

HALLIBURTON										CEMENT BOND LOG									
Company HIGHPOINT RESOURCES Well CRITTER CREEK 16-6005BE Field HEREFORD County WELD State CO										Company HIGHPOINT RESOURCES Well CRITTER CREEK 16-6005BE Field HEREFORD County WELD State CO									
Permanent Datum GROUND LEVEL Elevation 5253'										Other Services									
Log Measured From KB , 20' Ft. above perm. datum										CAST-M JUNK BASKET GUAGE RING									
Drilling Measured From KB																			
Date @ Time Logged 01/31/2019 @ 00:00										Type Fluid in Hole FERSHWATER									
Run No. ONE										Density of Fluid 8.4#									
Depth - Driller 17899'										Fluid Level 2300'									
Depth - Logger 17800'										Cement Top Est. Logged REC									
Bottom - Logged Interval 17706'										Equipment / Location 11874896 / BRIGHTON									
Top - Log Interval 6750'										Recorded by K. HENDRICKSON									
Max. Recorded Temp. 200 F										Witnessed by B. KOTHE									
CEMENTING DATA										Production String									
Date / Time Cemented										Liner									
Primary / Squeeze																			
Expected Compressive Strength psi@ hrs										psi@ hrs									
Cement Volume																			
Cement Type / Weight																			
Formulation																			
Mud Type / Mud Wgt.																			
Borehole Record										Casing & Tubing Record									
Run Number Bit From To										Size Weight From To									
ONE 4.5"										13# SURFACE 6994'									
ONE 4.5"										11.6# 6994' TD									

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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

GR-CCL-CBL-CAST RAN IN COMBINATION.

LOGS CORROLATED WITH AIR LOCK SUB AT 8095'.

0 PSI WHP.

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES, BRIGHTON CO

ONE	17800'	6750'	0	40				
	GAMMA		AMPLITUDE		IMPEDANCE		THICKNESS	
Pass	Scale		Scale		Scale		Scale	
No.	L	R	L	R	L	R	L	L
ONE	0	150	0	100	0	10	0.19	0.29
DIRECTIONAL INFORMATION								
Maximum Deviation	90	deg. @	8090'	KOP	6965'			

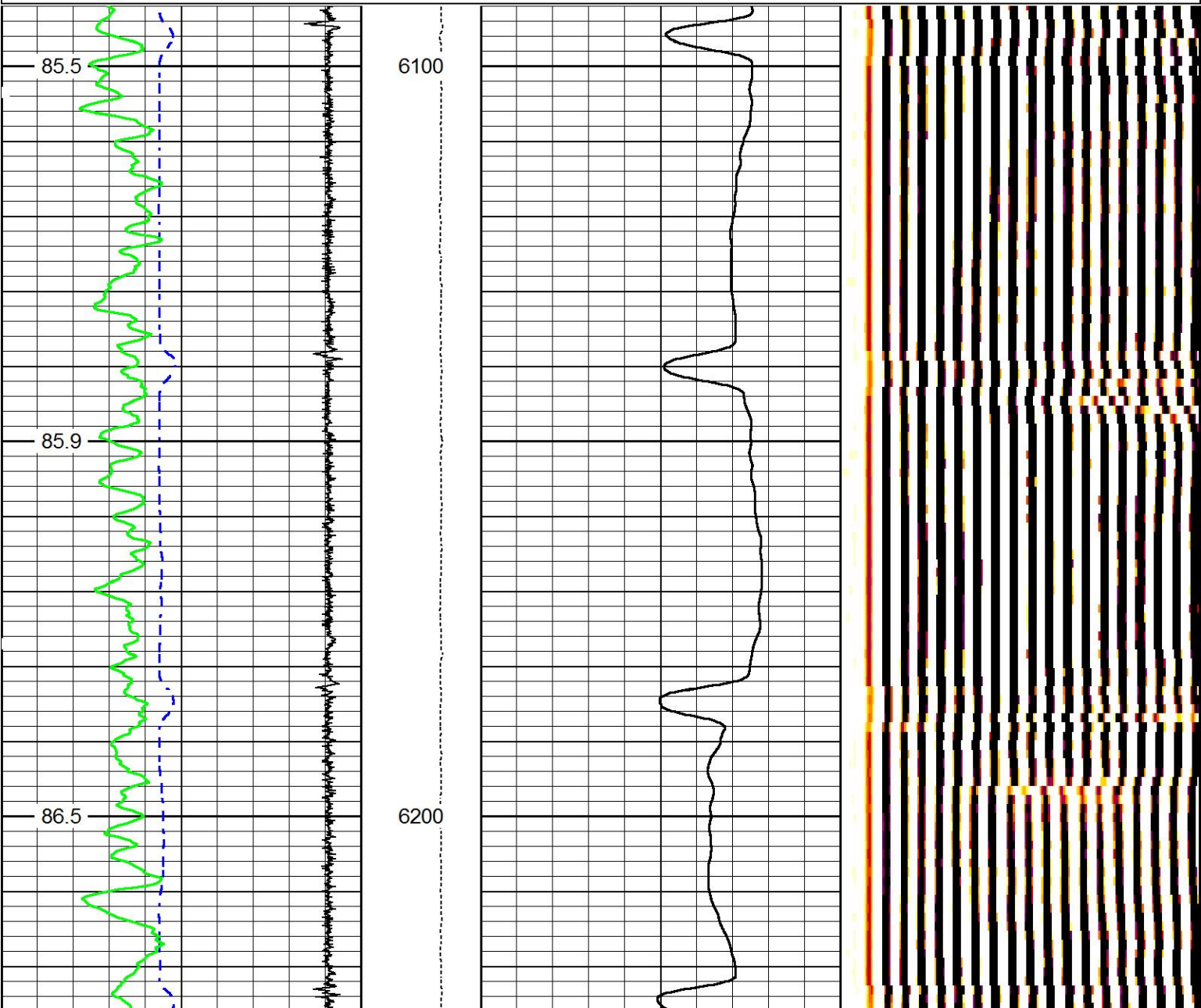
HALLIBURTON

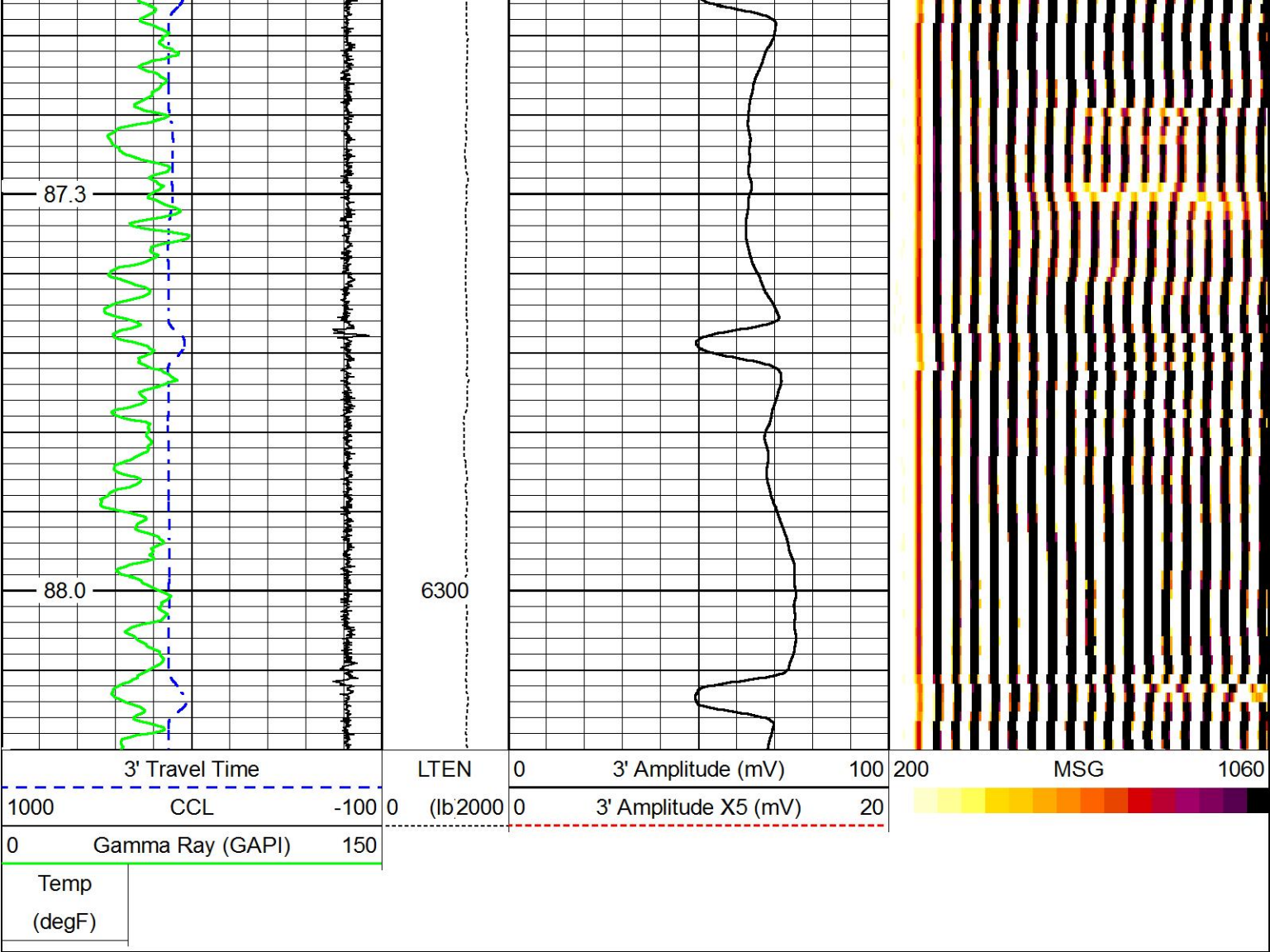
FREE PIPE PASS

5" = 100'

Database File	cc_16-6005be.db
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Presentation Format	hcbl
Dataset Creation	Thu Jan 31 04:59:27 2019
Charted by	Depth in Feet scaled 1:240

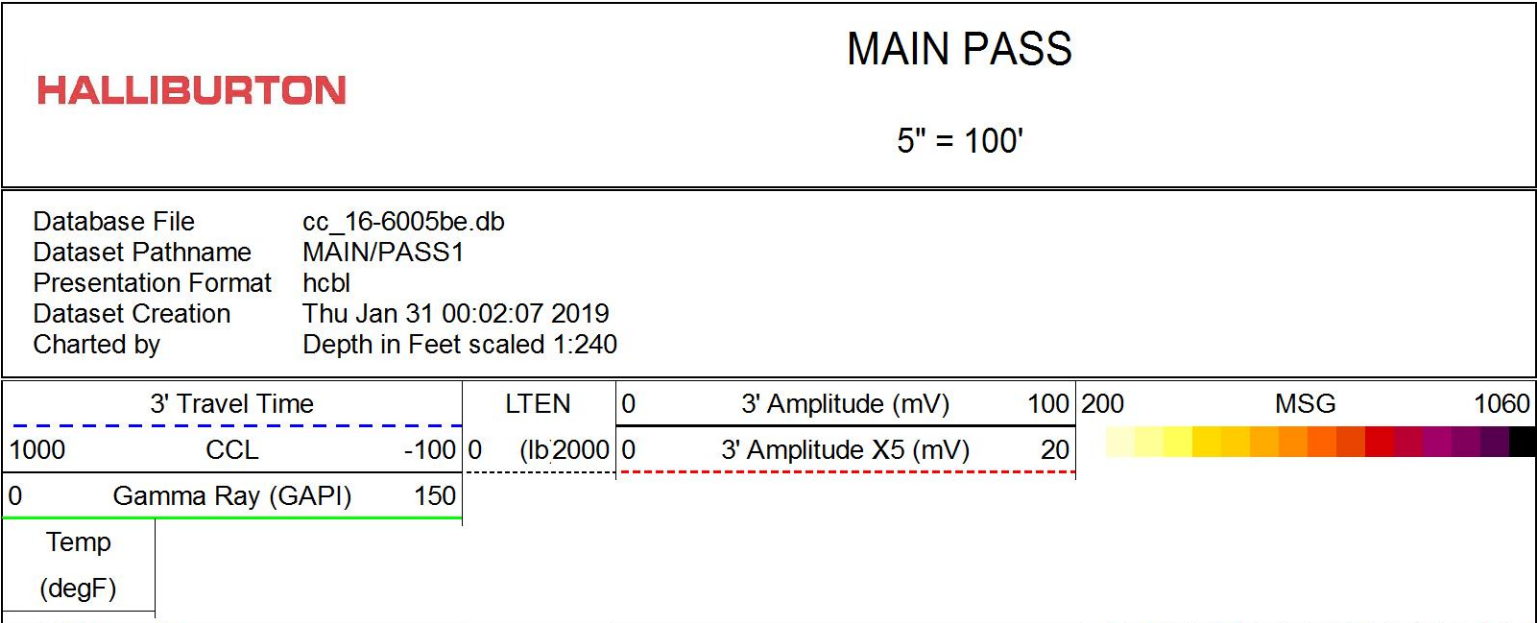
3' Travel Time		LTEN	0	3' Amplitude (mV)	100	200	MSG	1060
1000	CCL	-100	0	(lb2000	0	3' Amplitude X5 (mV)	20	
0	Gamma Ray (GAPI)	150						
Temp								
(degF)								





FREE PIPE PASS

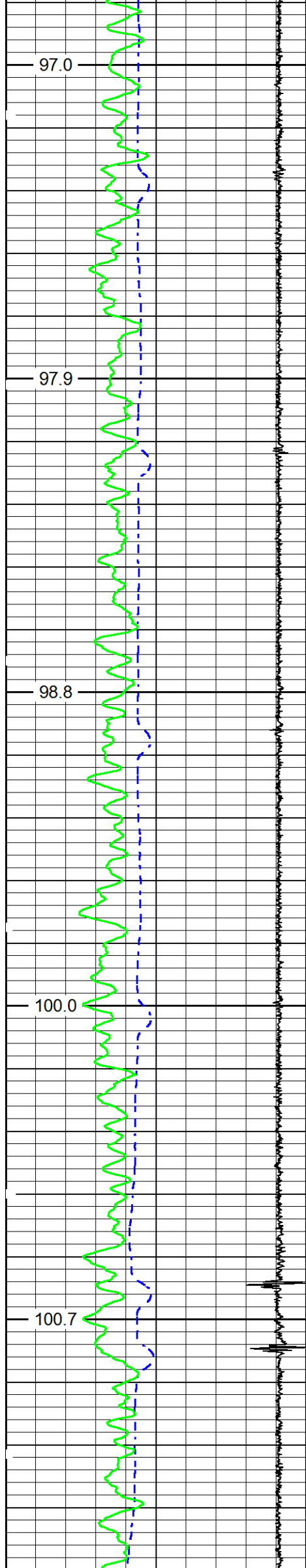
5" = 100'



MAIN PASS

5" = 100'

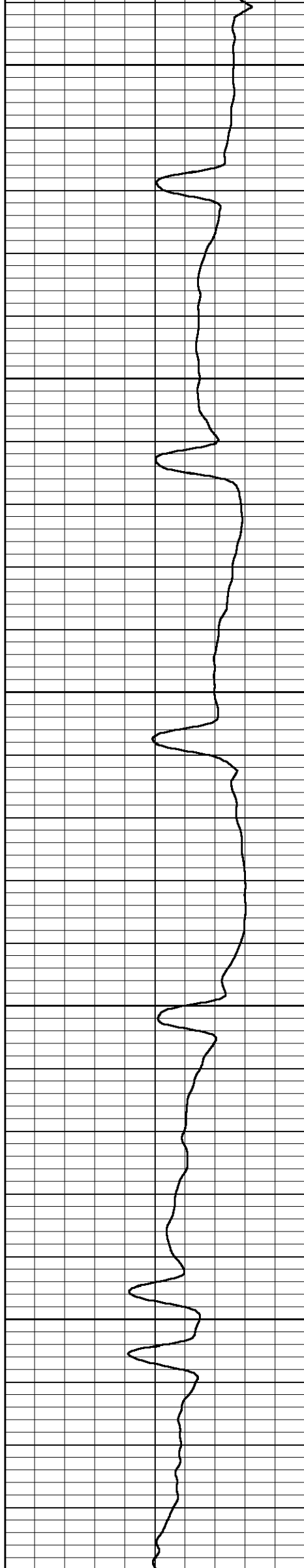
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Dataset Pathname MAIN/PASS1
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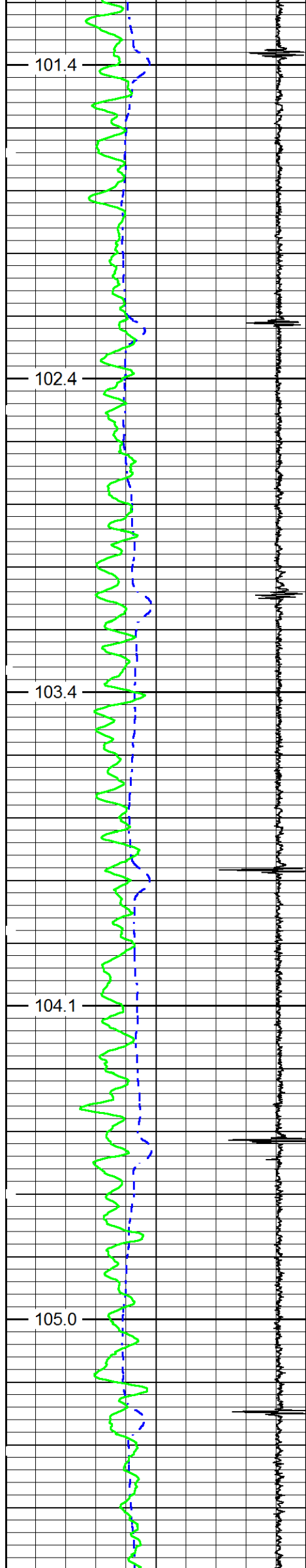


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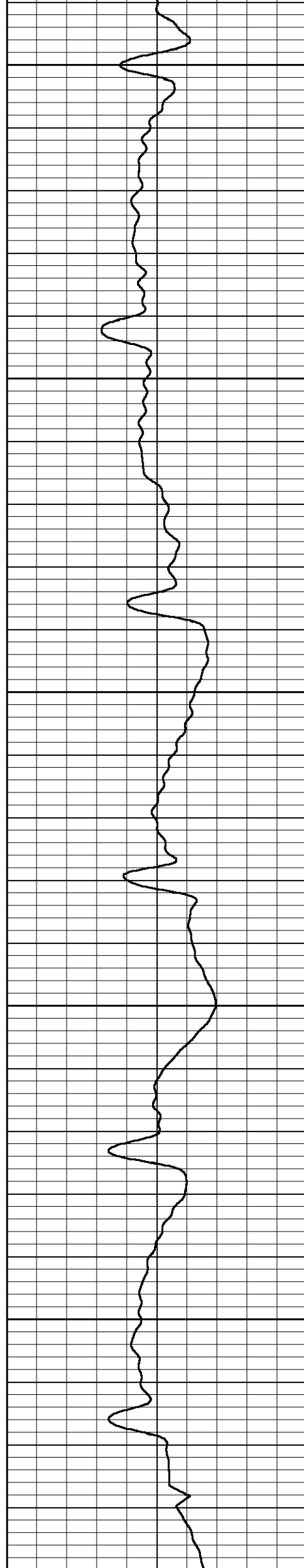
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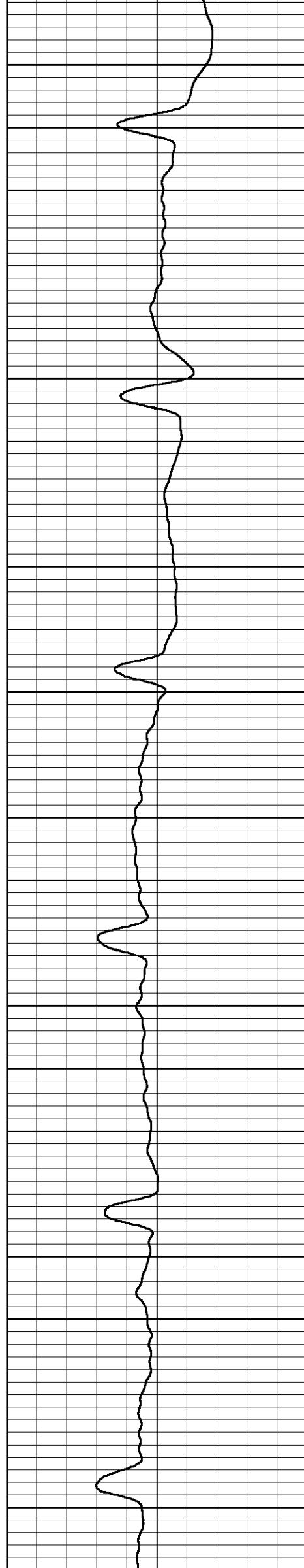
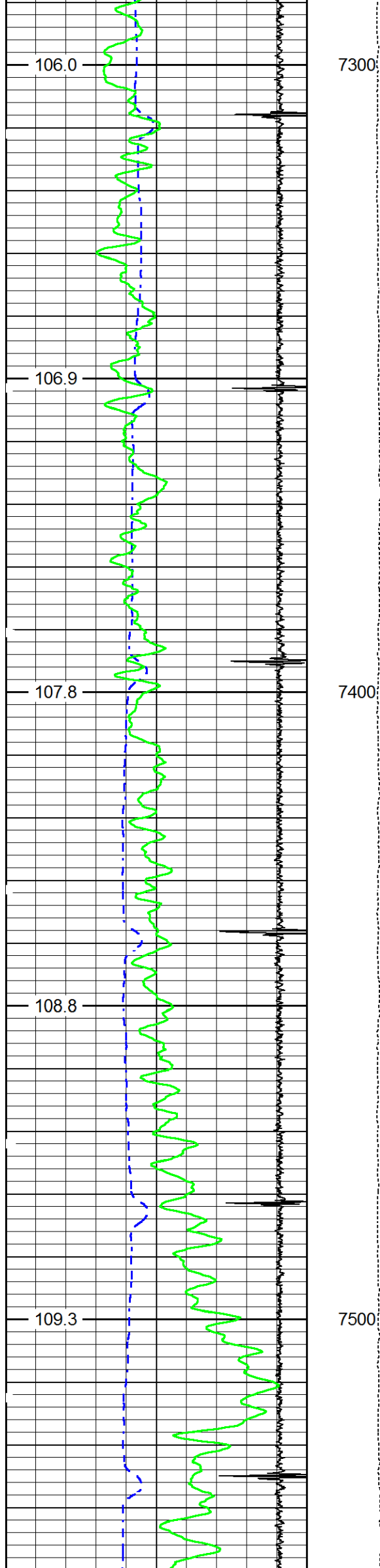


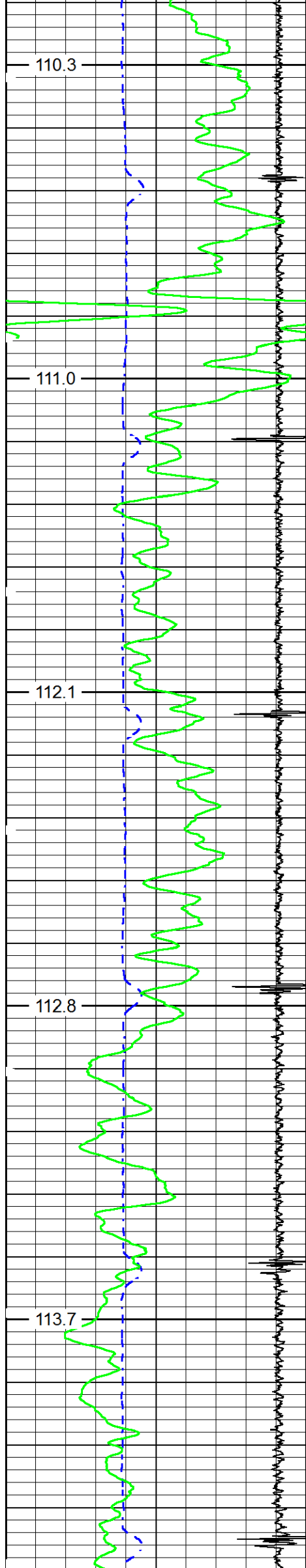


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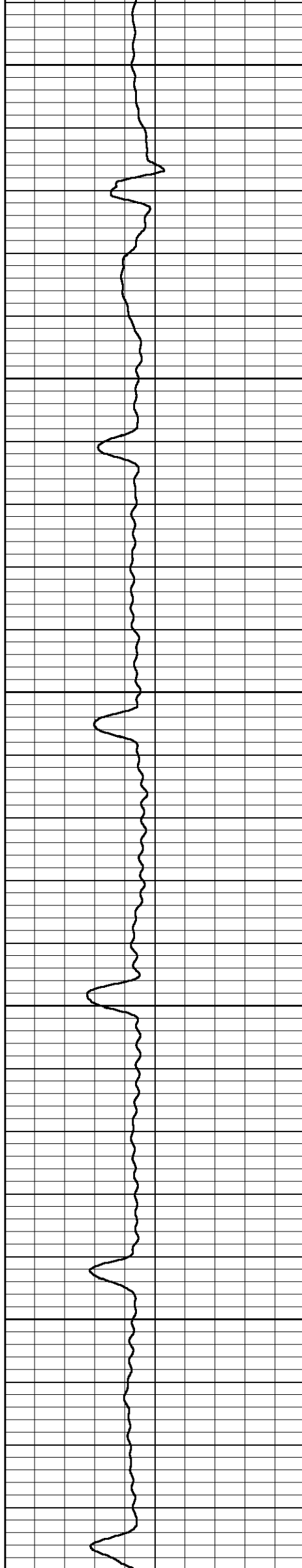


