

HALLIBURTON

GAMMA RAY COLLAR
CEMENT BOND LOG
(GR-CBL)

Company	URSA OPERATING CO., LLC.	
Well	TOMPKINS 21C-08-07-95	
Field	PARACHUTE	
County	GARFIELD	State CO
Company URSA OPERATING CO., LLC. Well TOMPKINS 21C-08-07-95 Field PARACHUTE County GARFIELD State CO		
API No.: 05045228220000 Serv #: 903507612 Other Services		
Location: N/A GR-RMTI		
Sec: 8 Twp: 7S Rge: 95W		
Permanent Datum	G.L.	Elevation 5532.0'
Log Measured From	K.B.	17.0 Ft. above perm. datum
Drilling Measured From	K.B.	Elevation 5532.0'
Date @ Time Logged	8/30/2016	Type Fluid in Hole WATER
Run No.	ONE	Density of Fluid 8.45#
Depth - Driller	7631' E.D.	Fluid Level SURFACE
Depth - Logger	7561'	Cement Top Est. Logged N/A
Bottom - Logged Interval	7555'	Equipment / Location 11591000 / BKSFD
Top - Log Interval	1700'	Recorded by DAN DUTY
Max. Recorded Temp.	N/A	Witnessed by MR. O. MOLINAR
CEMENTING DATA	Surface	Protection String
Date / Time Cemented	String	Production String
Primary / Squeeze		Liner
Expected Compressive Strength	psi@ hrs	psi@ hrs
Cement Volume		
Cement Type / Weight	/	/
Formulation		
Mud Type / Mud Wgt.	/	/
Borehole Record		
Run Number	Bit	From
ONE	24.0"	SURF
TWO	12.25"	77'
THREE	7.875"	1855'
		7672'
		1855'
		7672'
		4.5"
		11.6#
		SURF.
		7672'
		7631'
Casing & Tubing Record		
	Size	Weight
	16.0"	75.5#
	8.625"	32.0#
	4.5"	11.6#
		SURF.
		7672'
		7631'

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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

NO OPEN HOLE LOGS RUN ON THIS WELL USED 17' K.B. FOR DEPTH CONTROL
RMTI LOGGED TD TO 500' ABOVE WILLAMS FORK AS PER CUSTOMERS REQUEST
CBL LOGGED TO BOTTOM OF SURFACE CASING PER CUSTOMERS REQUEST

" THANK YOU FOR USING HALLIBURTON ENERGY SERVICES "
YOUR CREW FOR TODAY: F. ALIAS; F. NAVARRO
MBU. #BK0606
RIG: HES CRANE

Service Ticket No.	903507612	API No.	045-22822	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.	12029128	Serial No.	12157979	Serial No.	11680597
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	7555'	7350'	0 PSI	20'	REPEAT			
TWO	7555'	1700'	0 PSI	20'	MAIN			
	GAMMA		MSG					
Pass	Scale		Scale		Scale		Scale	
No.	L	R	L	R	L	R	L	L
ONE	0	200	200	1200				
TWO	0	200	200	1200				
DIRECTIONAL INFORMATION								
Maximum Deviation			deg. @		KOP			

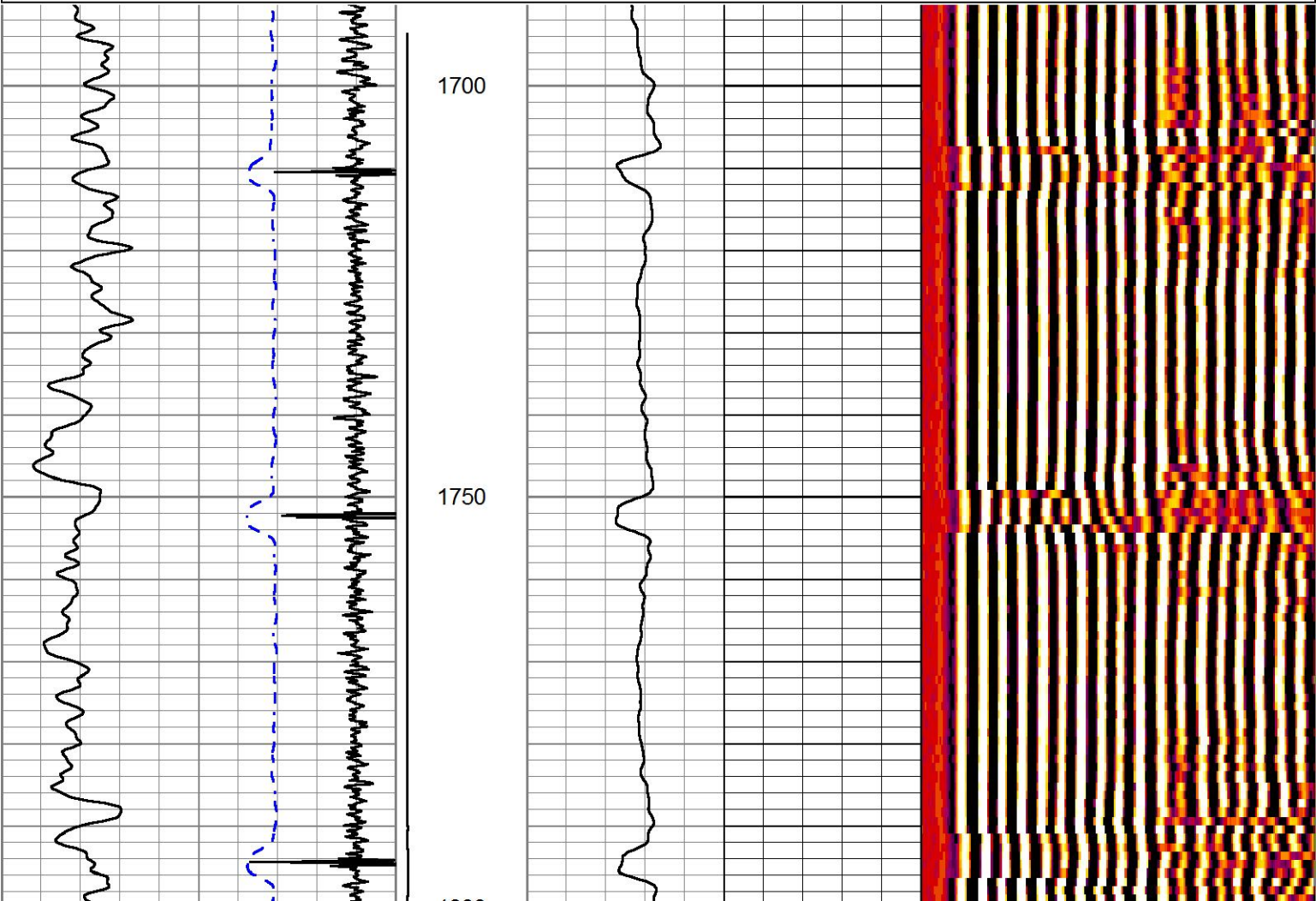
<div>HALLIBURTON</div>	Company	URSA OPERATING CO., LLC.						
	Well	TOMPKINS 21C-08-07-95						
	Field	PARACHUTE						
	County	GARFIELD						
	State	CO						Country U.S.A.

