

HALLIBURTON

CEMENT BOND LOG
(CBL-M)

Company	BILL BARRETT CORPORATION			Company	BILL BARRETT CORPORATION		
Well	PAPPENHEIM 6-62-27-3225BH2			Well	PAPPENHEIM 6-62-27-3225BH2		
Field	WATTENBERG			Field	WATTENBERG		
County	WELD	State	CO	County	WELD	State	CO
Permanent Datum				Sec: 27 Twp: 6N Rge: 62W			
Log Measured From				GROUND LEVEL Elevation 4733			
Drilling Measured From				K.B. 23 Ft. above perm. datum			
Date @ Time Logged				9-SEPT-14 @ 04:30			
Run No.				ONE			
Depth - Driller				161'11"			
Depth - Logger				5627'			
Bottom - Logged Interval				5619'			
Top - Log Interval				SURFACE			
Max. Recorded Temp.				N/A			
CEMENTING DATA				Surface			
Date / Time Cemented				String			
Primary / Squeeze				Protection			
Expected				String			
Compressive Strength				psi@ hrs			
Cement Volume				psi@ hrs			
Cement Type / Weight				psi@ hrs			
Formulation				psi@ hrs			
Mud Type / Mud Wgt.				/			
Borehole Record				Casing & Tubing Record			
Run Number		Bit	From	To	Size	Weight	To
CONDUCTOR		24	0	60	16	65	60
SURF		13 1/2	0	800	9 5/8	36	800
1ST		8 3/4	0	6694	7	26	6694
1ST LINER		6 1/8	5627	16111	4 1/2	11.6	16111

<<< Fold Here >>>

HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.

Comments

TOOLS WERE RAN IN 7.0" 26# CASING.
RMT RAN IN SIGMA MODE WITH A GENERATOR VOLTAGE OF 80.

YOUR CREW: G. SELLERS, L. SIMONS.

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES.

Service Ticket No.	901634215	API No.	05123392950000	PGM Ver	8.0
The Well Name, Location, Borehole Description, and / or Cementing Data Furnished by Client					
EQUIPMENT DATA					
GAMMA		CBL		RMT	
Run No.	ONE	Run No.	ONE	Run No.	ONE
Serial No.	11495480	Serial No.	1208113	Serial No.	12210614
Model No.	TTTCU-002	Model No.	CBL-M	Model No.	RMTi
Diameter	1.69"	Diameter	2.75"	Diameter	2.125"
LOGGING DATA					
General Data					
Pass	Depths		Well Head	Speed	Logging Run Comments
No	From	To	Pressure	Ft/Min	

No.	MAIN	5627'	SURFACE	0 psi	25 fpm		
	GAMMA		CBL		RMT		
Pass	Scale		Scale		Scale		Scale
No.	L	R	L	R	L	R	L L
MAIN	0	200	0	100	2	0.5	
DIRECTIONAL INFORMATION							
Maximum Deviation			deg. @		KOP		

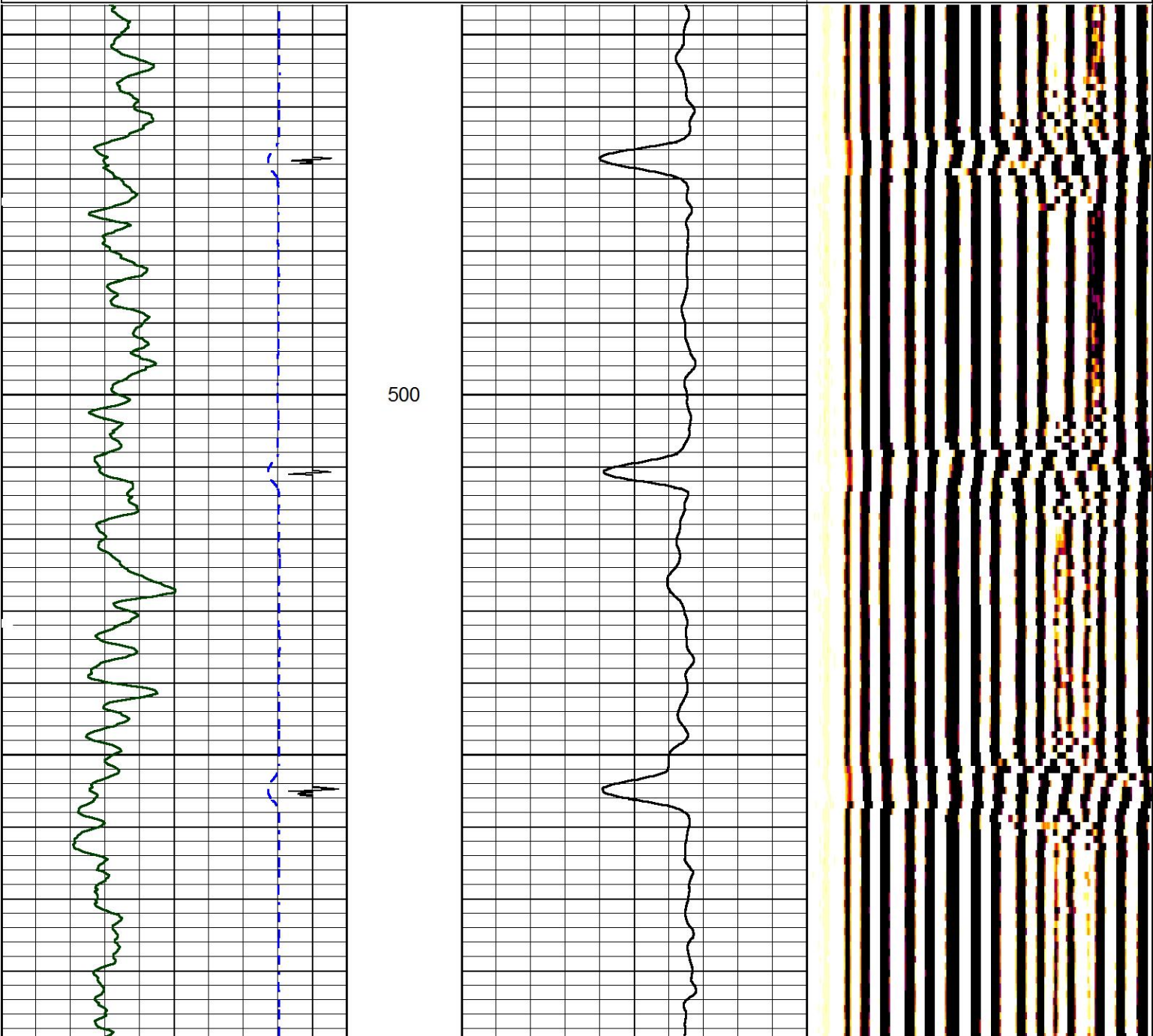
HALLIBURTON

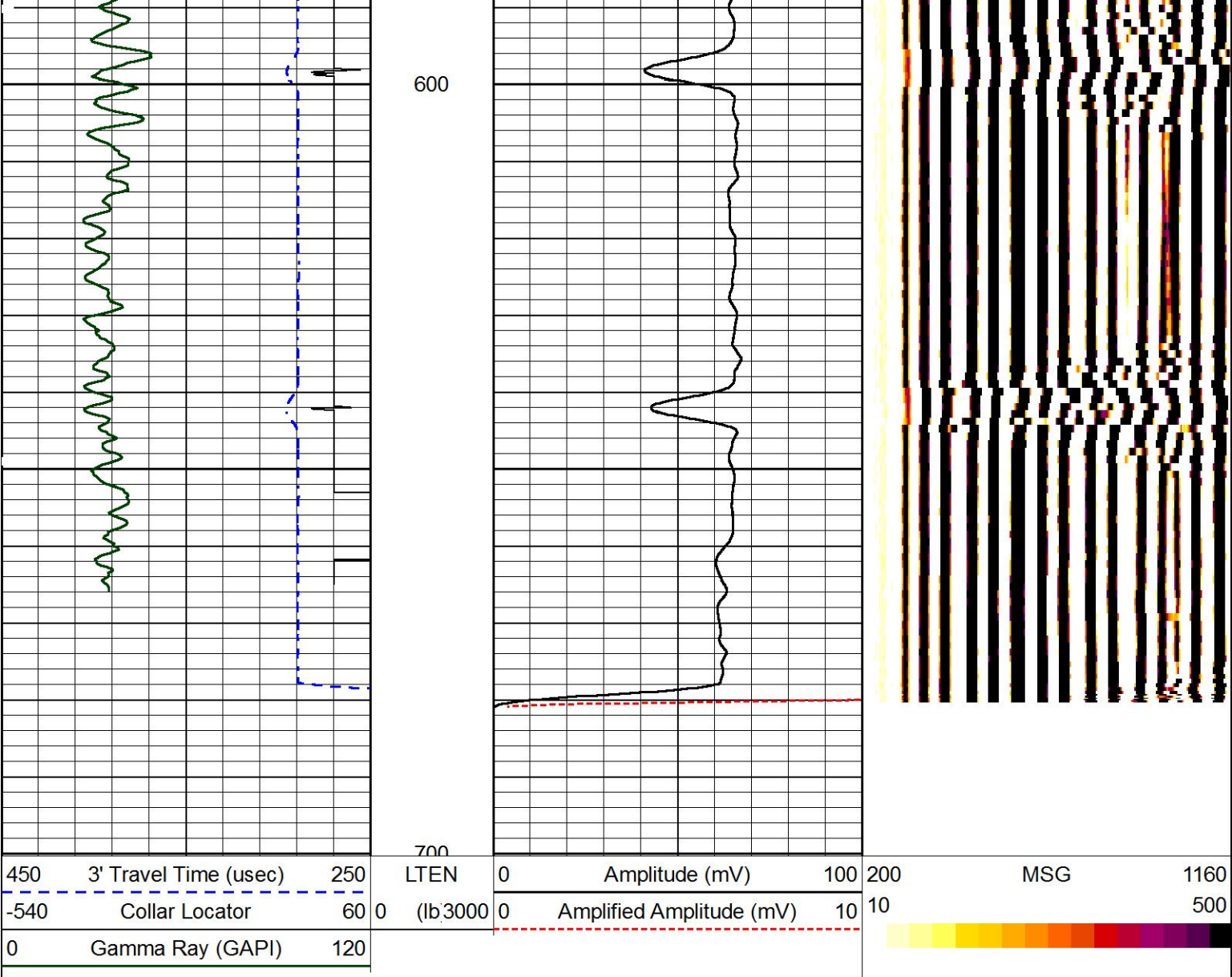
FREE PIPE PASS

5" = 100'

Database File	bb_pappenheim.db
Dataset Pathname	FREE1
Presentation Format	hcbl
Dataset Creation	Tue Sep 09 03:22:35 2014
Charted by	Depth in Feet scaled 1:240

450	3' Travel Time (usec)	250	LTEN	0	Amplitude (mV)	100	200	MSG	1160
-540	Collar Locator	60	0	(lb/3000	0	Amplified Amplitude (mV)	10	10	500
0	Gamma Ray (GAPI)	120							





FREE PIPE PASS

HALLIBURTON

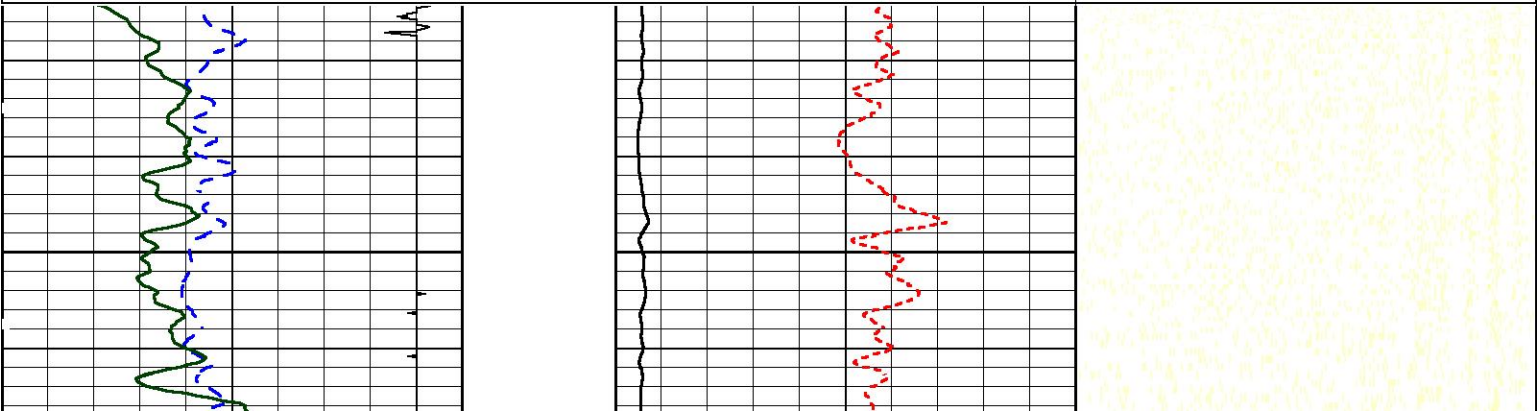
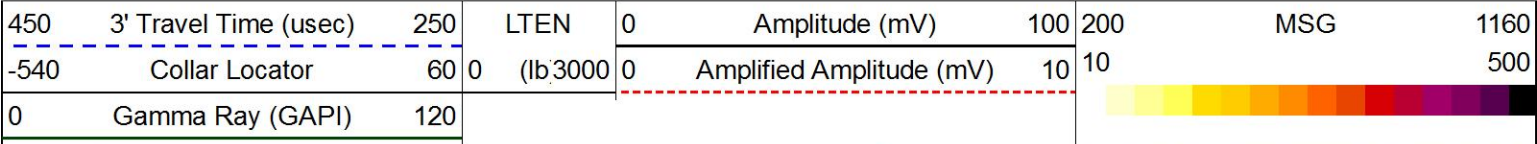
5" = 100'