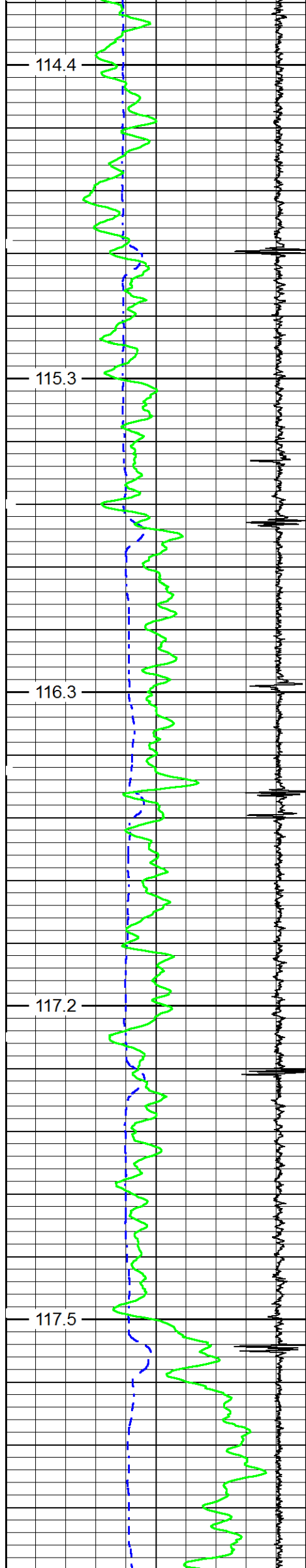




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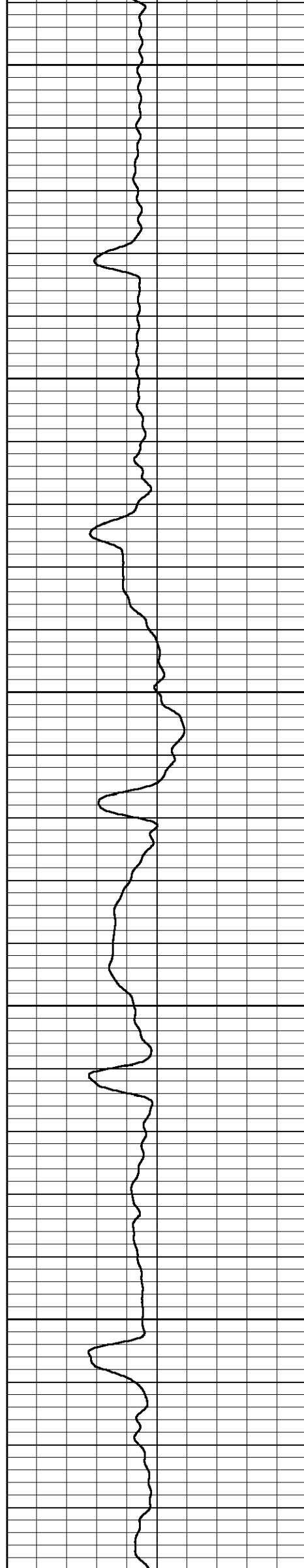


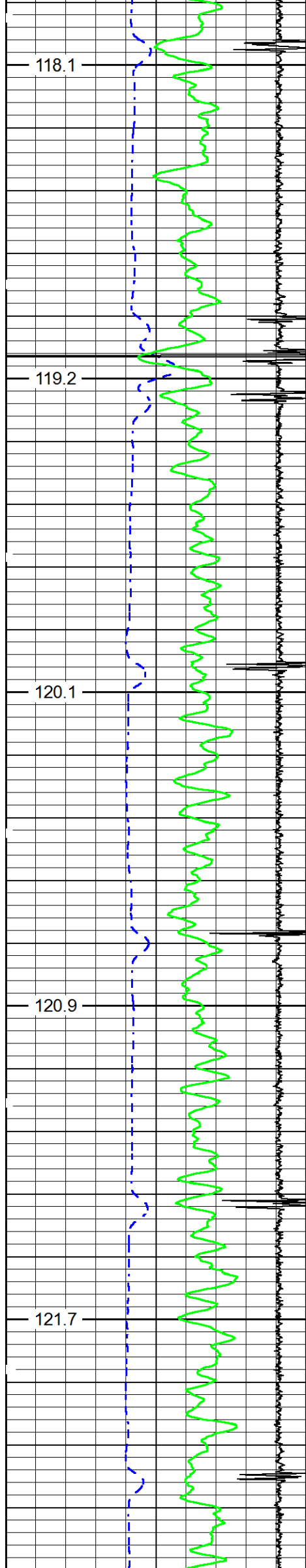


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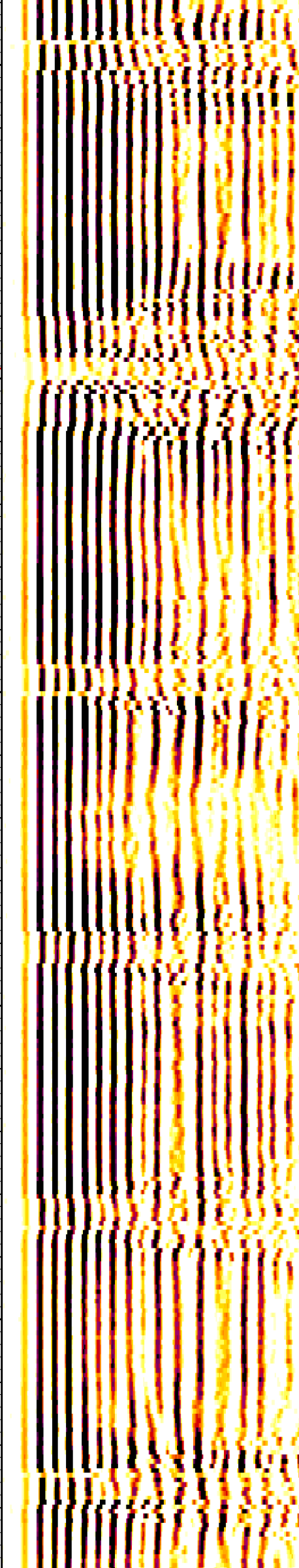
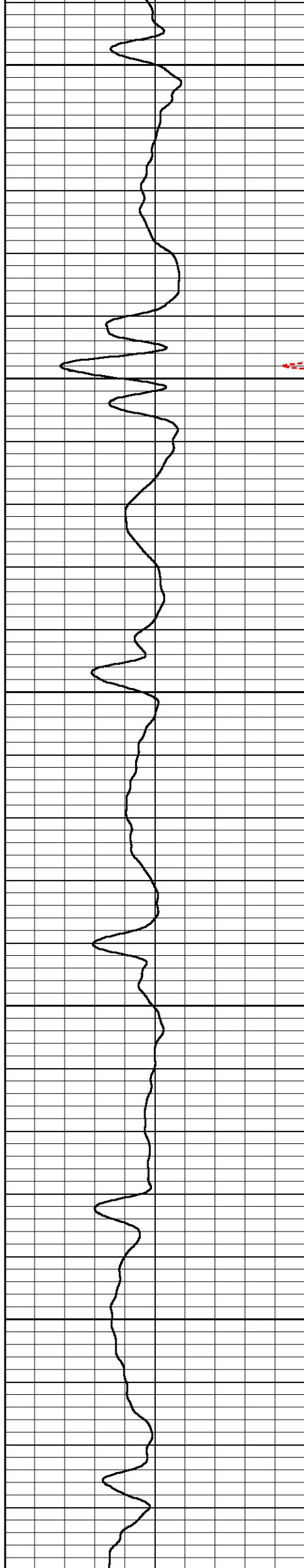
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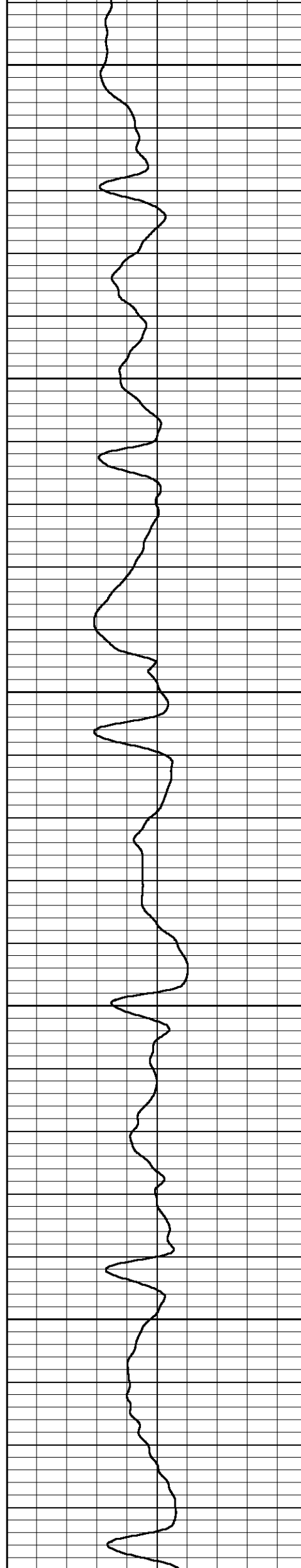
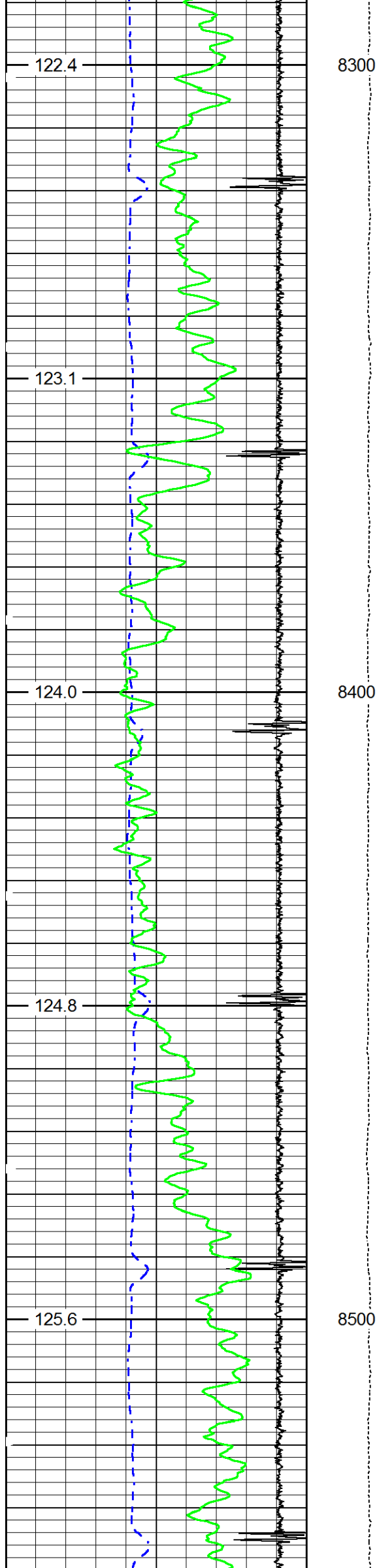


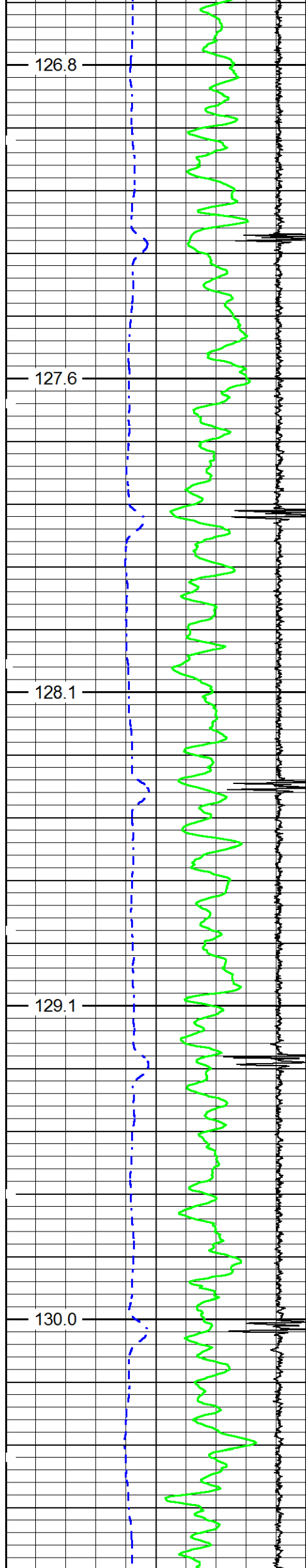


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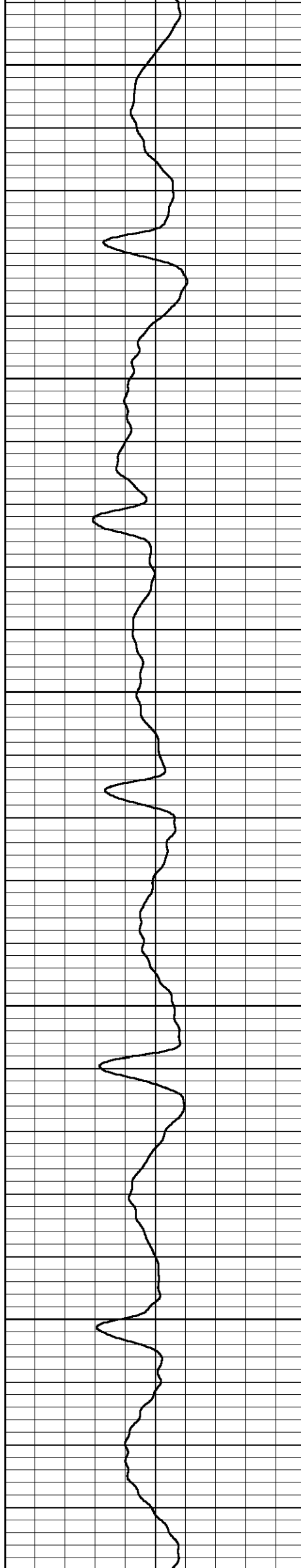


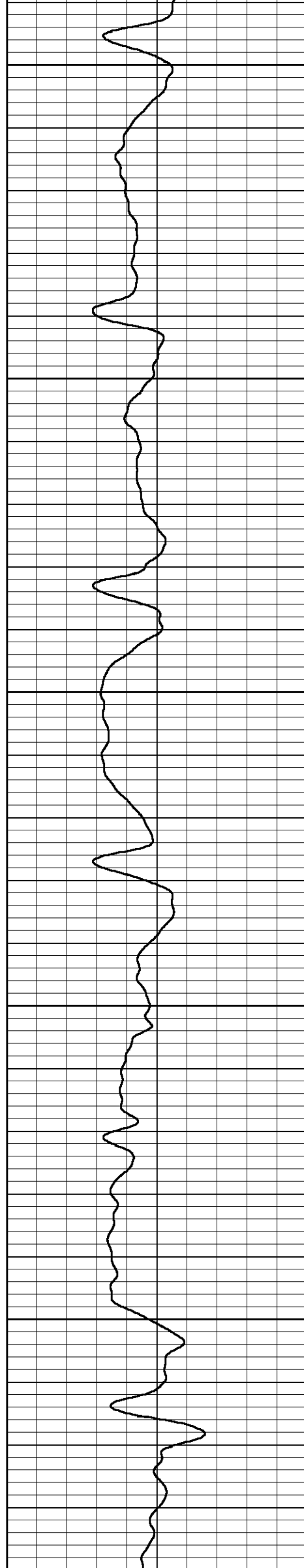
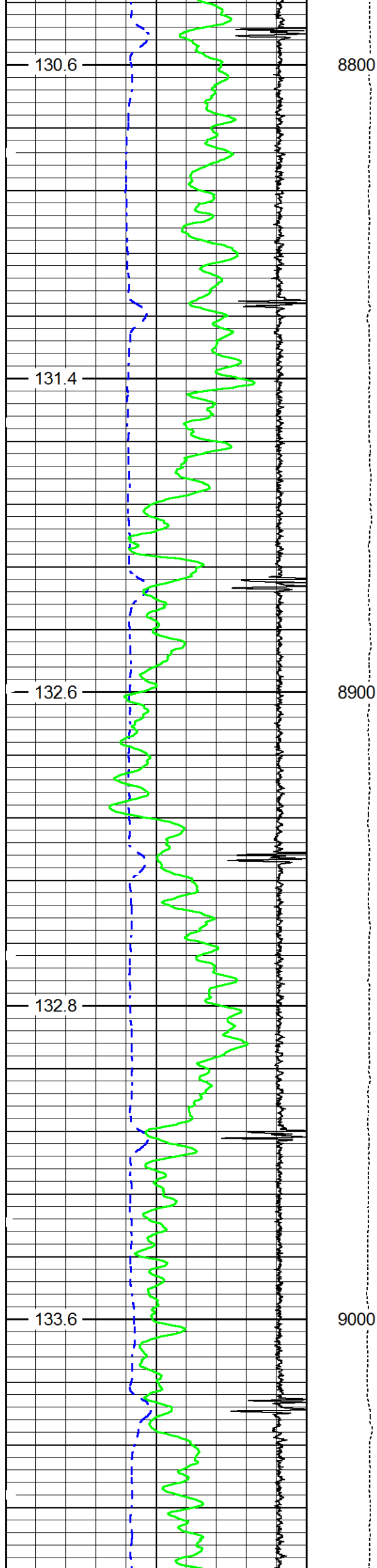


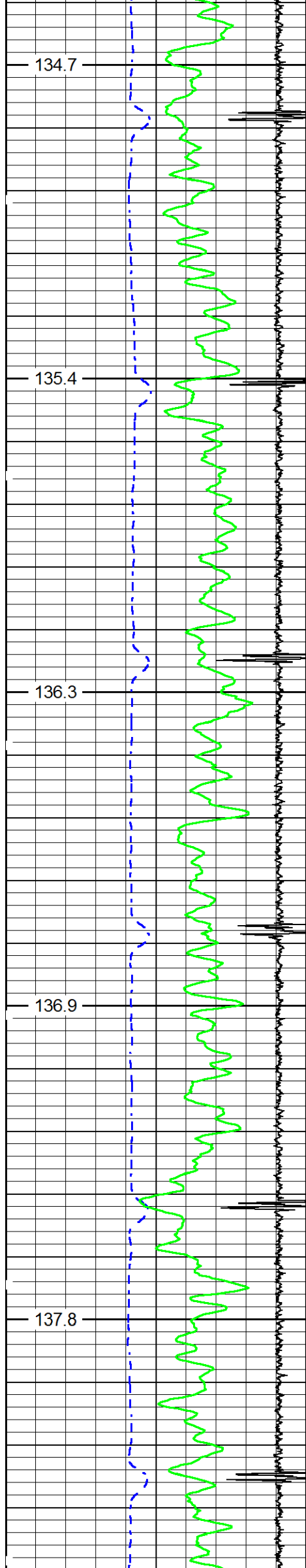


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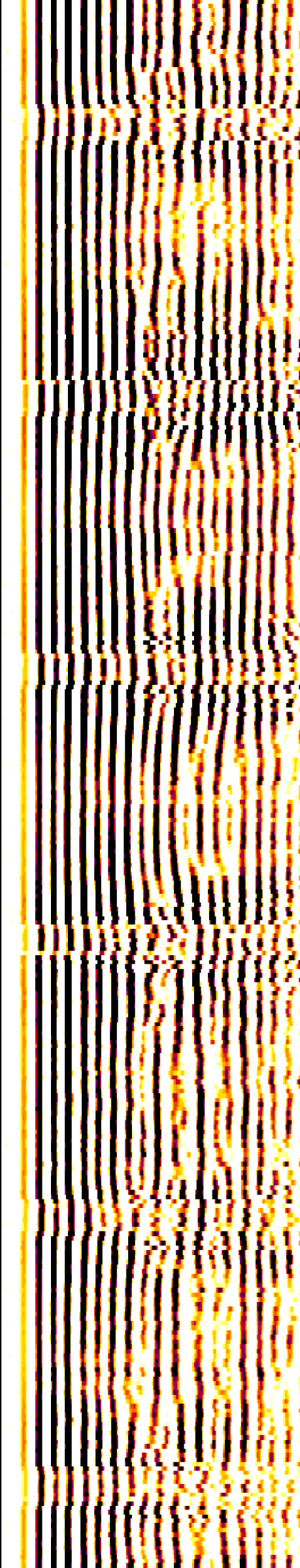
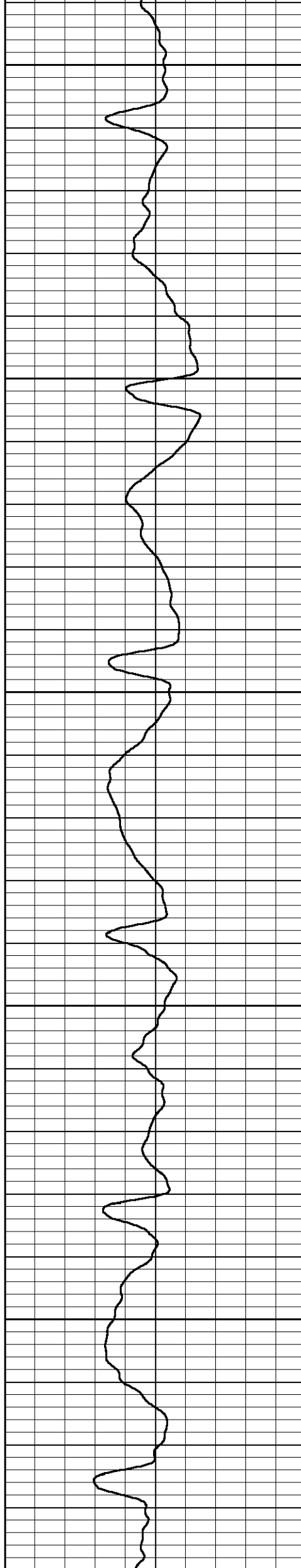


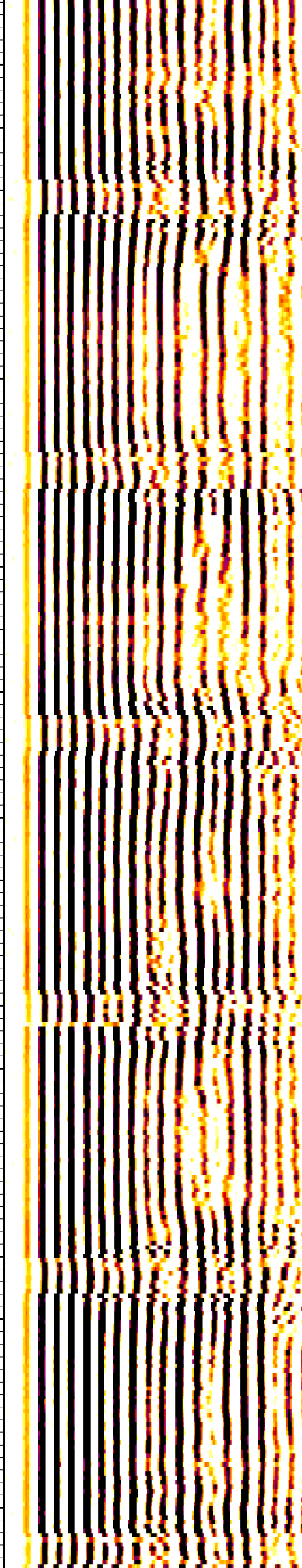
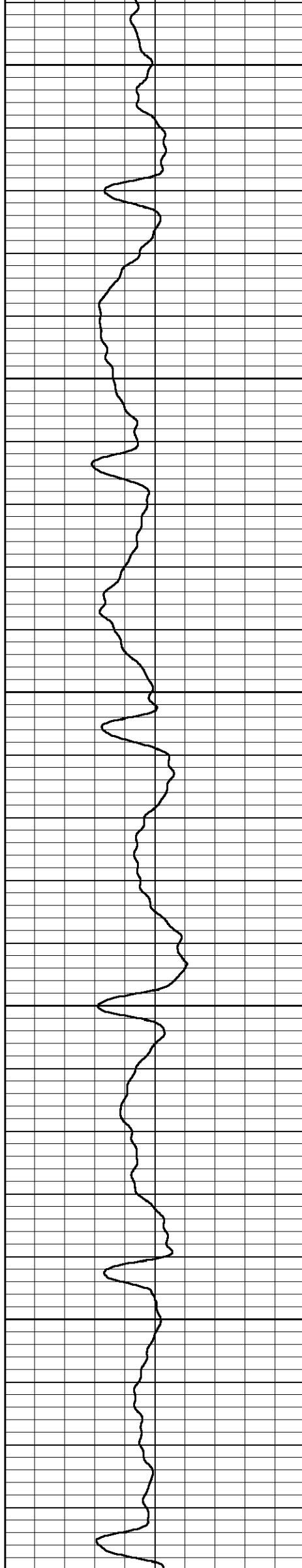
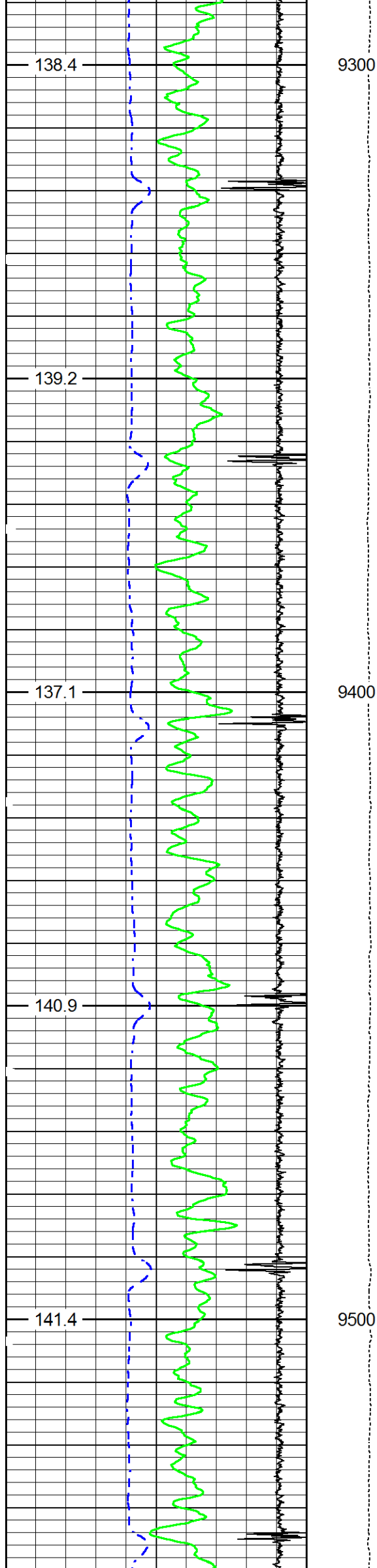


