

HALLIBURTON				CEMENT BOND LOG			
Company		URSA OPERATING COMPANY LLC		Company		URSA OPERATING COMPANY LLC	
Well		MONUMENT RIDGE B 21A-17-7-95		Well		MONUMENT RIDGE B 21A-17-7-95	
Field		PARACHUTE		Field		PARACHUTE	
County		GARFIELD State CO		County		GARFIELD State CO	
Permanent Datum		GROUND LEVEL Elevation 5702'		API No.: 05045228930000 Serv #: 903682891		Other Services	
Log Measured From		KB , 17' Ft. above perm. datum		Location: SHL: 939' FSL & 144' FEL BHL: 132' FNL & 1975' FWL		RMT-1	
Drilling Measured From		KB		Sec: 8 Twp: 7S Rge: 95W			
Date @ Time Logged		30 NOV 2016 @ 04:30		Type Fluid in Hole		FRESH WATER	
Run No.		ONE		Density of Fluid		8.4 PPG	
Depth - Driller		8191'		Fluid Level		SURFACE	
Depth - Logger		8013'		Cement Top Est. Logged		2050'	
Bottom - Logged Interval		8006'		Equipment / Location		11808537 / RS. WY	
Top - Log Interval		1862'		Recorded by		B. RIDDEL	
Max. Recorded Temp.		228 degF		Witnessed by		R. TOLLE	
CEMENTING DATA		Surface		Protection		Liner	
Date / Time Cemented		String		String		N/A	
Primary / Squeeze		N/A		N/A		N/A	
Expected Compressive Strength		N/A		psi@ N/A hrs		psi@ N/A hrs	
Cement Volume		N/A		N/A		N/A	
Cement Type / Weight		N/A		N/A		N/A	
Formulation		N/A		N/A		N/A	
Mud Type / Mud Wgt.		N/A		N/A		N/A	
Borehole Record		Casing & Tubing Record					
Run Number		Bit From To		Size Weight From To			
ONE		24" SURFACE 60'		16" 75.5 # SURFACE 60'			
TWO		12.25" 60' 1912'		8.625" 32.0 # SURFACE 1912'			
THREE		7.875" 1912' 8191'		4.5" 11.6 # SURFACE 8163'			
<<< 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							
ESTIMATED TOP OF CEMENT : 2050' GAMMA BLANKET : 408 GAPI FREE PIPE CALIBRATION DEPTH : 250' TENSION PULLED: 4486', 4470', 2112' & 1832' THANK YOU FOR CHOOSING HALLIBURTON ENERGY SVCS. YOUR CREW TODAY: B. RIDDEL, D. FLINDERS, B. BURDERER							

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Comments

ESTIMATED TOP OF CEMENT : 2050'
GAMMA BLANKET : 408 GAPI
FREE PIPE CALIBRATION DEPTH : 250'

TENSION PULLED: 4486', 4470', 2112' & 1832'

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SVCS.
YOUR CREW TODAY: B. RIDDEL, D. FLINDERS, B. BURDERER

Service Ticket No.	903682891	API No.	05045228930000	PGM Ver	15.10.29001
The Well Name, Location, Borehole Description, and / or Cementing Data Furnished by Client					
EQUIPMENT DATA					
XHU		GAMMA		RMTI	
Run No.	ONE	Run No.	ONE	Run No.	ONE
Serial No.	12146425	Serial No.	11224503	Serial No.	12095949
Model No.	XHU-3	Model No.	TTTC-U2	Model No.	RMTI
Diameter	1 11/16"	Diameter	1 11/16"	Diameter	2.25"
LOGGING DATA					
General Data					
Pass	Depths		Well Head	Speed	Logging Run Comments
No	From	To	Pressure	Ft/Min	

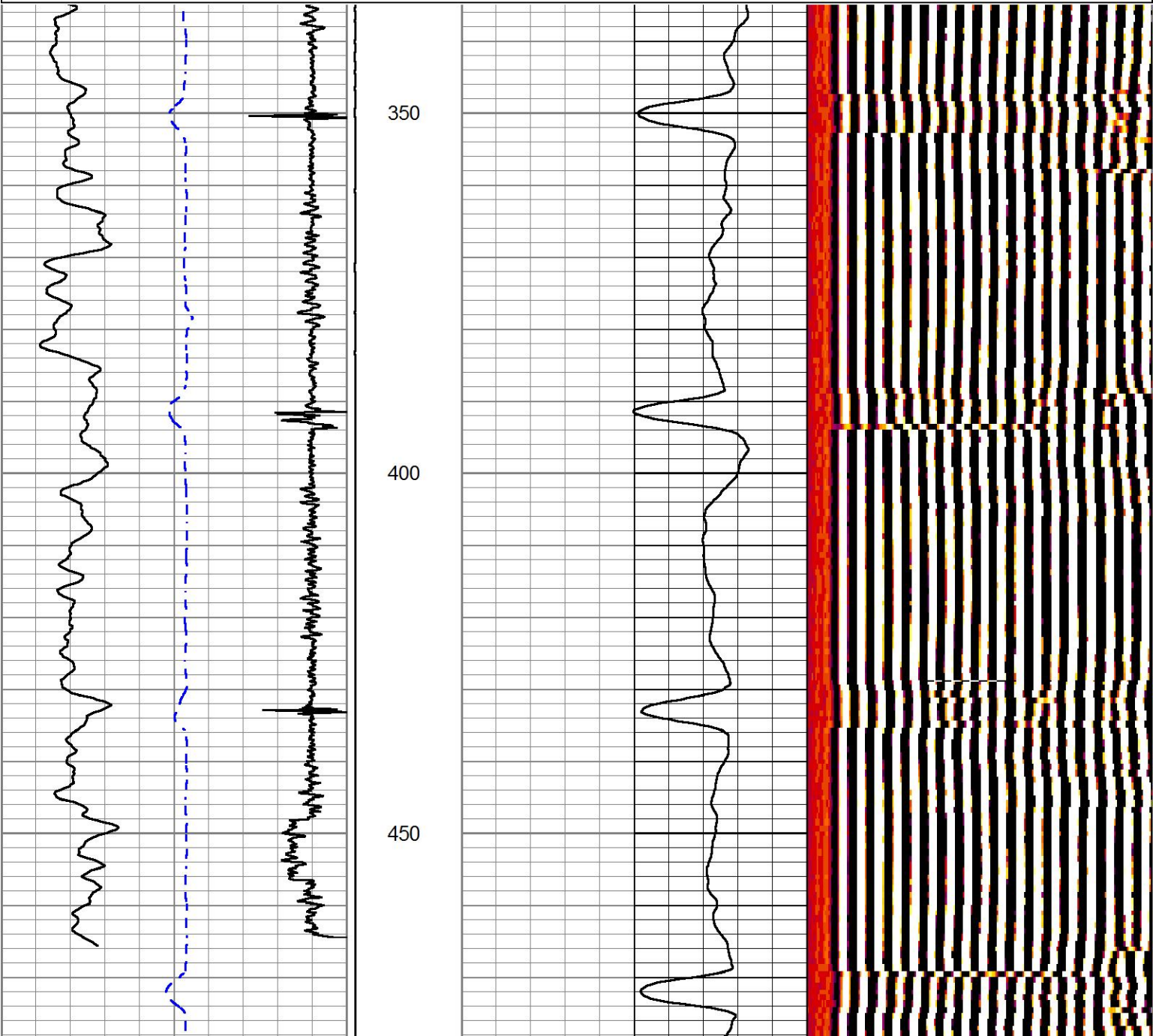
ONE	4380'	4130'	0 PSI	20	REPEAT			
TWO	8013'	1862'	0 PSI	20	MAIN			
	GAMMA		SIGMA		AMPLITUDE			
Pass	Scale		Scale		Scale		Scale	
No.	L	R	L	R	L	R	L	L
ONE	0	200	60	0	0	100		
TWO	0	200	60	0	0	100		
DIRECTIONAL INFORMATION								
Maximum Deviation			deg. @		KOP			

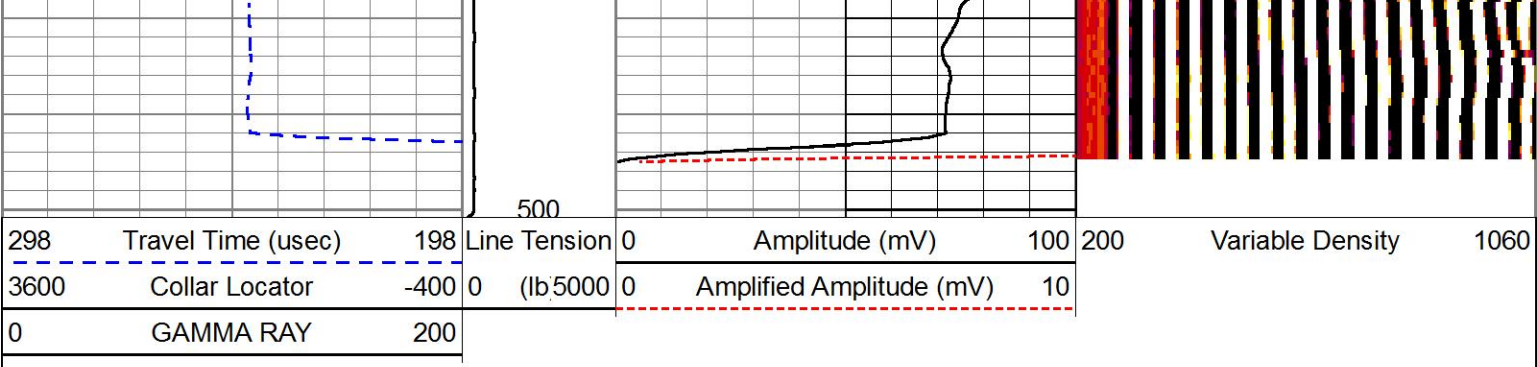
HALLIBURTON

FREE PIPE SECTION

5" = 100'

Database File	mr_b_21a_17_7_95.db		
Dataset Pathname	PASS1		
Presentation Format	!1!!cbl_rmti		
Dataset Creation	Wed Nov 30 03:03:11 2016		
Charted by	Depth in Feet scaled 1:240		
298	Travel Time (usec)	198	Line Tension 0
3600	Collar Locator	-400	0 (lb/5000
0	GAMMA RAY	200	
			Amplitude (mV) 100
			Amplified Amplitude (mV) 10
			Variable Density 1060





FREE PIPE SECTION

HALLIBURTON

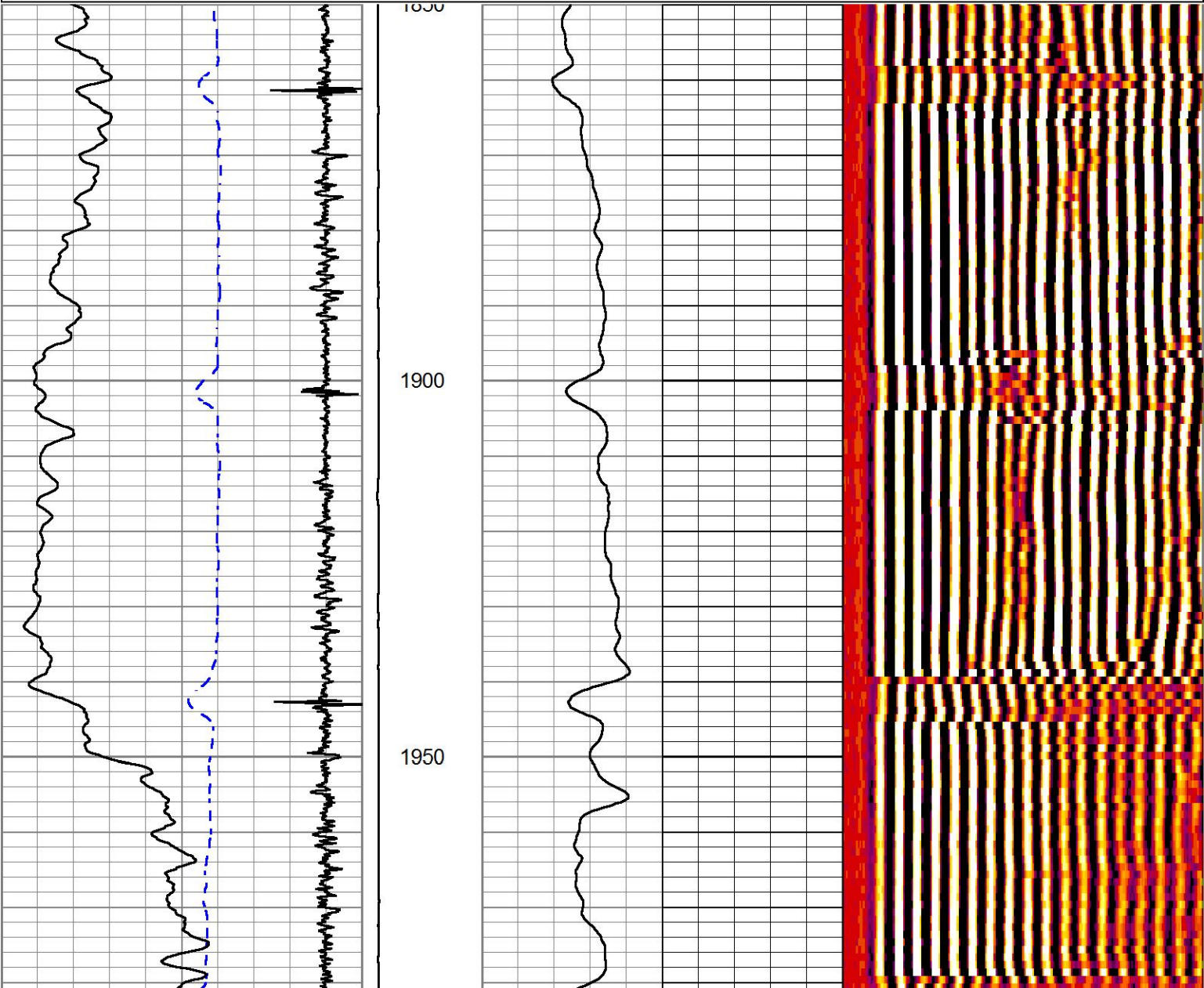
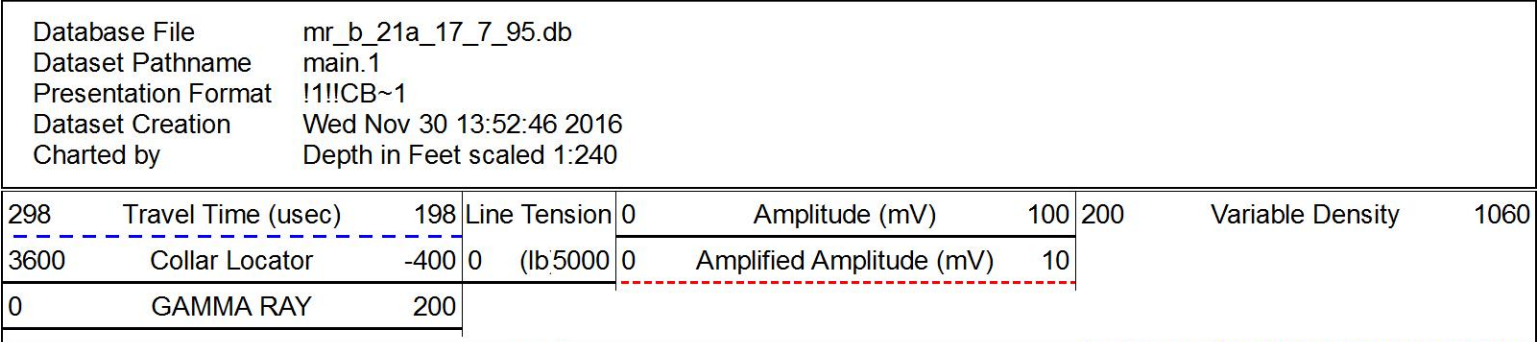
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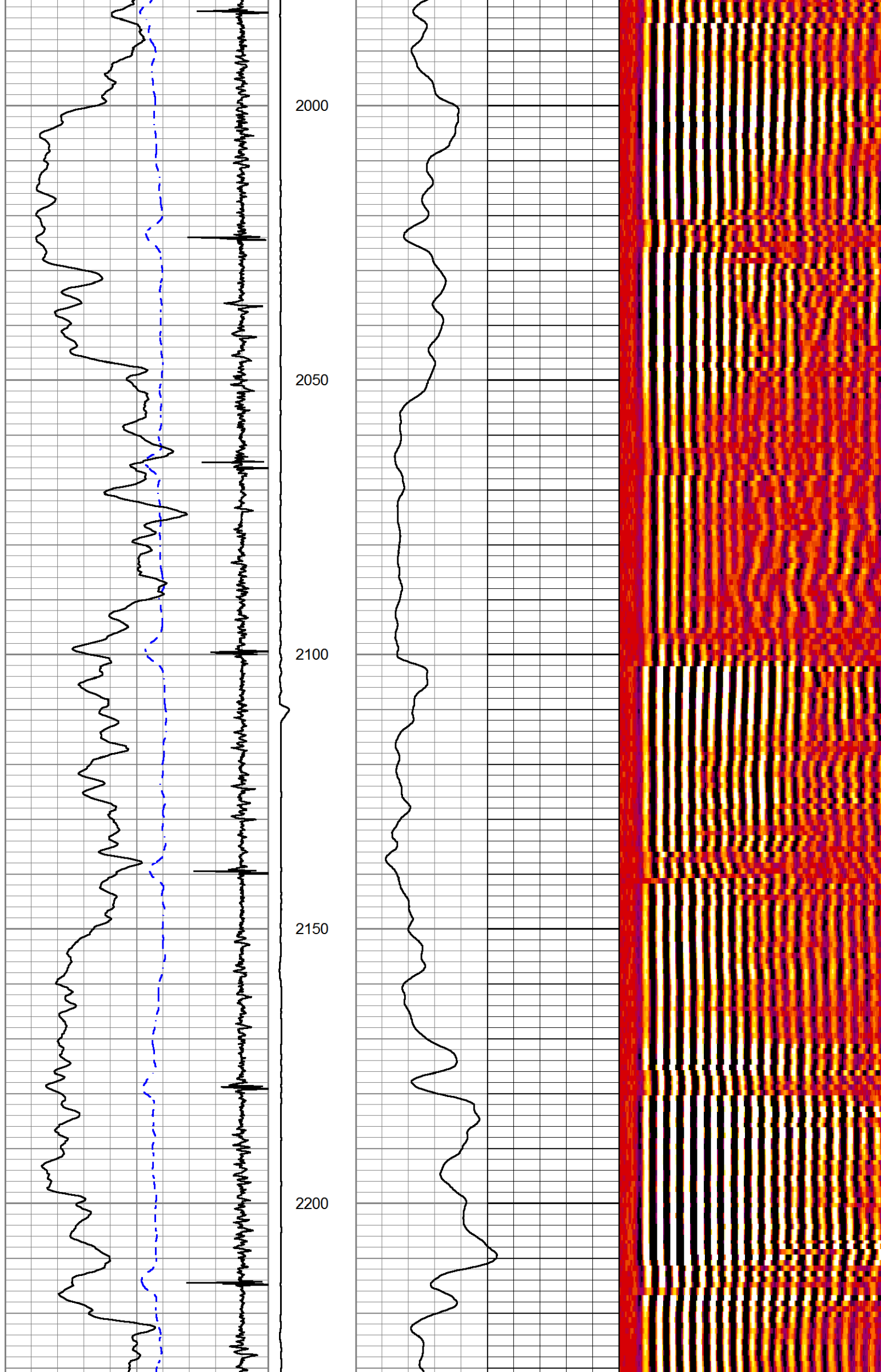