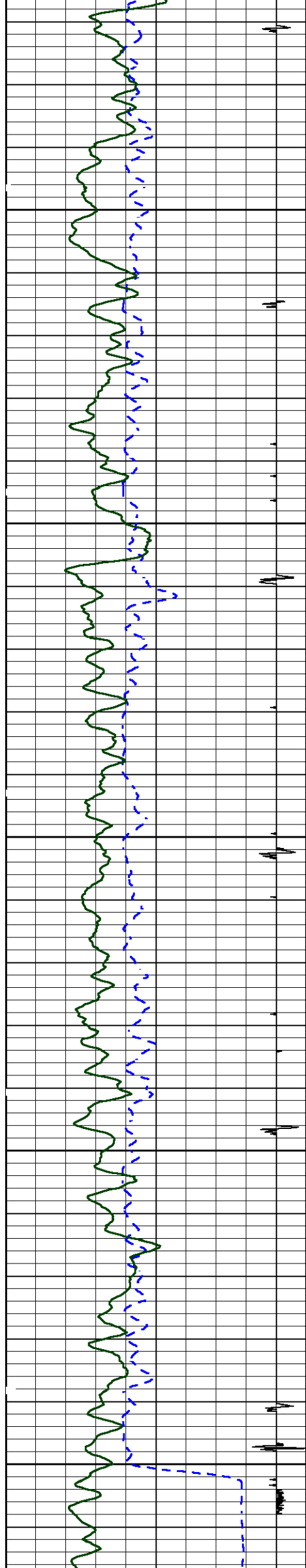
MAIN PASS

HALLIBURTON

5" = 100'

Database File bb_pappenheim.db
Dataset Pathname MAIN1
Presentation Format hcbl
Dataset Creation Tue Sep 09 04:32:29 2014
Charted by Depth in Feet scaled 1:240

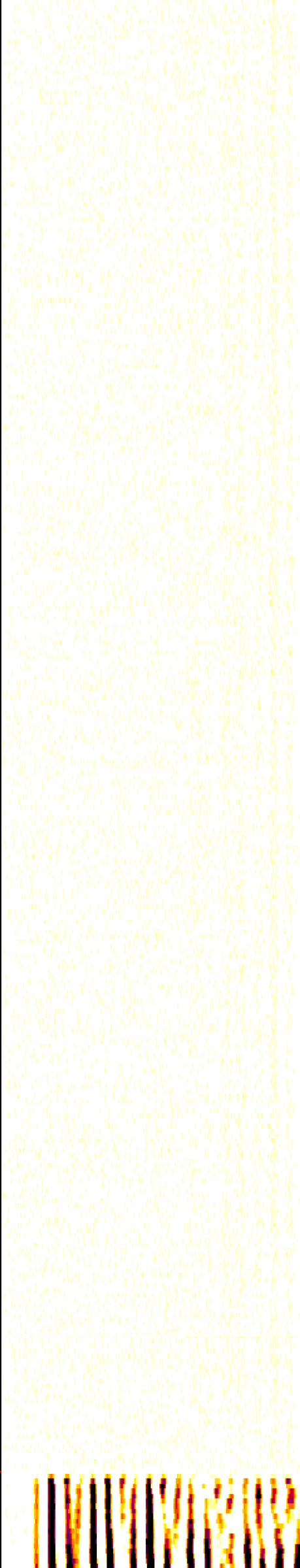
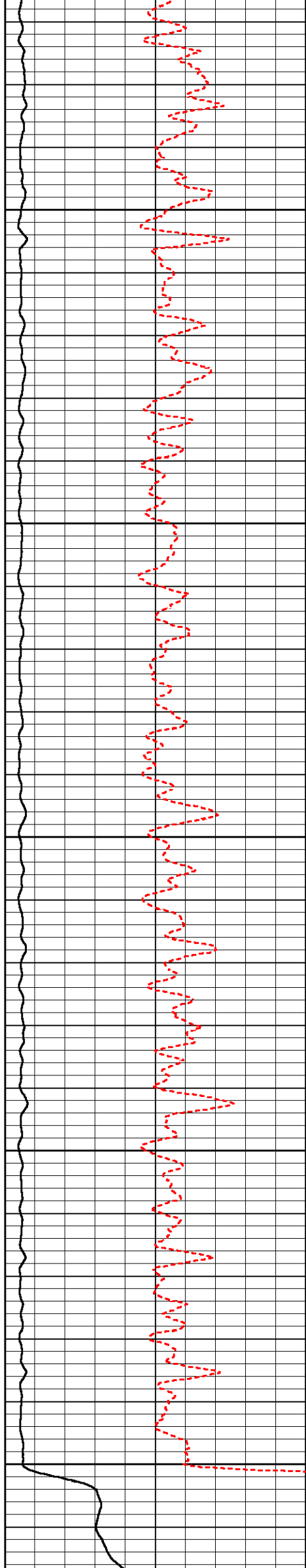


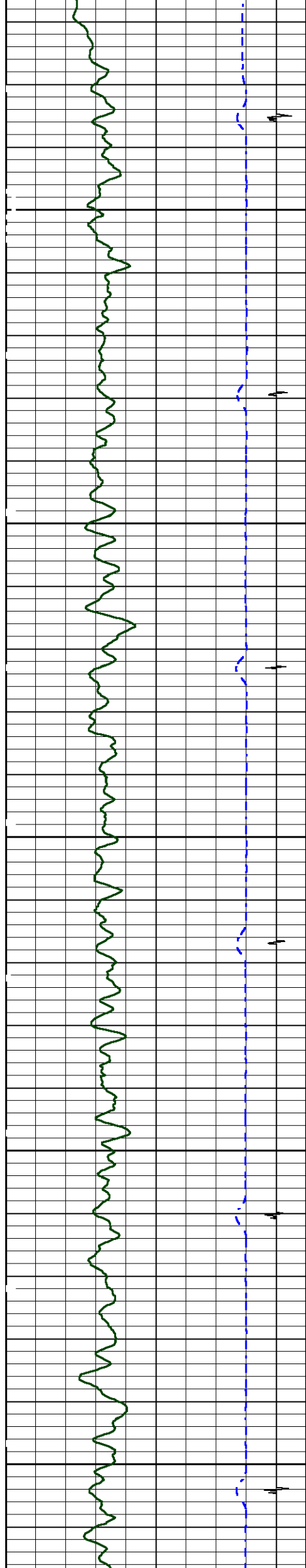


100

200

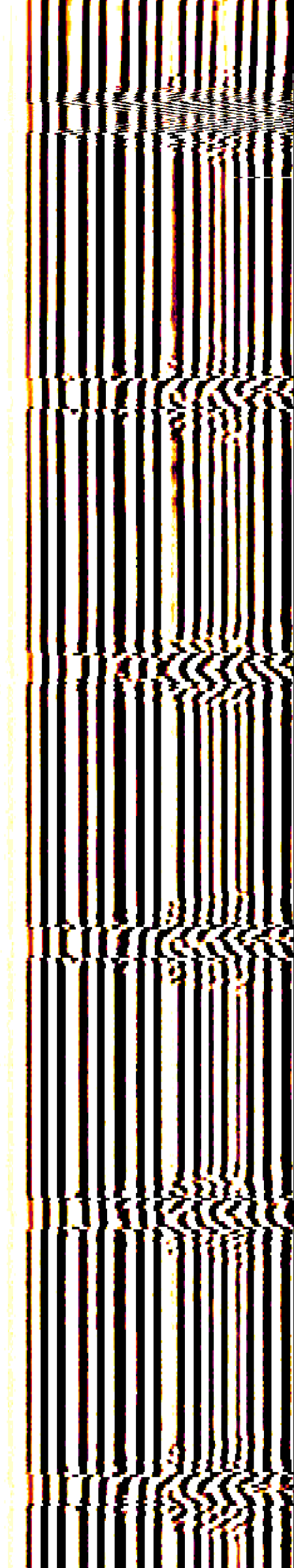
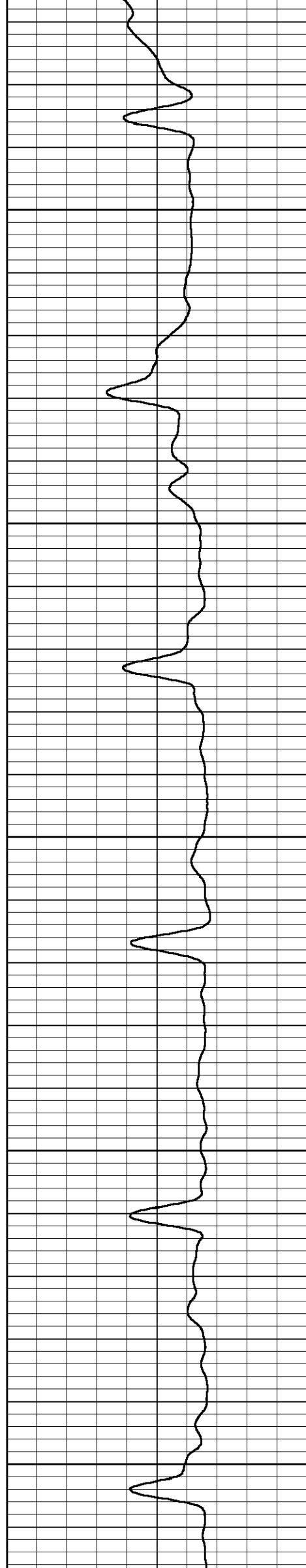
300