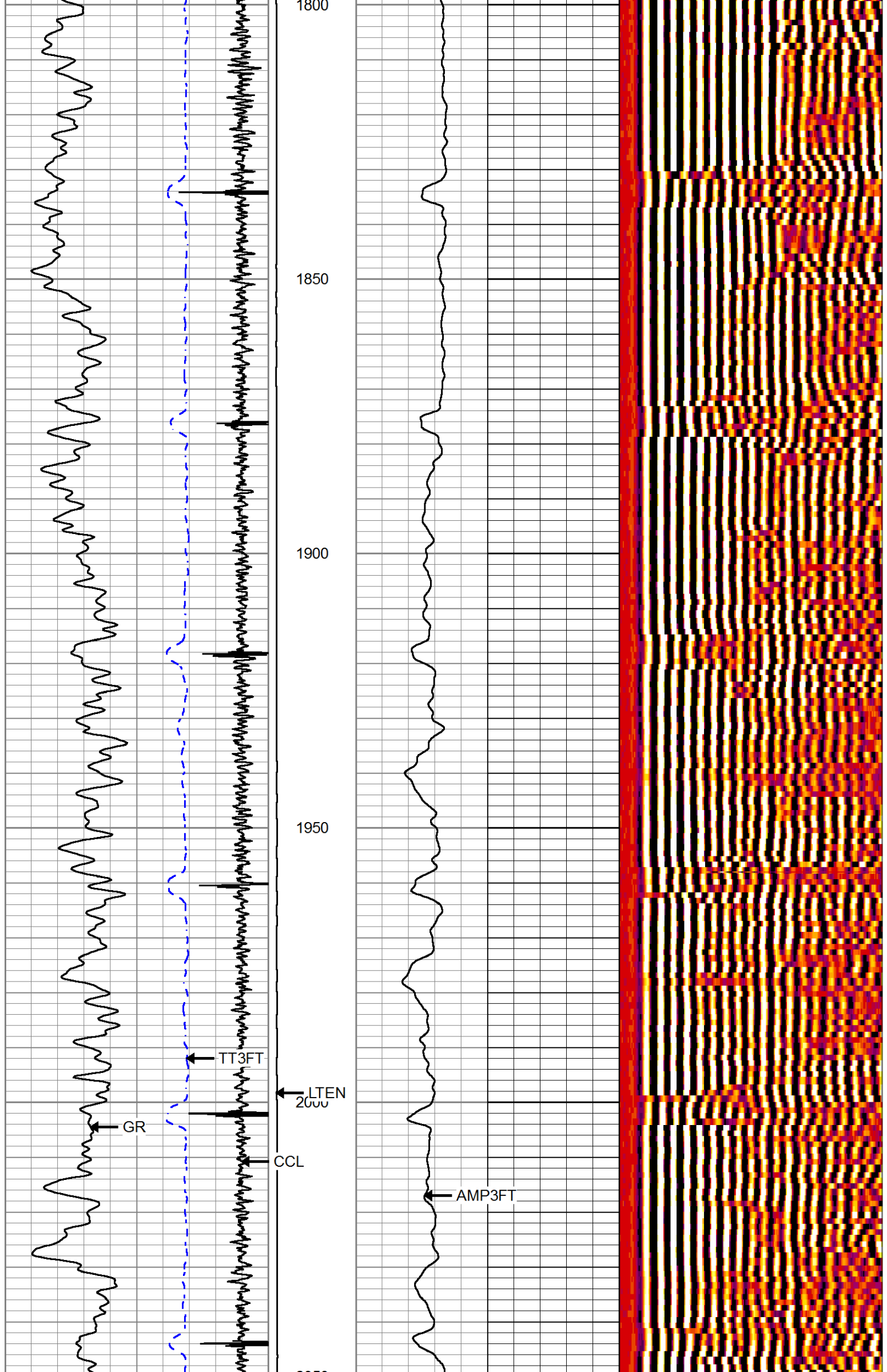
HALLIBURTON

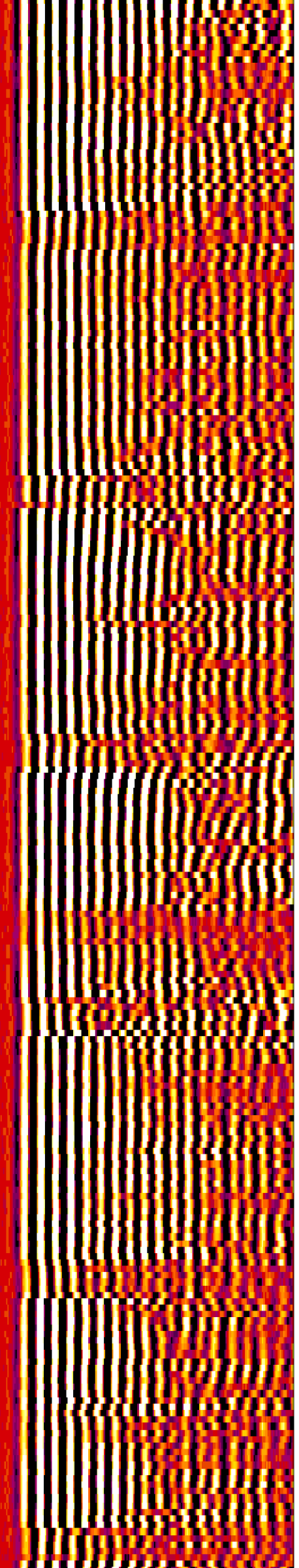
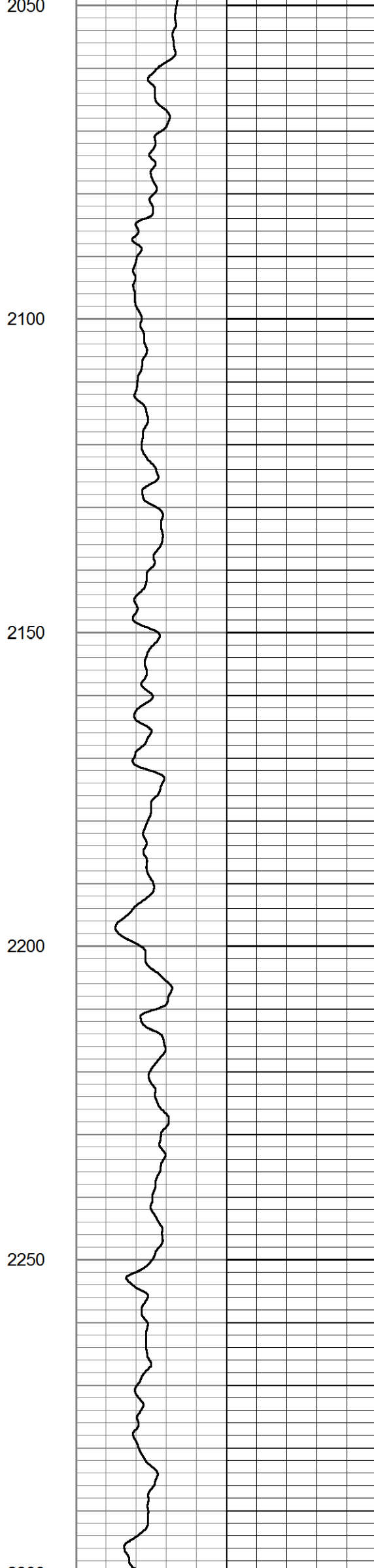
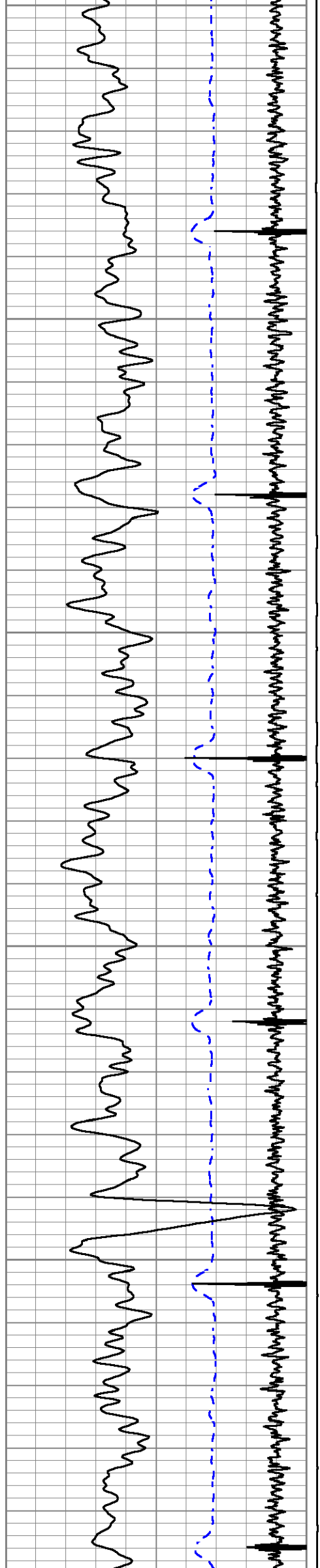
MAIN PASS

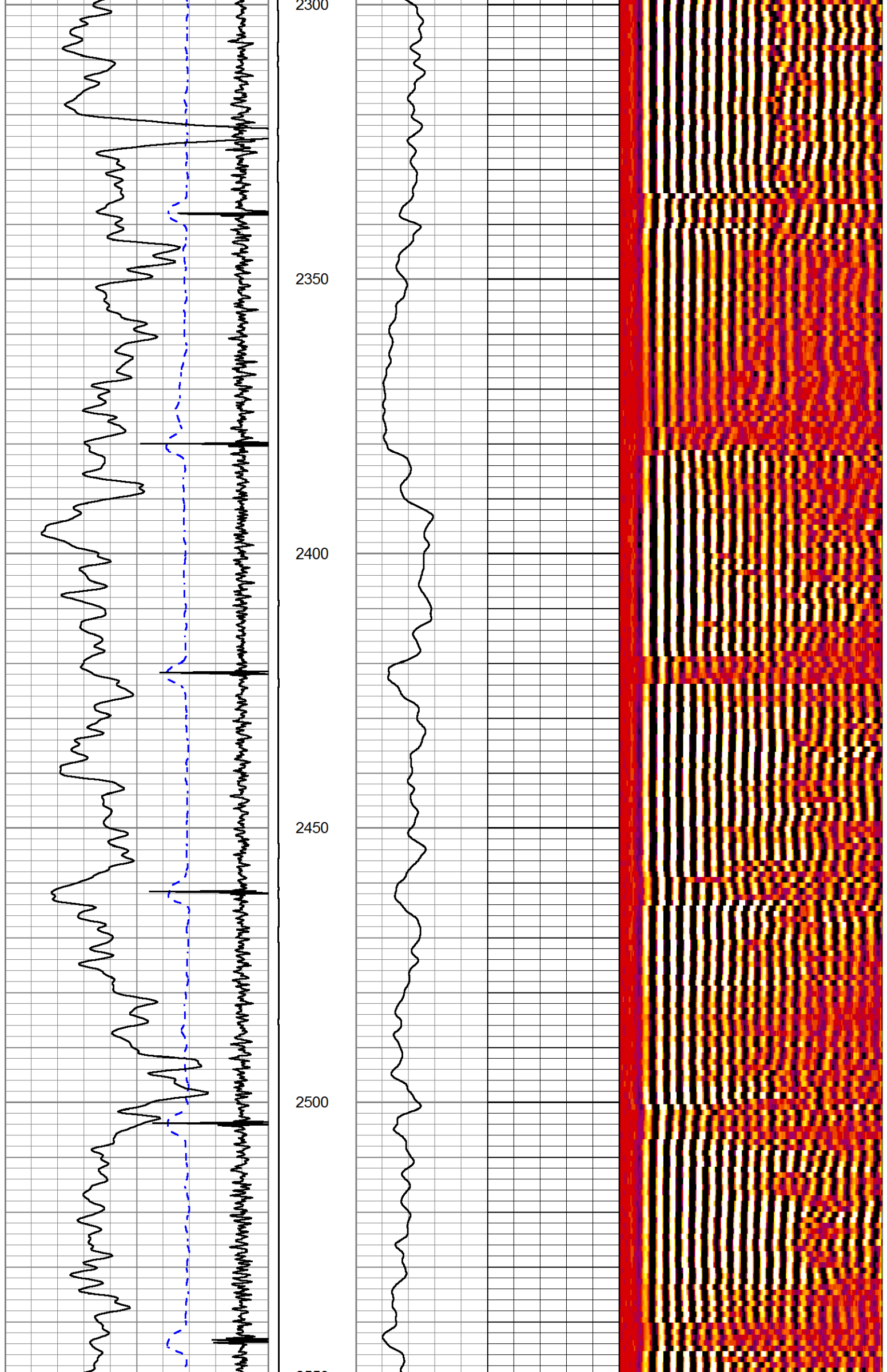
Database File	ursa-tom-21c3_sigma.db									
Dataset Pathname	pass1									
Presentation Format	!1!!cbl_rmti									
Dataset Creation	Wed Aug 31 08:02:44 2016									
Charted by	Depth in Feet scaled 1:240									

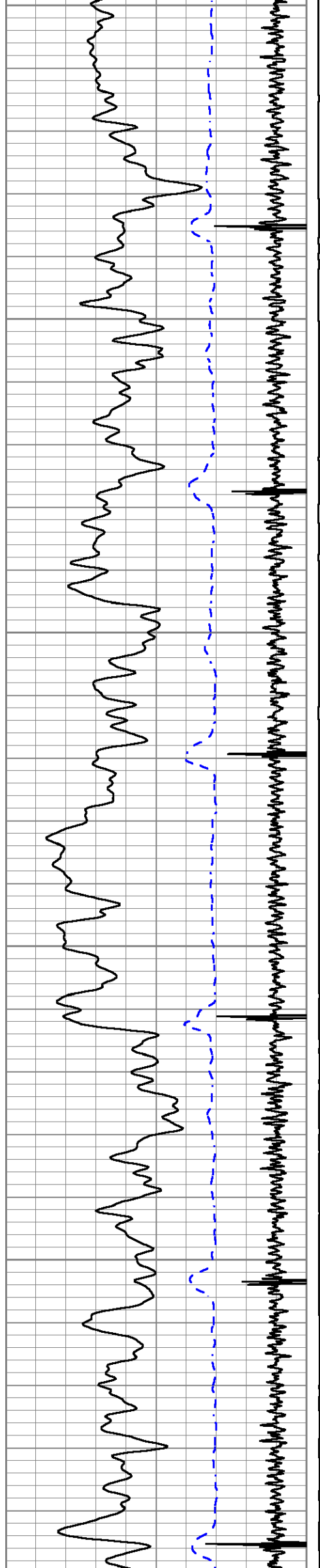
308	Travel Time (usec)	208	Line Tension	0	Amplitude (mV)	100	200	Variable Density	1060
3600	Collar Locator	-400	0 (lb/5000	0	Amplified Amplitude (mV)	10			
0	GAMMA RAY	200							



