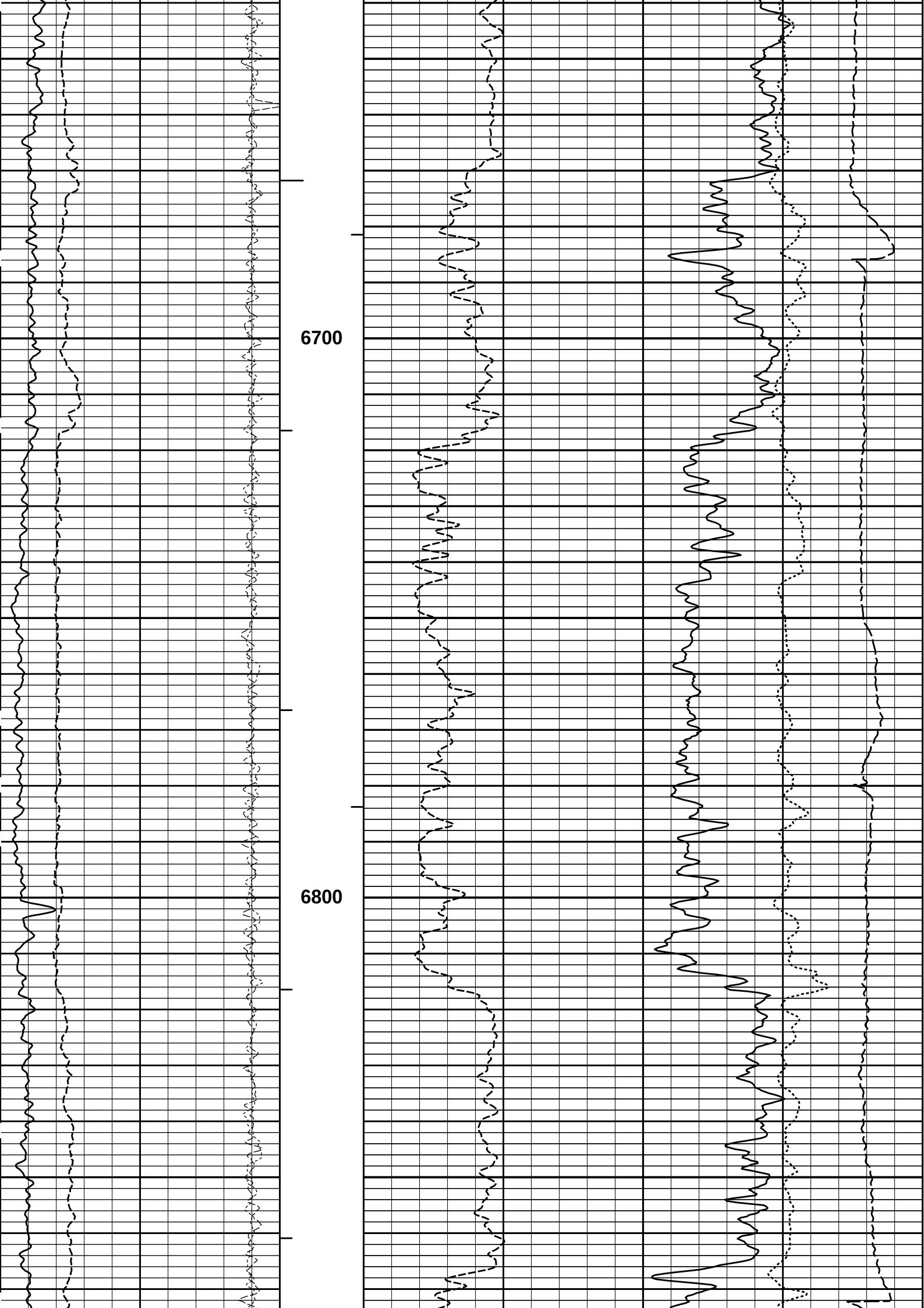


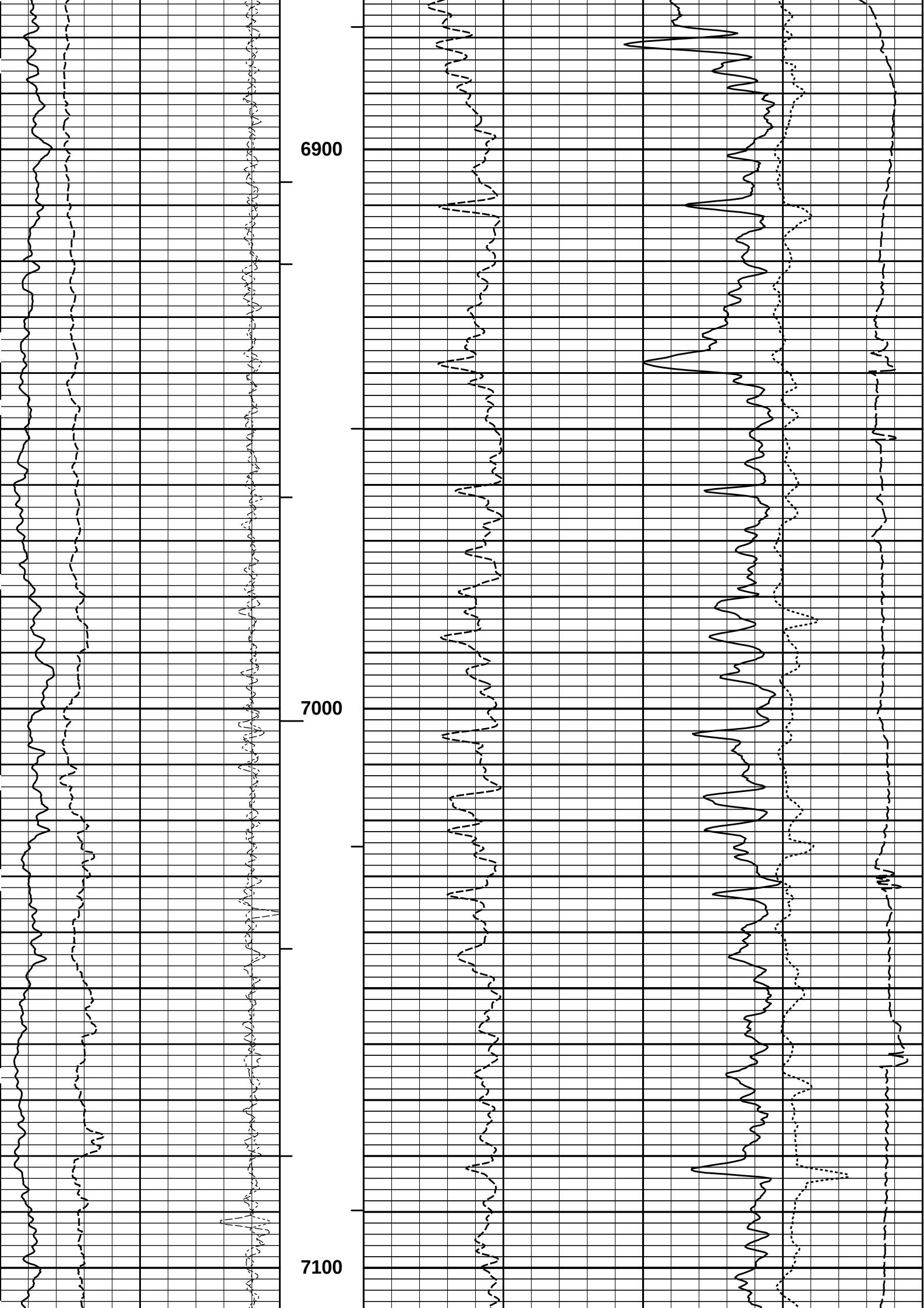


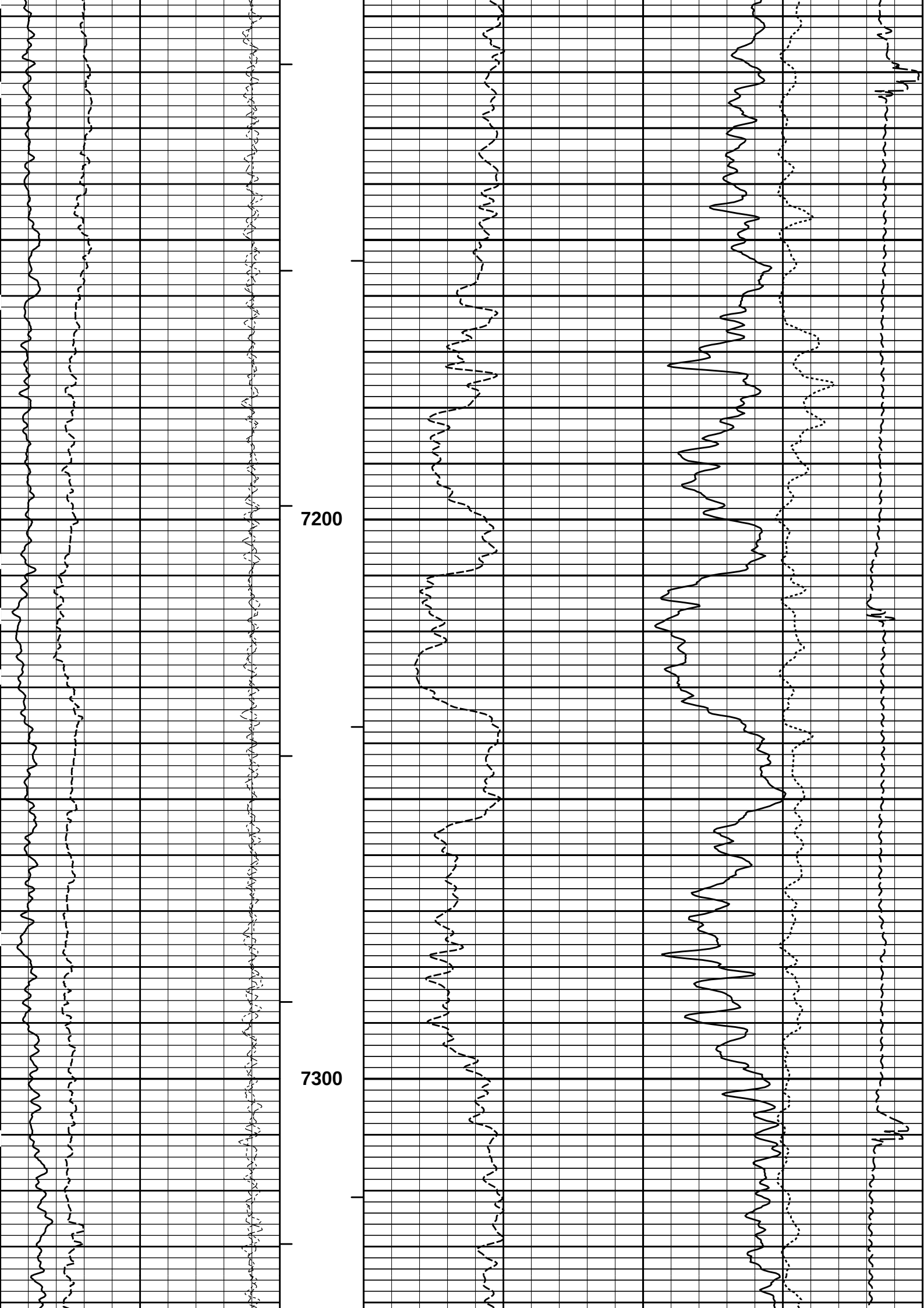


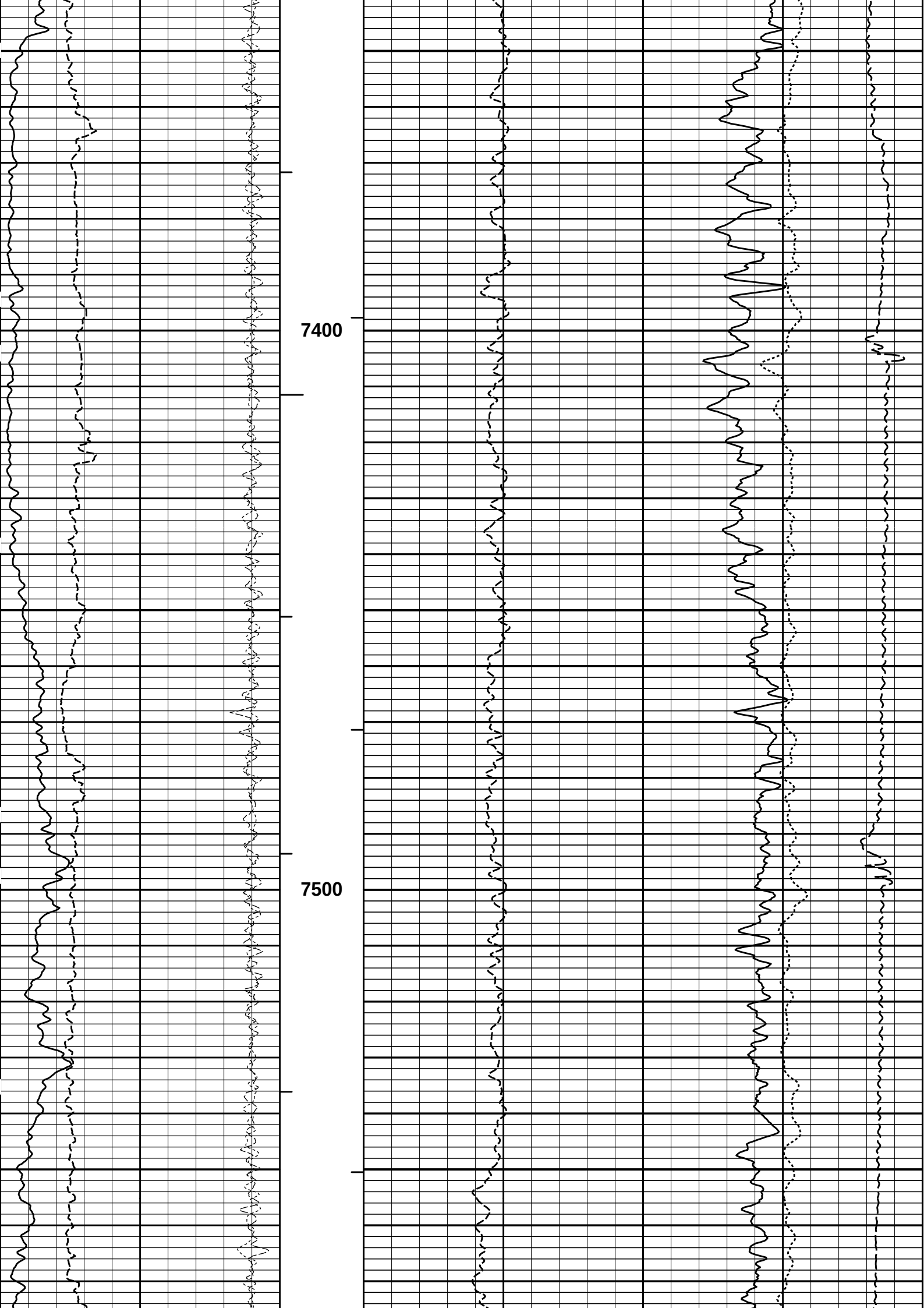


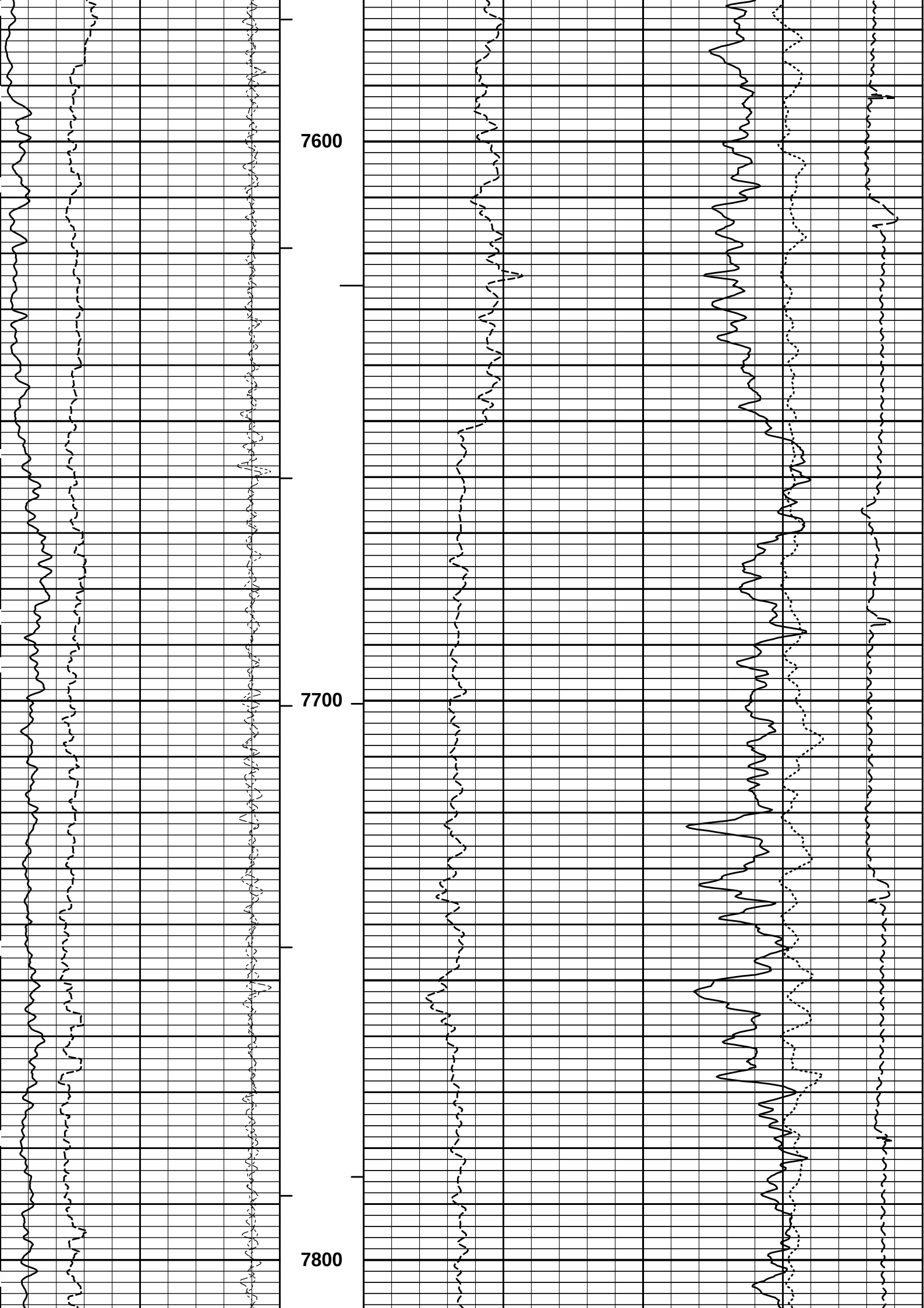


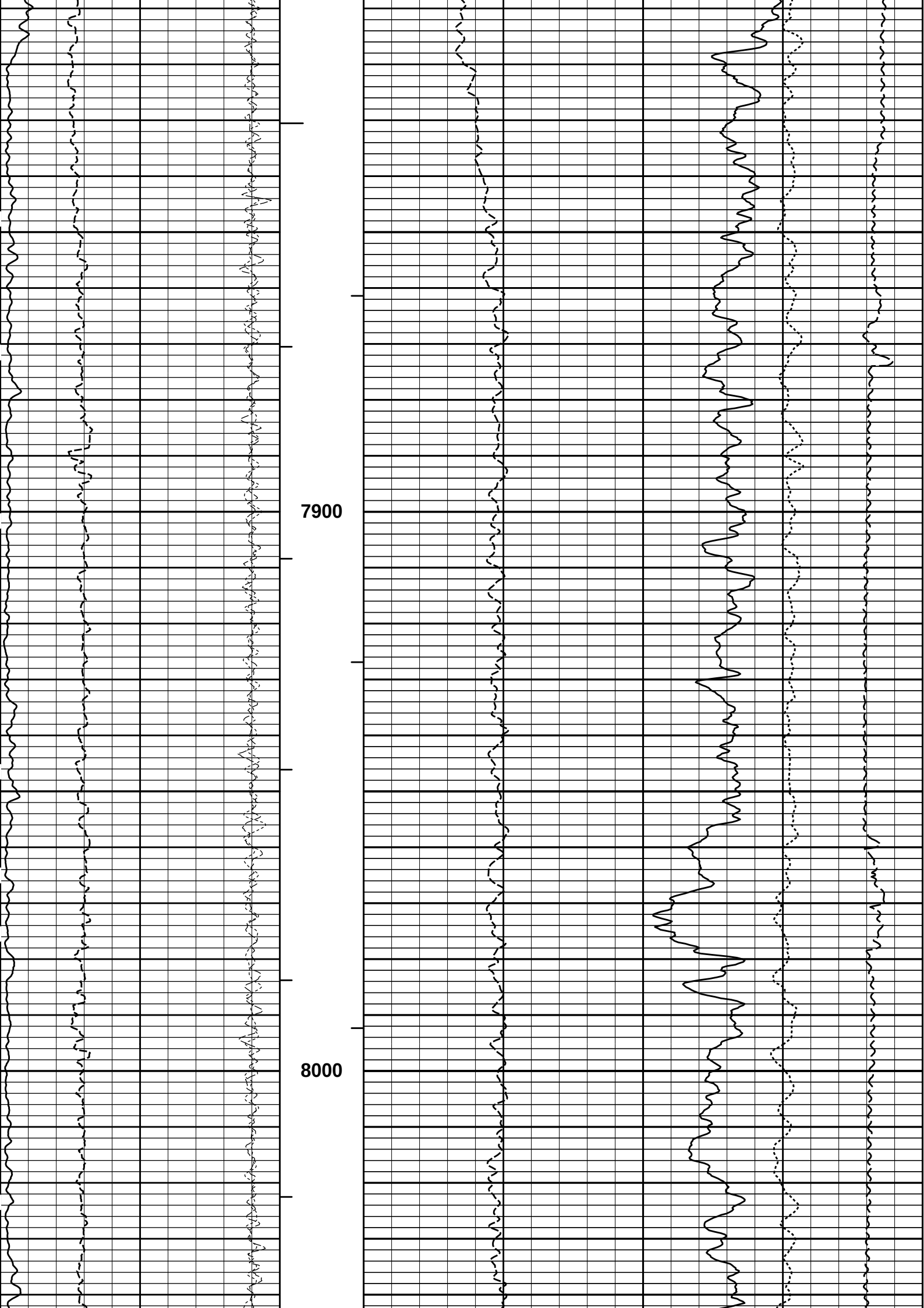


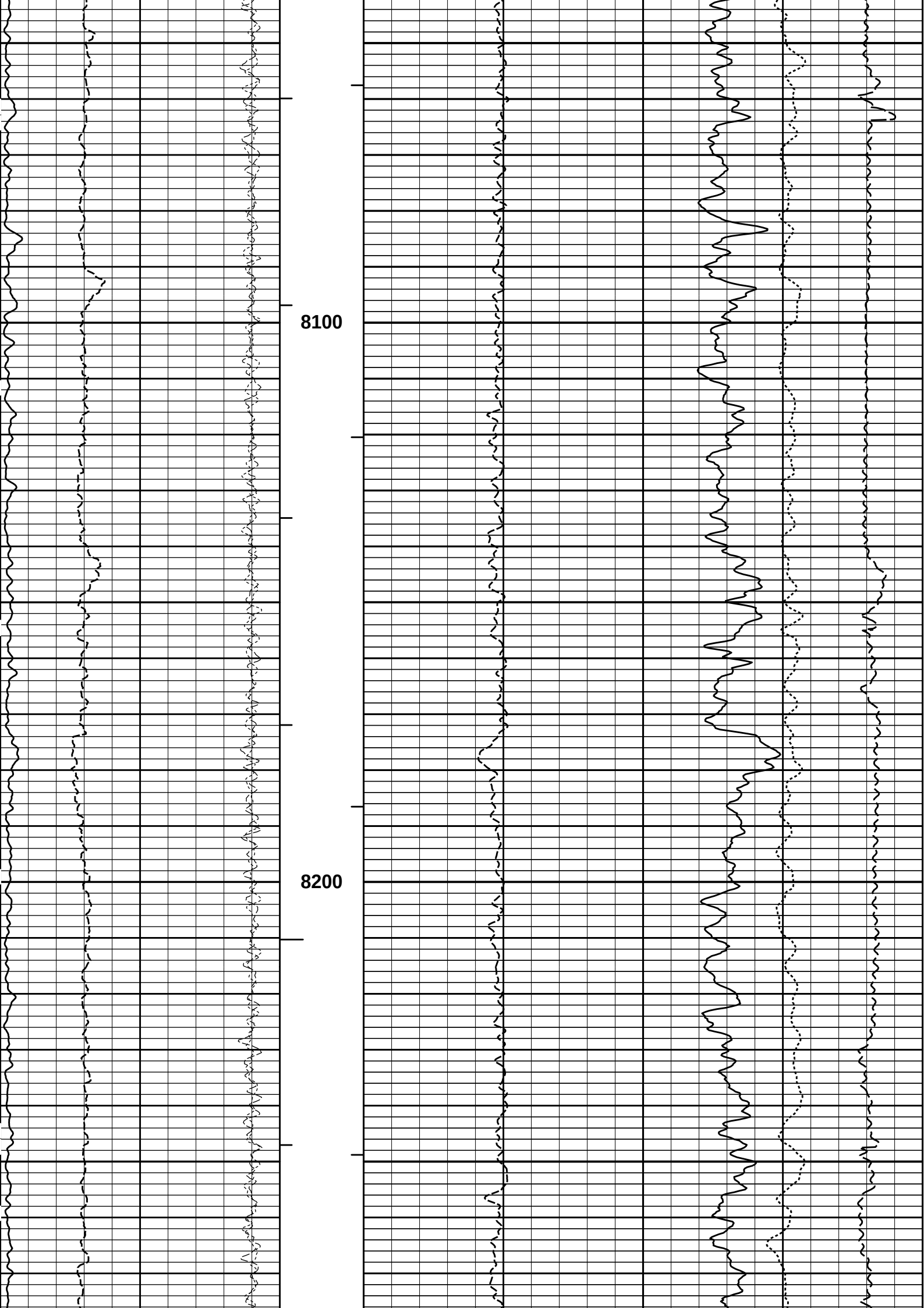


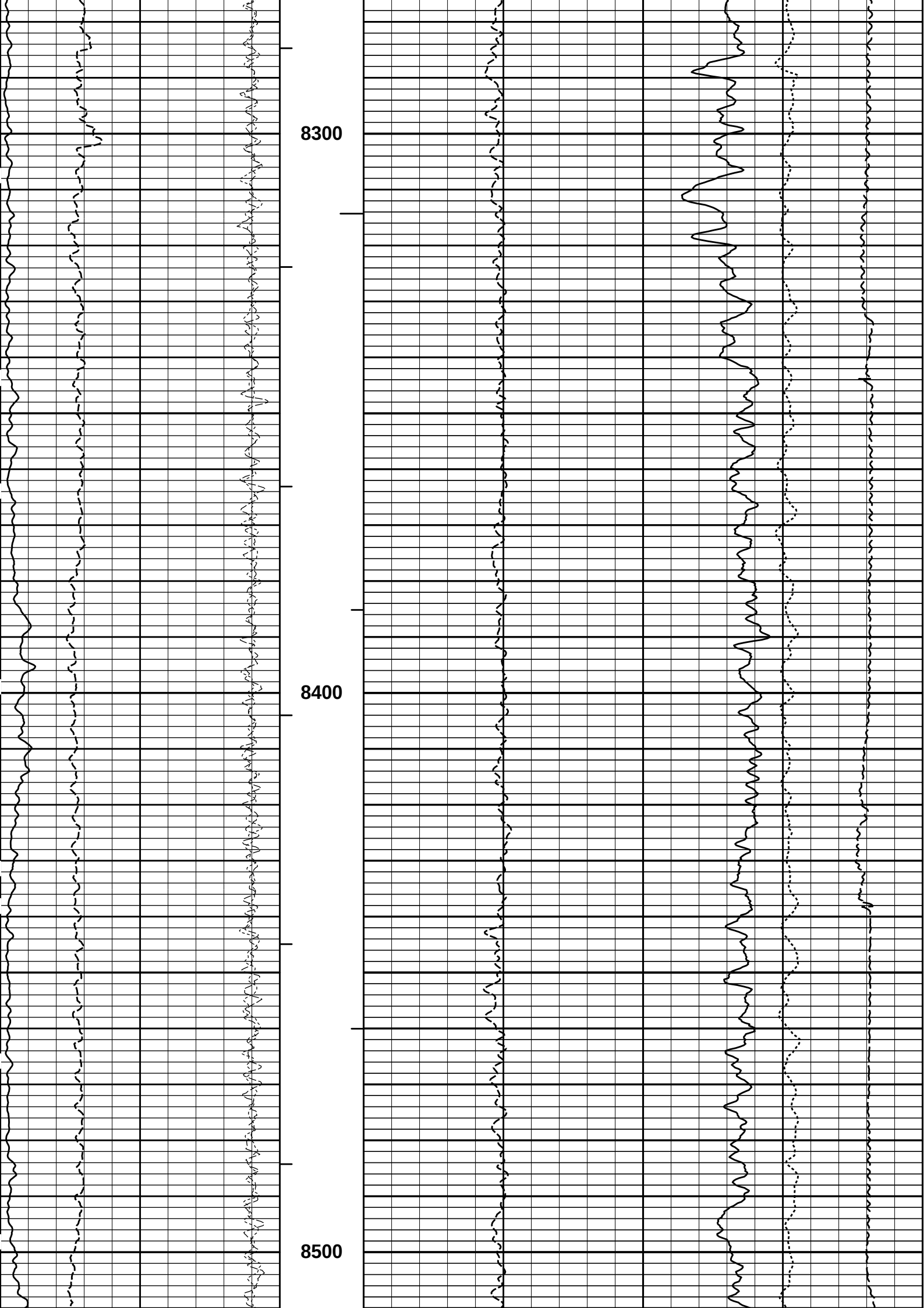


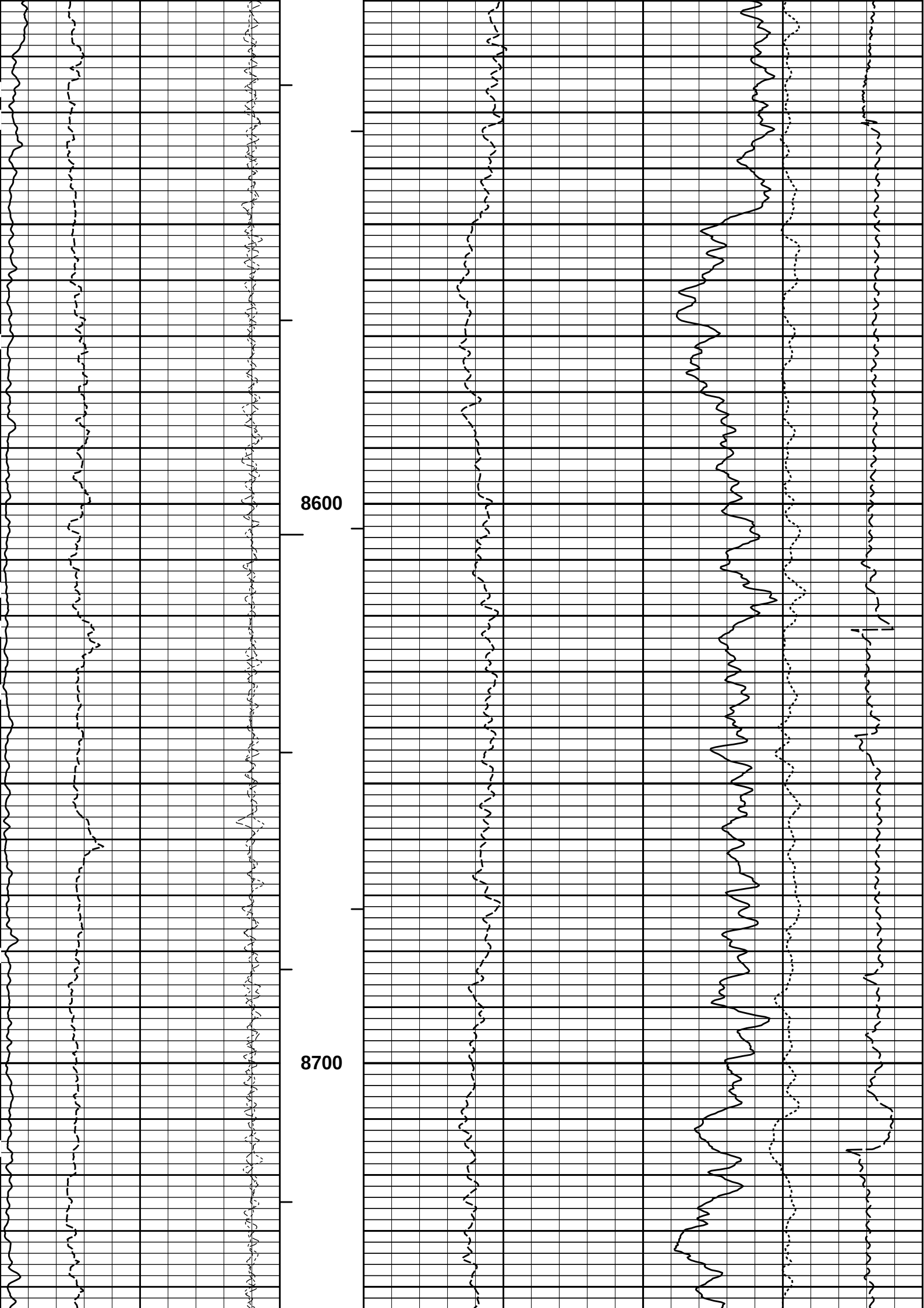


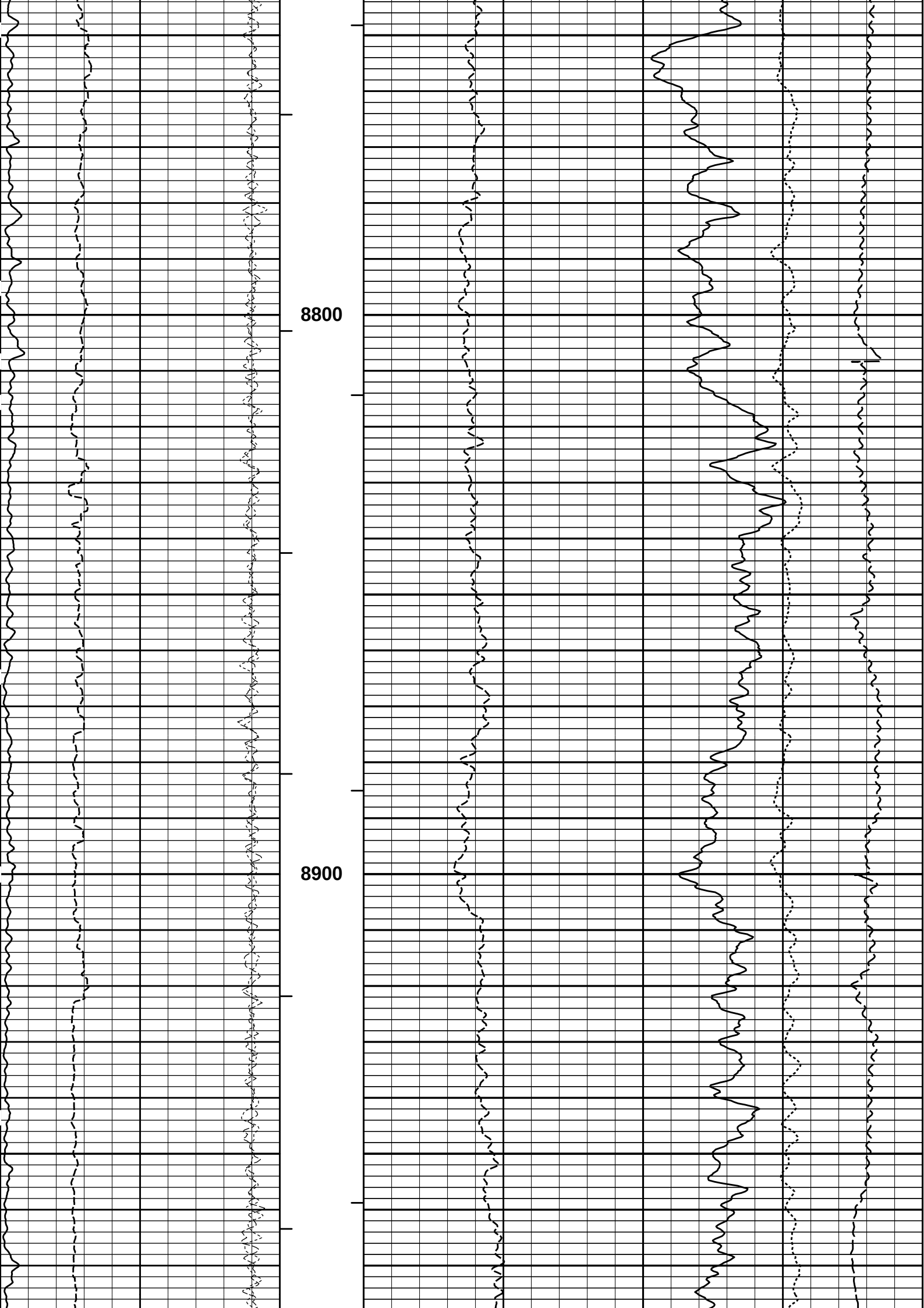


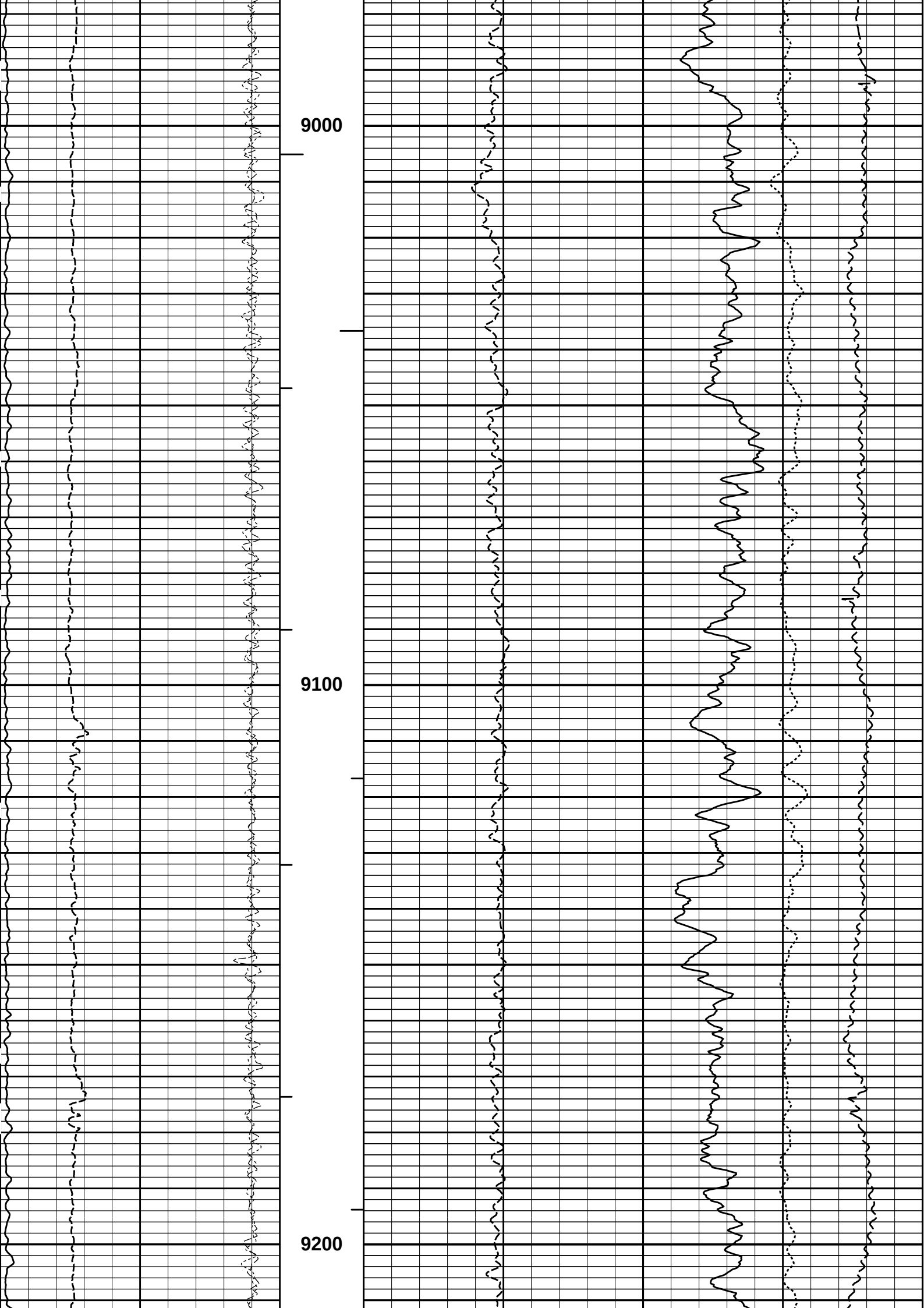