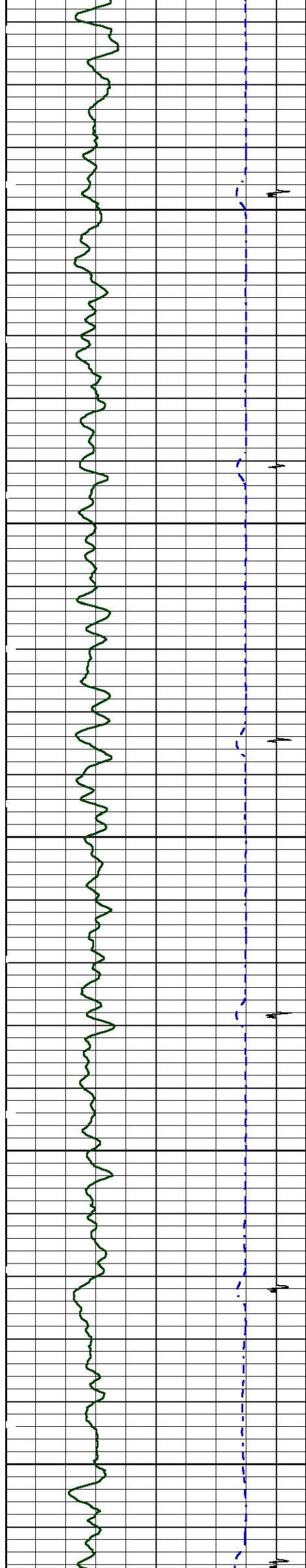




400

500

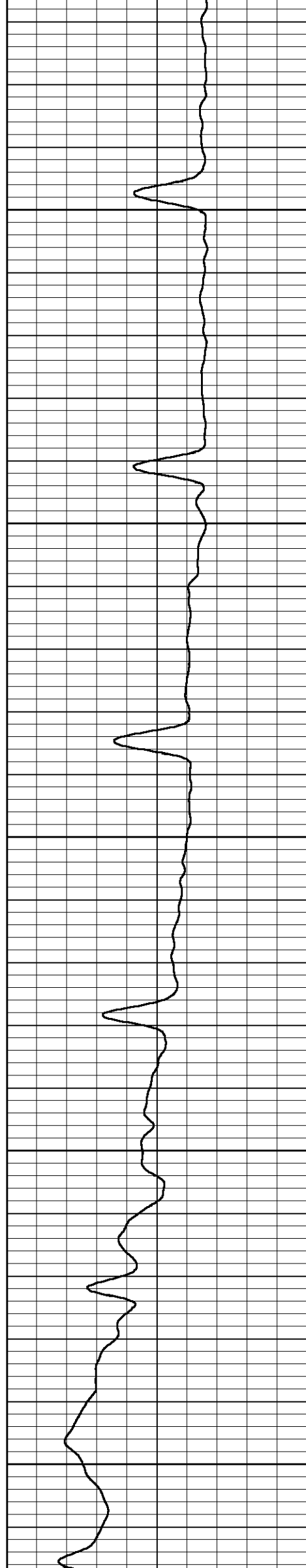


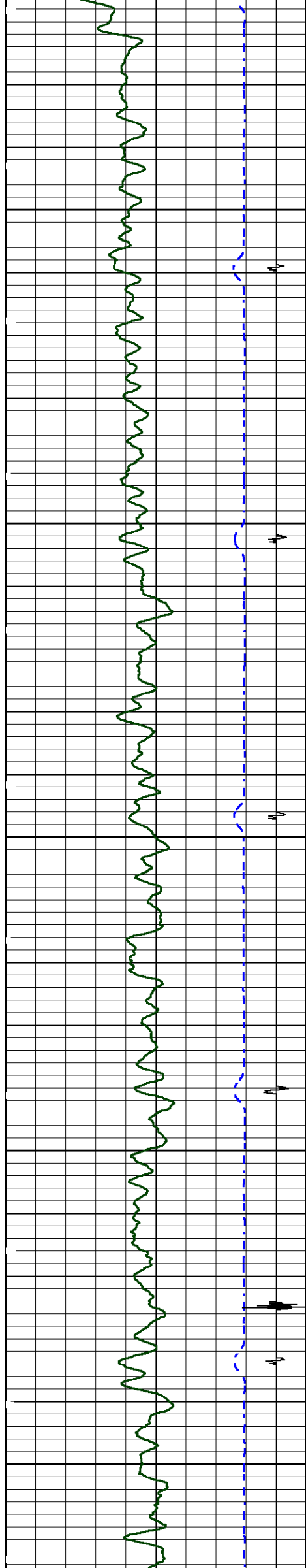


600

700

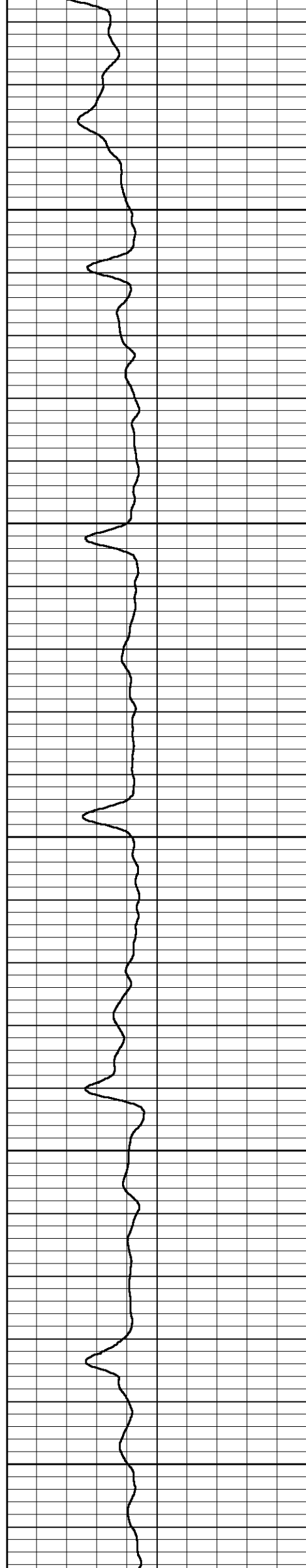
800

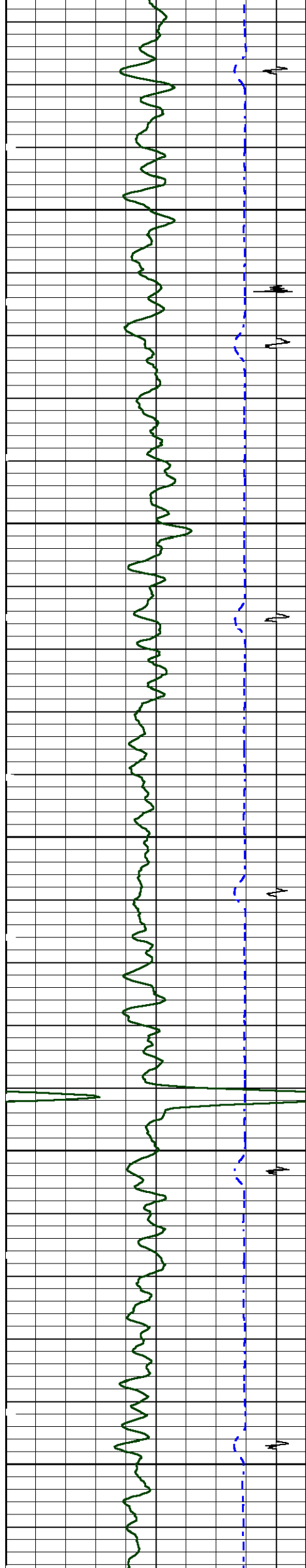




900

1000

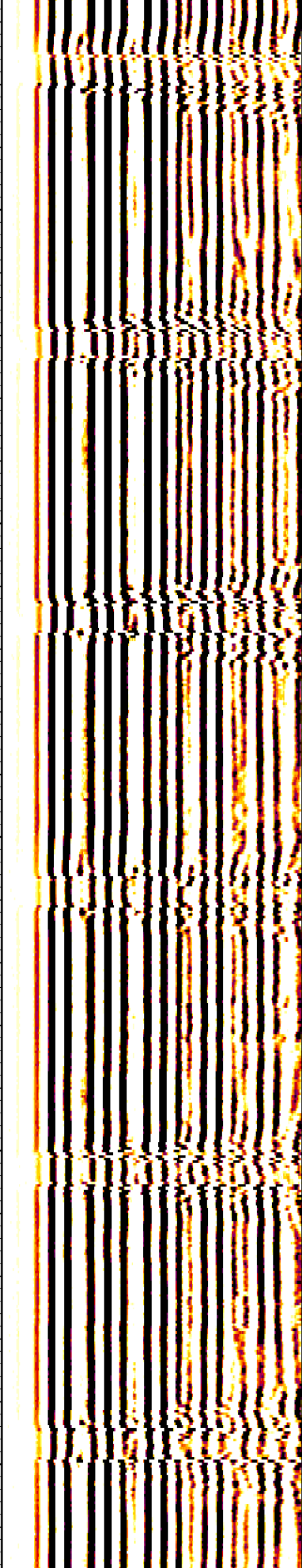
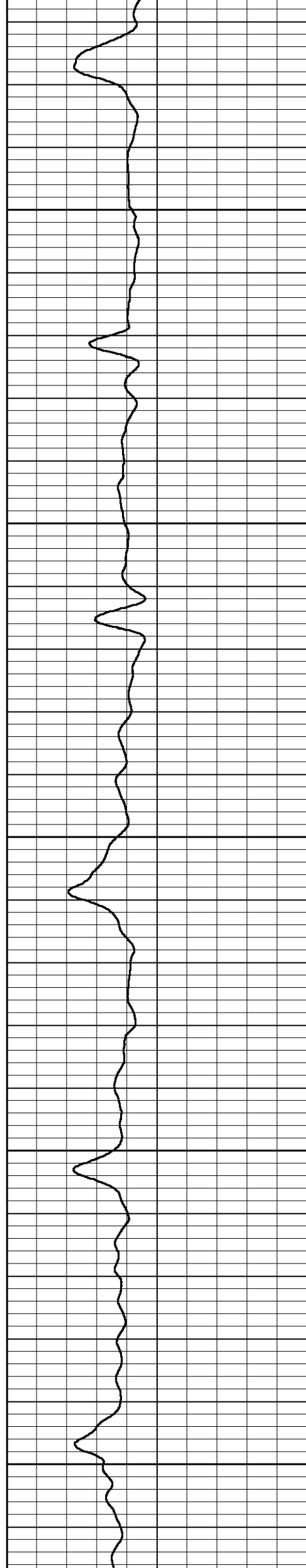


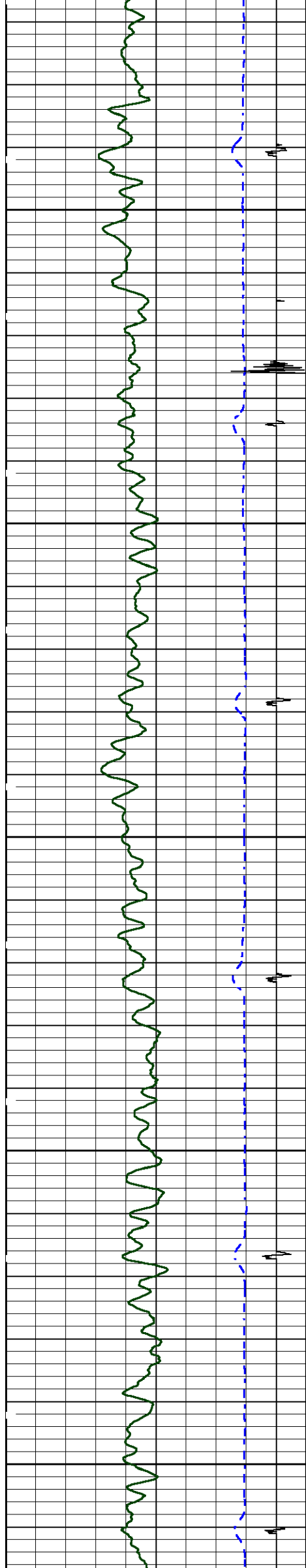


1100

1200

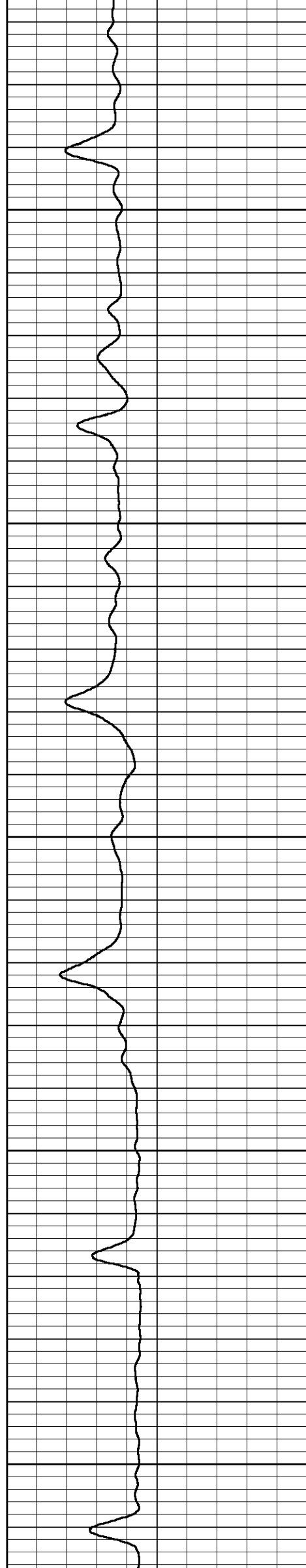
1300

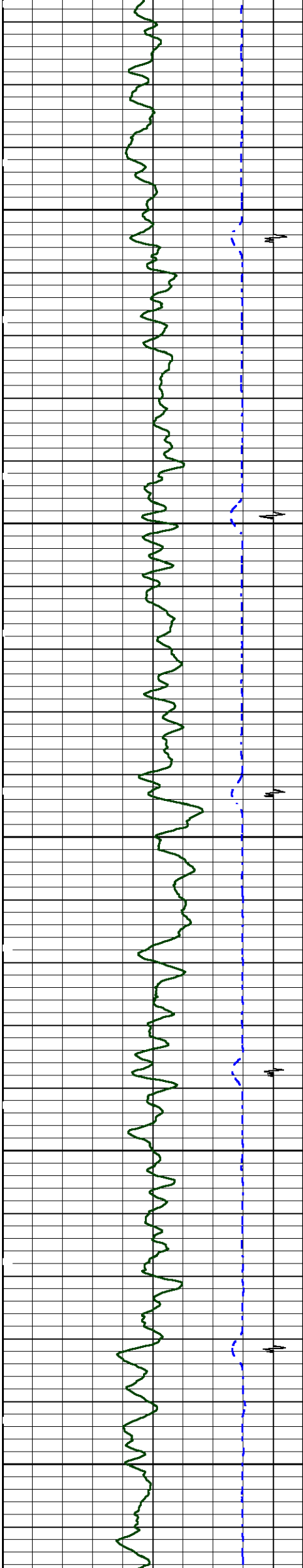




1400

1500

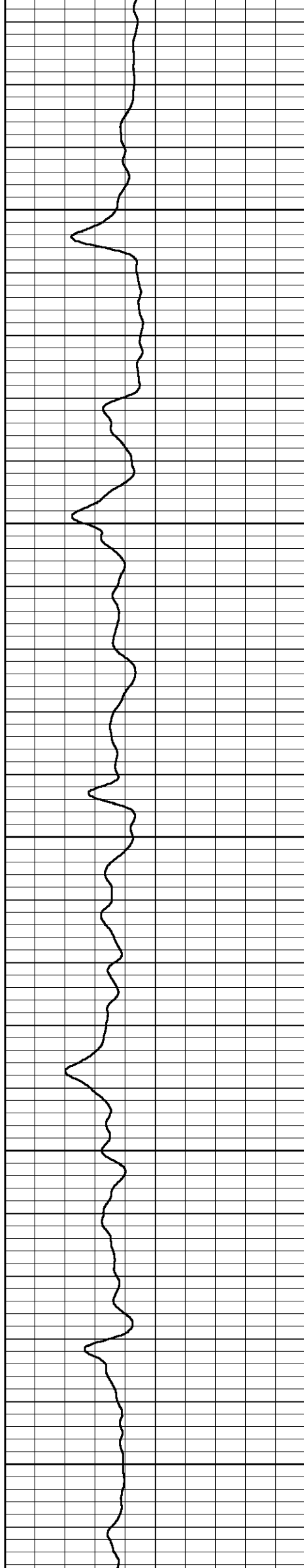


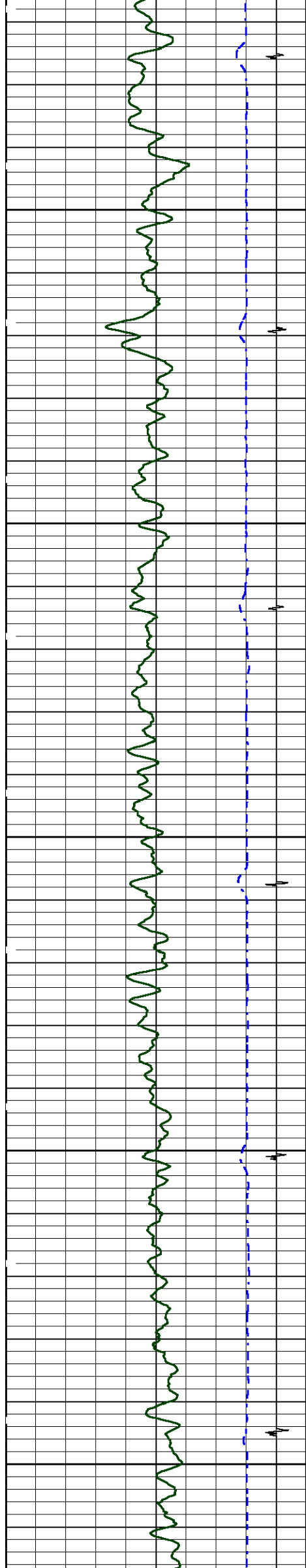


1600

1700

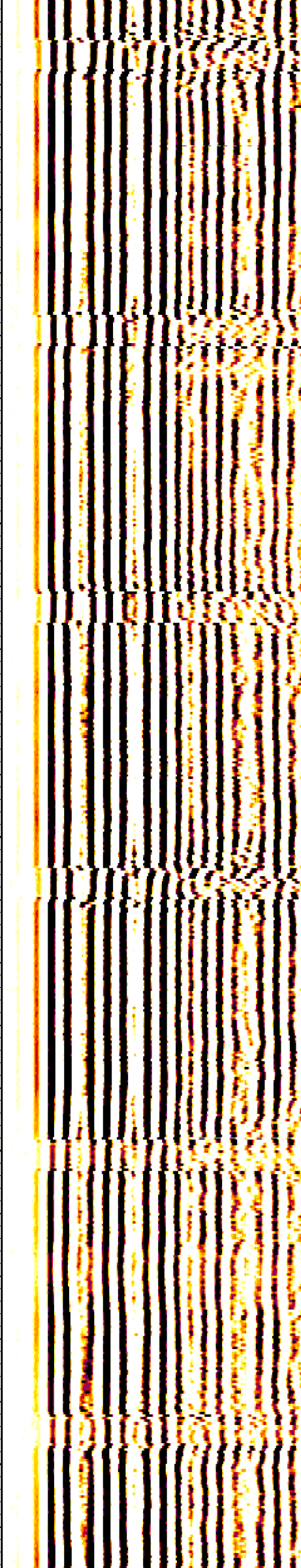
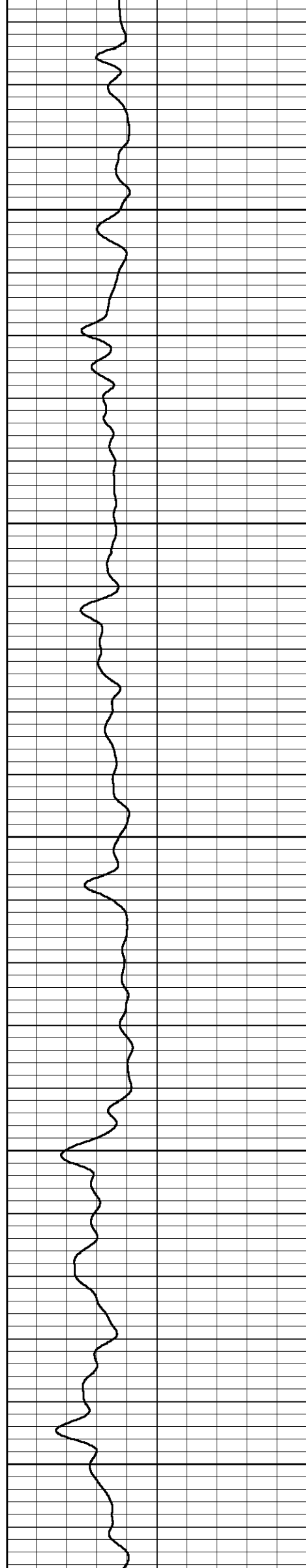
1800