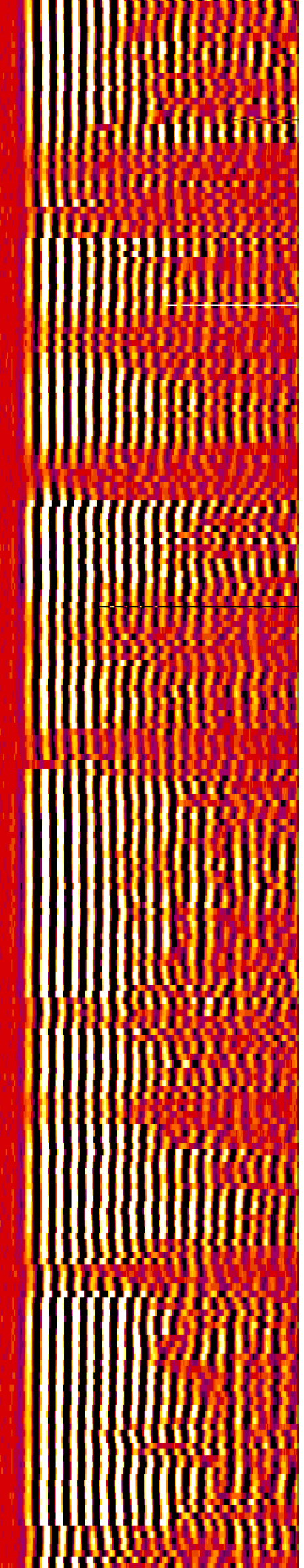


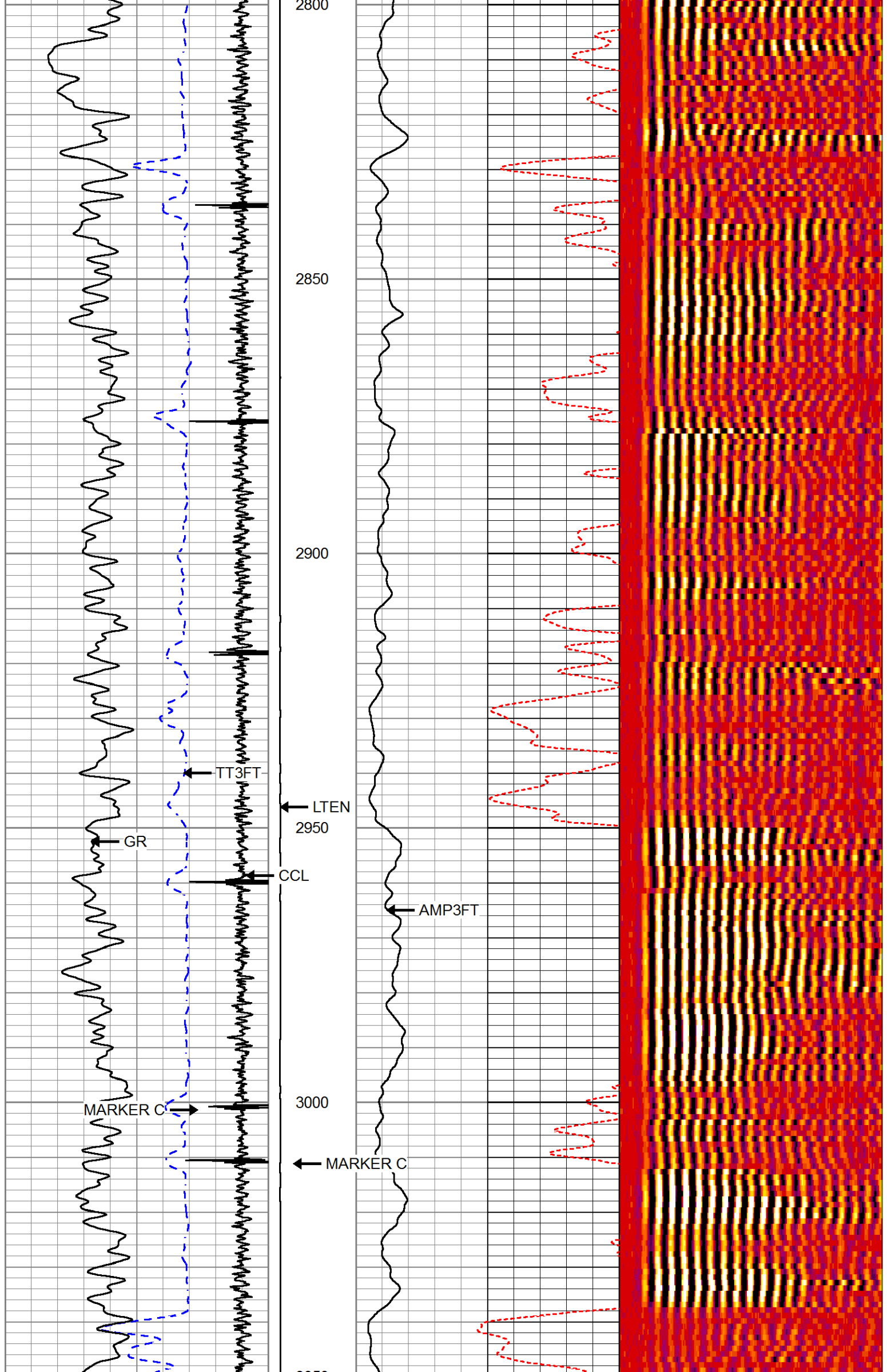


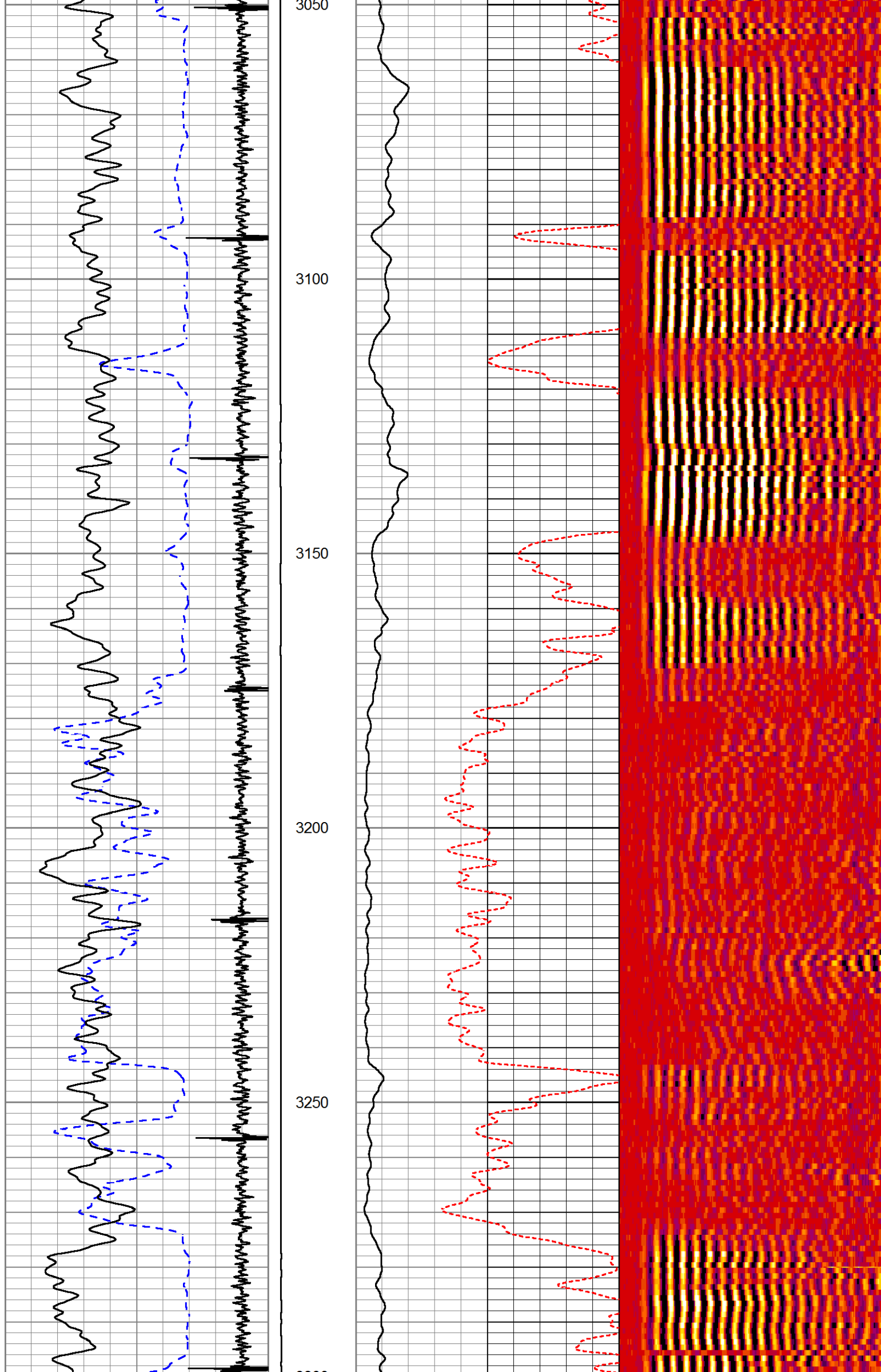


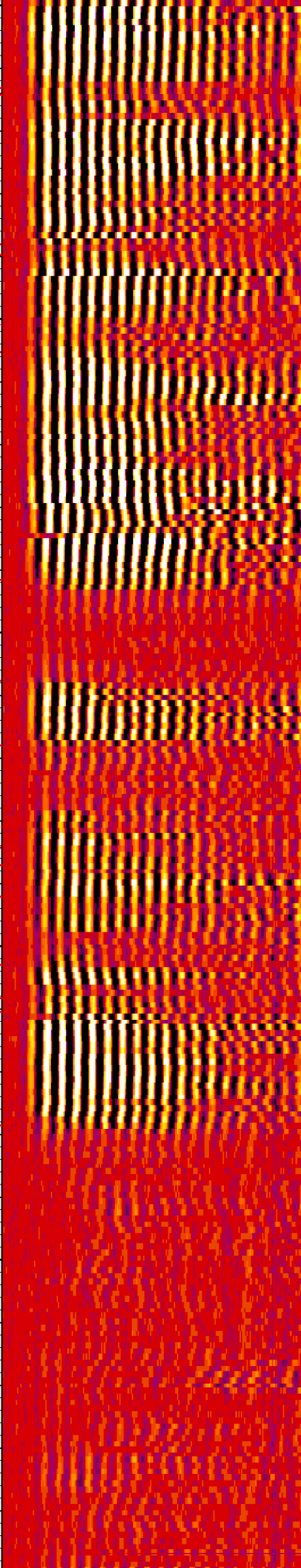
