

HALLIBURTON

CEMENT BOND LOG
GR-CCL

Company	URSA OPERATING COMPANY		
Well	BMC D 21D-18-07-95		
Field	WILDCAT		
County	GARFIELD	State	CO
Company URSA OPERATING COMPANY Well BMC D 21D-18-07-95 Field WILDCAT County GARFIELD State CO			
API No.:	05045233170000	Serv #:	904056242
Location: SHL: 1218' FNL 2380' FWL BHL: 1268' FNL & 1901' FEL		Other Services	
Sec: 18 Twp: 7S Rge: 95W		JB-GR RMT-i	
Permanent Datum	Ground Level	Elevation	5268'
Log Measured From	KB	17 Ft. above perm. datum	K.B. 5285' D.F. 5286' G.L. 5268'
Drilling Measured From	KB		
Date @ Time Logged	30-MAY-2017	Type Fluid in Hole	FRESH WATER
Run No.	ONE	Density of Fluid	8.4 PPG
Depth - Driller	6640 FT	Fluid Level	FULL
Depth - Logger	6212 FT	Cement Top Est. Logged	N/A
Bottom - Logged Interval	6204 FT	Equipment / Location	11808537 / RS
Top - Log Interval	1700 FT	Recorded by	Pedro Gonzalez Baqueiro
Max. Recorded Temp.	197 °F	Witnessed by	Luke Grieger
CEMENTING DATA		Protection	Liner
	Surface	String	
Date / Time Cemented			
Primary / Squeeze			
Expected Compressive Strength	psi@ hrs	psi@ hrs	psi@ hrs
Cement Volume			
Cement Type / Weight	/	/	/
Formulation			
Mud Type / Mud Wgt.	/	/	/
Borehole Record		Casing & Tubing Record	
Run Number	Bit	From	To
ONE	24"	SURFACE	60'
TWO	12.25"	SURFACE	1700'
THREE	7.875"	SURFACE	6640'

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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

HES Reservoir Monitor Log First run in to the Hole
Log Correlated By the KB 17'
Log Interval per customer Request
Log Ran in combo with RMT-i tool

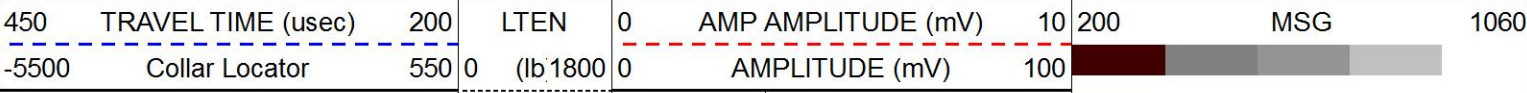
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES ROCK SPRING WY

MAIN PASS

HALLIBURTON

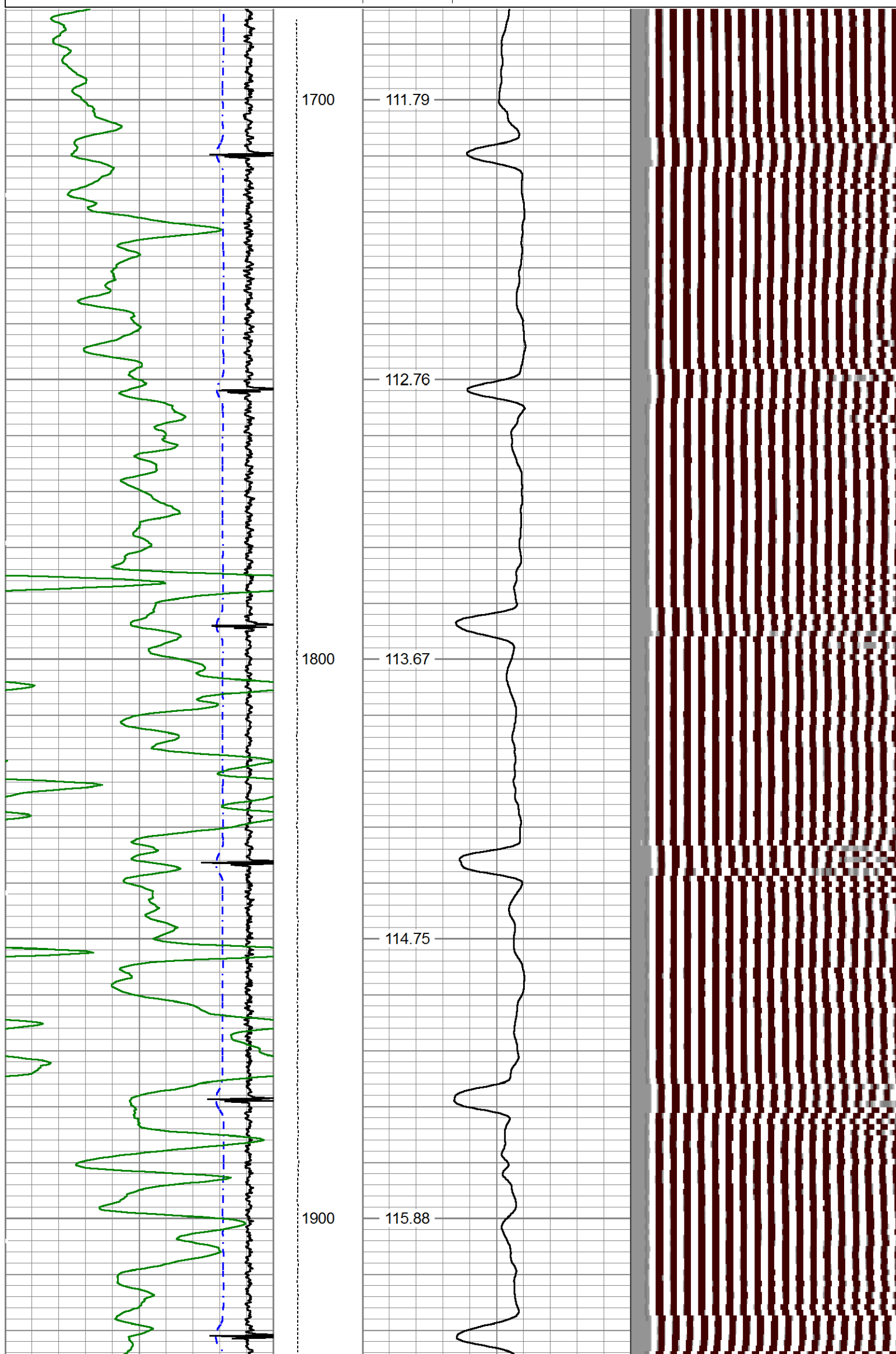
5"=100'

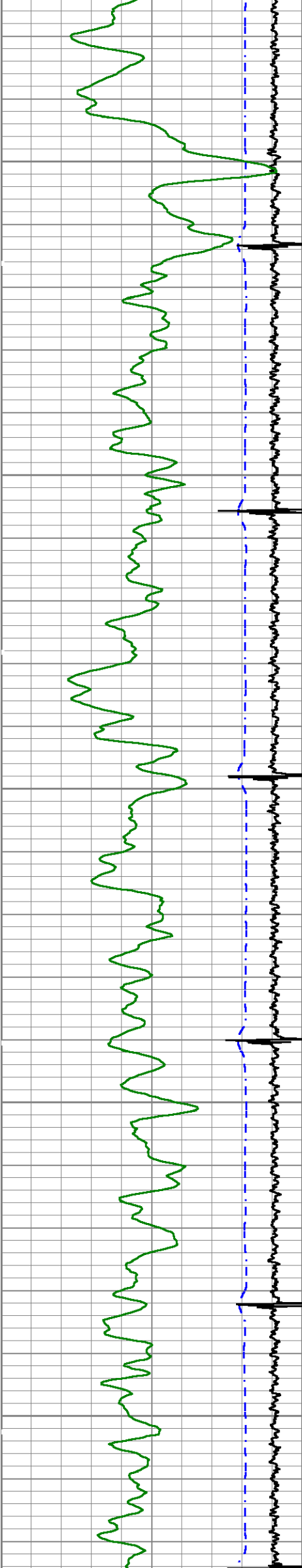
Database File bmc d 21d-18-07-95.db
Dataset Pathname wc/BMC_D_21D-18-07-95/run1/MAIN
Presentation Format cbl_main
Dataset Creation Tue May 30 06:50:15 2017
Charted by Depth in Feet scaled 1:240



0	Gamma Ray (GAPI)	150
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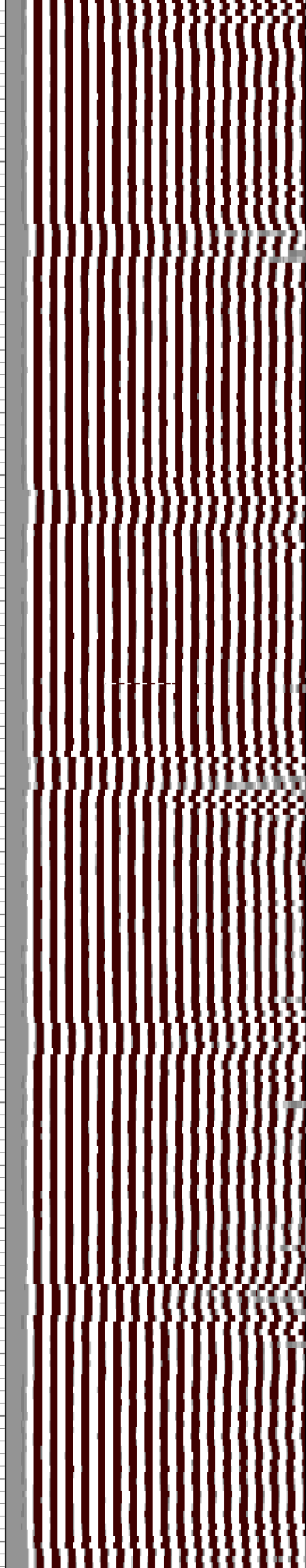
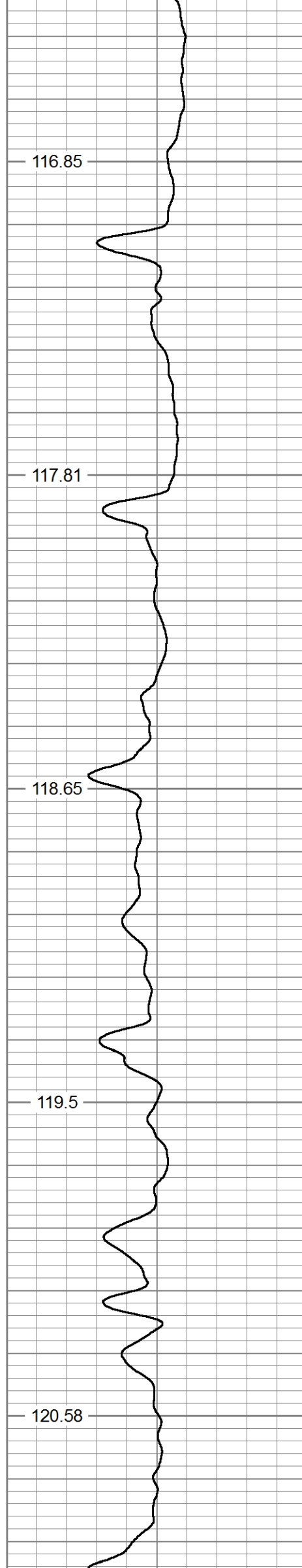
CbII Temp
(degF)