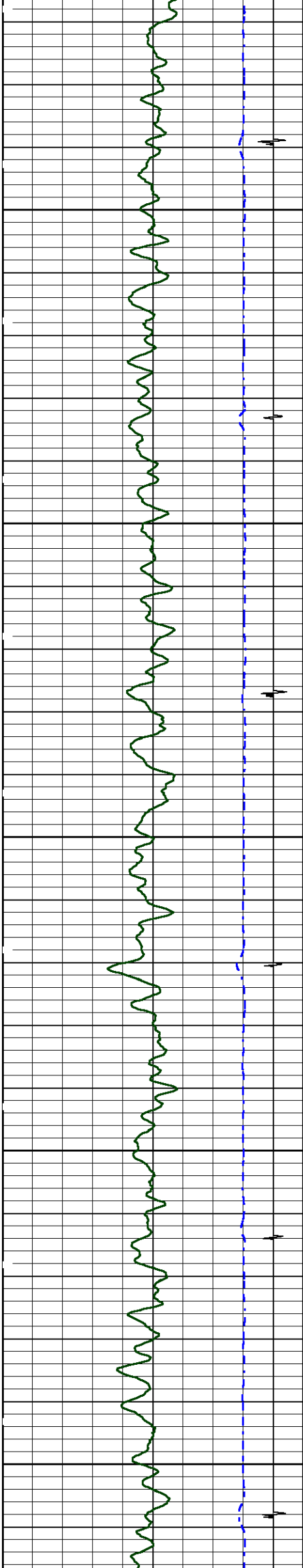




1900

2000

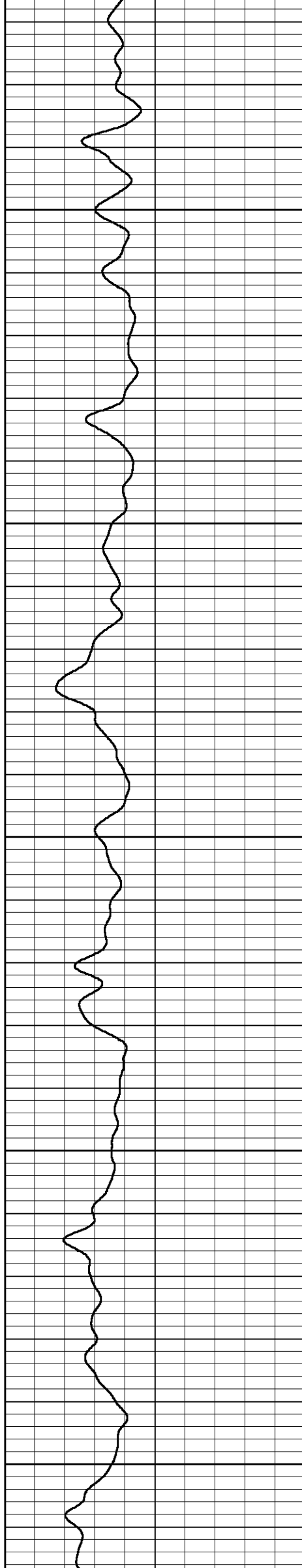


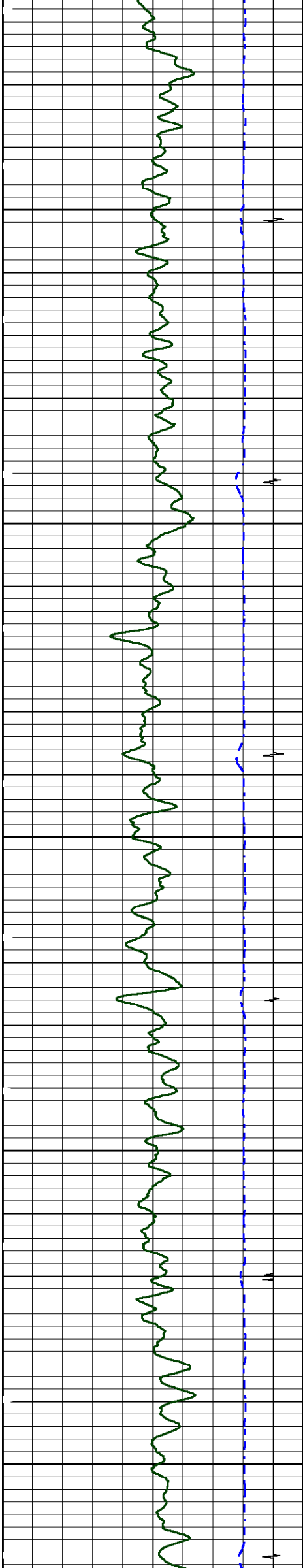


2100

2200

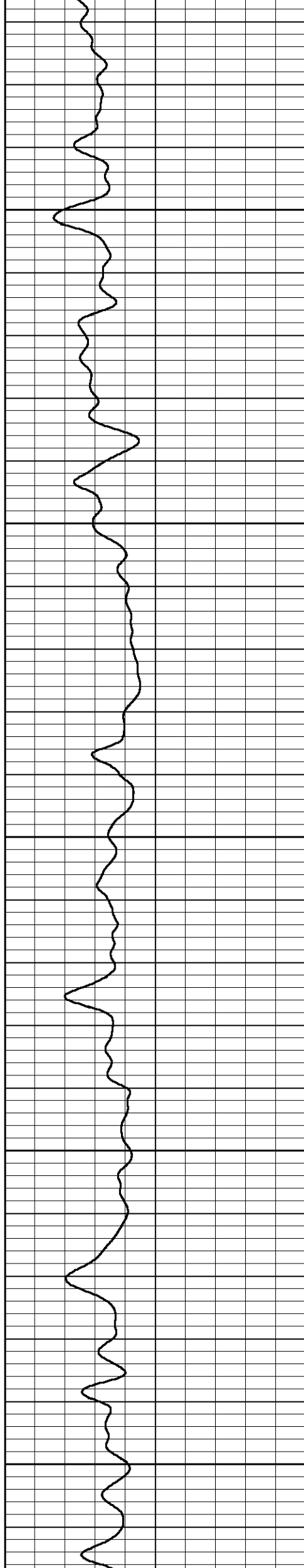
2300

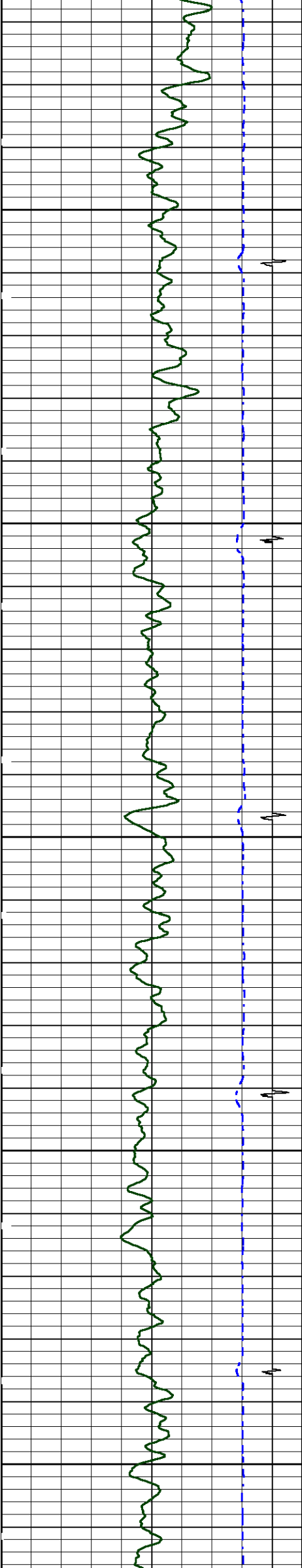




2400

2500

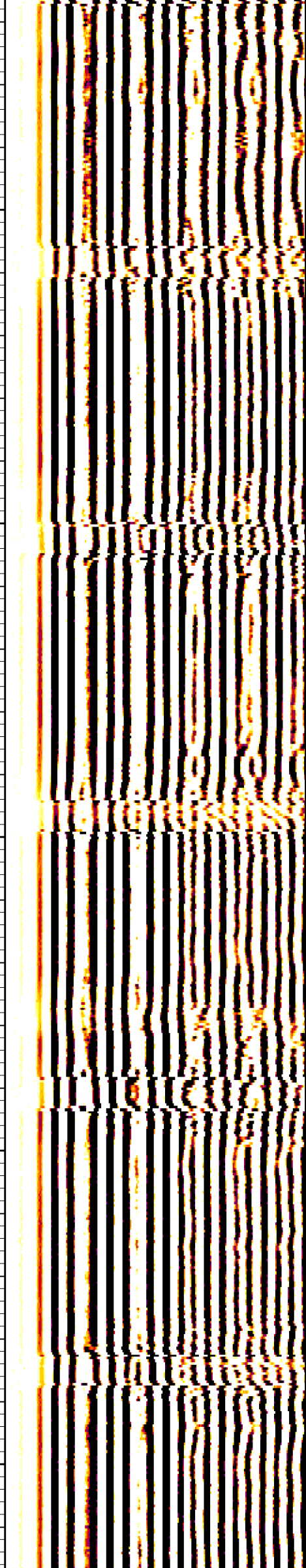
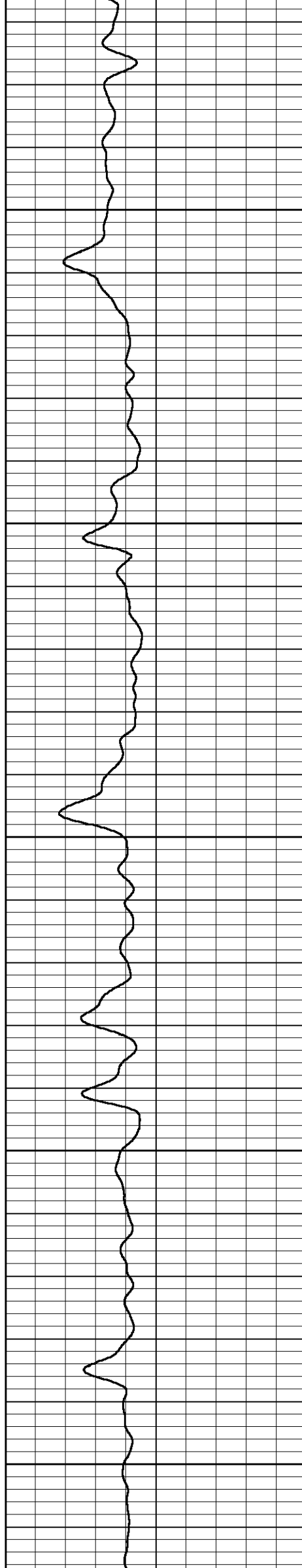