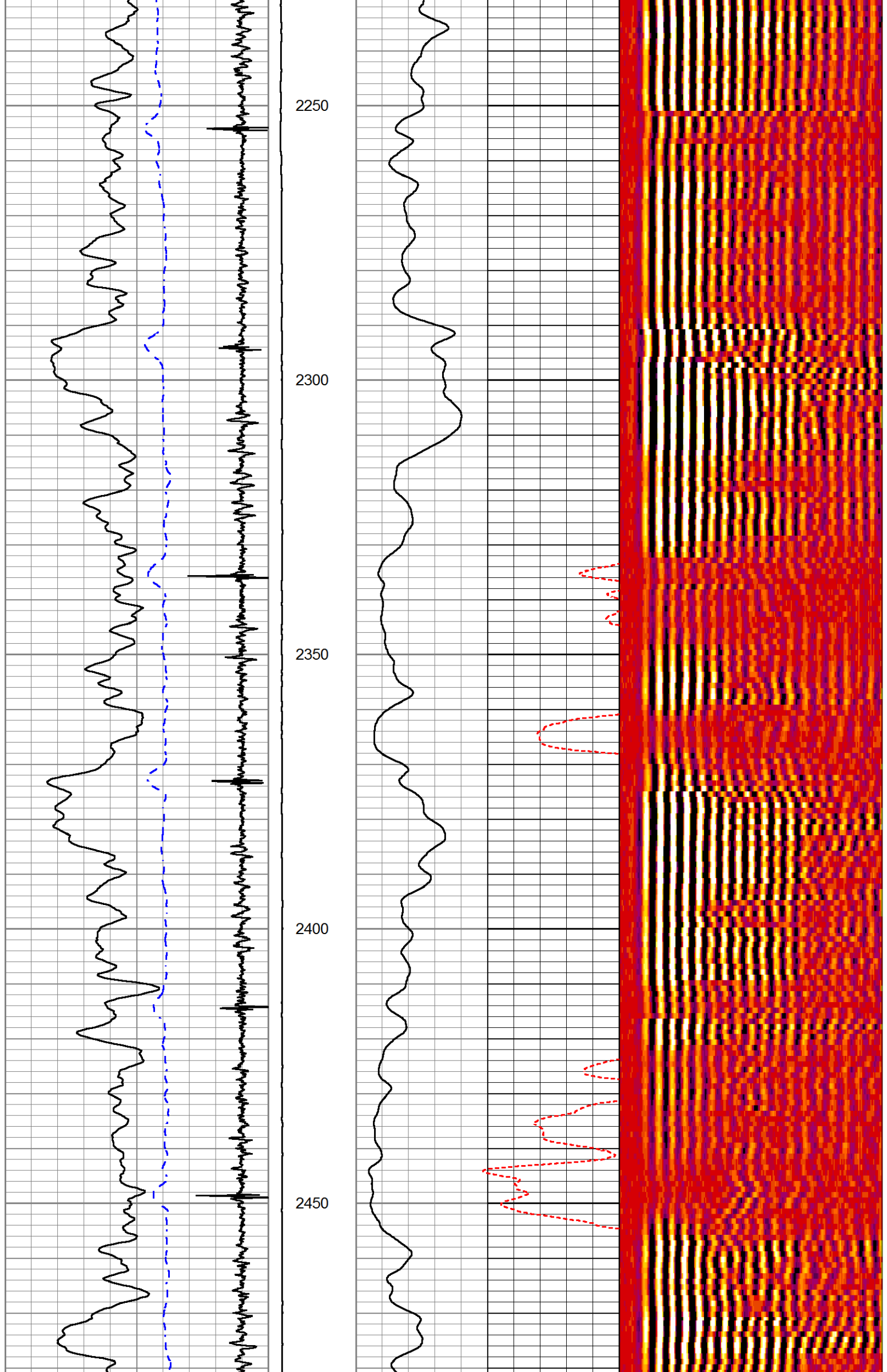
MAIN PASS

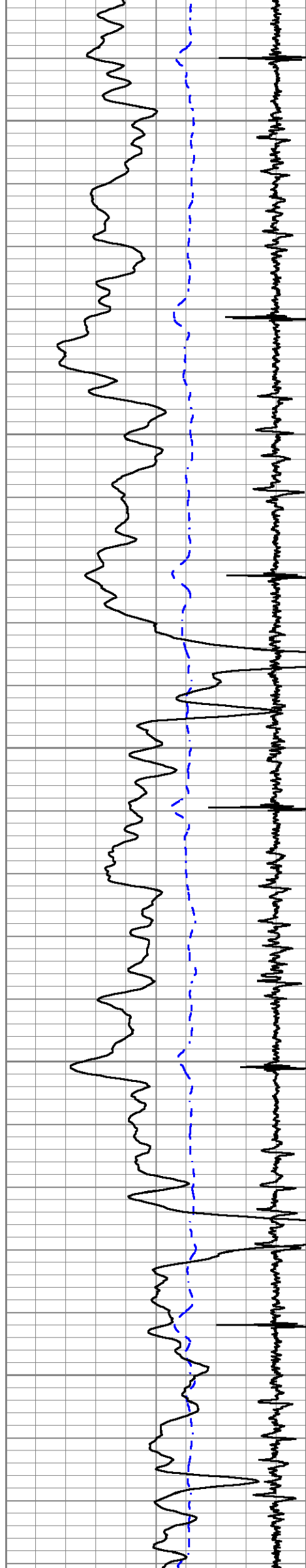
HALLIBURTON

5" = 100'









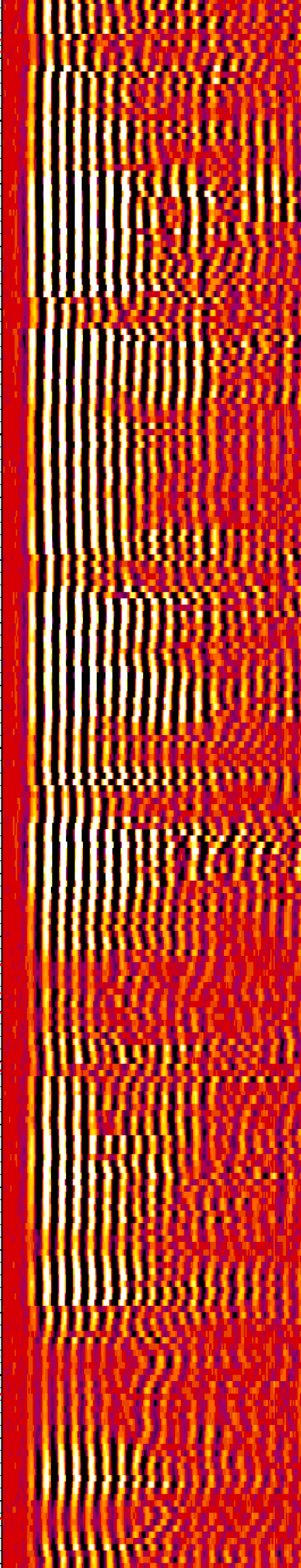
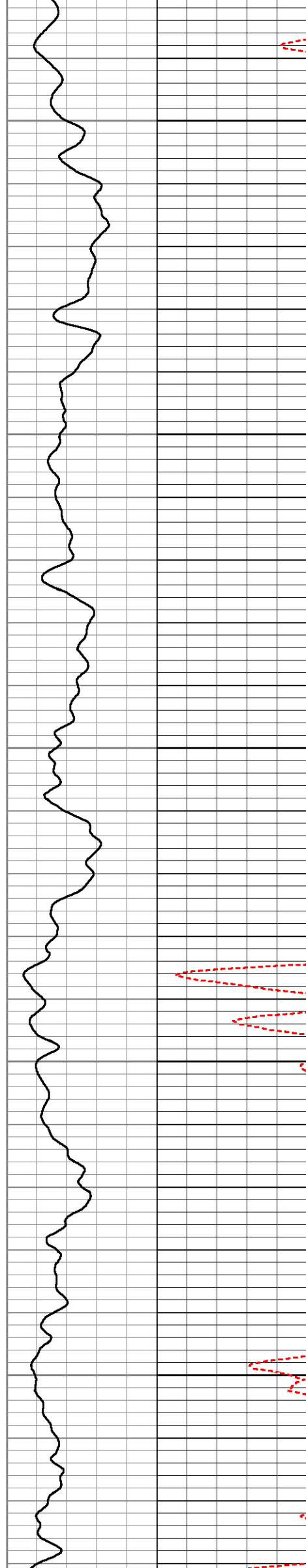
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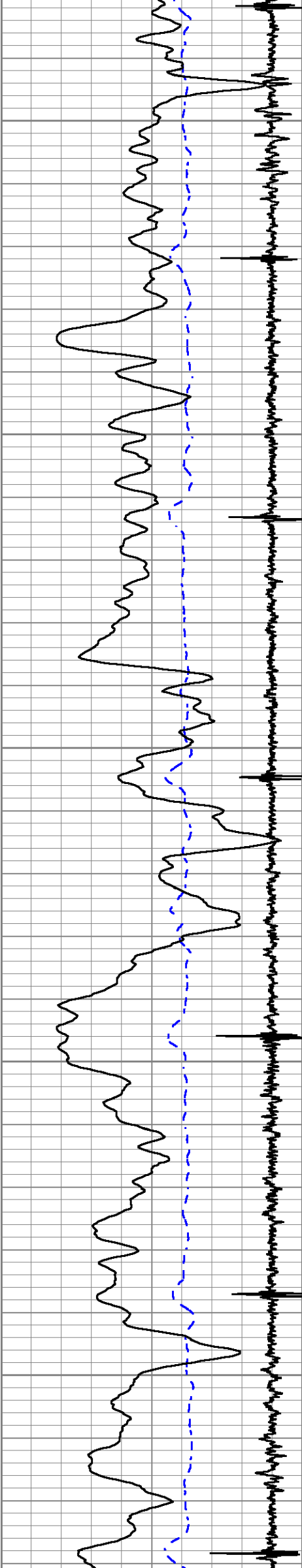
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2600