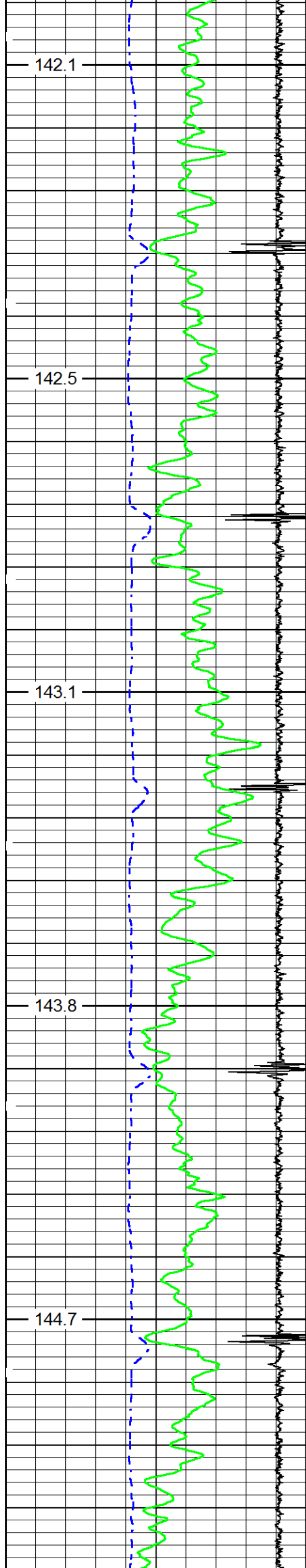


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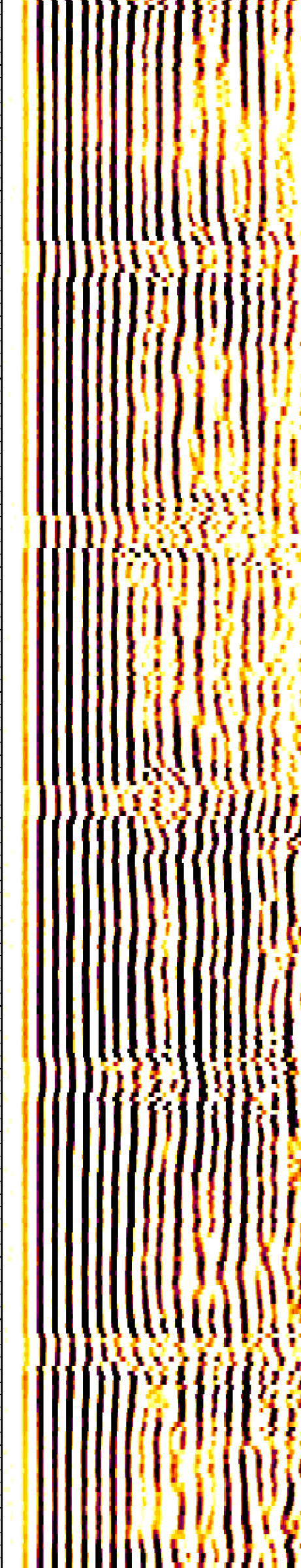
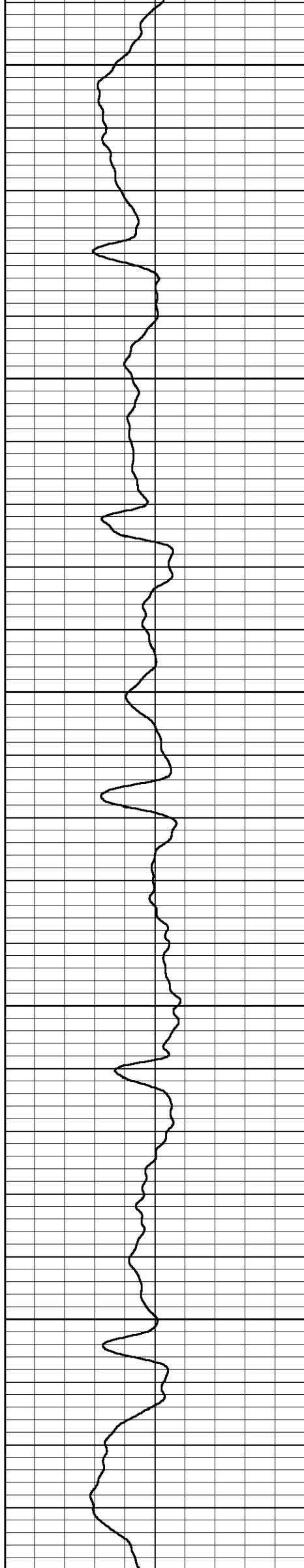


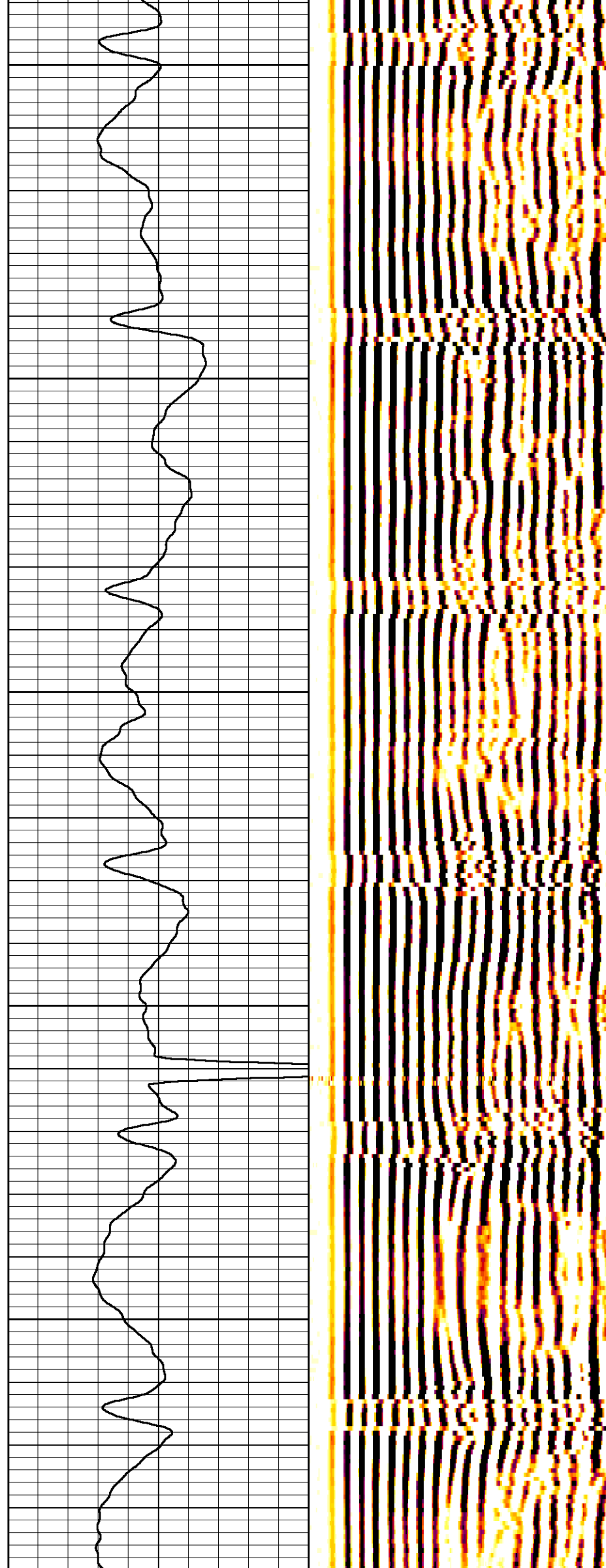
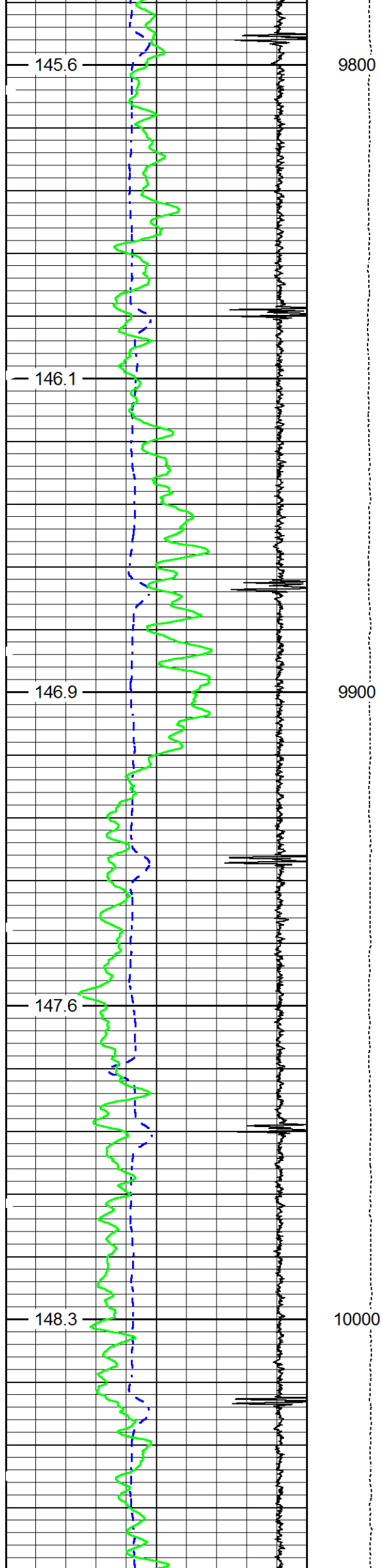


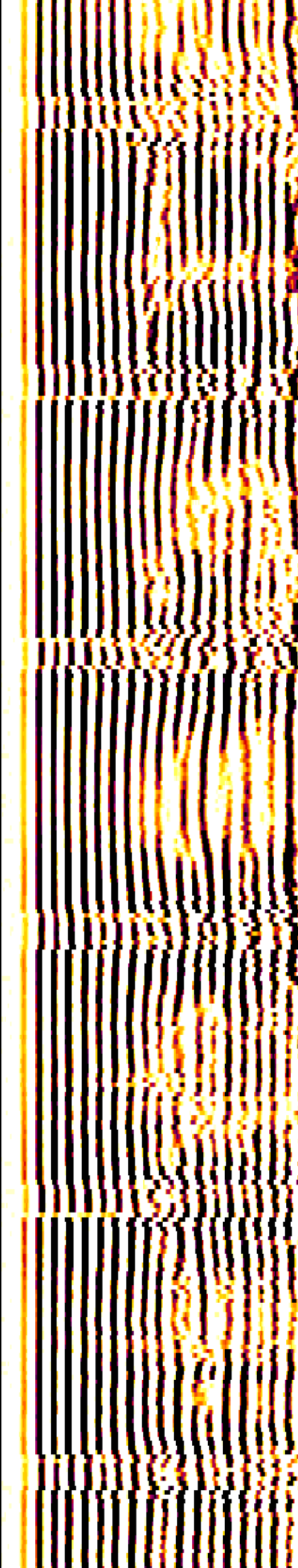
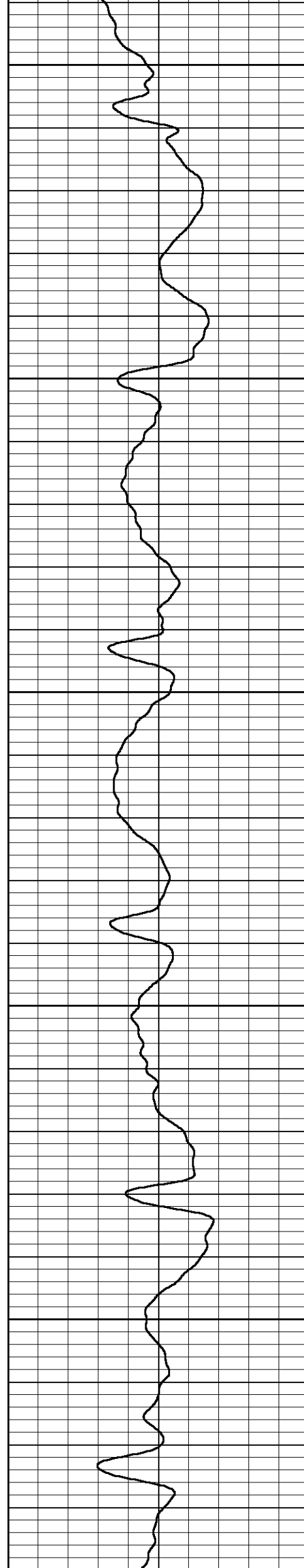
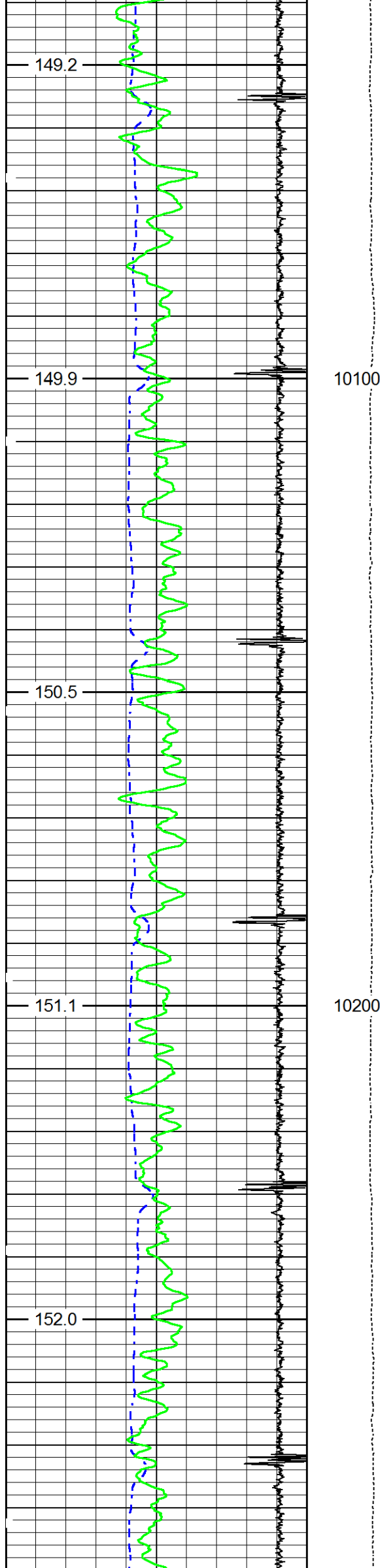


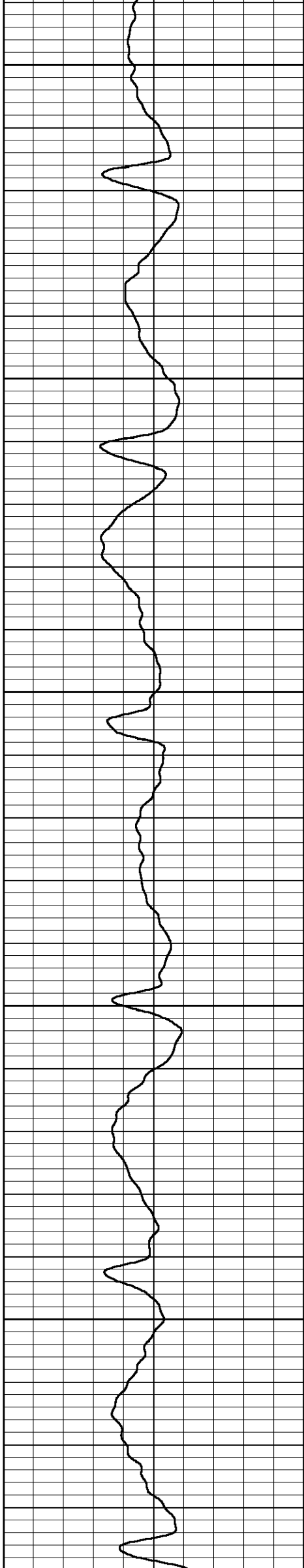
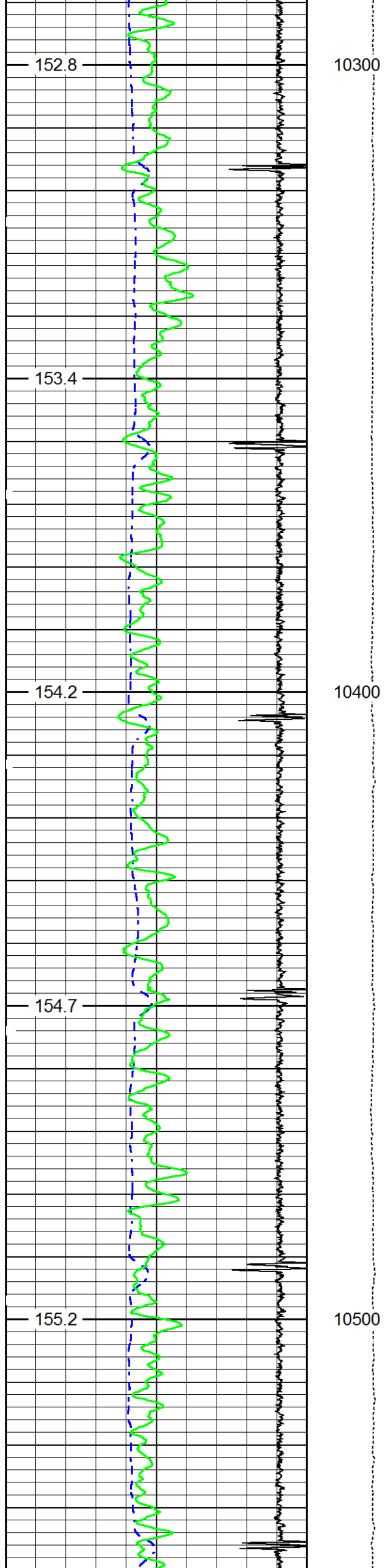
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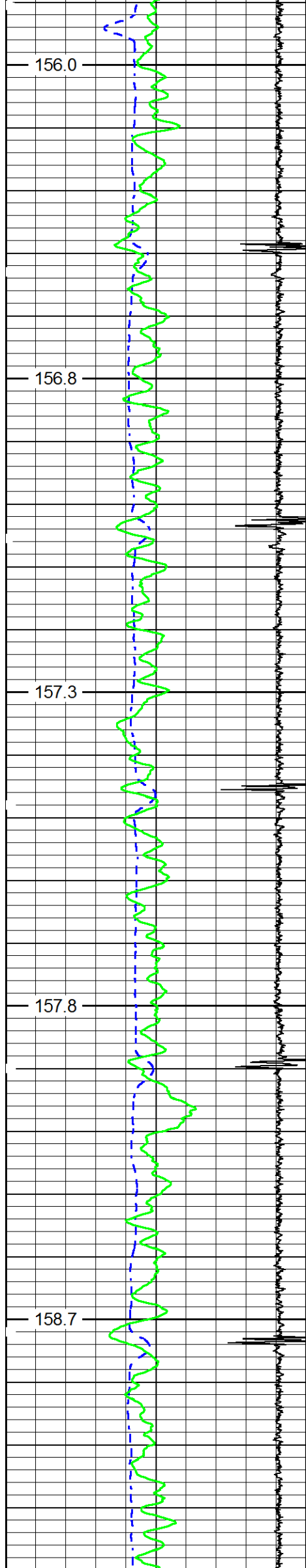
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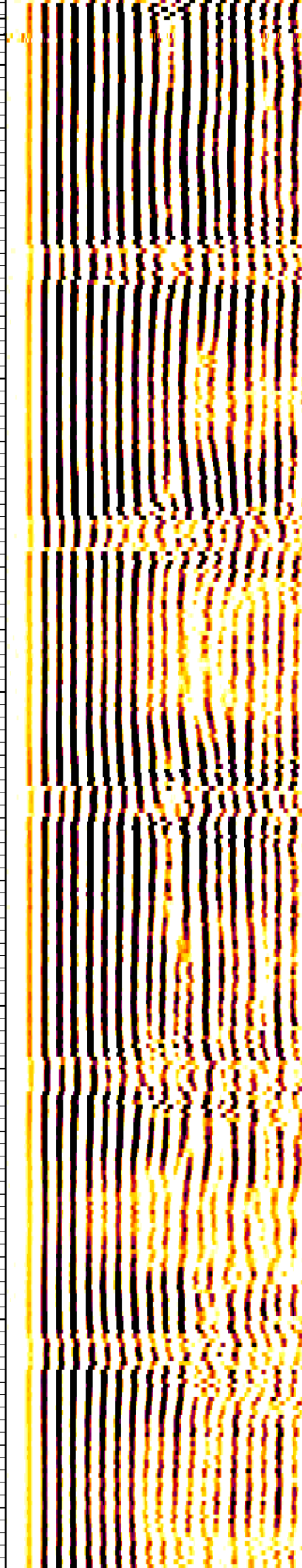
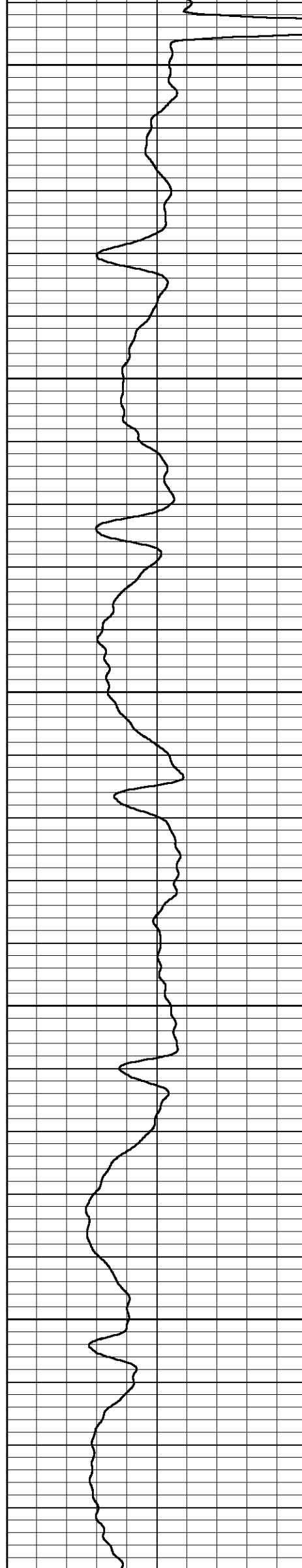


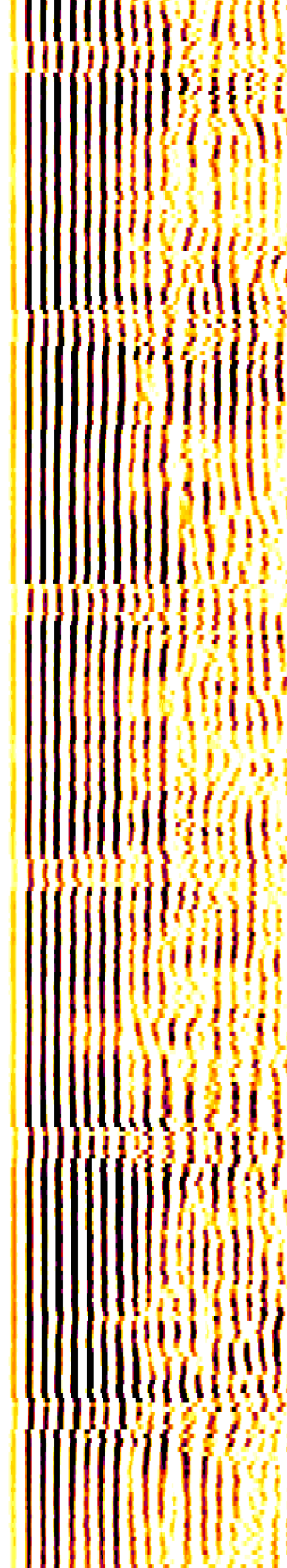
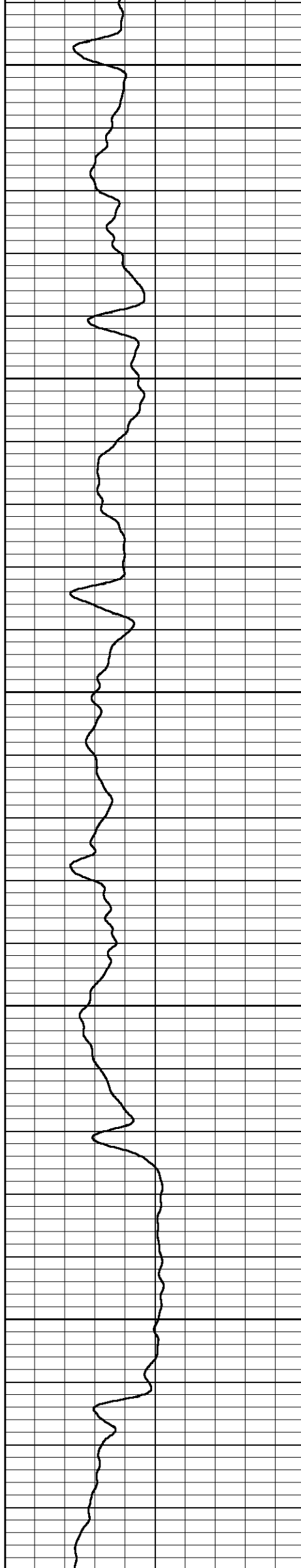
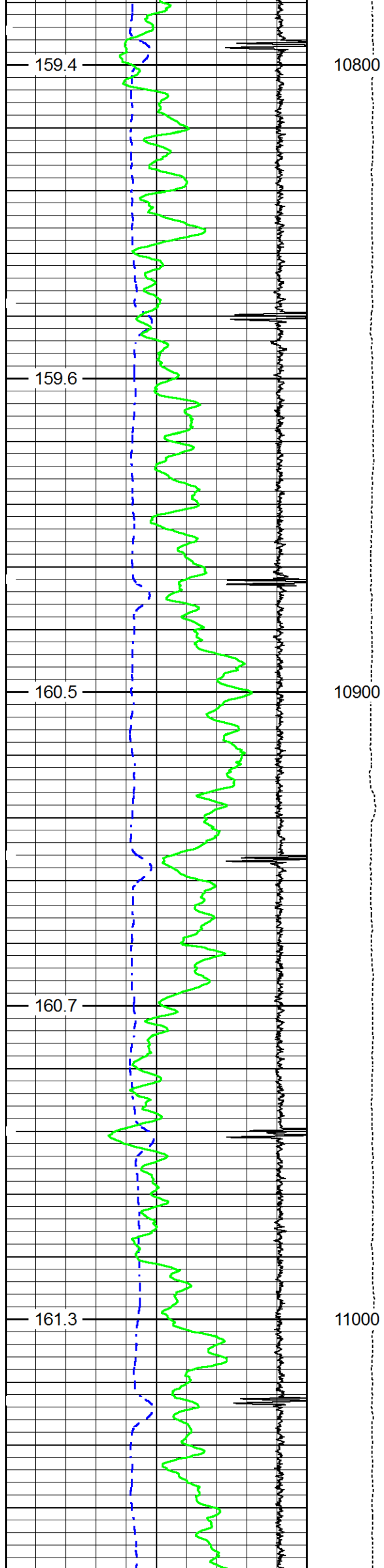


