

HALLIBURTON

ARRAY COMPENSATED TRUE RESISTIVITY LOG

HALLIBURTON										ARRAY COMPENSATED TRUE RESISTIVITY LOG			
COMPANY				OXY USA INC									
WELL				BCU #407W									
FIELD				PLEASANT PRAIRIE SE									
COUNTY				HASKELL									
STATE				KANSAS									
Permanent Datum				GL					Elev.: K.B. 3007.9 ft				
Log measured from				KB					D.F. 3006.9 ft				
Drilling measured from				KB					G.L. 2996.9 ft				
Date				15-Oct-12									
Run No.				ONE									
Depth - Driller				5746.00 ft									
Depth - Logger				5724.0 ft									
Bottom - Logged Interval				5714									
Top - Logged Interval				1802									
Casing - Driller				8.625 in @ 1803.0 ft					@				
Casing - Logger				1802.0 ft									
Bit Size				7.875 in					@				
Type Fluid in Hole				WATER BASED MUD									
Density		Viscosity	9.1 ppg	51.00	s/qt								
PH		Fluid Loss	10.30 pH	10.0	cpm								
Source of Sample				FLOWLINE									
Rm @ Meas. Temperature				1.010 ohmm @ 75.00 degF					@				
Rmf @ Meas. Temperature				0.71 ohmm @ 75.00 degF					@				
Rmc @ Meas. Temperature				1.250 ohmm @ 75.00 degF					@				
Source Rmf		Rmc	MEASURED		MEASURED								
Rm @ BHT				0.54 ohmm @ 145.0 degF					@				
Time Since Circulation				21.3 hr									
Time on Bottom				15-Oct-12 16:19									
Max. Rec. Temperature		145.0 degF @ 5724.0 ft		@				@					
Equipment		Location	10782954	LIBERAL									
Recorded By				S. INGERSOLL									
Witnessed By				GENE BILBY									

Fold here

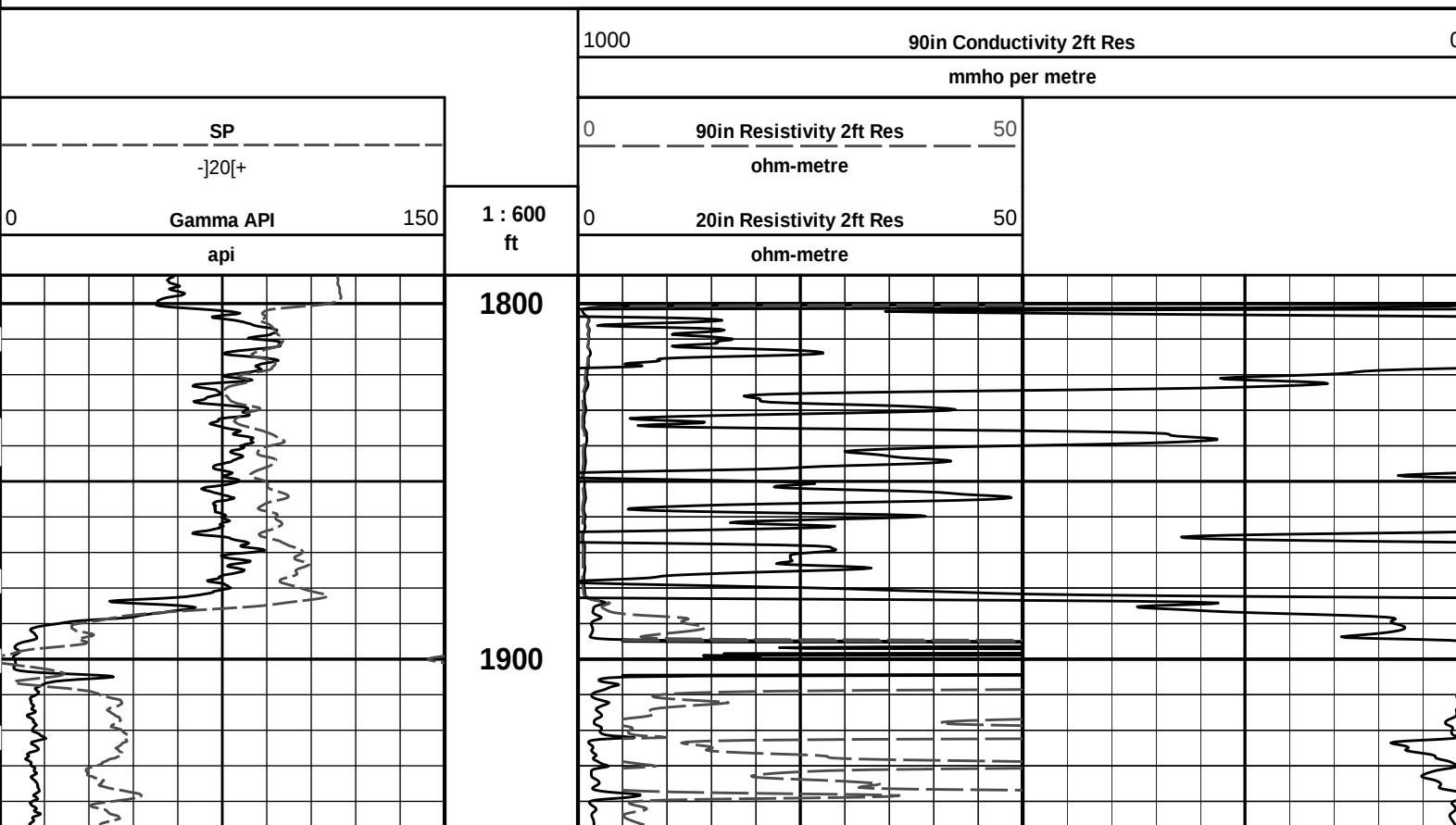
Service Ticket No.: 9884910						API Serial No.: 15-081-21998						PGM Version: WL INSITE R3.6.0 (Build 3)											
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE												RESISTIVITY SCALE CHANGES											
Date		Sample No.										Type Log		Depth		Scale Up Hole		Scale Down Hole					
Depth-Driller																							
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		1.5" S.O.					
Rmc @ Meas. Temp.				@				@						I776_S775									
Source Rmf		Rmc																					
Rm @ BHT				@				@															
Rmf @ BHT				@				@															
Rmc @ BHT				@				@															
EQUIPMENT DATA																							
GAMMA						ACOUSTIC						DENSITY						NEUTRON					
Run No.			ONE			Run No.			ONE			Run No.			ONE			Run No.			ONE		
Serial No.			10748374			Serial No.			10747684			Serial No.			10685803			Serial No.			10755066		
Model No.			GTET			Model No.			BSAT			Model No.			SDLT			Model No.			DSNT		
Diameter			3.625"			No. of Cent.			2			Diameter			4.5"			Diameter			3.625"		
Detector Model No.			GTET			Spacing			.5"			Log Type			GAM-GAM			Log Type			NEU-NEU		
Type			SCINT									Source Type			CS-137			Source Type			AM-241BE		
Length			8"			LSA [Y/N]						Serial No.			5073GW			Serial No.			DSN-436		
Distance to Source			N/A			FWDA [Y/N]						Strength			1.5 CI			Strength			15 CI		

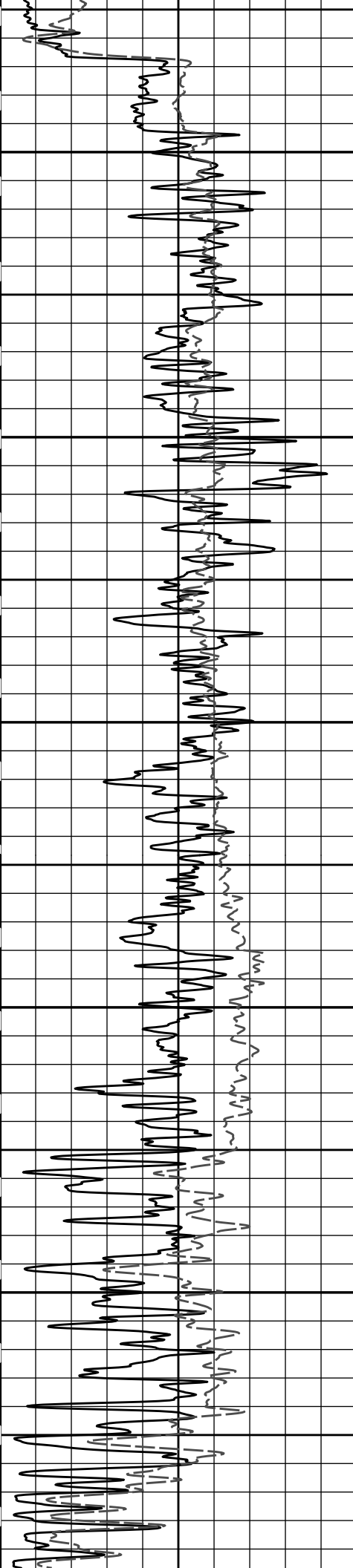
[illegible]

HALLIBURTON

Plot Time: 15-Oct-12 20:43:30
Plot Range: 1792 ft to 5723.25 ft
Data: oxy_BCU#407W\Well Based\MAIN PASS\
Plot File: \\LOCAL-loxy_BCU#407W\Well Based\ACRT\ACRT_2_lib

2 INCH MAIN LOG





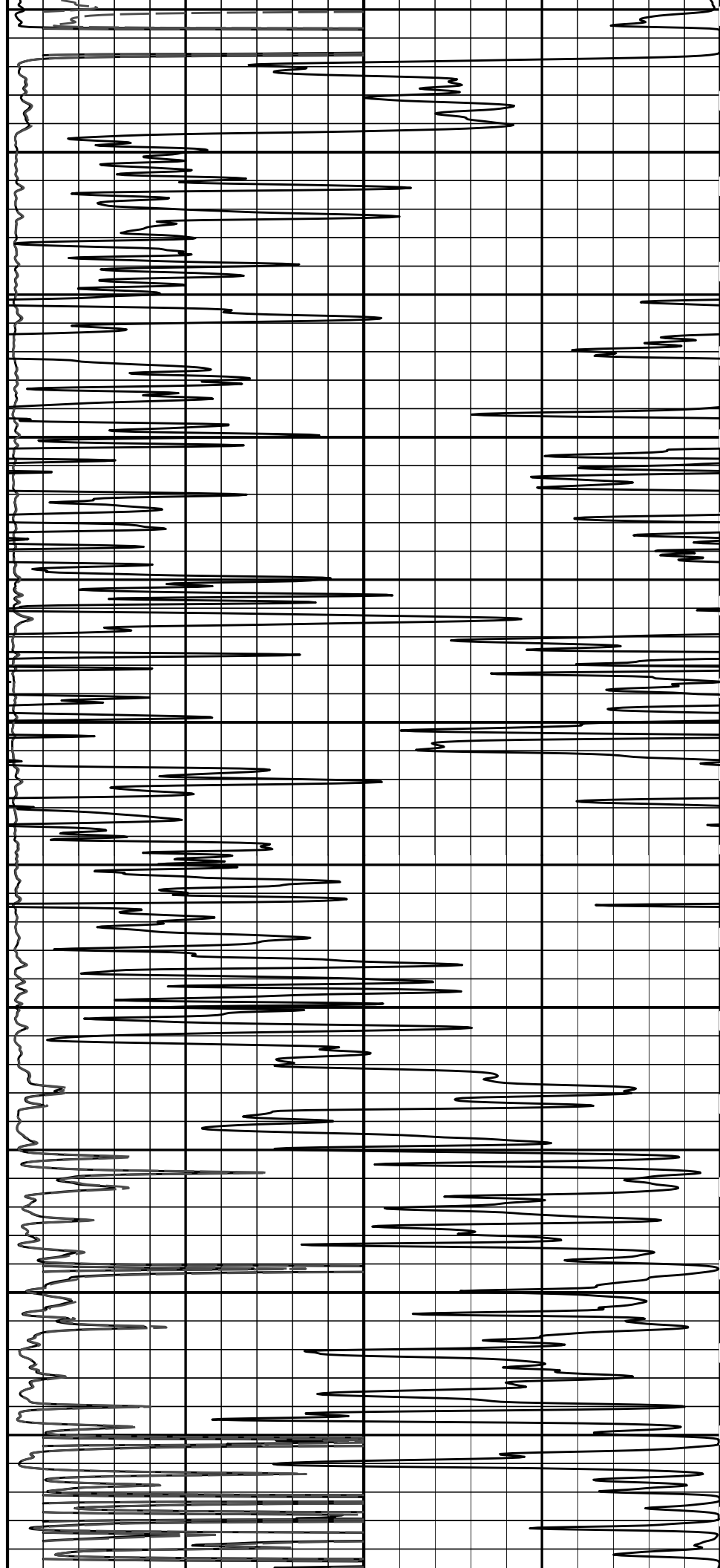
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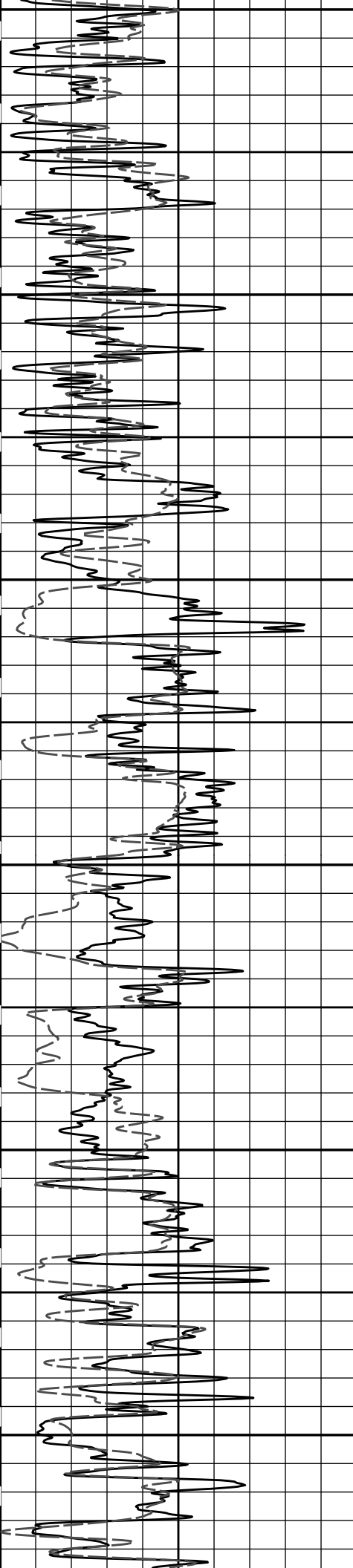
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2200

2300

2400





2500

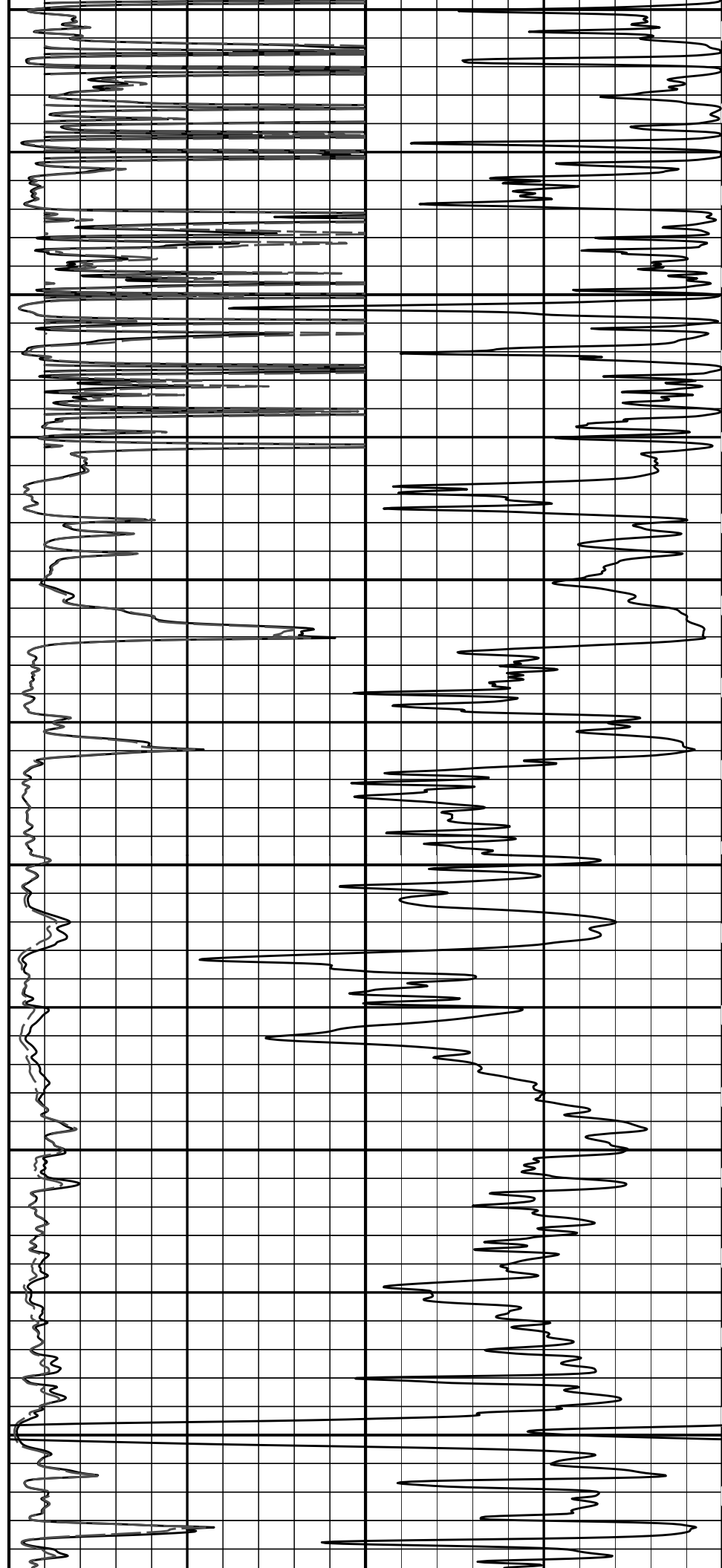
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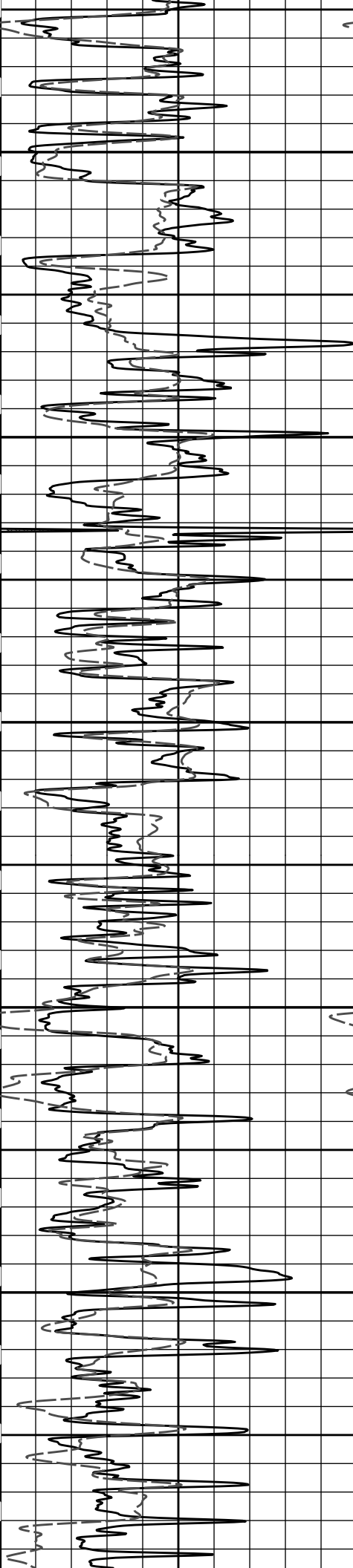
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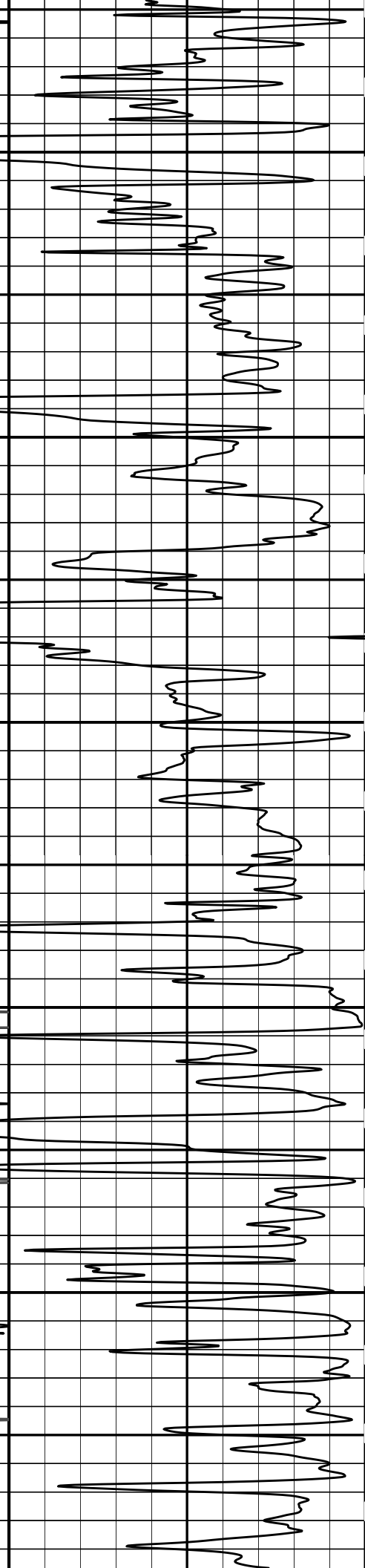
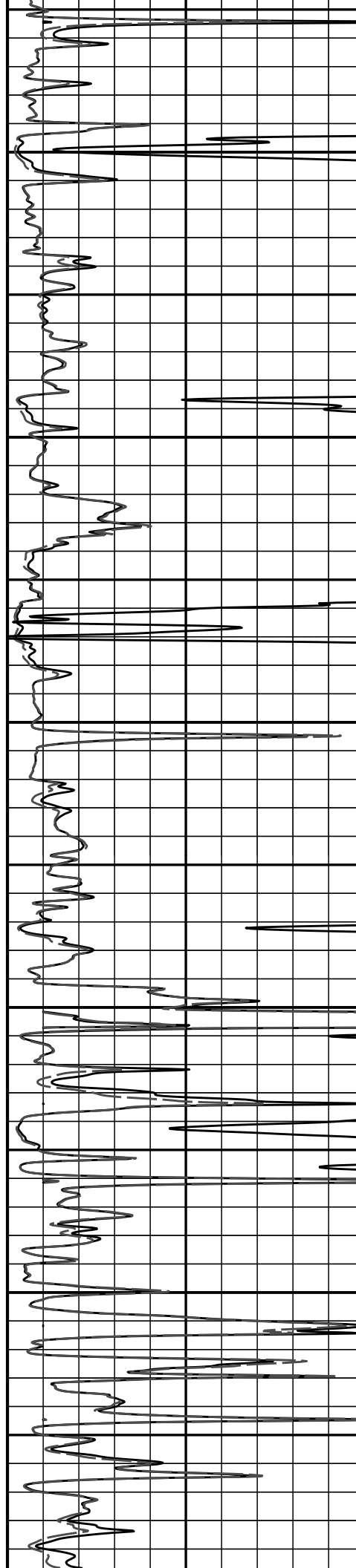
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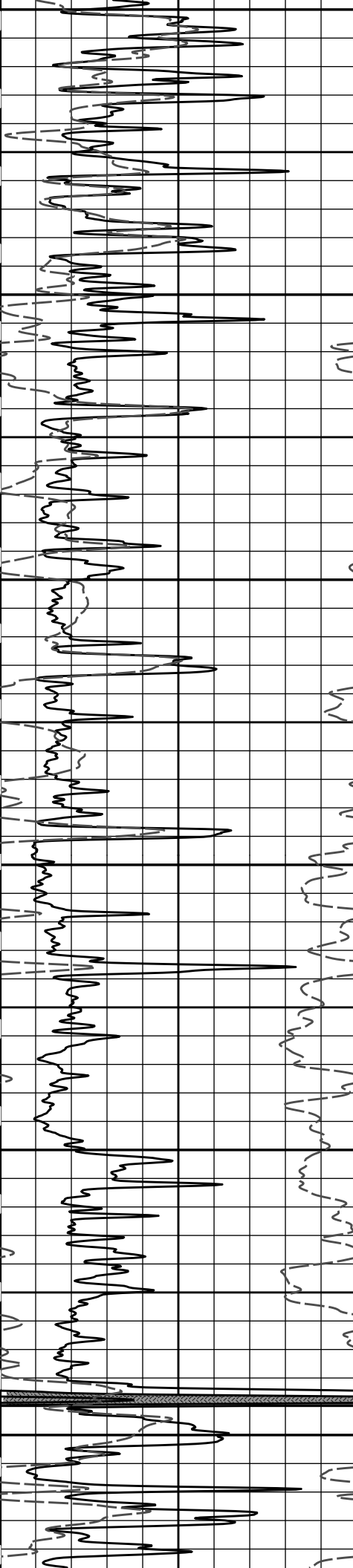
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3500