2650

2700





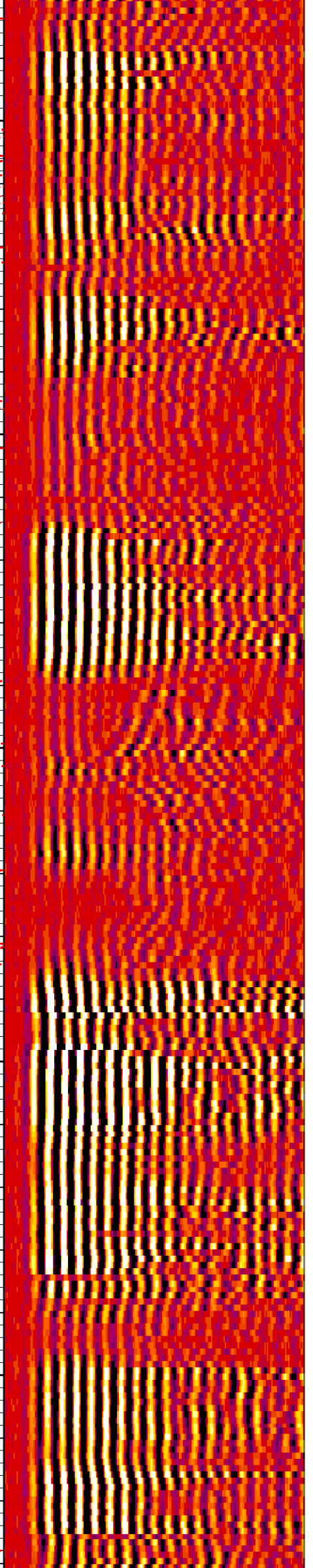
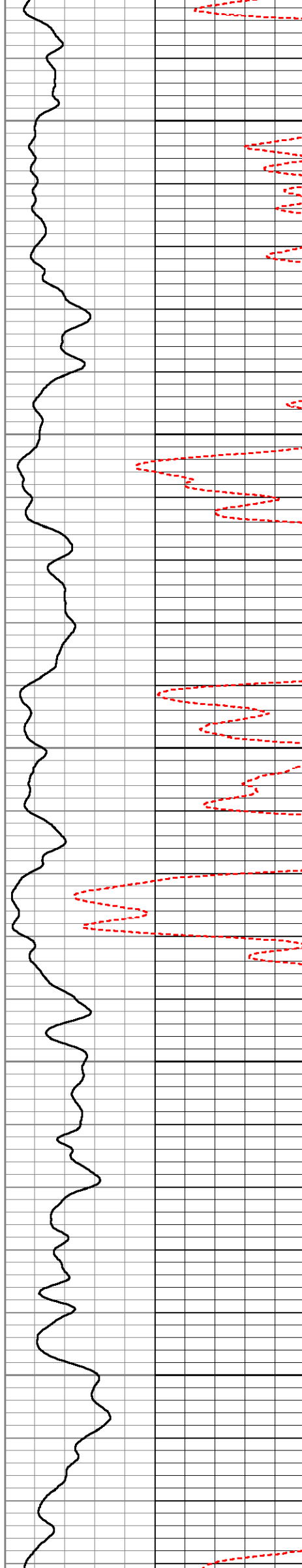
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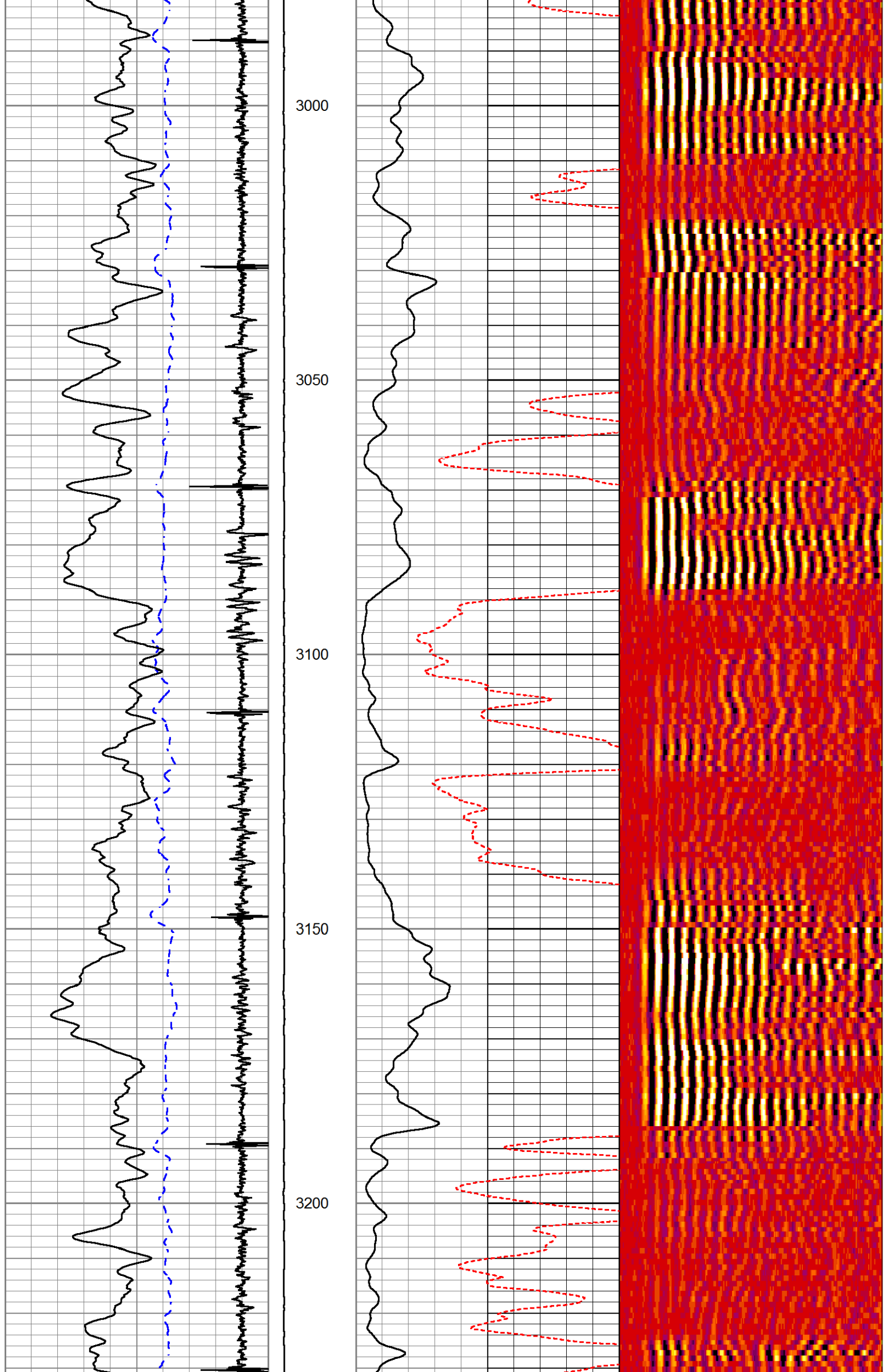
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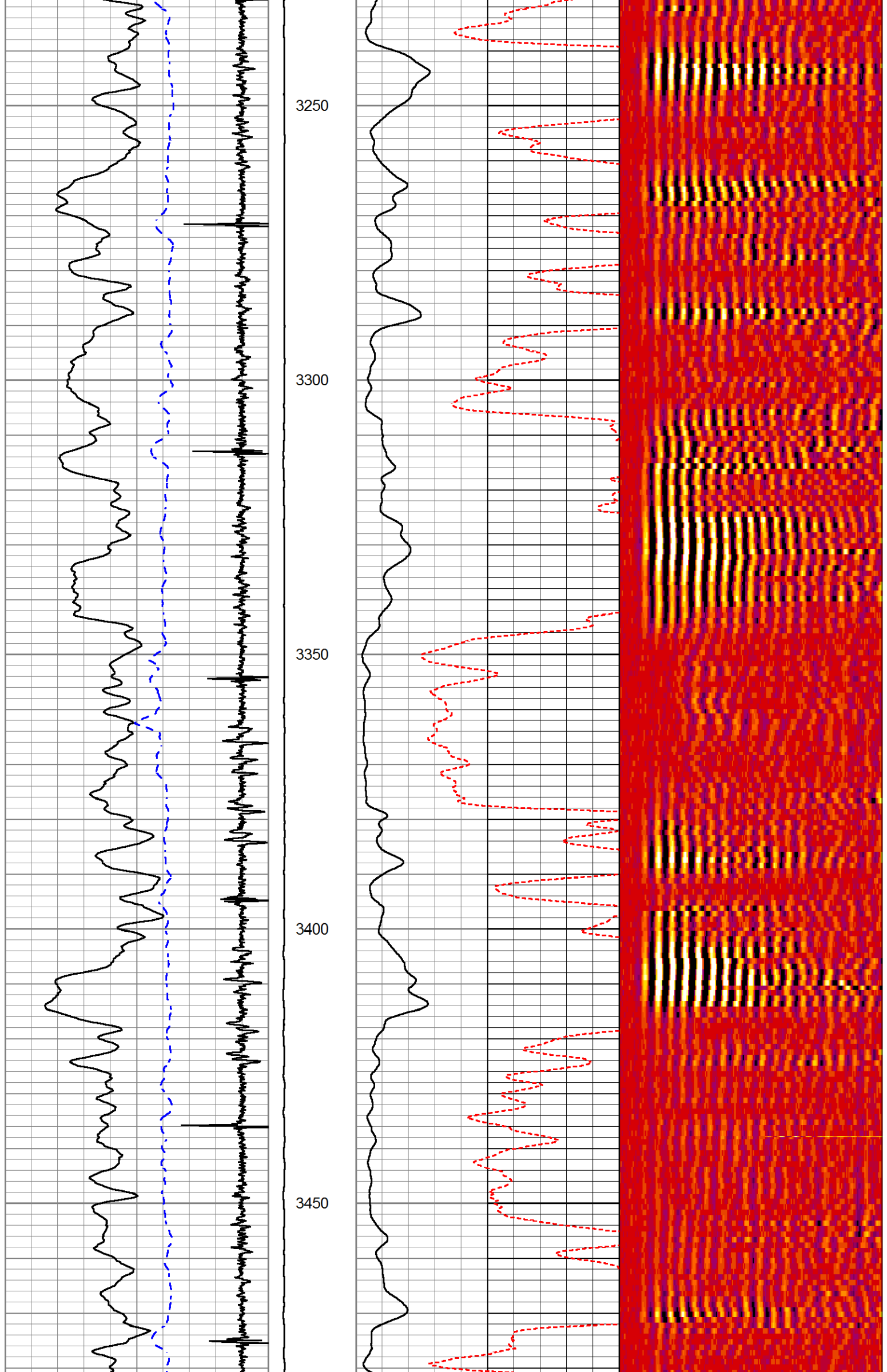
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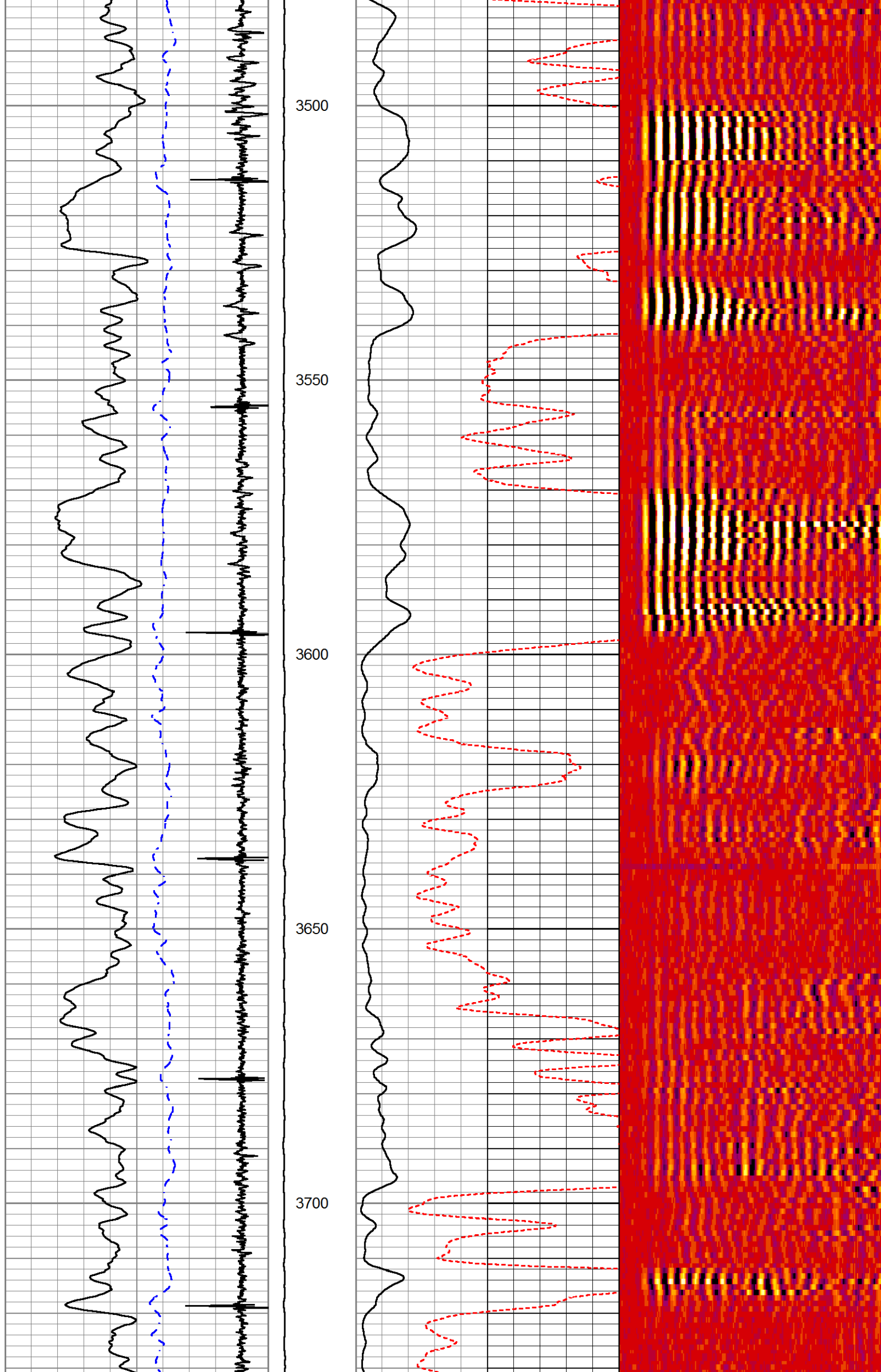
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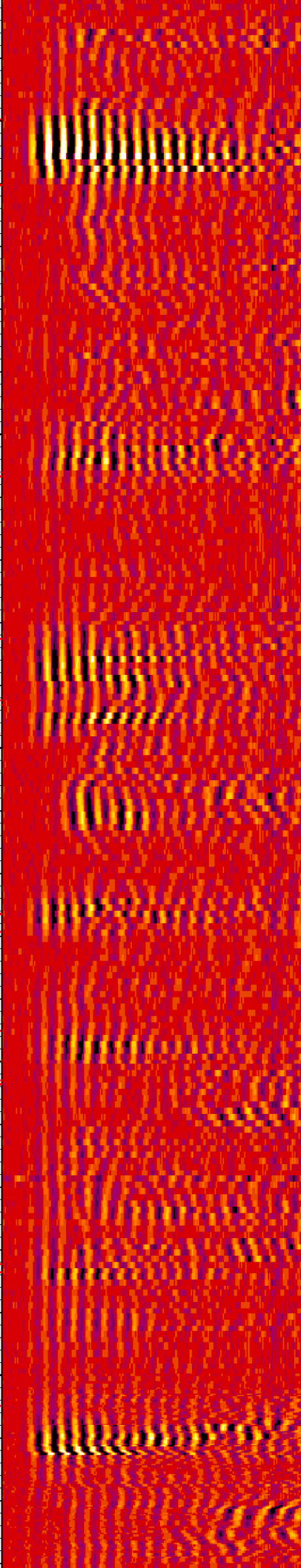
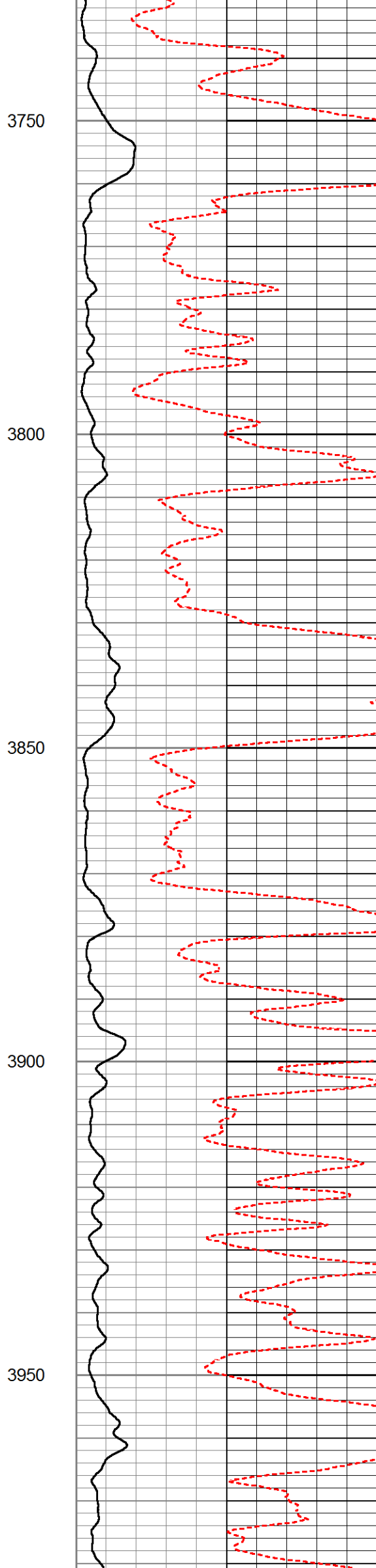
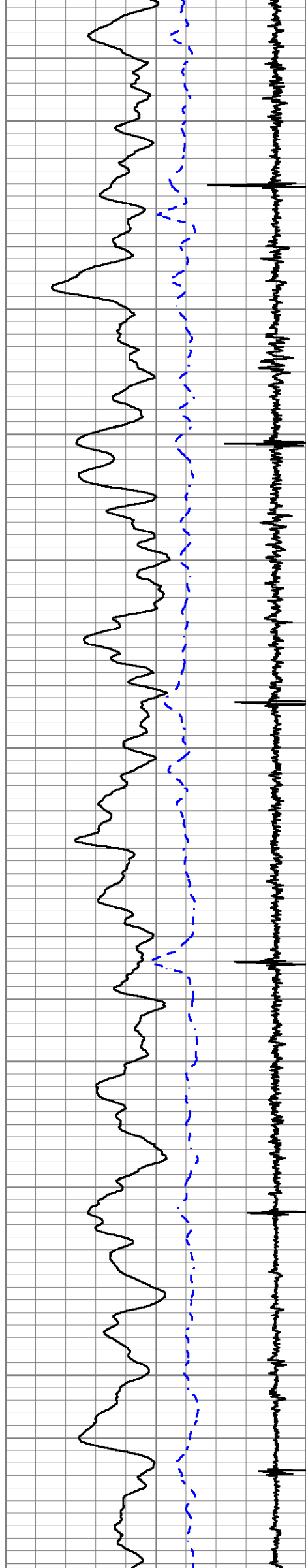
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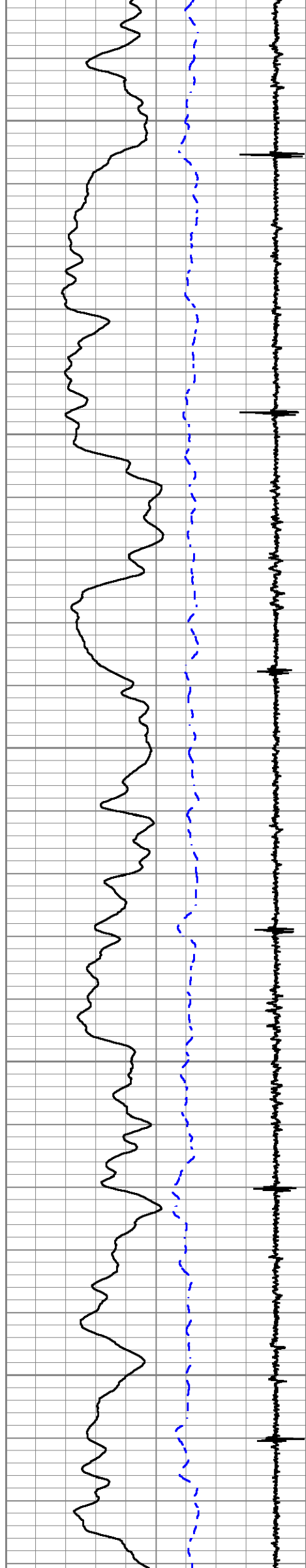