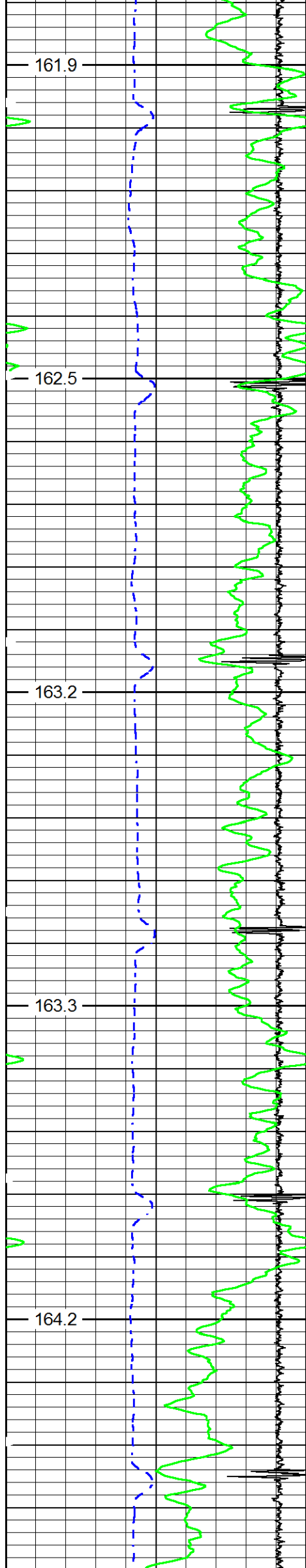


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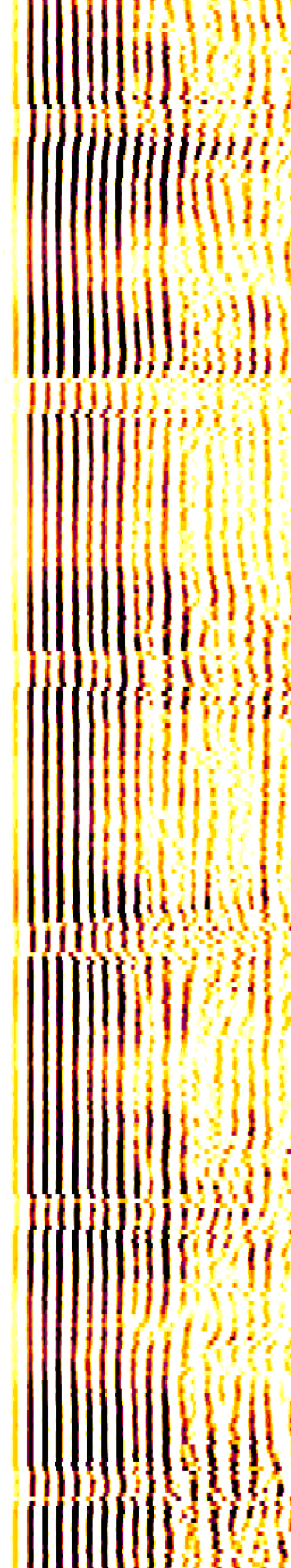
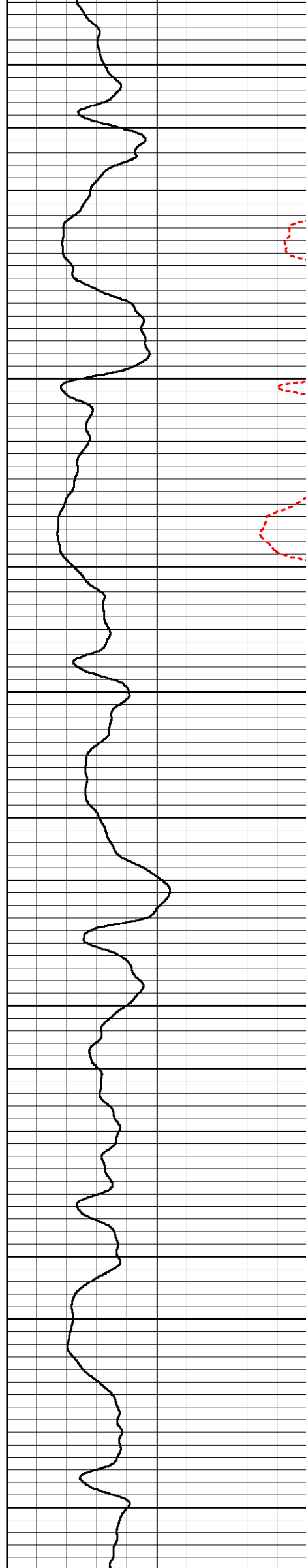


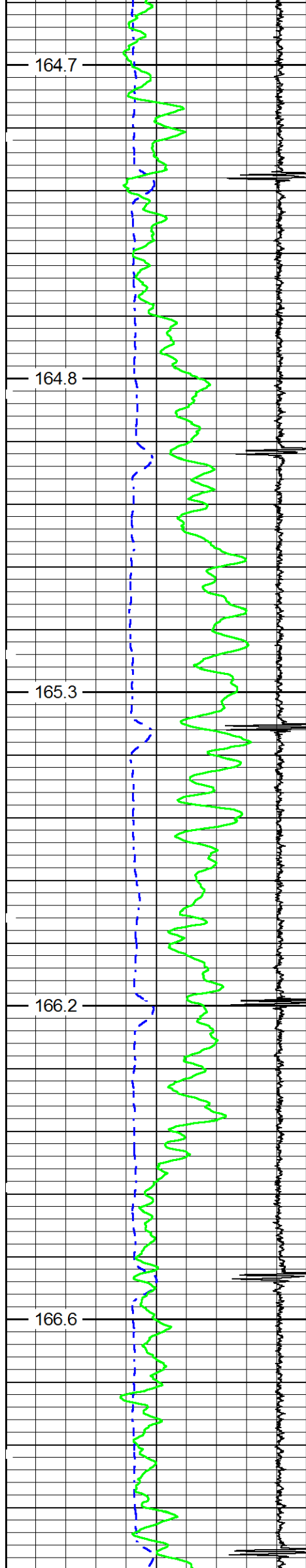




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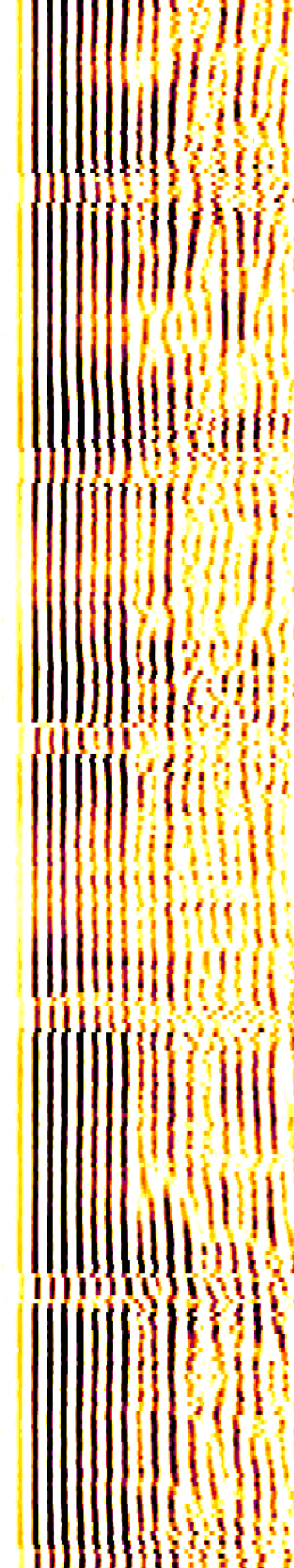


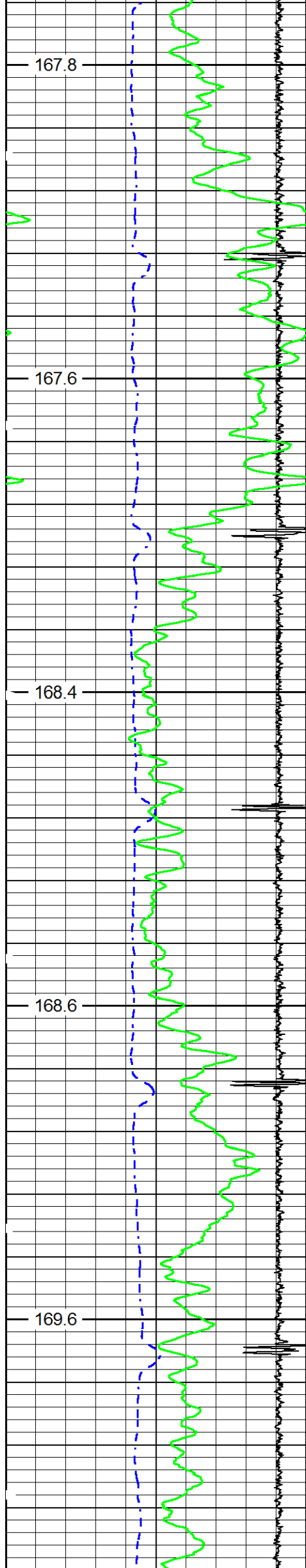


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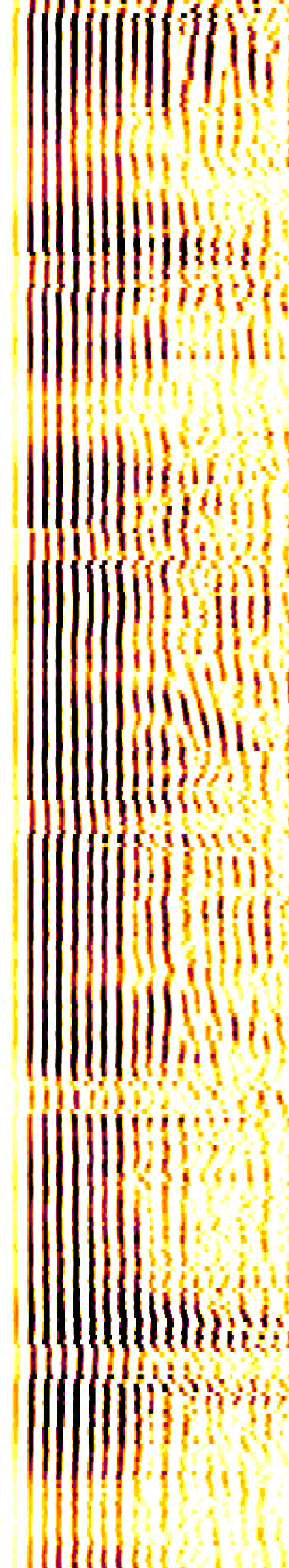
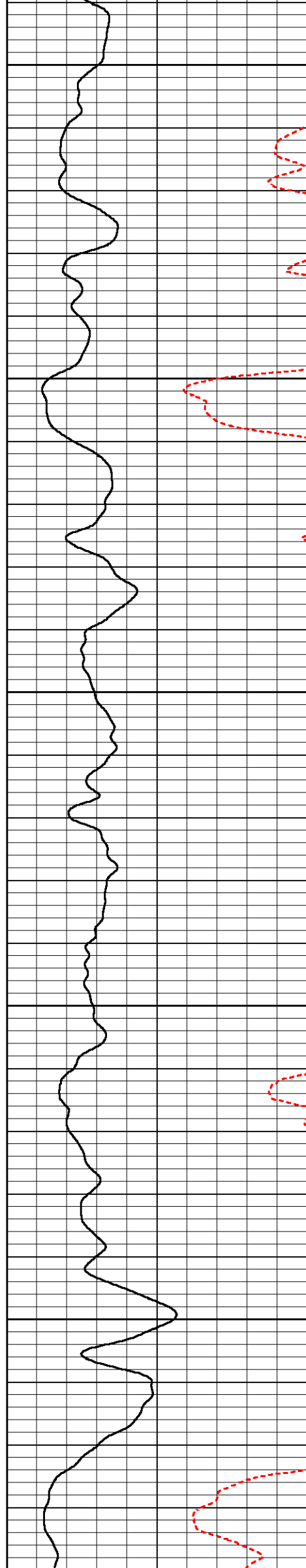
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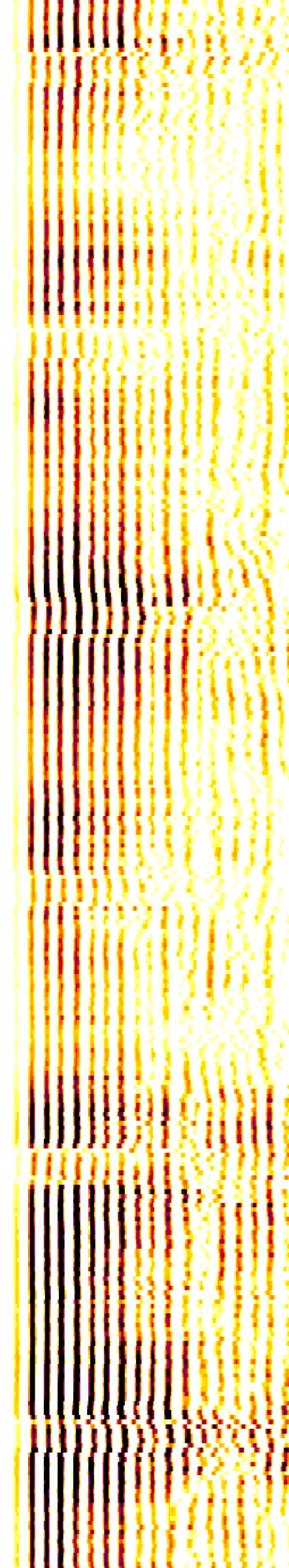
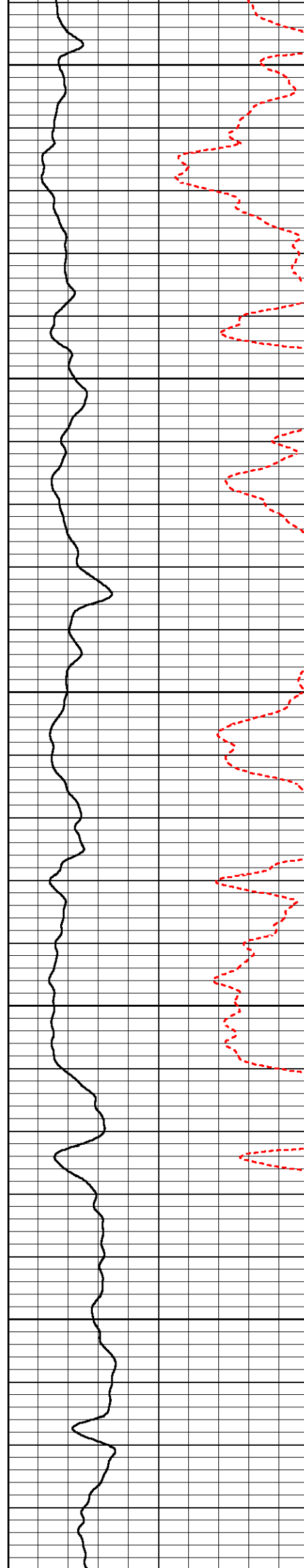
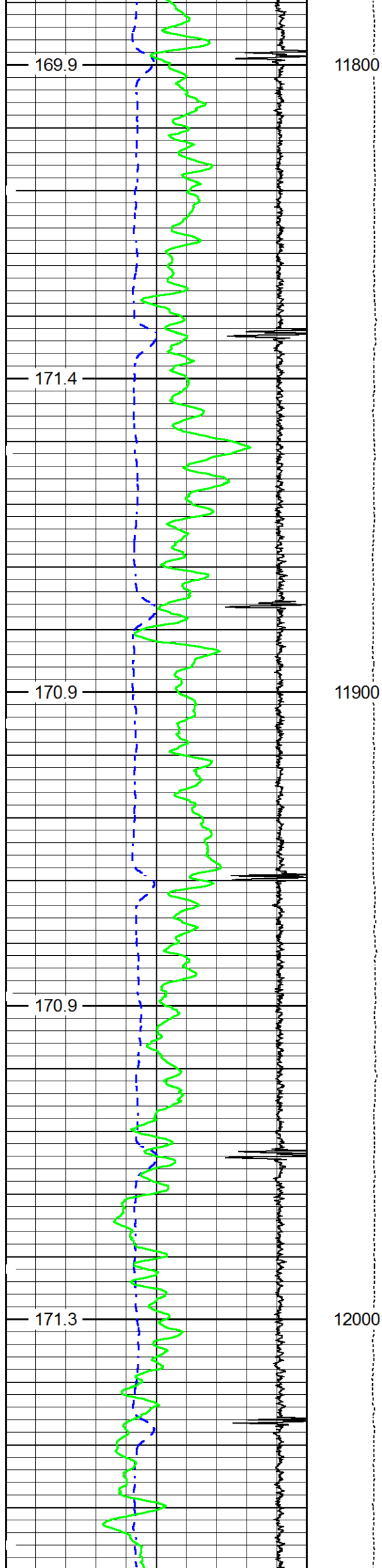


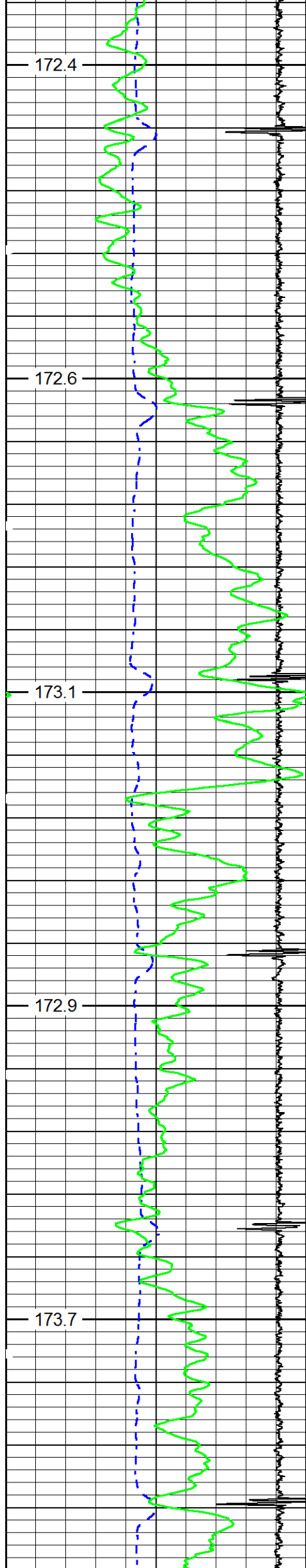


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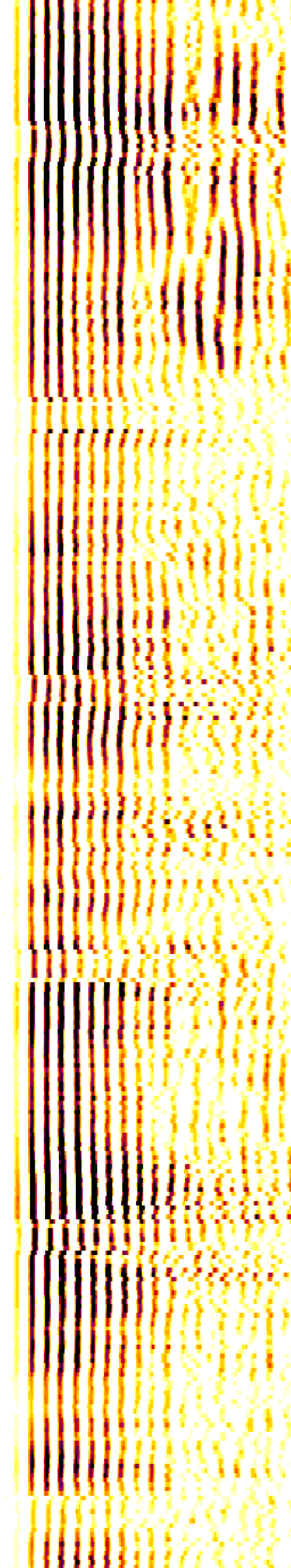
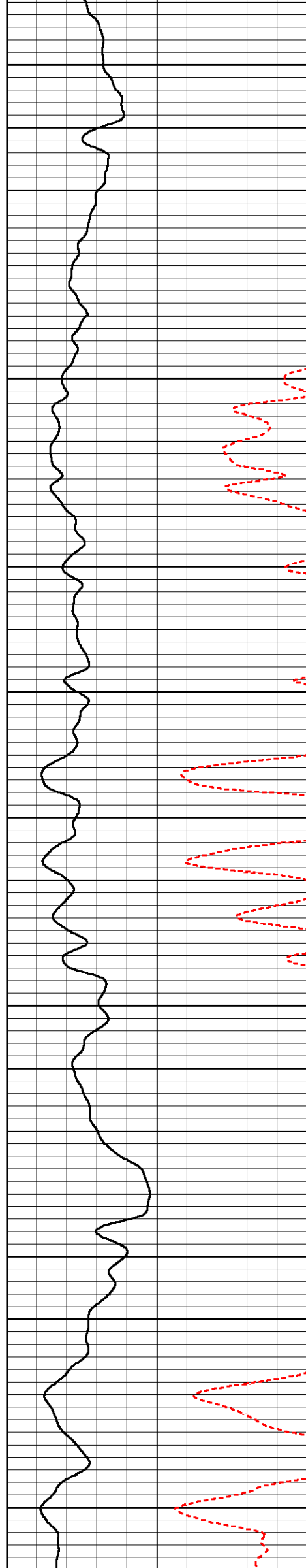


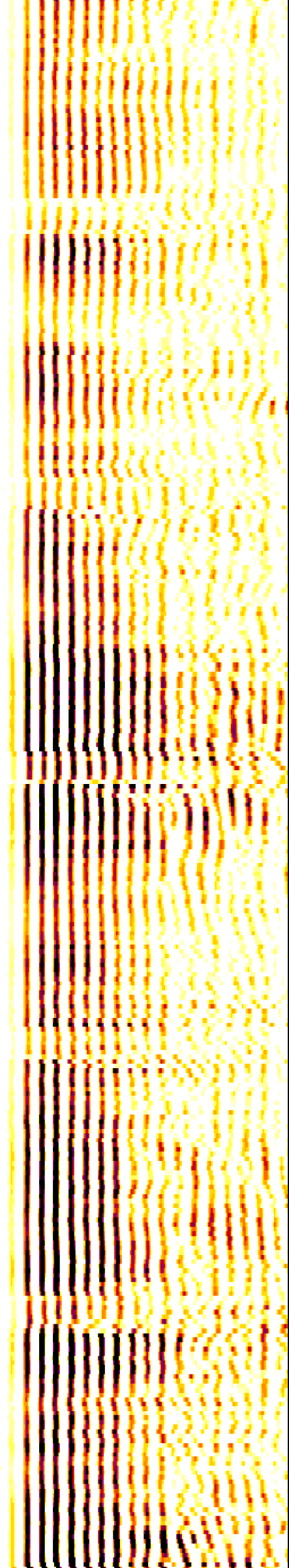
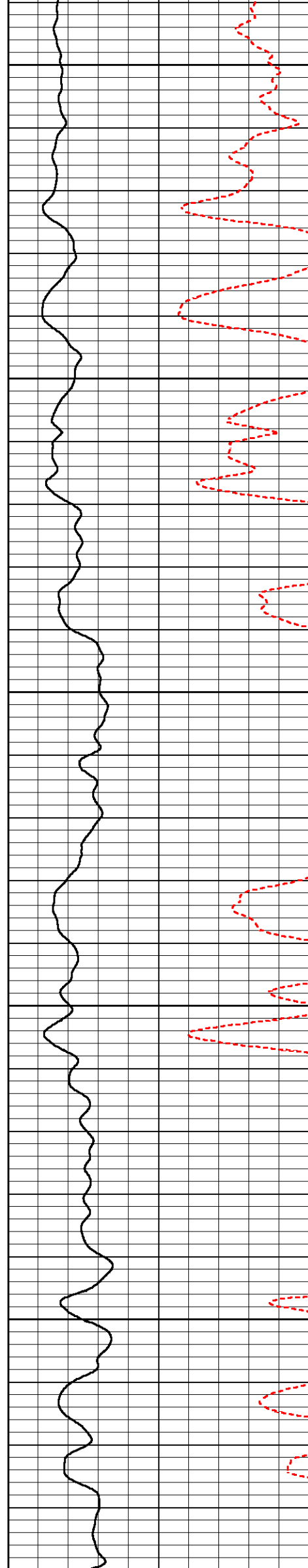
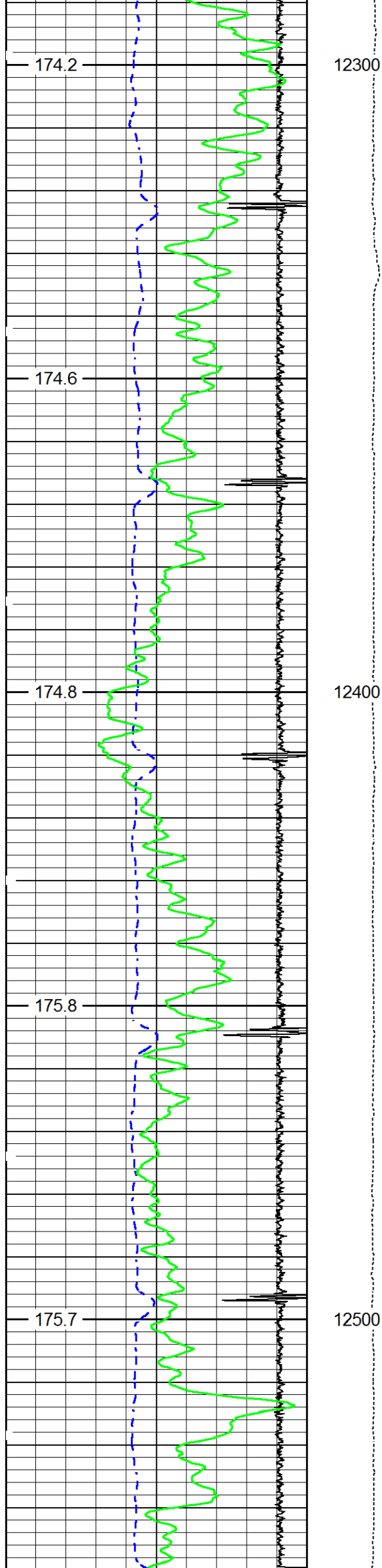