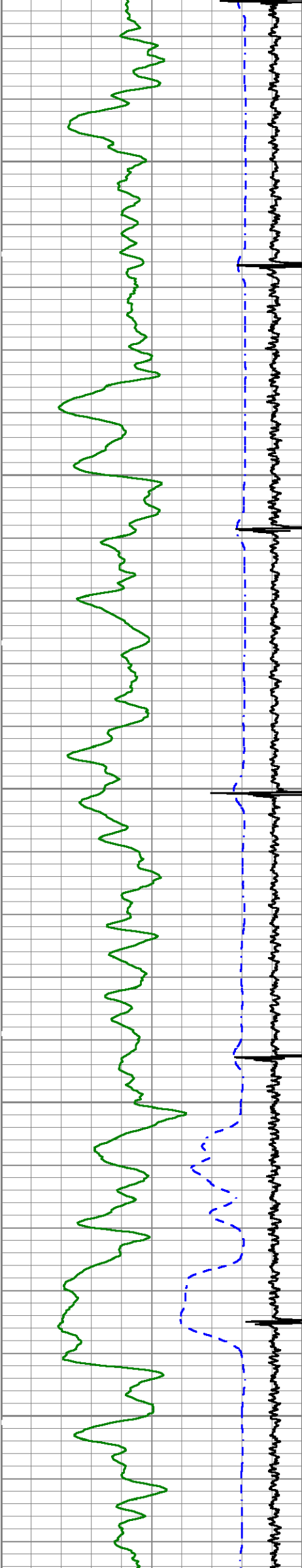




2000

2100

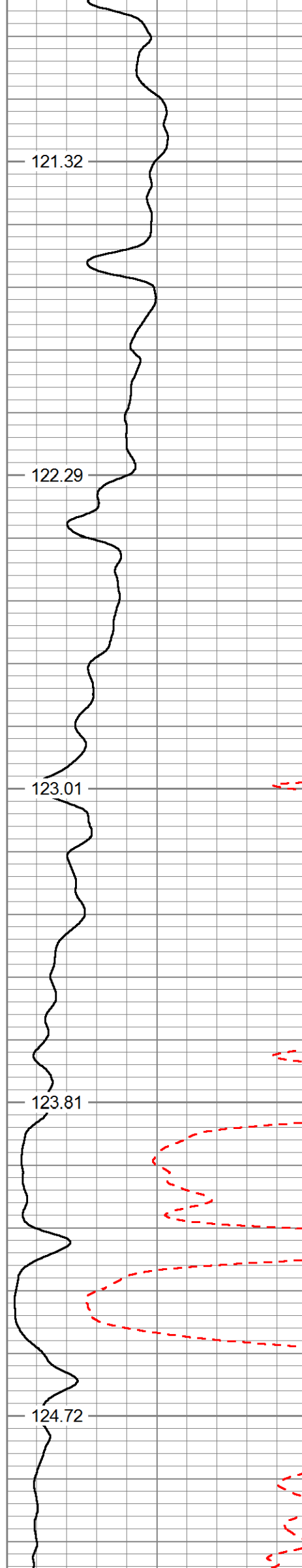




2200

2300

2400



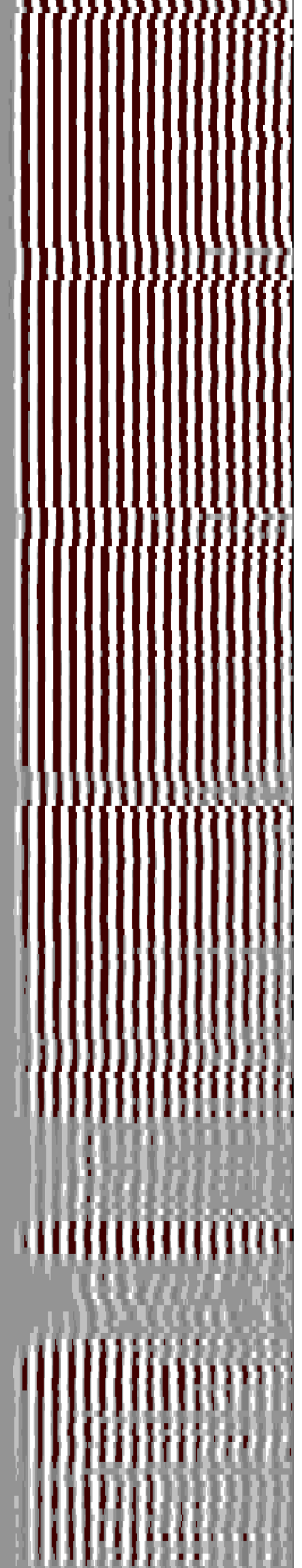
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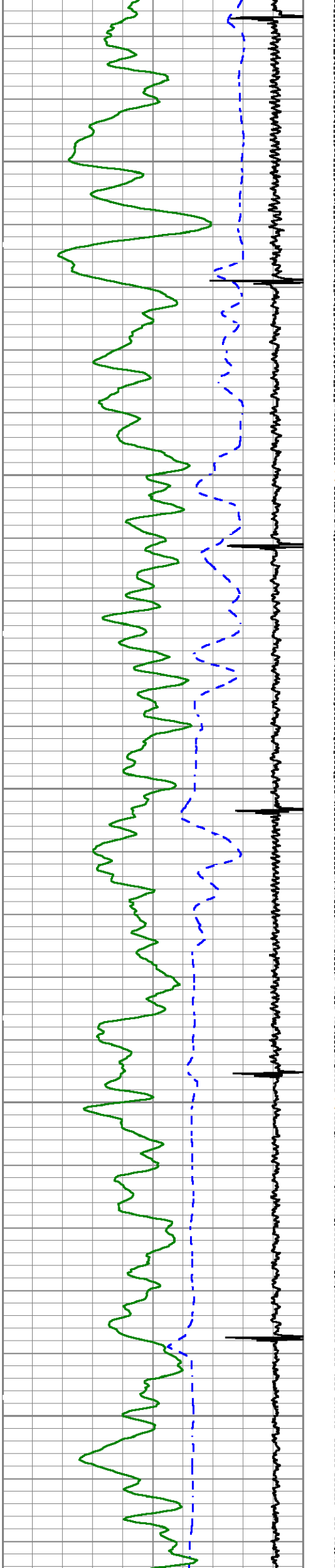
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123.01

123.81

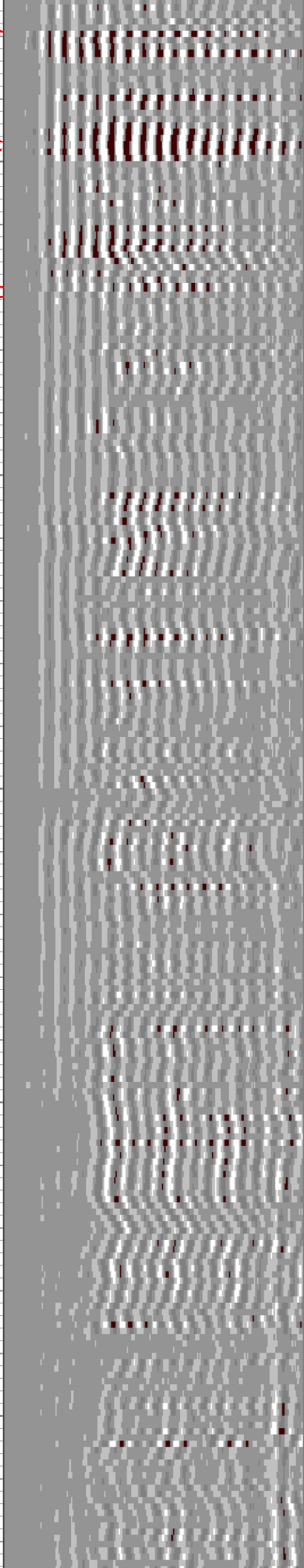
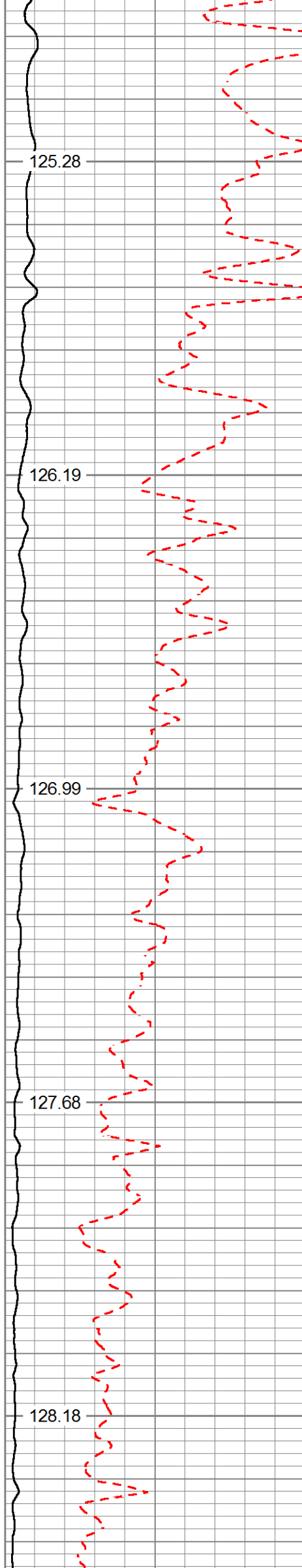
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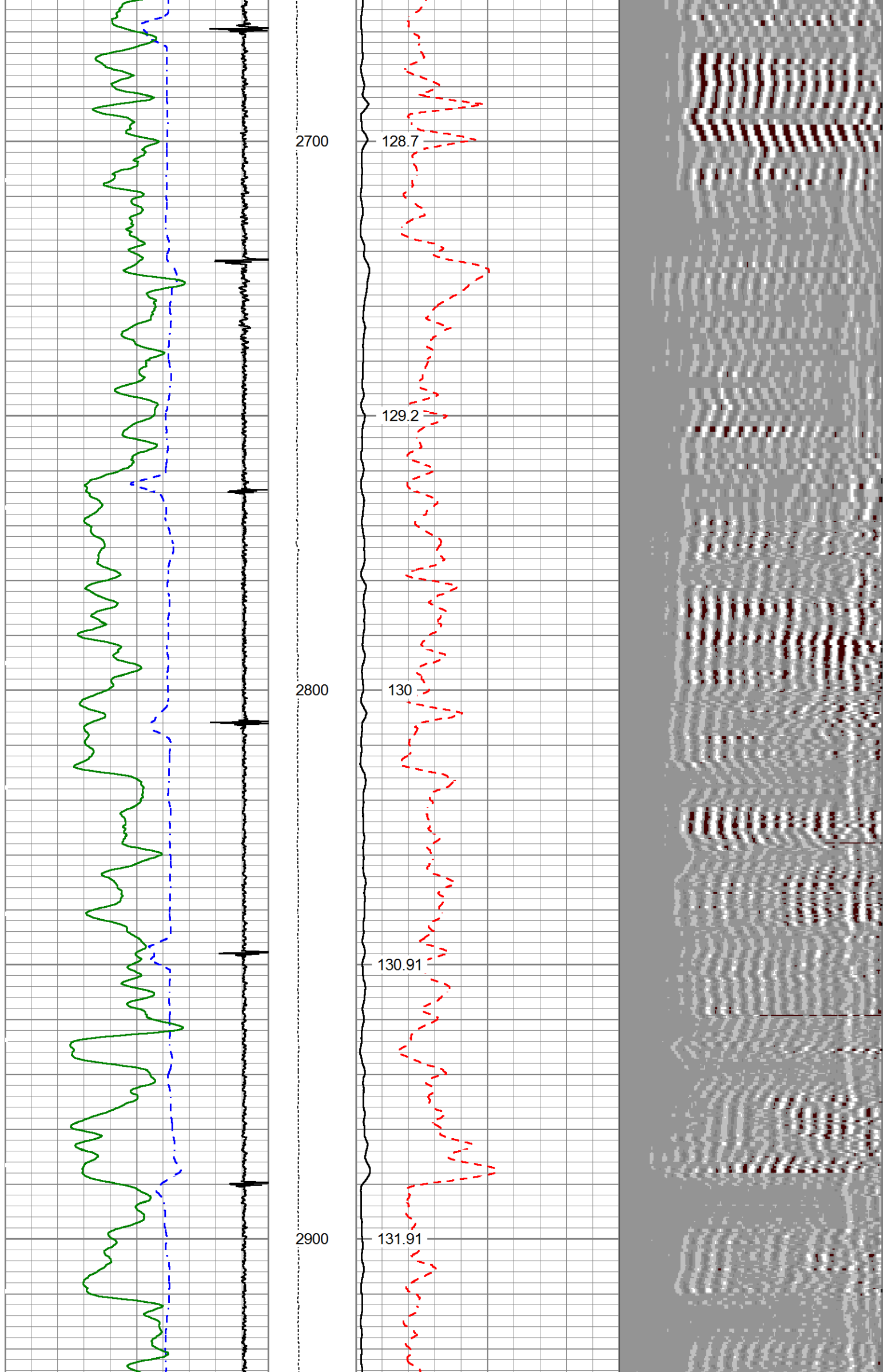