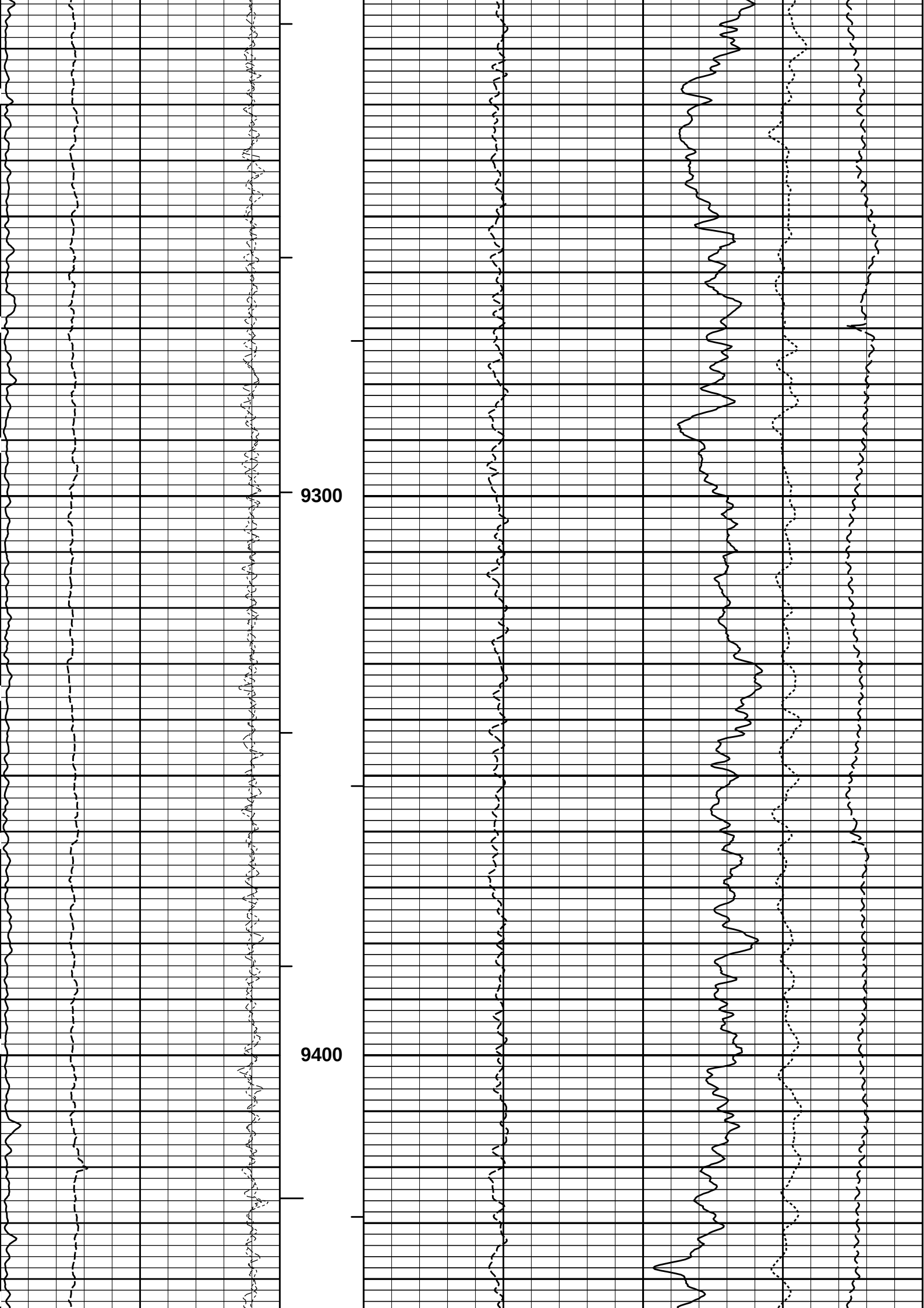


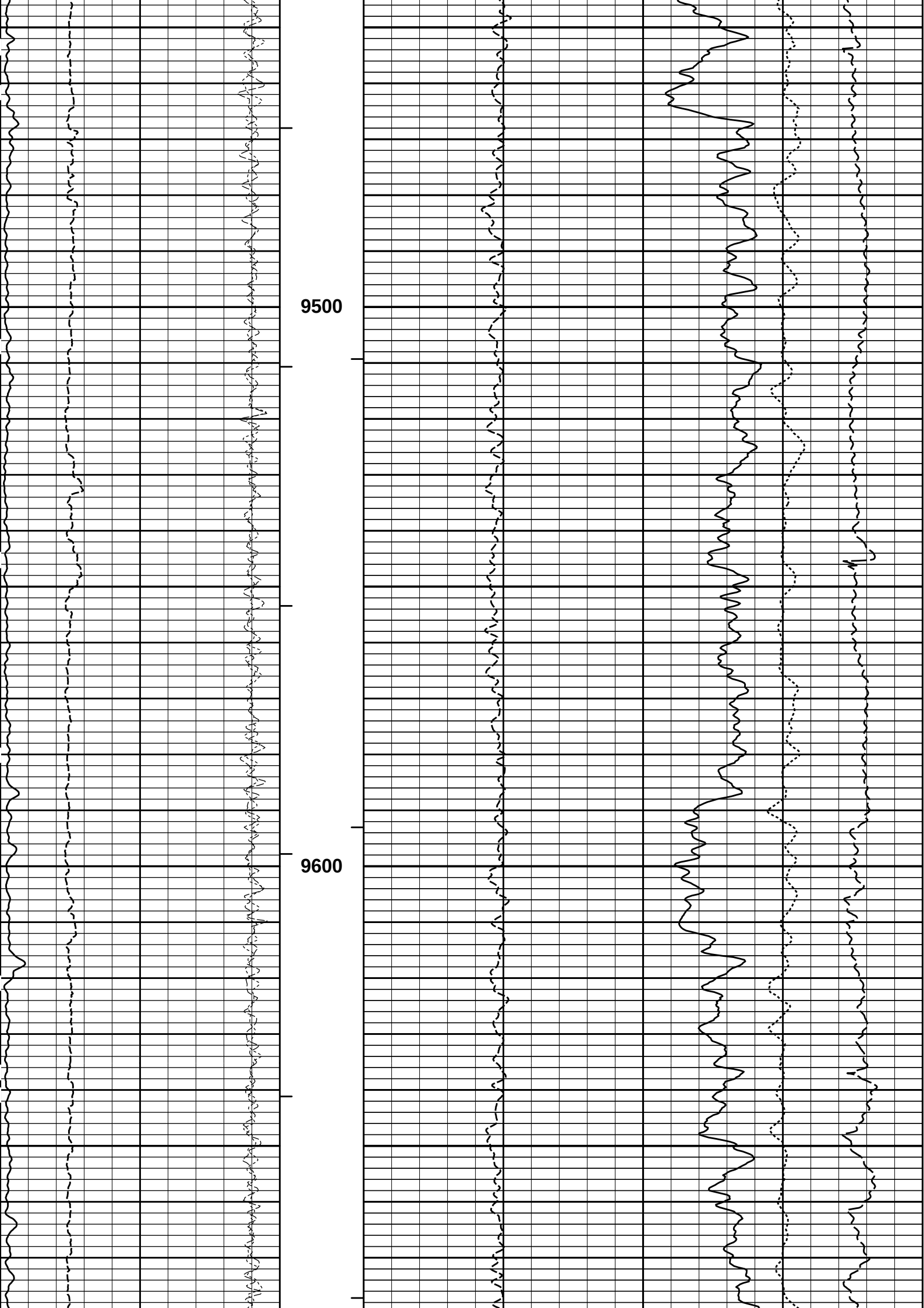


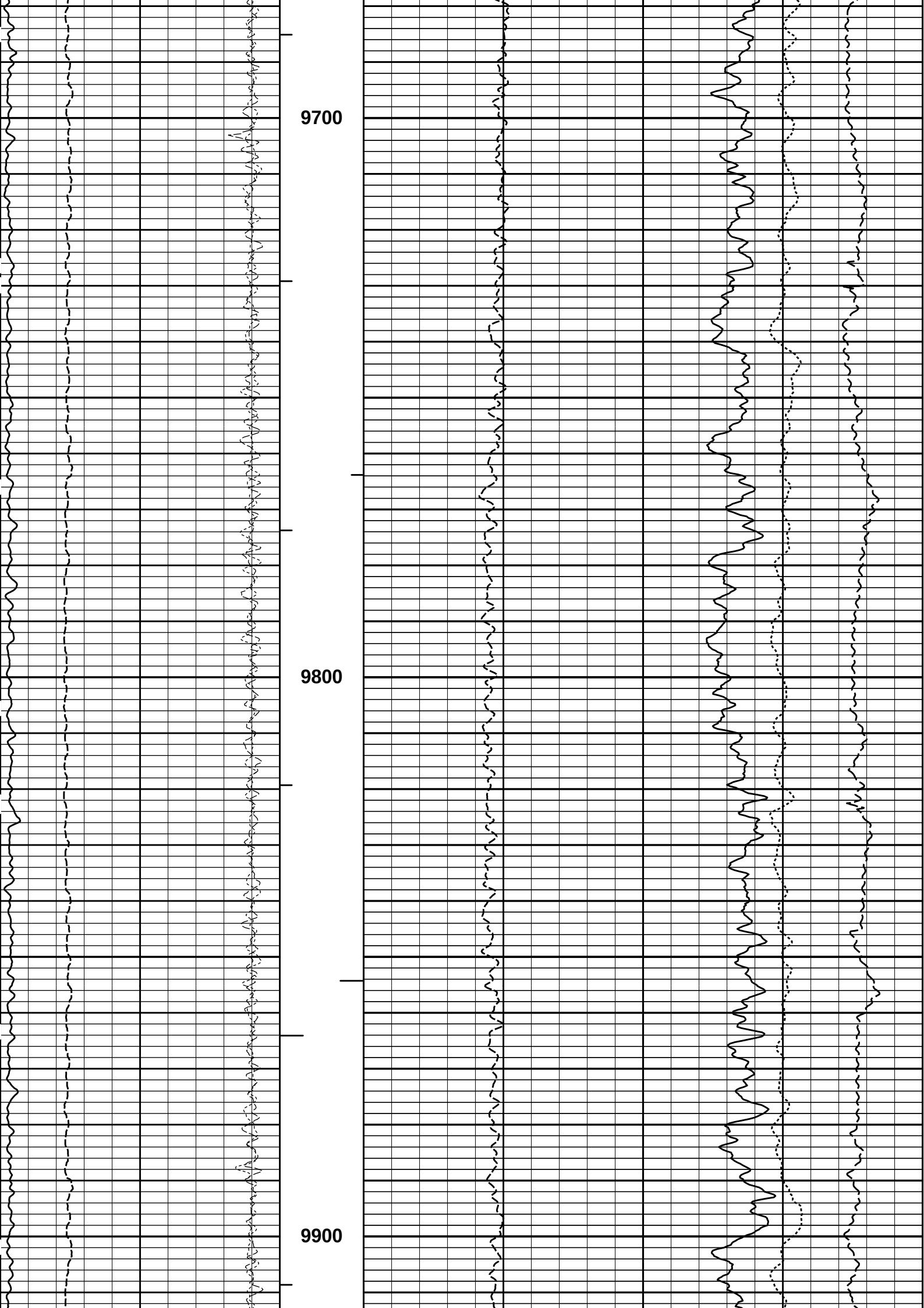


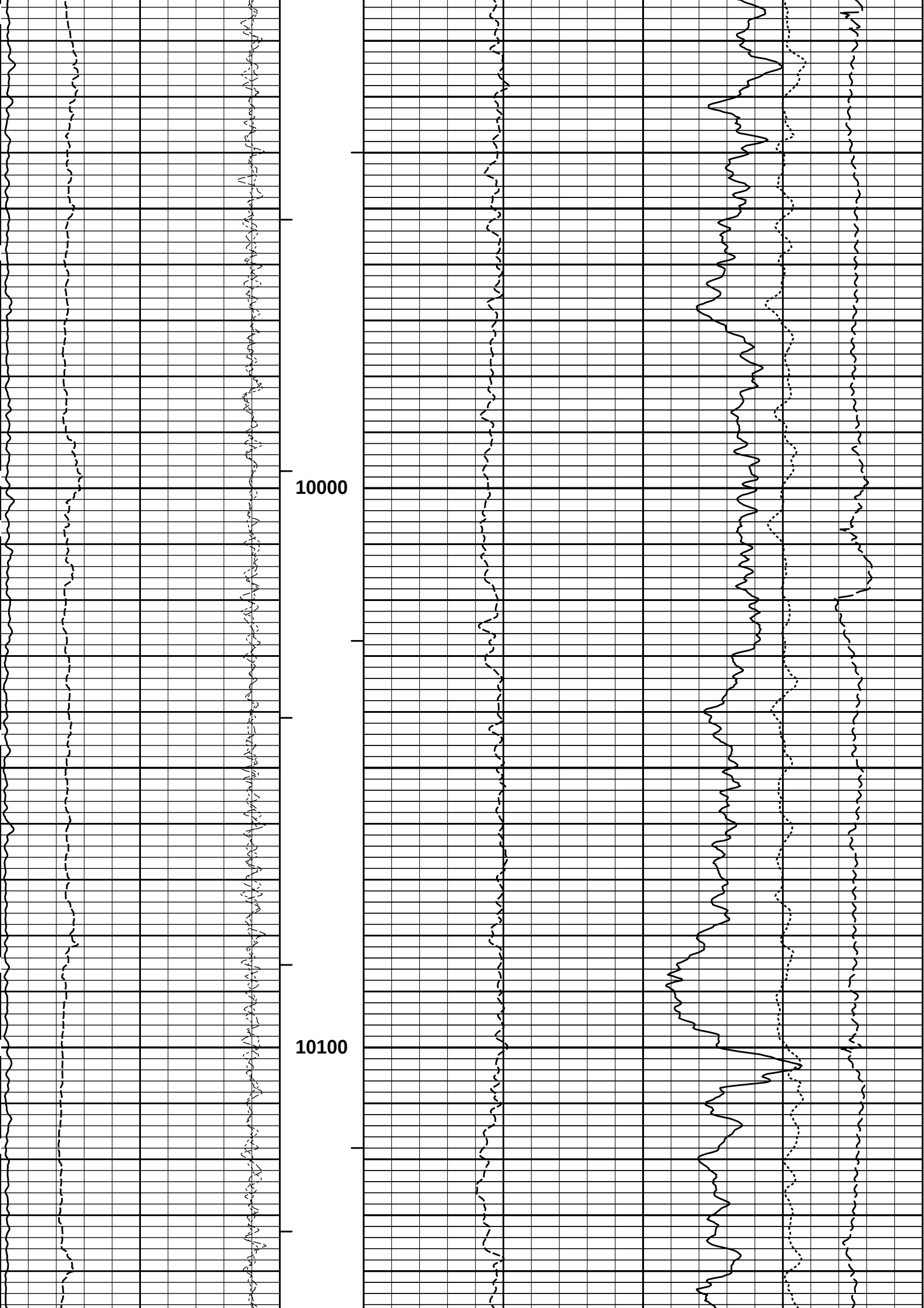


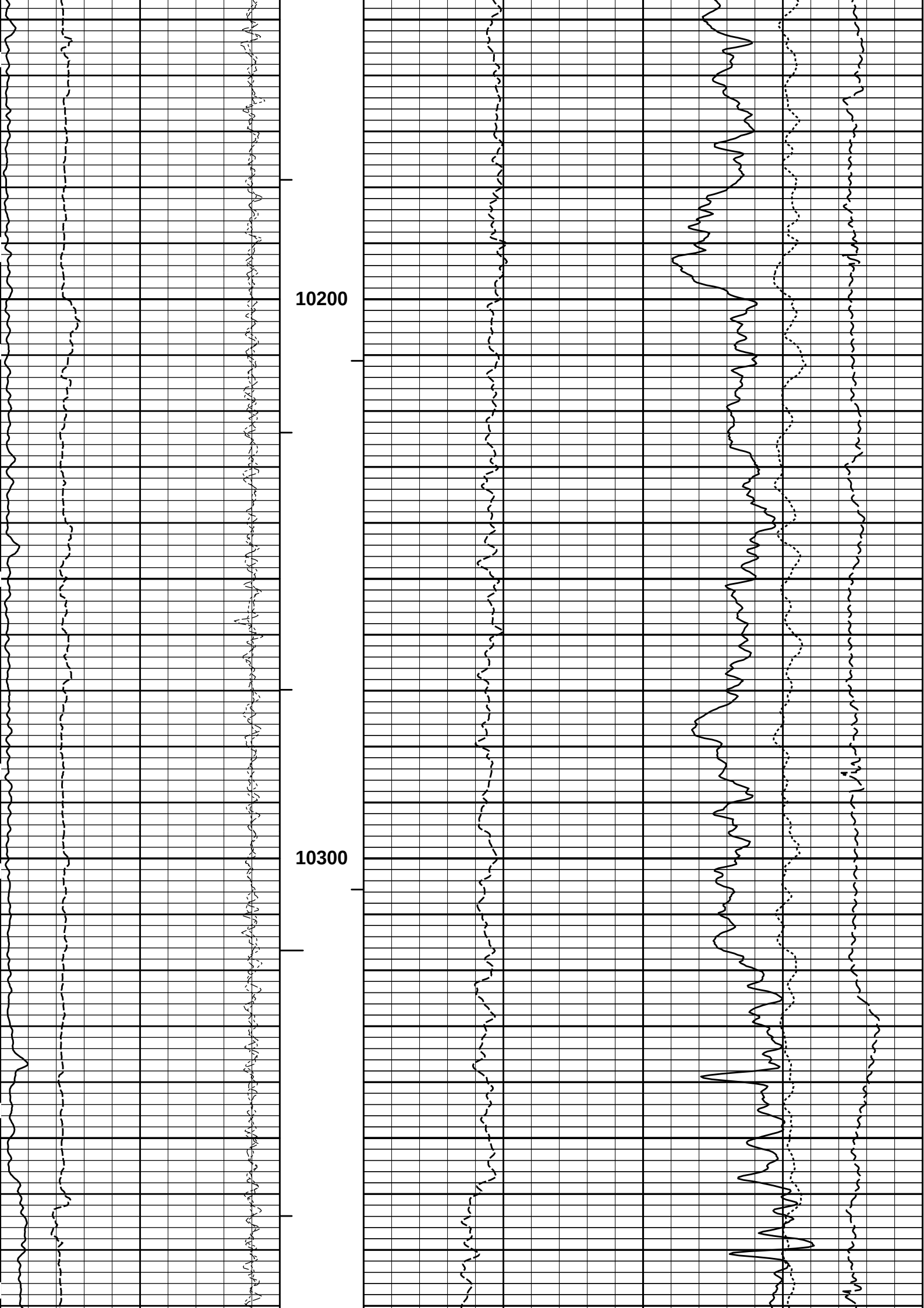


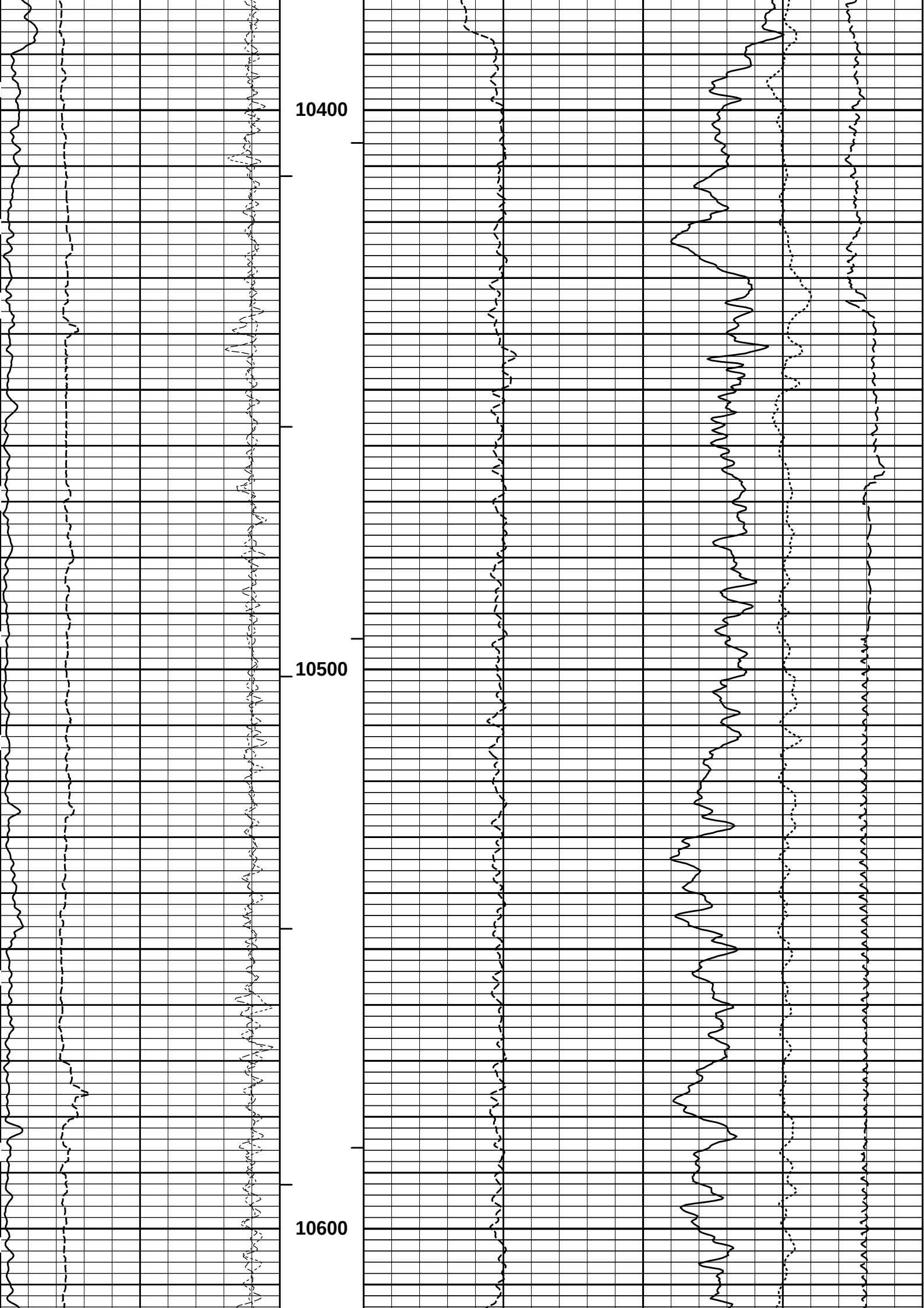


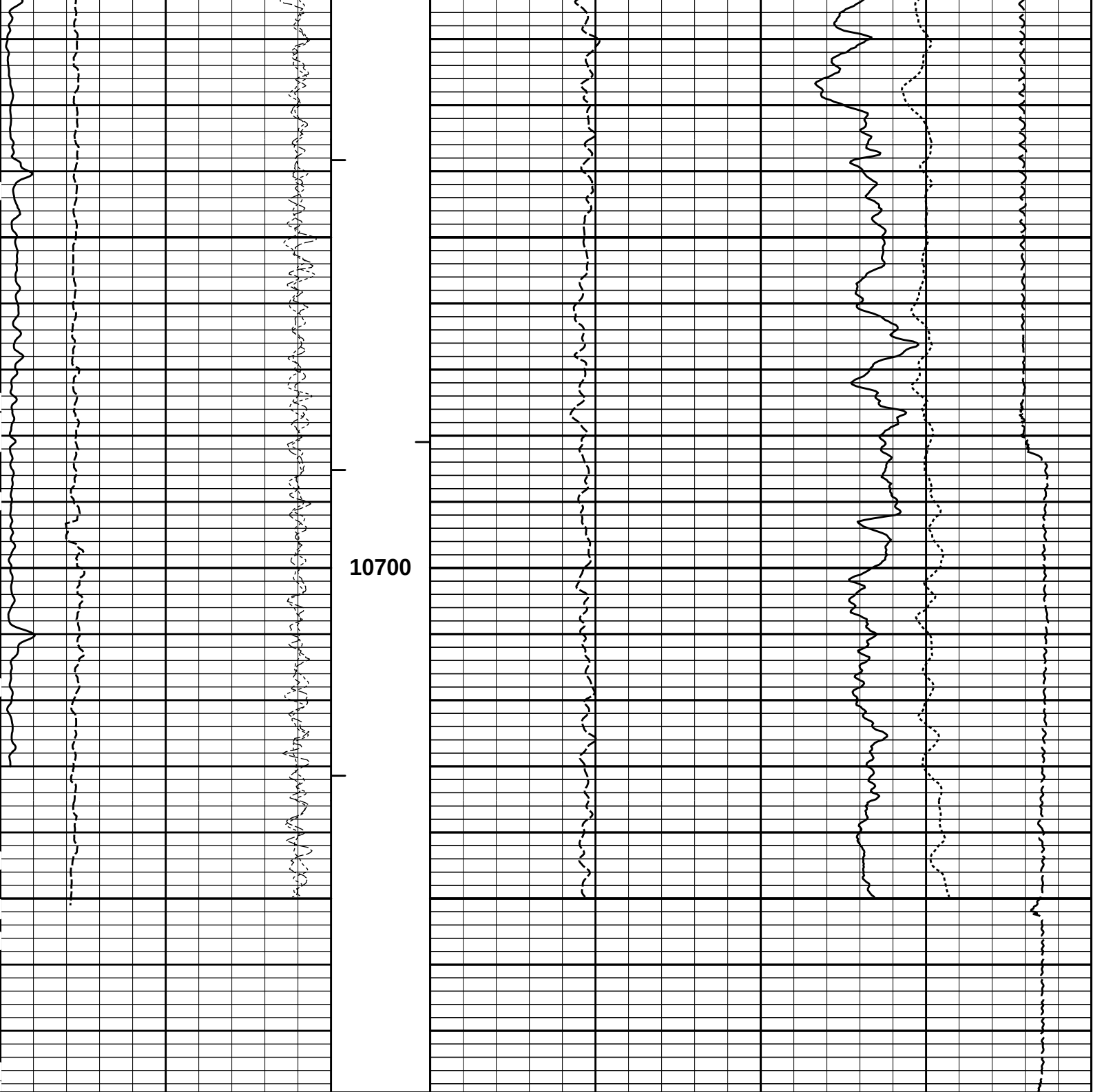












4	Caliper	14	MD 1 : 240 ft	0	Pe	10	-0.25	DensityCorr	0.25
	inches								
-18	NearQuality	2							
18	FarQuality	-2							
			AHV ft3	15K	Tension	0			
			BHV ft3	2	Bulk Density	3			
0	Gamma Ray	150							