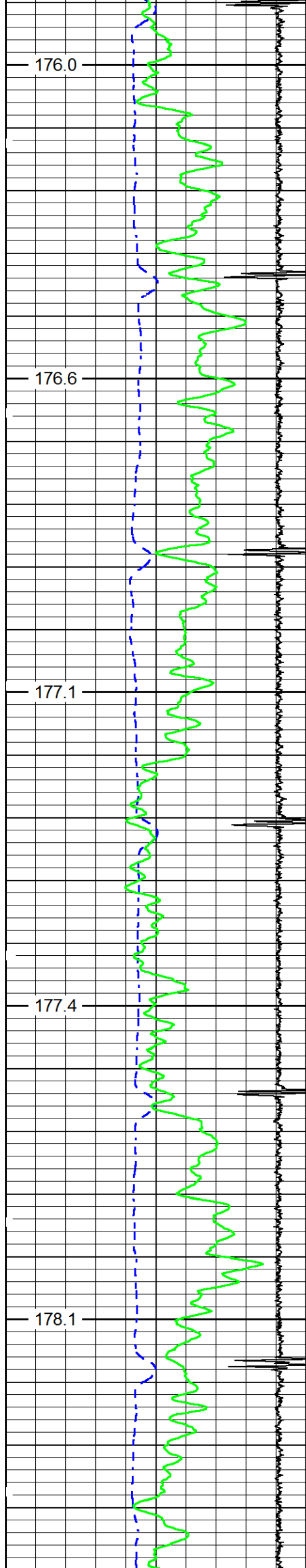


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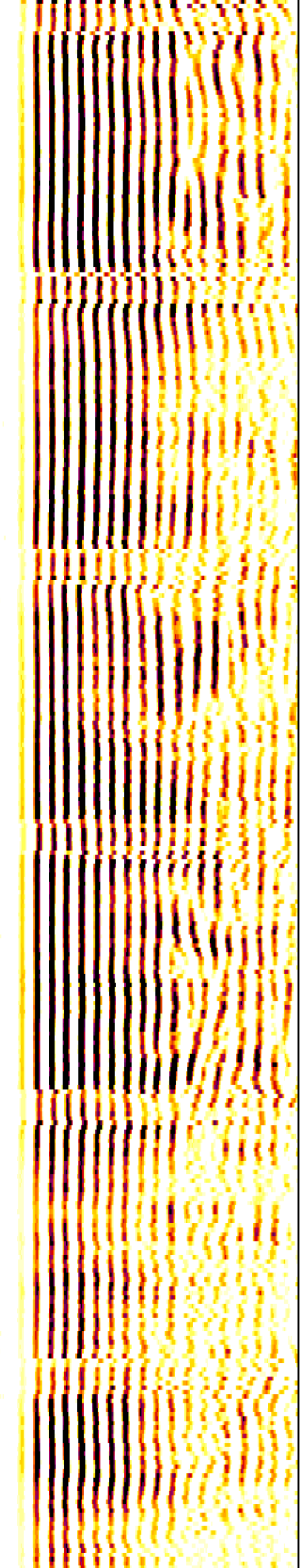
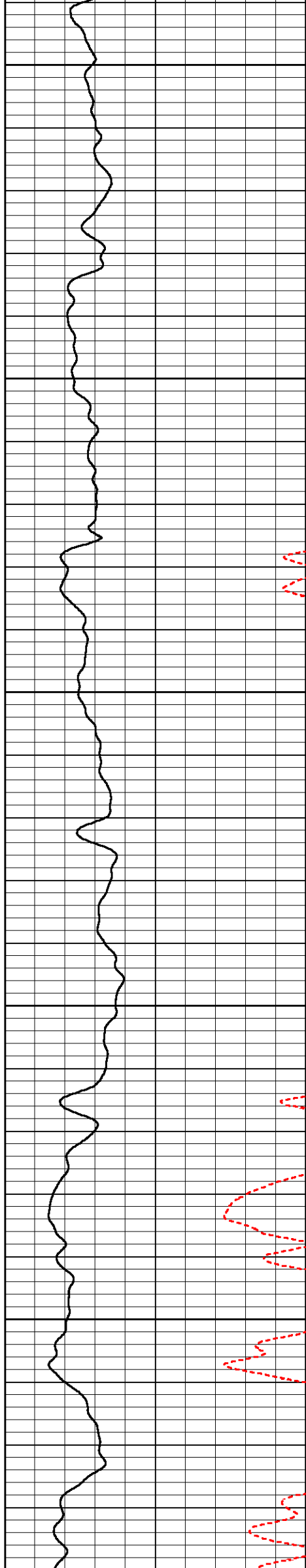


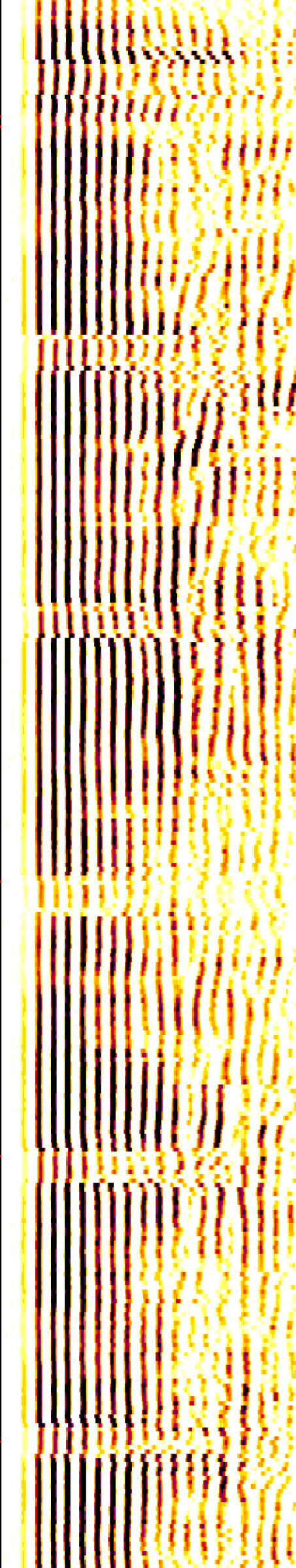
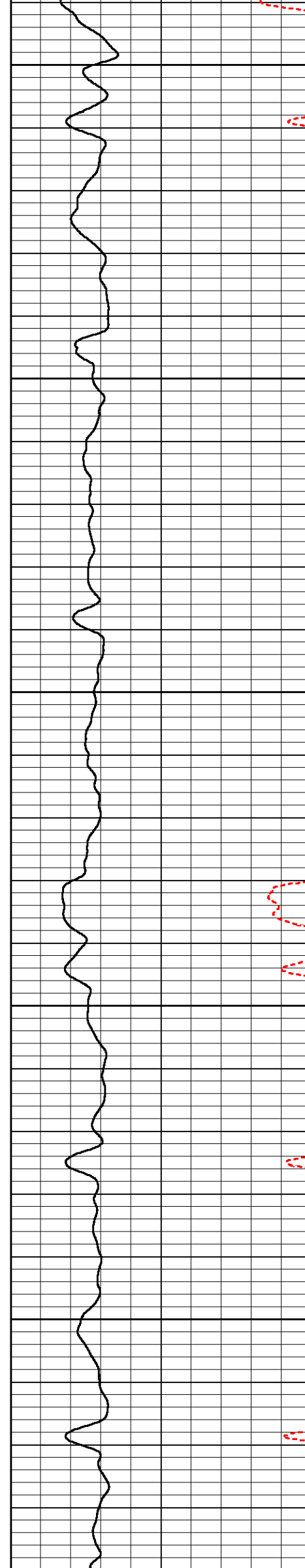
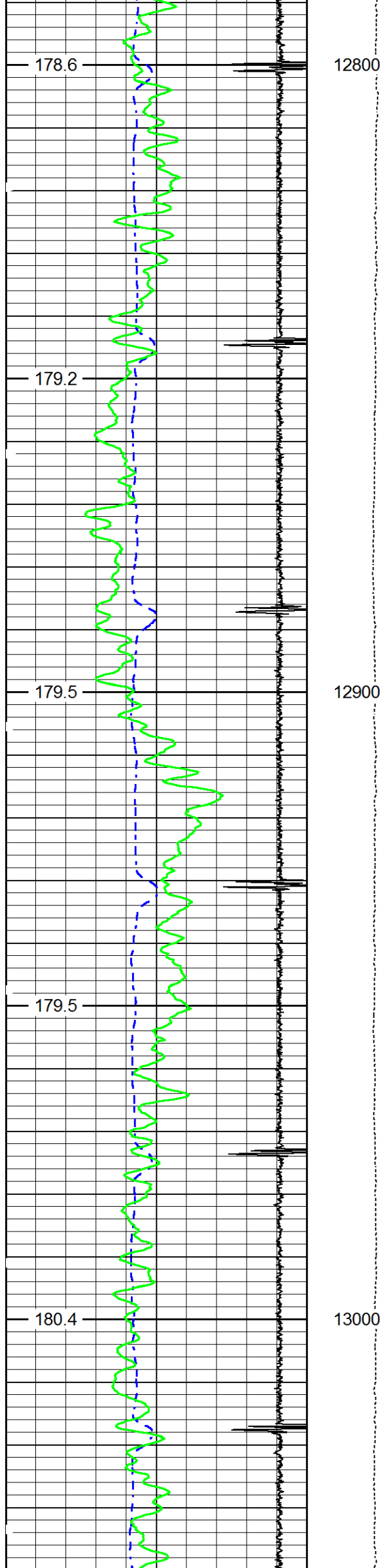


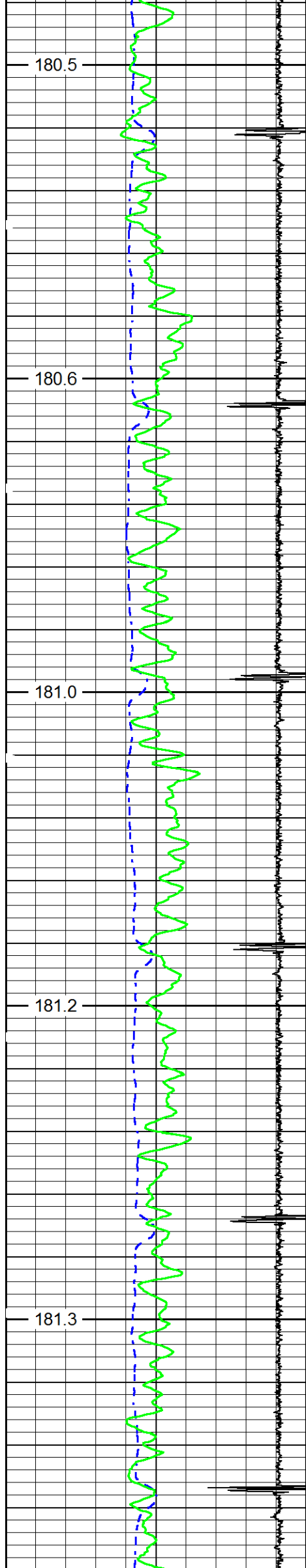


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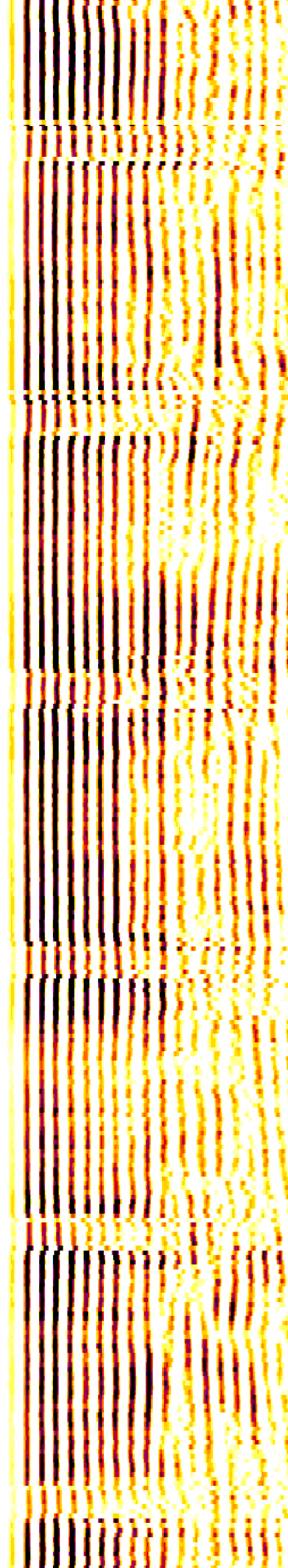
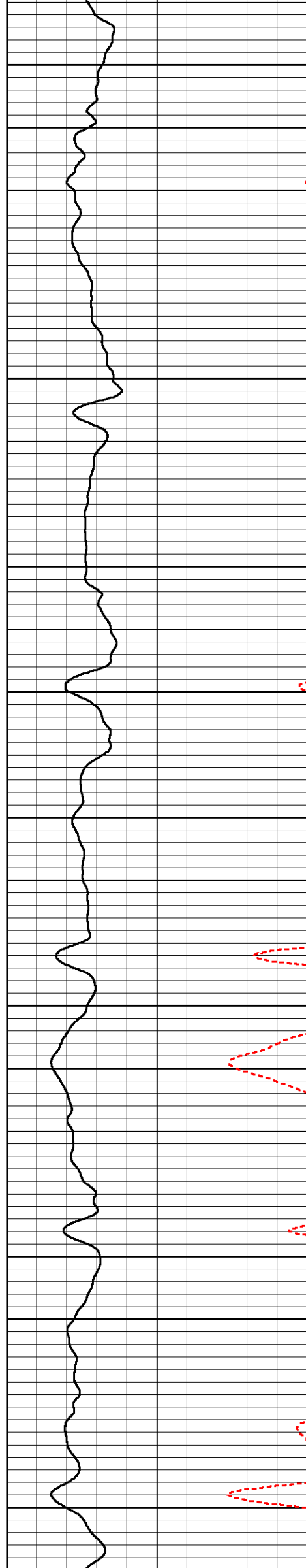


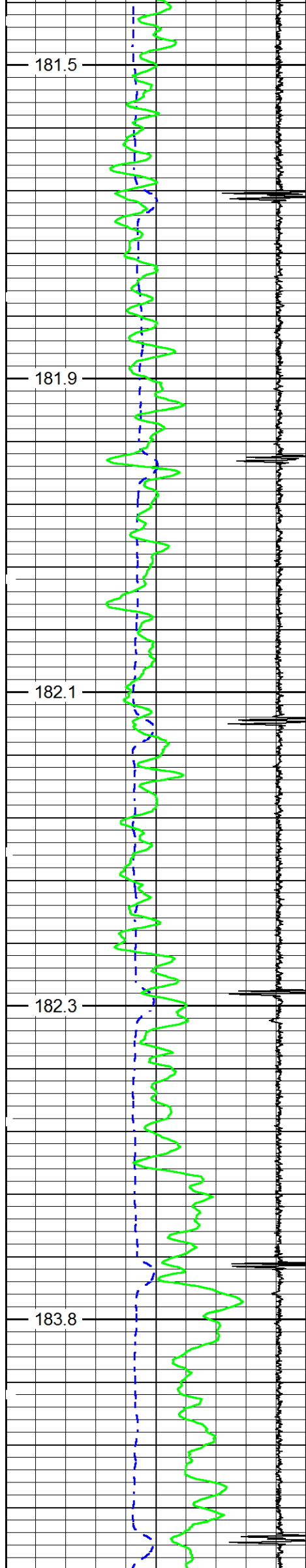




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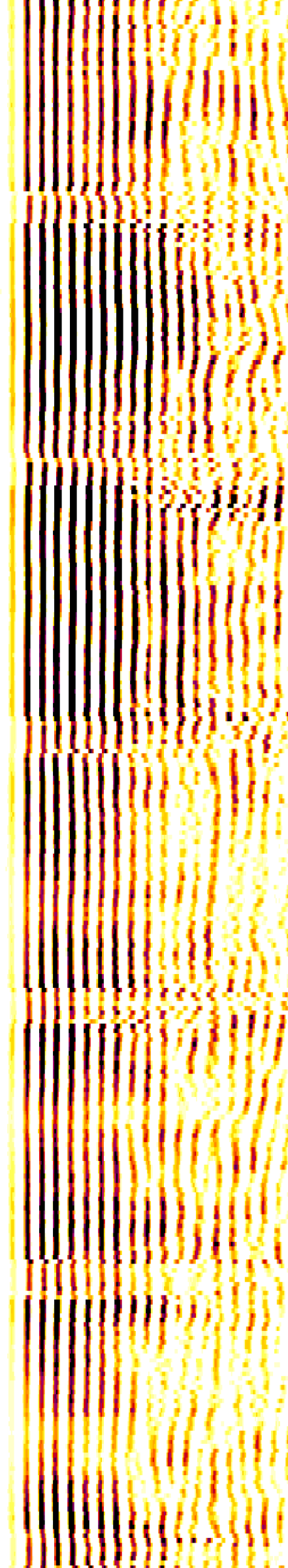
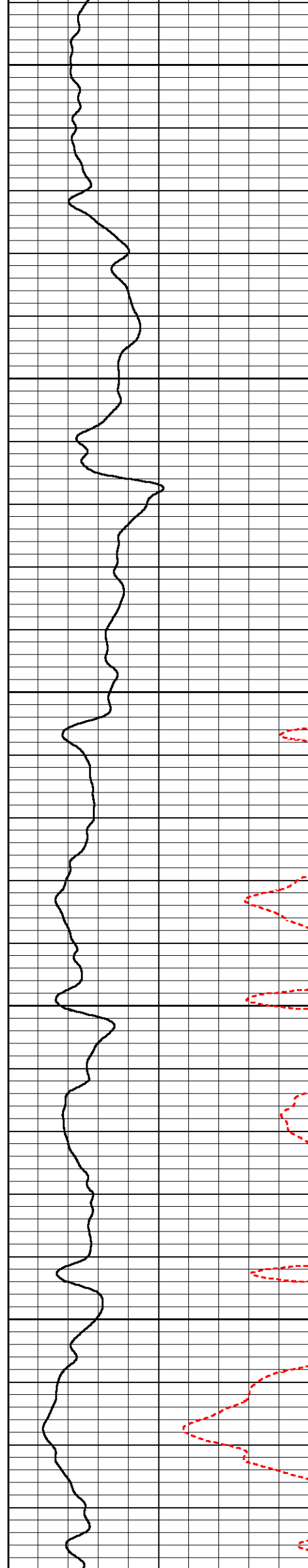


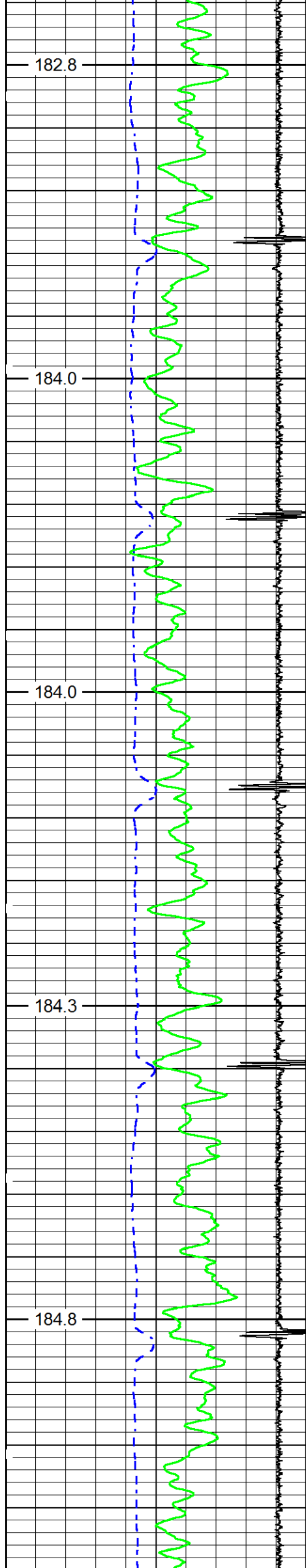


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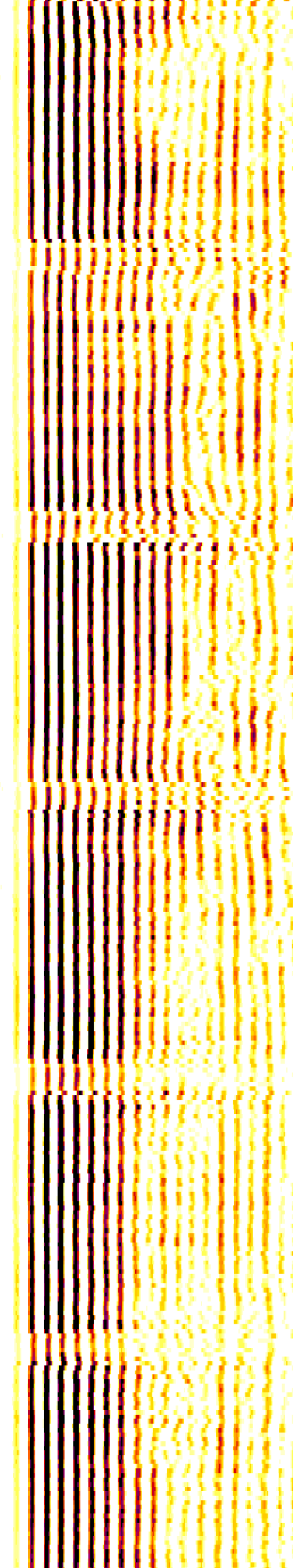
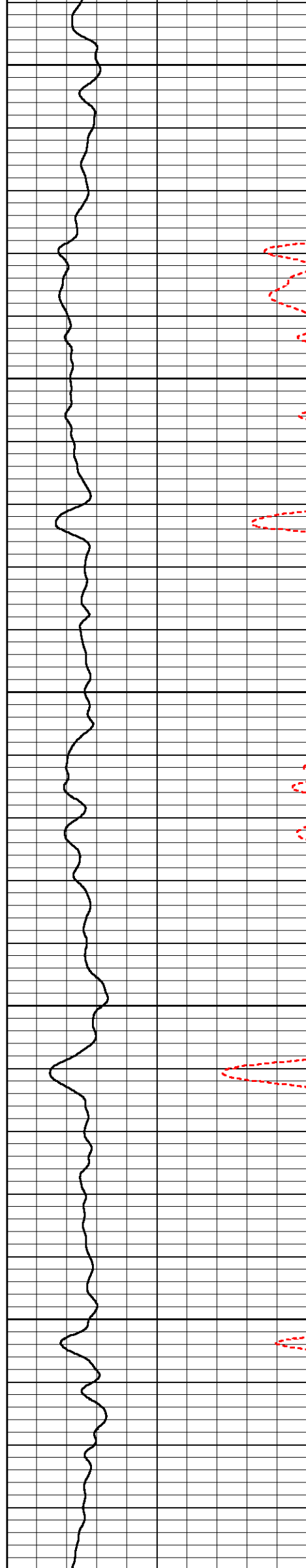
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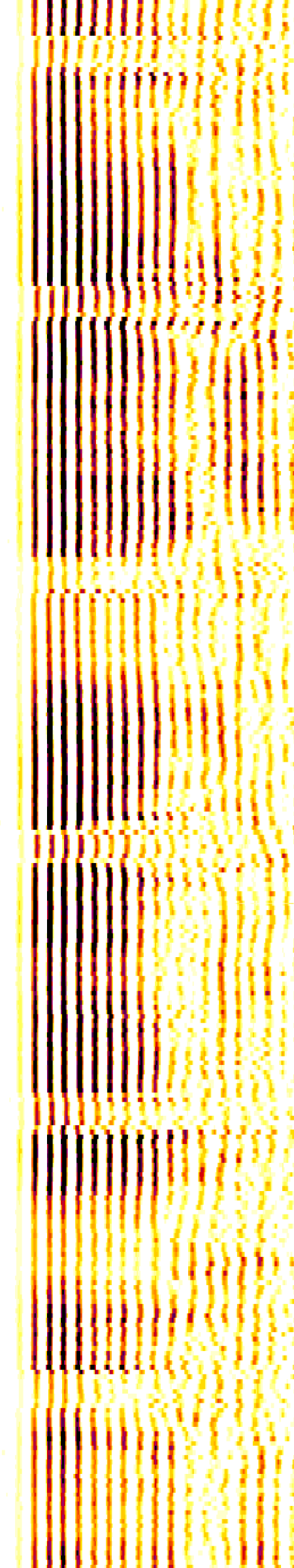
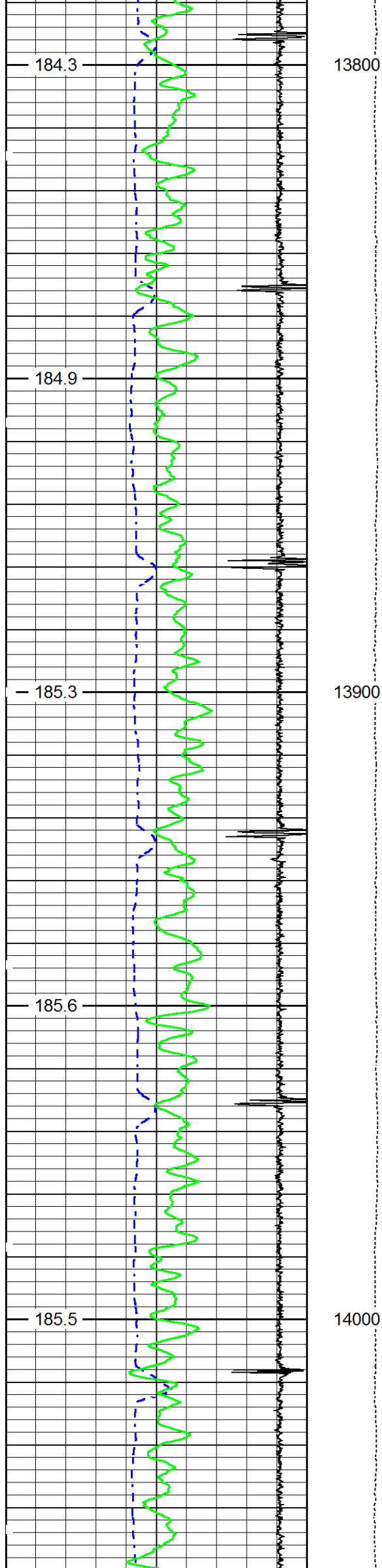