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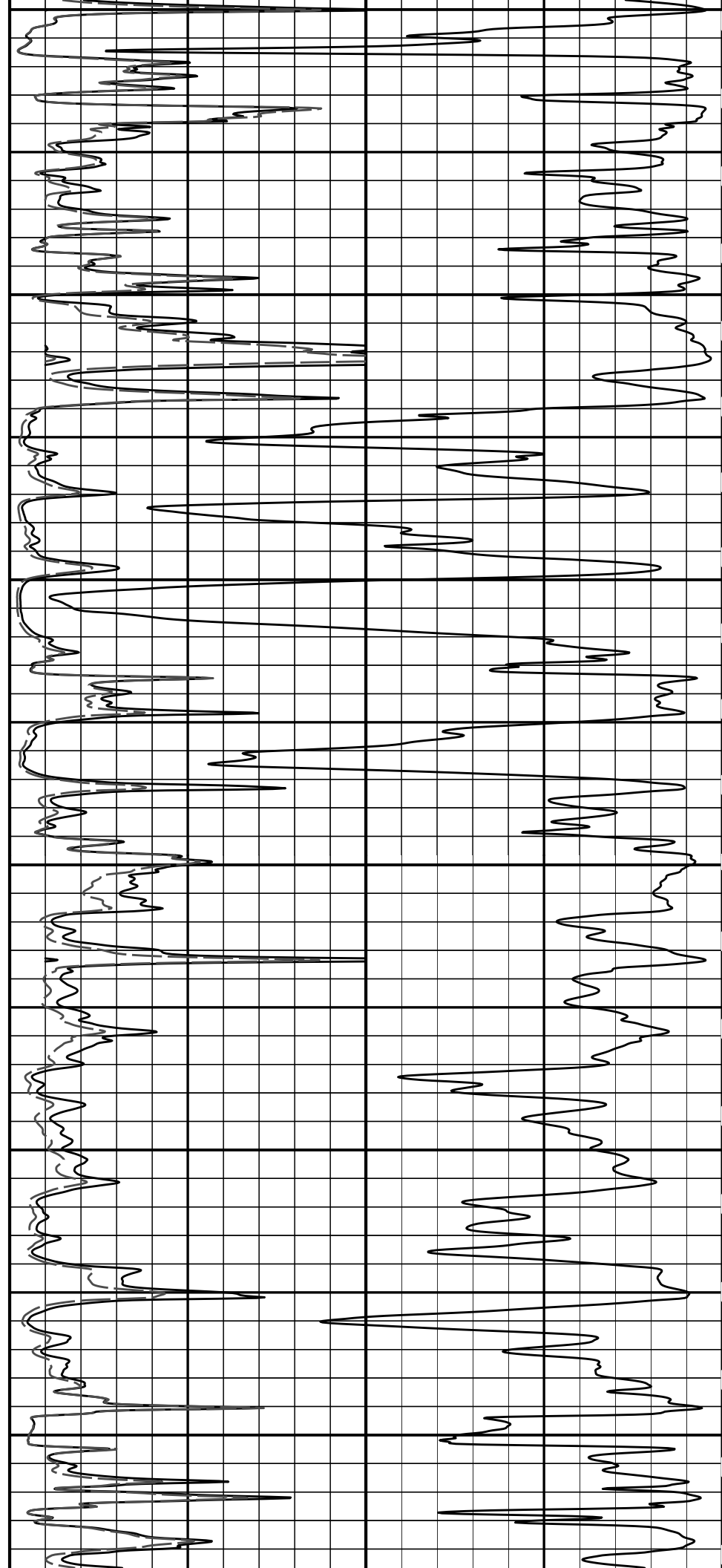
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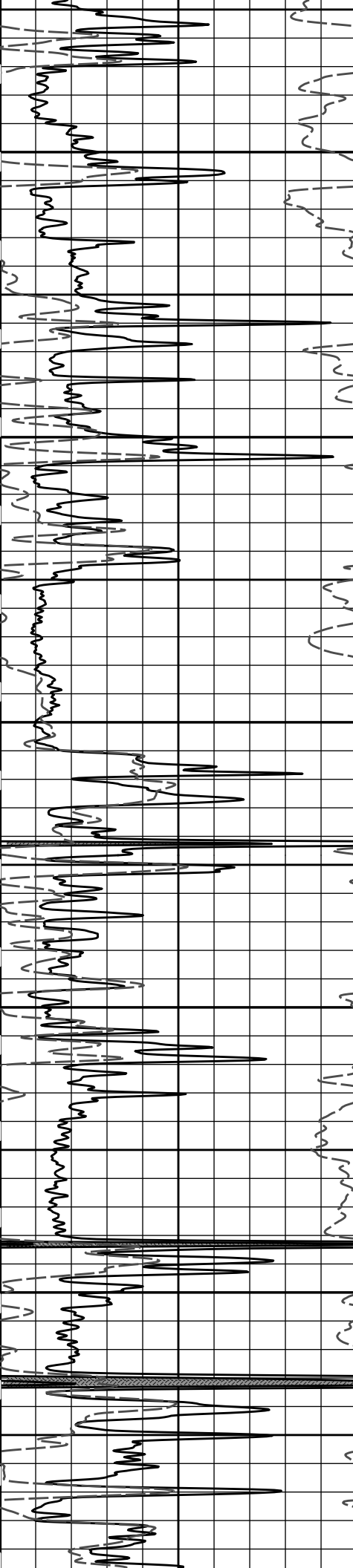
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4100





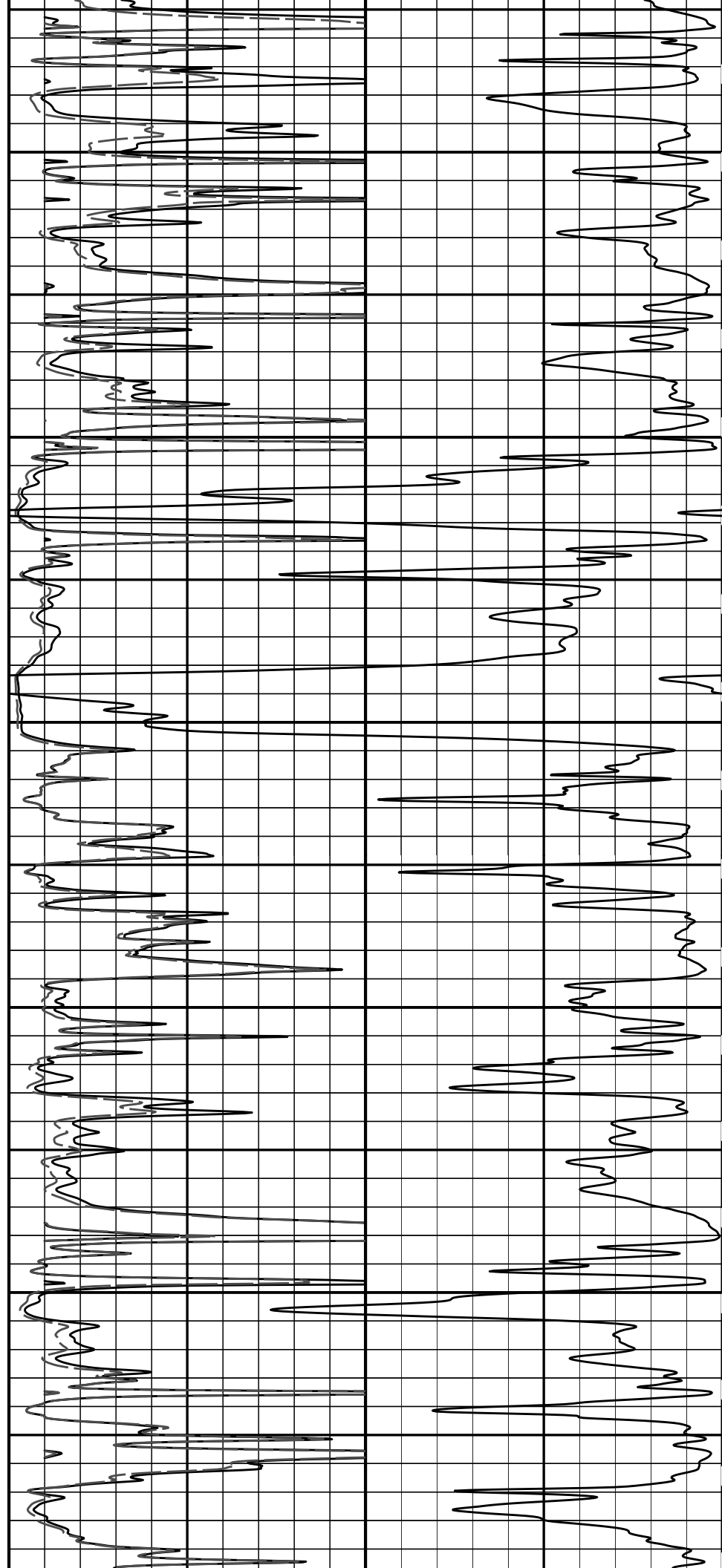
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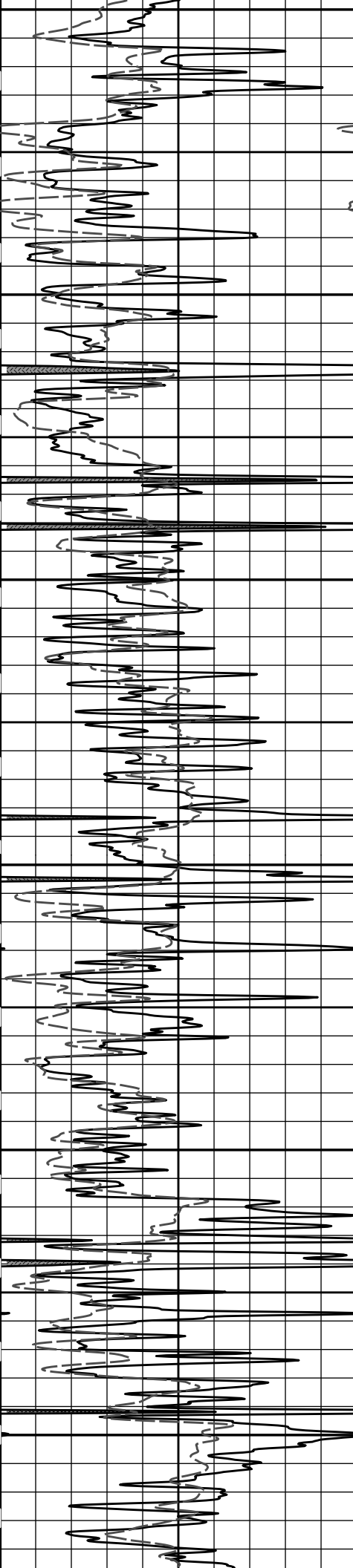
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4600





4700

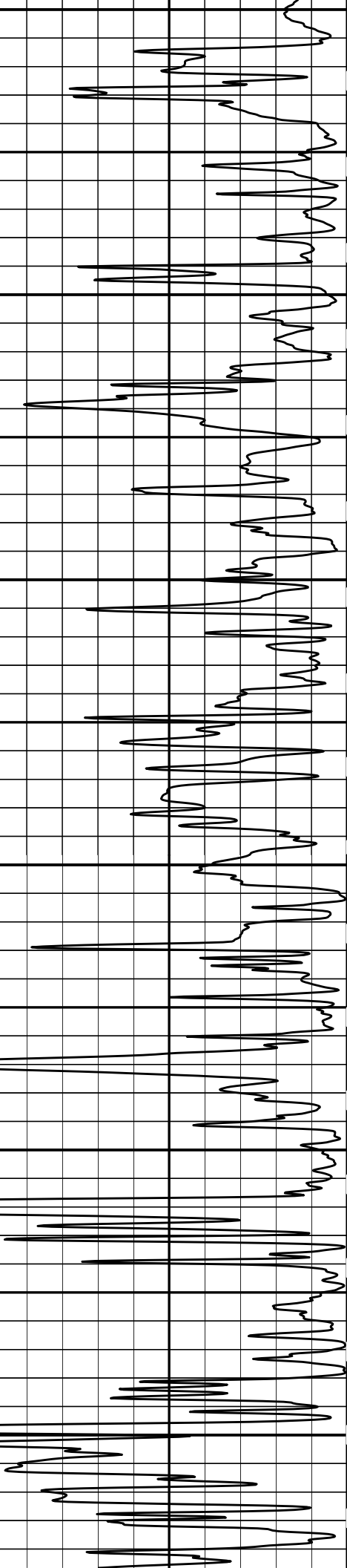
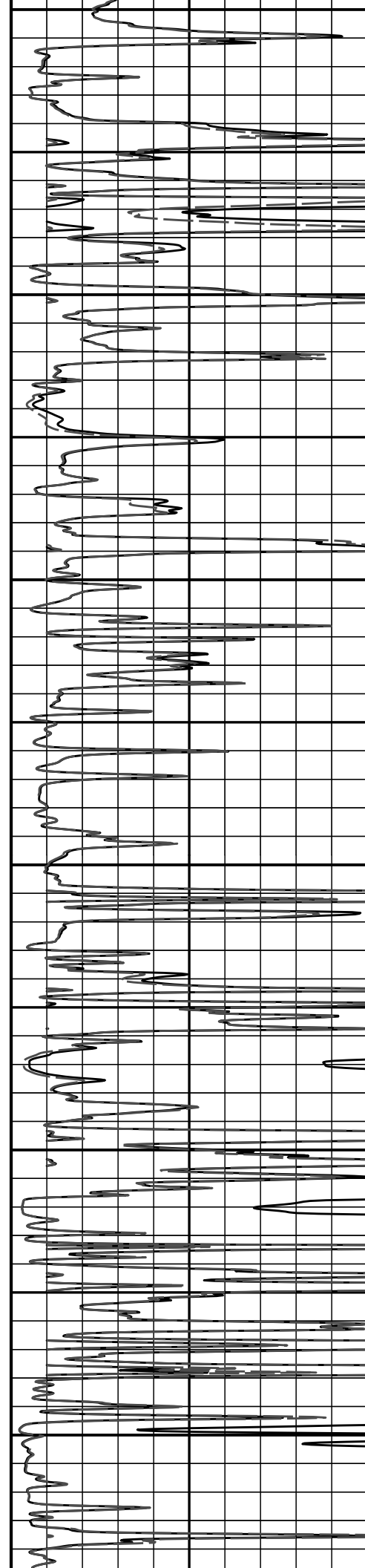
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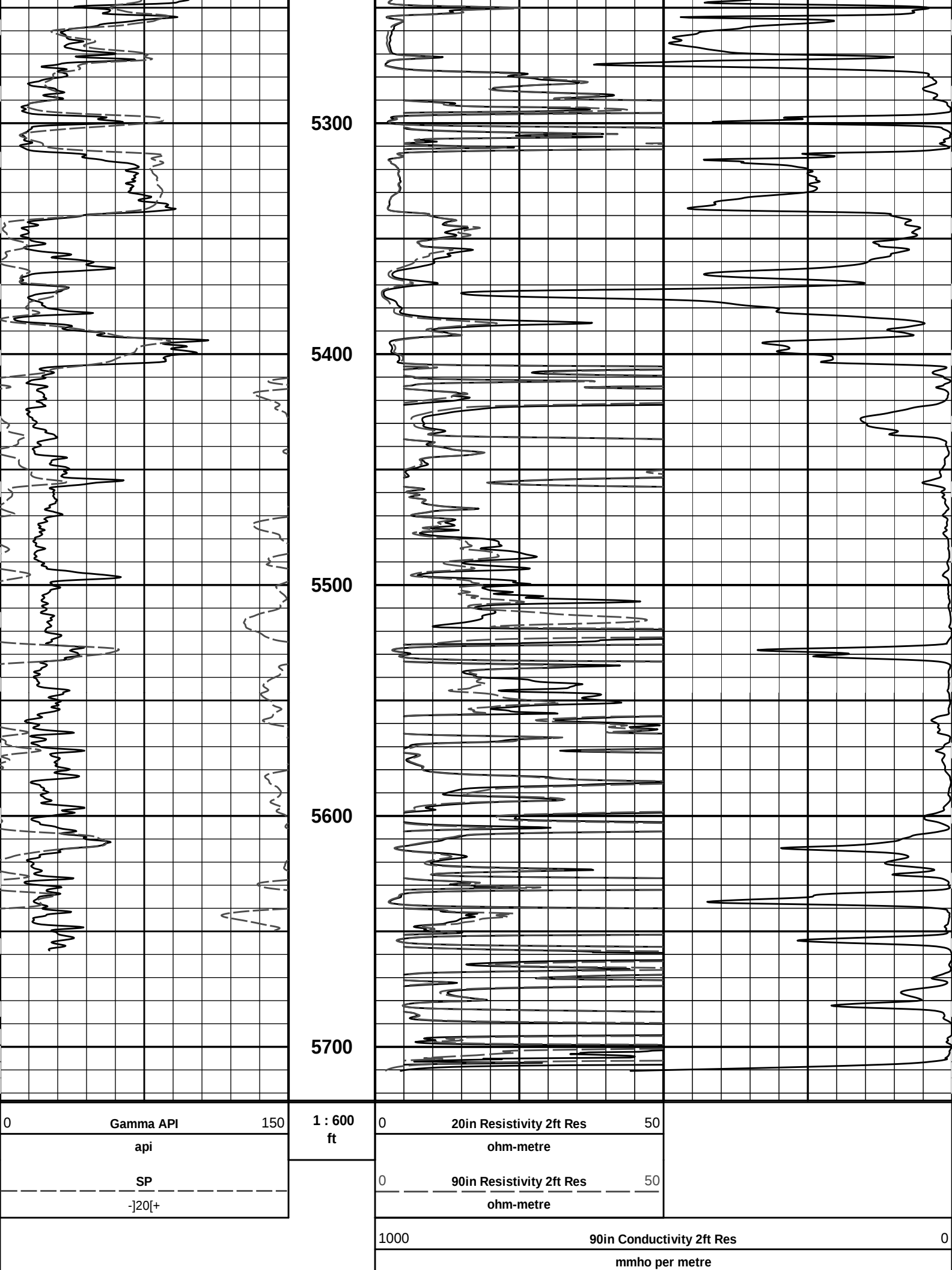
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5000

5100

5200





5300

5400

5500

5600

5700

0 Gamma API 150
api
SP
-20[+

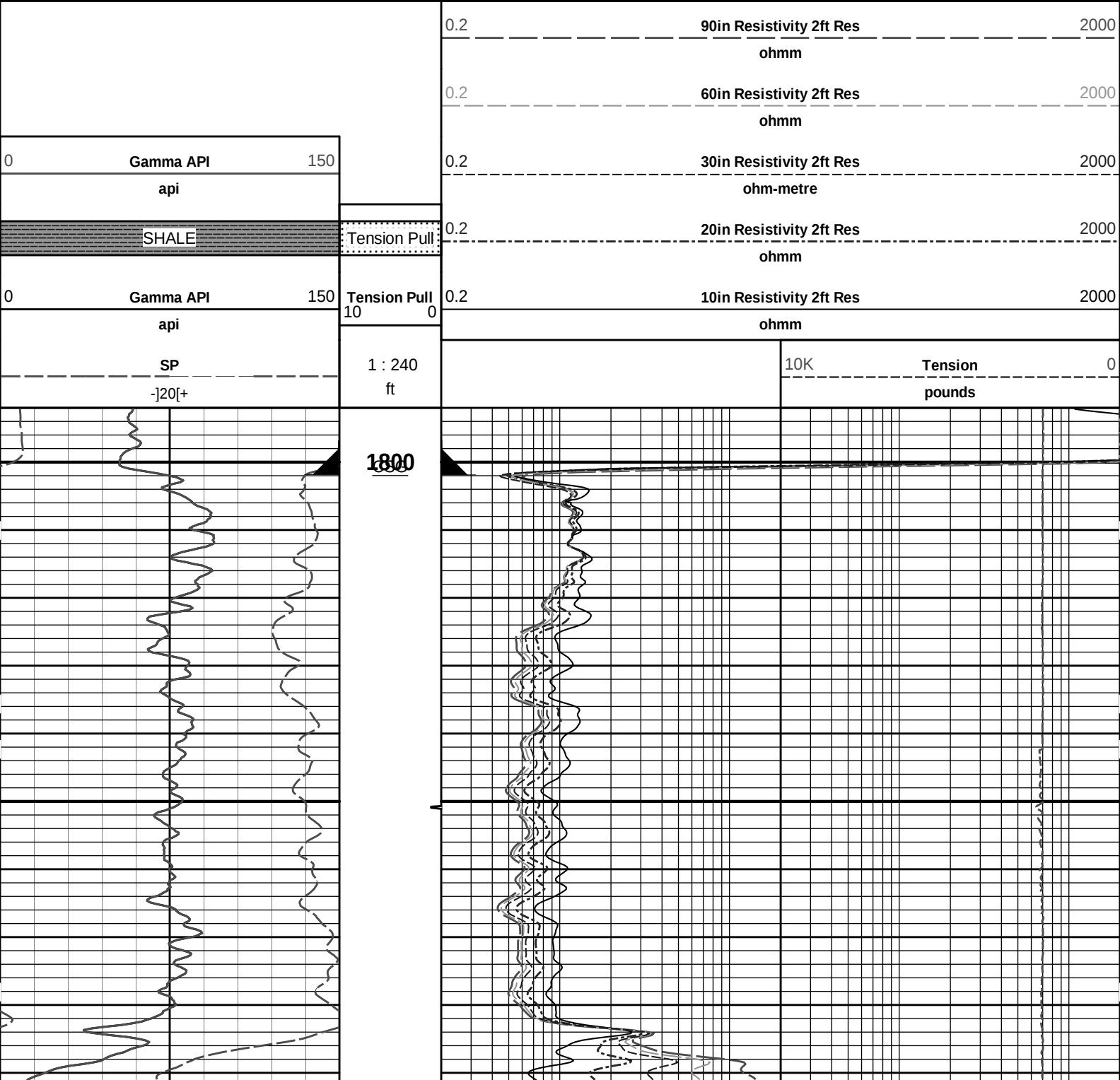
1 : 600
ft

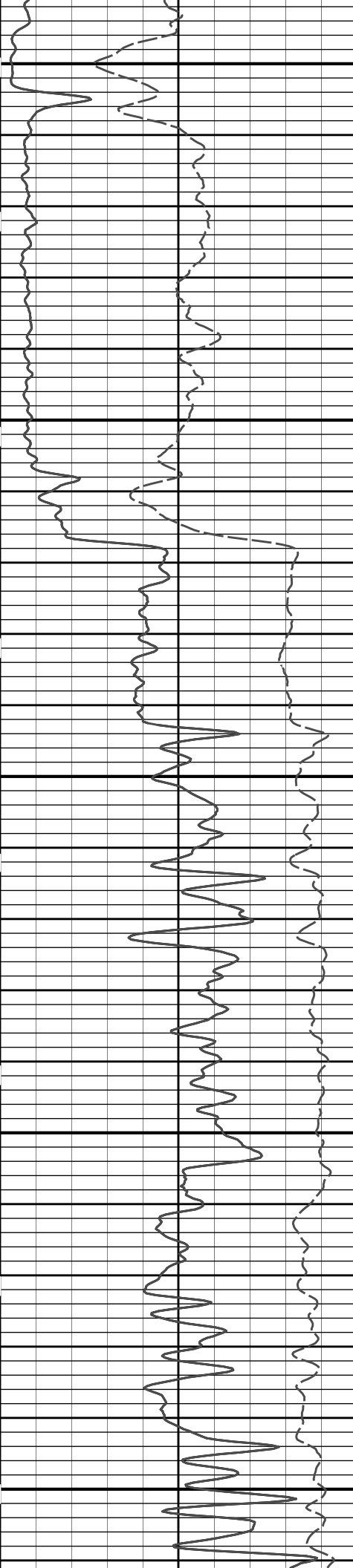
0 20in Resistivity 2ft Res 50
ohm-metre
0 90in Resistivity 2ft Res 50
ohm-metre