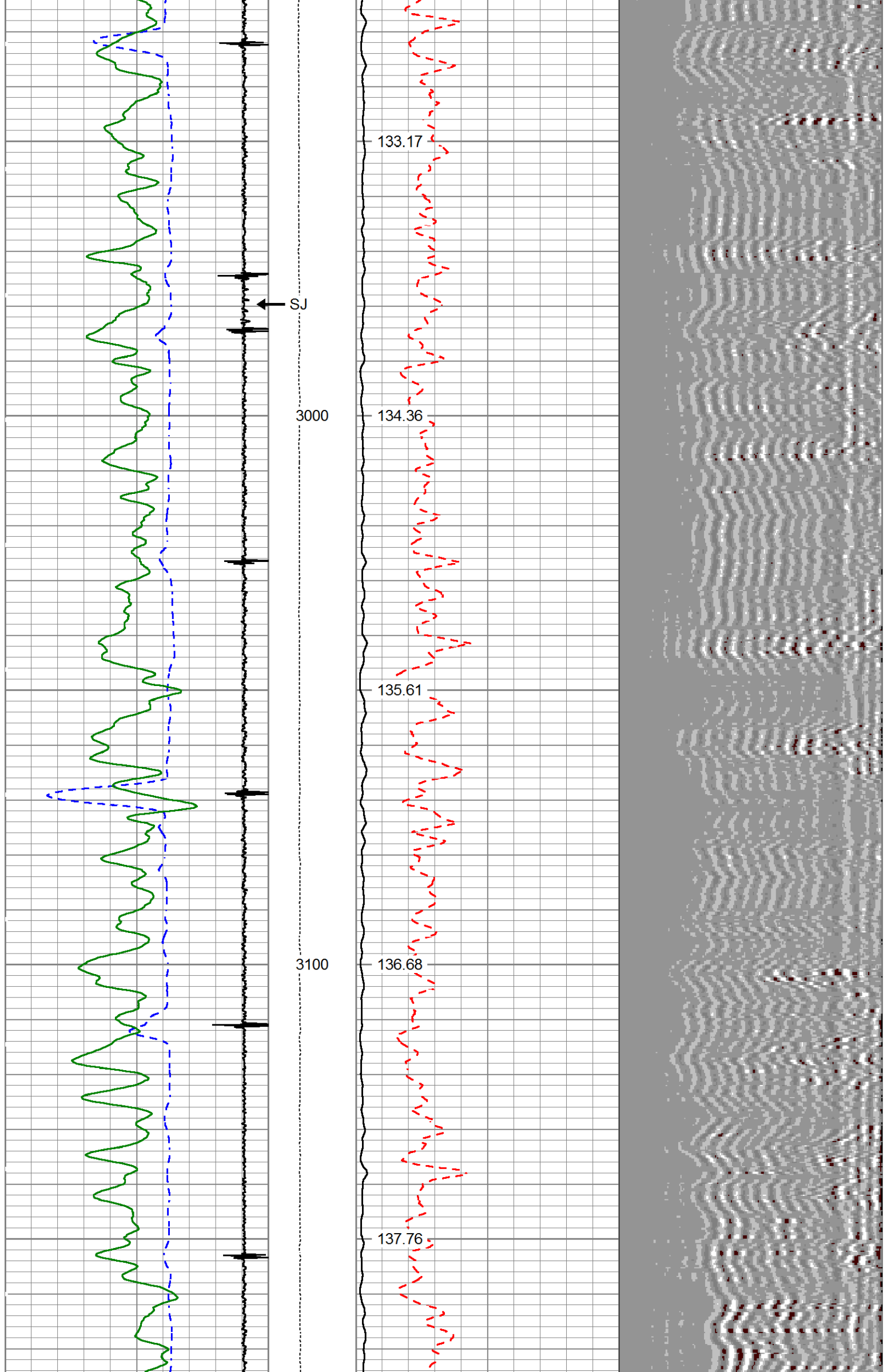


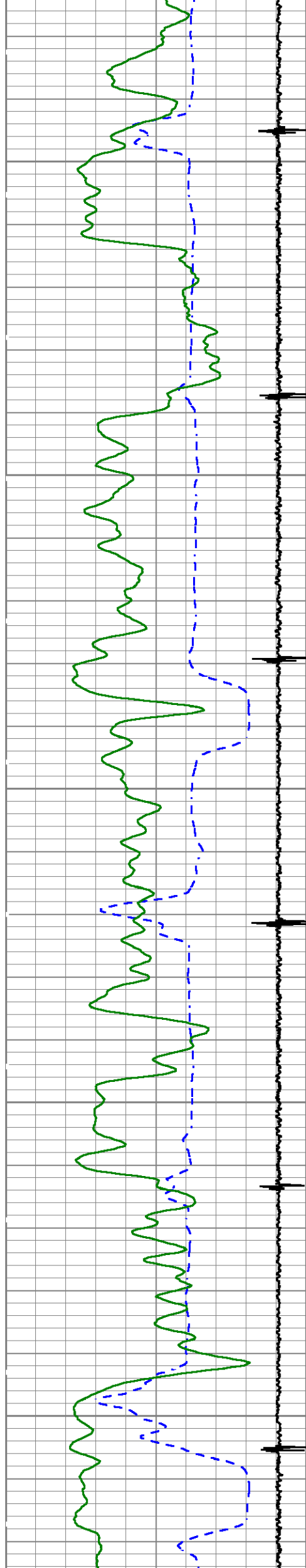
2500

2600





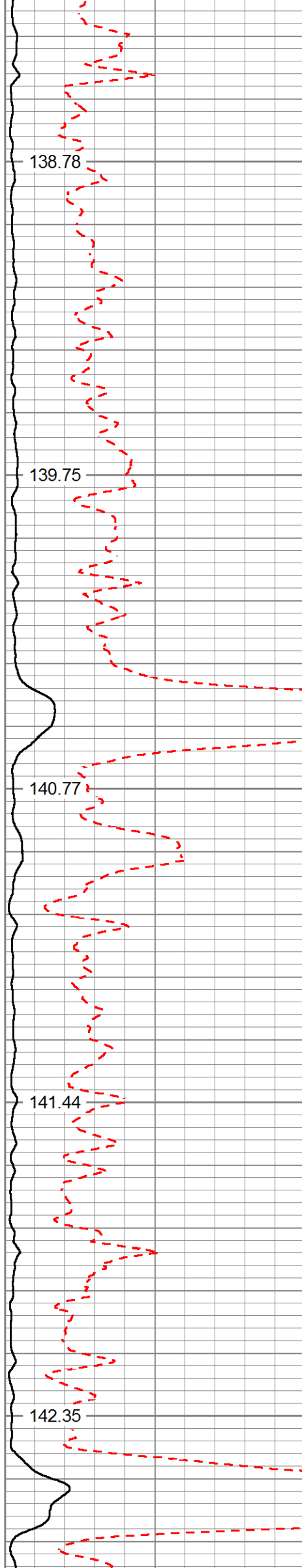




3200

3300

3400



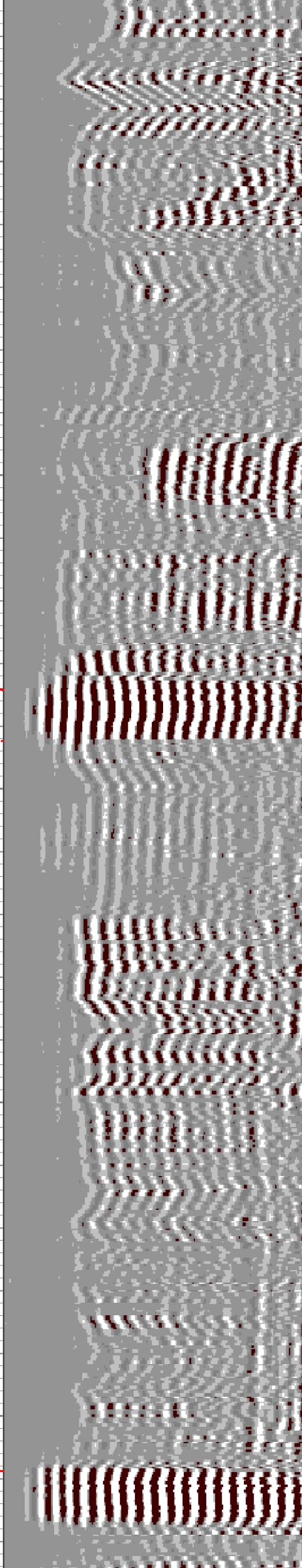
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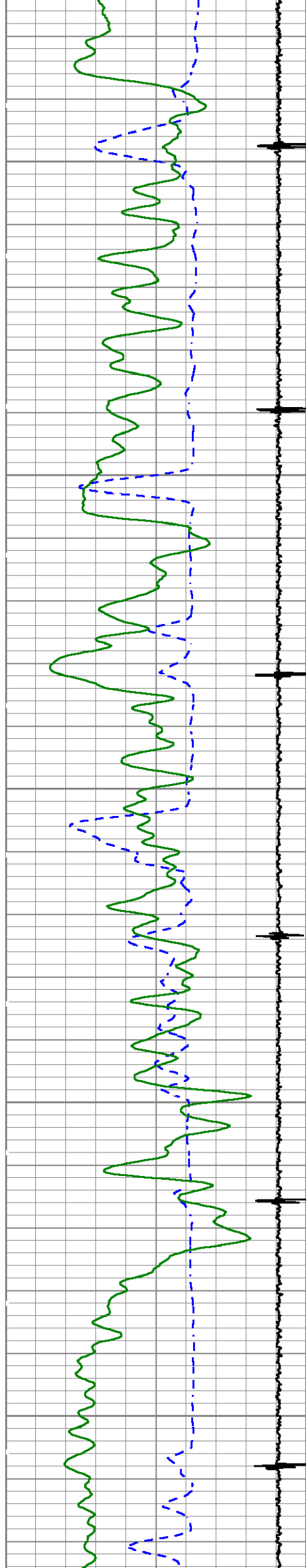
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140.77