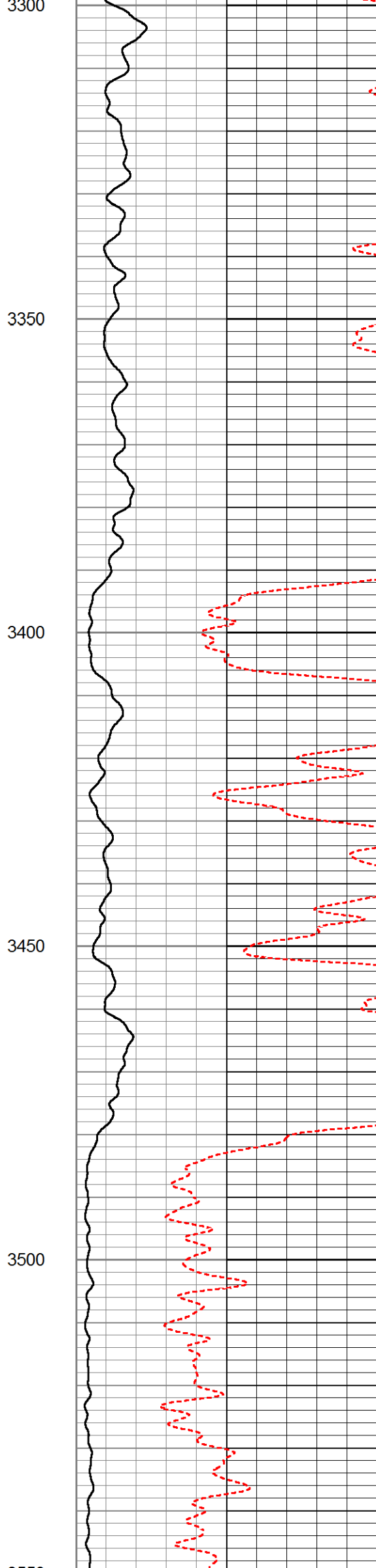
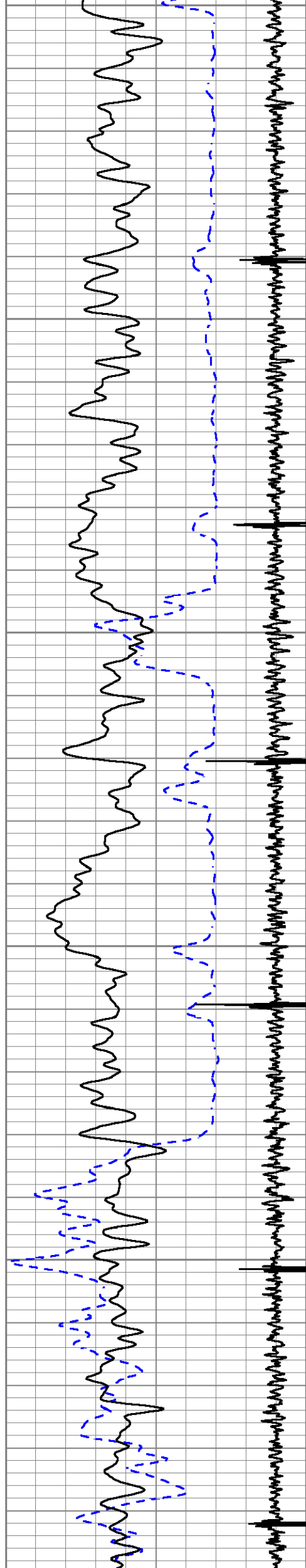


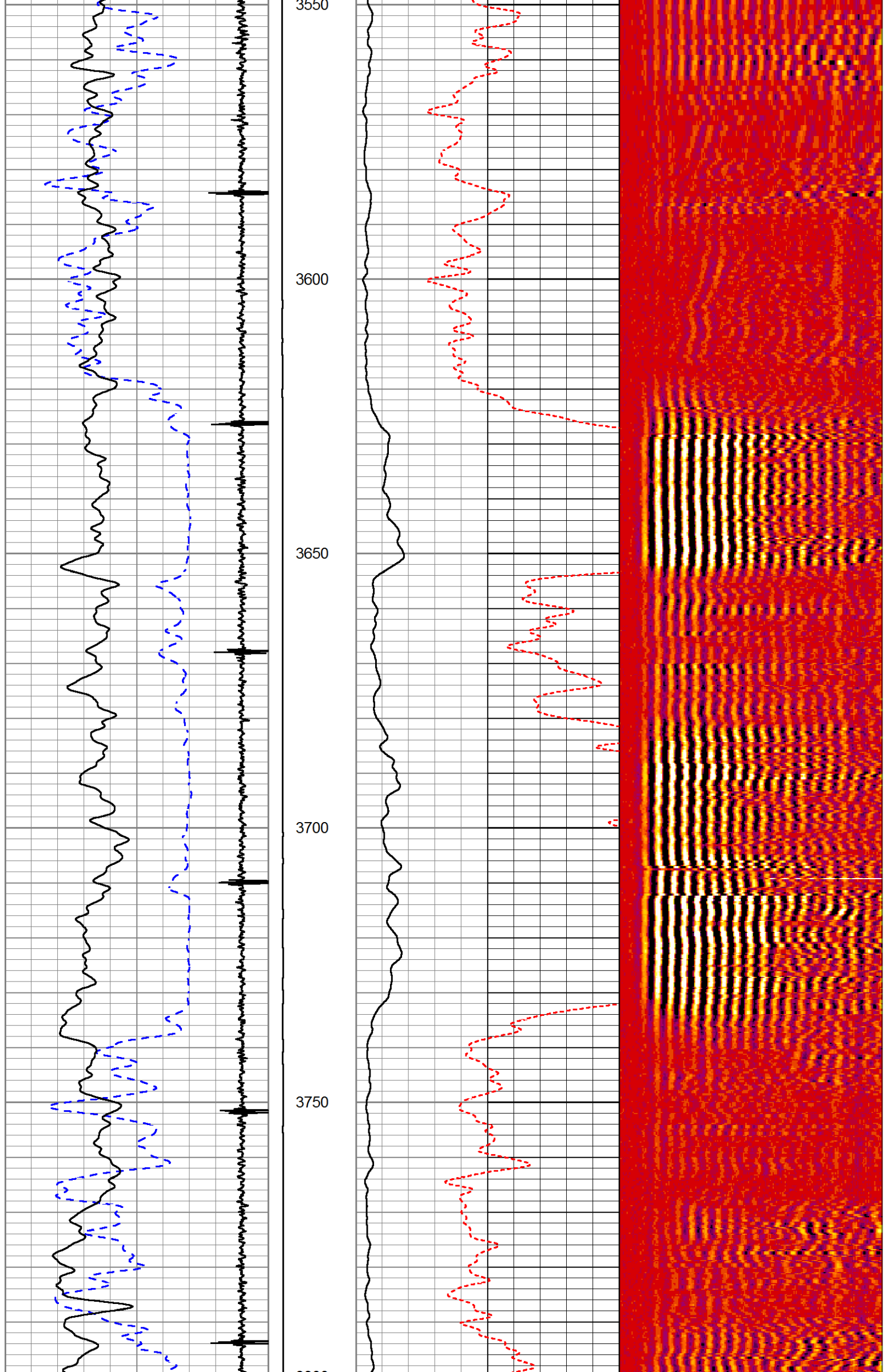
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2750