	api								
SHALE									

HALLIBURTON

Plot Time: 15-Aug-18 16:33:00
Plot Range: 4590 ft to 10779.3 ft
Data: BRUBAKER_1-17H\Well Based\MAIN_TD-4590\
Plot File: \\-LOCAL-1BRUBAKER_1-17H\Well Based\PORO\BULKD_5_MAIN_LIB

5 INCH MAIN LOG					
MEASURED DEPTH MAIN SECTION 5" PER 100'					
HALLIBURTON PARAMETERS REPORT					
Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	SHARED	BS	Bit Size	6.125	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	8.800	ppg
	SHARED	WAGT	Weighting Agent	Natural	
	SHARED	BSAL	Borehole salinity	0.00	ppm
	SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
	SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
	SHARED	RMUD	Mud Resistivity	2.000	ohmm
	SHARED	TRM	Temperature of Mud	75.0	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	4.500	in
	SHARED	CSTR	Compressive Strength	1000.00	psia
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	10799.00	ft
	SHARED	BHT	Bottom Hole Temperature	170.0	degF
	SHARED	SVTM	Navigation and Survey Master Tool	NONE	
	SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET	
	SHARED	TEMM	CBM Temperature Master Tool	GTET	
	SHARED	SOCI	Source of Casing Information	Parameters	
	SHARED	MSAL	Water-base mud filtrate salinity	0.00	ppm
	Rwa / CrossPlot	XPOK	Process Crossplot?	Yes	
	Rwa / CrossPlot	FCHO	Select Source of F	Automatic	
	Rwa / CrossPlot	AFAC	Archie A factor	0.6200	
	Rwa / CrossPlot	MFAC	Archie M factor	2.1500	
	Rwa / CrossPlot	RMFR	Rmf Reference	0.10	ohmm
	Rwa / CrossPlot	TMFR	Rmf Ref Temp	75.00	degF
	Rwa / CrossPlot	RWA	Resistivity of Formation Water	0.05	ohmm
	Rwa / CrossPlot	ADP	Use Air Porosity to calculate CrossplotPhi	No	
	Rwa / CrossPlot	BHSM	Borehole Size Source Tool	SDLT	
	Rwa / CrossPlot	ROIN	Input for RO Calculation	Rwa	
	GTET	GROK	Process Gamma Ray?	Yes	
	GTET	GEOK	Process Gamma Ray EVR?	No	
	GTET	TPOS	Tool Position for Gamma Ray Tools.	Eccentered	
	GTET	BHSM	Borehole Size Source Tool	SDLT	
	DSNT	DNOK	Process DSN?	Yes	