141.44

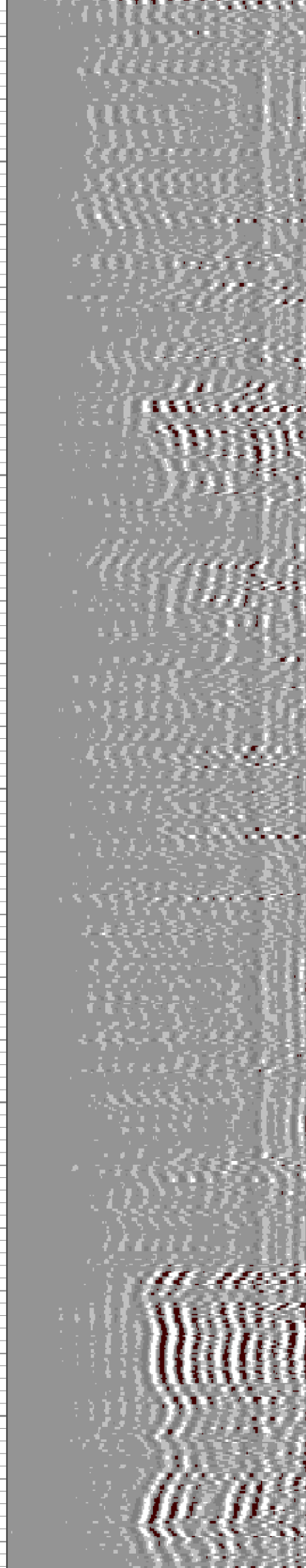
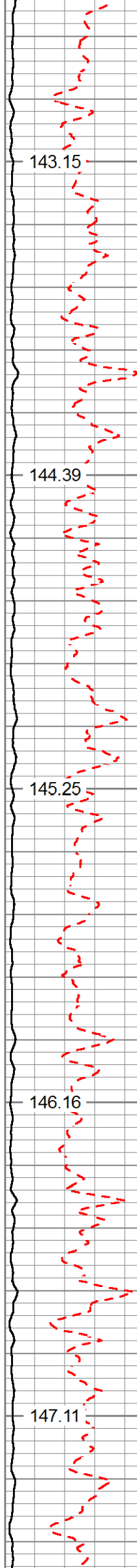
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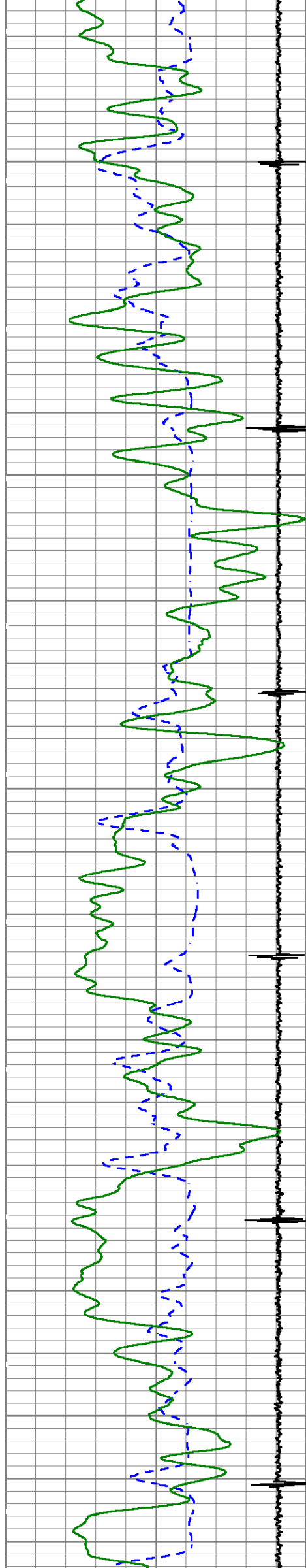