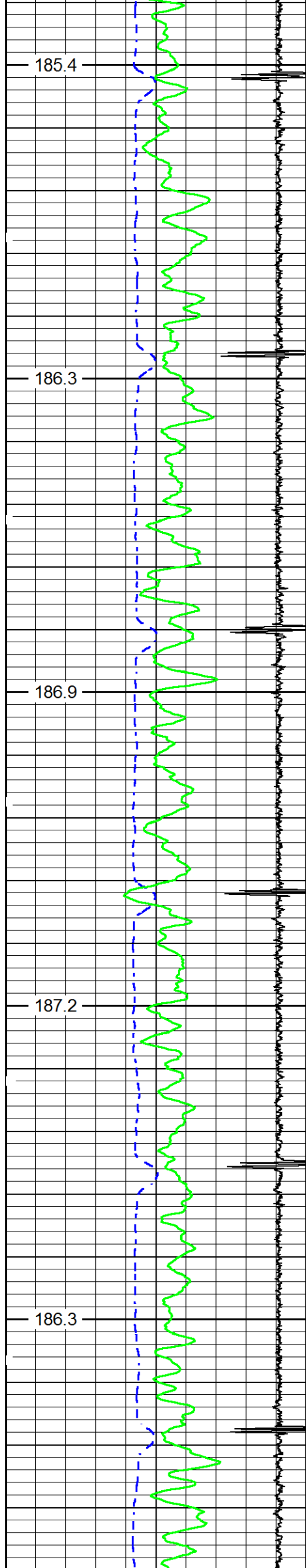


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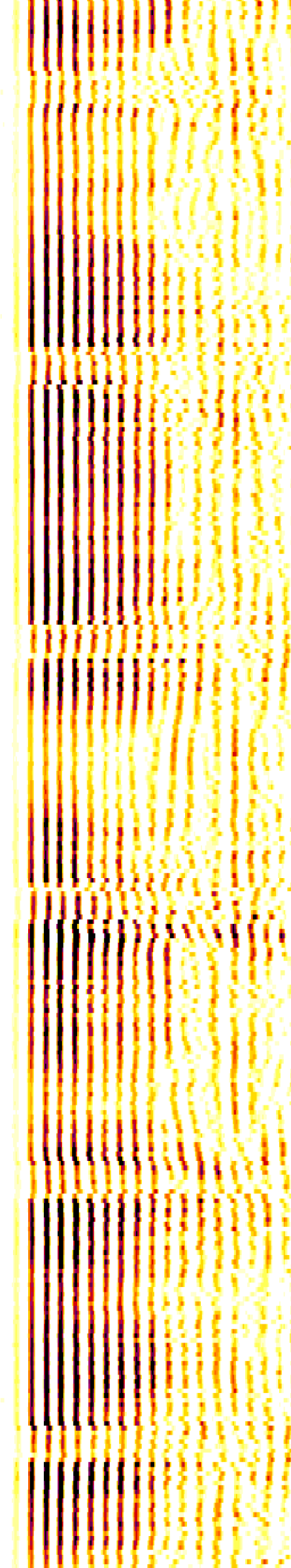
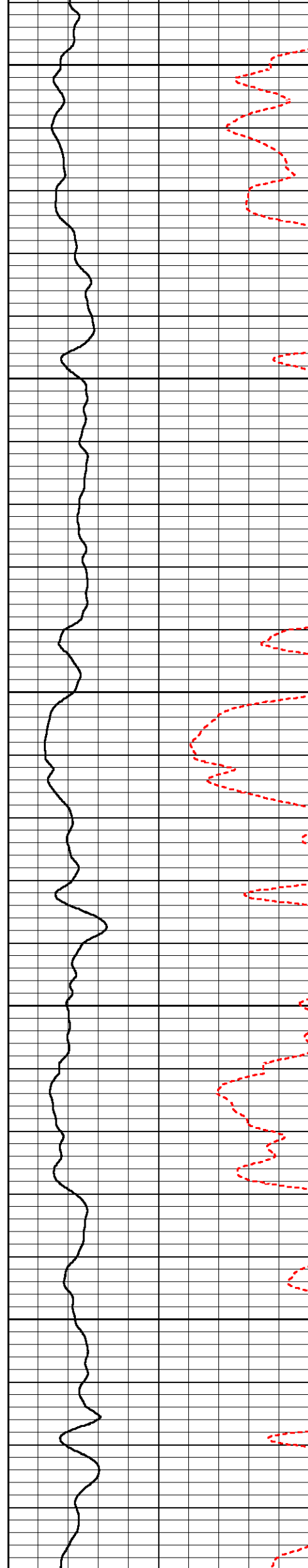


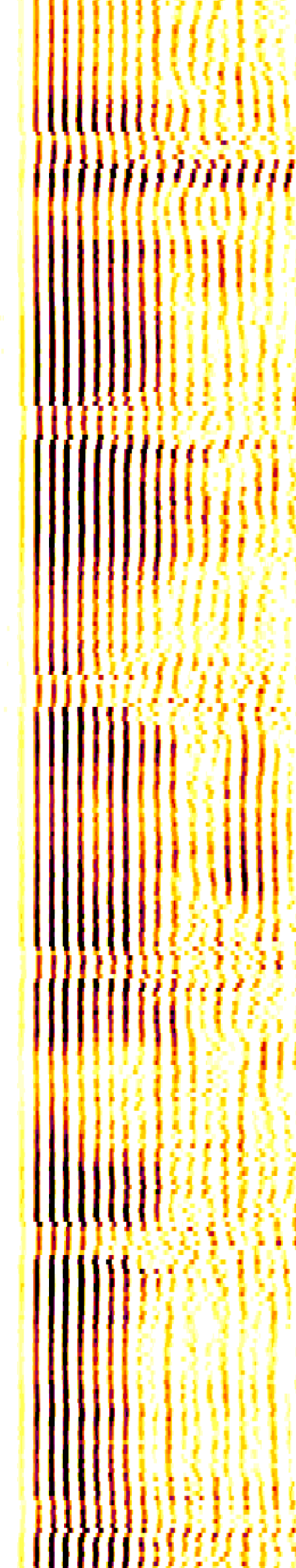
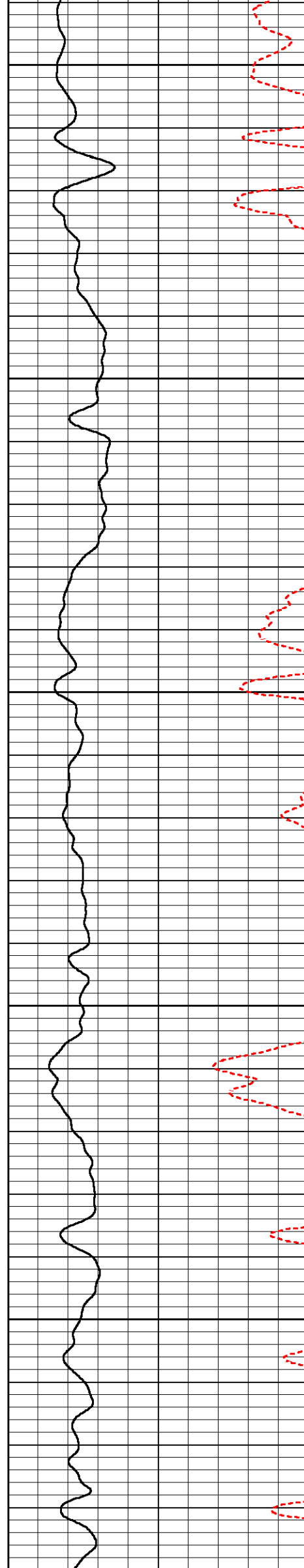
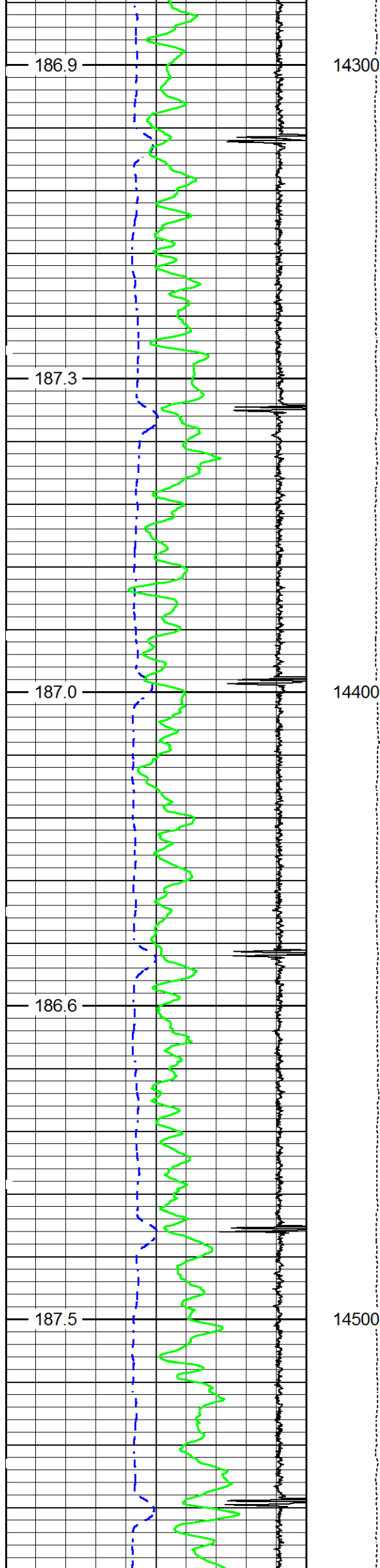


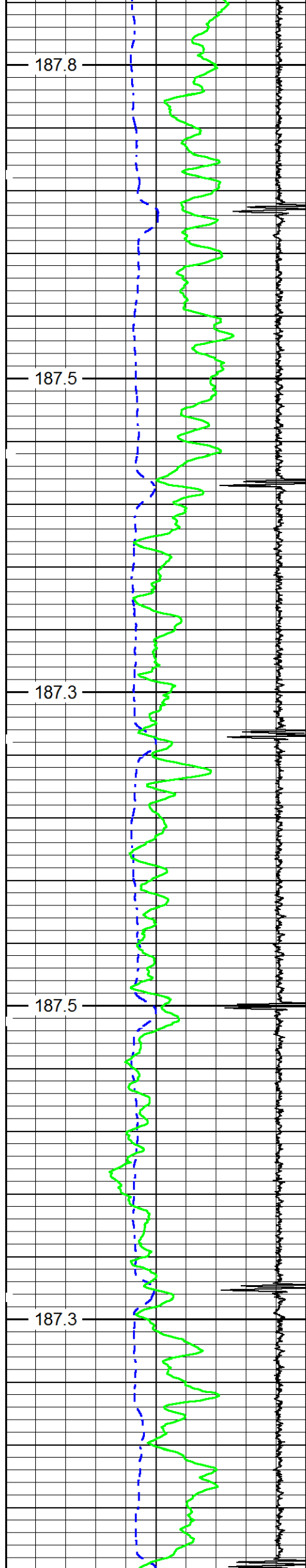


14100

14200

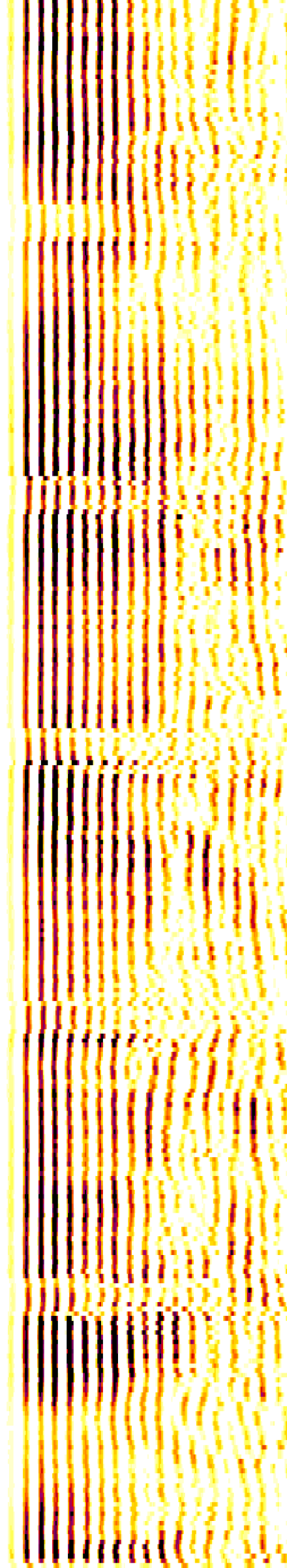
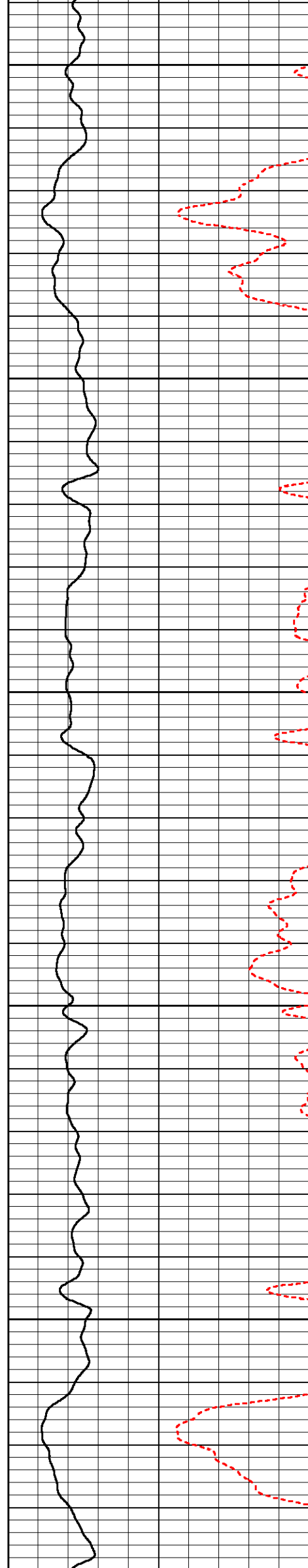


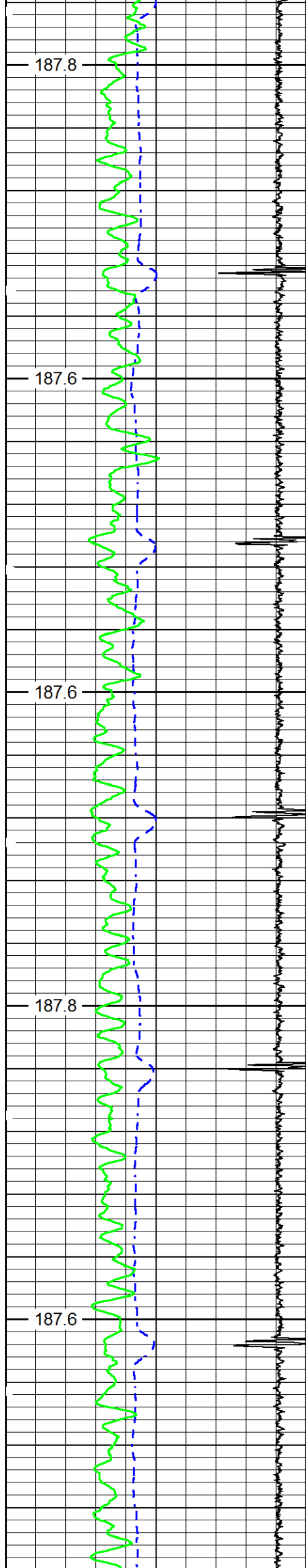




14600

14700

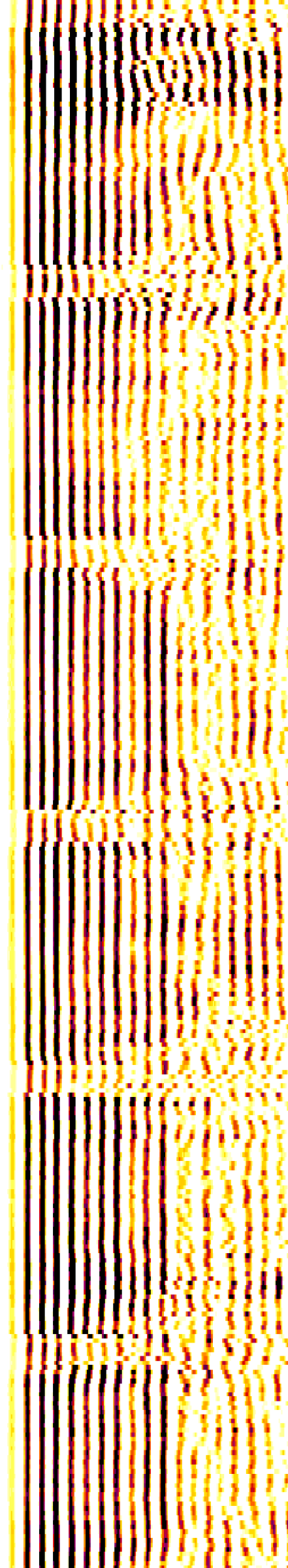
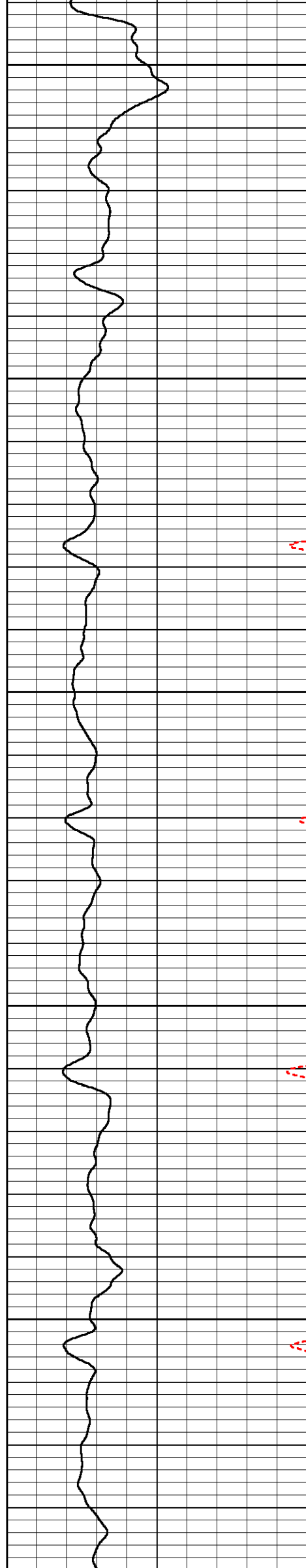


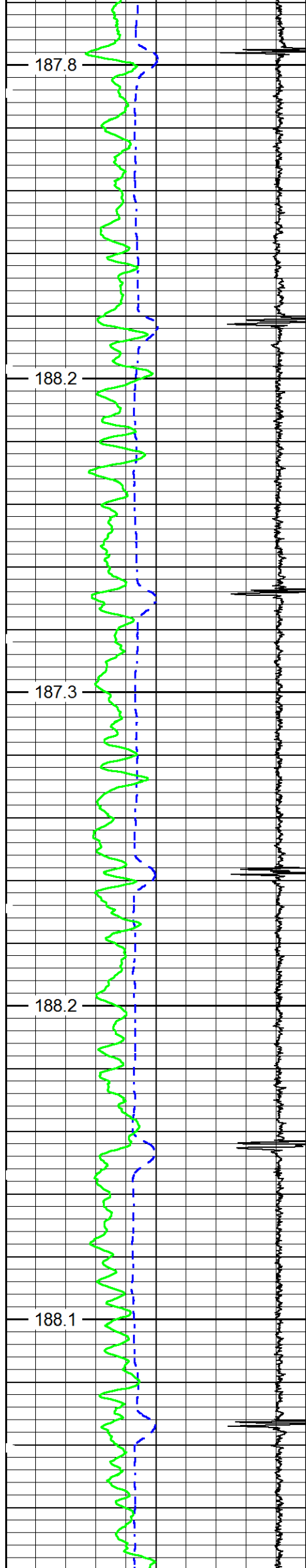


14800

14900

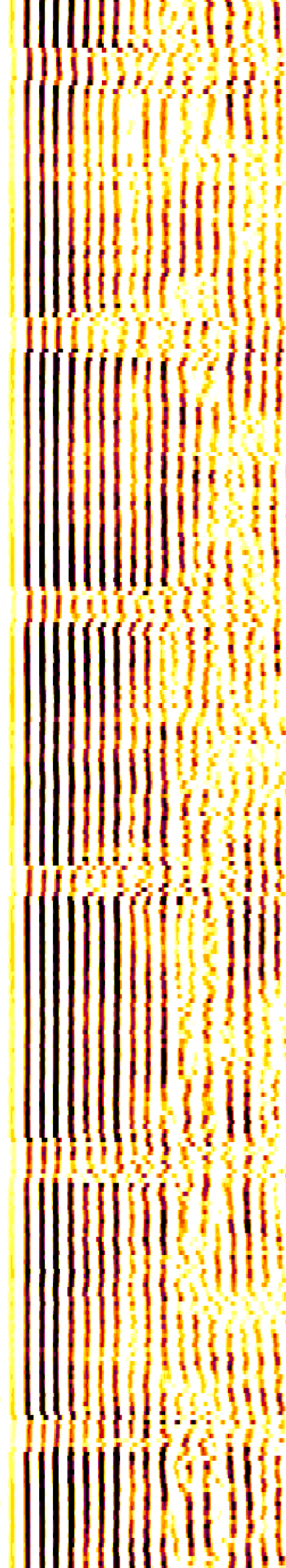
15000

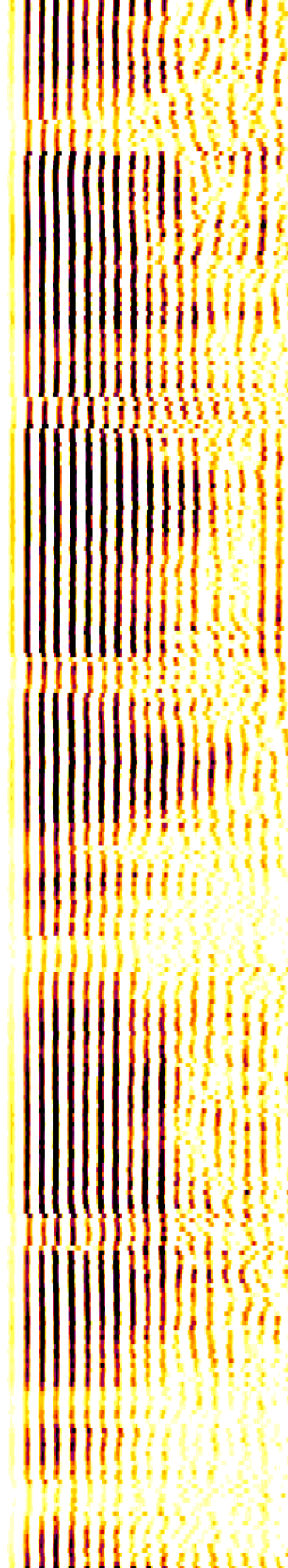
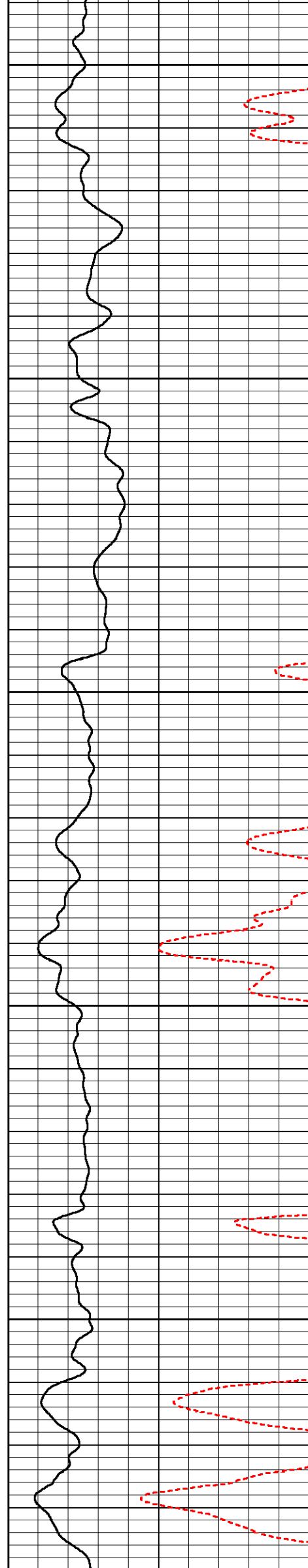
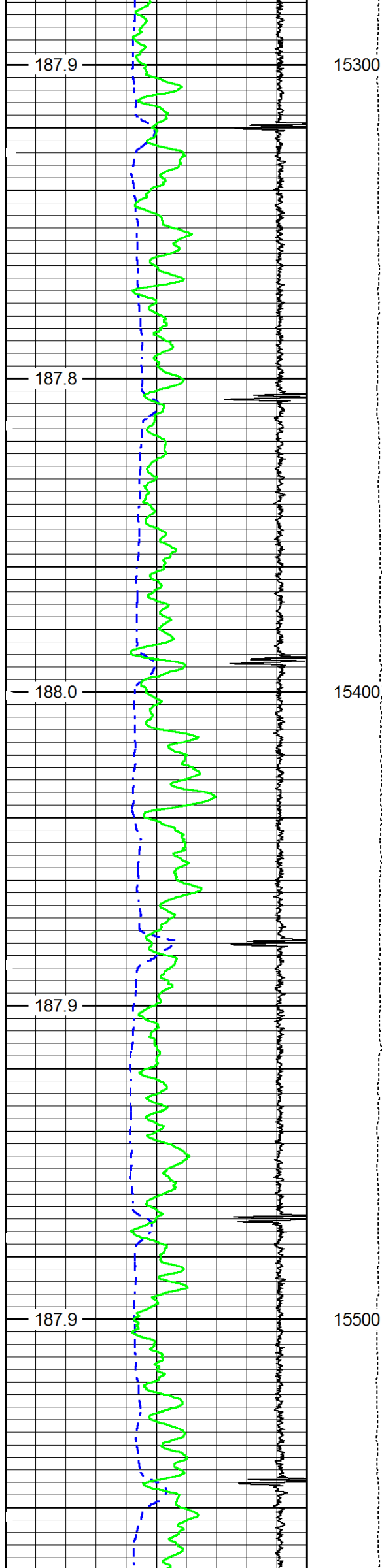