1000 90in Conductivity 2ft Res 0
mmho per metre

2 INCH MAIN LOG

5 INCH MAIN LOG

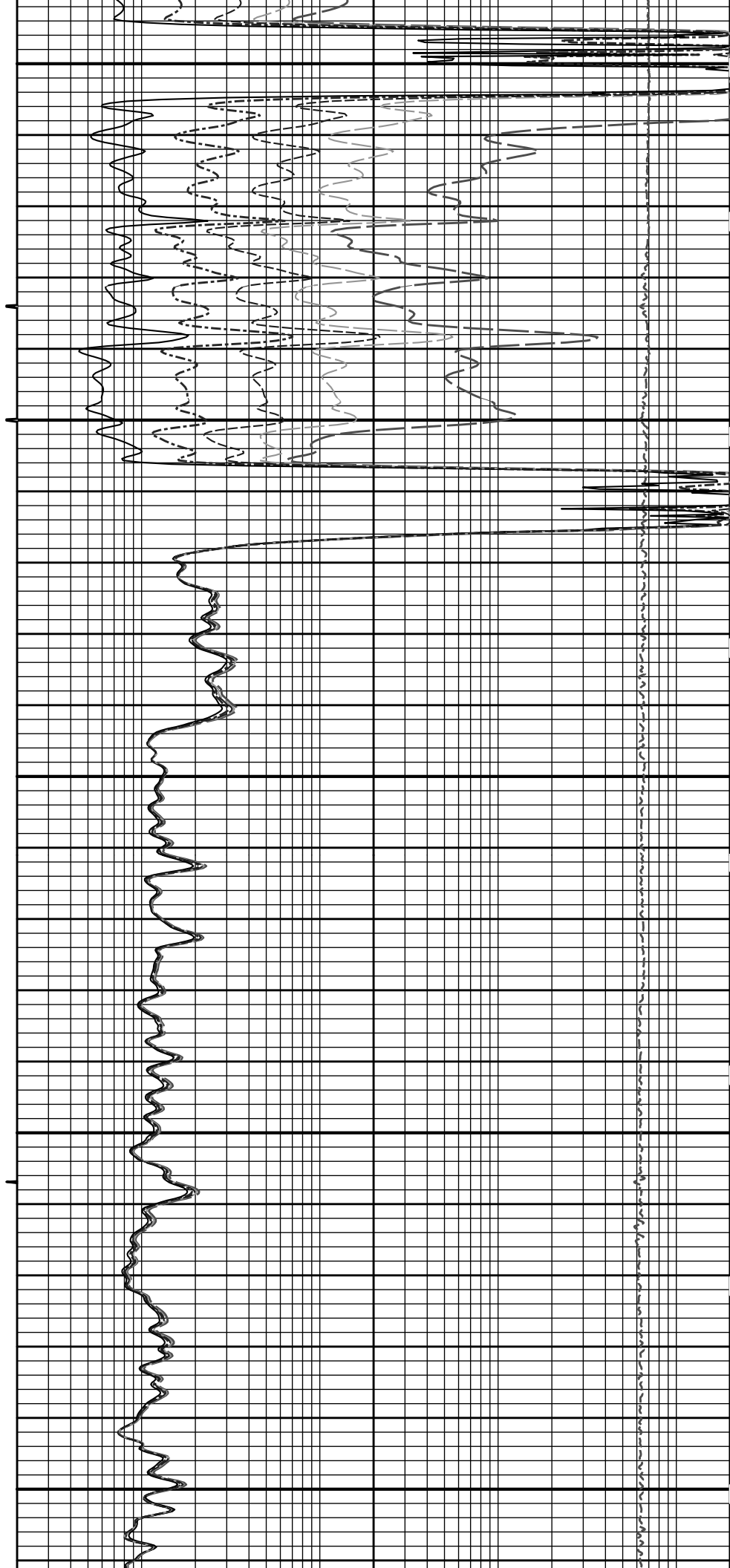


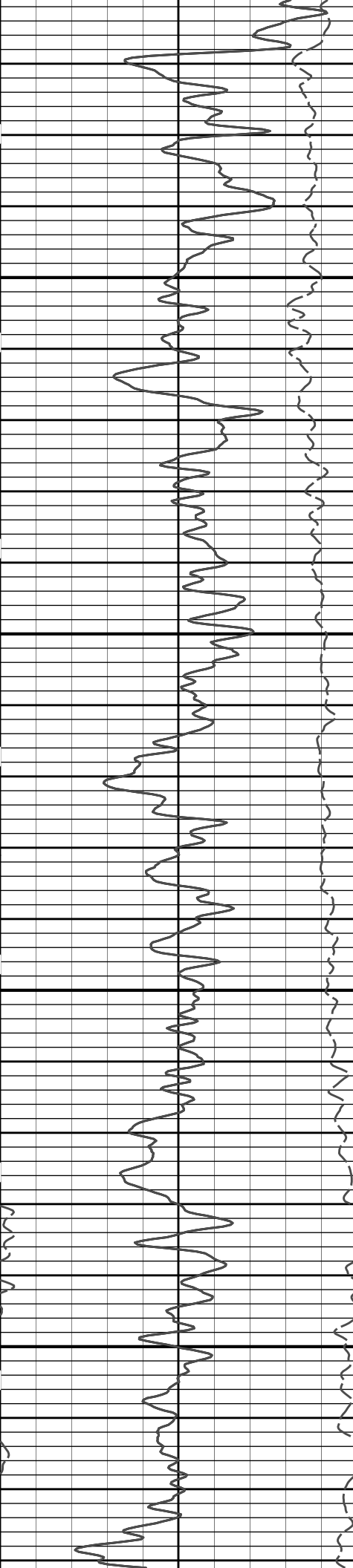


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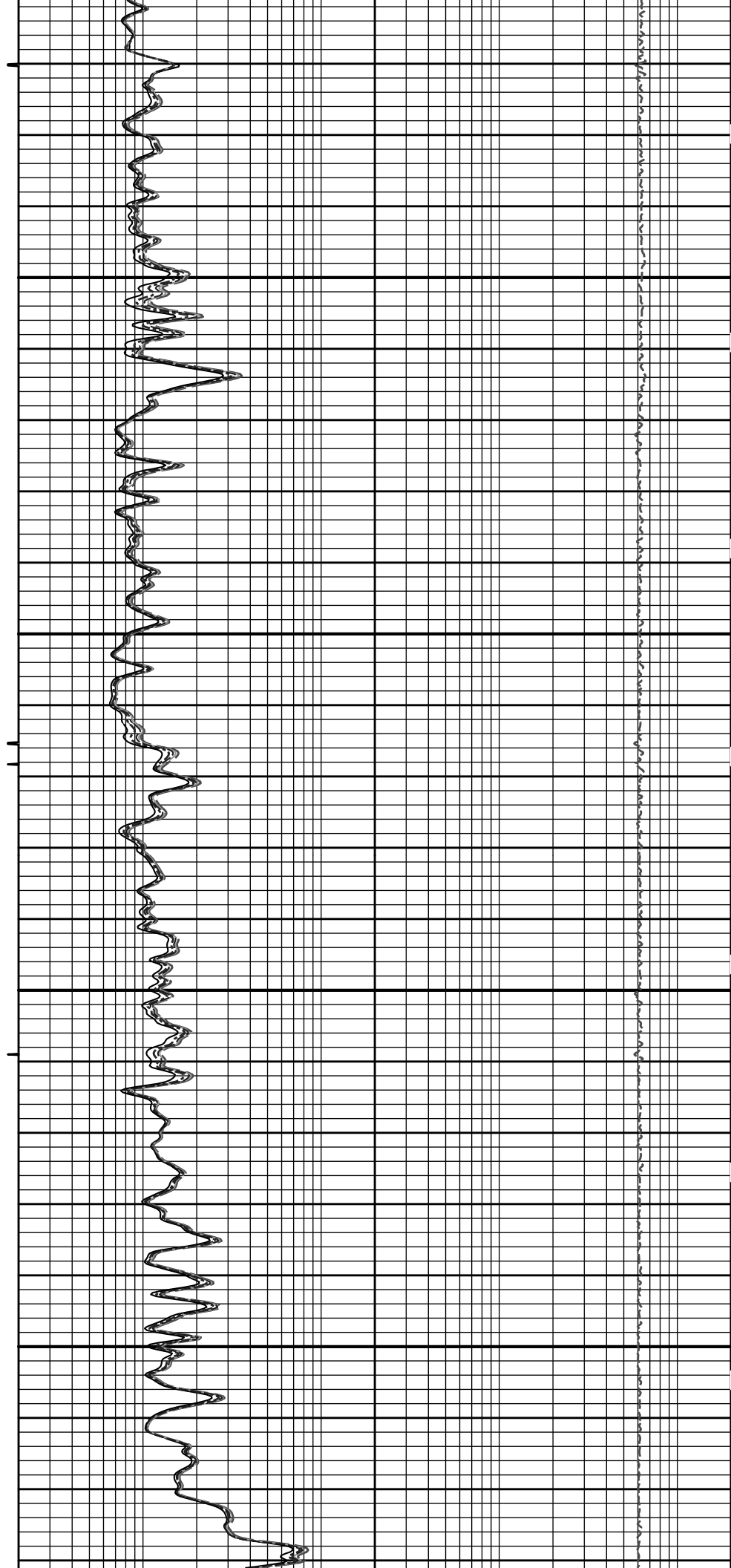
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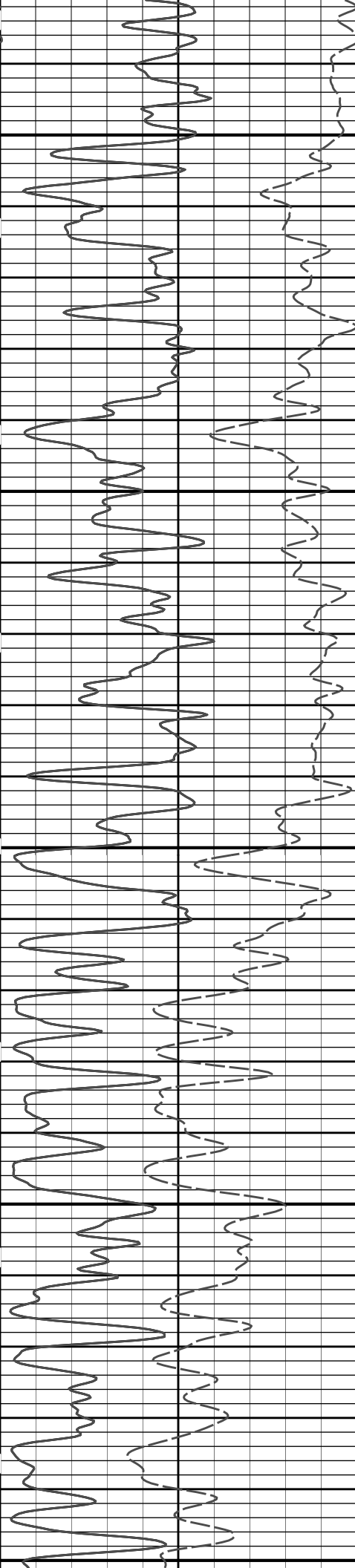




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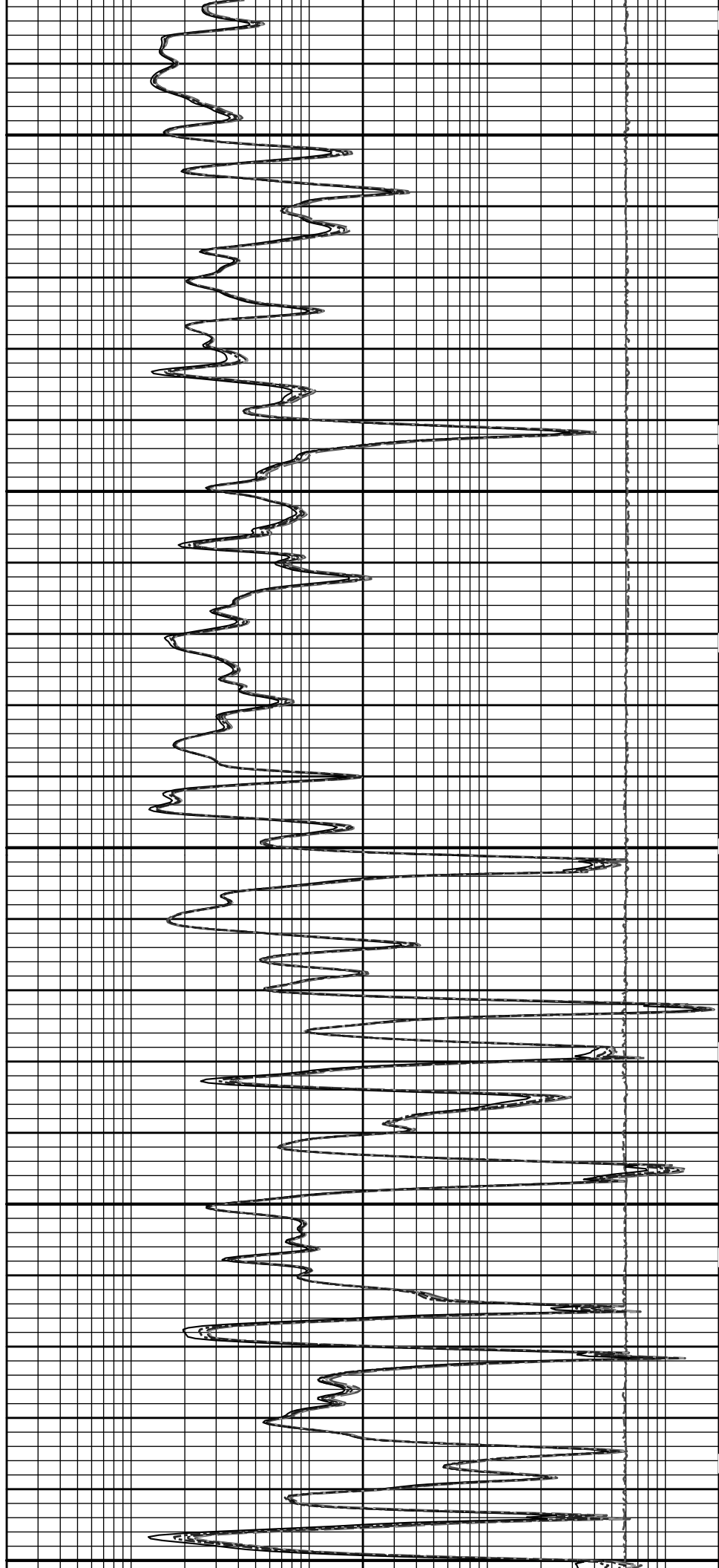
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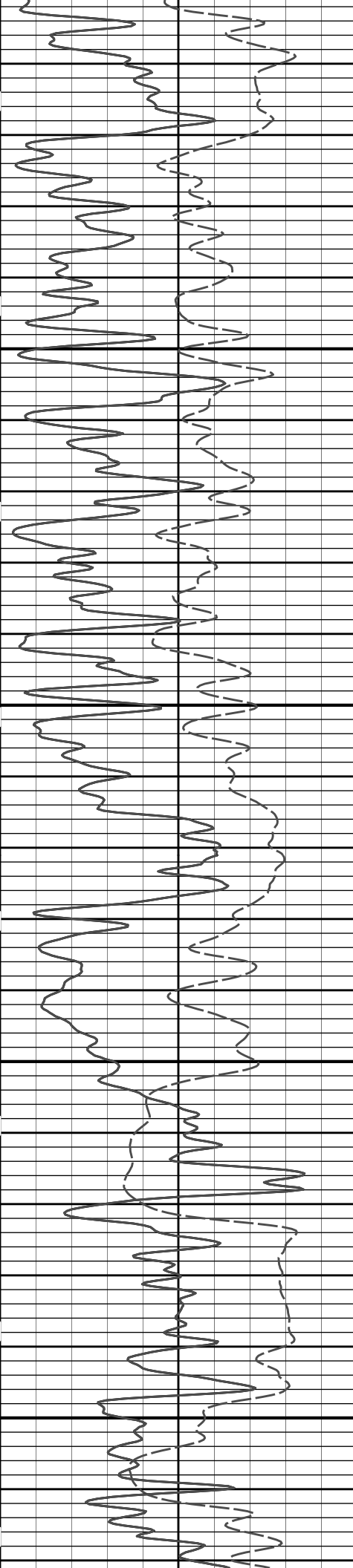




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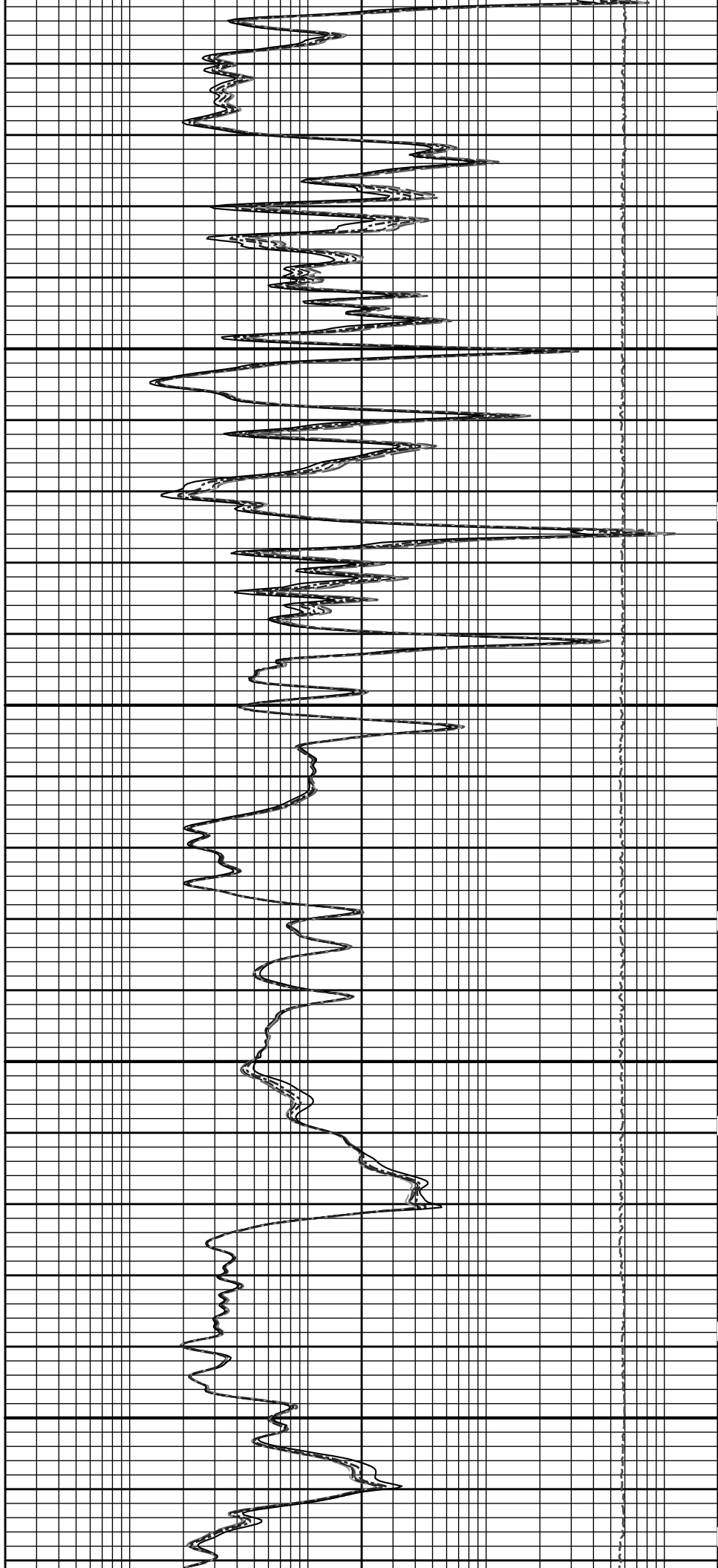
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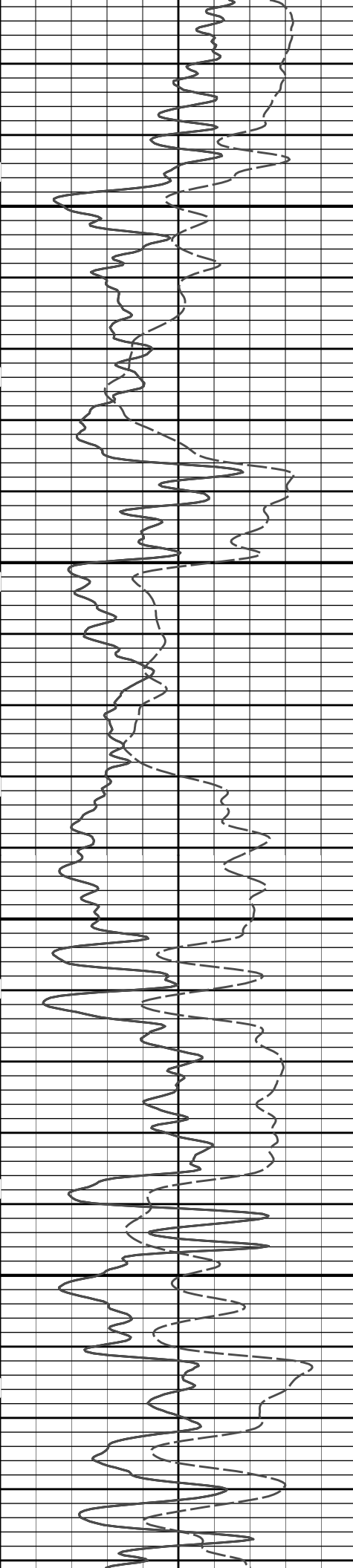




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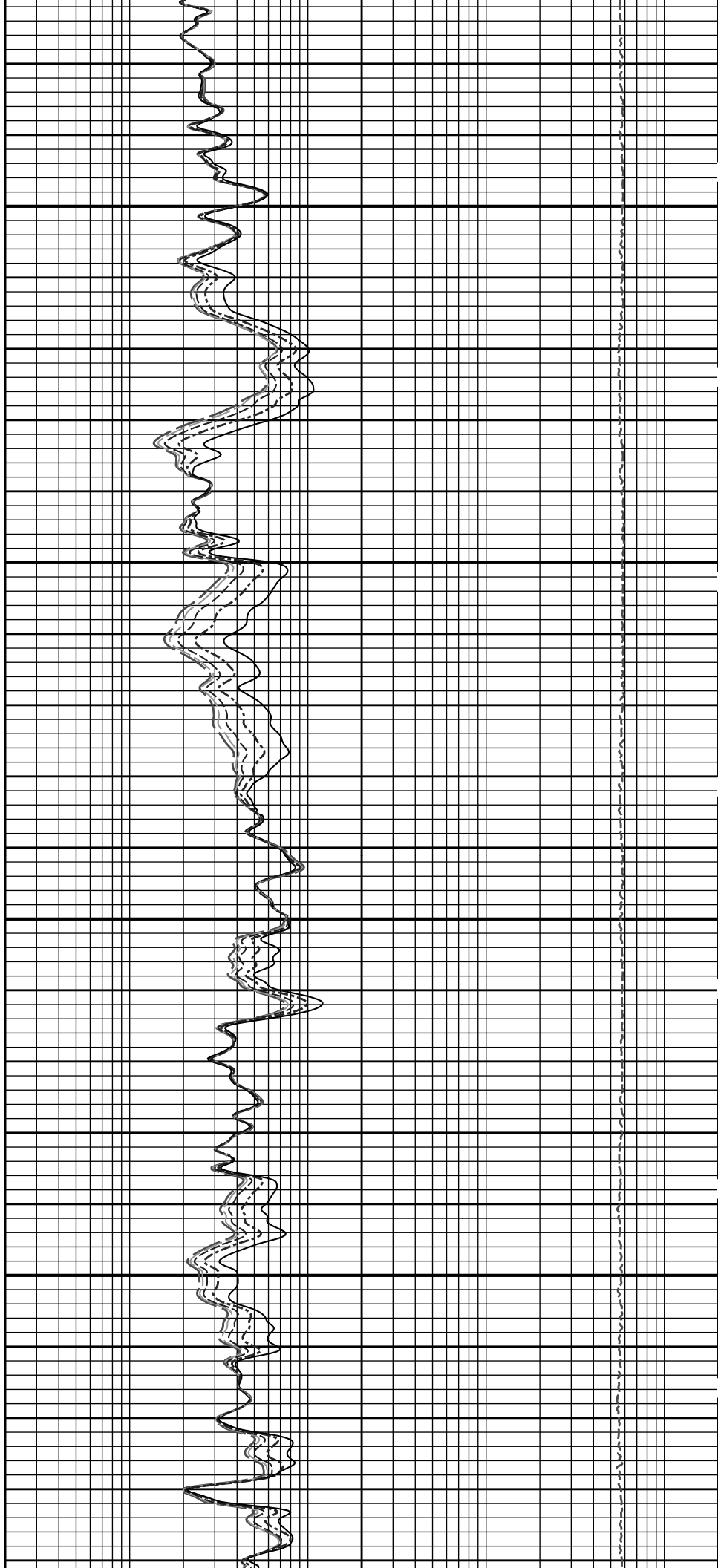
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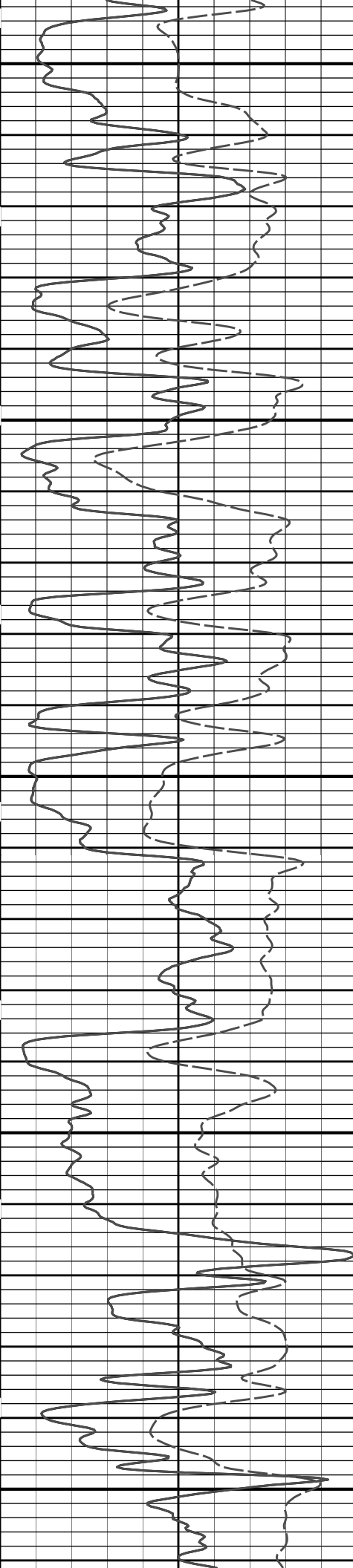