3500

3600

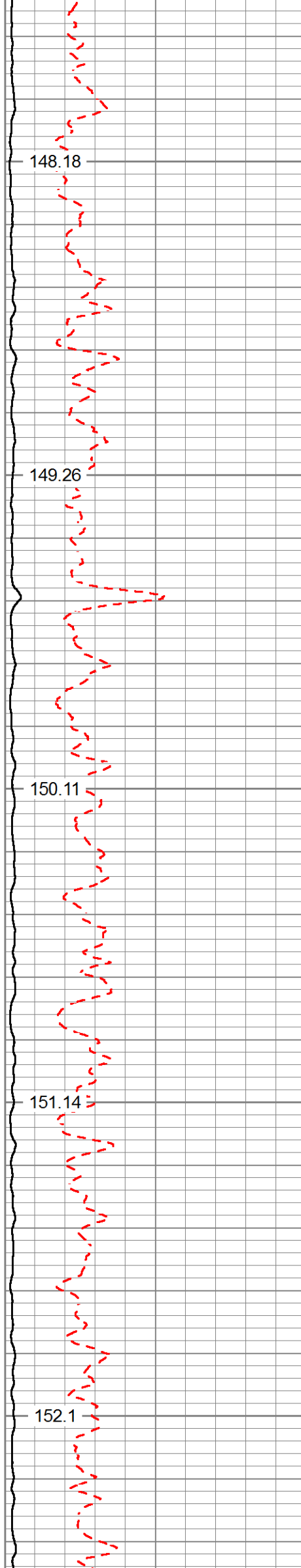




3700

3800

3900



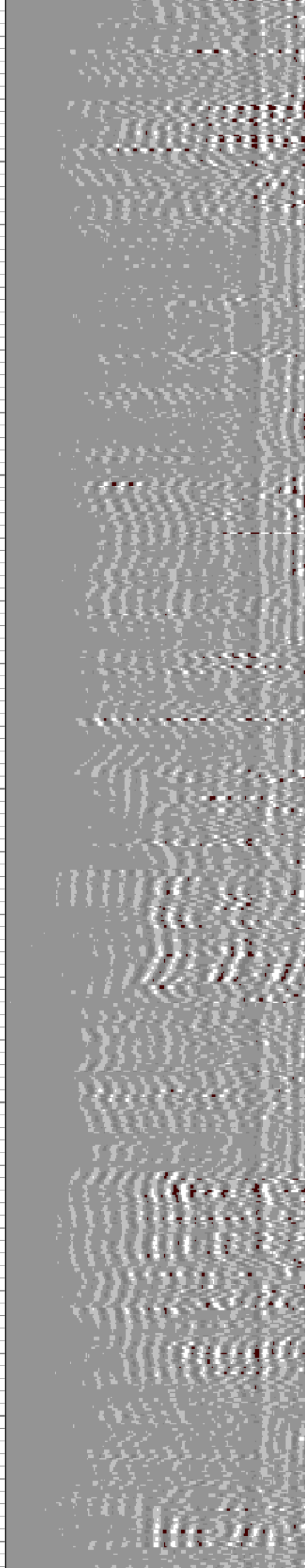
148.18

149.26

150.11

151.14

152.1



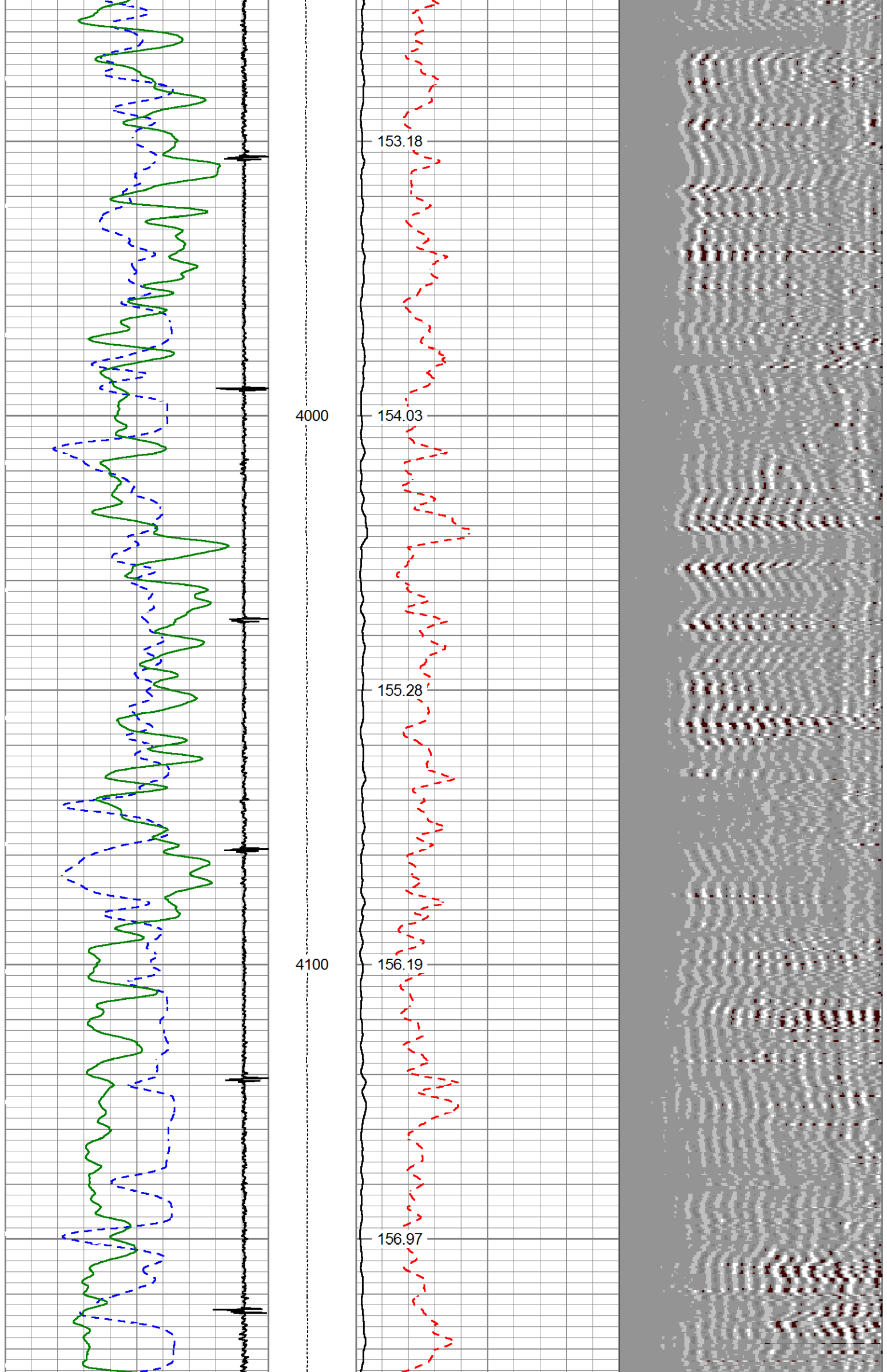
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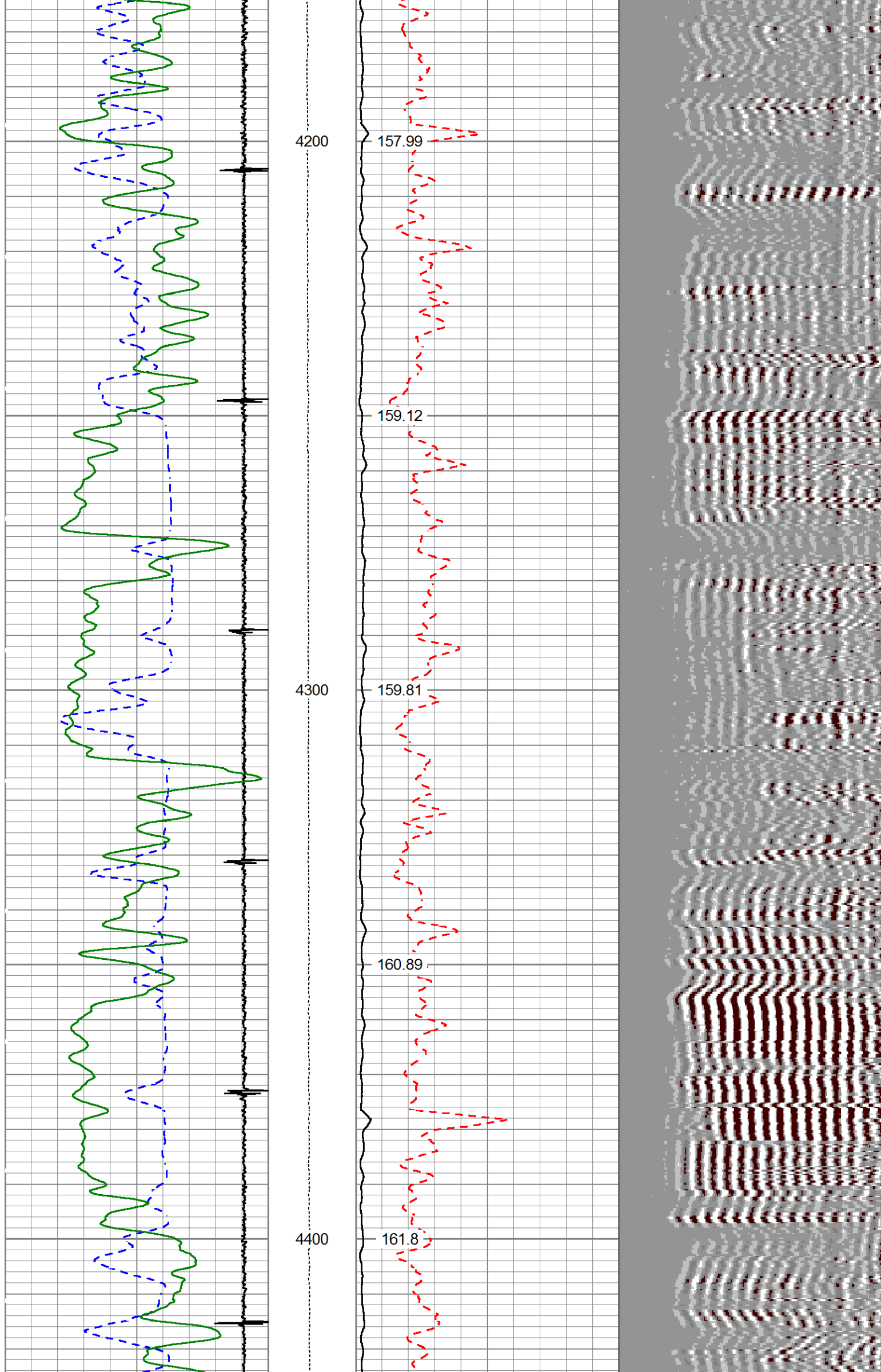