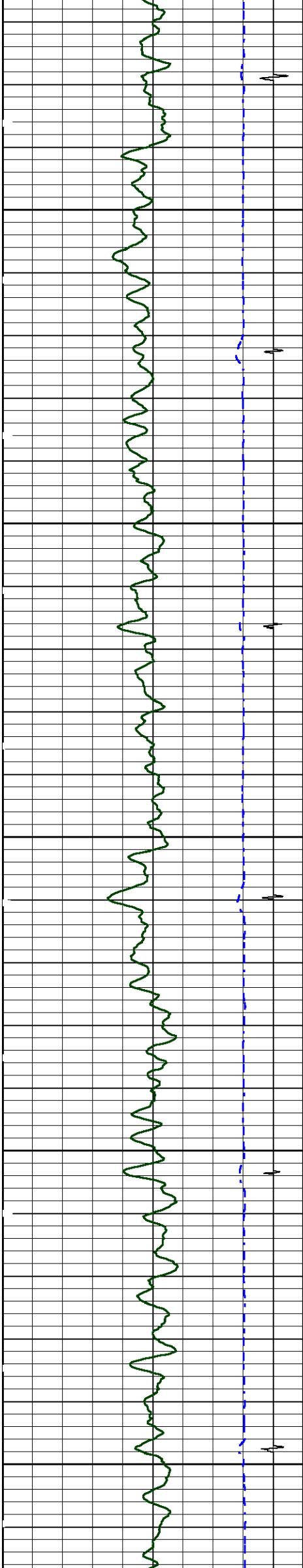


2600

2700

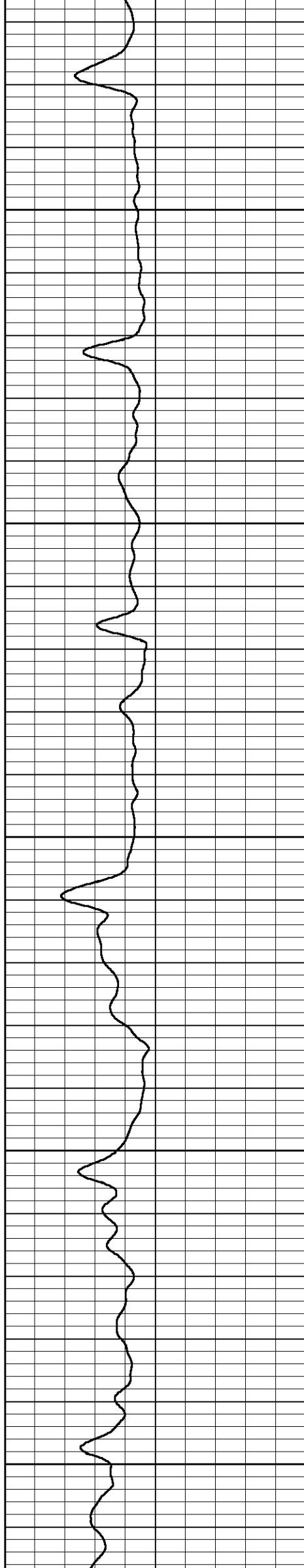
2800

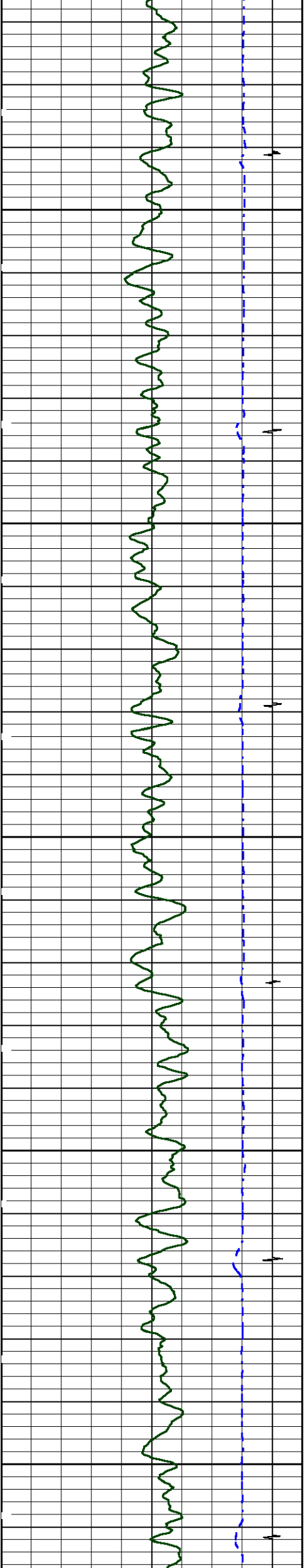




2900

3000

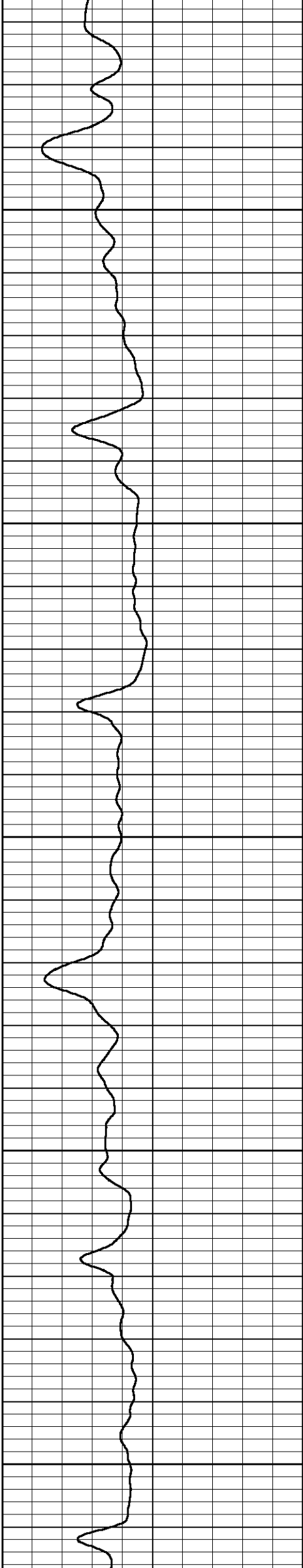


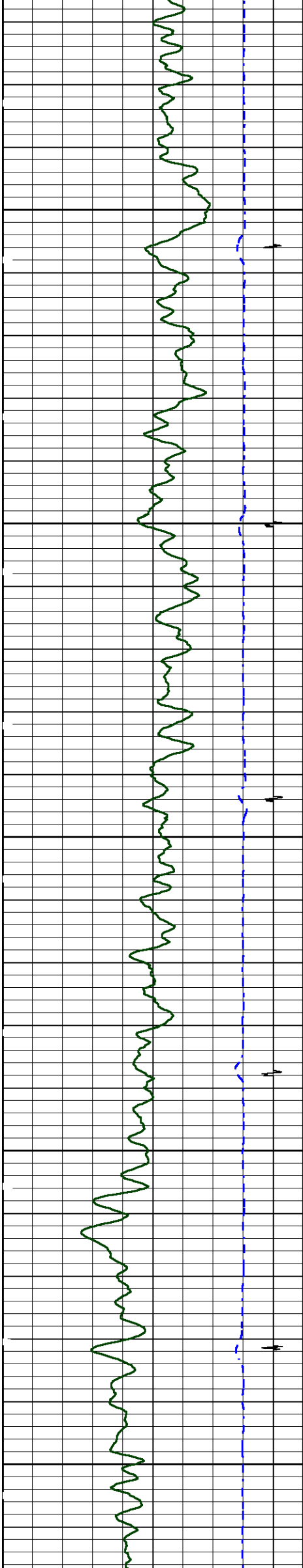


3100

3200

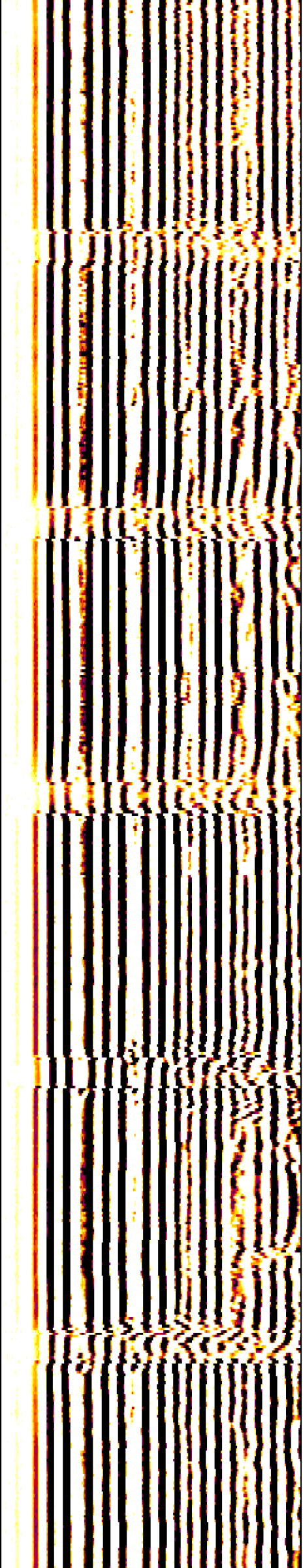
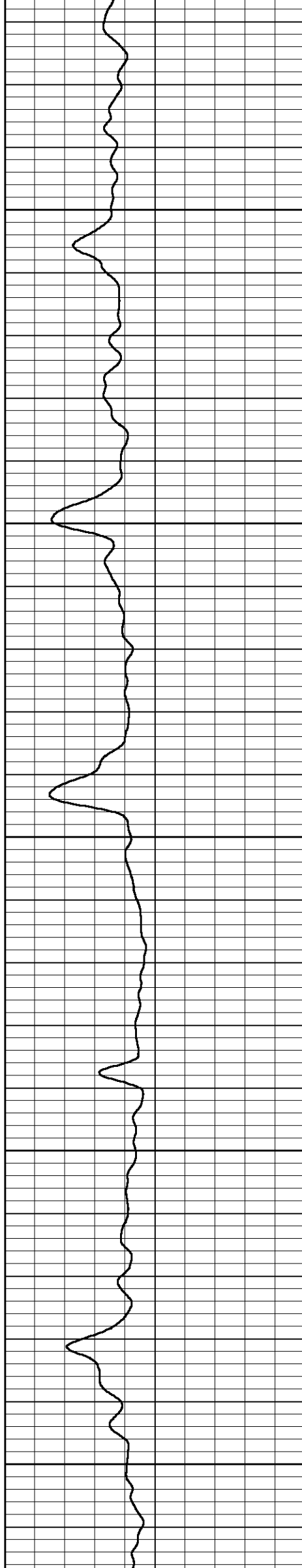
3300