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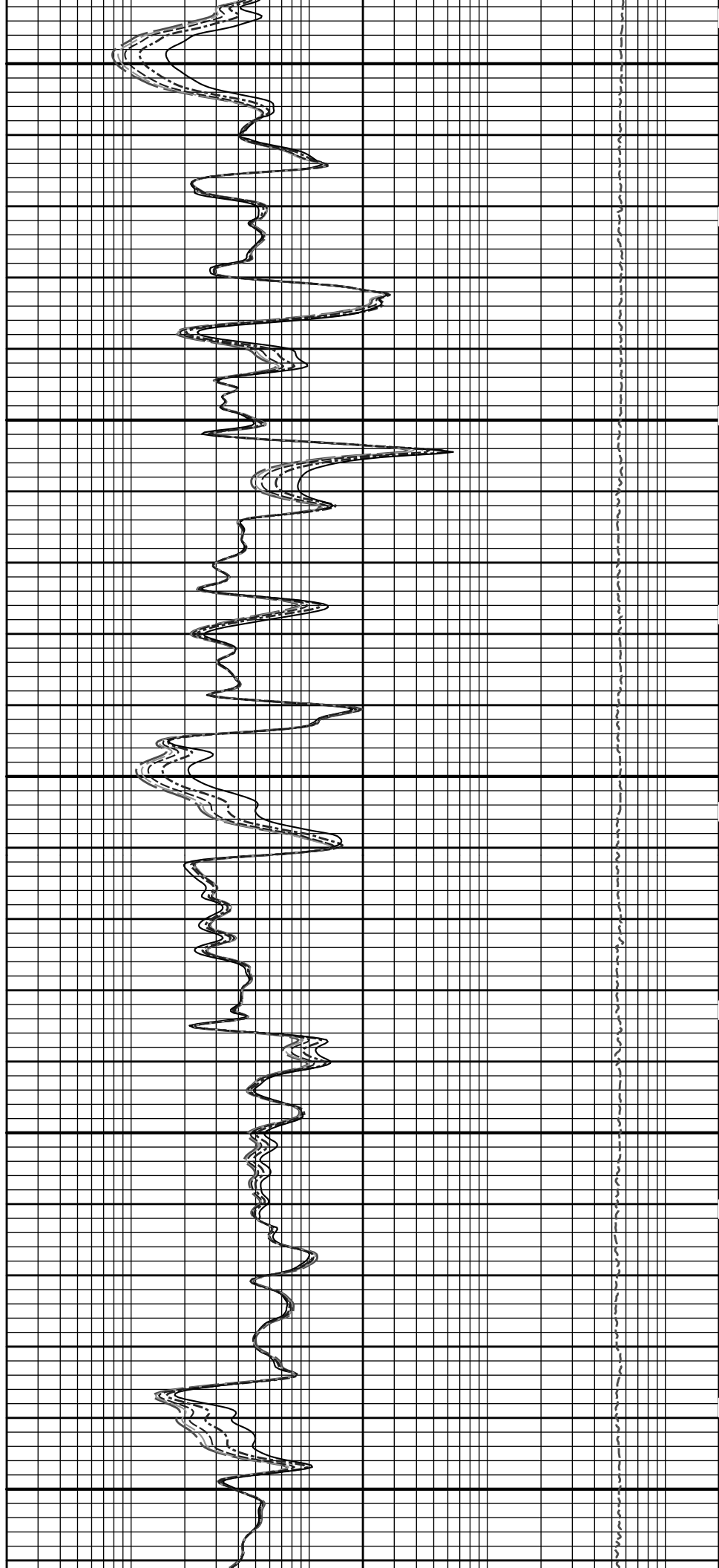


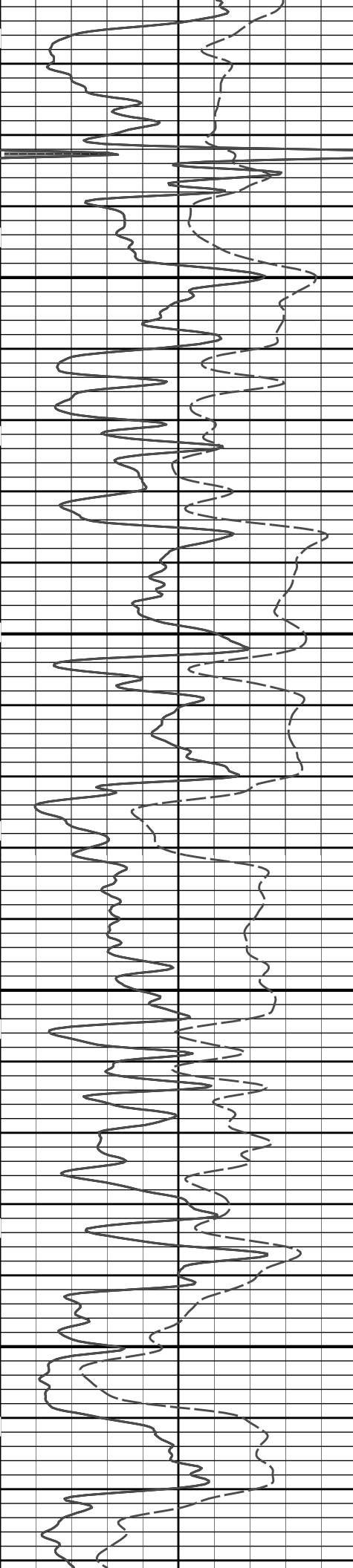


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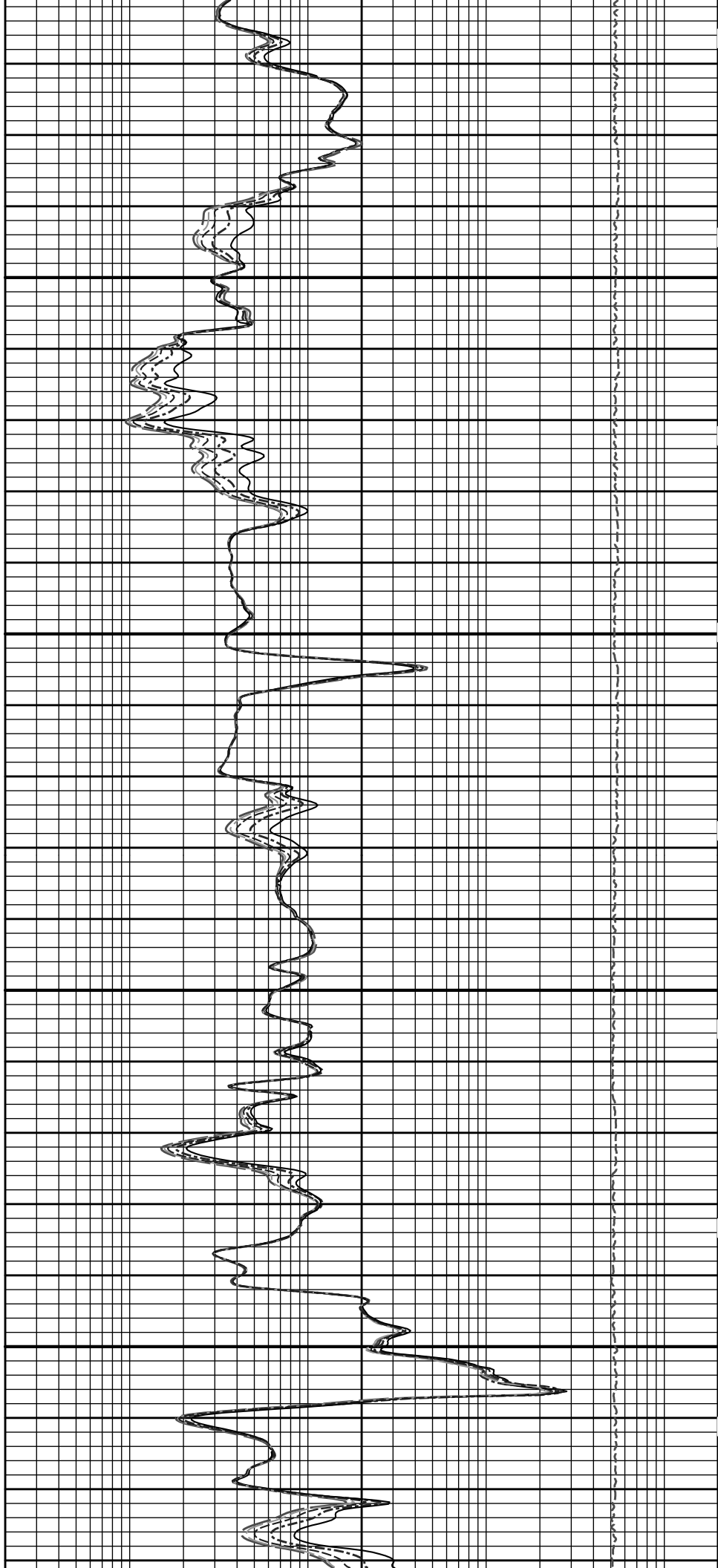
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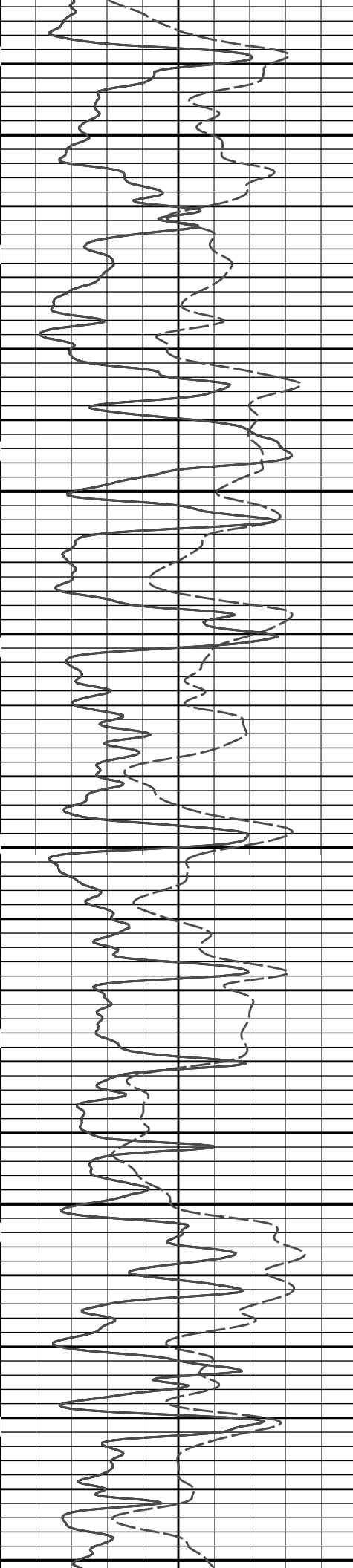




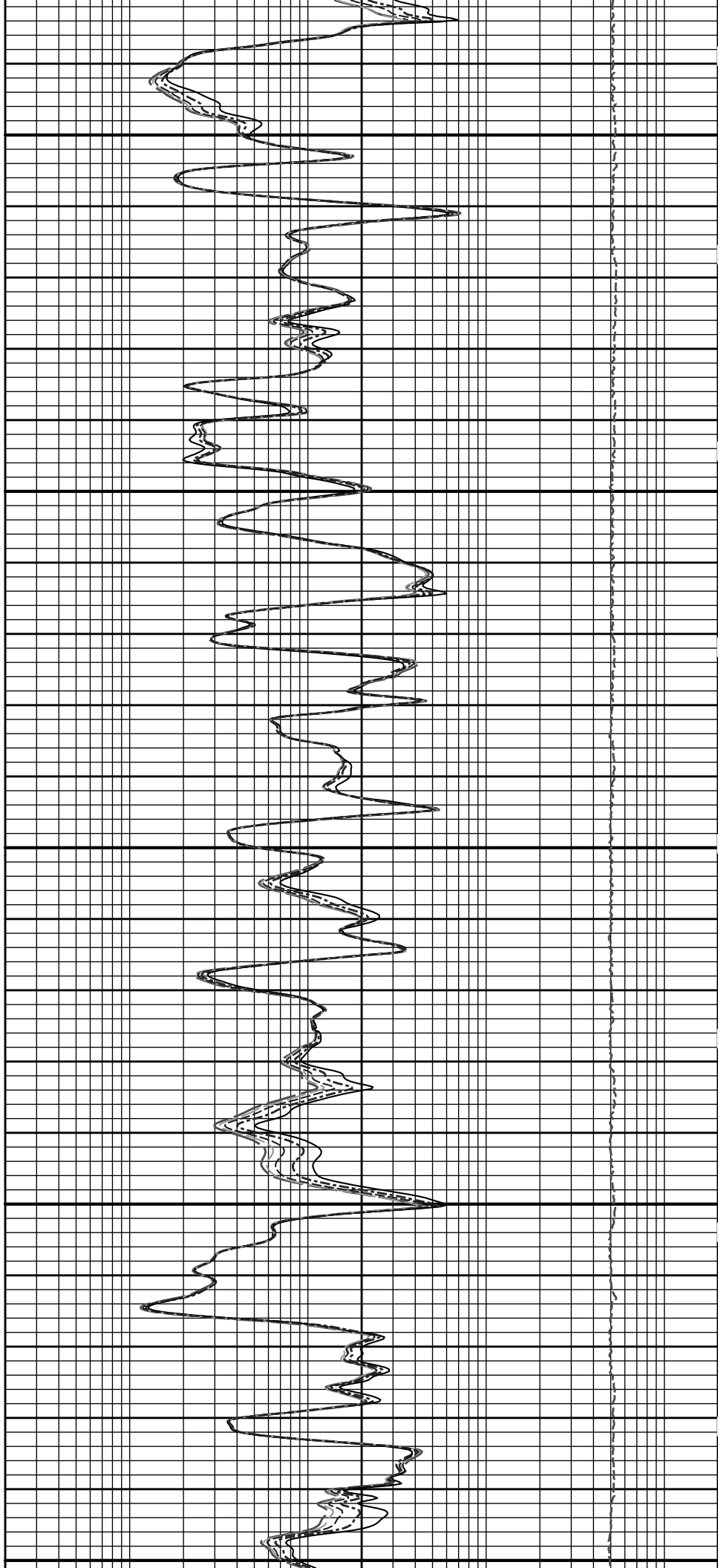
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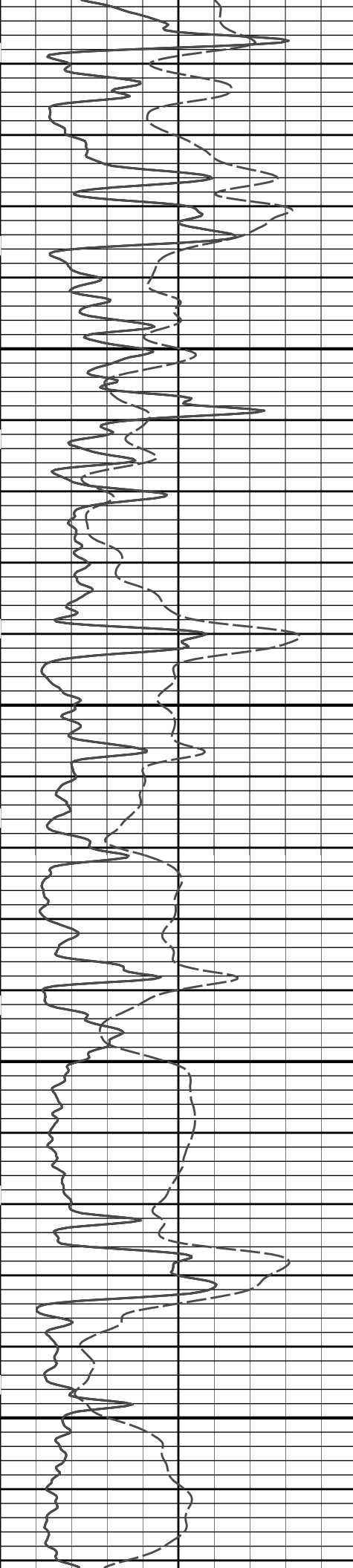




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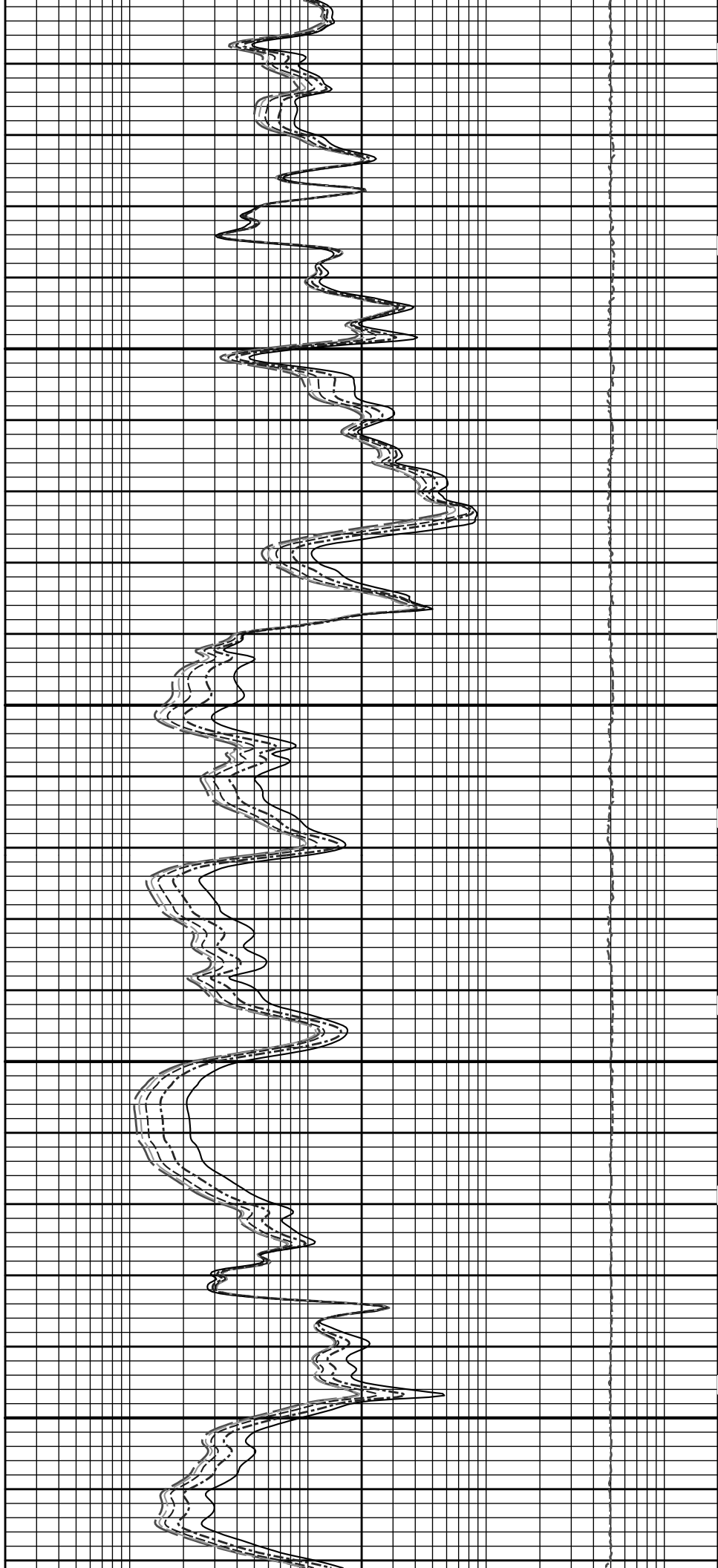