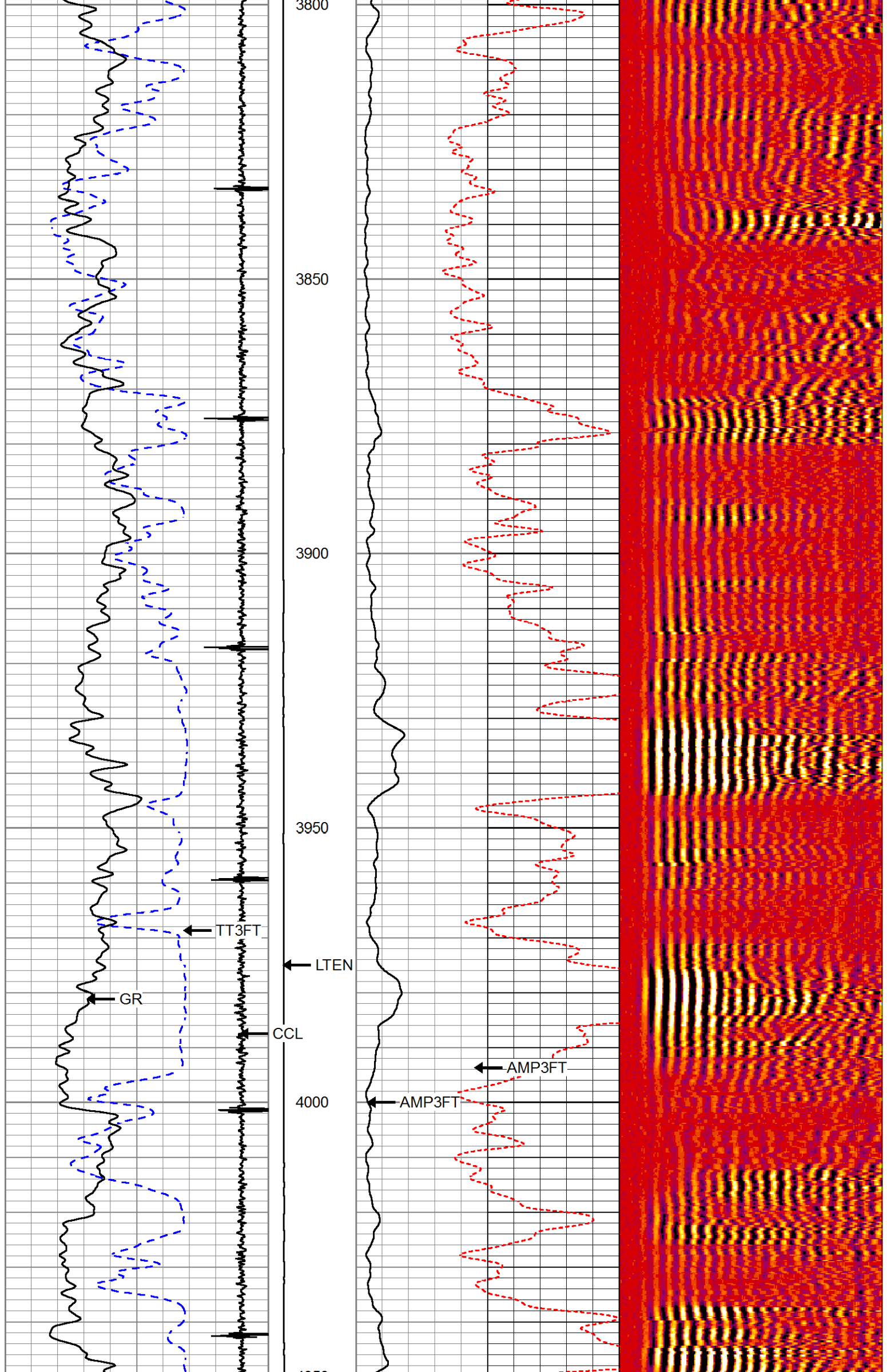


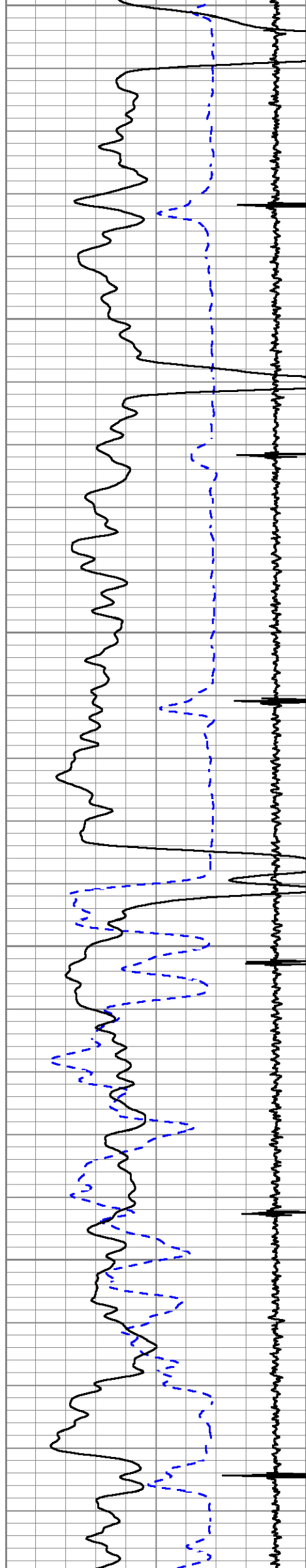




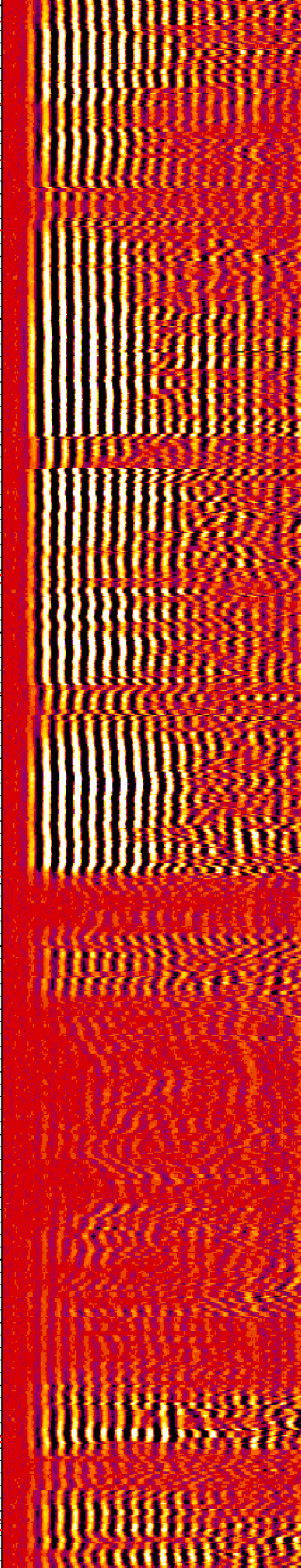
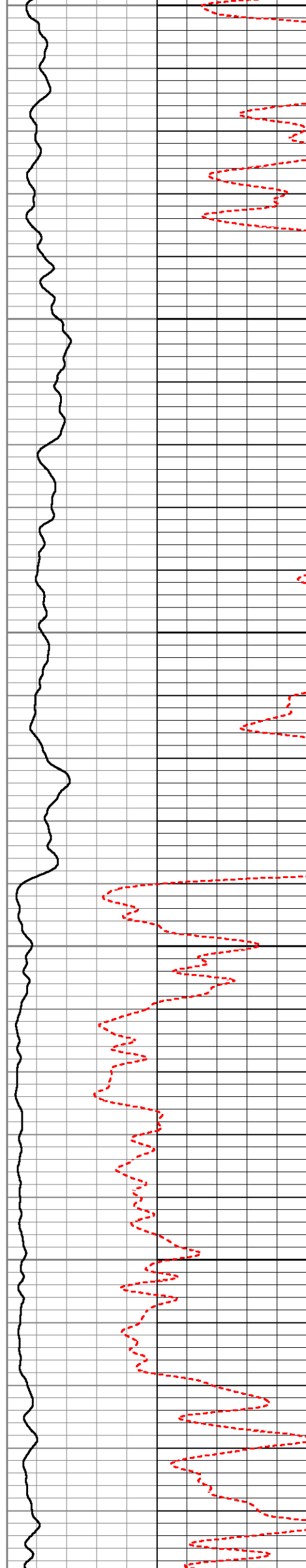


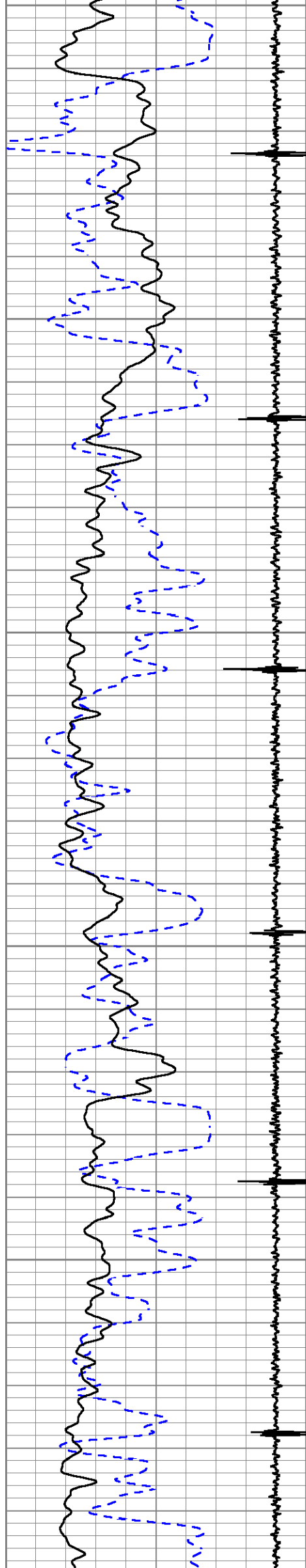




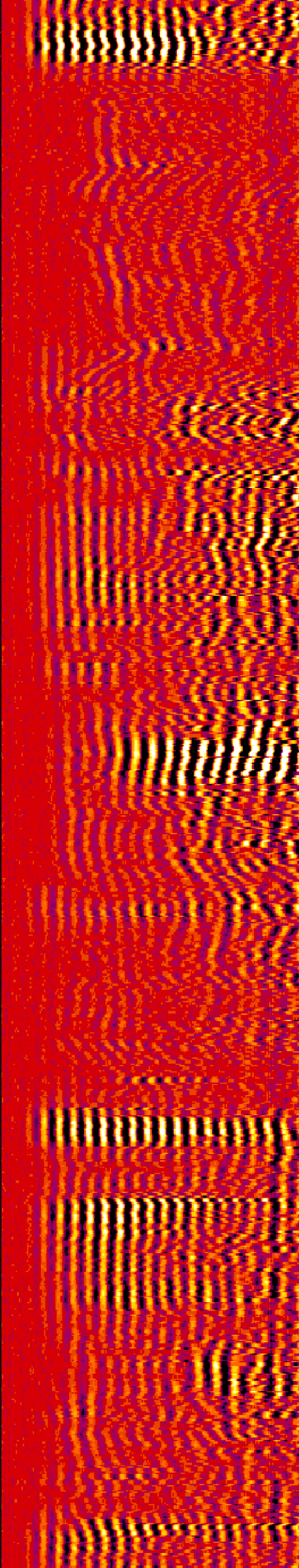
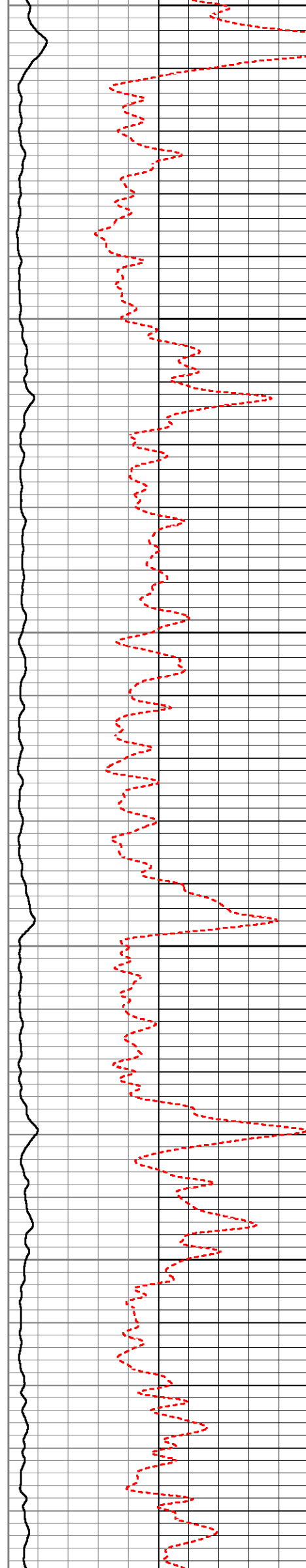


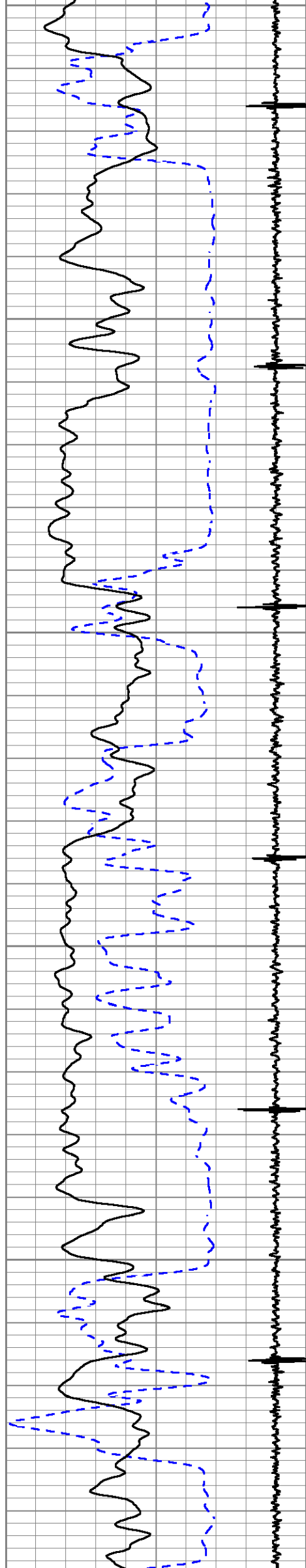
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4100
4150
4200
4250
4300