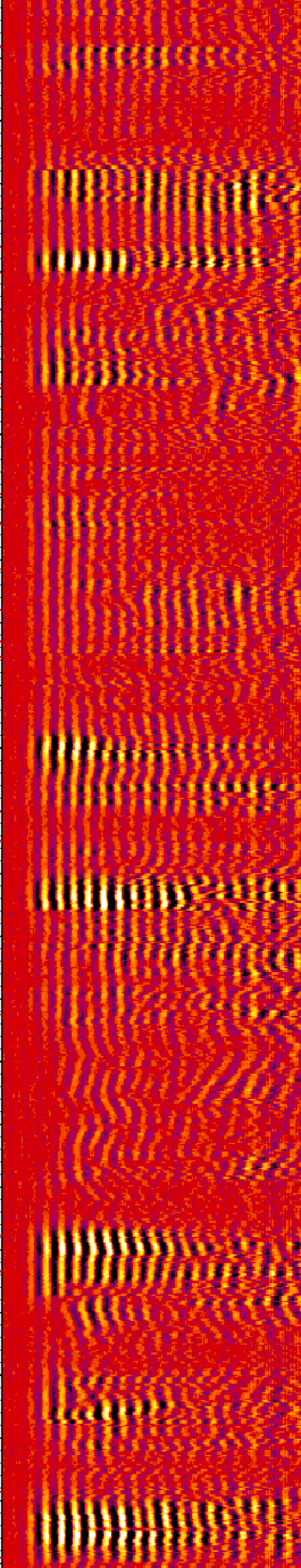
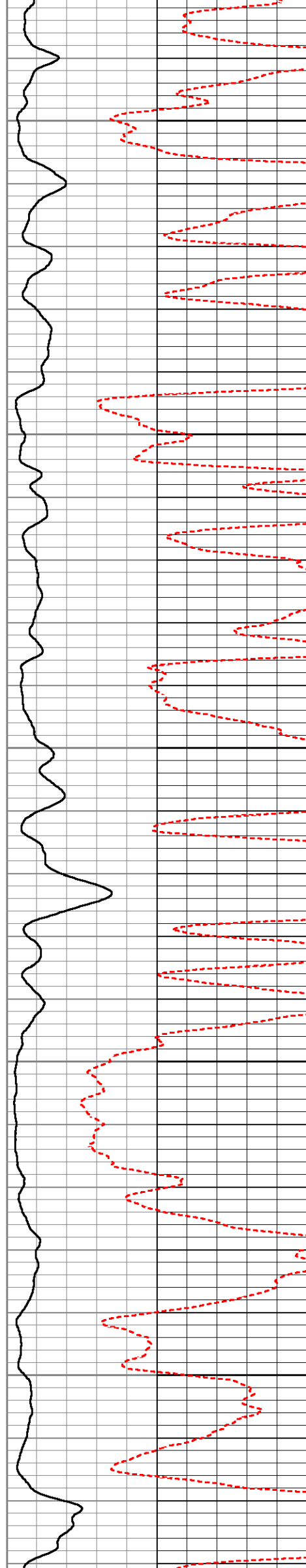
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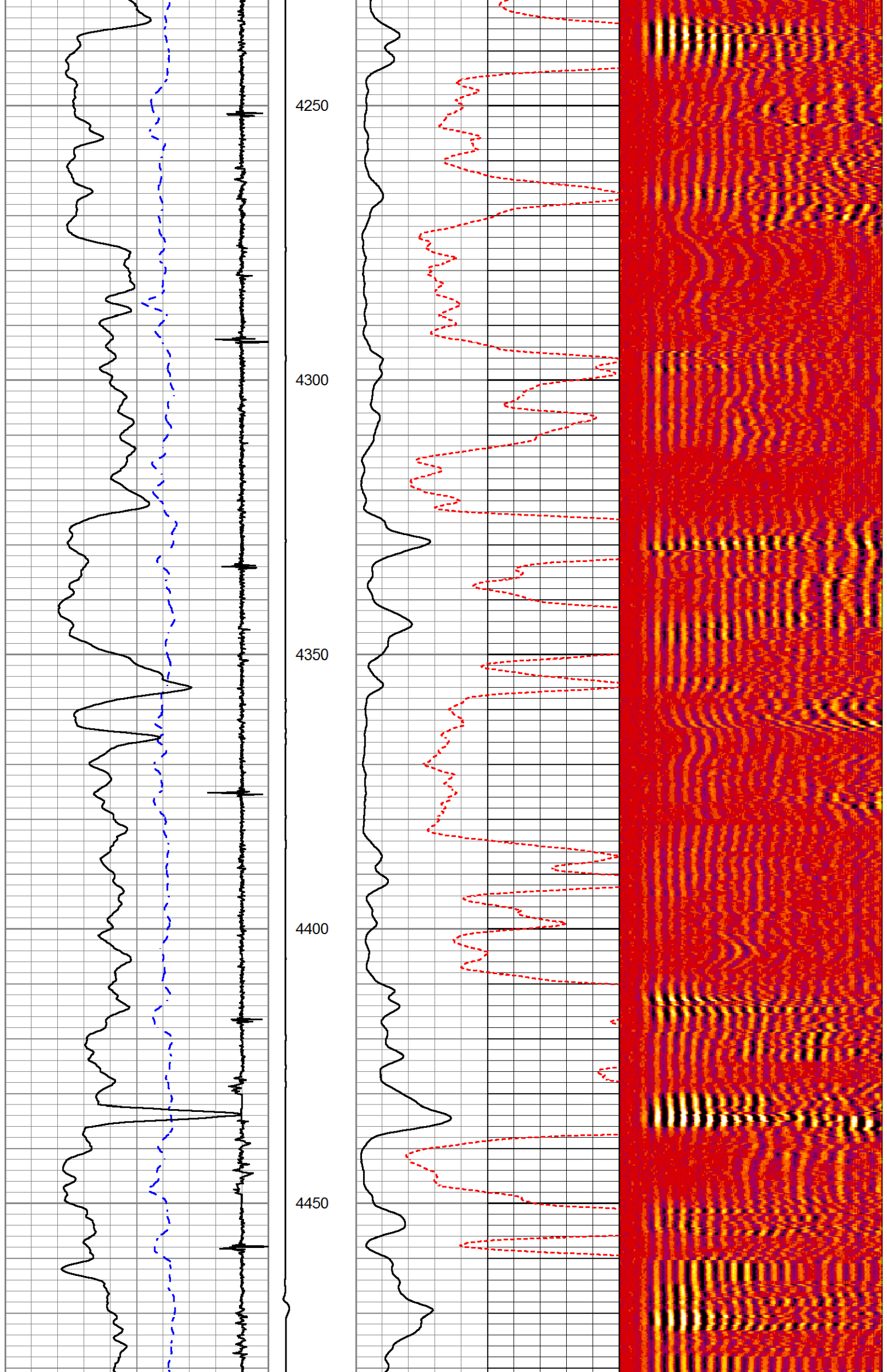
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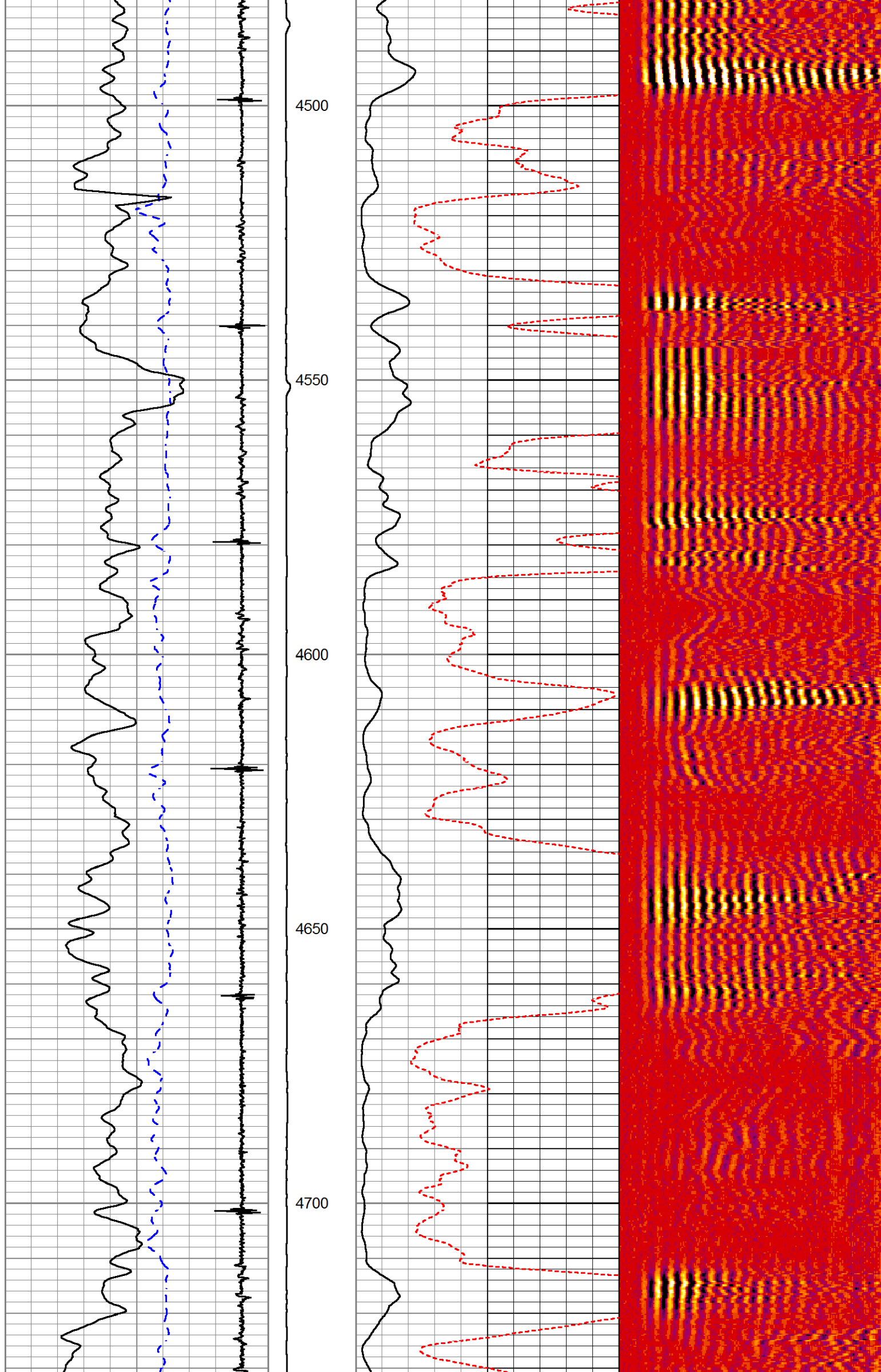