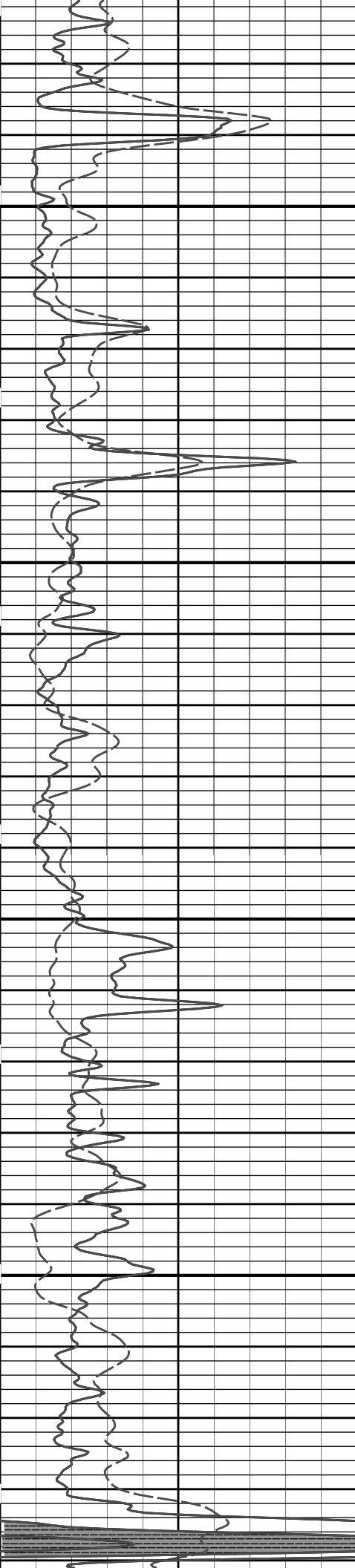
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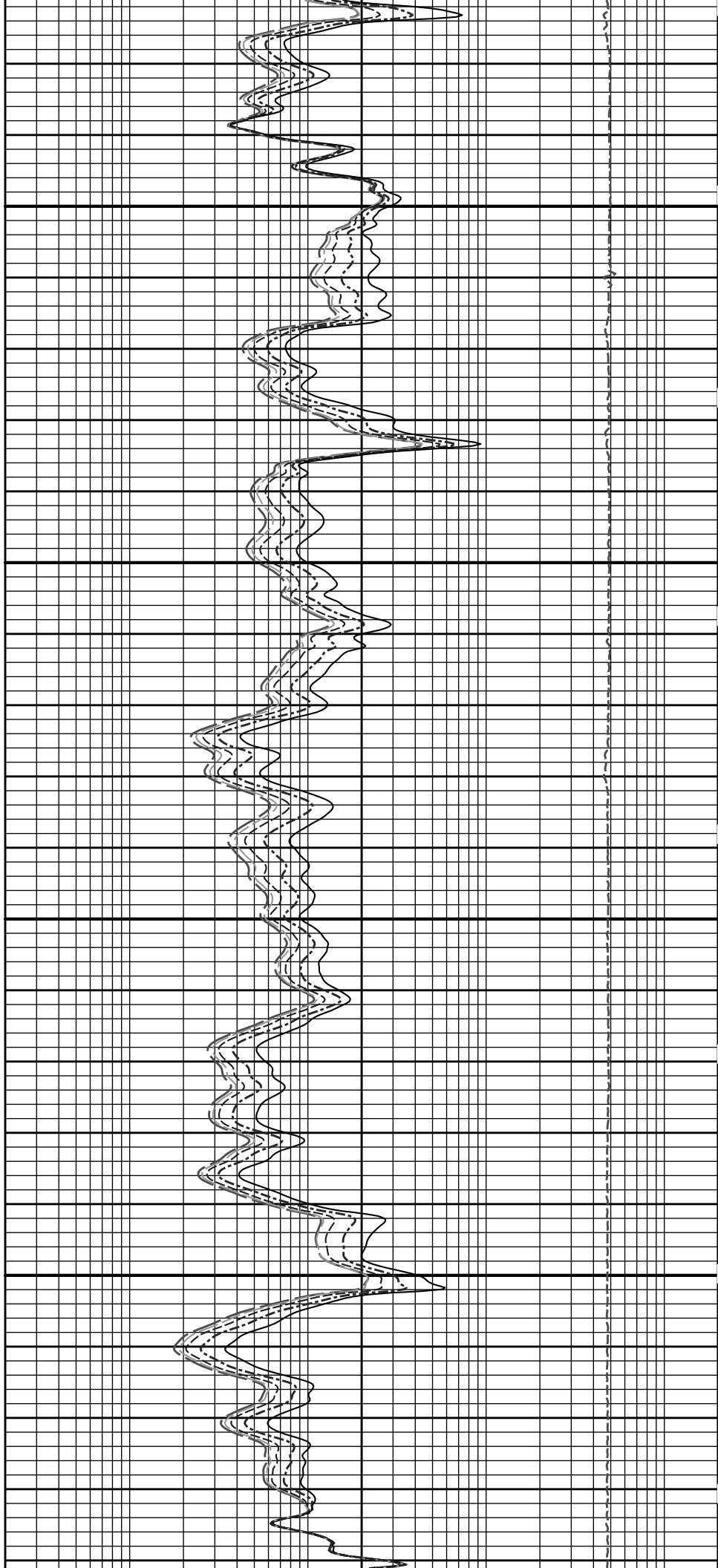
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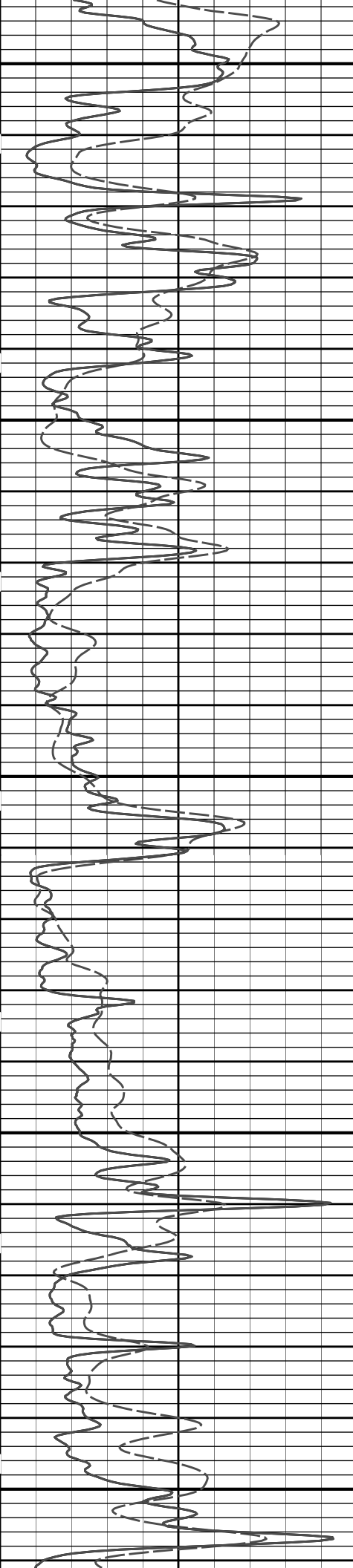




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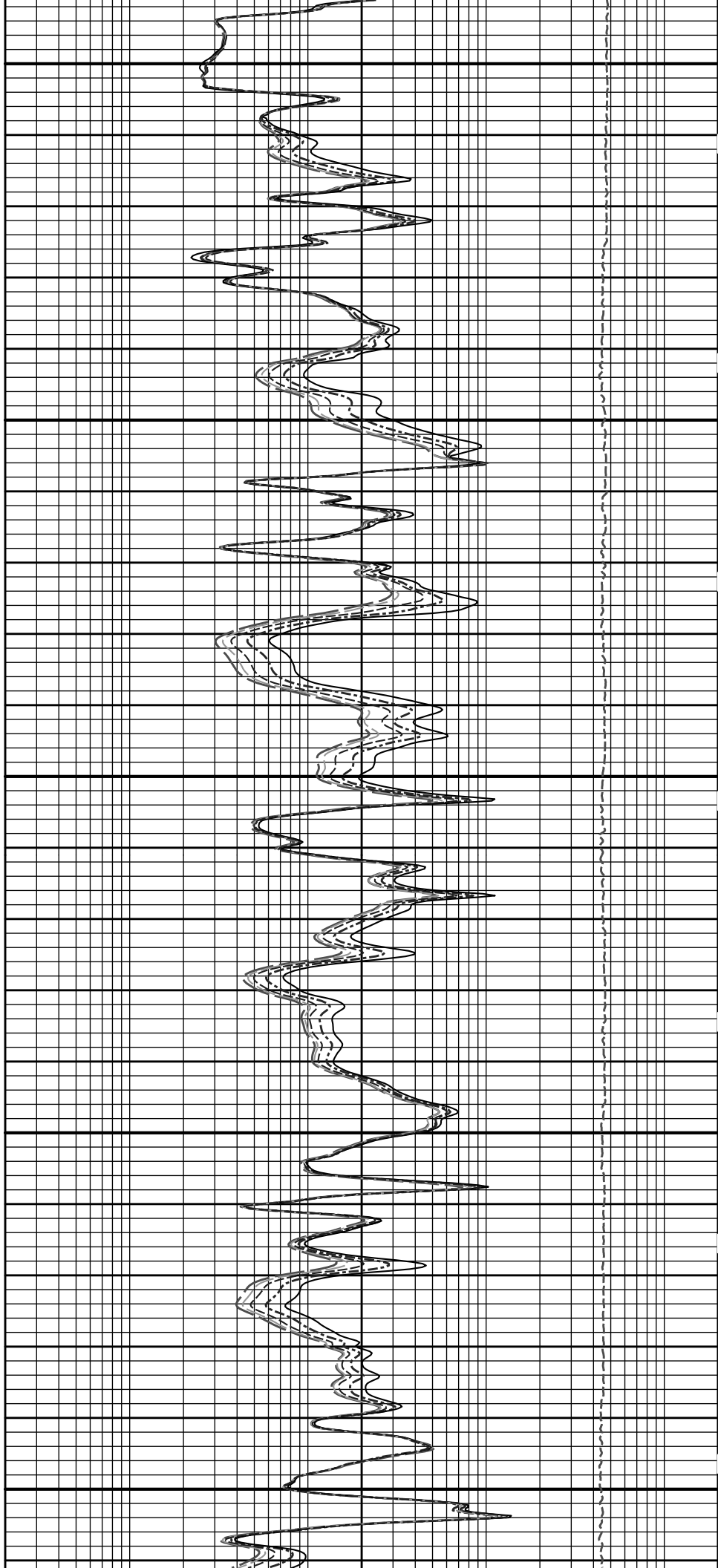


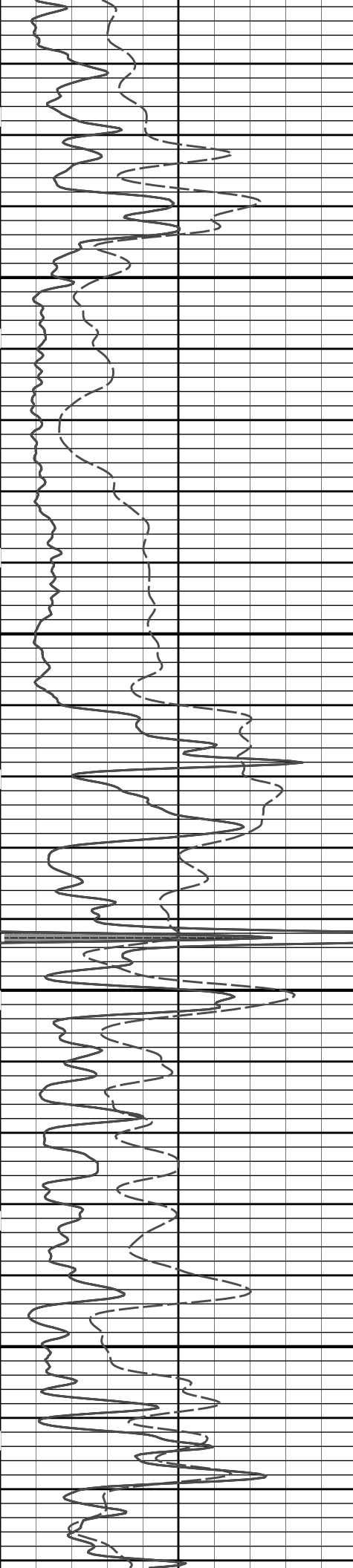


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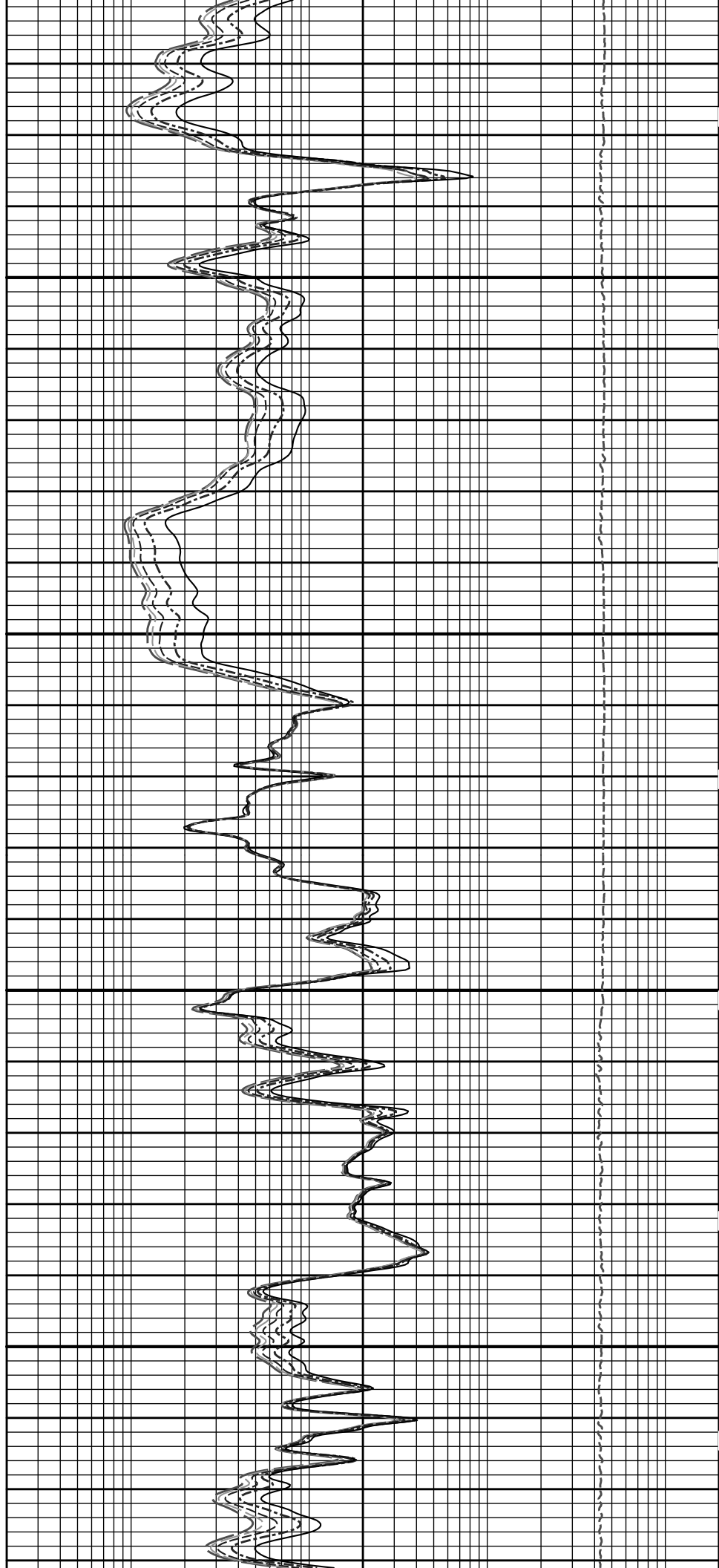
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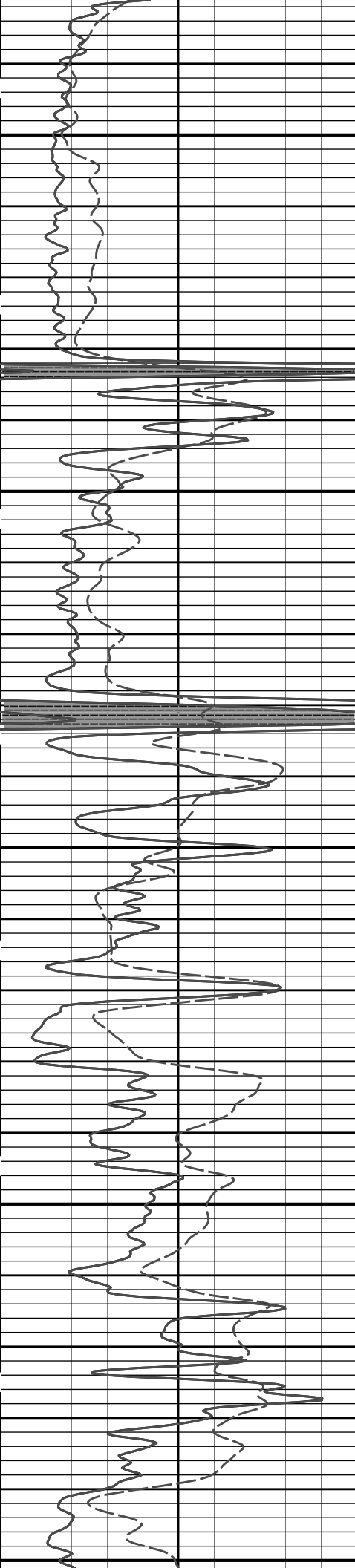




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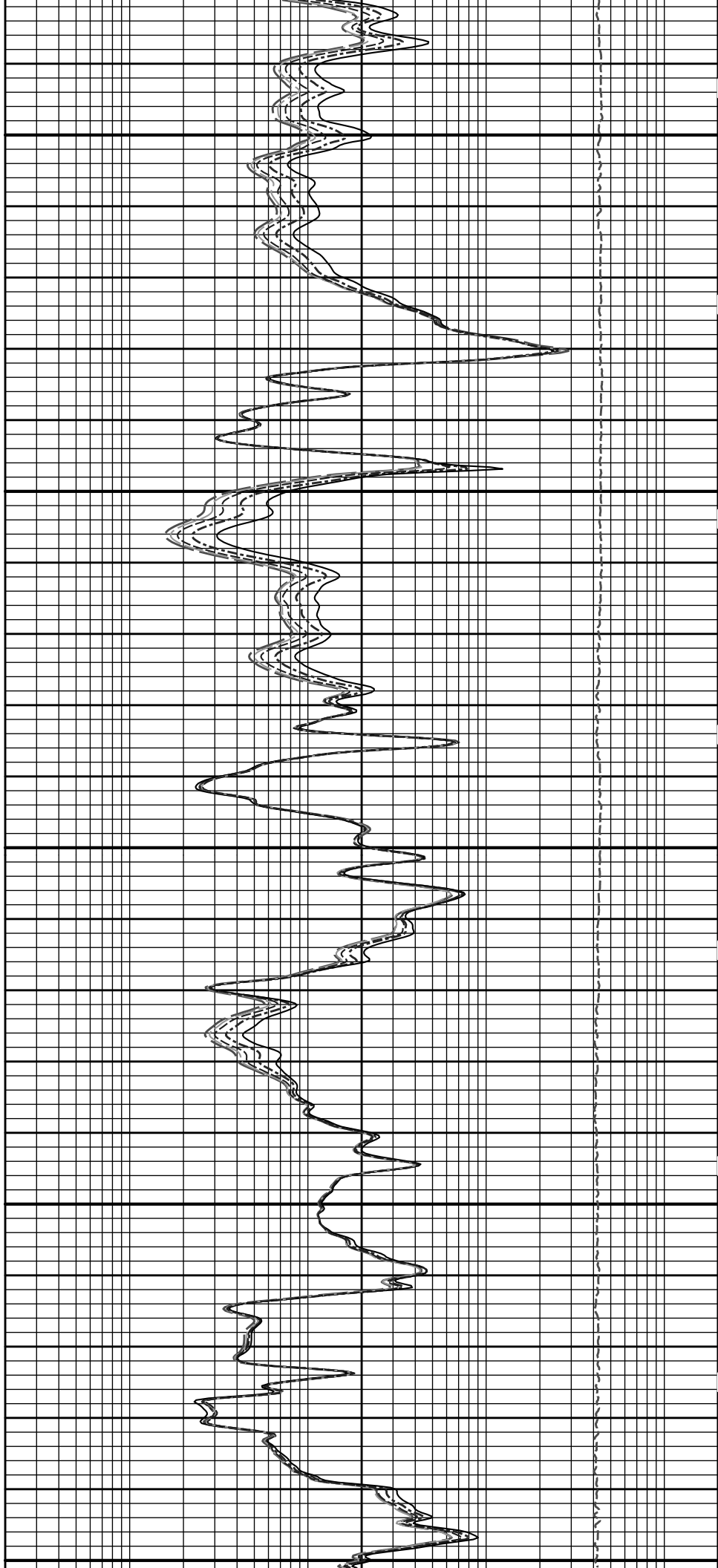
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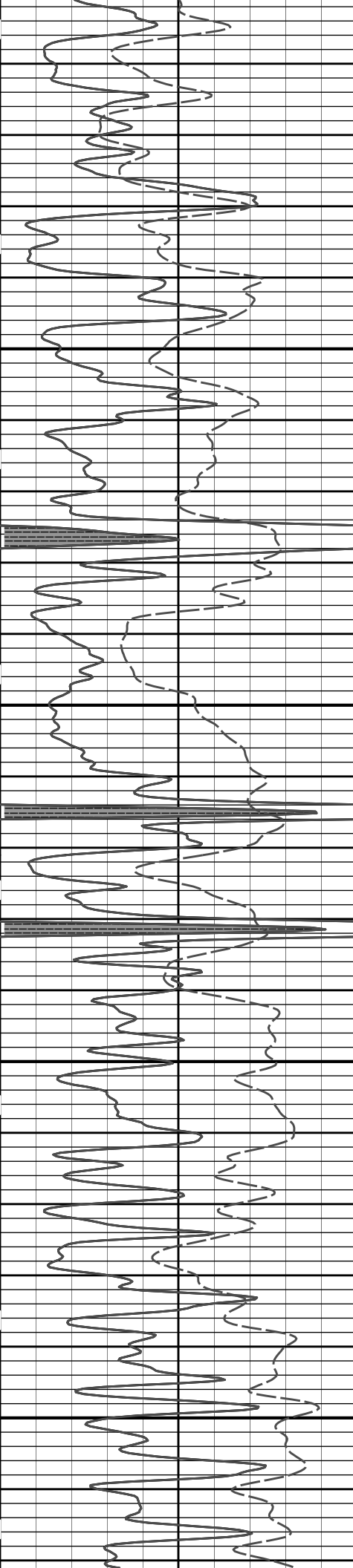




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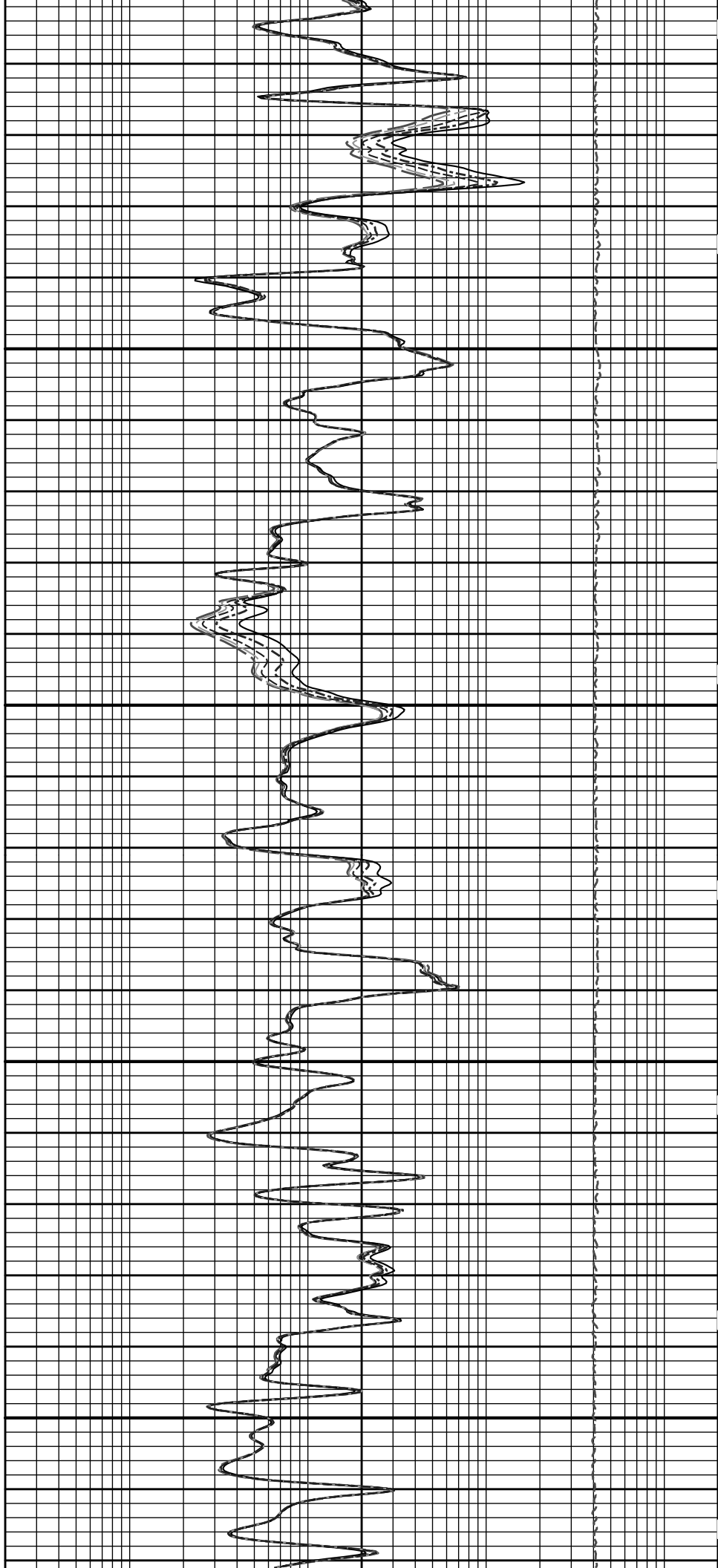
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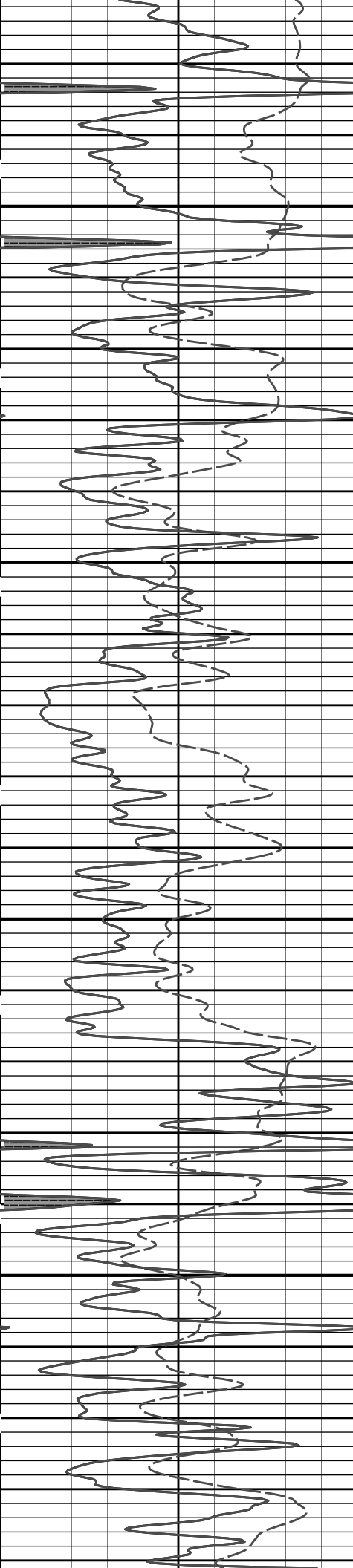