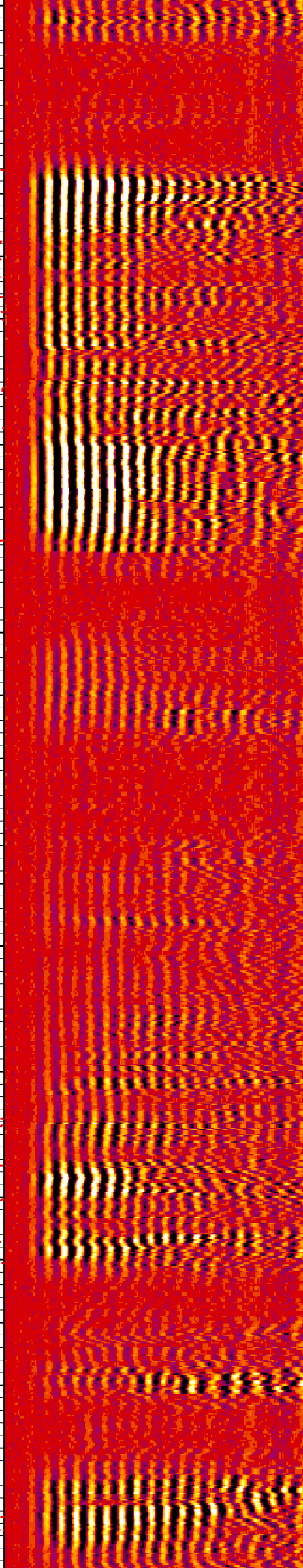
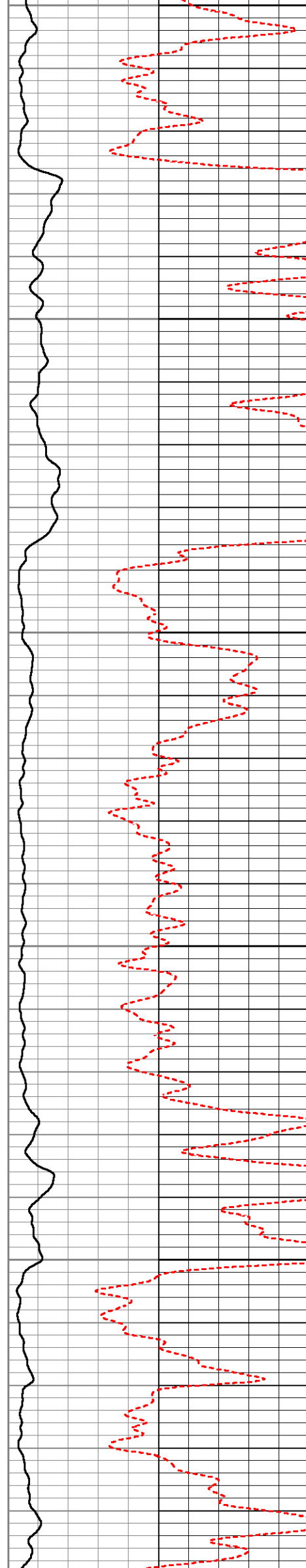


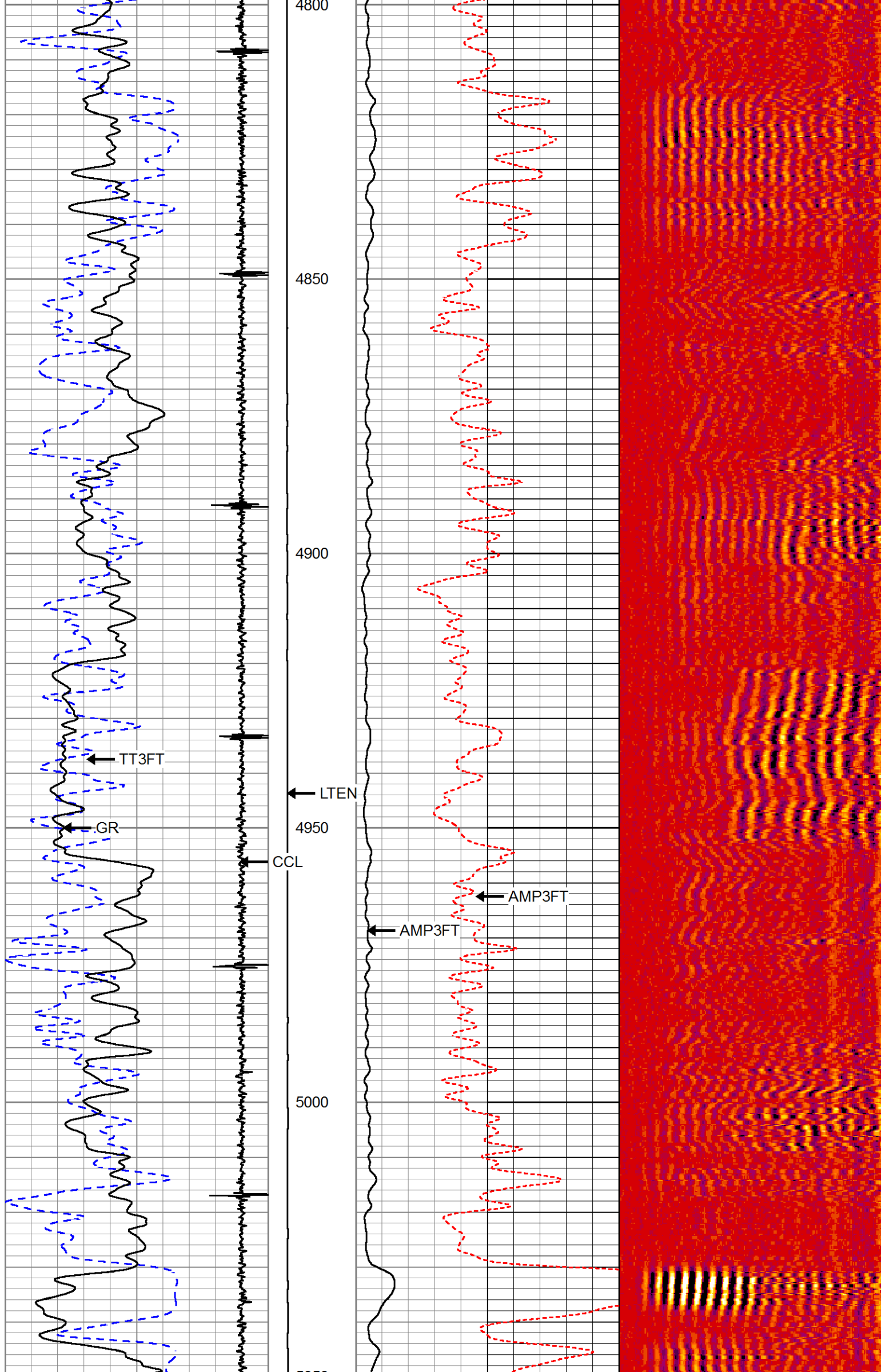
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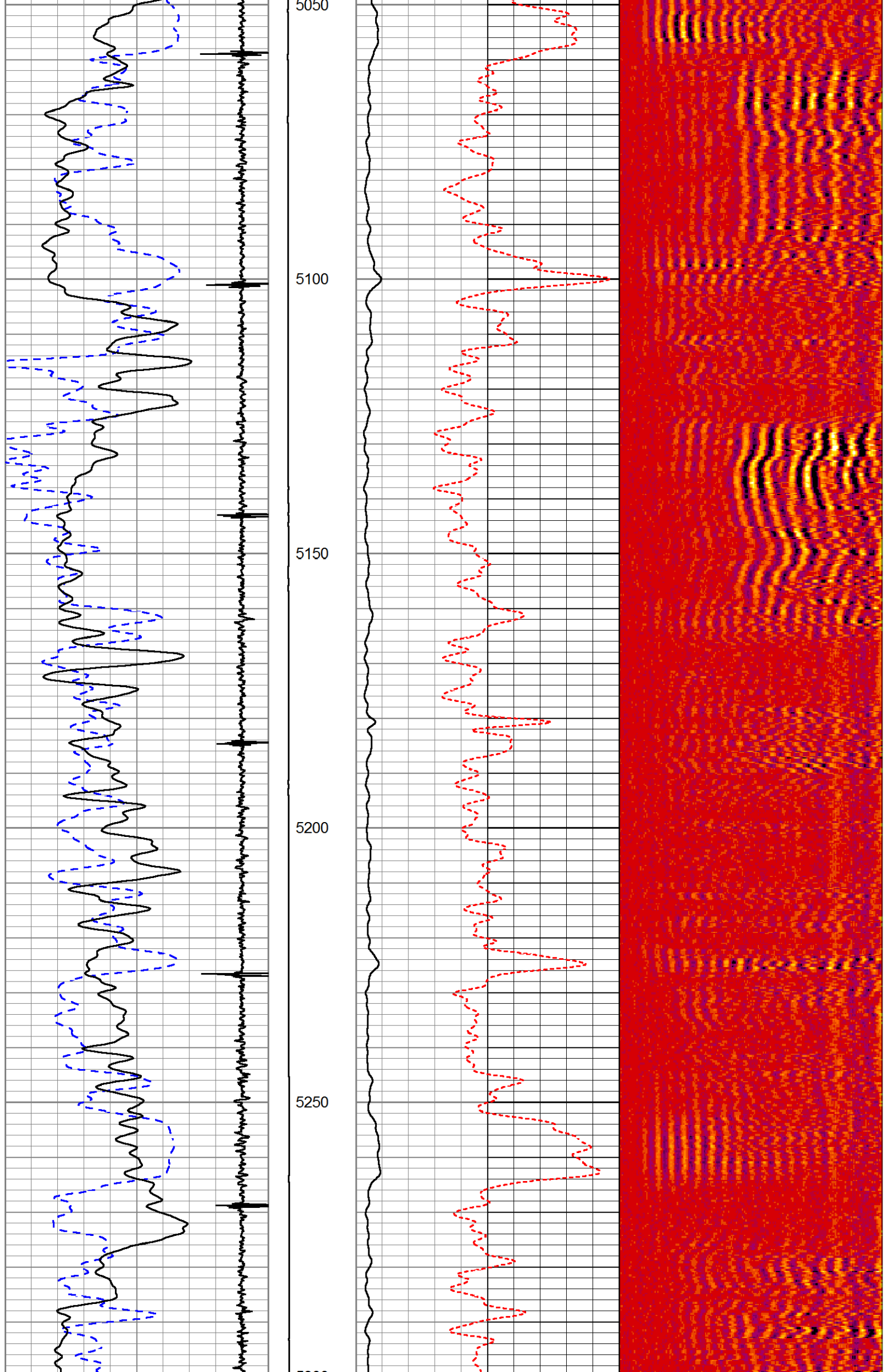