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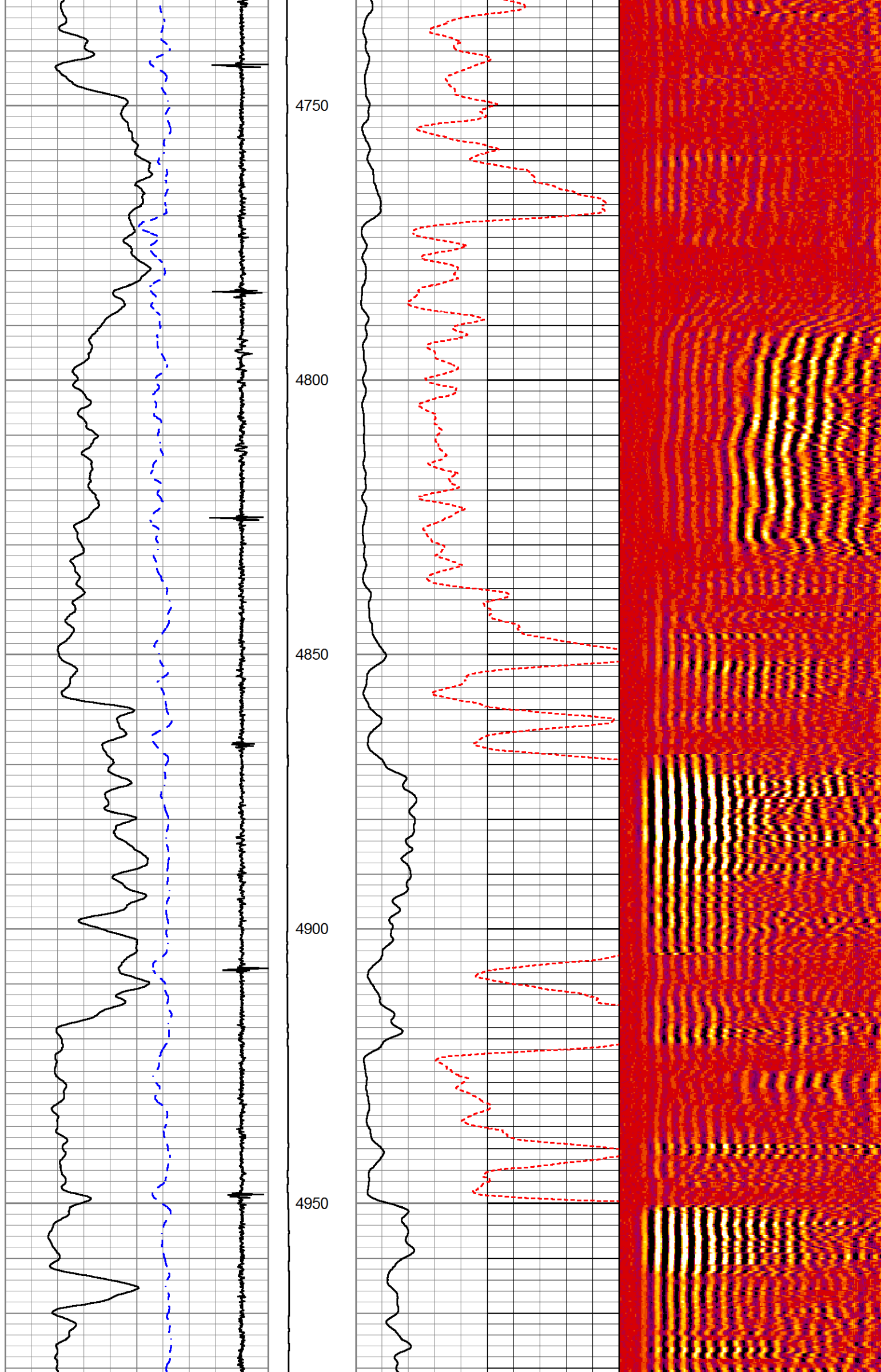
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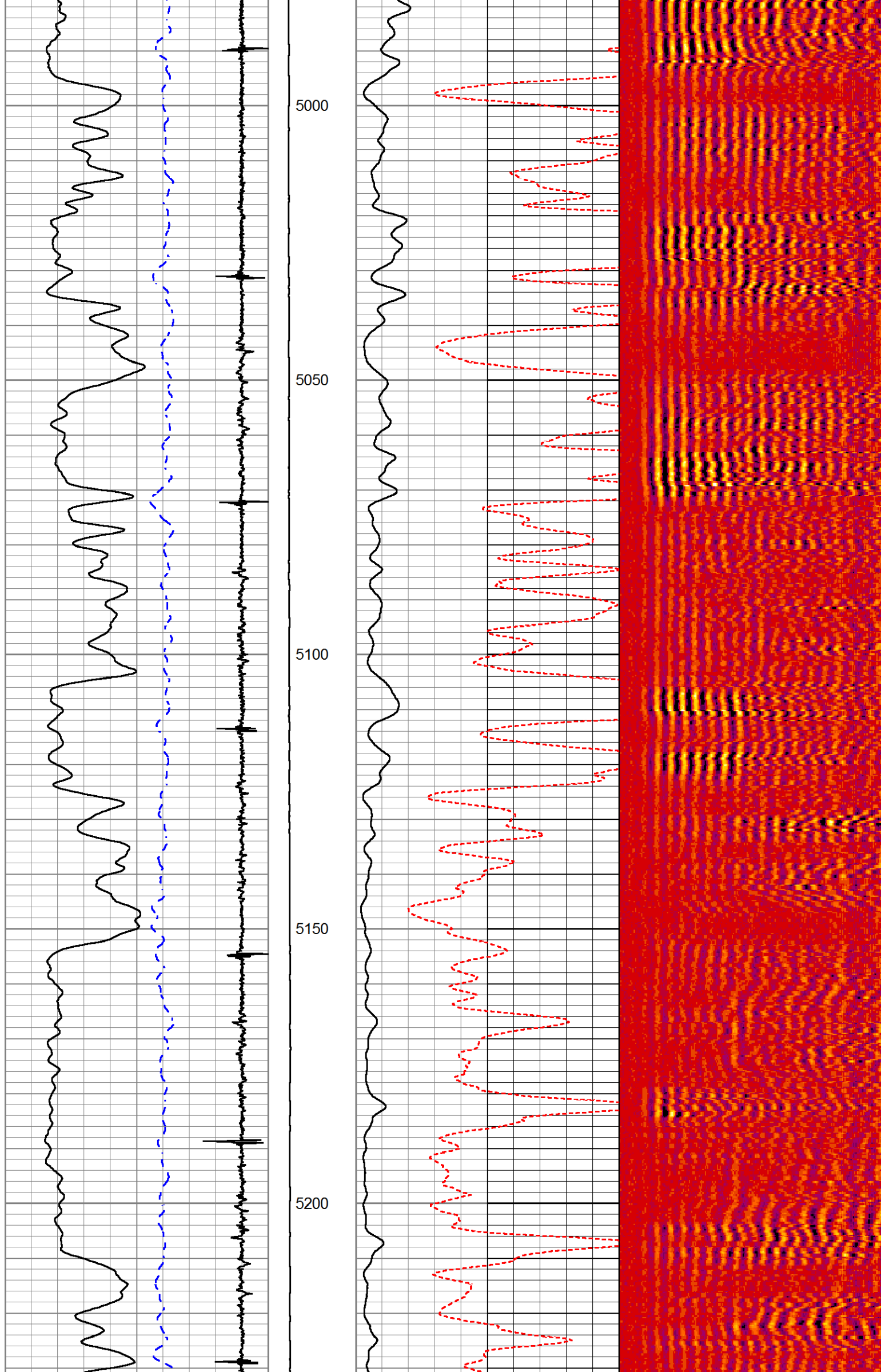
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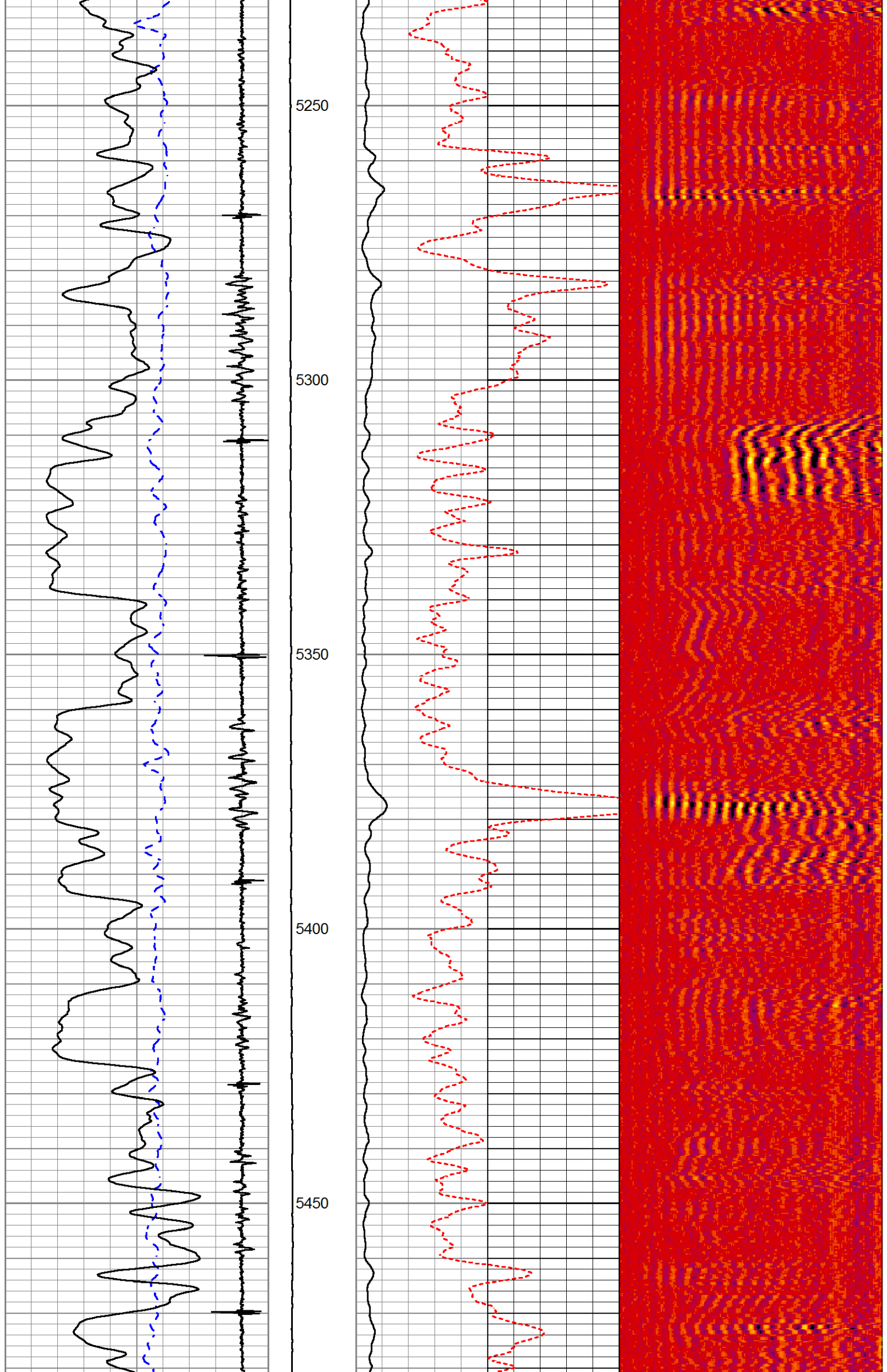