DSNT	DEOK	Process DSN EVR?	No	
DSNT	NLIT	Neutron Lithology	Limestone	
DSNT	DNSO	DSN Standoff - 0.25 in (6.35 mm) Recommended	0.250	in
DSNT	DNTT	Temperature Correction Type	None	
DSNT	DPRS	DSN Pressure Correction Type	None	
DSNT	SHCO	View More Correction Options	No	
DSNT	UTVD	Use TVD for Gradient Corrections?	No	
DSNT	LHWT	Logging Horizontal Water Tank?	No	
DSNT	UCLA	Classic Neutron Parameter utilized?	No	
DSNT	BHSM	Borehole Size Source Tool	SDLT	
SDLT	CLOK	Process Caliper Outputs?	Yes	
Microlog Pad	MLOK	Process MicroLog Outputs?	Yes	
SDLT Pad	DNOK	Process Density?	Yes	
SDLT Pad	DNOK	Process Density EVR?	No	
SDLT Pad	CB	Logging Calibration Blocks?	No	
SDLT Pad	SPVT	SDLT Pad Temperature Valid?	Yes	
SDLT Pad	DTWN	Disable temperature warning	No	
SDLT Pad	DMA	Formation Density Matrix	2.710	g/cc
SDLT Pad	DFL	Formation Density Fluid	1.000	g/cc
SDLT Pad	BHSM	Borehole Size Source Tool	SDLT	
ACRt Sonde	RTOK	Process ACRT?	Yes	
ACRt Sonde	MNSO	Minimum Tool Standoff	1.50	in
ACRt Sonde	TCS1	Temperature Correction Source	FP Lwr & FP Upr	
ACRt Sonde	TPOS	Tool Position	Free Hanging	
ACRt Sonde	RMOP	Rmud Source	Mud Cell	
ACRt Sonde	RMIN	Minimum Resistivity for MAP	0.20	ohmm
ACRt Sonde	RMAX	Maximum Resistivity for MAP	200.00	ohmm
ACRt Sonde	THQY	Threshold Quality	0.50	
ACRt Sonde	MRFX	Fixed mud resistivity	2000	ohmm
ACRt Sonde	BHSM	Borehole Size Source Tool	SDLT	
ACRt Sonde	MBFL	Apply Corkscrew Effect?	No	
BOTTOM				
Data: BRUBAKER_1-17H10001 TPL-GTET-DSNT-SDLT-ACRT1005 15-Aug-18 02:33 Up 10779.5f			Date: 15-Aug-18 02:43:19	

HALLIBURTON				
CALIBRATION REPORT				
NATURAL GAMMA RAY TOOL SHOP CALIBRATION				
Tool Name:	GTET - 10971172	Reference Calibration Date:	23-Jul-18 10:19:40	
Engineer:	JORGE ORLANDO PEREZ	Calibration Date:	23-Jul-18 10:24:24	
Software Version:	WL INSITE R5.6.0 (Build 2)	Calibration Version:	1	
Calibrator Source S/N: TB-146				
Calibrator API Reference:225.00 api				
Equivalent Calibrator API Reference:228.9 api				
	Measurement	Measured	Calibrated	Units
	Background	23.5	23.2	api
	Background + Calibrator	255.8	252.1	api
	Calibrator	232.3	228.9	api
NATURAL GAMMA RAY TOOL FIELD CALIBRATION				
Tool Name:	GTET - 10971172	Reference Calibration Date:	23-Jul-18 10:24:24	
Engineer:	JORGE ORLANDO PEREZ	Calibration Date:	23-Jul-18 10:28:05	
Software Version:	WL INSITE R5.6.0 (Build 2)	Calibration Version:	1	
Calibrator Source S/N: TB-146				
Calibrator API Reference:225.00 api				

Field Verification	Shop	Field	Units
Background	23.2	23.1	api
Background + Calibrator	252.1	254.0	api
Calibrator	228.9	230.9	api

Shop	Field	Difference	Tolerance
228.9	230.9	-2.0	+/- 9.00

ACCELEROMETER SHOP CALIBRATION

Tool Name:	GTET - 10971172	Reference Calibration Date:	01-Jan-70 00:00:00
Engineer:	WHITLOCK	Calibration Date:	20-Oct-08 14:40:55
Software Version:	WL INSITE R2.2 (Build 2)	Calibration Version:	1

Horizontal-1 Telemetry	Horizontal-2 Telemetry	Vertical Telemetry	Units
-85.64	-67.18	-16422.00	cnts

Coefficient	Coefficient Value	Tolerance
Gain	-0.000061	----
Offset	-0.005	----
Noise	0.0000	0.0000 - 0.0000

Orientation	Measured	Tolerance	Calibrated	Tolerance
Horizontal	-76.41	-0.10 - 0.10	0.00	-0.10 - 0.10
Vertical	-16422.00	0.90 - 1.10	1.00	0.90 - 1.10

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name:	DSNT - 11020487	Reference Calibration Date:	02-Jun-18 12:06:48
Engineer:	SEAN WOLTEMATH	Calibration Date:	02-Jun-18 12:32:43
Software Version:	WL INSITE R5.6.0 (Build 2)	Calibration Version:	1

Logging Source S/N: DSN-424
Tank Serial Number: 12345678
Reference value assigned to Tank: 56.100
Snow Block S/N: 12345678
Calibration Tank Water Temperature: 68 degF
Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS

Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	1.00899	1.00539	0.900 - 1.100

WATER TANK SUMMARY (Horizontal Water Tank)

Measurement	Current Reading (Previous Coef.)	Calibrated (New Coef.)	Change	Control Limit On Change
Porosity (decp):	0.2369	0.2358	0.0011	+/- 0.0020
Calibrated Ratio:	10.5973	10.5595	0.038	+/- 0.050

VERIFIER

Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0737	0.02000 - 0.09000

PASS/FAIL SUMMARY

Background Check:	Passed
Gain-Range Check:	Passed

DUAL SPACED NEUTRON FIELD CALIBRATION

Tool Name: DSNT - 11020487

Reference Calibration Date: 02-Jun-18 12:32:43

Engineer: SEAN WOLTEMATH

Calibration Date: 17-Jul-18 11:46:32

Software Version: WL INSITE R5.6.0 (Build 2)

Calibration Version: 1

Logging Source S/N: DSN-424

Snow Block S/N: 12345678

NEUTRON FIELD-CHECK SUMMARY

	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0737	0.0615	-0.0122	+/- 0.0150

PASS/FAIL SUMMARY

Block Change Check:	Passed
Snow Block Stat Check:	Passed
Temperature Check:	Passed

DENSITY CALIPER SHOP CALIBRATION

Tool Name: SDLT - 10951315

Reference Calibration Date: 05-Jun-18 15:52:51

Engineer: SEAN WOLTEMATH

Calibration Date: 12-Jul-18 10:21:55

Software Version: WL INSITE R5.6.0 (Build 2)

Calibration Version: 1

Host Tool Name: DSNT - 11020487

CALIBRATION COEFFICIENTS

Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-3384.37	-3428.66	-7000.00 - -1000.00
Pad Gain	0.0003746	0.0003776	0.0002000 - 0.0006000
Arm Offset	-2796.96	-2996.48	-5000.00 - 3000.00
Arm Gain	0.0005327	0.0005516	0.000300 - 0.000700
Arm Power	-0.000006524	-0.000007437	-0.000010000 - 0.000010000

The ring diameter is computed from: DIAMETER = PAD EXTENSION + ARM EXTENSION + TOOL DIAMETER

Tool Diameter: 4.50 in

CALIBRATION RINGS

Measurement	Current Reading (Previous Coeff.)	Calibrated (New Coeff.)	Change	Control Limit On New Value
PAD EXTENSION:				
Small Ring (in)	2.00	2.00	0.00	+/- 0.20
Medium Ring (in)	3.74	3.75	0.01	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.56	6.50	-0.06	+/- 0.20
Medium Ring (in)	8.26	8.25	-0.01	+/- 0.20
Large Ring (in)	14.98	15.00	0.02	+/- 0.20

PASS/FAIL SUMMARY

Calibration-Coefficients Range Check:	Passed
Ring-Measurement Check:	Passed

PASS/FAIL SUMMARY

Calibration-Coefficients Range Check:	Passed
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MICRO LOG SHOP CALIBRATION

Tool Name: Microlog Pad - 10951315

Reference Calibration Date: 05-Jun-18 16:17:44

Engineer: JORGE ORLANDO PEREZ

Calibration Date: 05-Jun-18 16:20:19

Software Version: WL INSITE R5.6.0 (Build 2)

Calibration Version: 1

Host Tool Name: DSNT - 11020487

CALIBRATION COEFFICIENT SUMMARY

Measurement	Micro Log Normal		Micro Log Lateral		Units
	Measured	Calibrated	Measured	Calibrated	
Tool Zero	-0.08	-0.09	-0.00	-0.00	ohmm
Calibration Point #1	0.01	0.00	0.00	0.00	ohmm
Calibration Point #2	20.00	20.00	20.01	20.00	ohmm
Internal Reference	19.92	19.91	20.01	20.01	ohmm
Measurement	Micro Log Normal Tool Value		Micro Log Lateral Tool Value		Units
Tool Zero	-2.58		1.07		V
Calibration Point #1	22.26		2.44		V
Calibration Point #2	5354.48		6944.42		V
Internal Reference	5330.80		6946.23		V

MICRO LOG FIELD CHECK					
Tool Name:	Microlog Pad - 10951315			Reference Calibration Date:	05-Jun-18 16:20:19
Engineer:	JORGE ORLANDO PEREZ			Calibration Date:	23-Jul-18 10:07:26
Software Version:	WL INSITE R5.6.0 (Build 2)			Calibration Version:	1

Measurement	Micro Log Normal		Micro Log Lateral		Units
	Shop	Field	Shop	Field	
Tool Zero	-0.09	-0.08	-0.00	-0.01	ohmm
Internal Reference	19.91	19.88	20.01	19.96	ohmm
Summary					
Signal	Shop	Field	Difference		Tolerance
Microlog Normal	19.91	19.88	0.03		+/- 0.80
Microlog Lateral	20.01	19.96	0.05		+/- 0.80

SPECTRAL DENSITY SHOP CALIBRATION					
Tool Name:	SDLT Pad - 10865873			Reference Calibration Date:	07-Jun-18 09:45:44
Engineer:	JORGE ORLANDO PEREZ			Calibration Date:	07-Jun-18 10:06:09
Software Version:	WL INSITE R5.6.0 (Build 2)			Calibration Version:	1

Logging Source S/N: 5471GW					
Aluminum Block S/N: EL RENO STD ALUMINUM		Density: 2.581g/cc		Pe: 3.170	
Magnesium Block S/N: EL RENO		Density: 1.687g/cc		Pe: 2.594	

DENSITY CALIBRATION SUMMARY			
Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0237	1.0324	0.90 - 1.10
Near Dens Gain	1.0143	1.0165	0.90 - 1.10
Near Peak Gain	1.0353	1.0338	0.90 - 1.10
Near Lith Gain	1.0390	1.0348	0.90 - 1.10
Far Bar Gain	1.0089	1.0082	0.90 - 1.10
Far Dens Gain	1.0003	1.0003	0.90 - 1.10
Far Peak Gain	1.0005	0.9992	0.90 - 1.10
Far Lith Gain	0.9773	0.9763	0.90 - 1.10
Near Bar Offset	-0.1478	-0.2291	NONE
Near Dens Offset	-0.0668	-0.0857	NONE
Near Peak Offset	-0.2518	-0.2374	NONE
Near Lith Offset	-0.3043	-0.2679	NONE
Far Bar Offset	-0.0330	-0.0259	NONE
Far Dens Offset	0.0141	0.0136	NONE
Far Peak Offset	-0.0280	-0.0190	NONE
Far Lith Offset	0.1016	0.1099	NONE

Near Bar Background	817.02	819.19	700 - 1450
Near Dens Background	268.27	268.51	230 - 480
Near Peak Background	118.83	120.08	100 - 210
Near Lith Background	144.34	141.71	125 - 260
Far Bar Background	599.84	599.35	450 - 900
Far Dens Background	235.92	235.85	175 - 345
Far Peak Background	92.65	93.06	70 - 140
Far Lith Background	95.74	95.63	75 - 145

CALIBRATION BLOCK SUMMARY

Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.686	1.687	0.001	+/- 0.015
Pe	2.563	2.559	-0.004	+/- 0.150
ALUMINUM				
Density (g/cc)	2.581	2.581	0.000	+/- 0.01500
Pe	3.151	3.132	-0.019	+/- 0.150

TOOL SUMMARY

Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	0.0015	+/- 0.0110	0.0004	+/- 0.0140
Magnesium Block	-0.0011	+/- 0.0110	-0.0001	+/- 0.0140
Aluminum Block	-0.0005	+/- 0.0110	0.0001	+/- 0.0140
Resolution	10.01	6.00 - 11.50	8.92	6.00 - 11.50
Internal Verifier(B+D+P+L)	1349	1200 - 2700	1024	800 - 1700