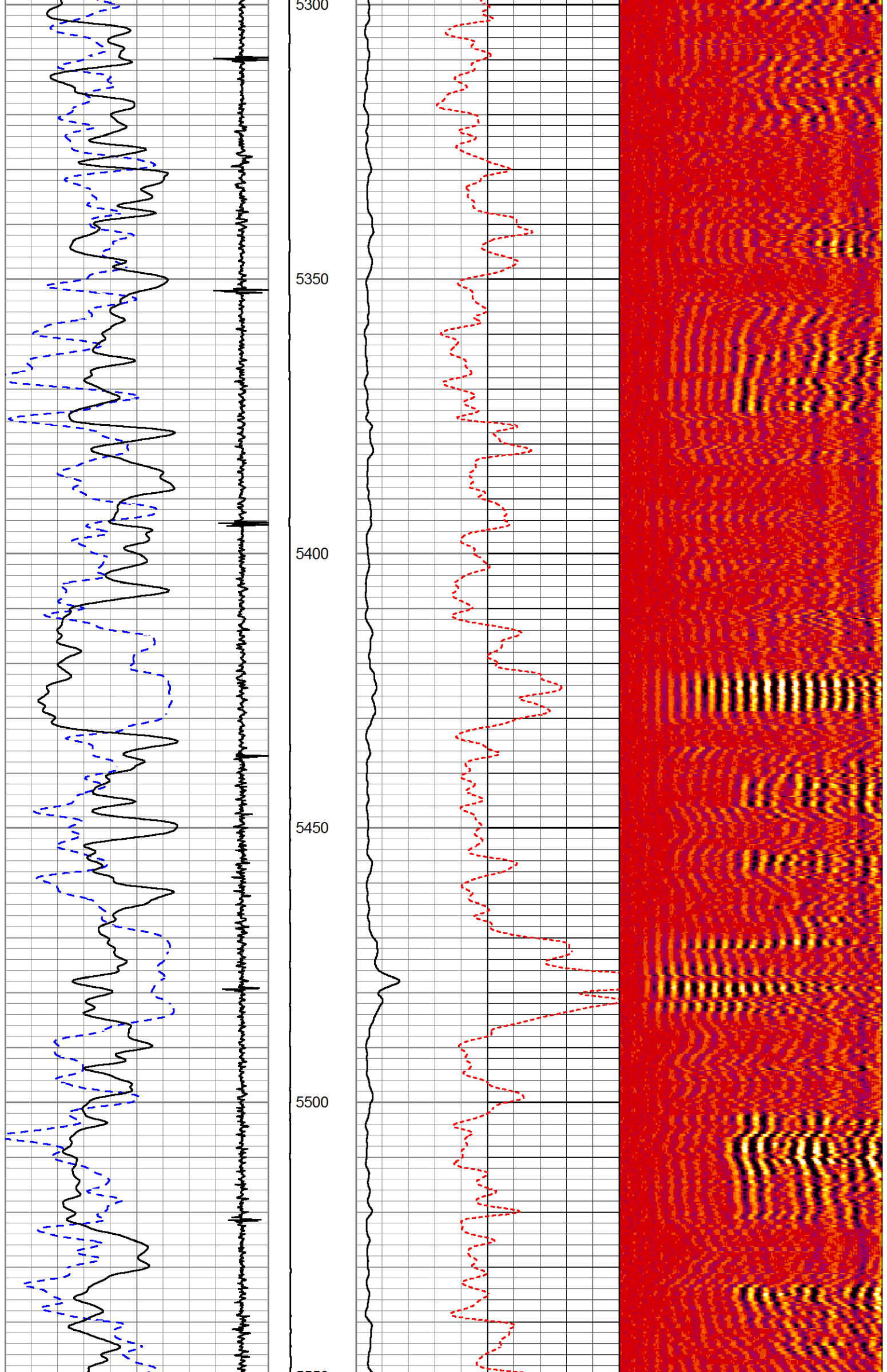


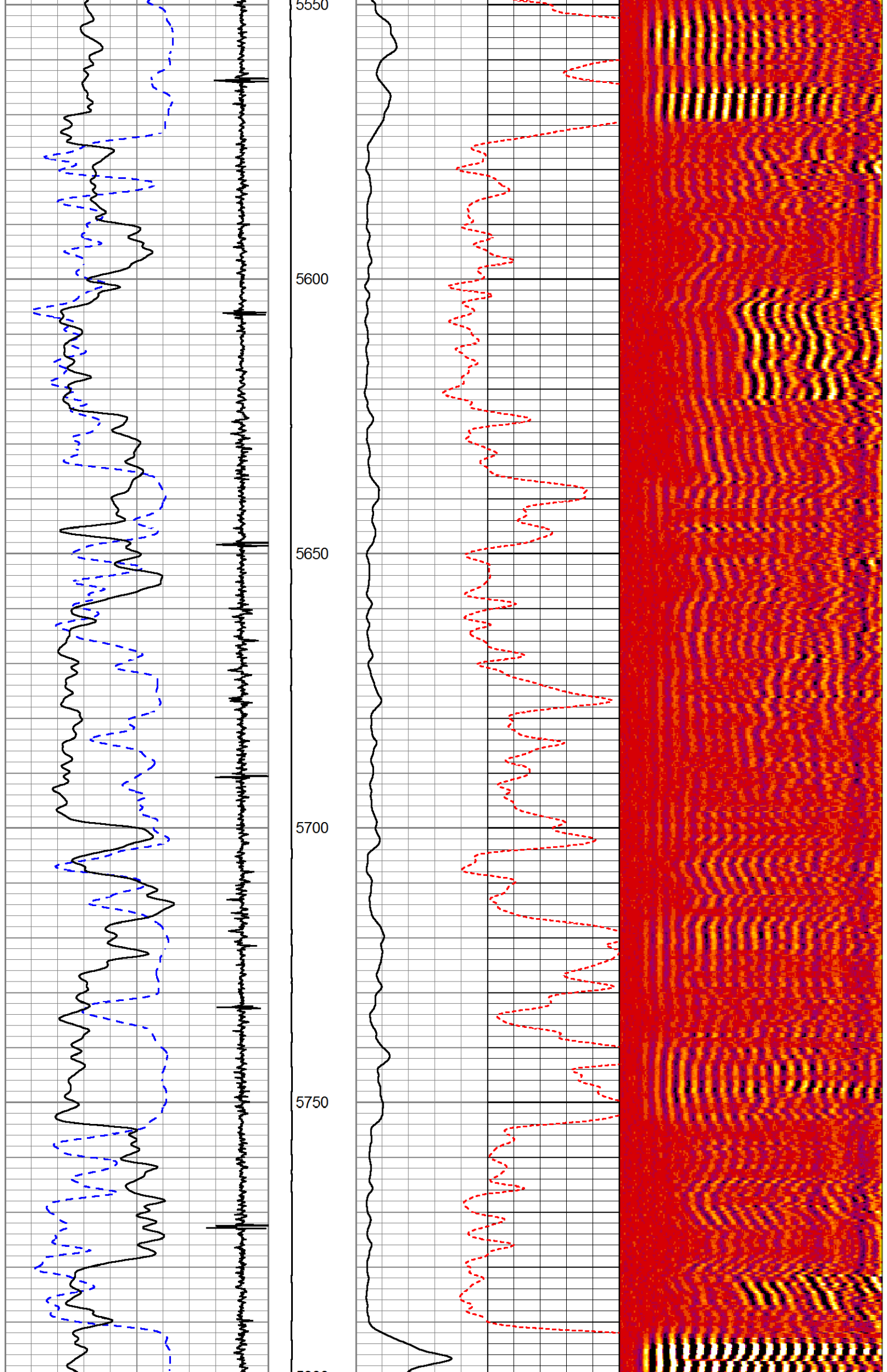
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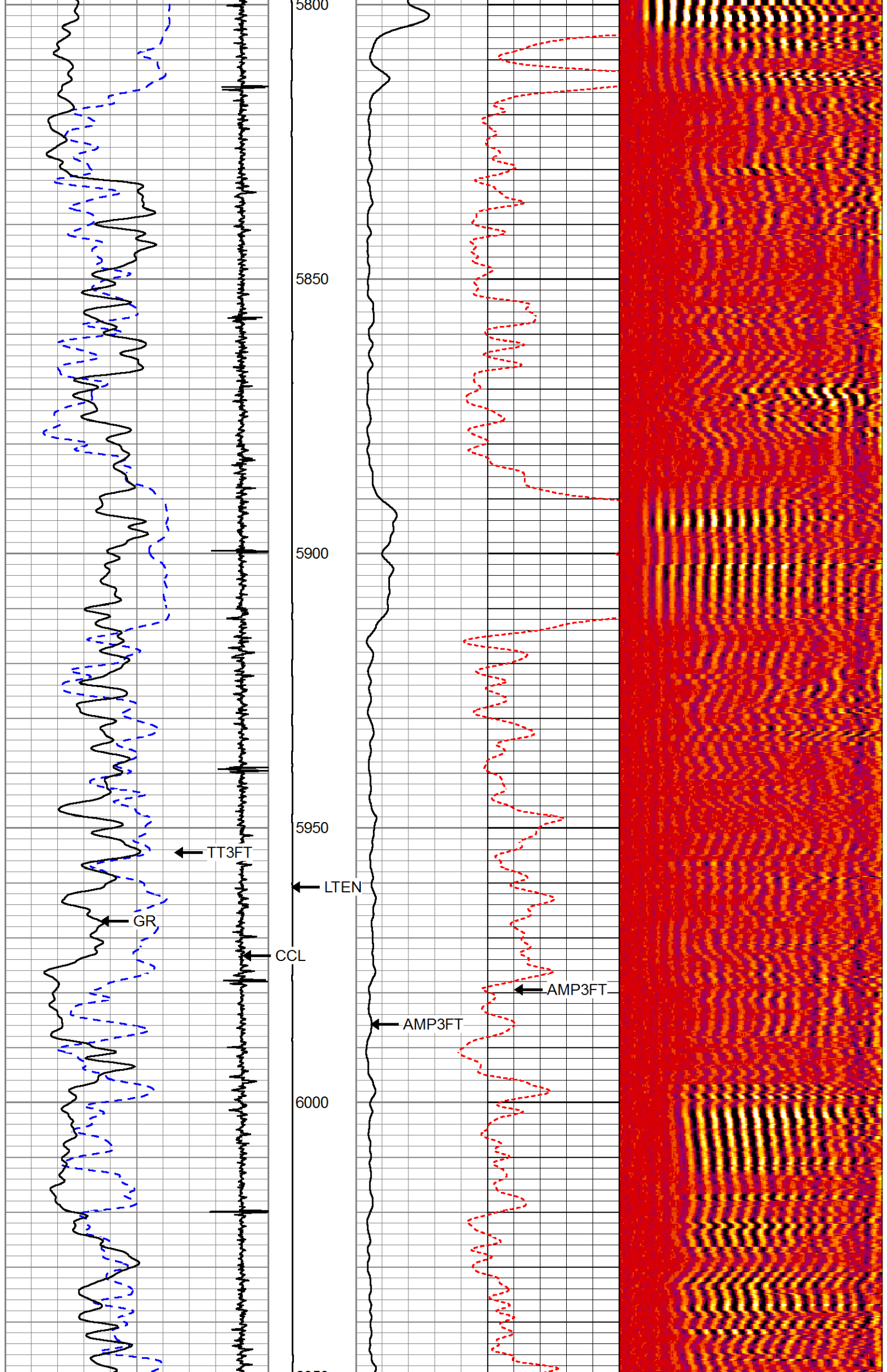