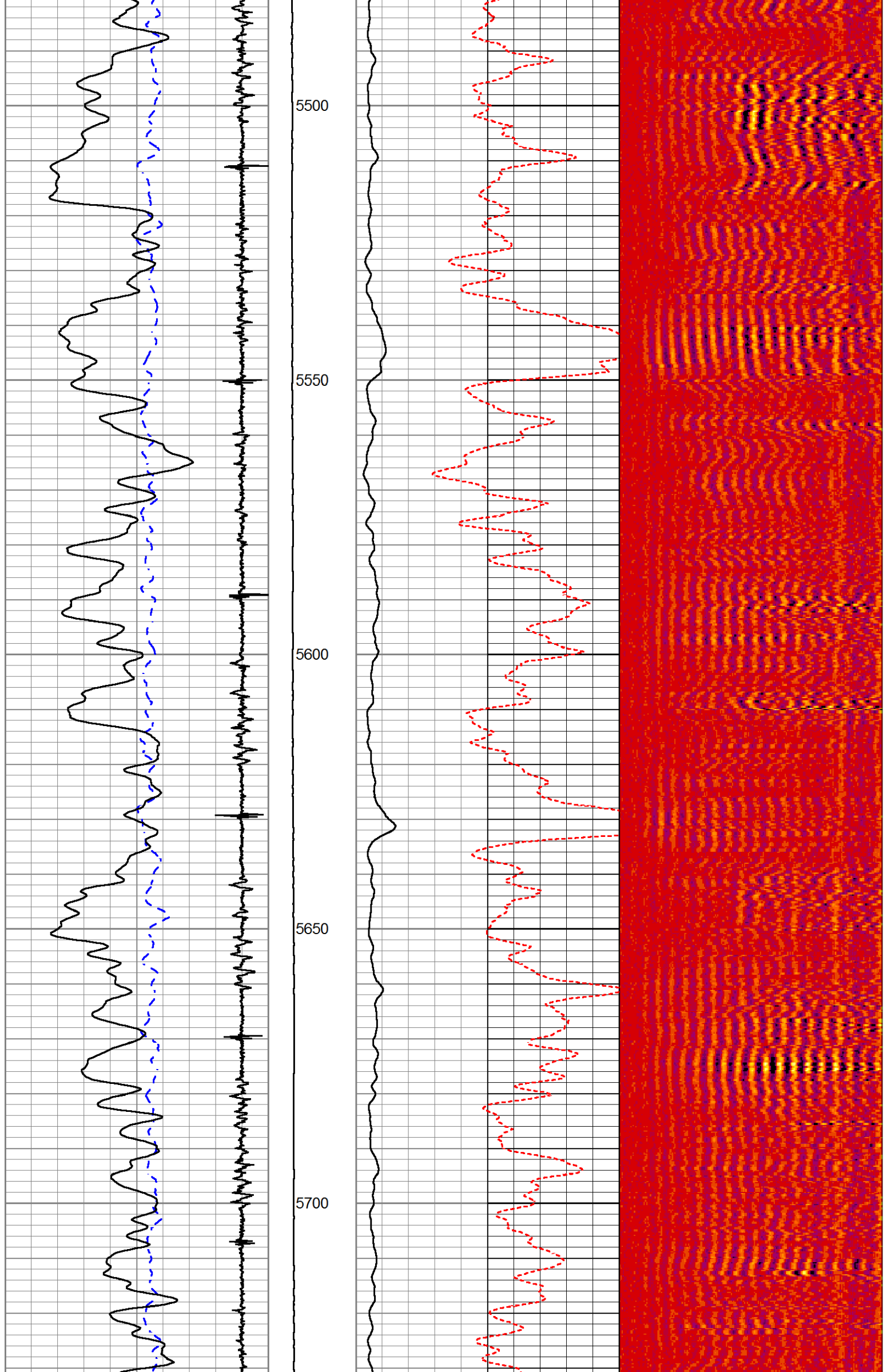


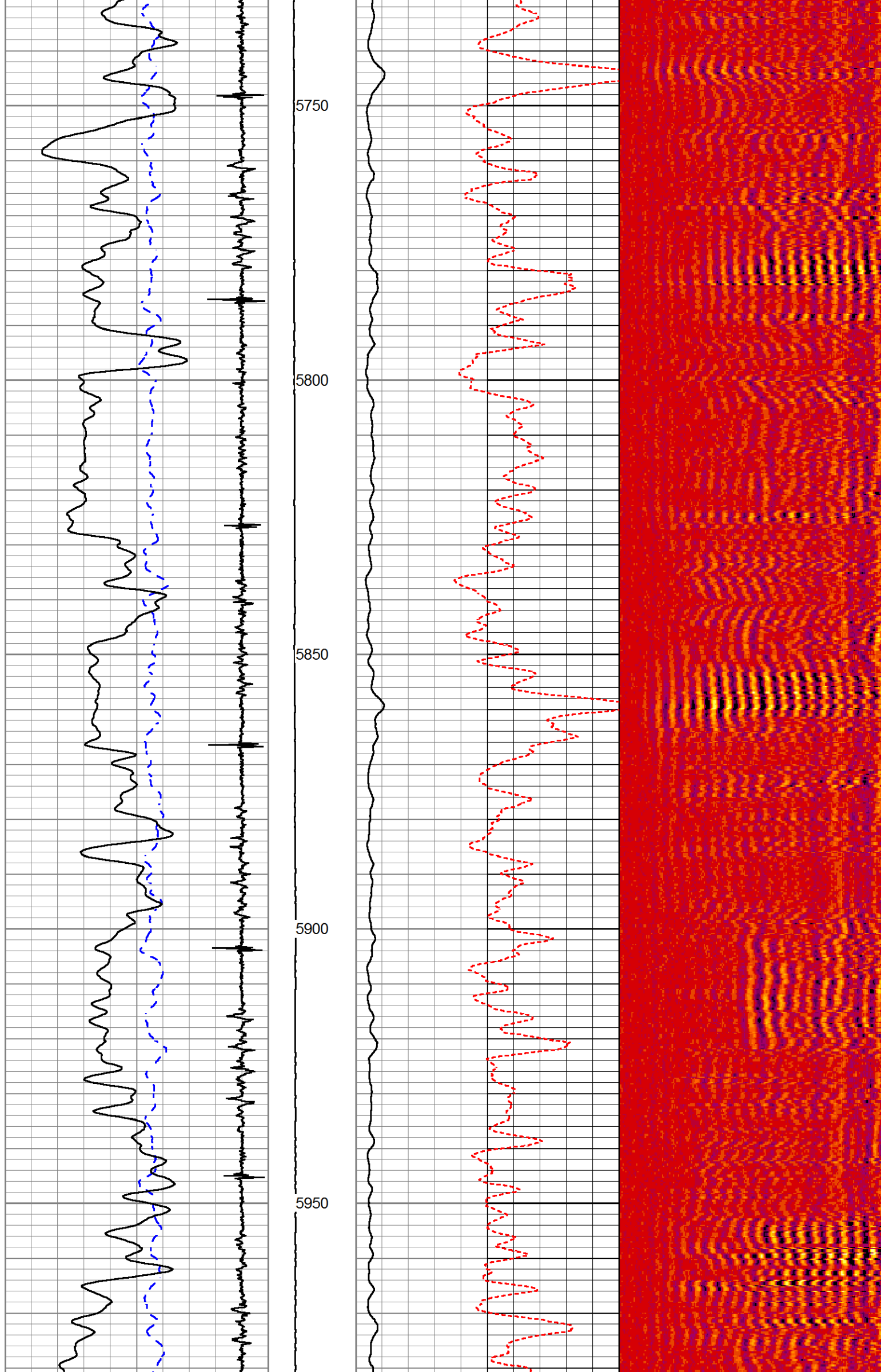


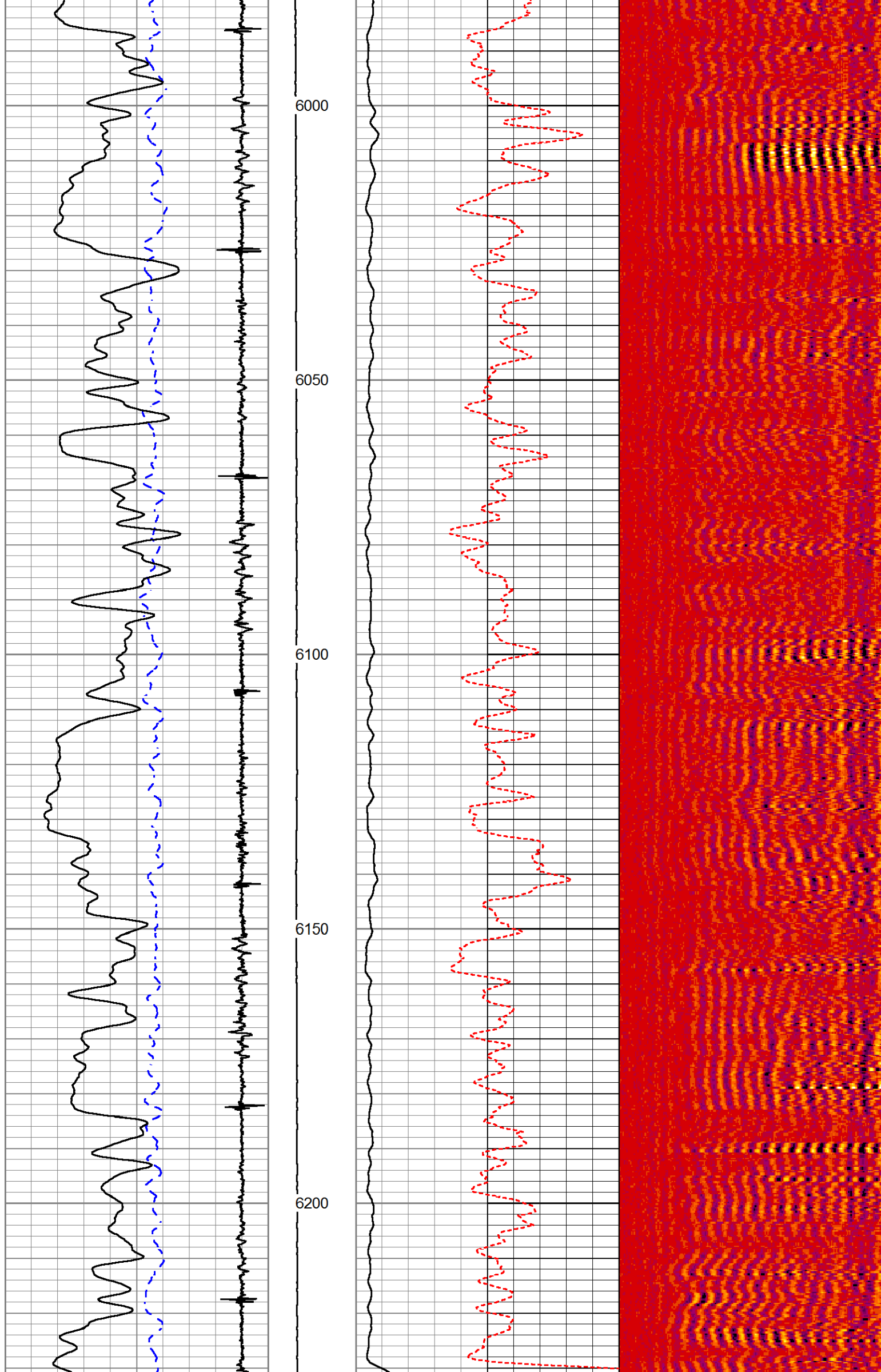


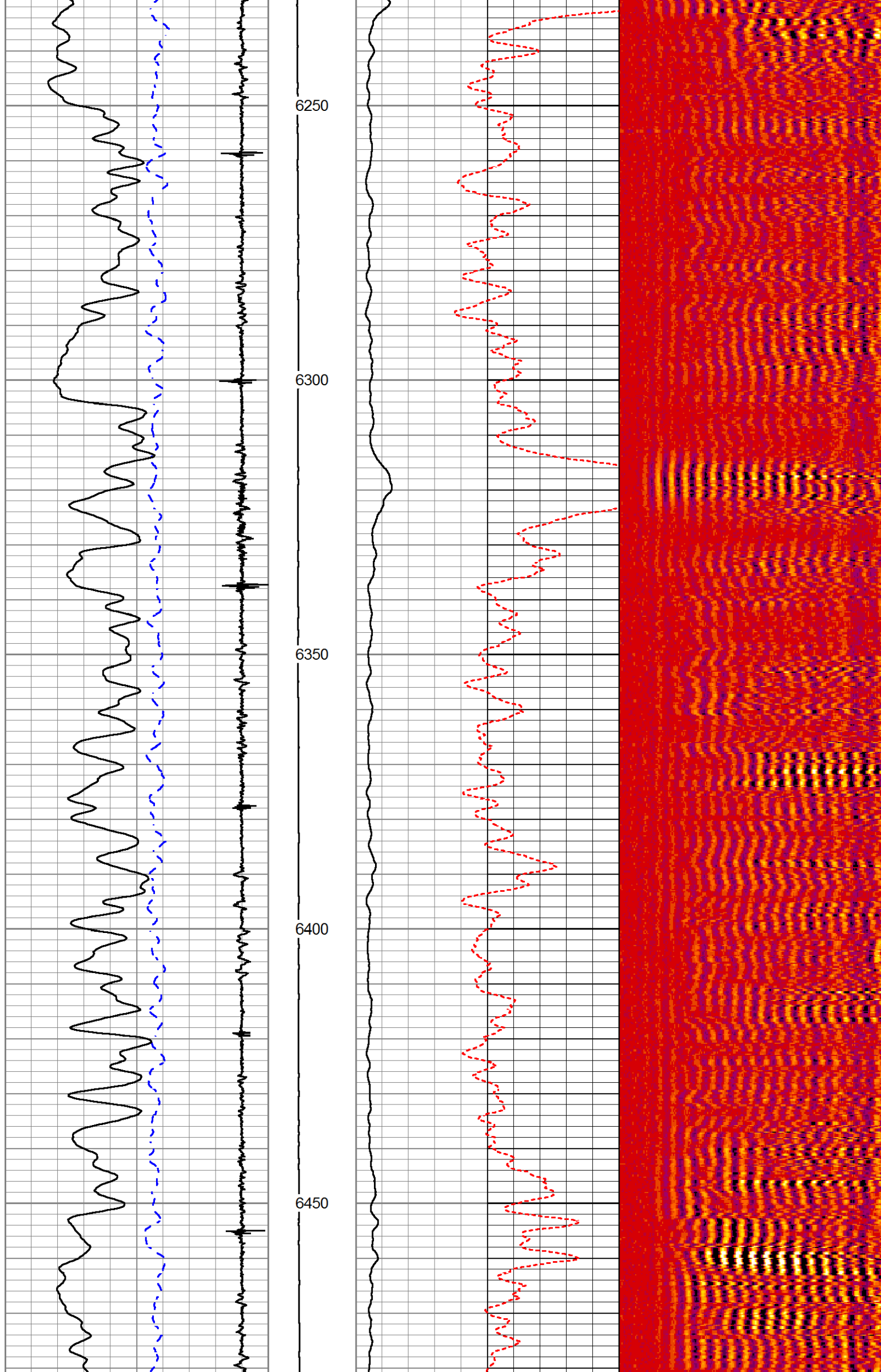


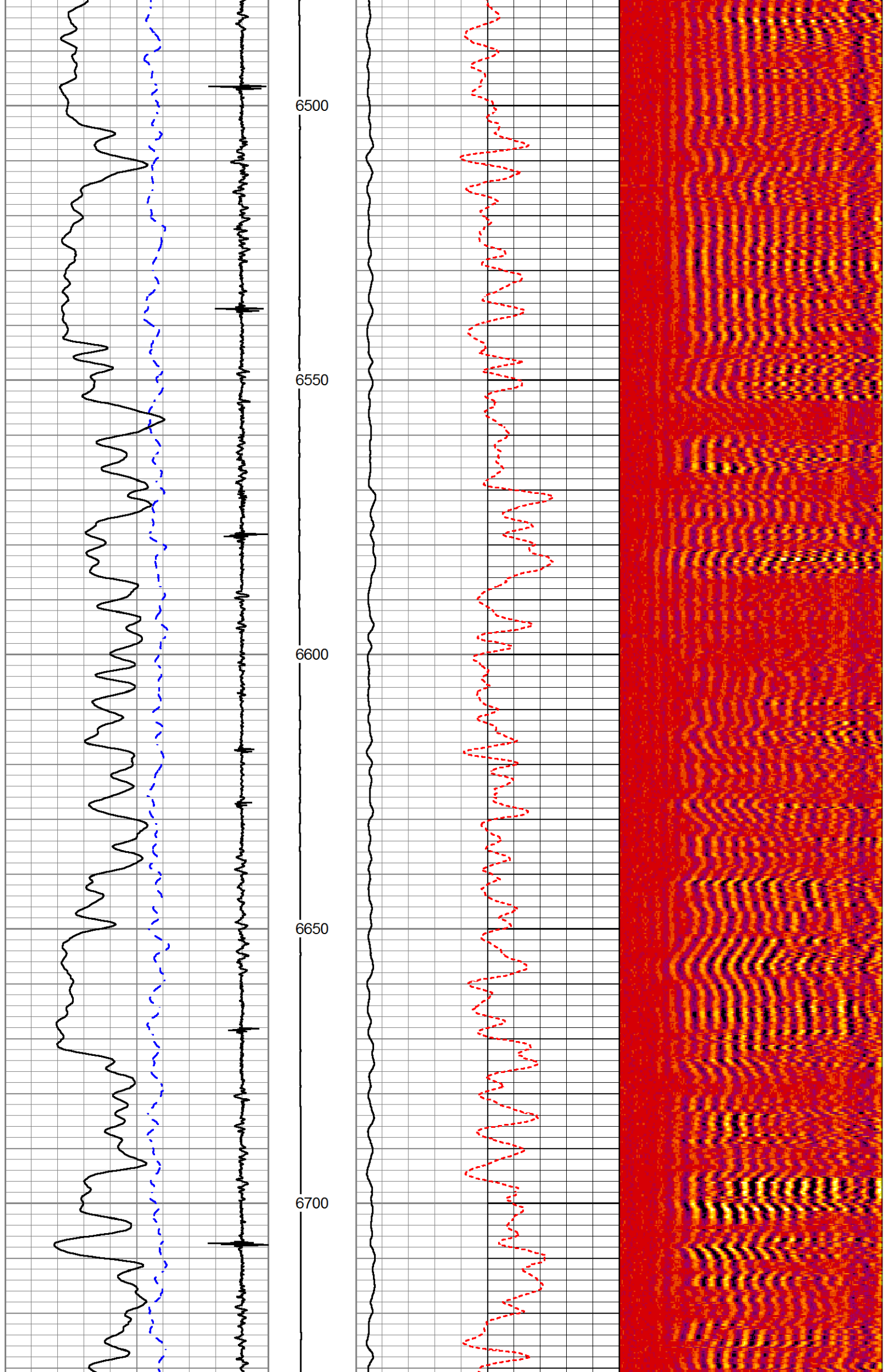


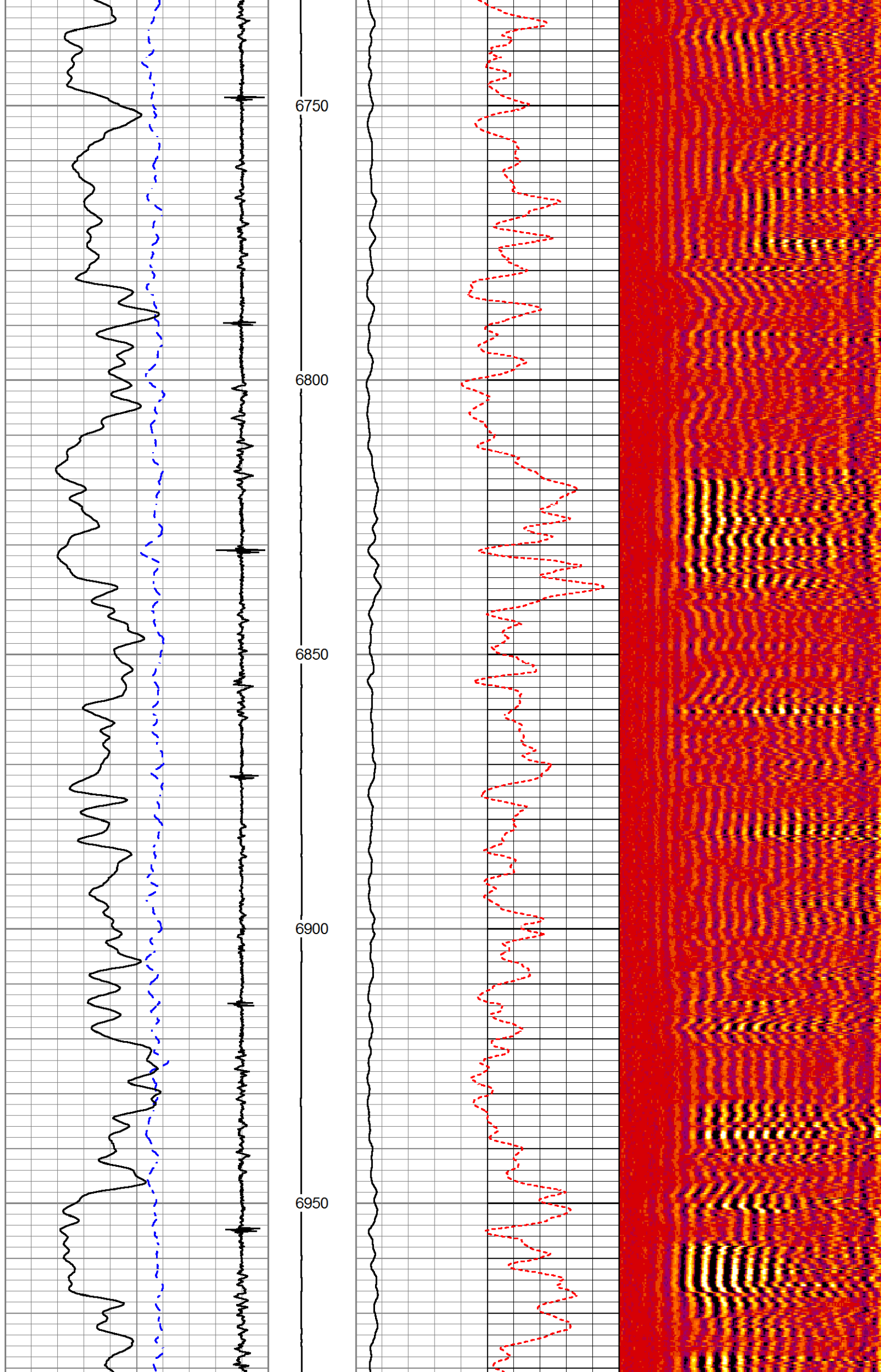


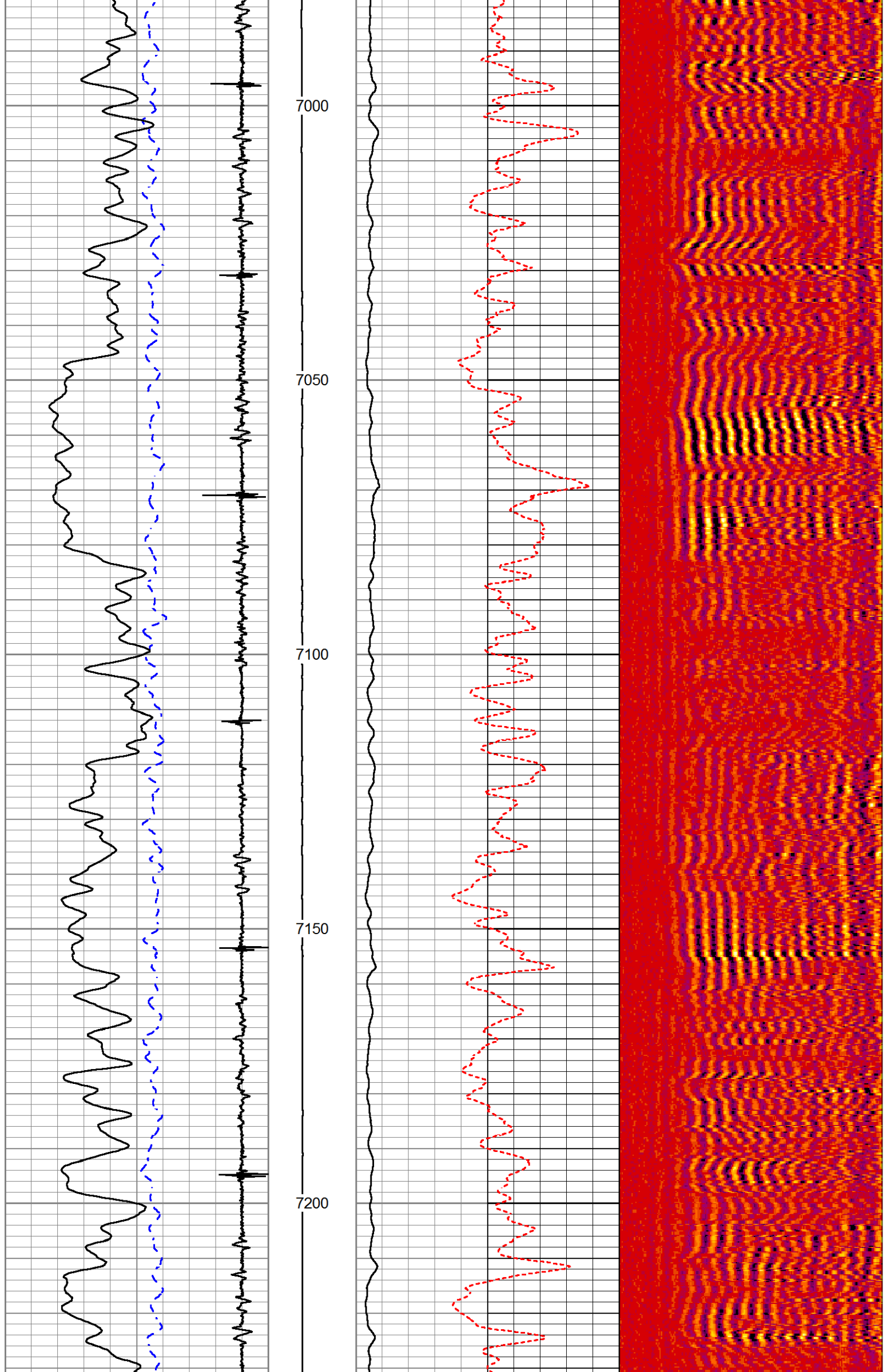


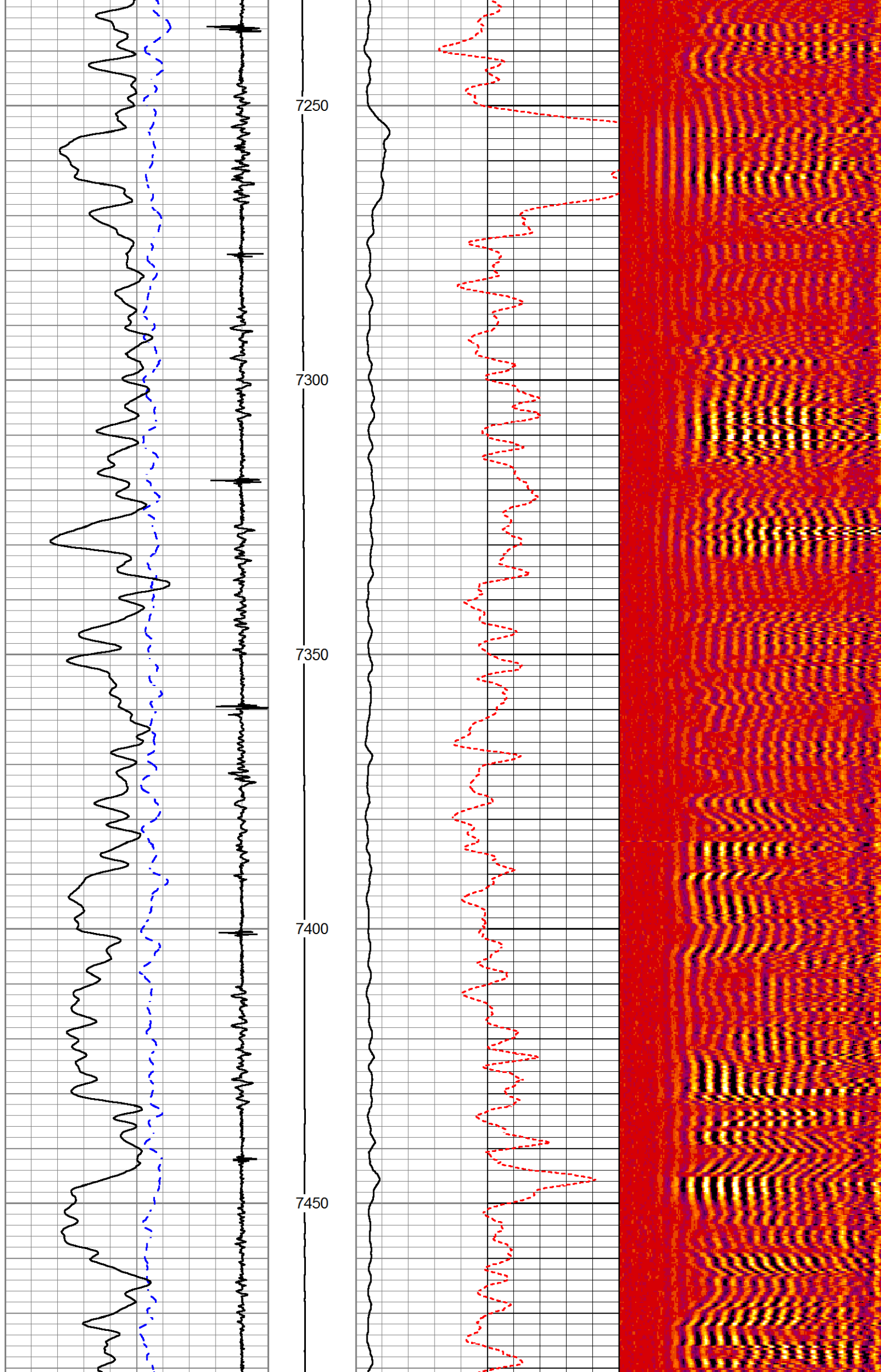


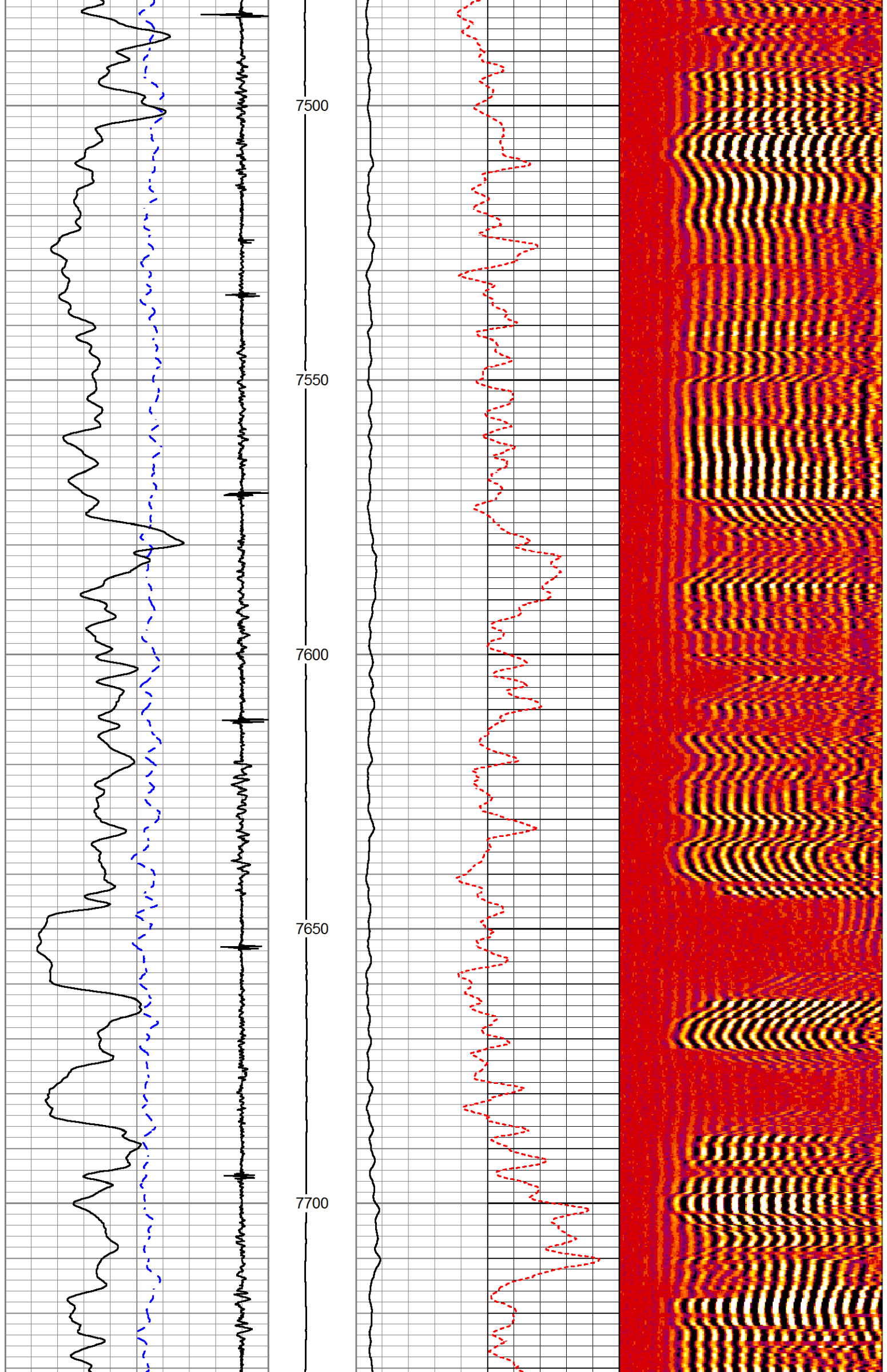


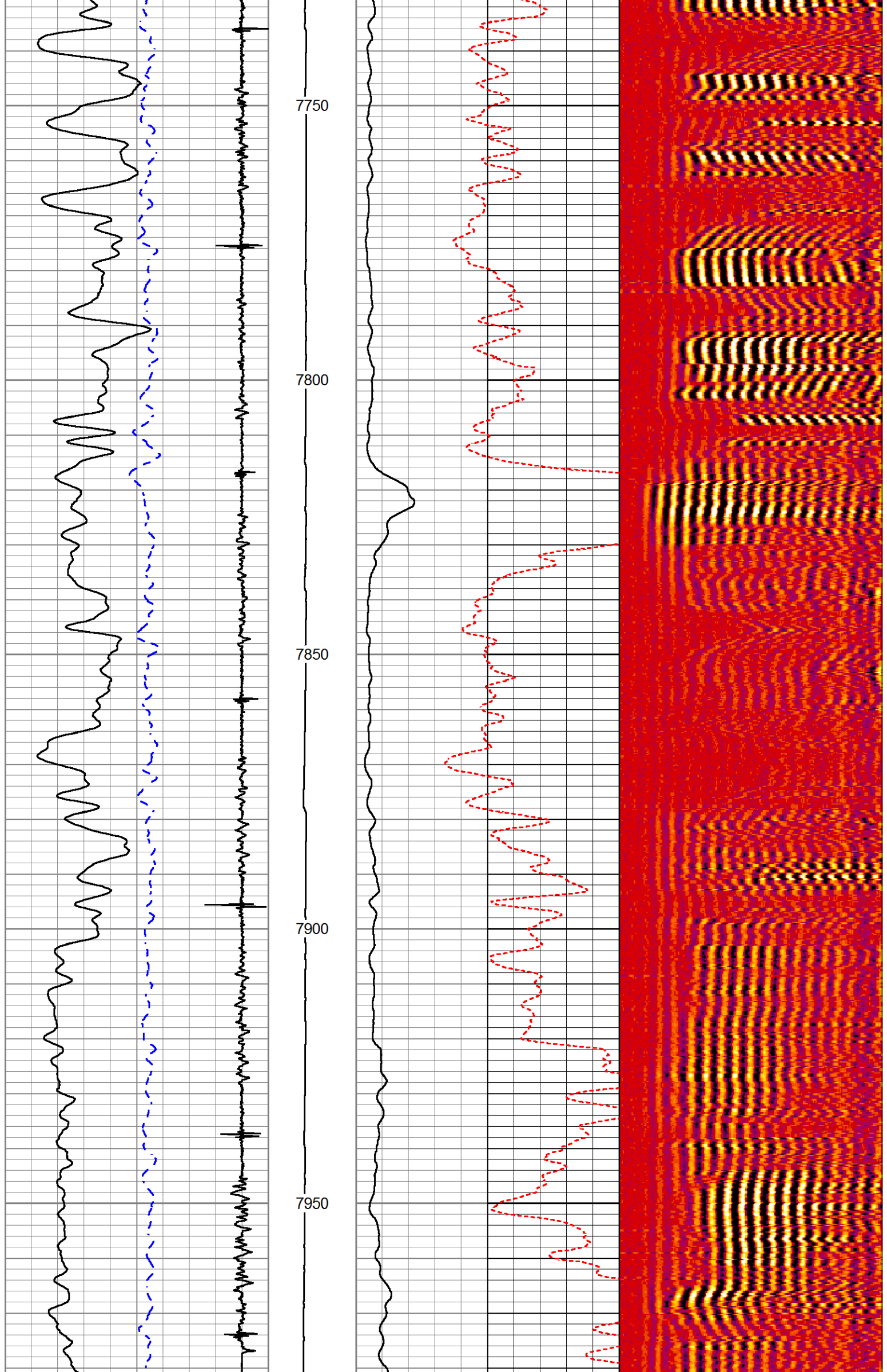


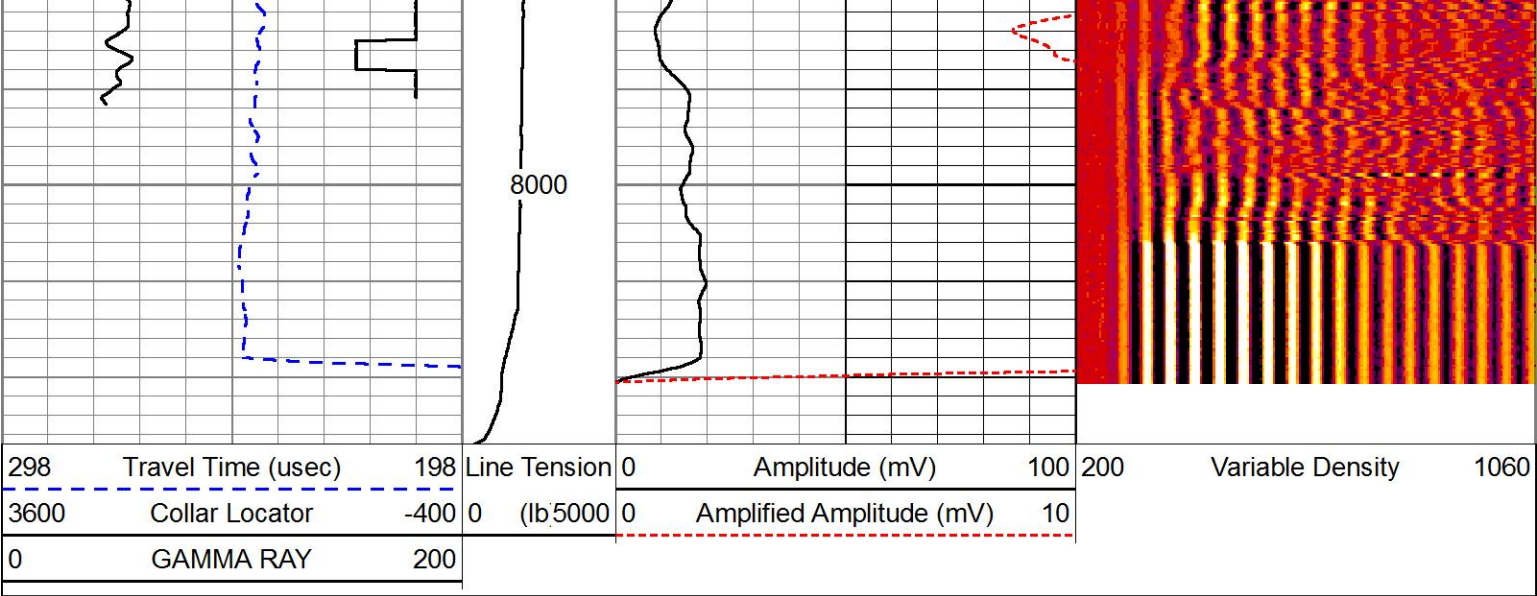








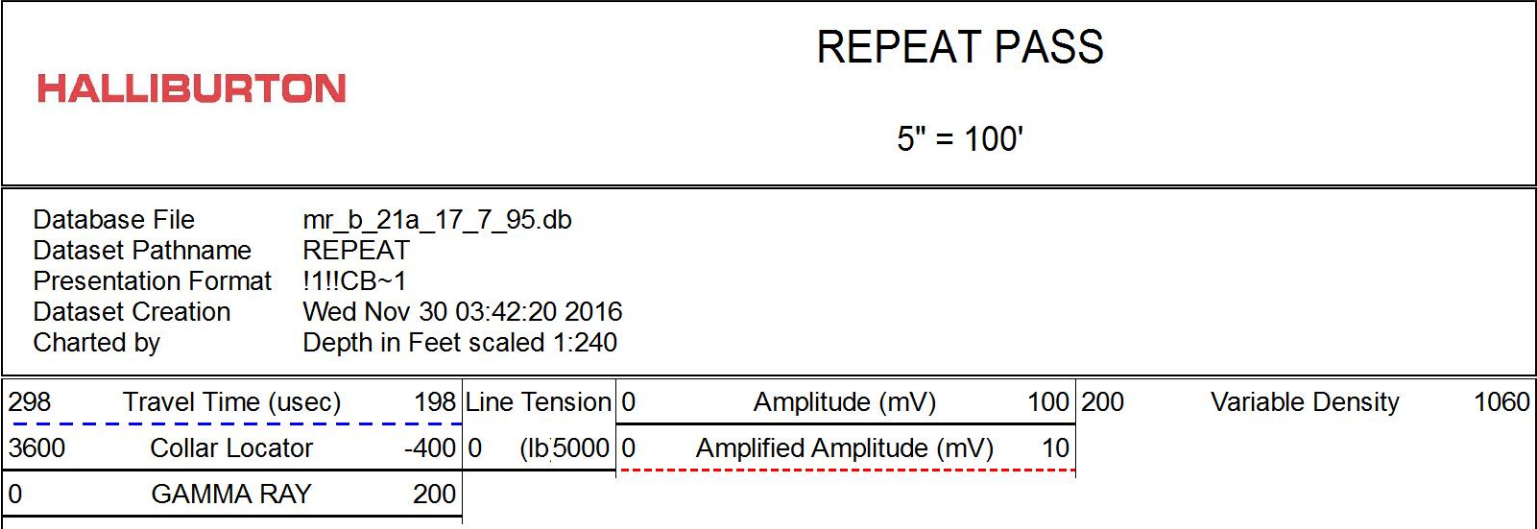




MAIN PASS

HALLIBURTON

5" = 100'

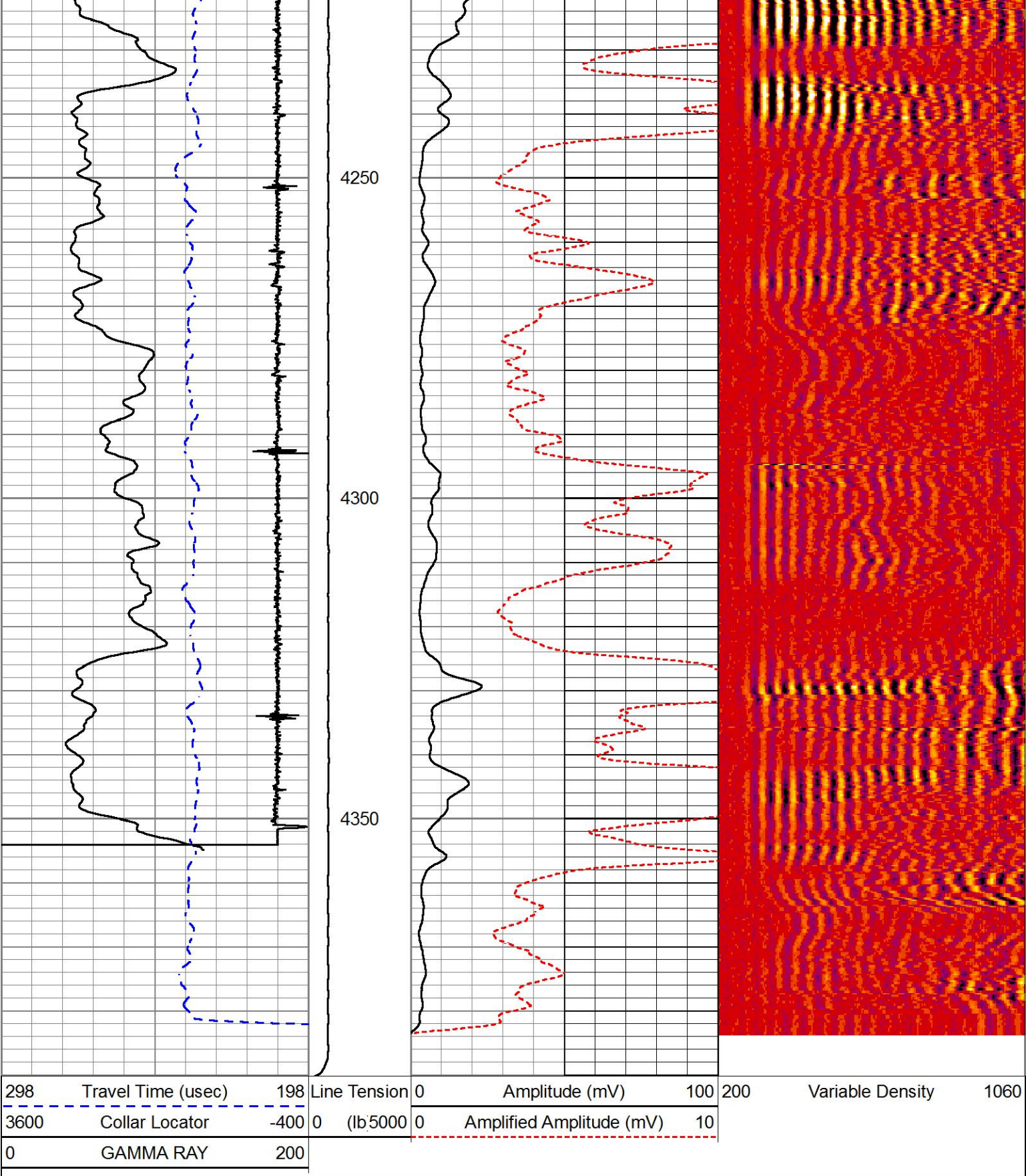


REPEAT PASS

HALLIBURTON

5" = 100'

Database File mr_b_21a_17_7_95.db
Dataset Pathname REPEAT
Presentation Format !1!!CB~1
Dataset Creation Wed Nov 30 03:42:20 2016
Charted by Depth in Feet scaled 1:240



REPEAT PASS

HALLIBURTON

5" = 100'

Log Variables

DatabaseC:\ProgramData\Warrior\Data\mr_b_21a_17_7_95.db
Dataset field/well/run1/main/_vars_

Top - Bottom

BHSAL1	BHSAL2	BHTEMP_Src	BITSIZE in	BORSAL kppm	BOTTEMP degF	CASED?	CASEOD in
1	0	TEMP	7.875	150	220	Yes	4.5
CASETHCK in	CASEWGHT lb/ft	LTH	MSGGN	MudWgt lb/gal	PERFS	POROS1	POROS2
0.25	11.6	Sandstone	1	8.4	0	1	0

RHO�F	SO in	SRFTEMP degF	TDEPTH ft	UHSGC	USERFTT usec/ft	ZREF MRayl	
0.25	0	30	8020	NONE	0	1.7	

Calibration Report		
Database File	mr_b_21a_17_7_95.db	
Dataset Pathname	main	
Dataset Creation	Wed Nov 30 04:37:22 2016	