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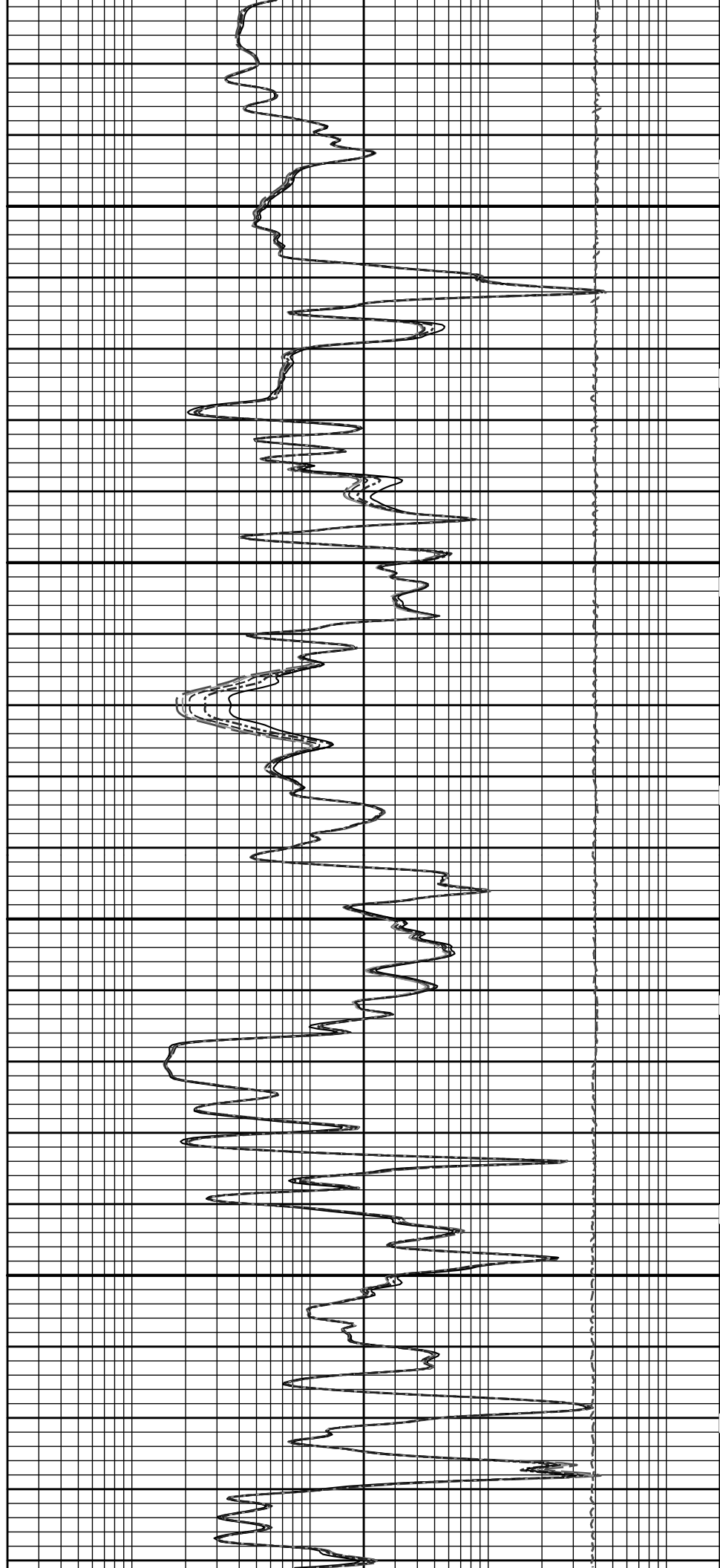
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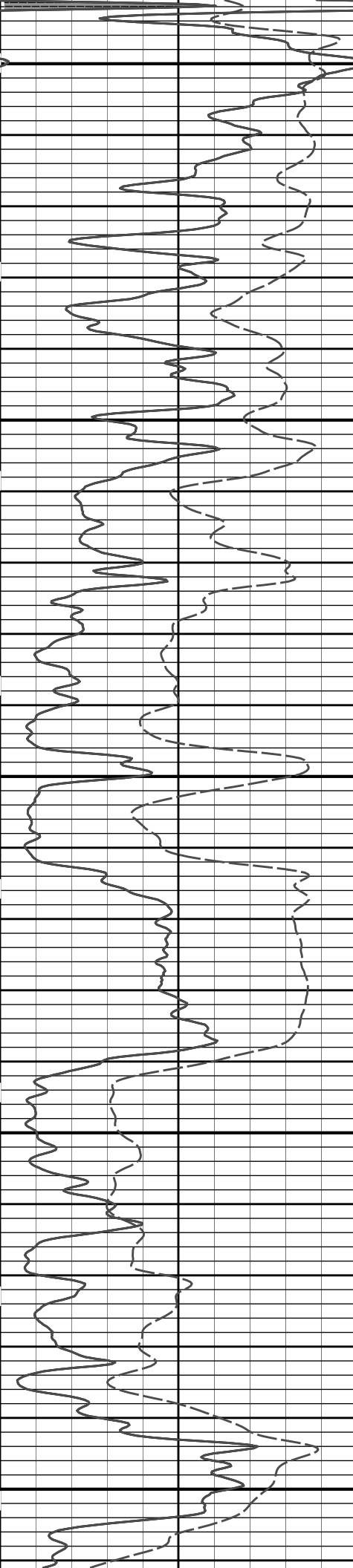




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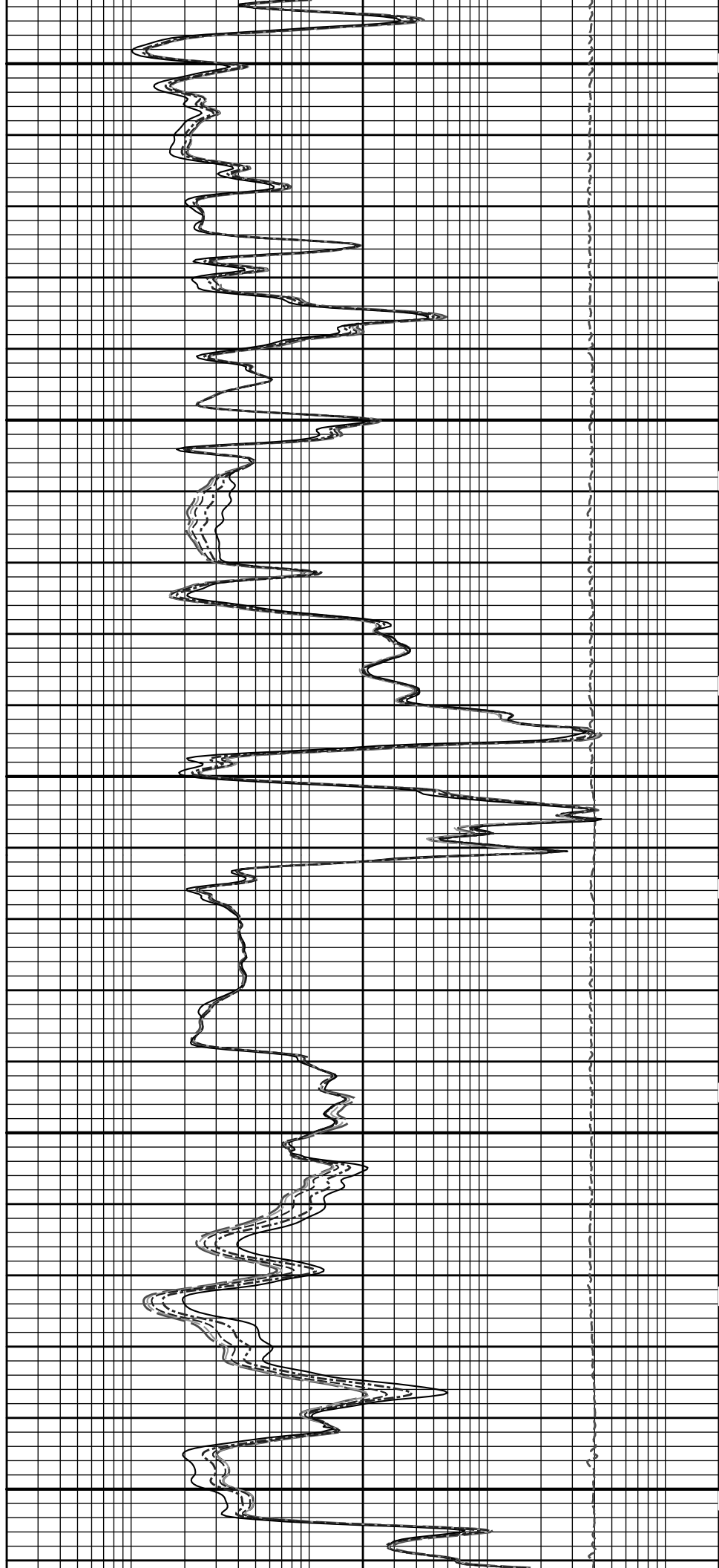


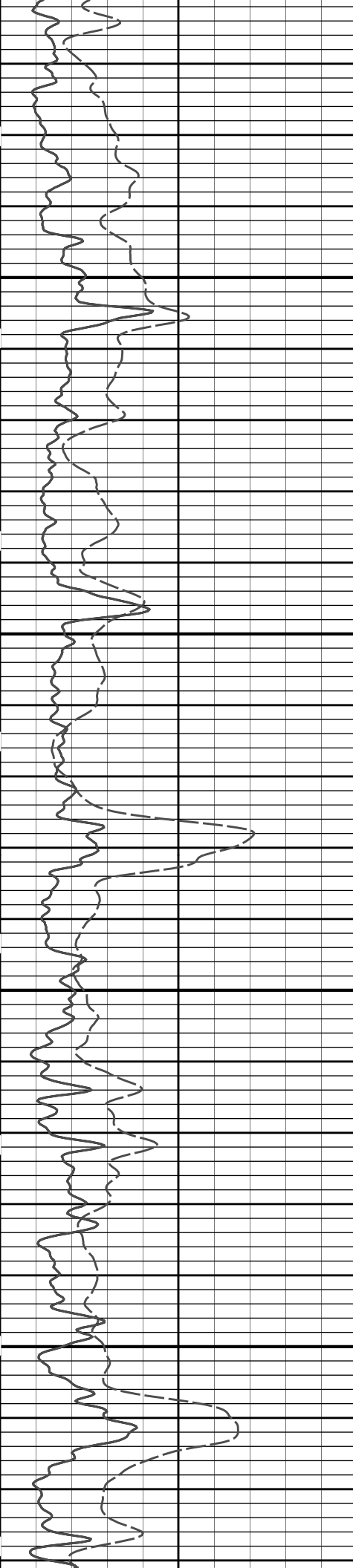


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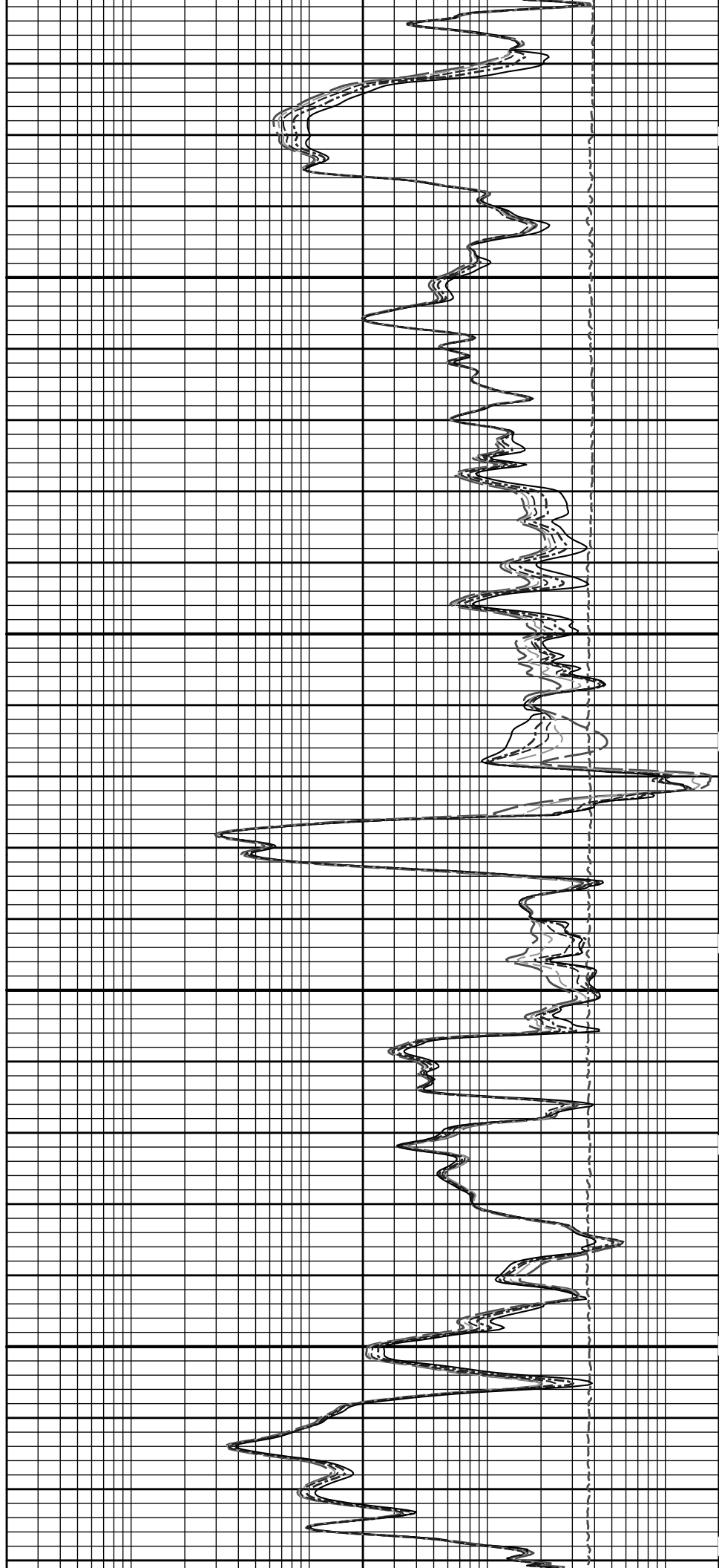
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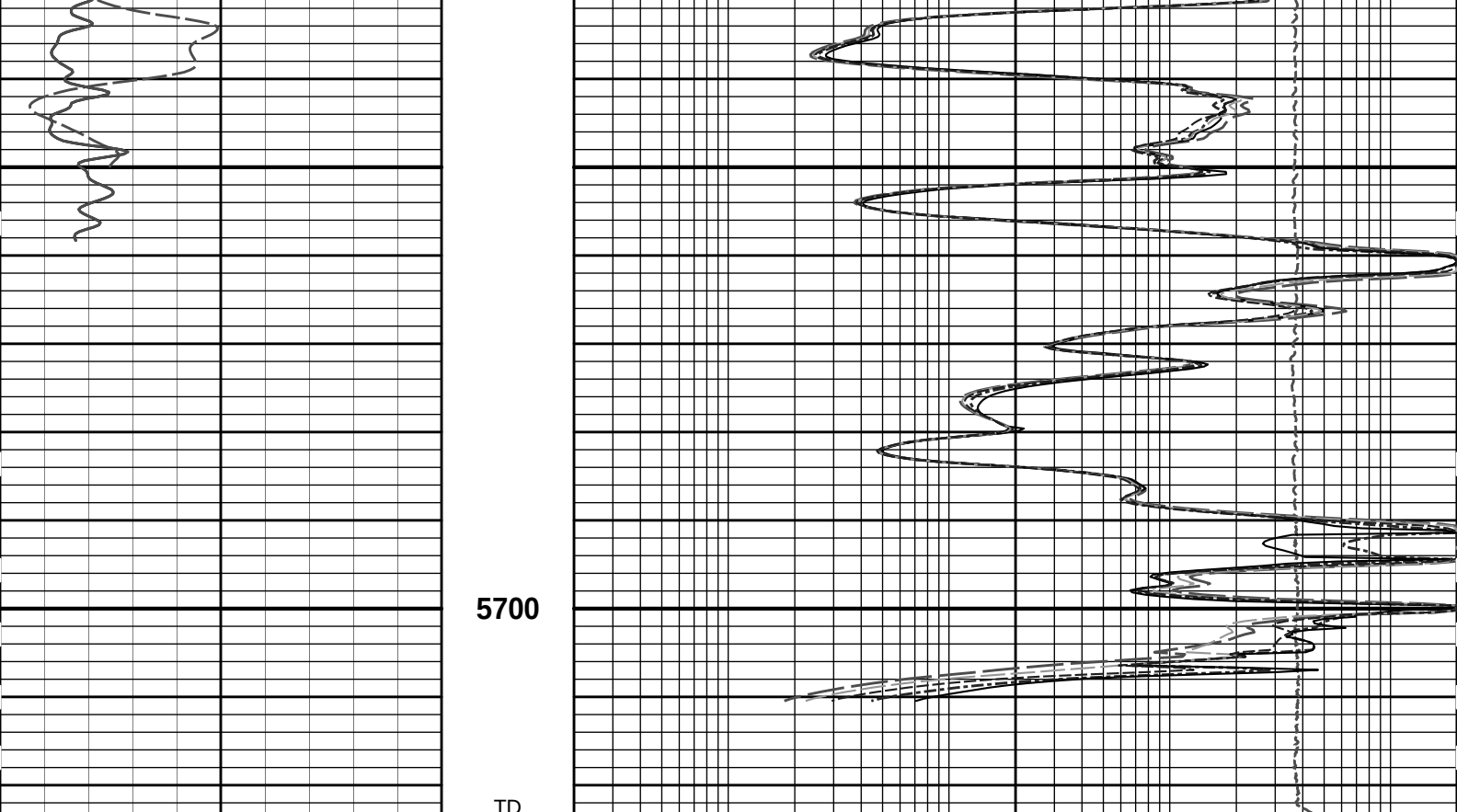




5500

5600





SP -]20[+		1 : 240 ft	10K Tension pounds		0
0	Gamma API 150 api		0.2	10in Resistivity 2ft Res ohmm	2000
	SHALE	Tension Pull	0.2	20in Resistivity 2ft Res ohmm	2000
0	Gamma API 150 api		0.2	30in Resistivity 2ft Res ohm-metre	2000
			0.2	60in Resistivity 2ft Res ohmm	2000
			0.2	90in Resistivity 2ft Res ohmm	2000

HALLIBURTON

Plot Time: 15-Oct-12 20:43:59
Plot Range: 1792 ft to 5723.25 ft
Data: oxy_BCU#407WWell Based\MAIN PASSI
Plot File: \\-LOCAL-loxy_BCU#407WWell Based\ACRT\ACRT_5_main_lib

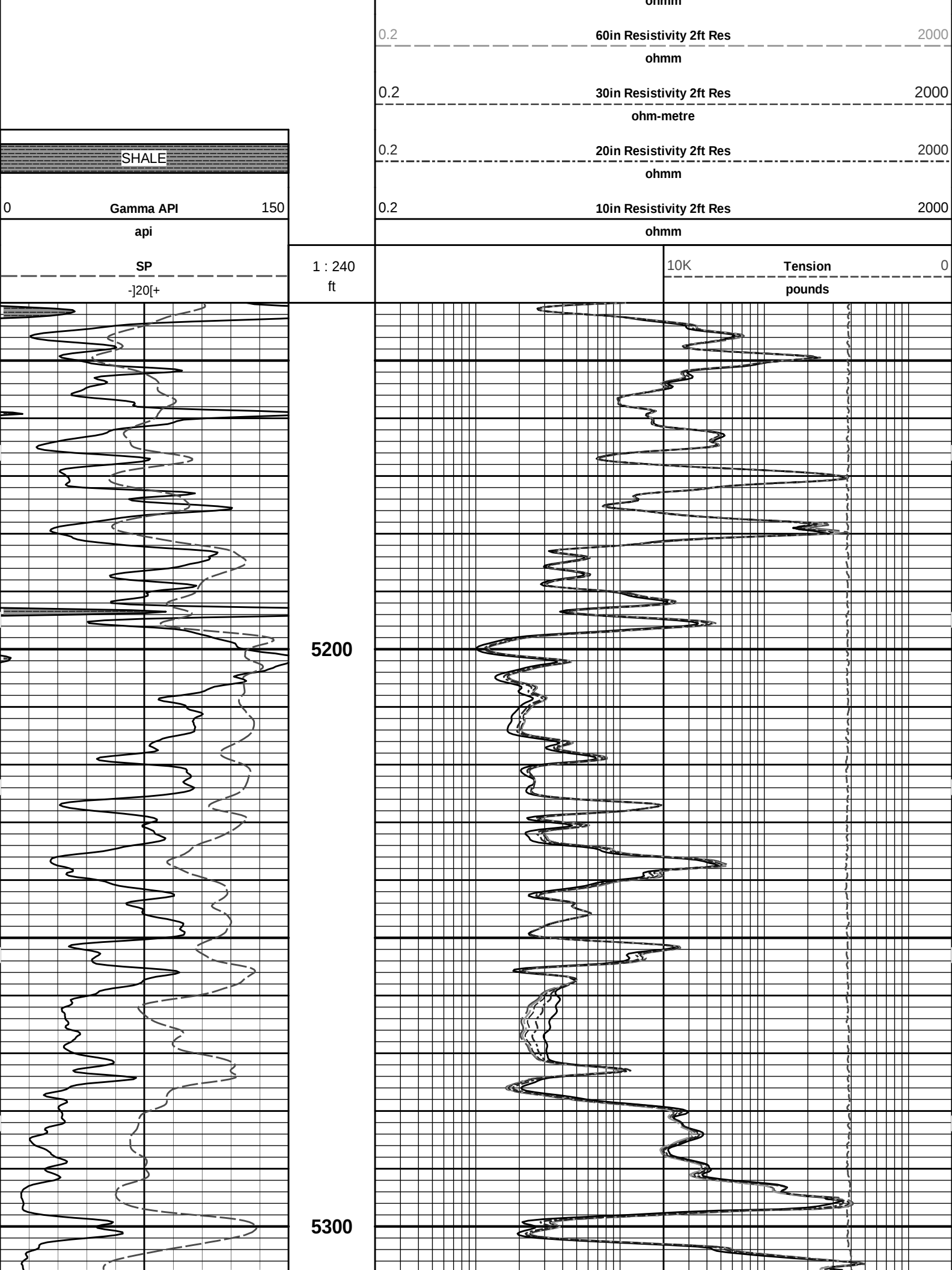
5 INCH MAIN LOG

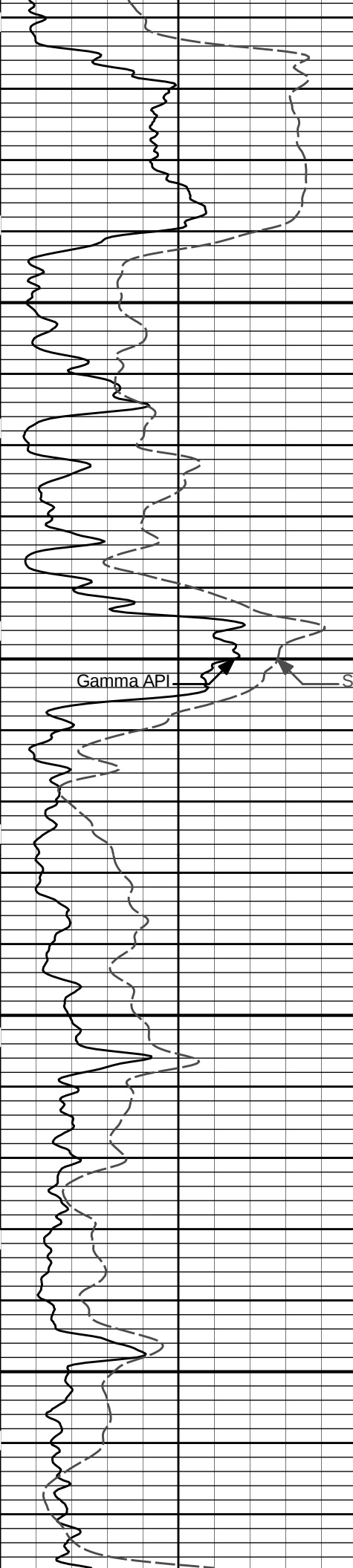
HALLIBURTON

Plot Time: 15-Oct-12 20:43:59
Plot Range: 5140 ft to 5730.5 ft
Data: oxy_BCU#407WWell Based\REPEAT
Plot File: \\-LOCAL-loxy_BCU#407WWell Based\ACRT\ACRT_5_repeat_lib