PASS/FAIL SUMMARY

Background Quality Check:	Passed
Background Range Check:	Passed
Background Resolution Check:	Passed
Background Verification Check:	Passed
Magnesium Quality Check:	Passed
Aluminum Quality Check:	Passed
Gains Check:	Passed
Changes in Calibration Blocks:	Passed

SPECTRAL DENSITY FIELD CHECK

Tool Name:	SDLT Pad - 10865873	Reference Calibration Date:	07-Jun-18 10:06:09
Engineer:	JORGE ORLANDO PEREZ	Calibration Date:	23-Jul-18 10:13:53
Software Version:	WL INSITE R5.6.0 (Build 2)	Calibration Version:	1

Pad Temperature: 73.4 degF

DENSITY FIELD CALIBRATION SUMMARY

Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1349.485	1347.028	-2.457	14.854
Far (B+D+P+L) cps	1023.890	1020.740	-3.150	17.067
Near Resolution	10.01	10.00	-0.010	0.50
Far Resolution	8.92	8.99	0.070	1.00

PASS/FAIL SUMMARY

Bkg Quality Check:	Passed
Bkg Resolution Check:	Passed
Bkg Verification Check:	Passed

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

Tool Name: ACRt Sonde - 11005908

Reference Calibration Date: 12-Sep-17 09:46:32

Engineer: JORGE ORLANDO PEREZ

Calibration Date: 06-Jun-18 11:09:43

Software Version: WL INSITE R5.6.3 (Build 4)

Calibration Version: 1

Host Tool Name: ACRt Instrument - 11026095

TYPICAL GAIN RANGE

Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.0428	1.05	0.95	1.0248	1.05	0.95	1.0160	1.05
A2 (50")	0.95	1.0376	1.05	0.95	1.0200	1.05	0.95	1.0143	1.05
A3 (29")	0.95	1.0342	1.05	0.95	1.0155	1.05	0.95	1.0062	1.05
A4 (17")	0.95	1.0432	1.05	0.95	1.0223	1.05	0.95	1.0141	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.0162	1.05	0.95	1.0071	1.05
A6 (6")	N/A	N/A	N/A	0.95	1.0000	1.05	0.95	0.9905	1.05

SONDE OFFSET

Subarray	R12KHz	R36KHz	R72KHz
	(mmho/m)	(mmho/m)	(mmho/m)
A1 (80")	1.334	-4.052	-5.782
A2 (50")	-0.783	-4.054	-5.057
A3 (29")	-14.308	-4.509	-3.767
A4 (17")	-93.379	-29.338	-24.647
A5 (10")	N/A	-111.483	-49.304
A6 (6")	N/A	353.379	183.122

TRANSMITTER CURRENT GAIN

Signal	Lower	R	Upper	Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
12K	0.6	0.97	1.3	Mud Cell	0.95	1.00	1.05
36K	1.0	1.94	2.0				
72K	1.0	1.32	2.0				

R-MUD VERIFICATION

PASS/FAIL SUMMARY

GAIN RANGE CHK

PASS

SONDE OFFSET CHK

PASS

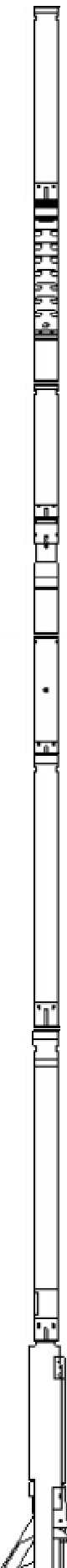
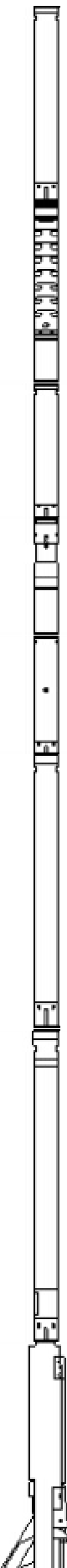
TOOL OK TO LOG

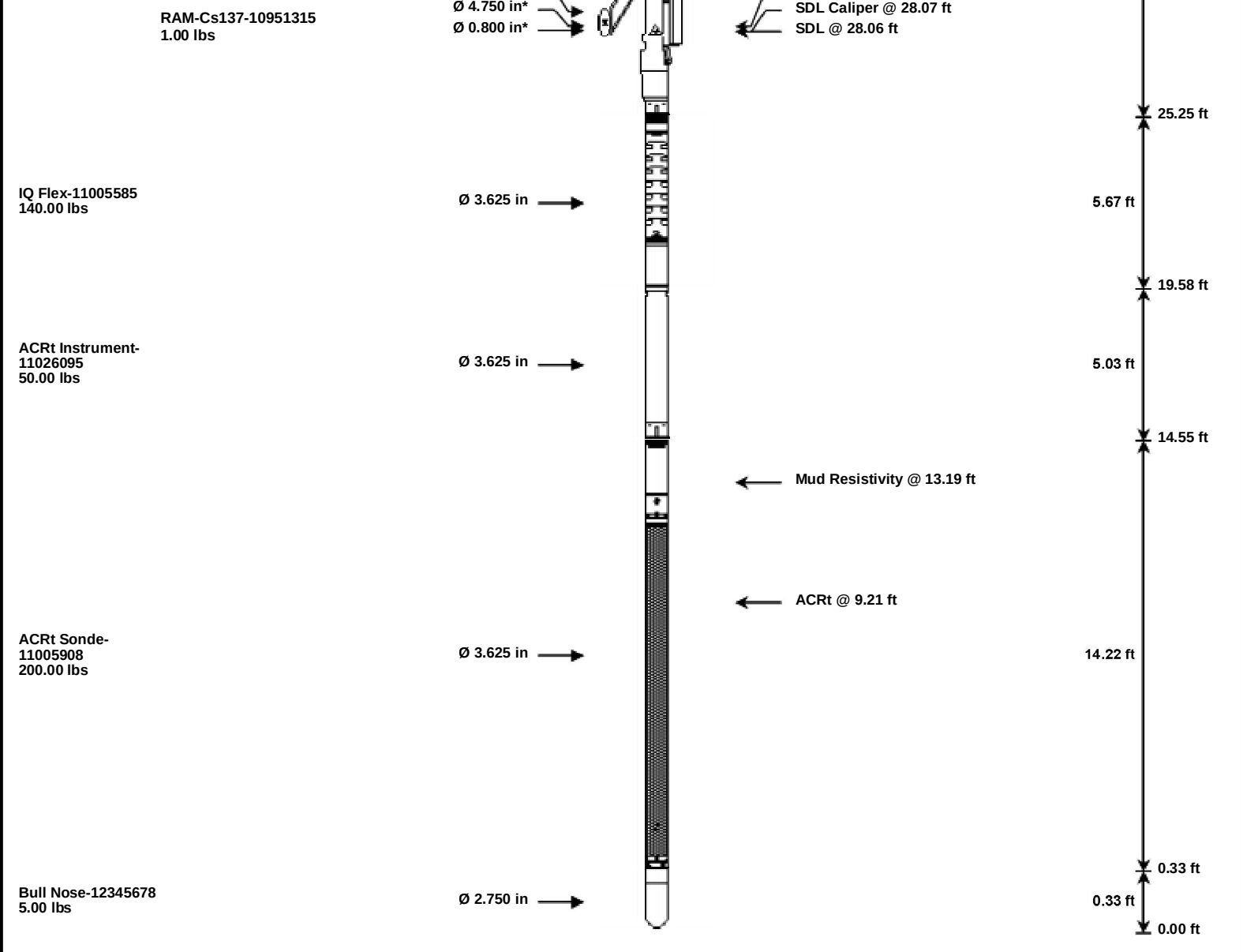
CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-10971172						
Gamma Ray Calibrator	228.9	230.9	-----	-2.0	+/- 9.00	api
DSNT-11020487						
Snow-Block Porosity	0.0737	0.0615	-----	0.0122	+/- 0.0150	decp
SDLT-10951315						
Pad Extension	3.75	-----	-----	0.00	+/-0.20	in
Ring Diameter	8.25	-----	-----	0.00	+/-0.20	in
Microlog Pad-10951315						
MicroLog Normal	19.91	19.88	-----	0.03	+/-0.80	ohmm
MicroLog Lateral	20.01	19.96	-----	0.05	+/-0.80	ohmm
SDLT Pad-10865873						
Near(B+D+P+L)	1349.485	1347.028	-----	2.457	+/-14.854	cps
Far(B+D+P+L)	1023.890	1020.740	-----	3.150	+/-17.067	cps

ACRt Sonde-11005908

HALLIBURTON TOOL STRING DIAGRAM REPORT
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Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
Spacer-12345678 100.00 lbs		Ø 3.625 in →			6.08 ft	77.55 ft
						71.47 ft
Flex Joint-10271064 140.00 lbs		Ø 3.625 in →			5.67 ft	65.80 ft
						61.67 ft
HDDS-A-10746201 125.00 lbs		Ø 4.060 in →			4.13 ft	58.01 ft
						54.27 ft
DTDD-11411576 90.00 lbs		Ø 3.625 in →		← Load Cell @ 60.58 ft ← Pad Locator @ 58.99 ft	3.66 ft	36.07 ft
SP Sub-11153357 60.00 lbs		Ø 3.625 in →		← SP @ 56.23 ft ← Z-Accelerometer @ 53.82 ft	3.74 ft	
GTET-10971172 165.00 lbs		Ø 3.625 in →		← GammaRay @ 48.21 ft	8.52 ft	
						45.75 ft
DSNT-11020487 174.00 lbs		Ø 3.625 in →			9.69 ft	
				← DSN Far @ 38.82 ft ← DSN Near @ 38.07 ft		
						36.07 ft
SDLT-10951315 360.00 lbs	SDLT Pad-10865873 65.00 lbs Microlog Pad-10951315 8.00 lbs	Ø 4.500 in → Ø 4.500 in*		Microlog @ 28.25 ft	10.81 ft	



Mnemonic		Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)	
SPC	Test		12345678	100.00	6.08	71.47	100.00	
FLEX	Flex Joint		10271064	140.00	5.67	65.80	300.00	
HDDS-A	Heavy Duty DITS Swivel tool.		10746201	125.00	4.13	61.67	300.00	
DTDD	Downhole Tension Device		11411576	90.00	3.66	58.01	300.00	
SP	SP Sub		11153357	60.00	3.74	54.27	300.00	
GTET	Gamma Telemetry Tool		10971172	165.00	8.52	45.75	60.00	
DSNT	Dual Spaced Neutron		11020487	174.00	9.69	36.07	60.00	
SDLT	Spectral Density Tool		10951315	360.00	10.81	25.25	60.00	
SDLP	Density Insite Pad		10865873	65.00	2.55	*	27.46	60.00
Cs137	Logging Source, SDLT-I, 1.78 Ci - Cs137		10951315	1.00	0.80	*	27.69	300.00
MICP	Microlog Pad		10951315	8.00	1.00	*	27.75	60.00
IQF	IQ Flex tool		11005585	140.00	5.67		19.58	300.00
ACRt	Array Compensated True Resistivity Instrument Section		11026095	50.00	5.03		14.55	120.00
ACRt	Array Compensated True Resistivity Sonde Section		11005908	200.00	14.22		0.33	120.00
BLNS	Bull Nose		12345678	5.00	0.33		0.00	300.00
Total				1,683.00	77.55			
* Not included in Total Length and Length Accumulation.								
Data: BRUBAKER_1-17H\0001 TPL-GTET-DSNT-SDLT-ACRT\005 15-Aug-18 02:33 Up 10779.5f						Date: 15-Aug-18 02:42:29		

COMPANY	SHELBY RESOURCES LLC
WELL	BRUBAKER 1-17H
FIELD	WILDCAT

COUNTY	PRATT	STATE	KANSAS
HALLIBURTON		SPECTRAL DENSITY DUAL SPACED NEUTRON LOG	