Cement Bond Log Shop Calibration Report		
Serial-Model:	12091451-A	
Calibration Performed:	Wed Nov 30 03:10:58 2016	
Free Pipe Calibration		
TT	Measured	Units
	245.1	usec
Amplitude	763.3	mV
Log Base Line	8.6	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	0.108	
Reservoir Monitor Tool I Calibration Report		
Serial-Model:	12095949-A	
Shop Calibration Performed:	Thu Nov 24 11:32:44 2016	

Carbon/Oxygen Mode						
Stabilization						
Result	Logged	Expected Value	Diff.	Tol.	Units	
GENV	90.00	80.00	10.00	+/-15.00	V	
ITCR2	3153	3250	-97	+/-250	cps	
Near Detector						
H	Channel	Expected Value	Amplitude	FWHM	Tol.	
Fe	60	60 +/-2	0.0259	5.51	<6.00	
NGAIN = 0.996	206	206 +/-2	0.0966	----	----	
	NZOFF = 0.5					
Far Detector						
H	Channel	Expected Value	Amplitude	FWHM	Tol.	
Fe	60	60 +/-2	0.0356	5.76	<6.50	
FGAIN = 0.990	210	208 +/-2	0.0903	----	----	
	FZOFF = 0.5					
Flask Temperature	50.0	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	5059	5000	59	+/-1000	cps	
ITCR2	3123	3200	-77	+/-250	cps	


Sigma Mode					
Stabilization					
Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	90.00	80.00	10.00	+/-15.00	V
FCAP	9856	10000	-144	+/-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	1.04	1.07	-0.03	+/-0.12	
RINC	1.61	1.64	-0.03	+/-0.18	
SGFN	24.07	24.00	0.07	+/-0.50	cu
SGFF	22.92	22.85	0.07	+/-0.50	cu
FSIN	23621	24000	-379	+/-2000	cps
FCAP	9956	10000	-44	+/-1000	cps
NFTR	0.82			<5.00	