REPEAT SECTION

		0.2	90in Resistivity 2ft Res	2000
			ohmm	





5400

20in Resistivity 2ft Res

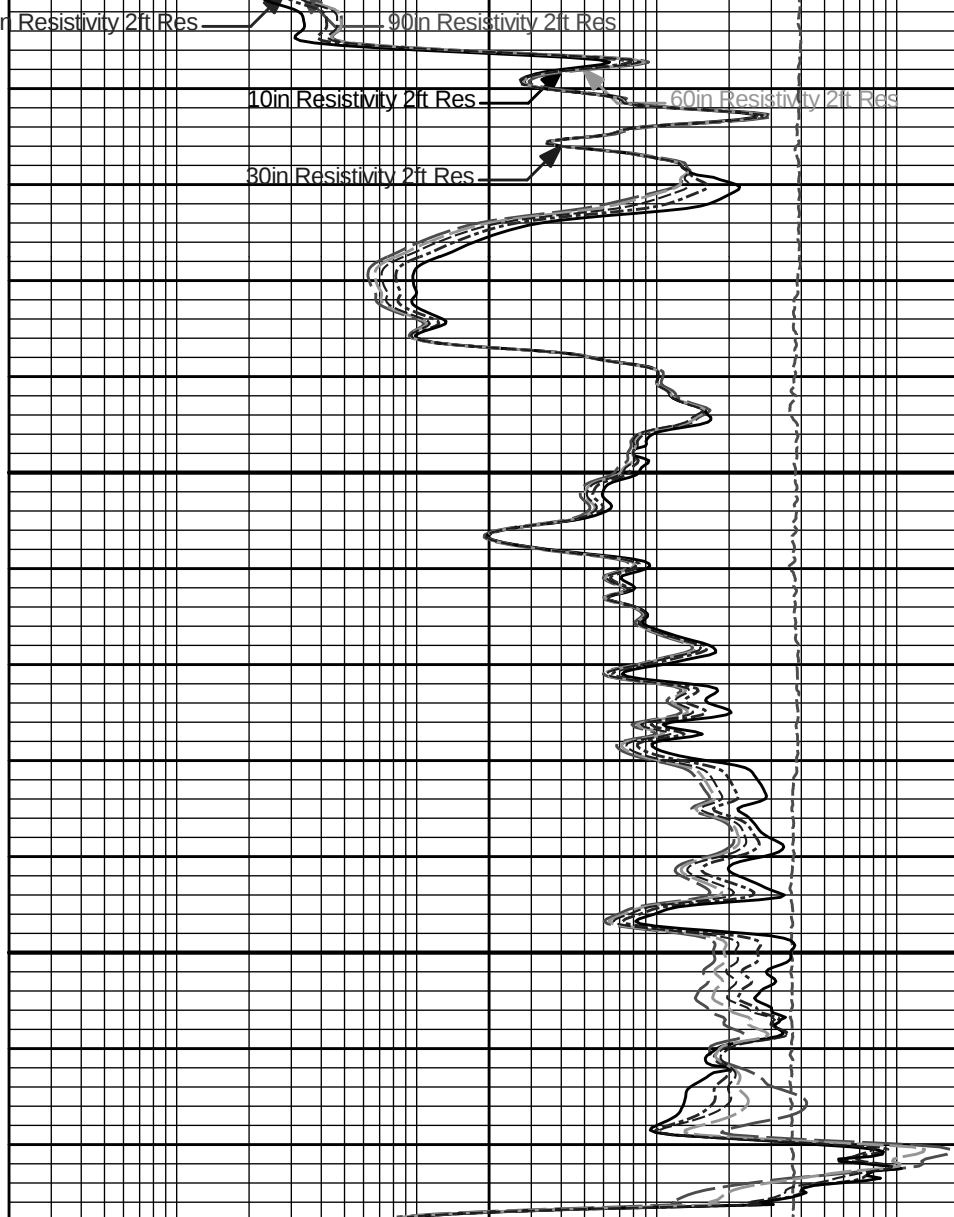
90in Resistivity 2ft Res

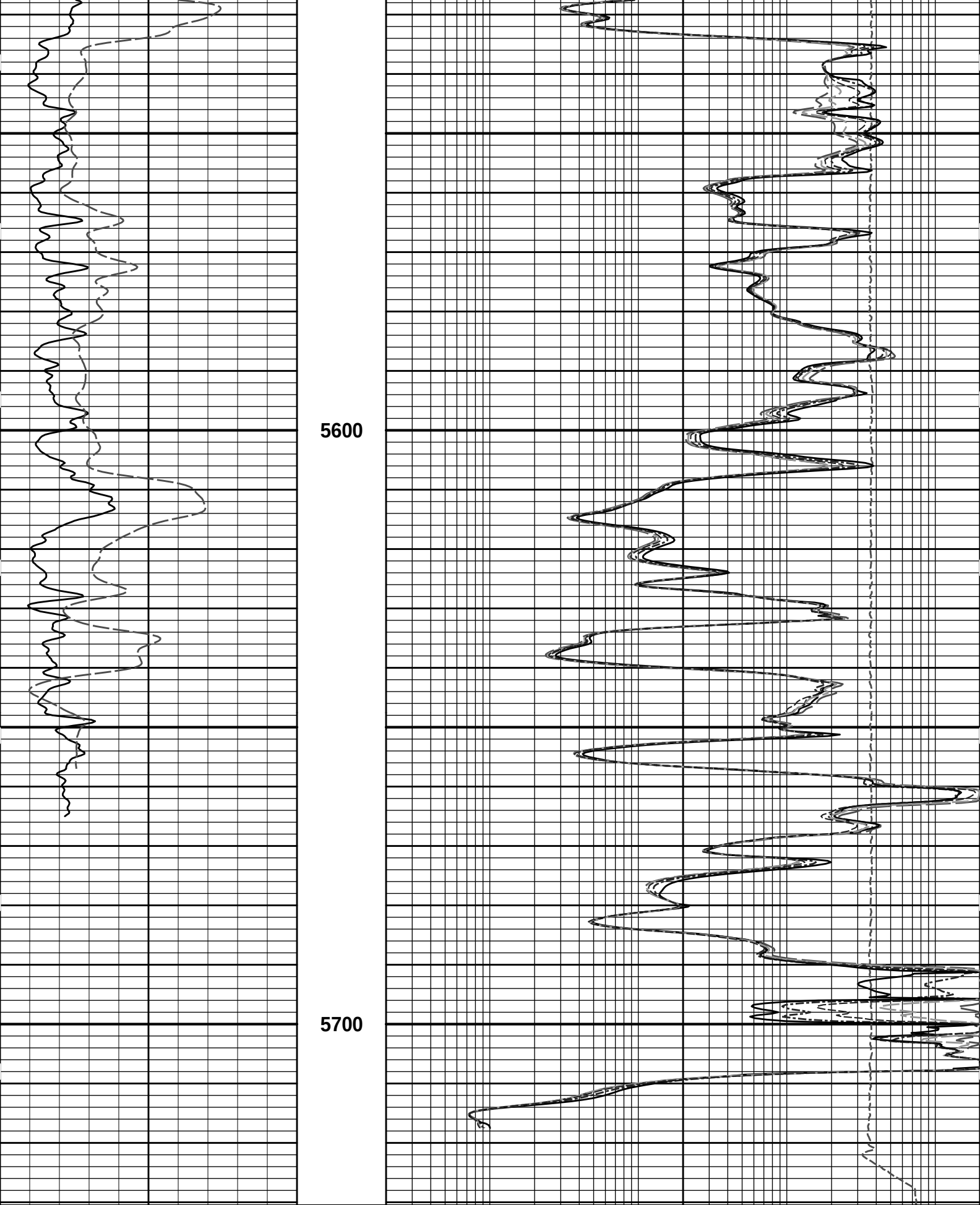
10in Resistivity 2ft Res

30in Resistivity 2ft Res

60in Resistivity 2ft Res

5500





SP -20[+20]		1 : 240 ft	10K	Tension pounds	0
0	Gamma API	150	0.2	10in Resistivity 2ft Res	2000

api SHALE	0.2	20in Resistivity 2ft Res	2000
		ohmm	
	0.2	30in Resistivity 2ft Res	2000
		ohm-metre	
	0.2	60in Resistivity 2ft Res	2000
		ohmm	
	0.2	90in Resistivity 2ft Res	2000
		ohmm	

HALLIBURTON

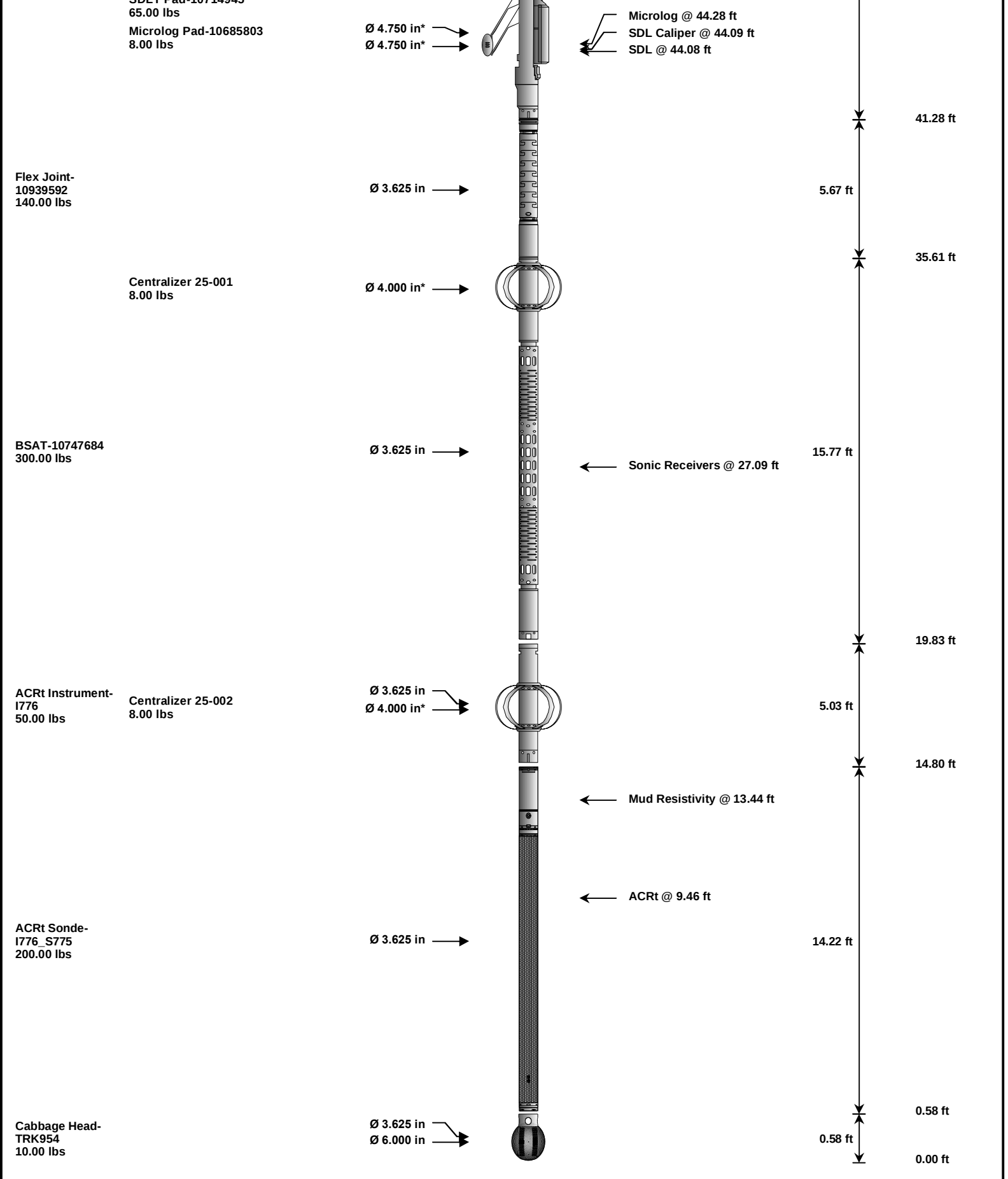
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Plot Range: 5140 ft to 5730.5 ft
Data: oxy_BCU#407W\Well Based\REPEAT\
Plot File: \\-LOCAL-loxy_BCU#407W\Well Based\ACRT\ACRT_5_repeat_lib

REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
Cable Head- PROT01 30.00 lbs		Ø 3.625 in →			1.92 ft	75.95 ft
SP Sub-TRK954 60.00 lbs		Ø 3.625 in →		← SP @ 72.26 ft	3.74 ft	74.03 ft
						70.30 ft
GTET-10748374 165.00 lbs		Ø 3.625 in →		← GammaRay @ 64.23 ft	8.52 ft	
						61.78 ft
DSNT-10755066 174.00 lbs	DSN Decentralizer- 10755066 6.60 lbs	Ø 5.000 in* → Ø 3.625 in →		← DSN Far @ 54.84 ft ← DSN Near @ 54.09 ft	9.69 ft	
						52.09 ft
SDLT-10685803 360.00 lbs	SDLT Pad-10714945	Ø 4.500 in →			10.81 ft	



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
CH	Standard OH Cable Head	PROT01	30.00	1.92	74.03	300.00
SP	SP Sub	TRK954	60.00	3.74	70.30	300.00
GTET	Gamma Telemetry Tool	10748374	165.00	8.52	61.78	60.00
DSNT	Dual Spaced Neutron	10755066	174.00	9.69	52.09	60.00
DCNT	DSN Decentralizer	10755066	6.60	5.13	* 55.42	300.00
SDLT	Spectral Density Tool	10685803	360.00	10.81	41.28	60.00

MICP	Microlog Pad	10685803	8.00	1.00	*	43.78	60.00
SDLP	Density Insite Pad	10714945	65.00	2.55	*	43.49	60.00
FLEX	Flex Joint	10939592	140.00	5.67		35.61	300.00
BSAT	Borehole Sonic Array Tool	10747684	300.00	15.77		19.83	60.00
OBCEN	Centralizer - 25 in. Overbody	001	8.00	2.08	*	33.31	300.00
ACRt	Array Compensated True Resistivity Instrument Section	1776	50.00	5.03		14.80	300.00
OBCEN	Centralizer - 25 in. Overbody	002	8.00	2.08	*	16.10	300.00
ACRt	Array Compensated True Resistivity Sonde Section	1776_S775	200.00	14.22		0.58	300.00
CBHD	Cabbage Head	TRK954	10.00	0.58		0.00	300.00
Total			1,584.60	75.95			
* Not included in Total Length and Length Accumulation.							Date: 15-Oct-12 14:20:33
Data: oxy_BCU#407W\0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-CH\IDLE							

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION			
Tool Name:	GTET - 10748374	Reference Calibration Date:	18-Sep-12 17:08:34
Engineer:	T. HYDE	Calibration Date:	02-Oct-12 10:47:13
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1
Calibrator Source S/N: TB-185			
Calibrator API Reference:228.00 api			
Equivalent Calibrator API Reference:232.0 api			
Measurement	Measured	Calibrated	Units
Background	40.5	40.0	api
Background + Calibrator	275.4	272.0	api
Calibrator	234.8	232.0	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION			
Tool Name:	GTET - 10748374	Reference Calibration Date:	02-Oct-12 10:47:13
Engineer:	S. INGERSOLL	Calibration Date:	13-Oct-12 10:28:18
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1
Calibrator Source S/N: TB-185			
Calibrator API Reference:228.00 api			
Equivalent Calibrator API Reference:232.0 api			
Field Verification	Shop	Field	Units
Background	40.0	36.6	api
Background + Calibrator	272.0	268.8	api
Calibrator	232.0	232.2	api
Shop	Field	Difference	Tolerance
232.0	232.2	-0.2	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION			
Tool Name:	DSNT - 10755066	Reference Calibration Date:	30-Sep-12 13:09:21
Engineer:	T. HYDE	Calibration Date:	30-Sep-12 13:31:25
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1
Logging Source S/N: DSN-436			
Tank Serial Number: 105060			
Reference value assigned to Tank: 51.680			
Snow Block S/N: TRK_954			

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.948	0.951	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):	0.2100	0.2107	0.0007	+/- 0.0020
Calibrated Ratio:	9.69	9.72	0.023	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0581	0.02000 - 0.09000

PASS/FAIL SUMMARY	
Background Check:	Passed
Gain-Range Check:	Passed
Snow-Block Check:	Passed

DENSITY CALIPER SHOP CALIBRATION

Tool Name:	SDLT - 10685803	Reference Calibration Date:	30-Sep-12 15:15:28
Engineer:	T. HYDE	Calibration Date:	30-Sep-12 15:20:02
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1
Host Tool Name:	DSNT - 10755066		

CALIBRATION COEFFICIENTS			
Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-4756.69	-4873.17	-7000.00 - -1000.00
Pad Gain	0.0003785	0.0003762	0.000200 - 0.000600
Arm Offset	-1910.52	-1855.72	-5000.00 - 3000.00
Arm Gain	0.0005476	0.0005483	0.000300 - 0.000700
Arm Power	-0.000007447	-0.000007411	-0.000010000 - 0.000010000

The ring diameter is computed from: $\text{DIAMETER} = \text{PAD EXTENSION} + \text{ARM EXTENSION} + \text{TOOL DIAMETER}$
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)	2.06	2.00	-0.06	+/- 0.20
Medium Ring (in)	3.82	3.75	-0.07	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.51	6.50	-0.01	+/- 0.20
Medium Ring (in)	8.26	8.25	-0.01	+/- 0.20
Large Ring (in)	15.00	15.00	0.00	+/- 0.20

PASS/FAIL SUMMARY	
Calibration-Coefficients Range Check:	Passed
Ring-Measurement Check:	Passed

PASS/FAIL SUMMARY	
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SPECTRAL DENSITY SHOP CALIBRATION

Tool Name: SDLT Pad - 10714945

Reference Calibration Date: 19-Aug-12 11:07:52

Engineer: T. HYDE

Calibration Date: 30-Sep-12 14:22:02

Software Version: WL INSITE R3.6.0 (Build 3)

Calibration Version: 1

Logging Source S/N: 5073GW

Aluminum Block S/N: 63061

Density: 2.591g/cc

Pe: 3.170

Magnesium Block S/N: 63393

Density: 1.690g/cc

Pe: 2.594

DENSITY CALIBRATION SUMMARY

Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	0.9590	0.9656	0.90 - 1.10
Near Dens Gain	0.9683	0.9659	0.90 - 1.10
Near Peak Gain	0.9846	0.9627	0.90 - 1.10
Near Lith Gain	0.9842	0.9549	0.90 - 1.10
Far Bar Gain	0.9833	0.9857	0.90 - 1.10
Far Dens Gain	0.9769	0.9809	0.90 - 1.10
Far Peak Gain	0.9722	0.9745	0.90 - 1.10
Far Lith Gain	0.9472	0.9527	0.90 - 1.10
Near Bar Offset	0.6134	0.5753	NONE
Near Dens Offset	0.5039	0.5397	NONE
Near Peak Offset	0.3458	0.5351	NONE
Near Lith Offset	0.3151	0.5631	NONE
Far Bar Offset	0.2663	0.2770	NONE
Far Dens Offset	0.3035	0.2992	NONE
Far Peak Offset	0.3006	0.3121	NONE
Far Lith Offset	0.4090	0.4017	NONE
Near Bar Background	985.51	988.66	700 - 1450
Near Dens Background	329.00	328.22	230 - 480
Near Peak Background	142.86	143.53	100 - 210
Near Lith Background	172.21	173.93	125 - 260
Far Bar Background	503.39	501.27	450 - 900
Far Dens Background	195.21	193.97	175 - 345
Far Peak Background	76.80	75.74	70 - 140
Far Lith Background	81.48	80.74	75 - 145

CALIBRATION BLOCK SUMMARY

Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.698	1.690	-0.008	+/- 0.015
Pe	2.434	2.555	0.121	+/- 0.150
ALUMINUM				
Density (g/cc)	2.593	2.591	-0.002	+/- 0.01500
Pe	3.051	3.129	0.078	+/- 0.150

TOOL SUMMARY

Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits

QUALITY				
Background	-0.0002	+/- 0.0110	0.0001	+/- 0.0140
Magnesium Block	-0.0012	+/- 0.0110	-0.0009	+/- 0.0140
Aluminum Block	-0.0002	+/- 0.0110	-0.0006	+/- 0.0140
Resolution	9.77	6.00 - 11.50	9.21	6.00 - 11.50
Internal Verifier(B+D+P+L)	1634	1200 - 2700	852	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 - 10714945	Reference Calibration Date:	30-Sep-12 14:22:02
Engineer:	S. INGERSOLL	Calibration Date:	13-Oct-12 10:43:57
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1

Pad Temperature: 71.7 degF

DENSITY FIELD CALIBRATION SUMMARY				
Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1634.342	1633.005	-1.337	16.246
Far (B+D+P+L) cps	851.718	860.608	8.890	16.006
Near Resolution	9.77	9.90	0.130	0.50
Far Resolution	9.21	9.37	0.160	1.00

PASS/FAIL SUMMARY	
Bkg Quality Check:	Passed
Bkg Resolution Check:	Passed
Bkg Verification Check:	Passed

MICRO LOG SHOP CALIBRATION

Tool Name:	Microlog Pad - 10685803	Reference Calibration Date:	30-Sep-12 15:31:05
Engineer:	T. HYDE	Calibration Date:	30-Sep-12 15:34:21
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1
Host Tool Name:	DSNT - 10755066		

CALIBRATION COEFFICIENT SUMMARY					
Measurement	Micro Log Normal		Micro Log Lateral		Units
	Measured	Calibrated	Measured	Calibrated	
Tool Zero	-0.12	-0.11	-0.01	-0.01	ohmm
Calibration Point #1	-0.01	0.00	-0.00	0.00	ohmm
Calibration Point #2	20.01	20.00	20.00	20.00	ohmm
Internal Reference	19.94	19.94	20.04	20.03	ohmm

Measurement	Micro Log Normal Tool Value	Micro Log Lateral Tool Value	Units
Tool Zero	0.24	0.17	V
Calibration Point #1	29.33	4.16	V
Calibration Point #2	5212.22	6222.22	V

Calibration Point #2		5313.38	6882.99	V
Internal Reference		5296.33	6894.51	V

MICRO LOG FIELD CHECK					
Tool Name:	Microlog Pad - 10685803		Reference Calibration Date:	30-Sep-12 15:34:21	
Engineer:	T. HYDE		Calibration Date:	13-Oct-12 10:26:04	
Software Version:	WL INSITE R3.6.0 (Build 3)		Calibration Version:	1	

	Measurement	Micro Log Normal		Micro Log Lateral		
		Shop	Field	Shop	Field	Units
	Tool Zero	-0.11	-0.11	-0.01	0.00	ohmm
	Internal Reference	19.94	19.84	20.03	19.94	ohmm
	Summary					
	Signal	Shop	Field	Difference	Tolerance	
	Microlog Normal	19.94	19.84	0.10	+/- 0.80	
	Microlog Lateral	20.03	19.94	0.09	+/- 0.80	

SDLT CALIPER FIELD CALIBRATION				
Tool Name:	SDLT - 10685803		Reference Calibration Date:	30-Sep-12 15:20:02
Engineer:	S. INGERSOLL		Calibration Date:	13-Oct-12 10:47:32
Software Version:	WL INSITE R3.6.0 (Build 3)		Calibration Version:	1

	MEASURED CALIPER VALUES				
	Measurement	Shop	Field	Change	Control Limit On New Value
	Pad Extension	3.75	3.78	0.03	+/- 0.10
	Ring Diameter	8.25	8.33	0.08	+/- 0.15

PASS/FAIL SUMMARY	
Pad Extension Check:	Passed
Diameter Check:	Passed

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION									
Tool Name:	ACRt Sonde - I776_S775			Reference Calibration Date:	18-Aug-12 11:31:49				
Engineer:	J. BOLLLOM			Calibration Date:	23-Sep-12 10:59:02				
Software Version:	WL INSITE R3.6.0 (Build 3)			Calibration Version:	1				
Host Tool Name:	ACRt Instrument - I776								

TYPICAL GAIN RANGE									
Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.01	1.05	0.95	1.02	1.05	0.95	1.01	1.05
A2 (50")	0.95	1.02	1.05	0.95	1.02	1.05	0.95	1.02	1.05
A3 (29")	0.95	1.02	1.05	0.95	1.02	1.05	0.95	1.02	1.05
A4 (17")	0.95	1.01	1.05	0.95	1.01	1.05	0.95	1.01	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.01	1.05	0.95	1.01	1.05
A6 (6")	N/A	N/A	N/A	0.95	1.00	1.05	0.95	0.99	1.05