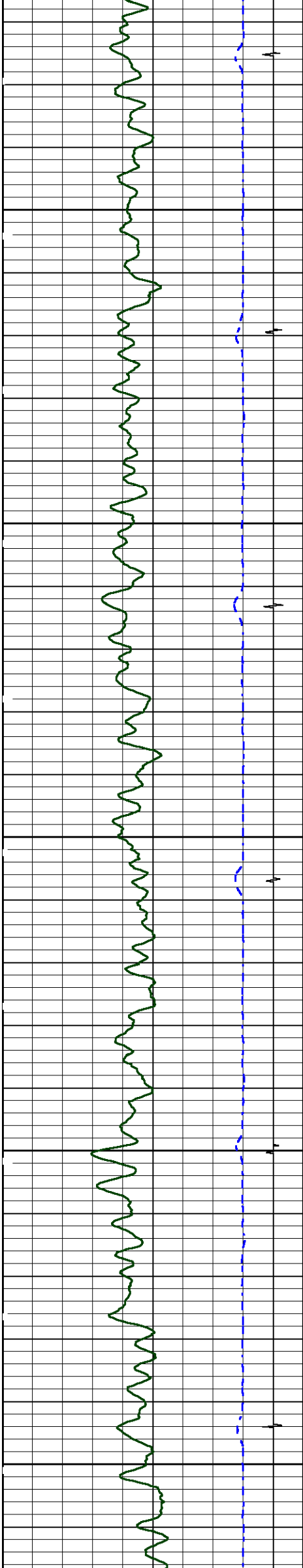




3400

3500

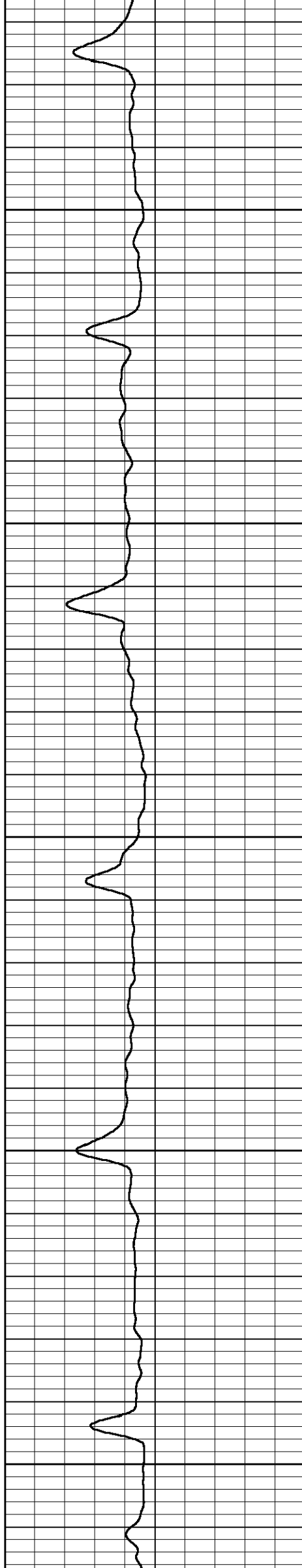


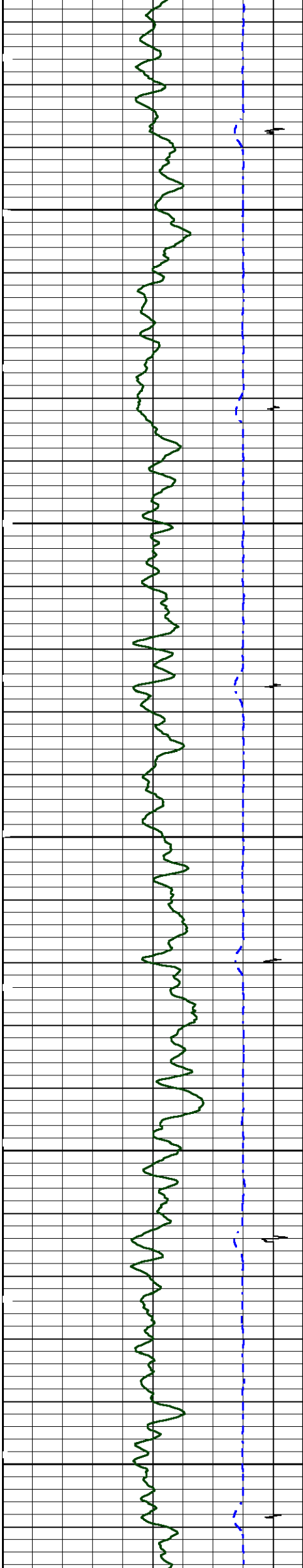


3600

3700

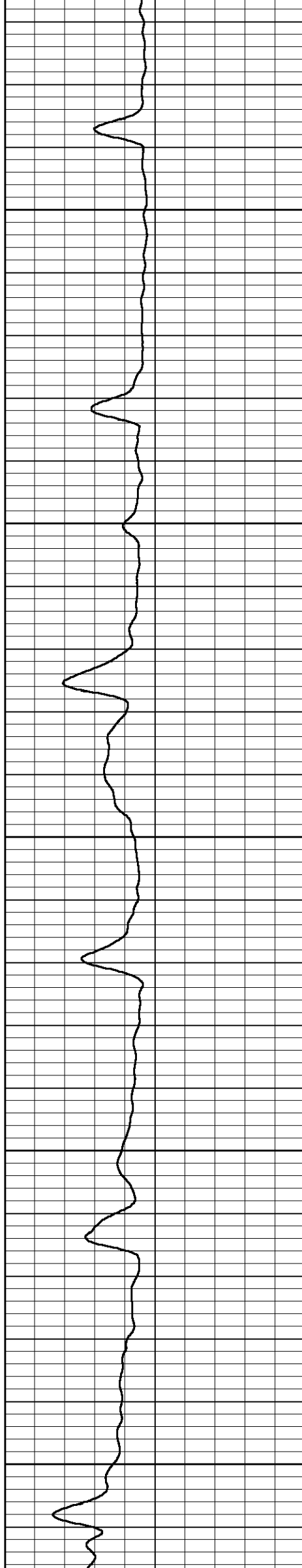
3800

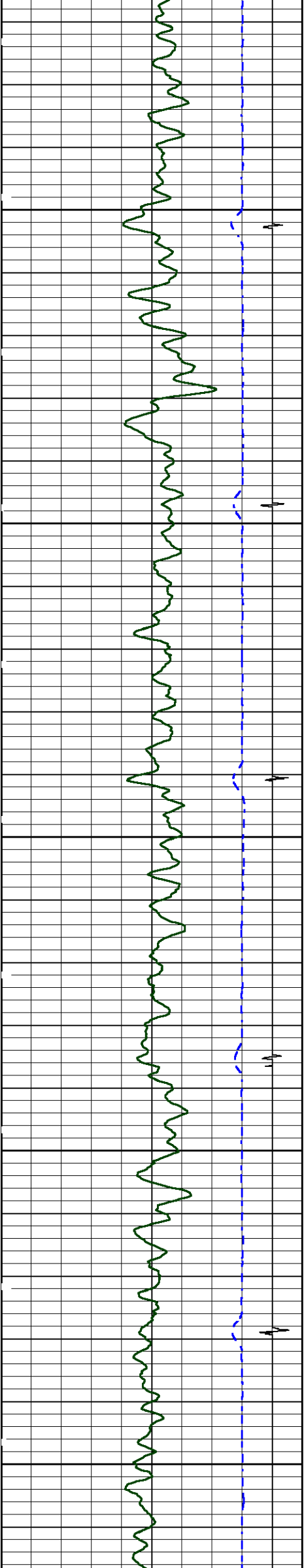




3900

4000

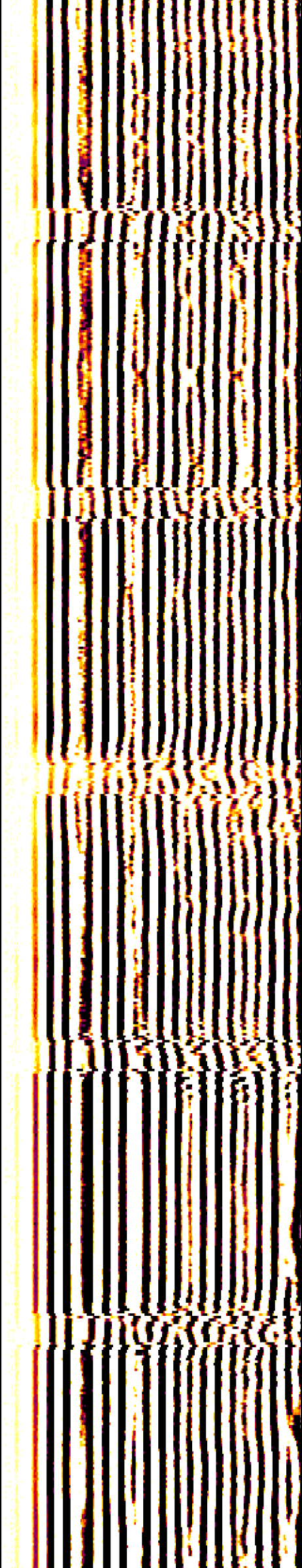
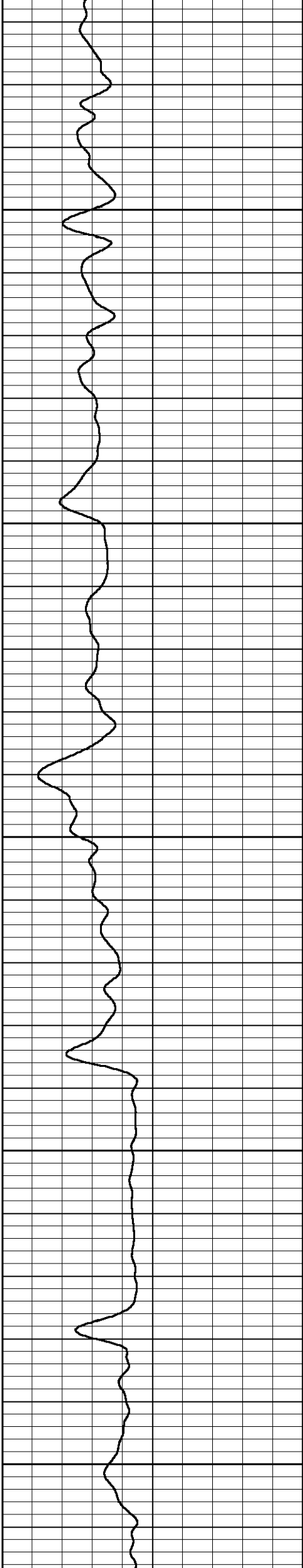


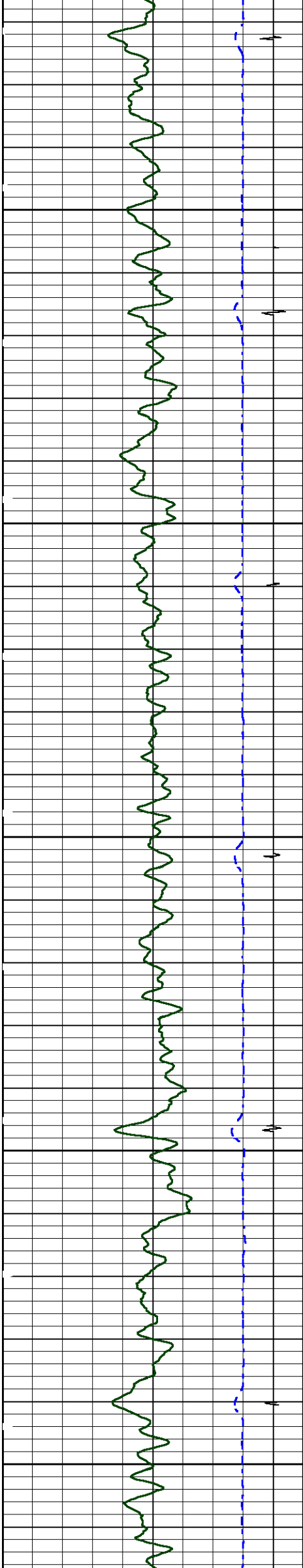


4100

4200

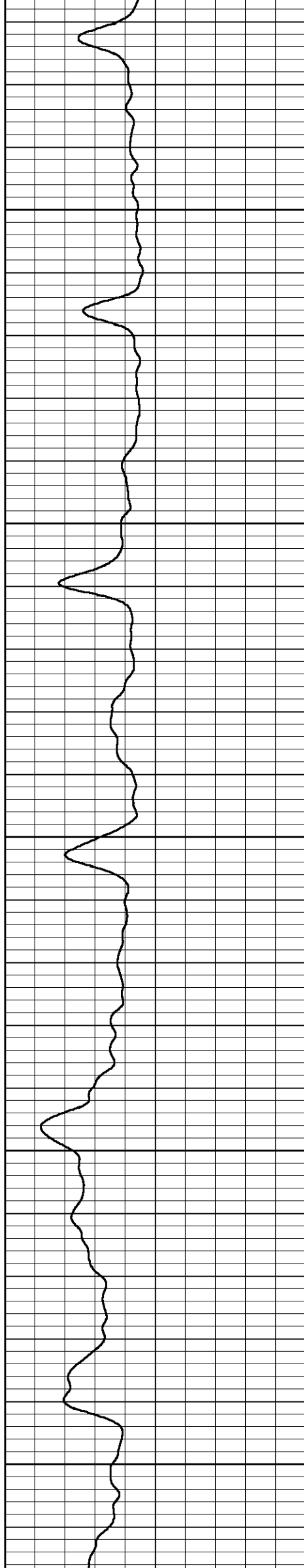
4300

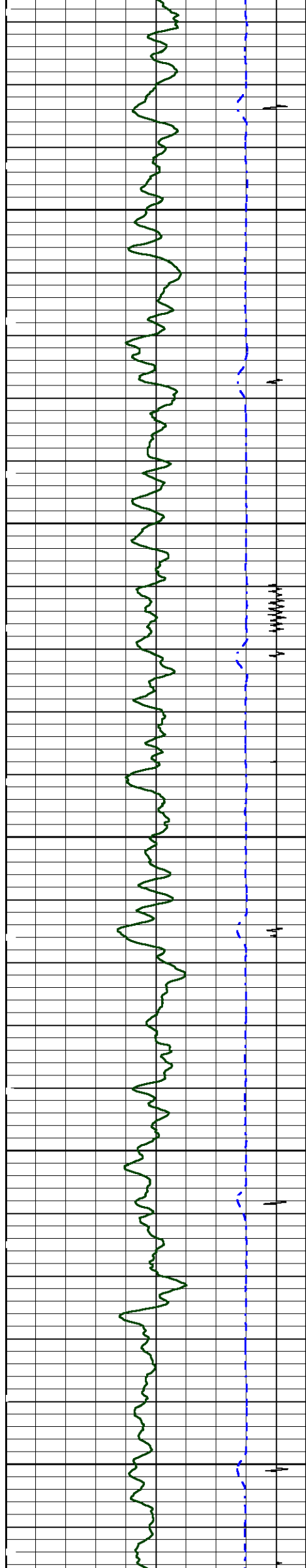




4400

4500

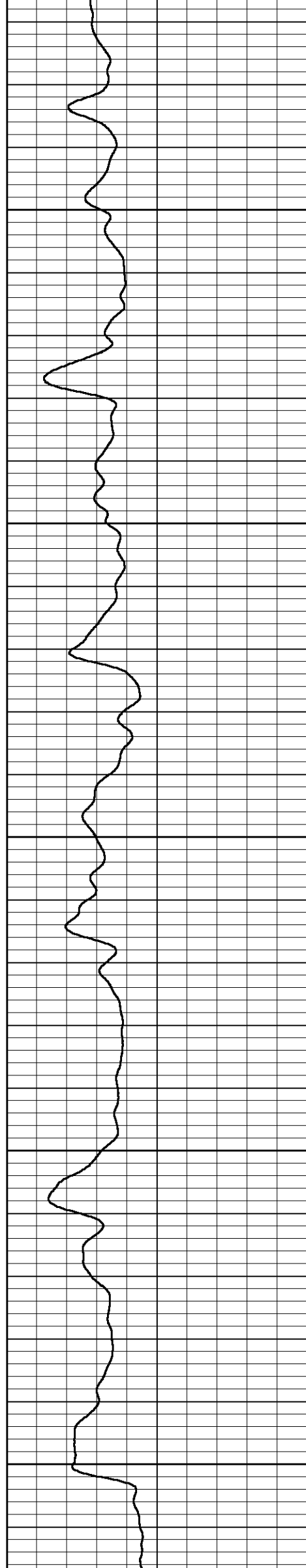


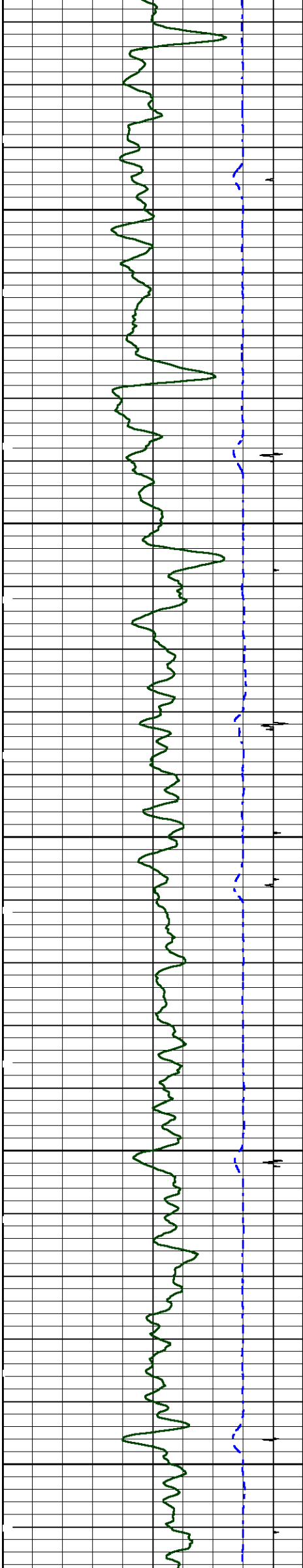


4600

4700

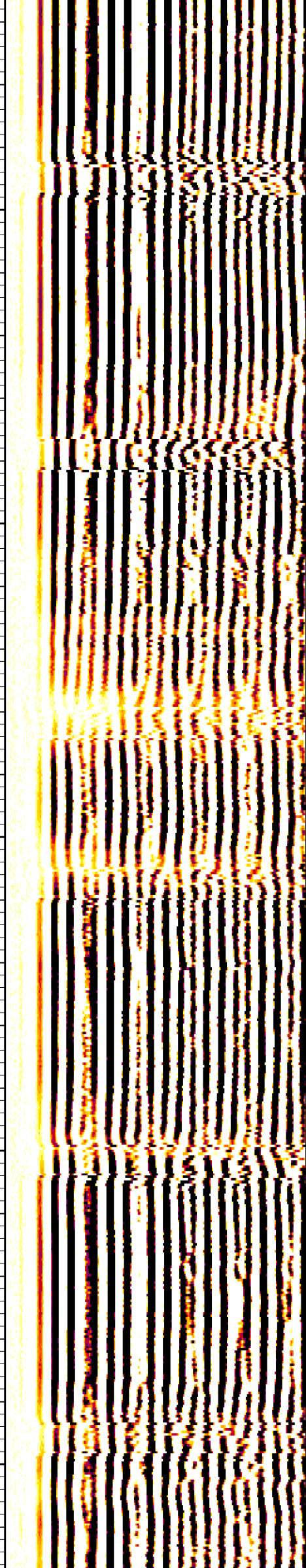
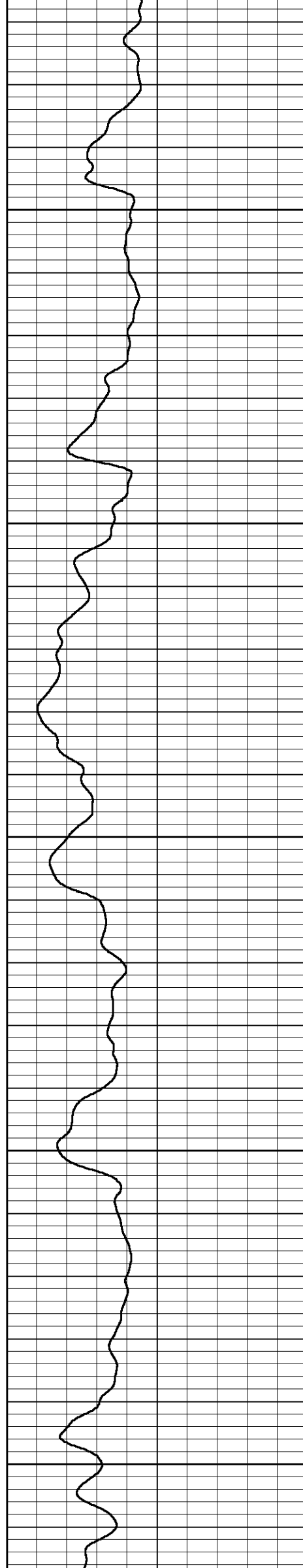
4800