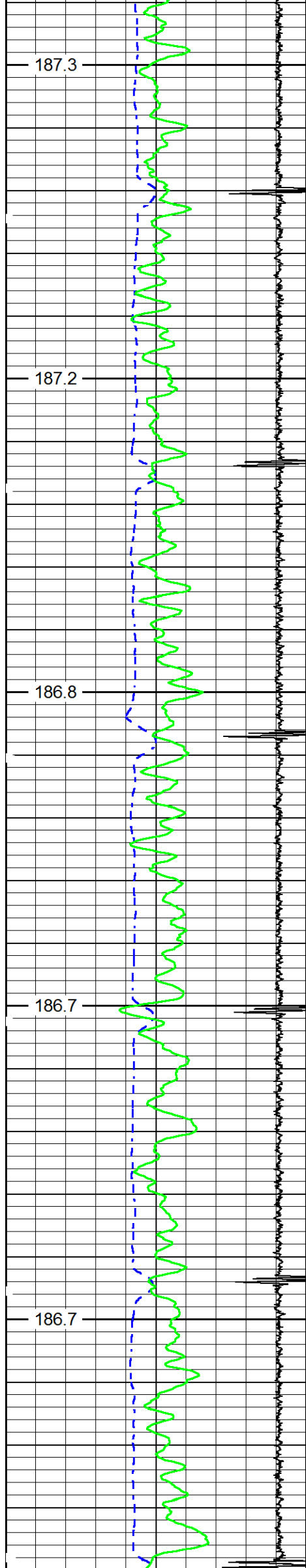


15100

15200

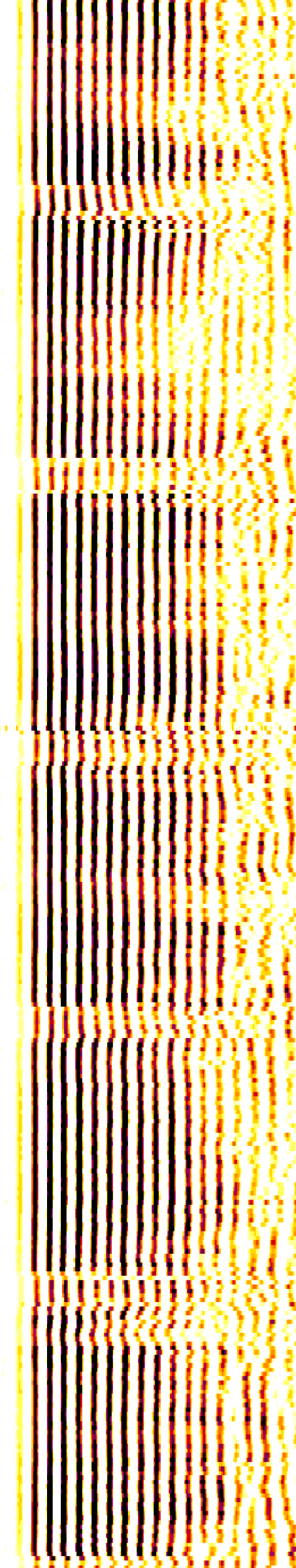
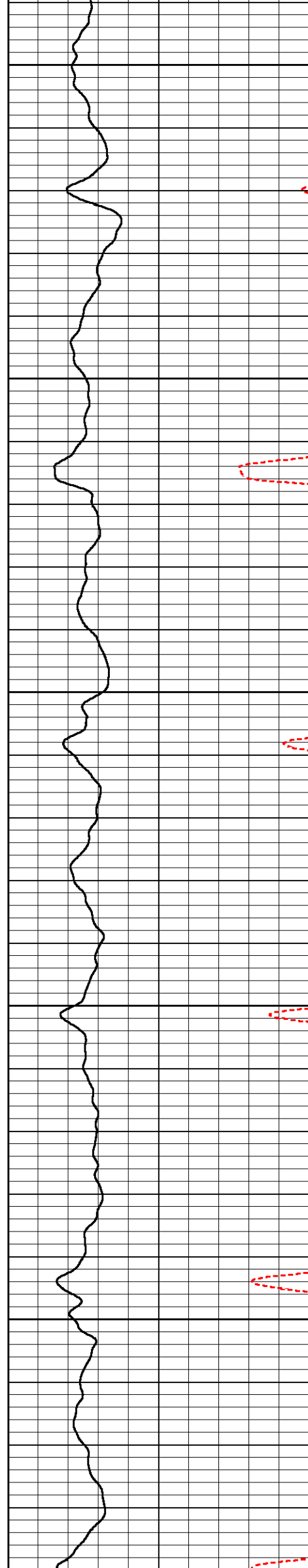


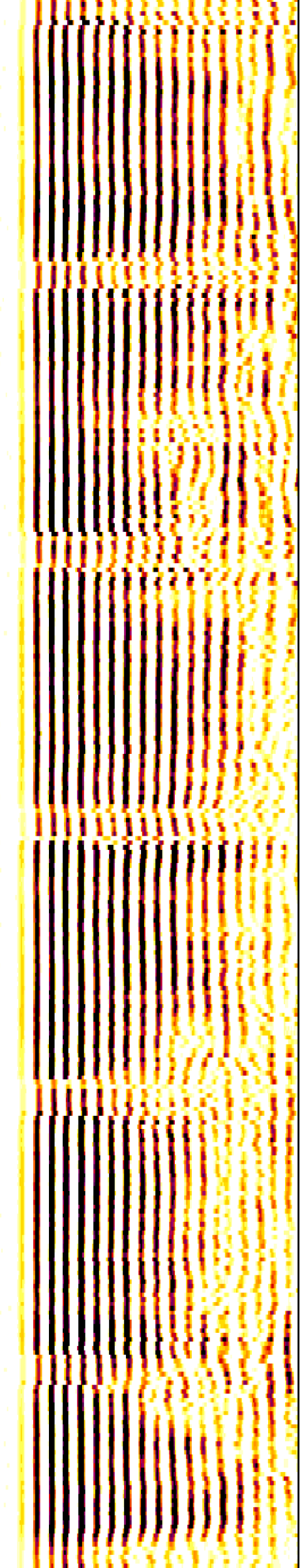
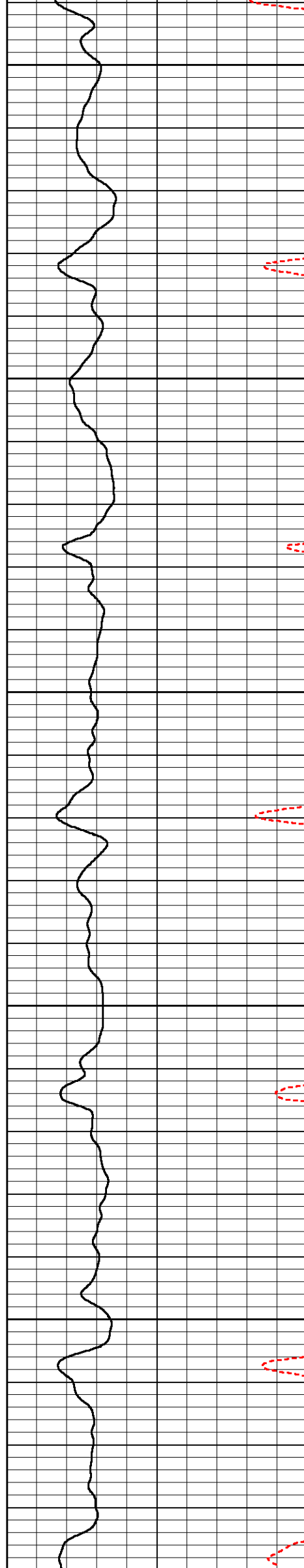
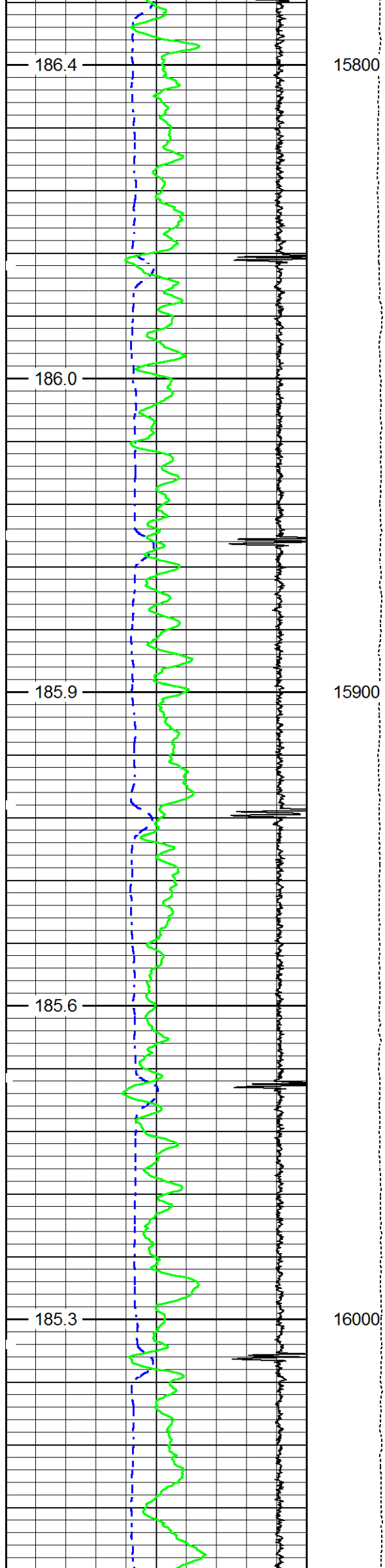


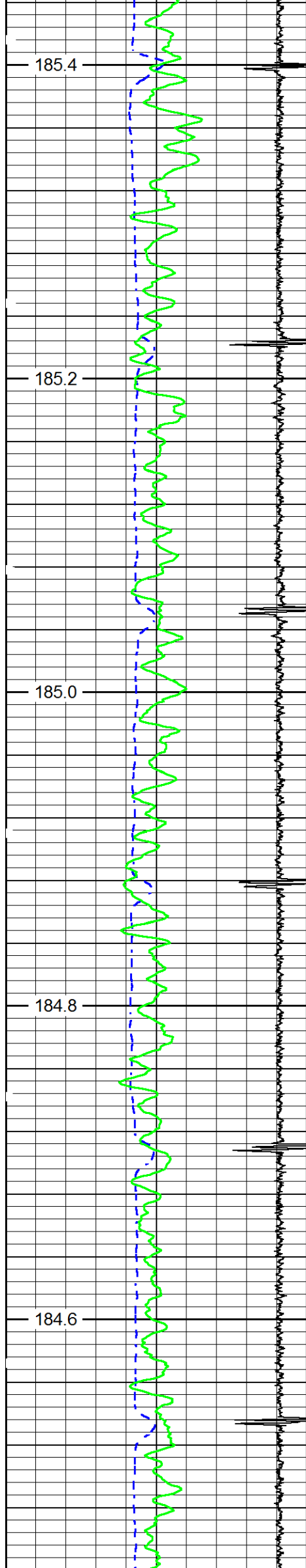


15600

15700

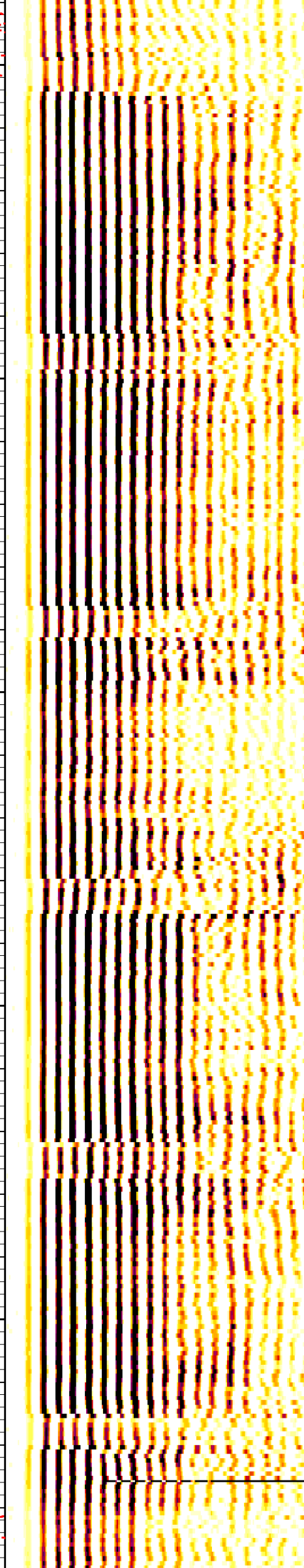
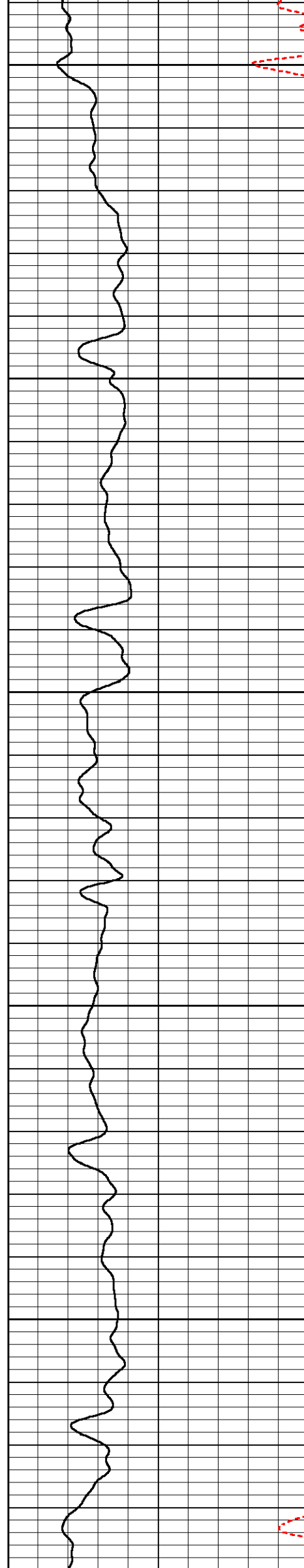


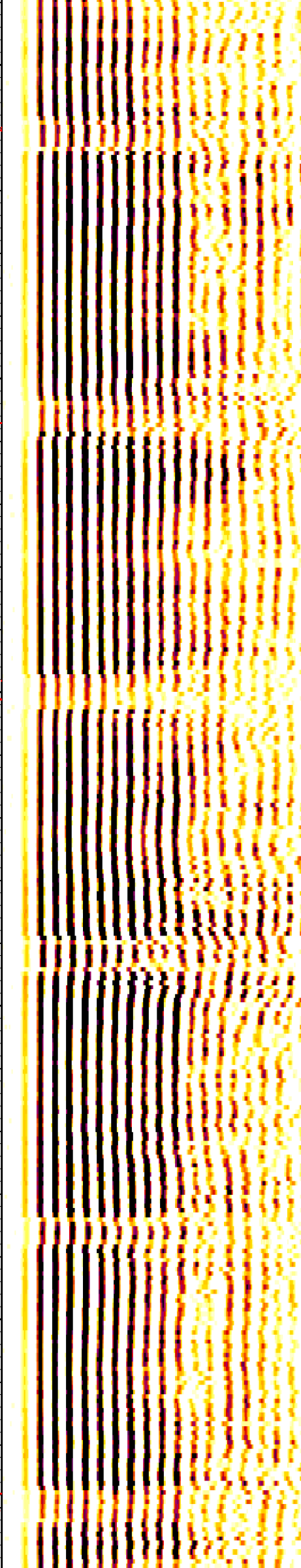
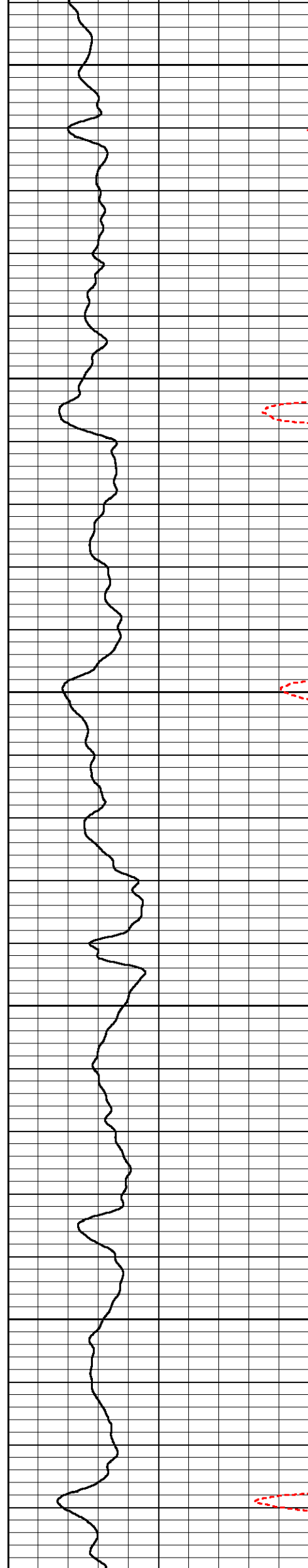
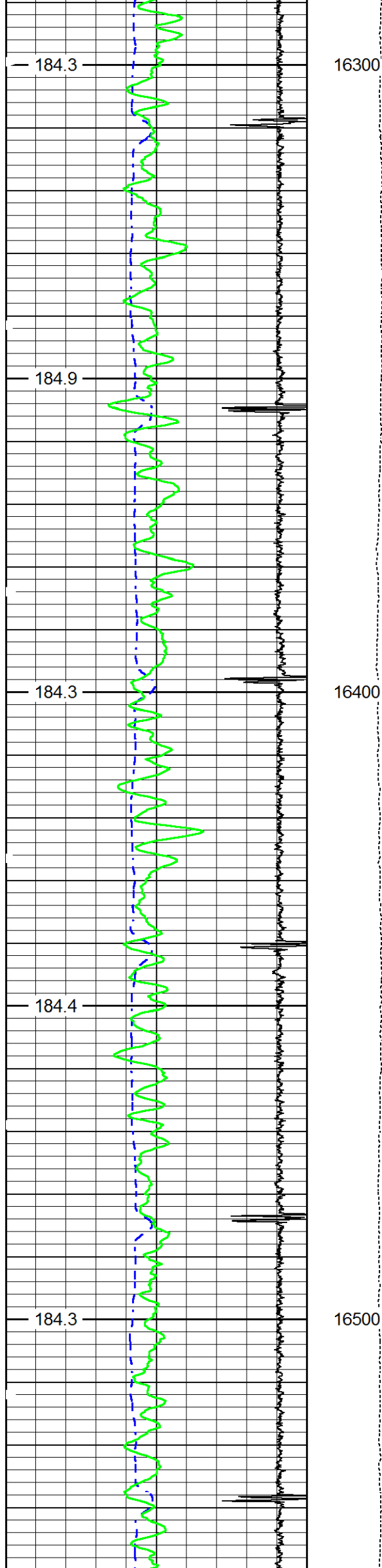


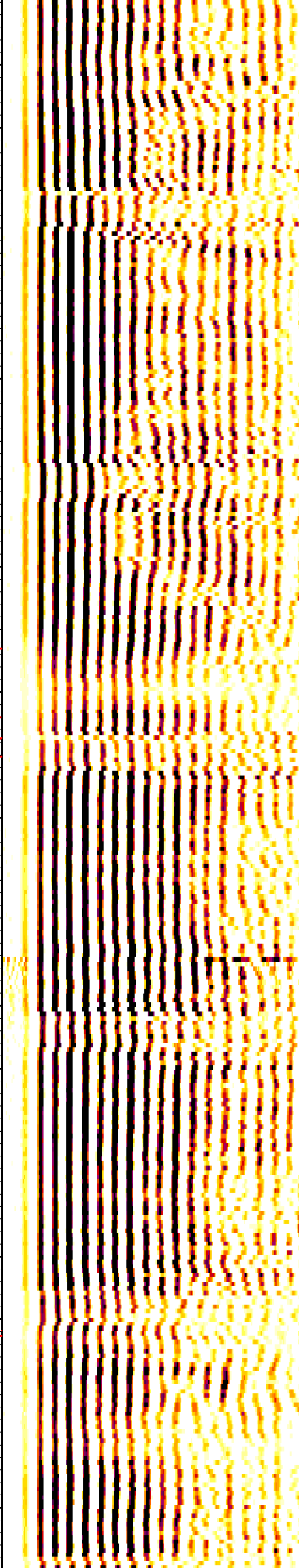
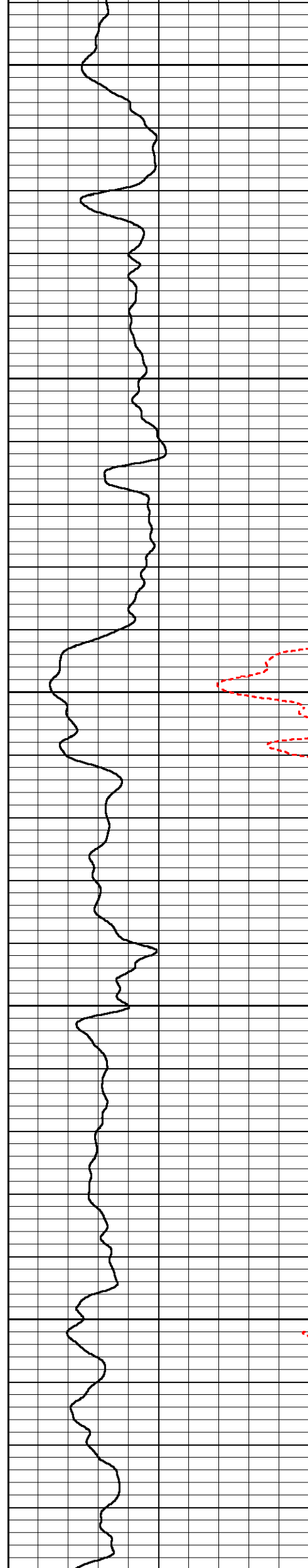
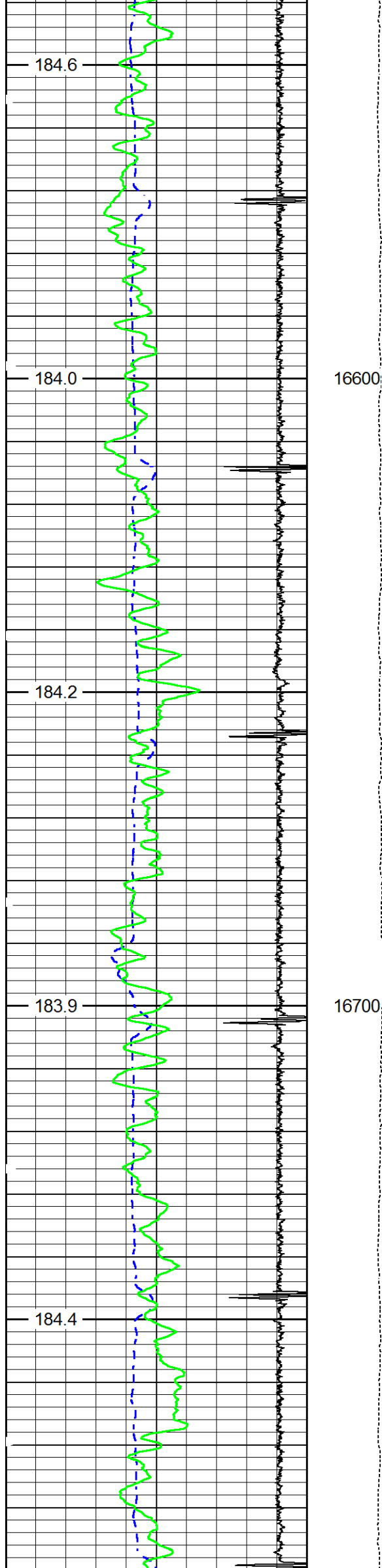


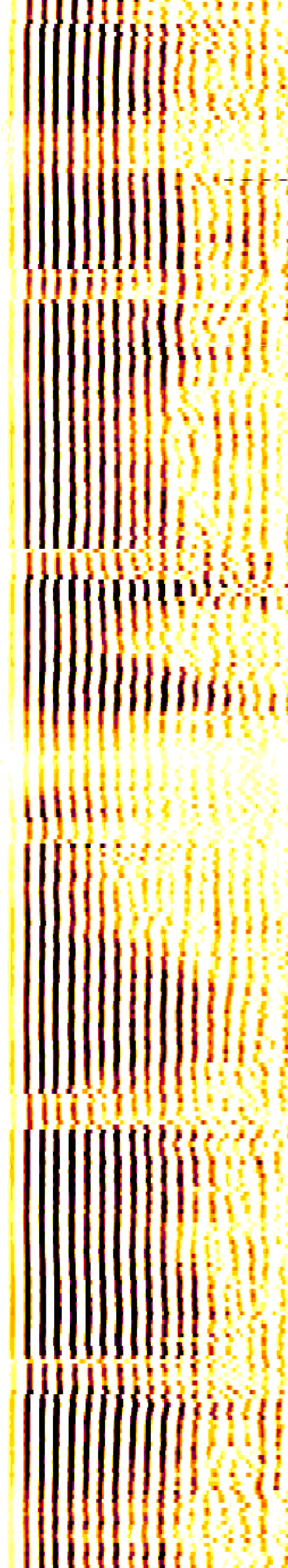
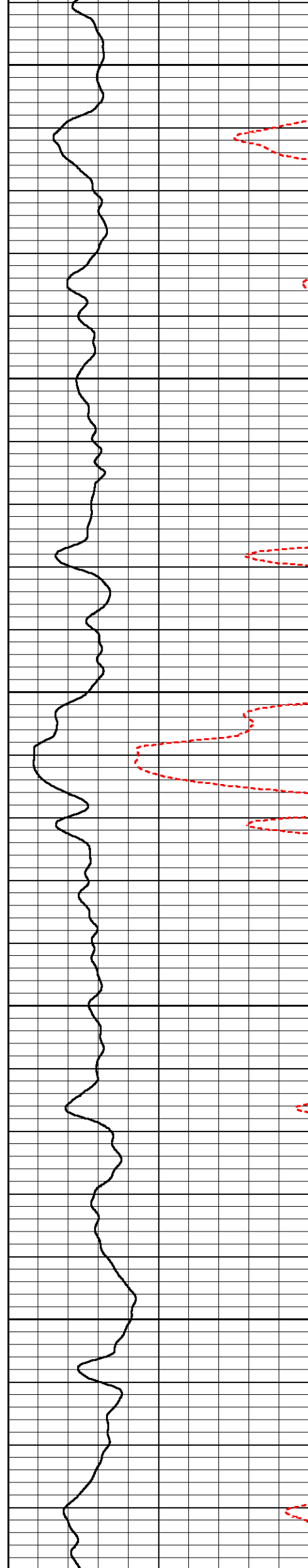
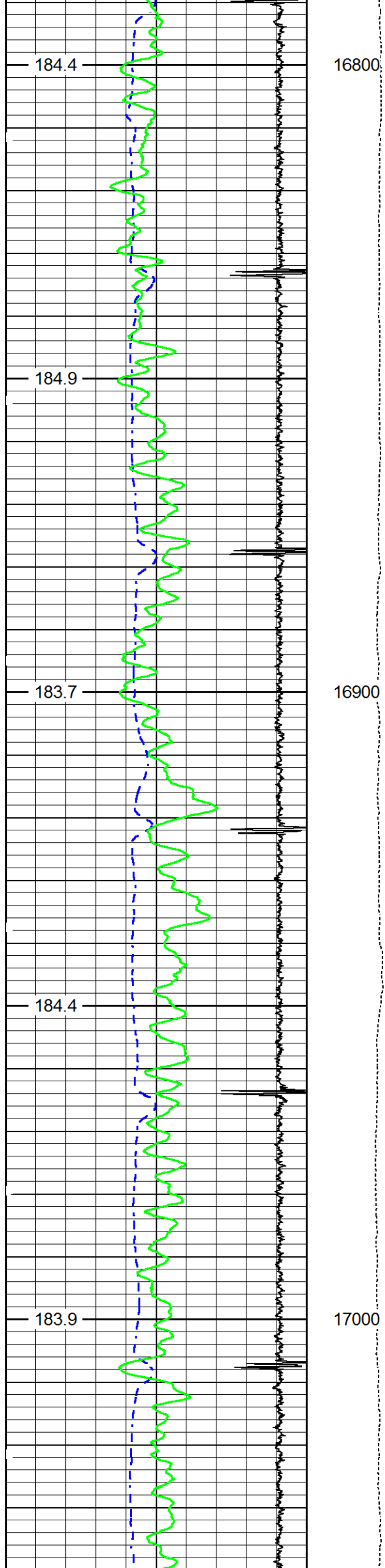
16100