FFTR	0.92			<5.00	
NBKG	190			<500	cps
FBKG	97			<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	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 / 11214503
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SHOP CALIBRATION		Wed Nov 09 16:25:32 2016			
	Counts/Sec.	Gain	Offset	Jig	Units
Background	34.1				cps
Calibrator	297.9				cps
		1.3950			GAPI/cps
PRIMARY VERIFICATION					
Background	42.3				cps
Calibrator	413.8				cps
Difference				371.5	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-STND_CH 1.4375 IN CABLE HEAD	1.50	1.44	1.00

CCL	35.82							
GR	33.56		TTTCU-002 (11214503) Through Tubing Telemetry Cartridge - Ultrawire	7.65	1.69	100.00		
			XHU-003 (000001) Crossover Halliburton 1553 to Ultrawire	1.58	1.69	7.00		
RmtTFGT	22.91							
RmtTNGT	22.41		RMTI-A (12095949) Halliburton RMTI Tool	14.00	2.13	77.00		
RmtFP5V	14.66							
RmtNFwvMcsP	14.66		X-OVER-GoxSondex Go Box x Sondex Pin CrossOver	0.27	1.69	1.00		
RmtCommFWa	14.66		CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00		
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		
			AUH-001 (11072111) Adaptor Ultrawire/Halliburton	0.38	1.69	3.00		
LLMTEN	0.00		BUL-001 (000001) Bullnose	0.30	1.69	1.50		
Dataset: mr_b_21a_17_7_95.db: field/well/run1/main Total length: 39.39 ft Total weight: 356.50 lb O.D.: 3.13 in								

Field	PARACHUTE		
County	GARFIELD	State	CO
HALLIBURTON	CEMENT BOND LOG		