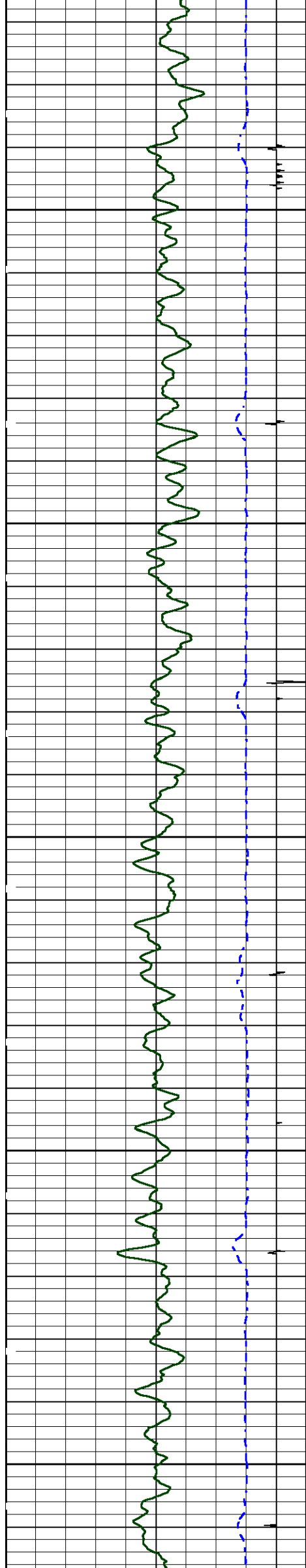




4900

5000

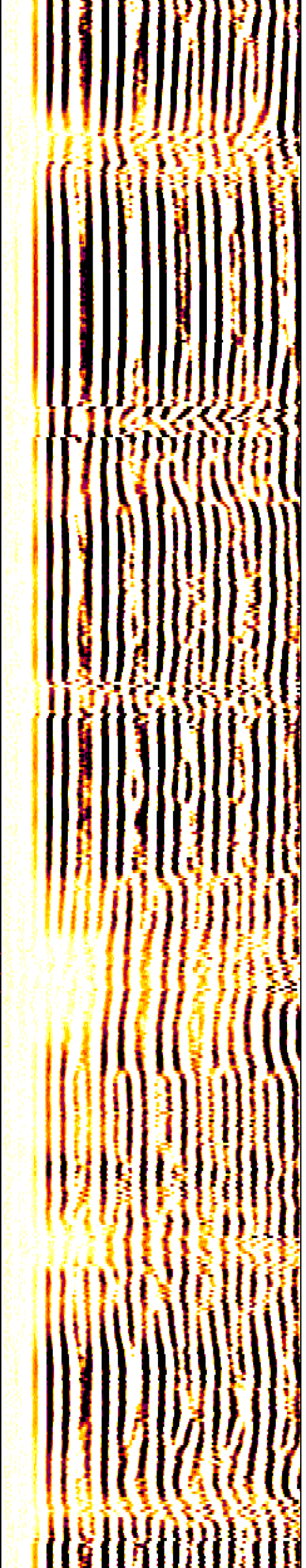
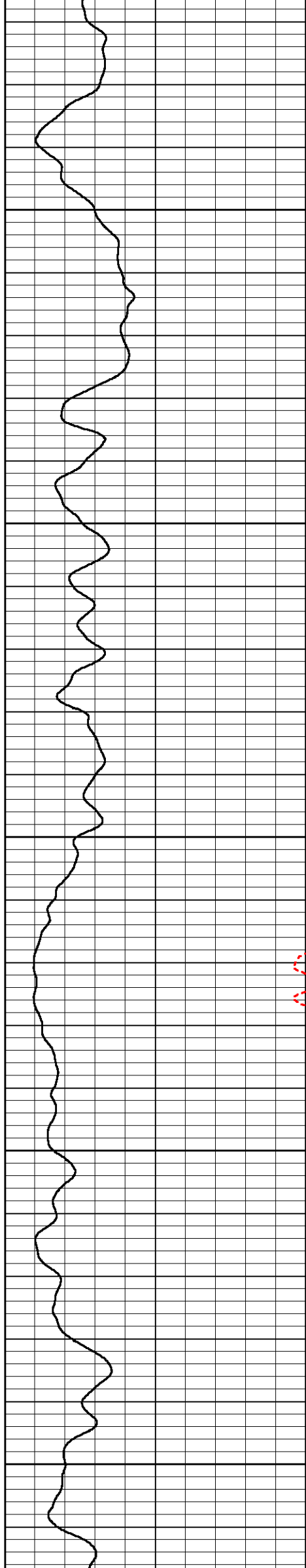


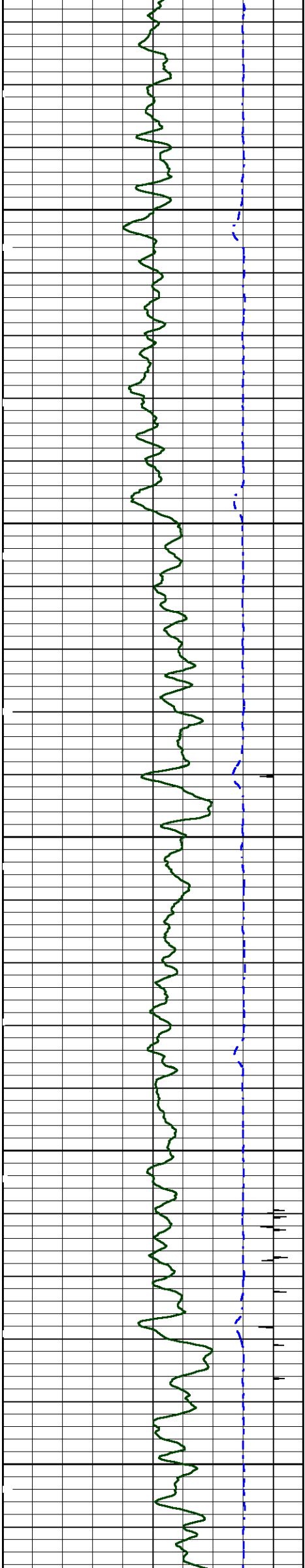


5100

5200

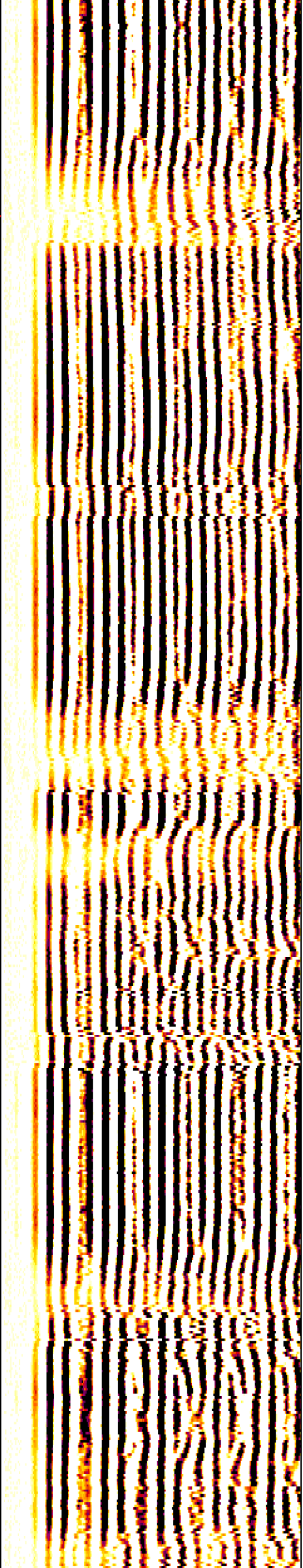
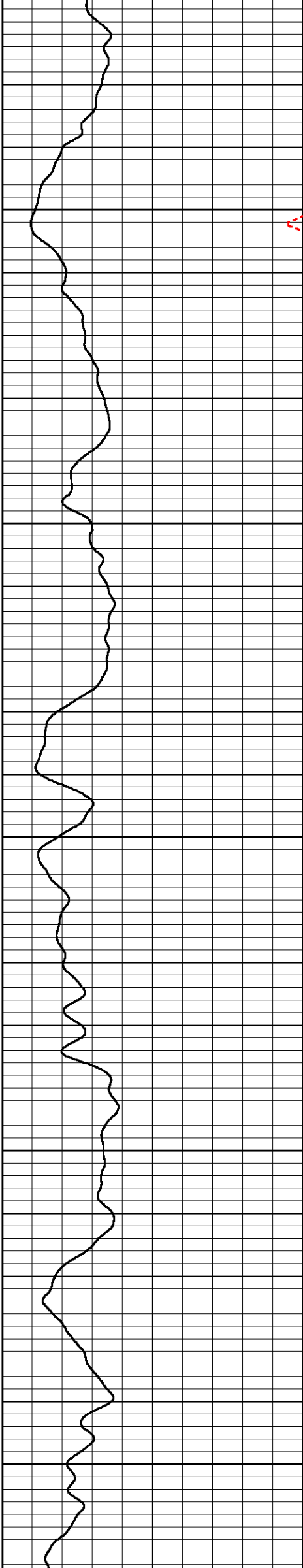
5300