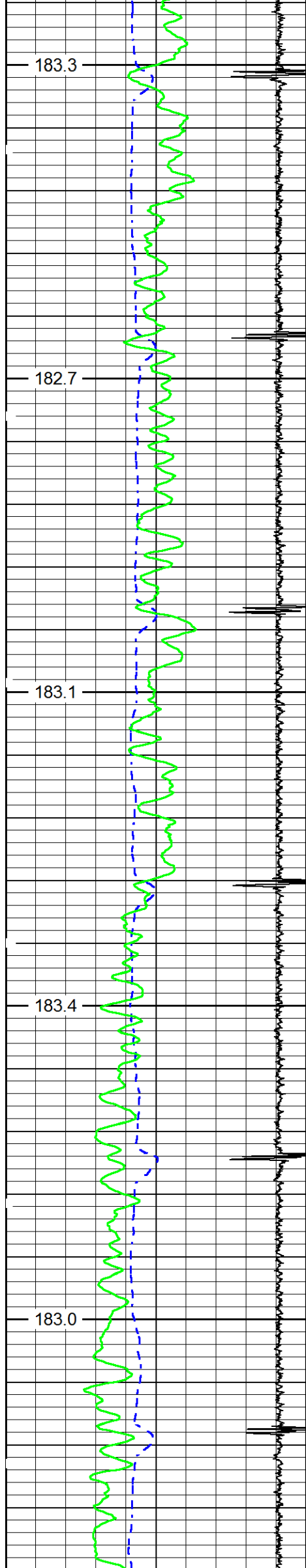
16200





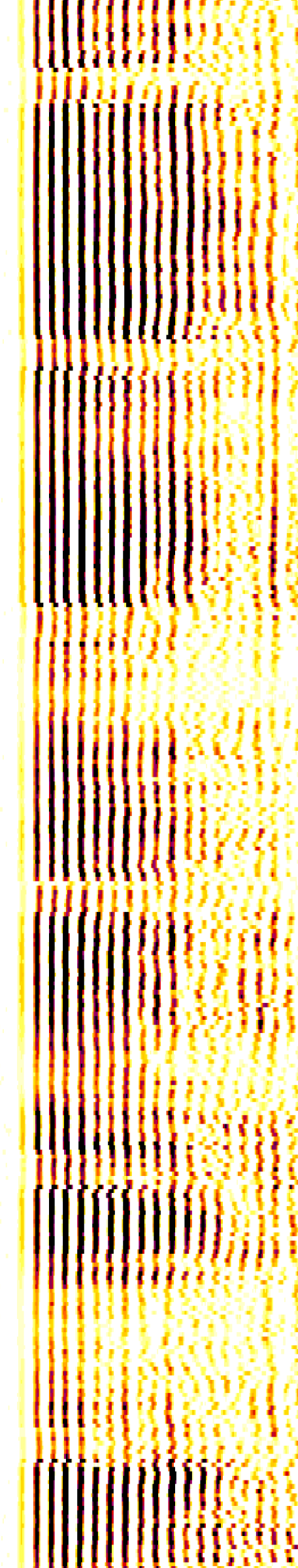
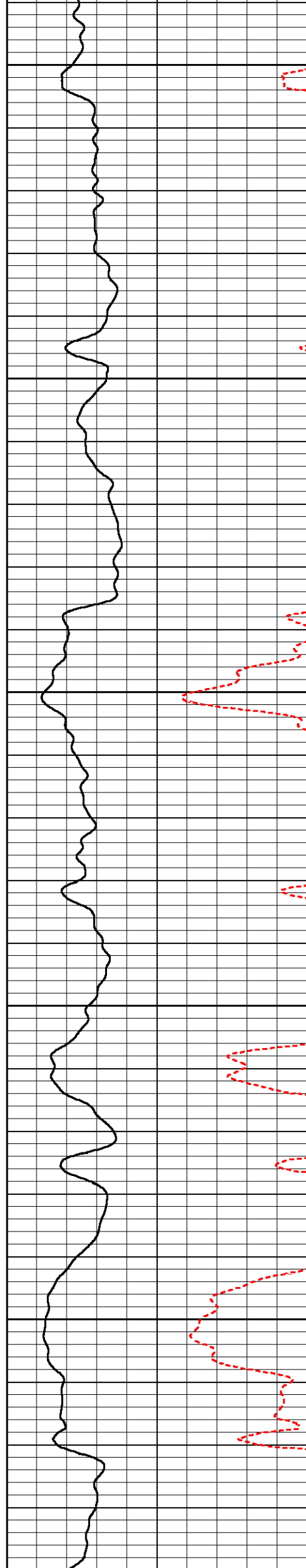


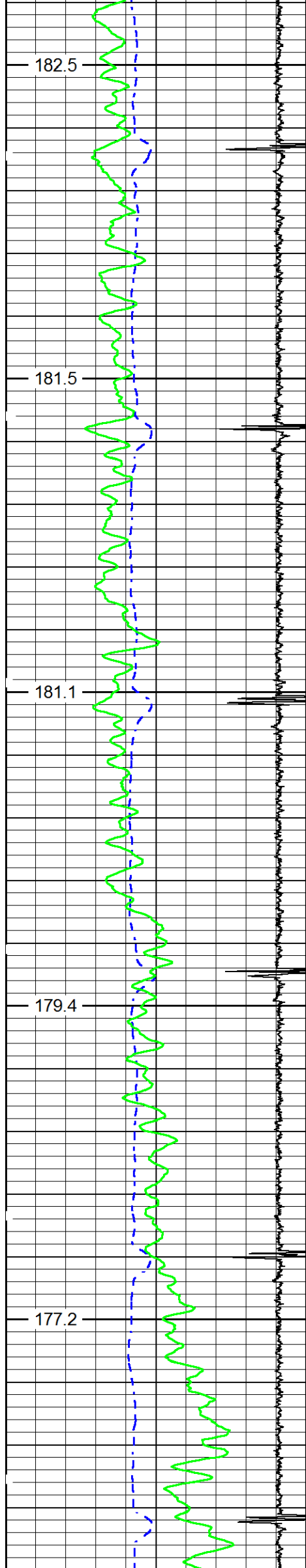




17100

17200

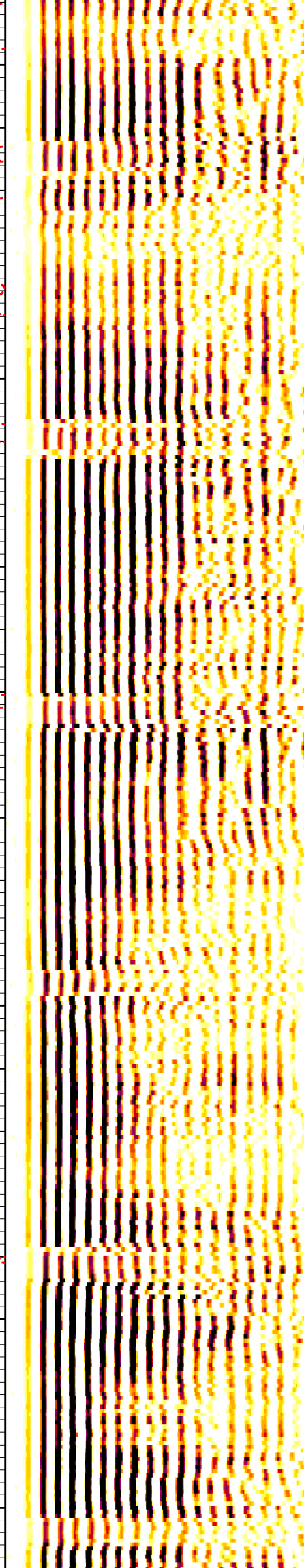
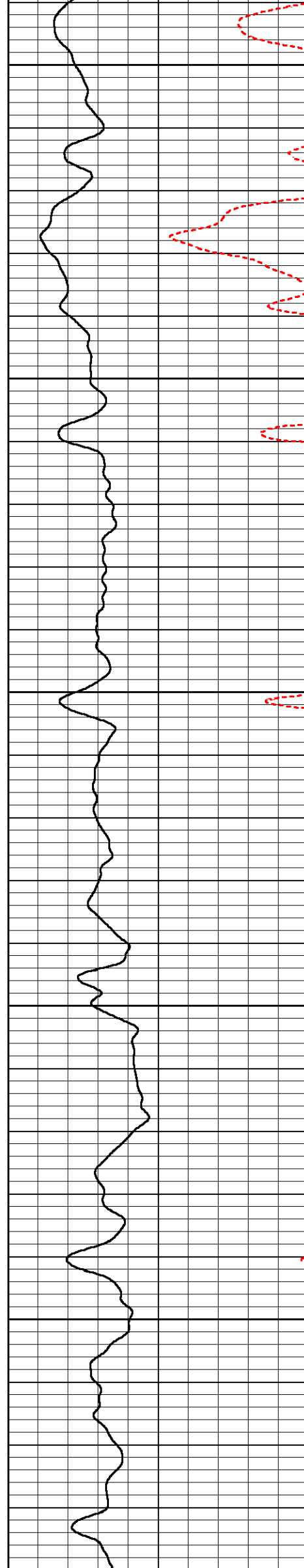


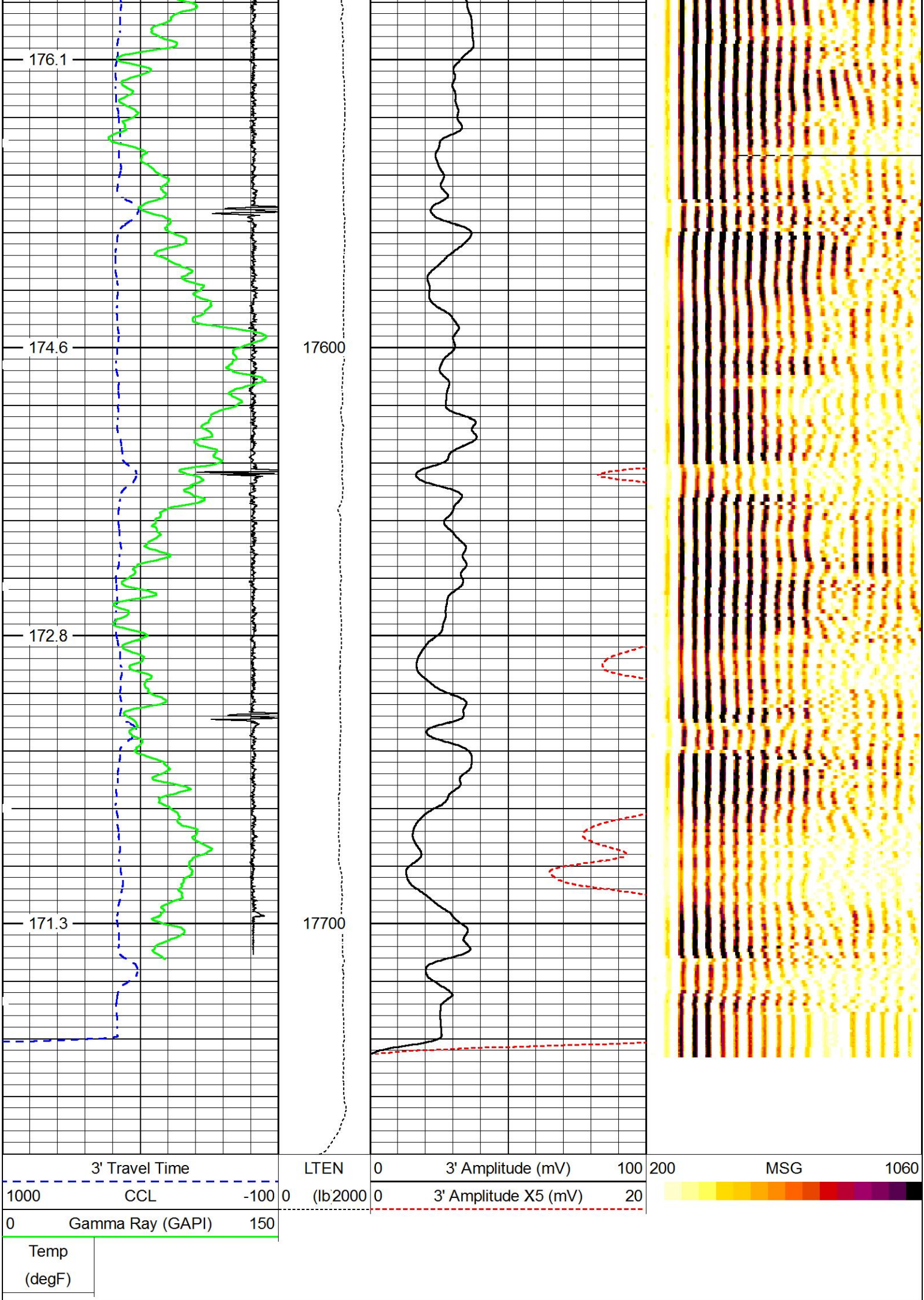


17300

17400

17500





MAIN PASS

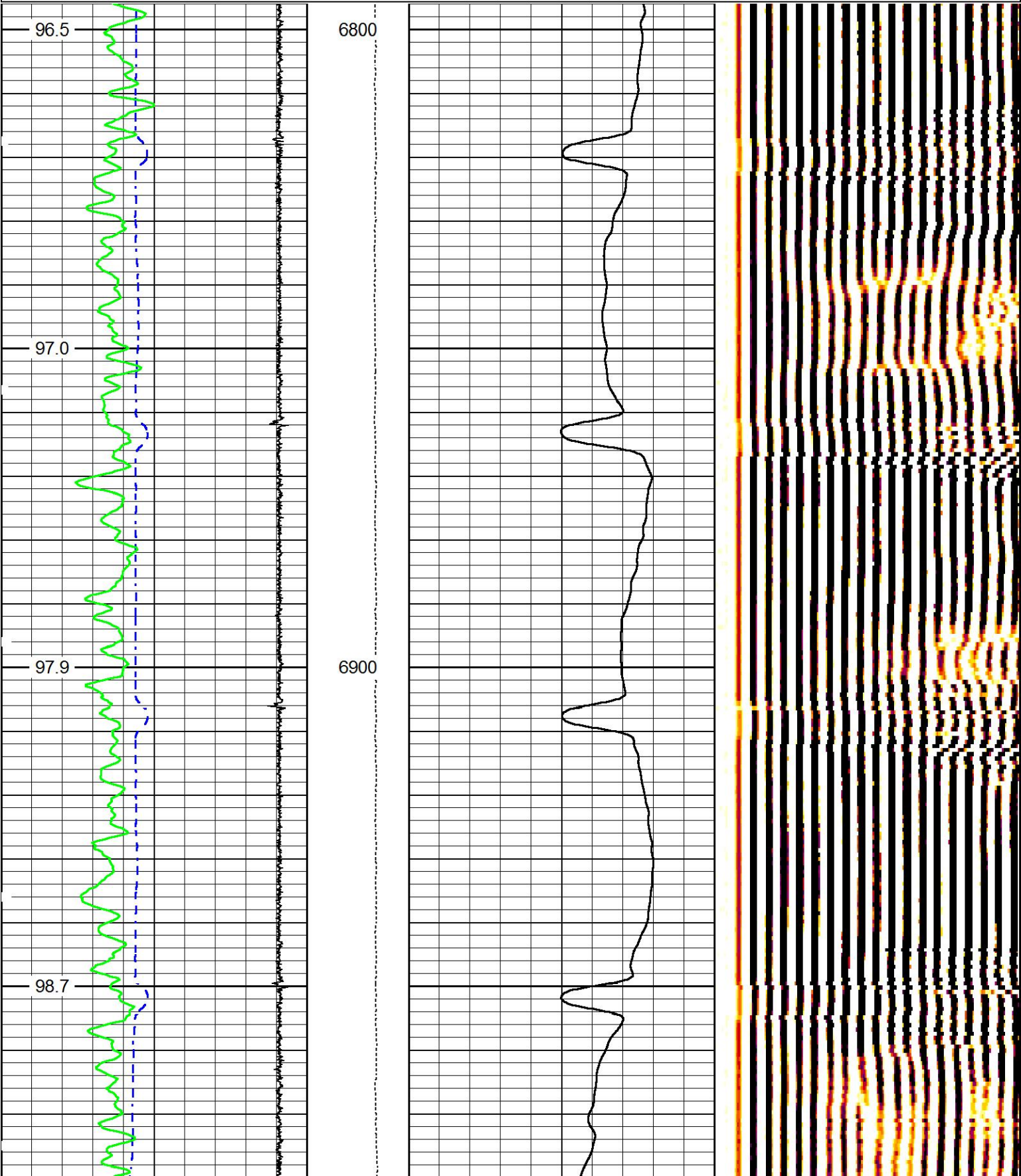
5" = 100'

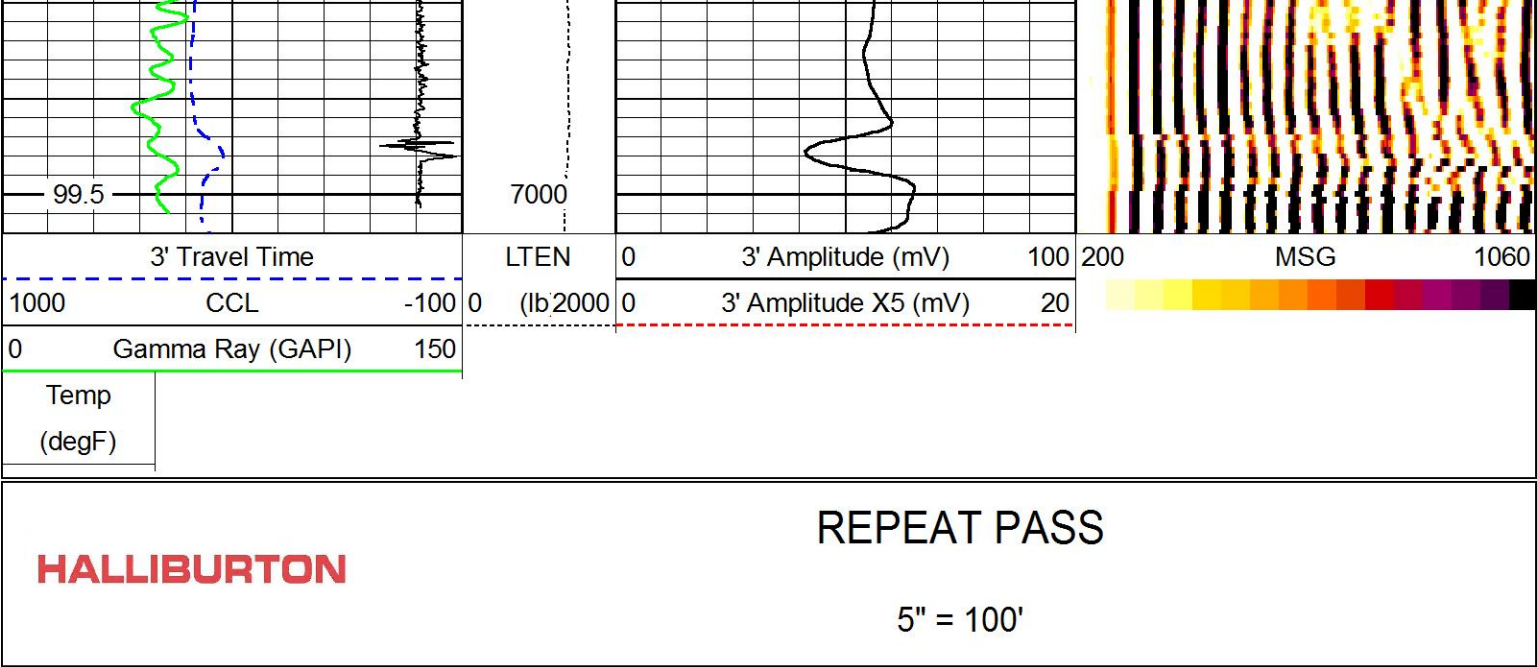
HALLIBURTON

5" = 100'

Database File cc_16-6005be.db
Dataset Pathname REPEAT/PASS1
Presentation Format hcbl
Dataset Creation Thu Jan 31 04:33:55 2019
Charted by Depth in Feet scaled 1:240

3' Travel Time			LTEN	0	3' Amplitude (mV)	100	200	MSG			1060
1000	CCL	-100	0	(lb2000	0	3' Amplitude X5 (mV)	20				
Gamma Ray (GAPI)			150								
Temp											
(degF)											





Log Variables

DatabaseC:\ProgramData\Warrior\Data\cc_16-6005be.db

Dataset field/well/REPEAT/PASS1/_vars_

Top - Bottom

BHTEMP_Src	BITSIZE in	BOTTEMP degF	CASEOD in	CASETHCK in	CASEWGHT lb/ft	MSGGN	MudWgt lb/gal
TEMP	7.875	100	4.5	0.25	11.6	1	8.4
PERFS	SRFTEMP degF	TDEPTH ft	USERFTT usec/ft	ZREF MRayl			
0	0	0	0	1.7			

Calibration Report						
Database File	cc_16-6005be.db					
Dataset Pathname	REPEAT/PASS1					
Dataset Creation	Thu Jan 31 04:33:55 2019					
Circumferential Acoustic Scanning Tool Shop Calibration Report						
Serial-Model:		11488892a-3 1/8 SCAN				
Calibration Performed:		Tue Jan 29 17:49:54 2019				
Mudcell Transducer			Main Transducer			
	Measured	Expected	Measured	Expected	Units	
W/O Calibrator	49.99	44.00	N/A	N/A	usec	
W Calibrator	40.82	35.00	57.09	50.00	usec	
Calibrated Offsets						
Name	Value	Units				
TCAL	7.0900	usec				
MCAL	4.1435	usec				
XY Accelerometers Calibration Report						
Performed:		(Not Performed)				
	Low Read.	High Read.		Low Ref.	High Ref.	
X Accelerometer	0.000	1.000	gee	0.000	1.000	gee
Y Accelerometer	0.000	1.000	gee	0.000	1.000	gee

Serial-Model:

11923474-A

Calibration Performed:

Tue Jan 29 18:51:42 2019

Free Pipe Calibration

	Measured	Units
TT	245.4	usec
Amplitude	458.8	mV
Log Base Line	-1.8	mV

Calibration References and Gain

Name	Value	Units
Pipe O.D.	4.500	in
Pipe Weight	11.6	lb/ft
Pipe Ref. Amp.	81.0	mV
Amp. Gain	0.176	

Gamma Ray Calibration Report

Type / Serial:

002 / 11527445

SHOP CALIBRATION

Wed Jul 26 16:57:09 2017

	Counts/Sec.	Gain	Offset	Jig	Units
Background	22.9				cps
Calibrator	244.7				cps
		1.6587			GAPI/cps

PRIMARY VERIFICATION

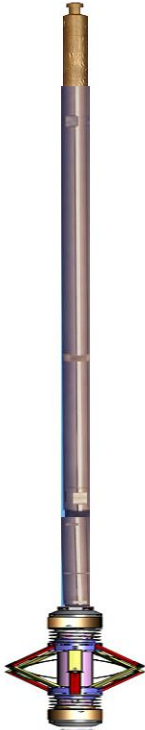
Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI


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)
			STNDCH-1_11_16_CH 1.6875 IN CABLE HEAD	1.50	1.44	1.00
CCL	35.08					
GR	32.82		TTTCU-002 (11527445) Through Tubing Telemetry Cartridge - Ultrawire	7.65	1.69	100.00
			XHU-003 (11890311) Crossover Halliburton 1553 to Ultrawire	1.58	1.69	7.00
			CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00

Temp	23.10					
			HCBLM-A (11923474) Halliburton HCBLM Tool	9.38	2.75	116.00
WVF3FT	19.37					
TT3FT	19.37					
AMP3FT	19.37					
WVF5FT	17.37					
			CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00
			HAL-CAST-M-ELECT-CAST-M-Elect (11927.573) CAST M ELECTRONIC		2.75	30.00
AccY2	0.00					
AccX2	0.00					
AccY1	0.00					
AccX1	0.00					
SCAN	0.00					
LOCTIM	0.00					
UTCTIM	0.00					
LLMTEN	0.00					
		HAL-CAST-M-3 1/8 SCAN (11488892a) 3 1/8 SCAN CASTM	6.64	3.13	276.00	
Dataset: cc_16-6005be.db: field/well/REPEAT/PASS1 Total length: 38.65 ft Total weight: 580.00 lb O.D.: 3.13 in						

Company	HIGHPOINT RESOURCES				
Well	CRITTER CREEK 16-6005BE				
Field	HEREFORD				
County	WELD	State	CO		
HALLIBURTON		CEMENT BOND LOG			