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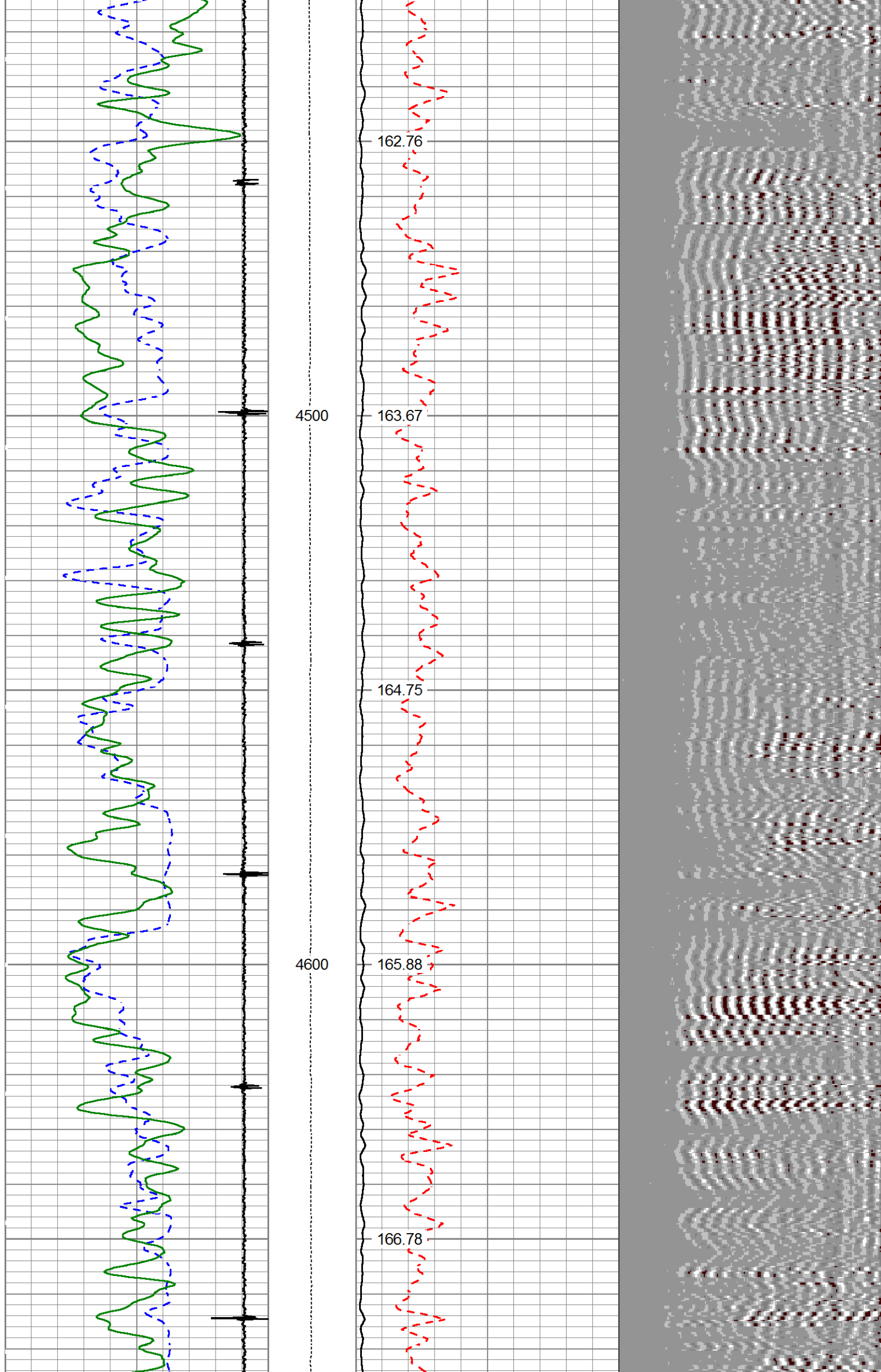
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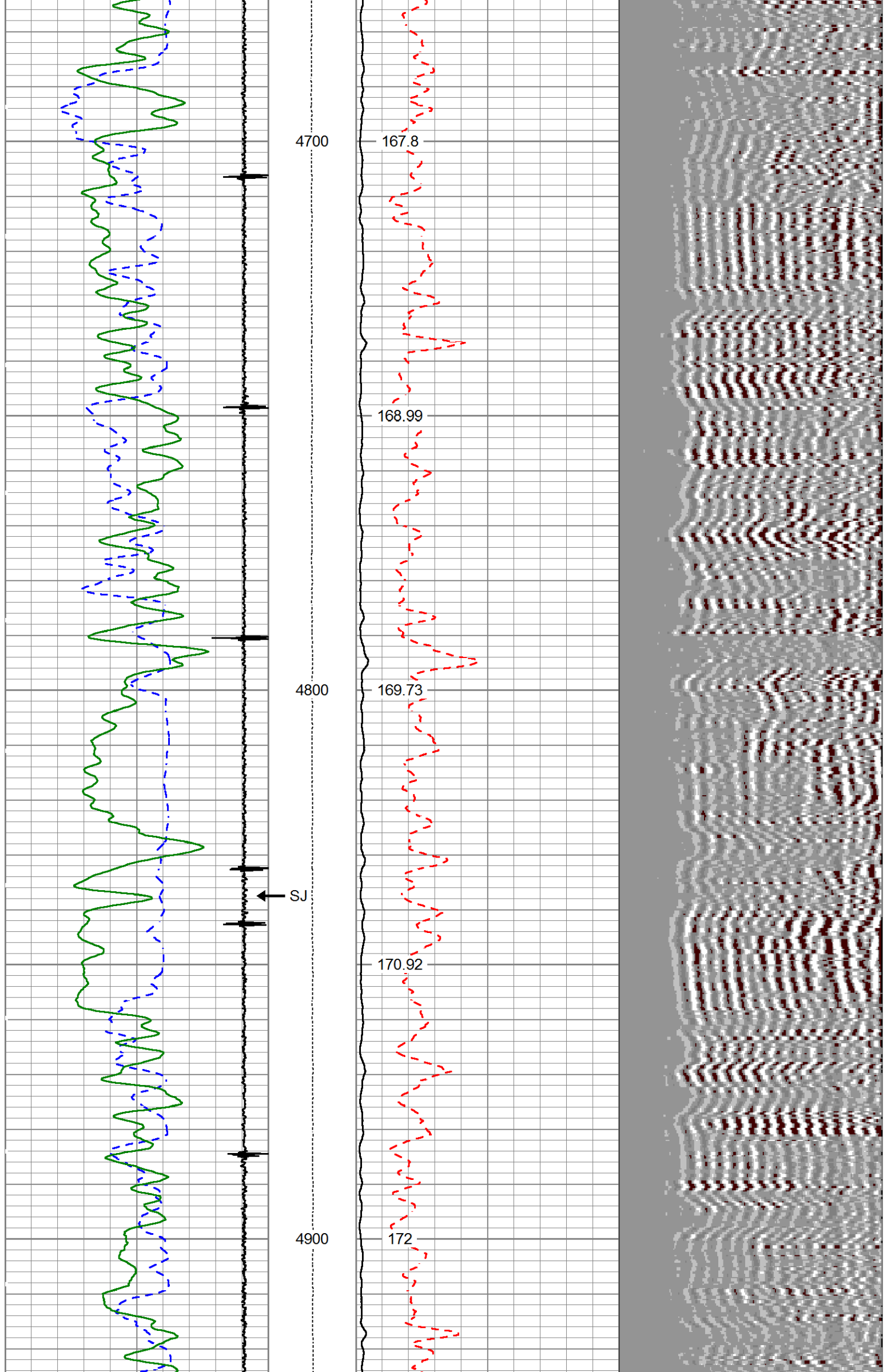
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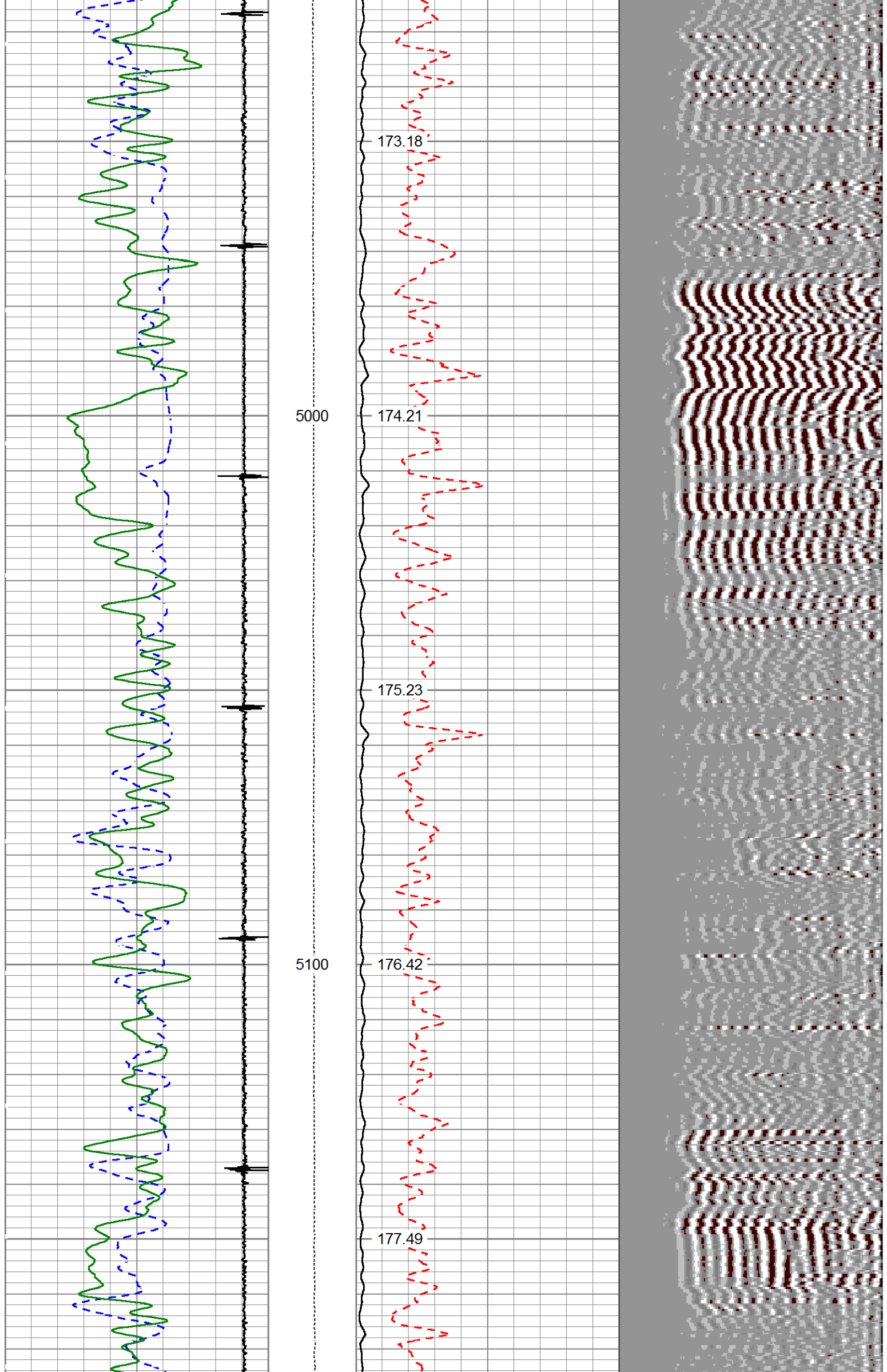
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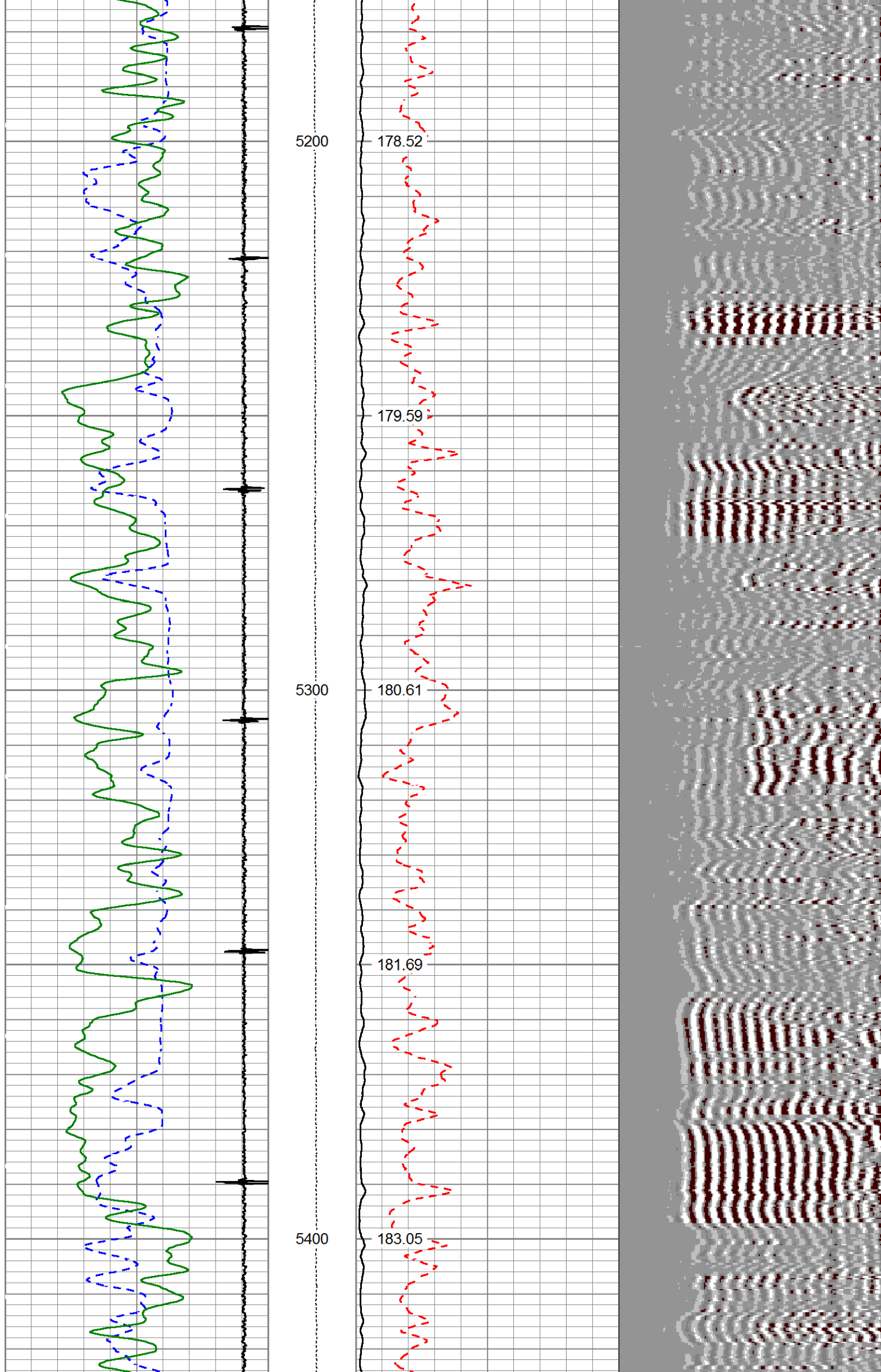