TYPICAL SONDE OFFSET RANGE									
Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	-5	-1.62	2	-6	-4.68	-2	-8	-5.05	-2
A2 (50")	-7	-3.46	0	-7	-4.38	0	-7	-4.45	0

A3 (29")	-27	-15.08	-9	-4.91	-3	-7	-3.00	-1	
A4 (17")	-180	-103.13	-60	-45	-32.93	-15	-39	-26.29	-13
A5 (10")	N/A	N/A	N/A	-150	-105.52	-50	-80	-50.94	-10
A6 (6")	N/A	N/A	N/A	175	256.24	525	90	131.35	270

TRANSMITTER CURRENT GAIN				R-MUD VERIFICATION			
Signal	Lower	R	Upper	Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
12K	0.6	0.85	1.3	Mud Cell	0.95	0.99	1.05
36K	1.0	1.18	2.0				
72K	1.0	1.46	2.0				

PASS/FAIL SUMMARY	
GAIN RANGE CHK	PASS
SONDE OFFSET RANGE CHK	PASS
Tx CURRENT GAIN	PASS
Rmud VERIFICATION	PASS

TOOL OK TO LOG

CALIBRATION SUMMARY						
Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-10748374						
Gamma Ray Calibrator	232.0	232.2	-----	-0.2	+/- 9.00	api
DSNT-10755066						
Snow-Block Porosity	0.0581	-----	-----	0.0000	+/- -.-	decp
SDLT-10685803						
Pad Extension	3.75	3.78	-----	-0.03	+/-0.10	in
Ring Diameter	8.25	8.33	-----	-0.08	+/-0.15	in
SDLT Pad-10714945						
Near(B+D+P+L)	1634.342	1633.005	-----	1.337	+/-16.246	cps
Far(B+D+P+L)	851.718	860.608	-----	-8.890	+/-16.006	cps
Microlog Pad-10685803						
MicroLog Normal	19.94	19.84	-----	0.10	+/-0.80	ohmm
MicroLog Lateral	20.03	19.94	-----	0.09	+/-0.80	ohmm
ACRt Sonde-I776_S775						
Mud Cell	0.99	-----	-----	0.00	-----	ohm-m

Data: oxy_BCU#407W10001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-CH1005 15-Oct-12 16:18 Up @5724.0f

Date: 15-Oct-12 18:38:11

HALLIBURTON						
PARAMETERS REPORT						
Depth ((ft))	Tool Name	Mnemonic	Description	Value	Units	
TOP						
	SHARED	BS	Bit Size	7.875	in	
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No		
	SHARED	MDBS	Mud Base	Water		
	SHARED	MDWT	Borehole Fluid Weight	9.100	ppg	
	SHARED	WAGT	Weighting Agent	Natural		
	SHARED	BSAL	Borehole salinity	0.00	ppm	
	SHARED	FSAL	Formation Salinity NaCl	0.00	ppm	
	SHARED	KBCT	Down Hole Mud Motor Weight	0.00	lb	

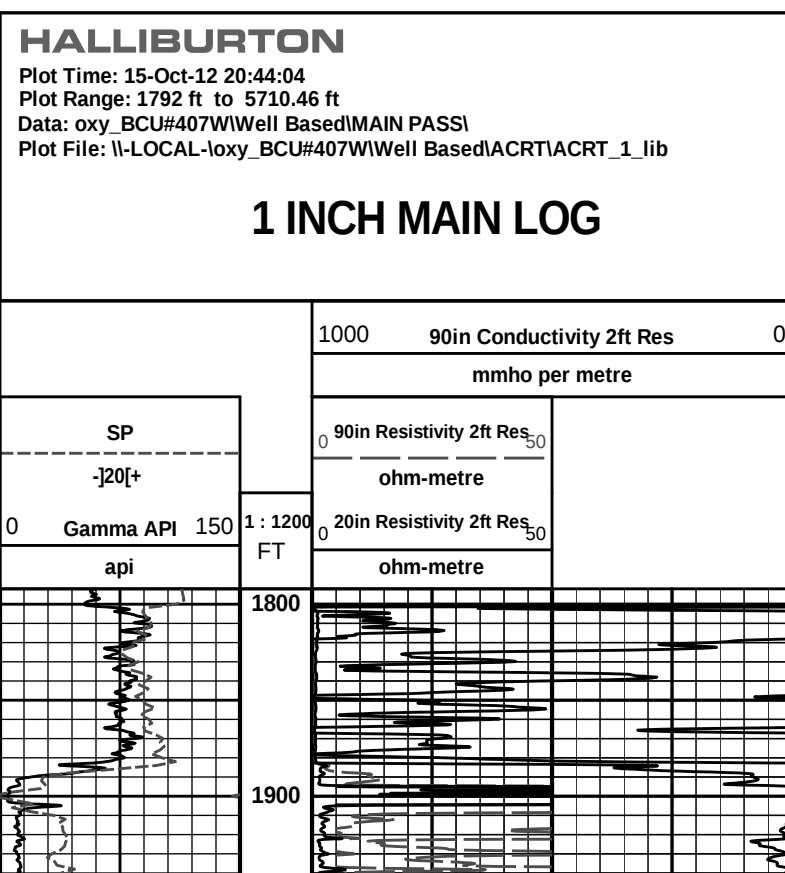
SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
SHARED	RMUD	Mud Resistivity	0.660	ohmm
SHARED	TRM	Temperature of Mud	75.0	degF
SHARED	CSD	Logging Interval is Cased?	No	
SHARED	ICOD	AHV Casing OD	5.500	in
SHARED	ST	Surface Temperature	75.0	degF
SHARED	TD	Total Well Depth	5746.00	ft
SHARED	BHT	Bottom Hole Temperature	140.0	degF
SHARED	SVTM	Navigation and Survey Master Tool	NONE	
SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET	
SHARED	TEMM	Temperature Master Tool	NONE	
SHARED	BHSM	Borehole Size Master Tool	NONE	
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	
GTET	GROK	Process Gamma Ray?	Yes	
GTET	GRSO	Gamma Tool Standoff	0.000	in
GTET	GEOK	Process Gamma Ray EVR?	No	
GTET	TPOS	Tool Position for Gamma Ray Tools.	Eccentered	
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	DNTP	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	
SDLT	CLOK	Process Caliper 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
Microlog Pad	MLOK	Process MicroLog Outputs?	Yes	
BSAT	MBOK	Compute BCAS Results?	Yes	
BSAT	FLLO	Frequency Filter Low Pass Value?	5000	Hz
BSAT	FLHI	Frequency Filter High Pass Value?	27000	Hz
BSAT	DTFL	Delta -T Fluid	189.00	uspf
BSAT	DTMT	Delta -T Matrix Type	User define	
BSAT	DTMA	Delta -T Matrix	47.60	uspf
BSAT	DTSH	Delta -T Shale	100.00	uspf
BSAT	SPEQ	Acoustic Porosity Equation	Wylie	
ACRt Sonde	RTOK	Process ACRt?	Yes	
ACRt Sonde	MNSO	Minimum Tool Standoff	1.50	in

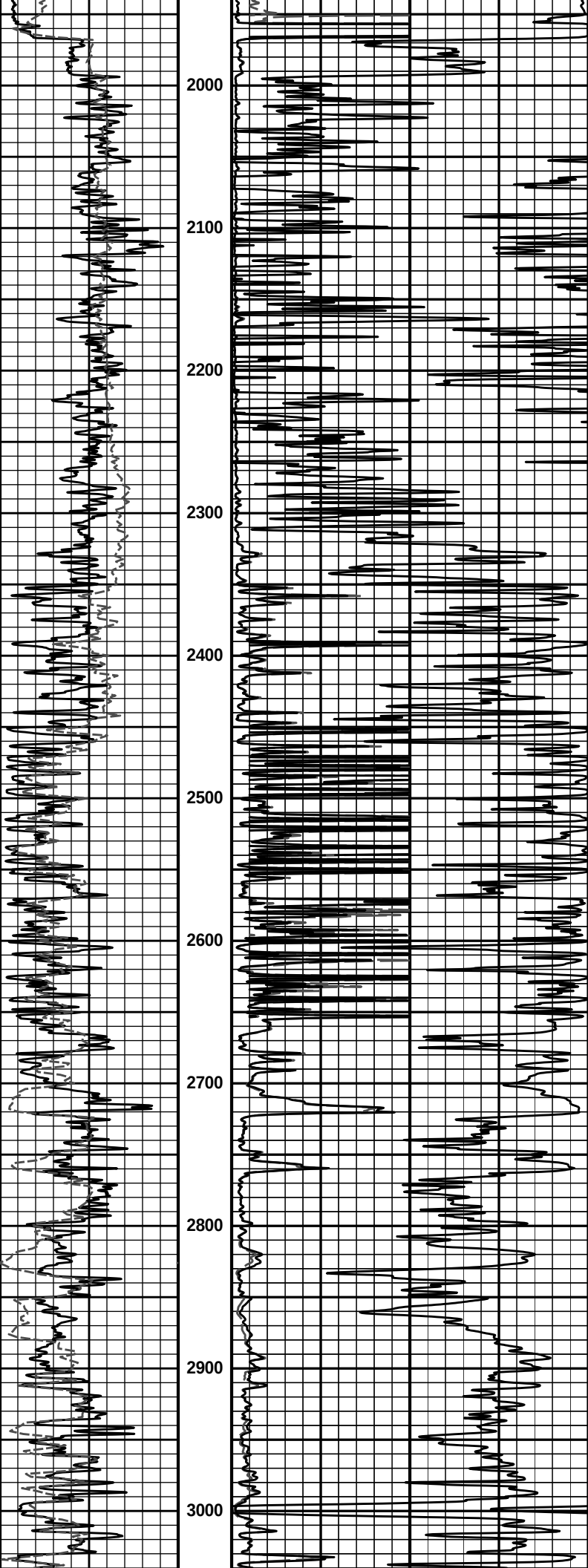
RMDC	Root Frame Count	29.03	NO	
GMOD	Gain processing mode	19.83	NO	
ACRt Sonde				
TPUL	Tension Pull	2.97	NO	
F1R1	ACRT 12KHz - 80in R value	9.22	BLK	0.000
F1X1	ACRT 12KHz - 80in X value	9.22	BLK	0.000
F1R2	ACRT 12KHz - 50in R value	6.72	BLK	0.000
F1X2	ACRT 12KHz - 50in X value	6.72	BLK	0.000
F1R3	ACRT 12KHz - 29in R value	5.22	BLK	0.000
F1X3	ACRT 12KHz - 29in X value	5.22	BLK	0.000
F1R4	ACRT 12KHz - 17in R value	4.22	BLK	0.000
F1X4	ACRT 12KHz - 17in X value	4.22	BLK	0.000
F1R5	ACRT 12KHz - 10in R value	3.72	BLK	0.000
F1X5	ACRT 12KHz - 10in X value	3.72	BLK	0.000
F1R6	ACRT 12KHz - 6in R value	3.47	BLK	0.000
F1X6	ACRT 12KHz - 6in X value	3.47	BLK	0.000
F2R1	ACRT 36KHz - 80in R value	9.22	BLK	0.000
F2X1	ACRT 36KHz - 80in X value	9.22	BLK	0.000
F2R2	ACRT 36KHz - 50in R value	6.72	BLK	0.000
F2X2	ACRT 36KHz - 50in X value	6.72	BLK	0.000
F2R3	ACRT 36KHz - 29in R value	5.22	BLK	0.000
F2X3	ACRT 36KHz - 29in X value	5.22	BLK	0.000
F2R4	ACRT 36KHz - 17in R value	4.22	BLK	0.000
F2X4	ACRT 36KHz - 17in X value	4.22	BLK	0.000
F2R5	ACRT 36KHz - 10in R value	3.72	BLK	0.000
F2X5	ACRT 36KHz - 10in X value	3.72	BLK	0.000
F2R6	ACRT 36KHz - 6in R value	3.47	BLK	0.000
F2X6	ACRT 36KHz - 6in X value	3.47	BLK	0.000
F3R1	ACRT 72KHz - 80in R value	9.22	BLK	0.000
F3X1	ACRT 72KHz - 80in X value	9.22	BLK	0.000
F3R2	ACRT 72KHz - 50in R value	6.72	BLK	0.000
F3X2	ACRT 72KHz - 50in X value	6.72	BLK	0.000
F3R3	ACRT 72KHz - 29in R value	5.22	BLK	0.000
F3X3	ACRT 72KHz - 29in X value	5.22	BLK	0.000
F3R4	ACRT 72KHz - 17in R value	4.22	BLK	0.000
F3X4	ACRT 72KHz - 17in X value	4.22	BLK	0.000
F3R5	ACRT 72KHz - 10in R value	3.72	BLK	0.000
F3X5	ACRT 72KHz - 10in X value	3.72	BLK	0.000
F3R6	ACRT 72KHz - 6in R value	3.47	BLK	0.000
F3X6	ACRT 72KHz - 6in X value	3.47	BLK	0.000
RMUD	Mud Resistivity	12.76	BLK	0.000
F1RT	Transmitter Reference 12 KHz Real Signal	2.97	BLK	0.000
F1XT	Transmitter Reference 12 KHz Imaginary Signal	2.97	BLK	0.000
F2RT	Transmitter Reference 36 KHz Real Signal	2.97	BLK	0.000
F2XT	Transmitter Reference 36 KHz Imaginary Signal	2.97	BLK	0.000
F3RT	Transmitter Reference 72 KHz Real Signal	2.97	BLK	0.000
F3XT	Transmitter Reference 72 KHz Imaginary Signal	2.97	BLK	0.000
TFPU	Upper Feedpipe Temperature Calculated	2.97	BLK	0.000
TFPL	Lower Feedpipe Temperature Calculated	2.97	BLK	0.000
ITMP	Instrument Temperature	2.97	BLK	0.000
TCVA	Temperature Correction Values Loop Off	2.97	NO	
TIDV	Instrument Temperature Derivative	2.97	NO	
TUDV	Upper Temperature Derivative	2.97	NO	
TLDV	Lower Temperature Derivative	2.97	NO	
TRBD	Receiver Board Temperature	2.97	NO	

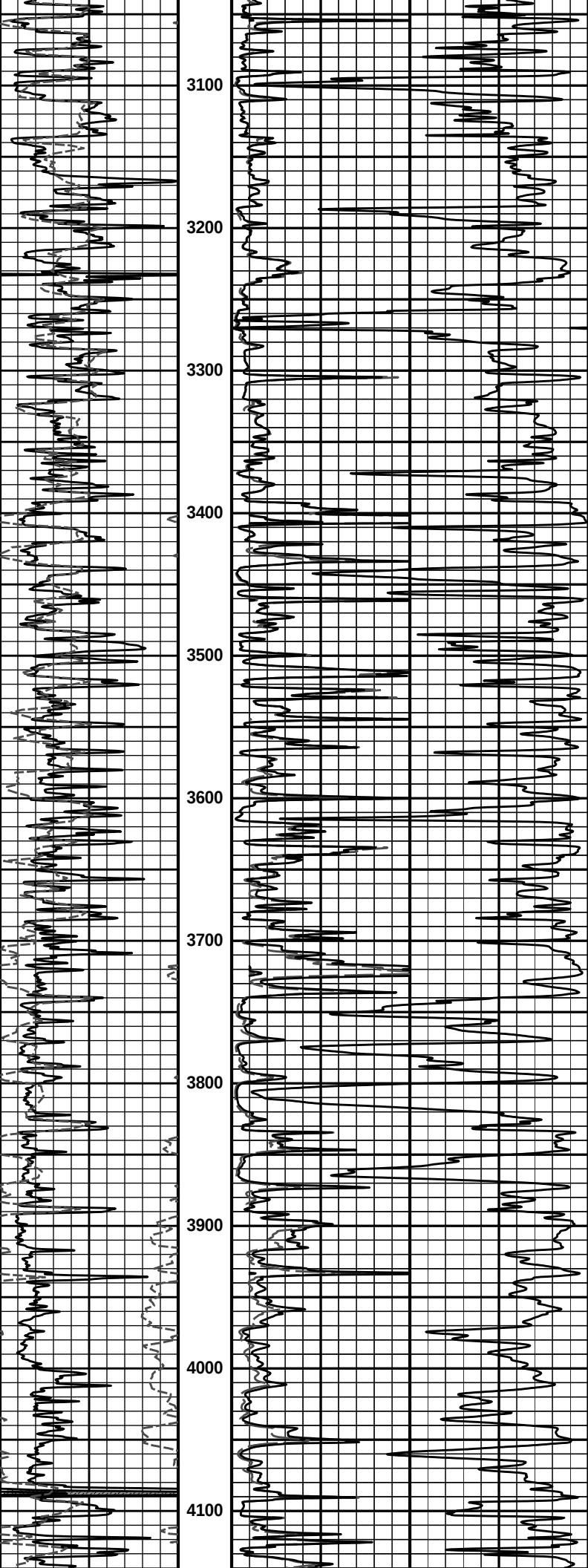
SDLT Pad				
TPUL	Tension Pull	44.08	NO	
NAB	Near Above	43.90	BLK	0.920
NHI	Near Cesium High	43.90	BLK	0.920
NLO	Near Cesium Low	43.90	BLK	0.920
NVA	Near Valley	43.90	BLK	0.920
NBA	Near Barite	43.90	BLK	0.920
NDE	Near Density	43.90	BLK	0.920
NPK	Near Peak	43.90	BLK	0.920
NLI	Near Lithology	43.90	BLK	0.920
NBAU	Near Barite Unfiltered	43.90	BLK	0.250
NLIU	Near Lithology Unfiltered	43.90	BLK	0.250
FAB	Far Above	44.26	BLK	0.250
FHI	Far Cesium High	44.26	BLK	0.250
FLO	Far Cesium Low	44.26	BLK	0.250
FVA	Far Valley	44.26	BLK	0.250
FBA	Far Barite	44.26	BLK	0.250
FDE	Far Density	44.26	BLK	0.250
FPK	Far Peak	44.26	BLK	0.250
FLI	Far Lithology	44.26	BLK	0.250
PTMP	Pad Temperature	44.09	BLK	0.920
NHV	Near Detector High Voltage	43.49	NO	
FHV	Far Detector High Voltage	43.49	NO	
ITMP	Instrument Temperature	43.49	NO	
DDHV	Detector High Voltage	43.49	NO	
Microlog Pad				
TPUL	Tension Pull	44.28	NO	
MINV	Microlog Lateral	44.28	BLK	0.750
MNOR	Microlog Normal	44.28	BLK	0.750

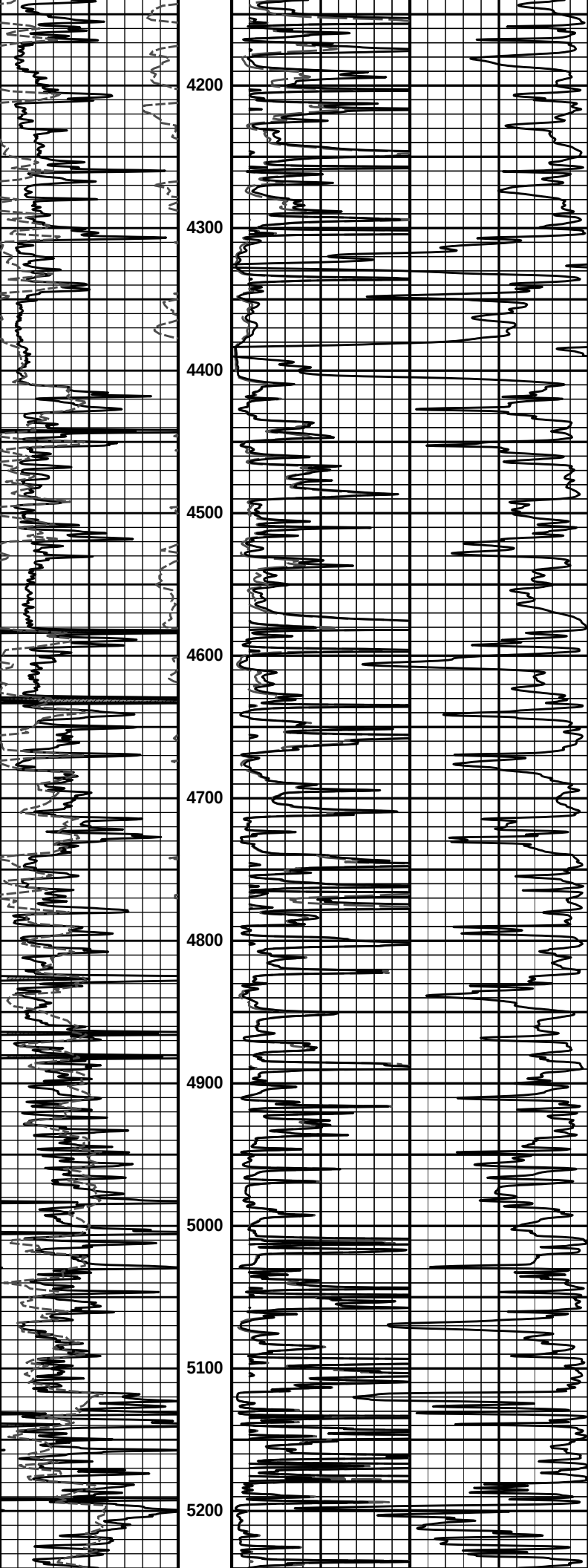
Data: oxy_BCU#407W0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-CH005 15-Oct-12 16:18 Up @5724.0f

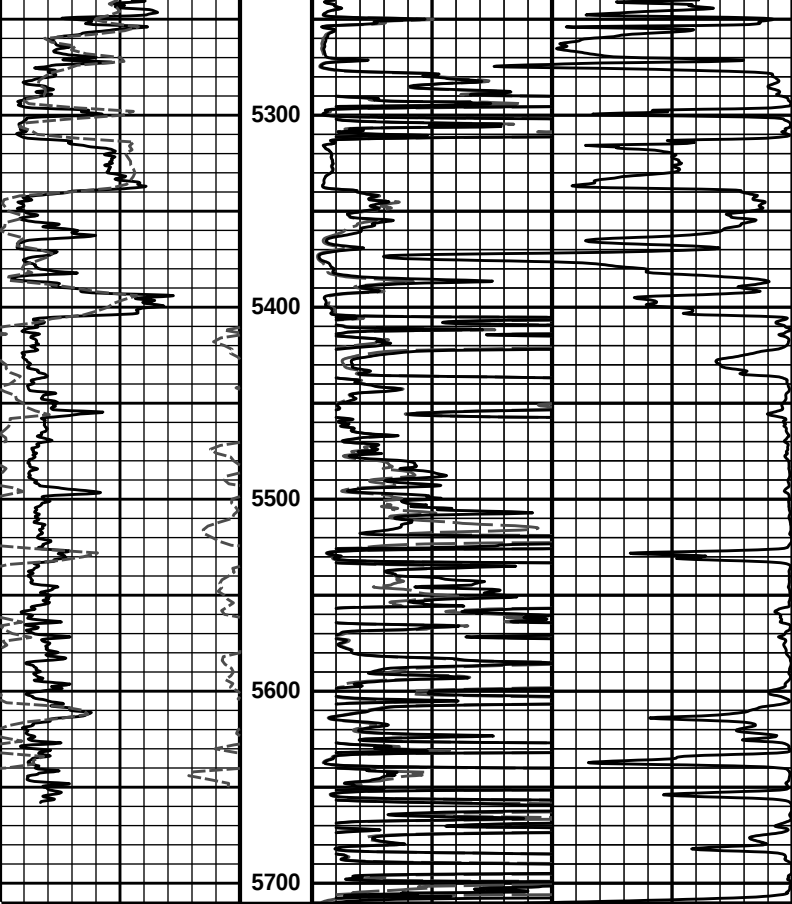
Date: 15-Oct-12 18:30:14











0	Gamma API	150	1 : 1200	0	20in Resistivity 2ft Res	50
	api		FT		ohm-metre	
	SP			0	90in Resistivity 2ft Res	50
	- 20 +				ohm-metre	
				1000	90in Conductivity 2ft Res	0
					mmho per metre	

HALLIBURTON
Plot Time: 15-Oct-12 20:44:10
Plot Range: 1792 ft to 5710.46 ft
Data: oxy_BCU#407W\Well Based\MAIN PASS\
Plot File: \\-LOCAL-\\oxy_BCU#407W\Well Based\ACRT\ACRT_1.lib

1 INCH MAIN LOG

COMPANY	OXY USA INC		
WELL	BCU #407W		
FIELD	PLEASANT PRAIRIE SE		
COUNTY	HASKELL	STATE	KANSAS
HALLIBURTON		ARRAY COMPENSATED TRUE RESISTIVITY LOG	