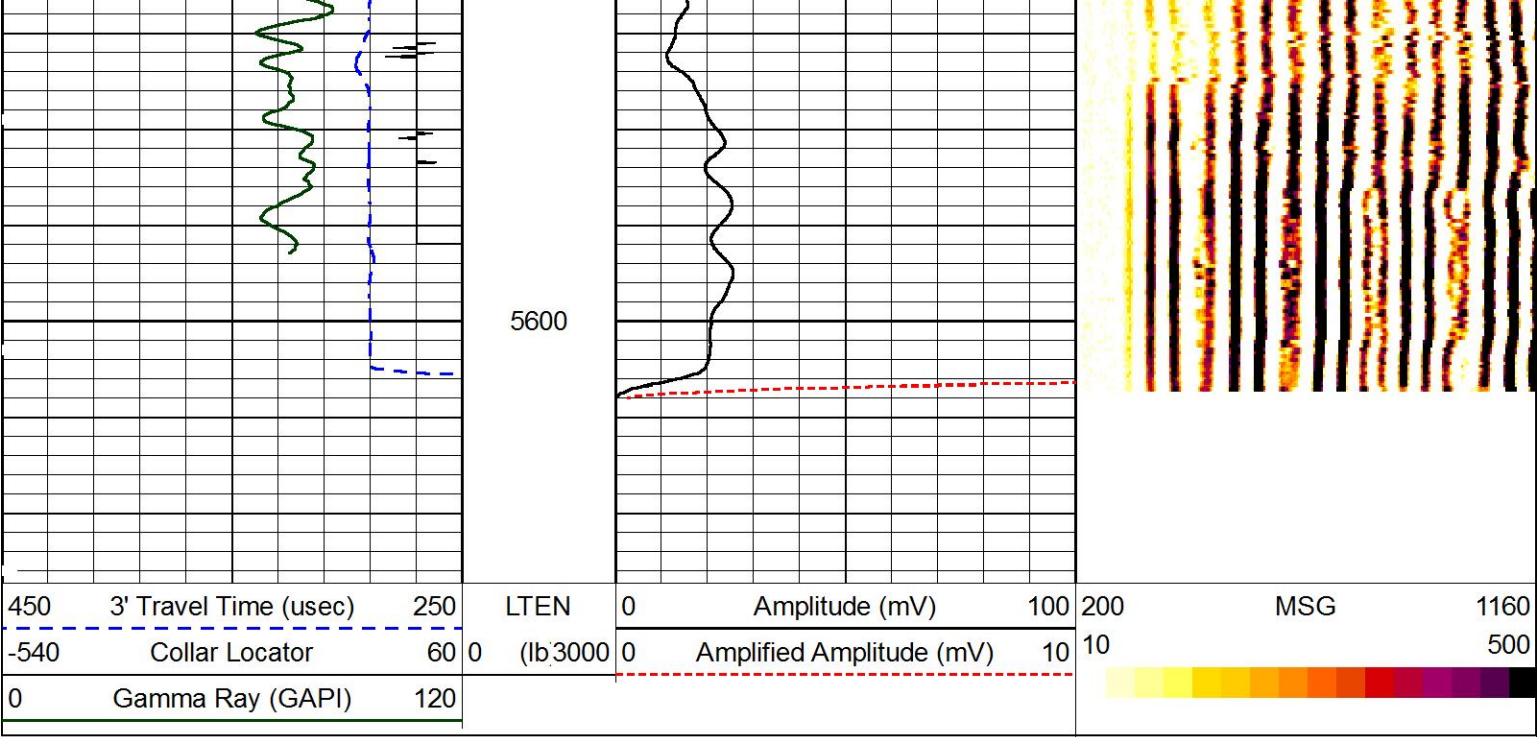




5400

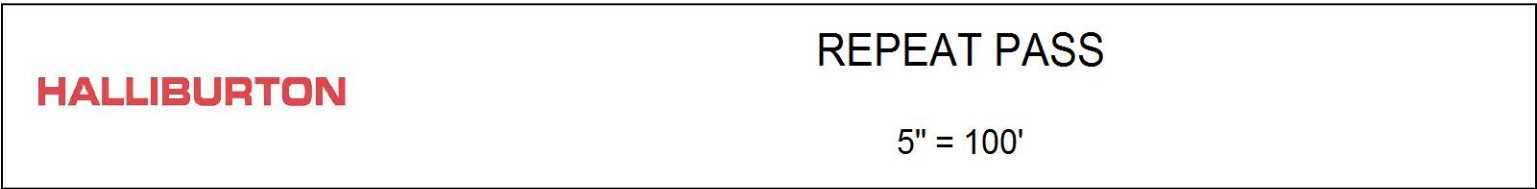
5500





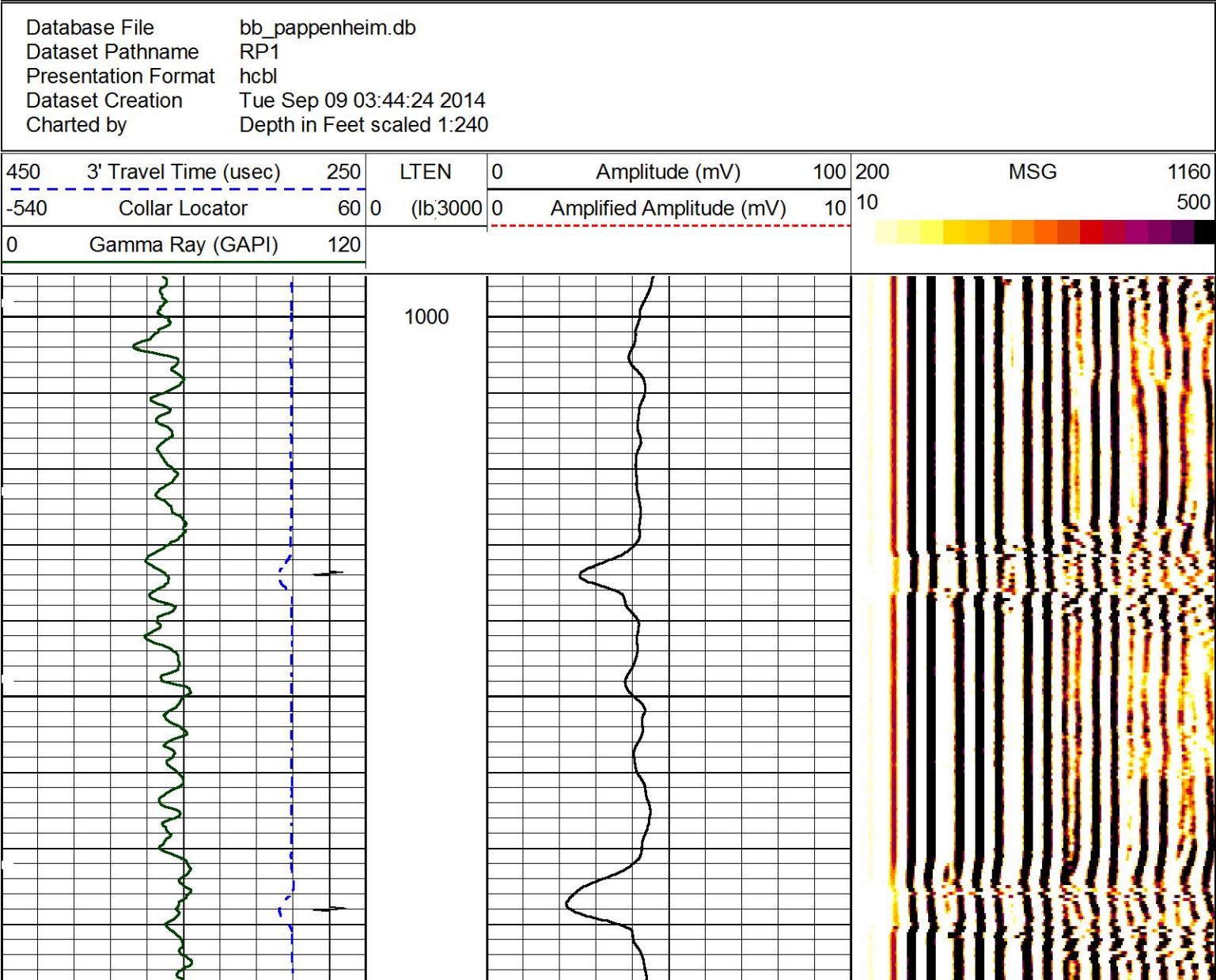
MAIN PASS

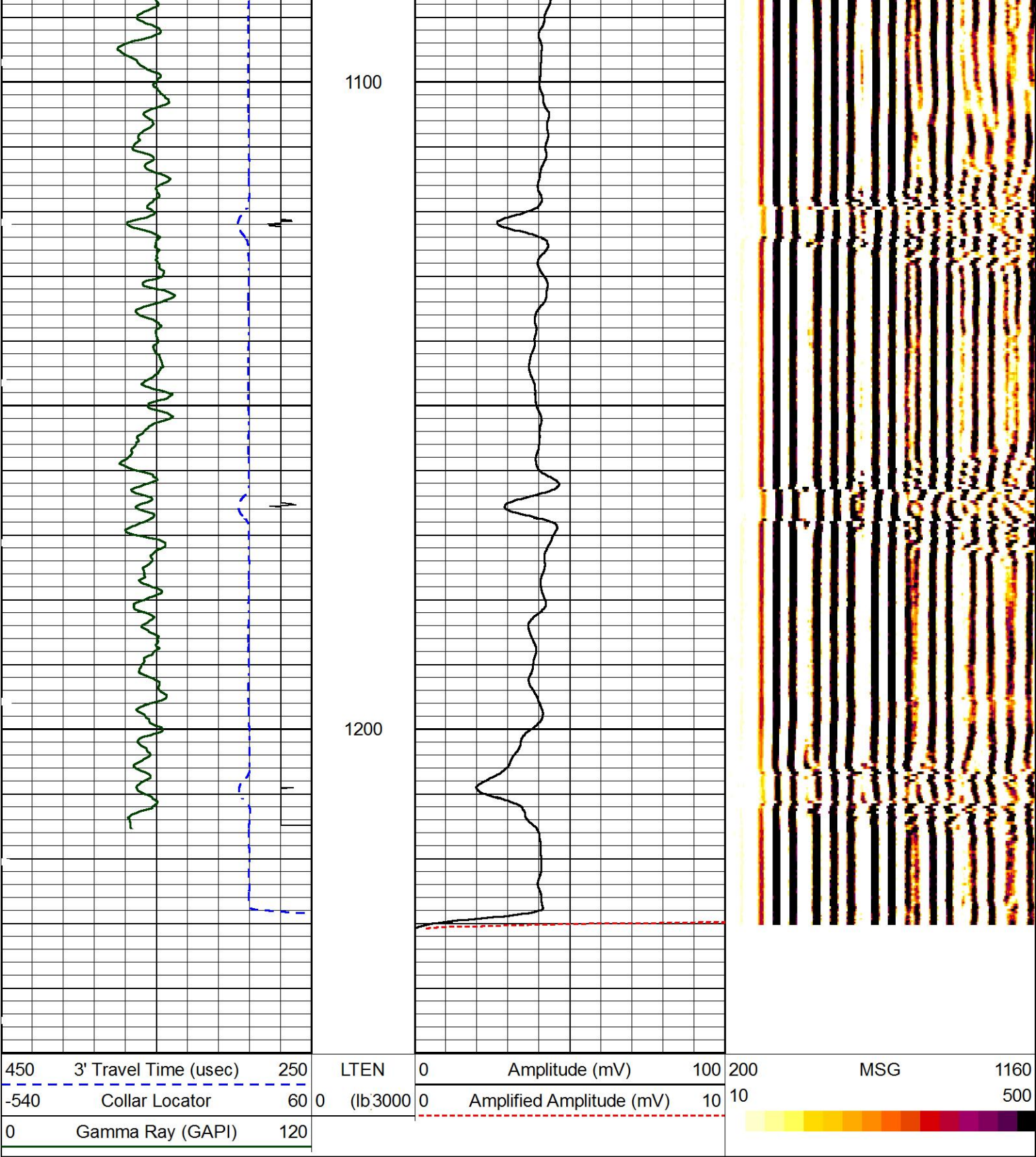
5" = 100'



REPEAT PASS

5" = 100'





REPEAT PASS

5" = 100'

HALLIBURTON

Database File		bb_pappenheim.db		Calibration Report	
Dataset Pathname		MAIN1			
Dataset Creation		Tue Sep 09 04:32:29 2014			
Reservoir Monitor Tool I Calibration Report					
Serial-Model:		12210614-A			
Shop Calibration Performed:		Tue Aug 05 09:54:21 2014			

Stabilization					
Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	80.00	80.00	0.00	+/-15.00	V
ITCR2	3302	3250	52	+/-250	cps
Near Detector					
H	Channel 60	Expected Value 60 +/-2	Amplitude 0.0263	FWHM 5.46	Tol. <6.00
Fe	207	206 +/-2	0.0958	-----	-----
NGAIN = 0.992 NZOFF = 0.7					
Far Detector					
H	Channel 60	Expected Value 60 +/-2	Amplitude 0.0354	FWHM 5.68	Tol. <6.50
Fe	210	208 +/-2	0.0912	-----	-----
FGAIN = 0.990 FZOFF = 0.3					
Flask Temperature	61.1 degF				
Result	Logged	Expected Value	Diff.	Tol.	Units
COIR2	0.45	0.45	-0.00	+/-0.02	
LIRI2	1.65	1.64	0.01	+/-0.05	
TCCR2	5369	5000	369	+/-1000	cps
ITCR2	3280	3200	80	+/-250	cps

Sigma Mode					
Stabilization					
Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	80.00	80.00	0.00	+/-15.00	V
FCAP	10337	10000	337	+/-500	cps
Horizontal Water Tank					
Result	Logged	Expected Value	Diff.	Tol.	Units
N/F Normalizer	0.95	0.95	-0.00		
N/F Inel Norm	0.61	0.61	0.00		
RNF	1.05	1.07	-0.02	+/-0.12	
RINC	1.63	1.64	-0.01	+/-0.18	
SGFN	24.09	24.00	0.09	+/-0.50	cu
SGFF	22.92	22.85	0.07	+/-0.50	cu
FSIN	24838	24000	838	+/-2000	cps
FCAP	10459	10000	459	+/-1000	cps
NFTR	0.83			<5.00	
FFTR	0.90			<5.00	
NBKG	181			<500	cps
FBKG	96			<500	cps
RTN	0.40	0.40	0.00	+/-0.10	usec
RTF	0.42	0.40	0.02	+/-0.10	usec

Calibration Software Modules	
HRMTI Module	2013.11.14.0
RMTI Module	2014.5.9.1
Log Data Acquisition Software Modules	
HRMTI Module	2013.11.14.0
RMTI Module	2014.5.9.1

Cement Bond Log Shop Calibration Report	
Serial-Model:	1208113-A

Free Pipe Calibration

TT	Measured	Units
Amplitude	289.2	usec
Log Base Line	633.9	mV
	-2.3	mV

Calibration References and Gain

Name	Value	Units
Pipe O.D.	7.000	in
Pipe Weight	26.0	lb/ft
Pipe Ref. Amp.	62.2	mV
Amp. Gain	0.098	

Gamma Ray Calibration Report

Type / Serial: 002 / 11495480

SHOP CALIBRATION

Mon Sep 08 13:42:53 2014

	Counts/Sec.	Gain	Offset	Jig	Units
Background	47.3				cps
Calibrator	221.7				cps
		1.3941			GAPI/cps

PRIMARY VERIFICATION

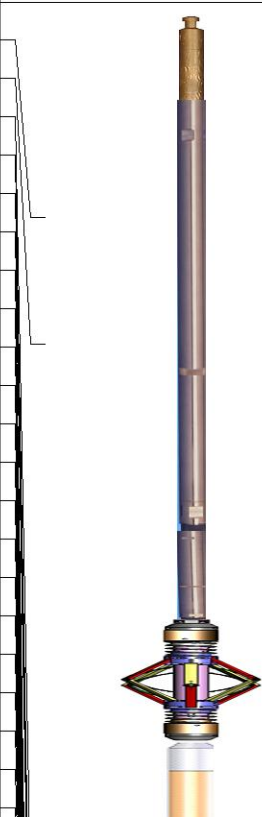
Background	70.7				cps
Calibrator	314.3				cps
Difference				243.6	GAPI

BEFORE SURVEY VERIFICATION

Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI

AFTER SURVEY VERIFICATION

Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
CCL	35.09		STNDCH-STND_CH	1.50	1.44	1.00
GR	32.83		1.4375 IN CABLE HEAD			
Temp	23.11					
TT3FT	20.86					
AMP3FT	20.86					
WVF5FT	19.90					
FrameCnt	16.38					
TLINITCNT	16.38		TTTCU-002 (11495480)	7.65	1.69	100.00
CbICTT	16.38		Through Tubing Telemetry Cartridge - Ultrawire			
CbICCsGwgt	16.38					
CbICCsGOD	16.38					
CbICAp	16.38					
CbIBLine	16.38					
CbITTTresh	16.38					
CbIAGate	16.38		XHU-003 (11971778)	1.58	1.69	7.00
CbILWvCnt	16.38		Crossover Halliburton 1553 to Ultrawire			
CbICStat	16.38					
CbIIVolt	16.38		CENT-CASTM-CENT	2.16	3.13	25.00
CbIITemp	16.38		CAST M INLINE CENTRALIZER			
CbISeqNum	16.38					
CbITStat	16.38					

Tool Name	Length (ft)	Weight (lb)	OD (in)
WVF3FT	16.38		
RmtTFGT	8.47		
RmtFBACK	8.47		
RmtFCAPT	8.47		
RmtFINEL	8.47		
RmtTNGT	7.97		
RmtNBACK	7.97		
RmtNCAPT	7.97		
RmtNINEL	7.97		
TLINICNT	0.22		
RImpBTEST	0.22		
RImpBCYC	0.22		
RImpBRGW	0.22		
RImpBRGO	0.22		
RImpState	0.22		
RImpPhase	0.22		
RImpCyc	0.22		
RmtGenClampV	0.22		
RmtFTemp	0.22		
RmtFP5V	0.22		
RmtFPMHV	0.22		
RmtFPMI	0.22		
RmtFPrgSt1	0.22		
RmtFDetStat	0.22		
RmtNTemp	0.22		
RmtNPMHV	0.22		
RmtNPMI	0.22		
RmtNPrgSt1	0.22		
RmtNDetStat	0.22		
RmtGenIonI	0.22		
RmtGen15BusV	0.22		
RmtGenLvdsV	0.22		
RmtGenSyncV	0.22		
RmtGenClampV	0.22		
RmtGenP5V	0.22		
RmtGenP33V	0.22		
RmtGen200V	0.22		
RmtGenP15VI	0.22		
RmtGenTemp	0.22		
RmtGenP5VI	0.22		
HCBLM-A (1208113) Halliburton HCBLM Tool	9.38	2.75	116.00
CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00
RMTI-A (12210614) Halliburton RMTI Tool	14.00	2.13	77.00
BUL-006 (000002) Bullnose Terminator	0.22	1.69	1.20
Dataset: bb_pappenheim.db: field/well/run1/MAIN1 Total length: 38.66 ft Total weight: 352.20 lb O.D.: 3.13 in			