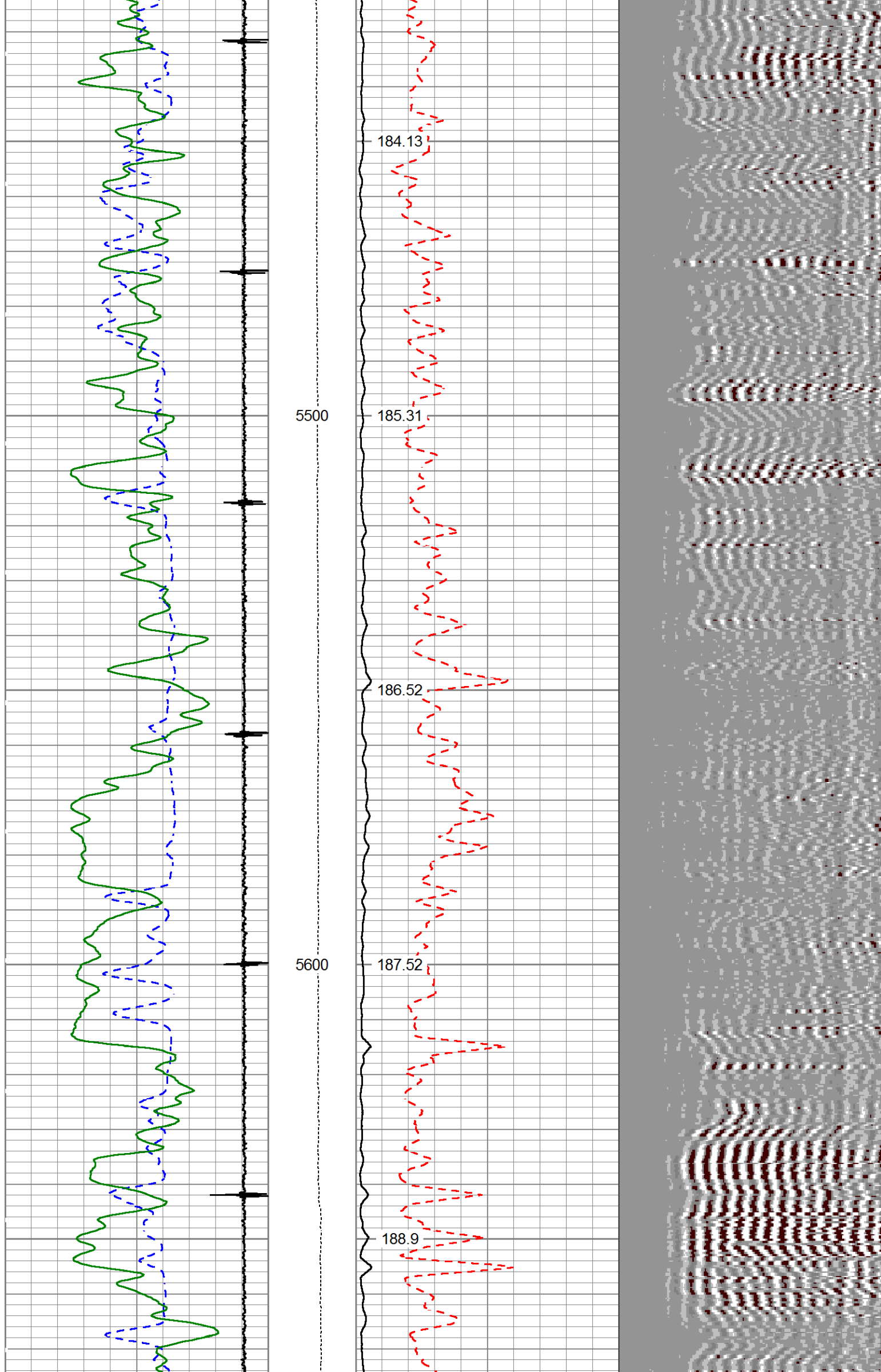


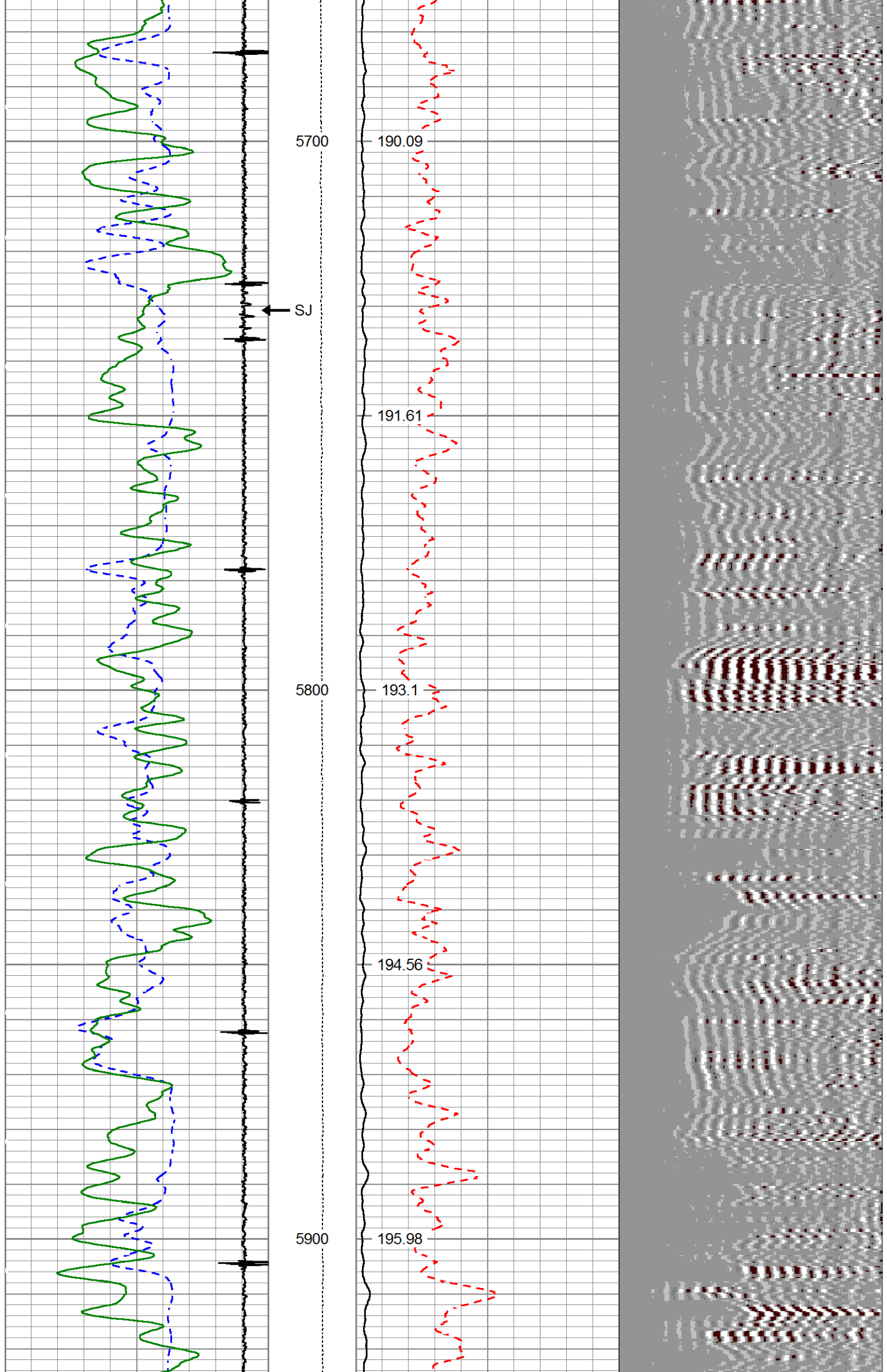


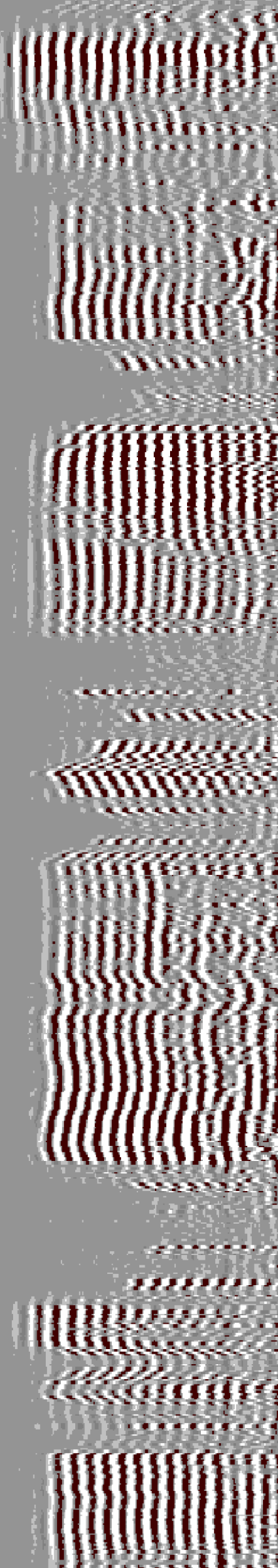
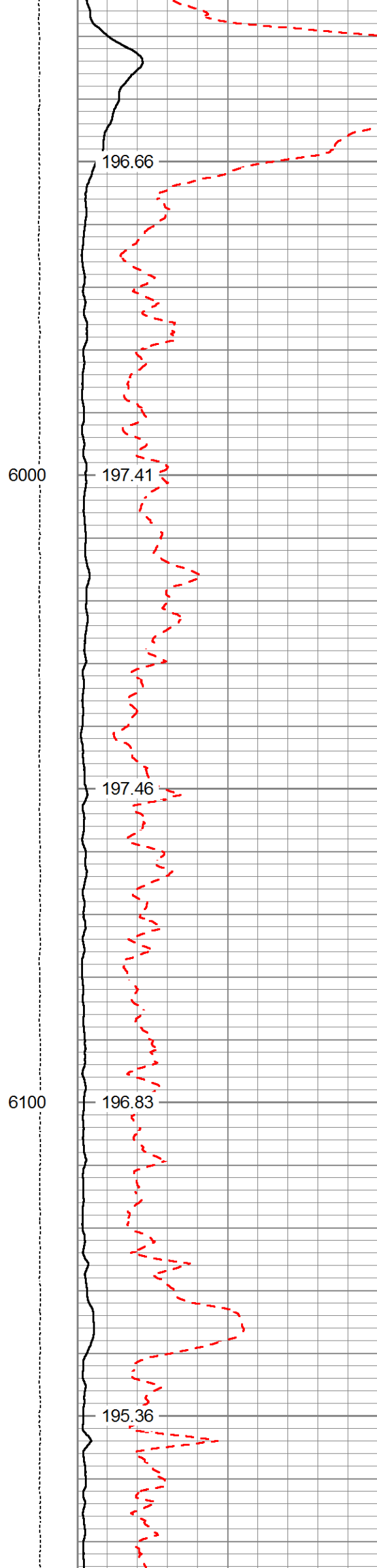
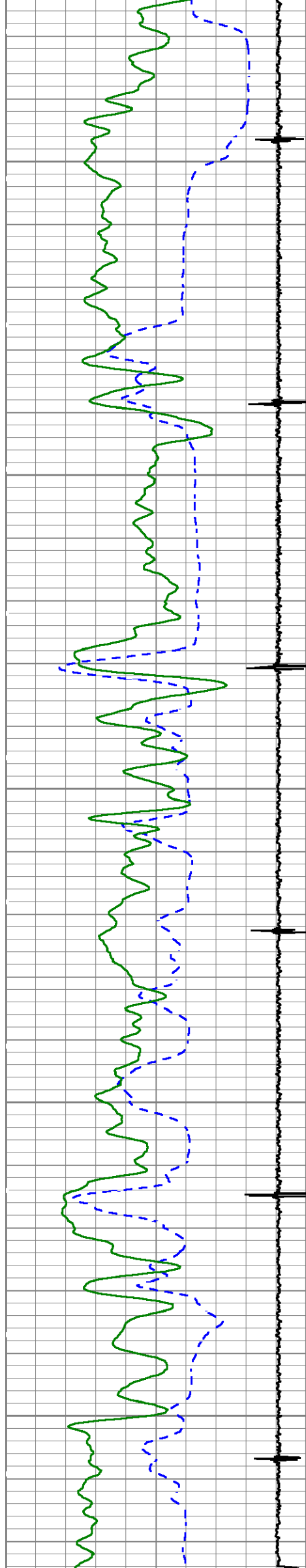


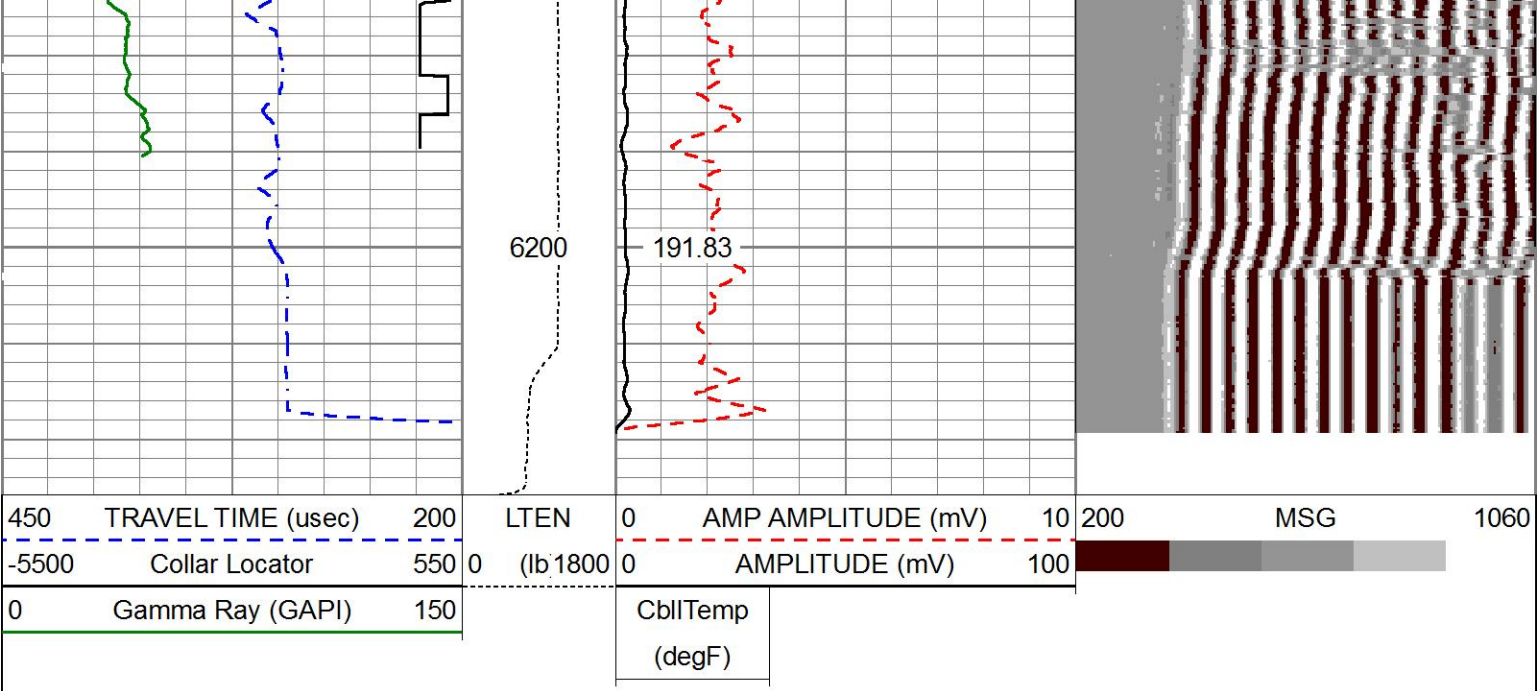








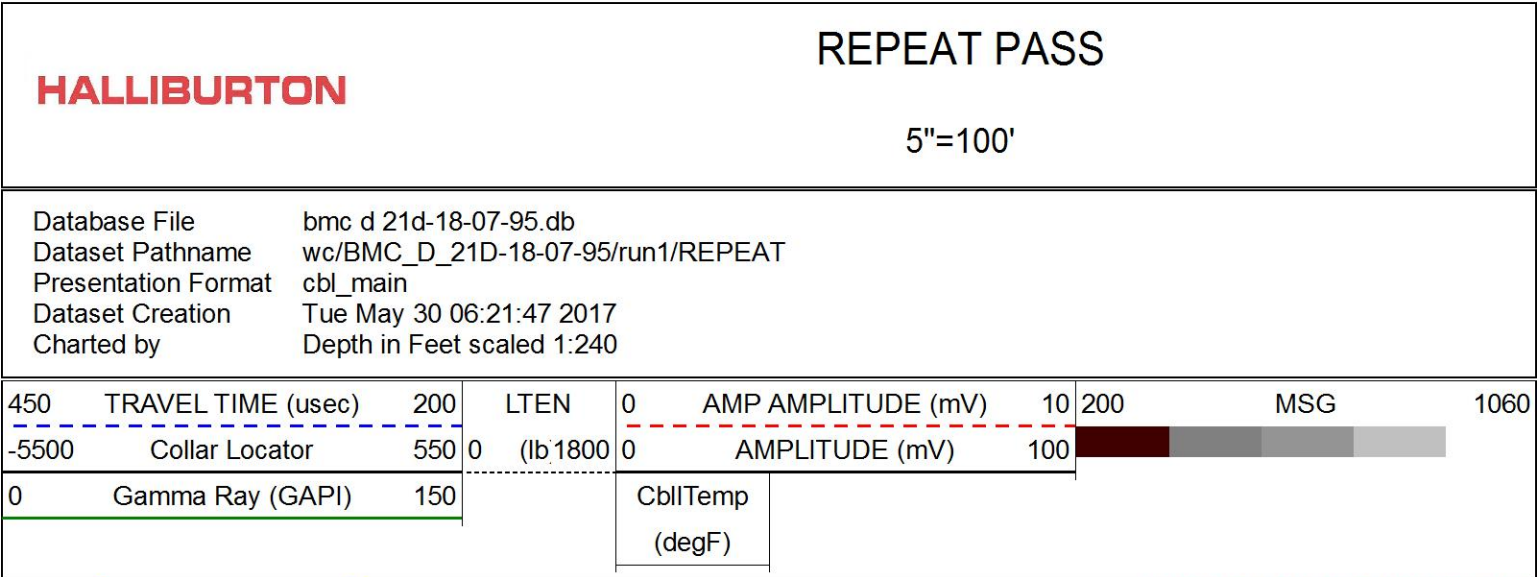




MAIN PASS

5"=100'

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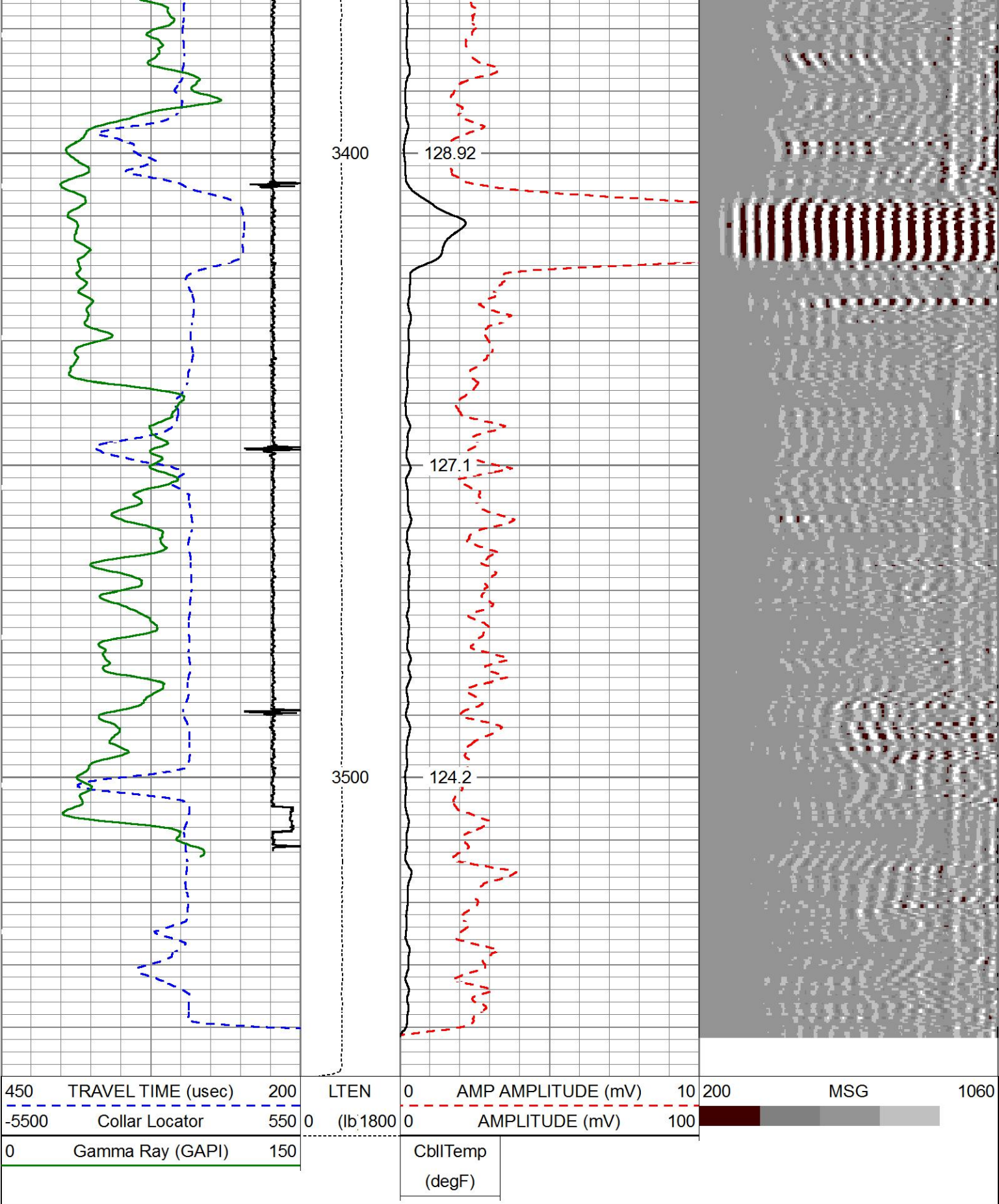


REPEAT PASS

5"=100'

HALLIBURTON

Database File bmc d 21d-18-07-95.db
Dataset Pathname wc/BMC_D_21D-18-07-95/run1/REPEAT
Presentation Format cbl_main
Dataset Creation Tue May 30 06:21:47 2017
Charted by Depth in Feet scaled 1:240



REPEAT PASS

5"=100'

HALLIBURTON

Calibration Report

Database File bmc d 21d-18-07-95.db
Dataset Pathname wc/BMC_D_21D-18-07-95/run1/MAIN
Dataset Creation Tue May 30 06:50:15 2017

Cement Bond Log Shop Calibration Report

Serial-Model: 12091451-A

Calibration Performed: Tue May 30 06:16:33 2017

Free Pipe Calibration

	Measured	Units
TT	246.9	usec
Amplitude	570.9	mV
Log Base Line	19.1	mV

Calibration References and Gain

Name	Value	Units
Pipe O.D.	4.500	in
Pipe Weight	11.6	lb/ft
Pipe Ref. Amp.	81.2	mV
Amp. Gain	0.144	

Reservoir Monitor Tool I Calibration Report

Serial-Model: 12376244-A

Shop Calibration Performed: Mon May 22 10:29:12 2017

Carbon/Oxygen Mode

Stabilization

Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	85.00	80.00	5.00	+/-15.00	V
ITCR2	3094	3250	-156	+/-250	cps

Near Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0297	5.30	<6.00
Fe	207	206 +/-2	0.0985	-----	-----
NGAIN = 0.993	NZOFF = 0.8				

Far Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0332	6.30	<6.50
Fe	209	208 +/-2	0.0907	-----	-----
FGAIN = 0.991	FZOFF = 0.5				

Flask Temperature 50.6 degF

Result	Logged	Expected Value	Diff.	Tol.	Units
COIR2	0.45	0.45	-0.00	+/-0.02	
LIRI2	1.36	1.36	0.00	+/-0.05	
TCCR2	4834	4000	834	+/-1000	cps
ITCR2	3081	3200	-119	+/-250	cps

Sigma Mode

Stabilization

Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	87.00	80.00	7.00	+/-15.00	V
FCAP	9885	10000	-115	+/-500	cps

Horizontal Water Tank

Result	Logged	Expected Value	Diff.	Tol.	Units
N/F Normalizer	0.96	0.95	0.01		
N/F Inel Norm	0.62	0.61	0.01		


RNF	1.05	1.07	-0.02	+/-0.12	
RINC	1.62	1.64	-0.02	+/-0.18	
SGFN	24.10	24.00	0.10	+/-0.50	cu
SGFF	22.95	22.85	0.10	+/-0.50	cu
FSIN	23623	24000	-377	+/-2000	cps
FCAP	9982	10000	-18	+/-1000	cps
NFTR	0.83			<5.00	
FFTR	0.92			<5.00	
NBKG	178			<500	cps
FBKG	99			<500	cps
RTN	0.41	0.40	0.01	+/-0.10	usec
RTF	0.43	0.40	0.03	+/-0.10	usec

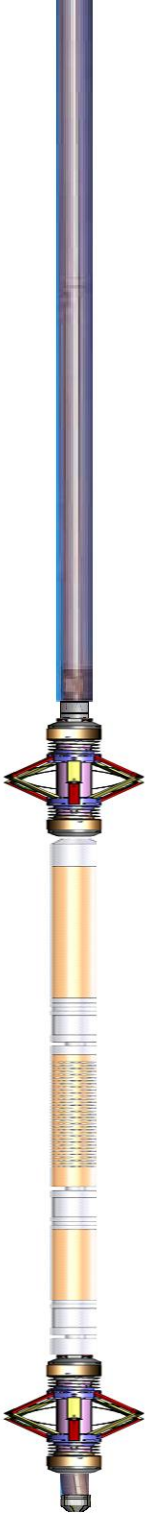
Calibration Software Modules					
HRMTI Module	2015.5.4.0				
RMTI Module	2015.10.16.1				
Log Data Acquisition Software Modules					
HRMTI Module	2015.5.4.0				
RMTI Module	2015.10.16.1				

Gamma Ray Calibration Report

Type / Serial:	002 / 11527445
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SHOP CALIBRATION		Mon May 22 11:40:46 2017			
	Counts/Sec.	Gain	Offset	Jig	Units
Background	22.8				cps
Calibrator	291.4				cps
		1.3703			GAPI/cps
PRIMARY VERIFICATION					
Background	32.5				cps
Calibrator	395.1				cps
Difference				362.6	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	35.86		STNDCH-STND_CH 1.4375 IN CABLE HEAD	1.50	1.44	1.00
GR	33.60		TTTCU-002 (11527445) Through Tubing Telemetry Cartridge - Ultrawire	7.65	1.69	37.00
			XHU-003 (12461937) Crossover Halliburton 1553 to Ultrawire	1.58	1.69	7.00

RmtTFGT	22.95		RMTI-A (12376244) Halliburton RMTI Tool	14.00	2.13	77.00
RmtTNGT	22.45					
RmtFP5V	14.70		X-OVER-SondexxGo Sondex Box x Go Pin Cross Over	0.31	1.69	1.00
RmtNFwvMcsP	14.70		CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00
RmtCommFWa	14.70					
Temp	9.57					
TT3FT	7.32		HCBLM-A (12091451) Halliburton HCBLM Tool	9.38	2.75	116.00
AMP3FT	7.32					
WVF5FT	6.36					
WVF3FT	2.84		CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00
LLMTEN	0.00		AUH-001 (11734726) Adaptor Ultrawire/Halliburton	0.38	1.69	3.00
			BUL-001 (000001) Bullnose	0.30	1.69	1.50
Dataset: bmc d 21d-18-07-95.db: wc/BMC_D_21D-18-07-95/run1/MAIN Total length: 39.43 ft Total weight: 293.50 lb O.D.: 3.13 in						

Company	URSA OPERATING COMPANY				
Well	BMC D 21D-18-07-95				
Field	WILDCAT				
County	GARFIELD		State	CO	
HALLIBURTON	CEMENT BOND LOG GR-CCL				