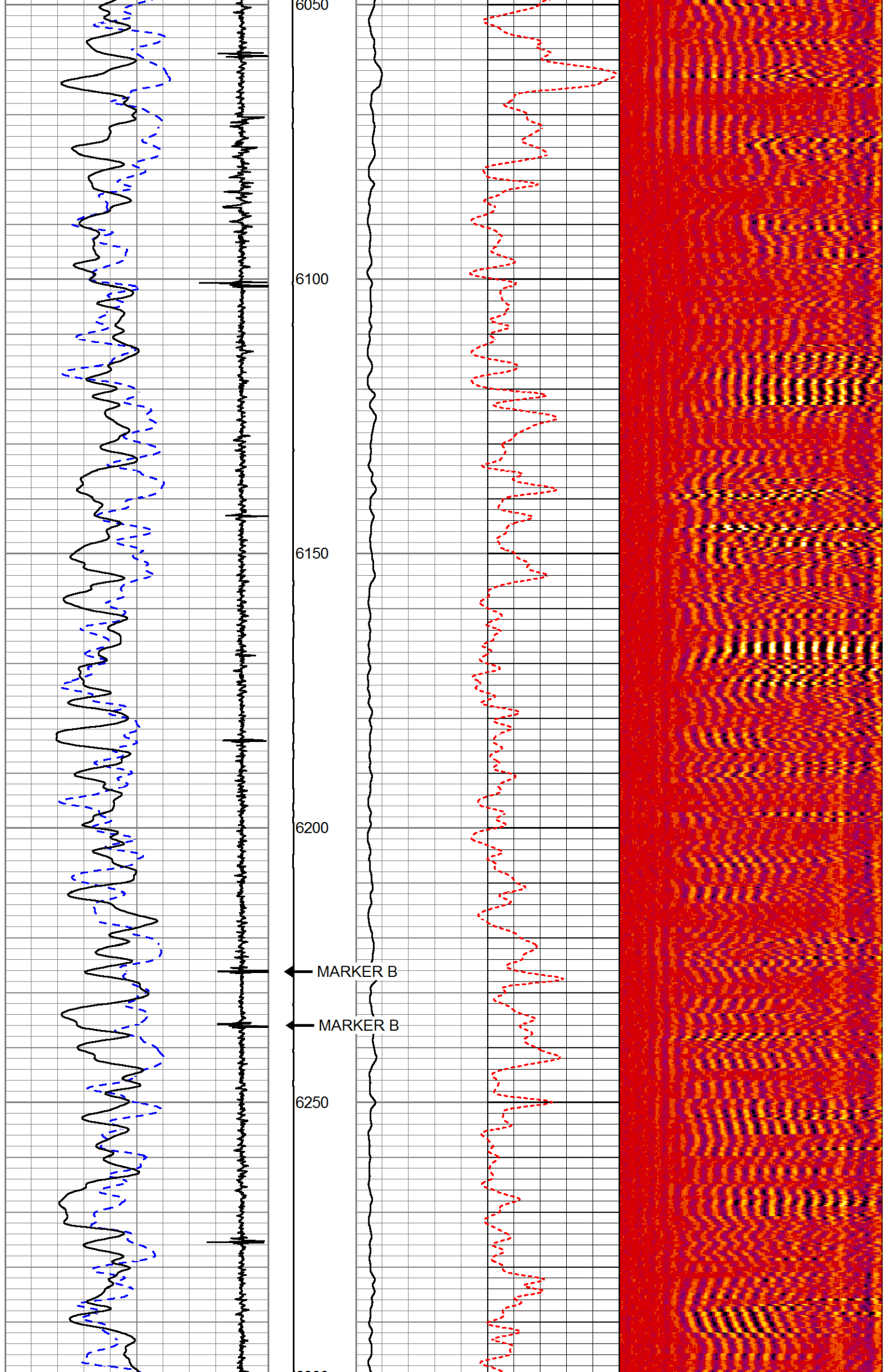


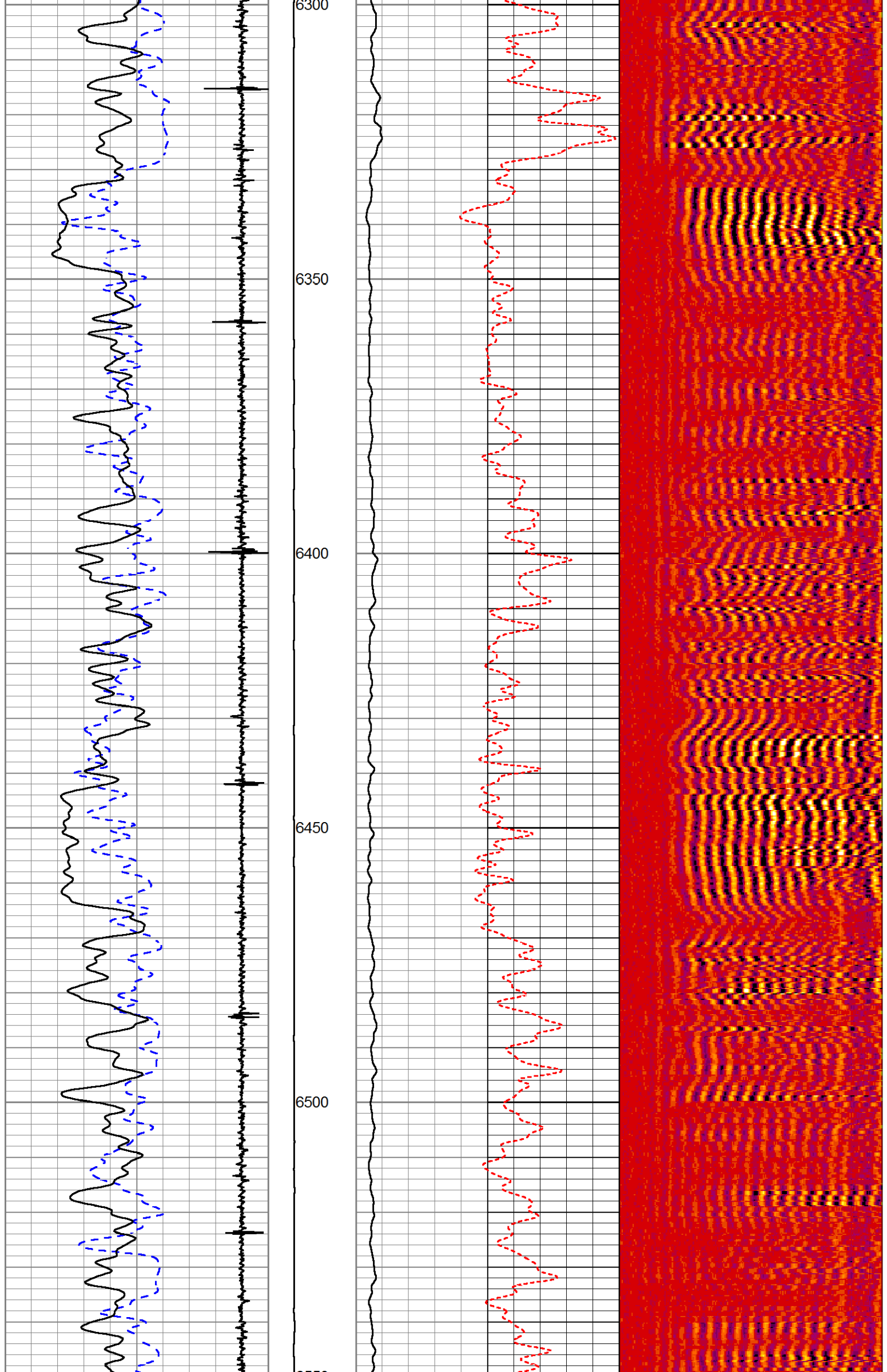


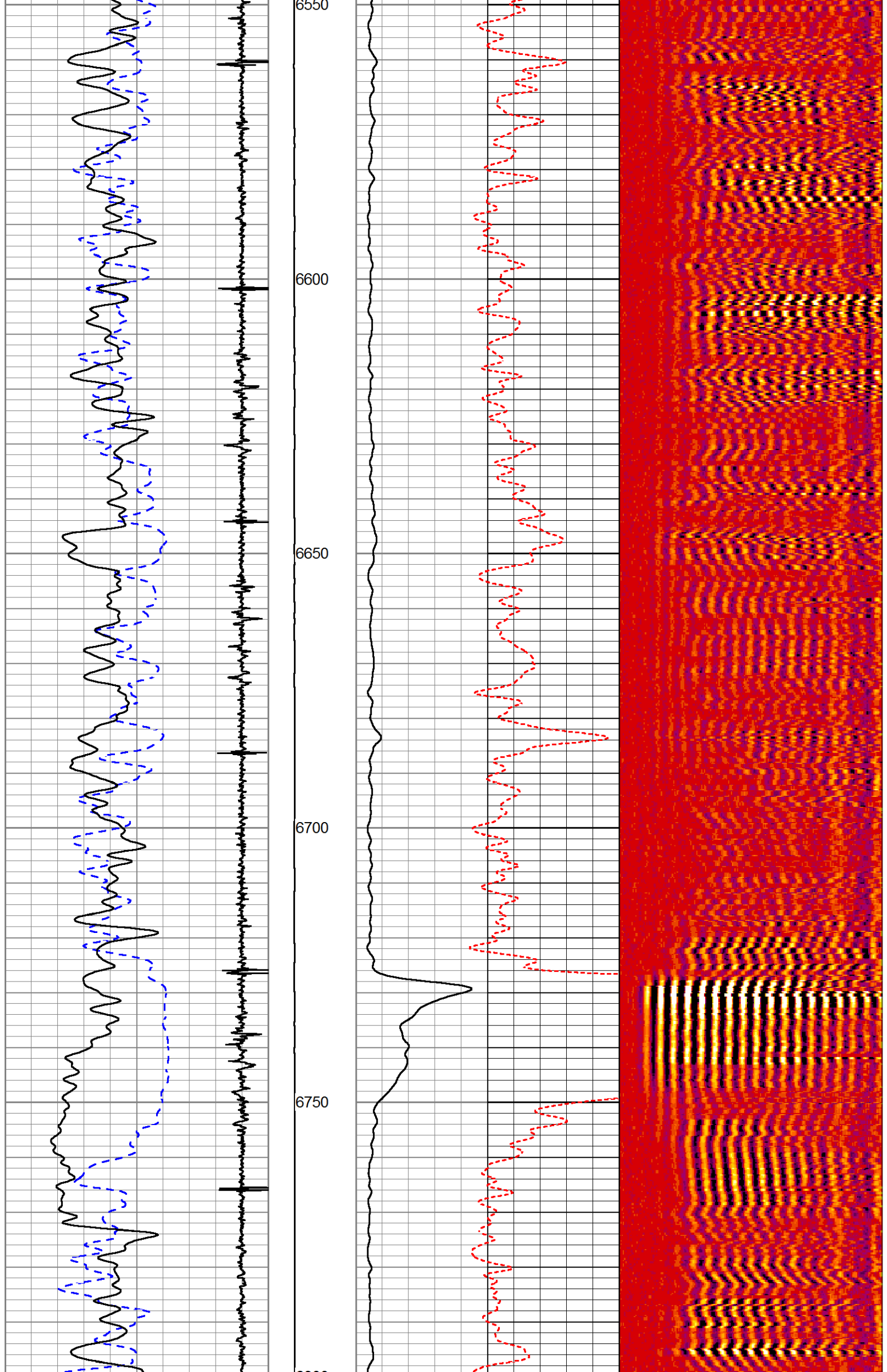


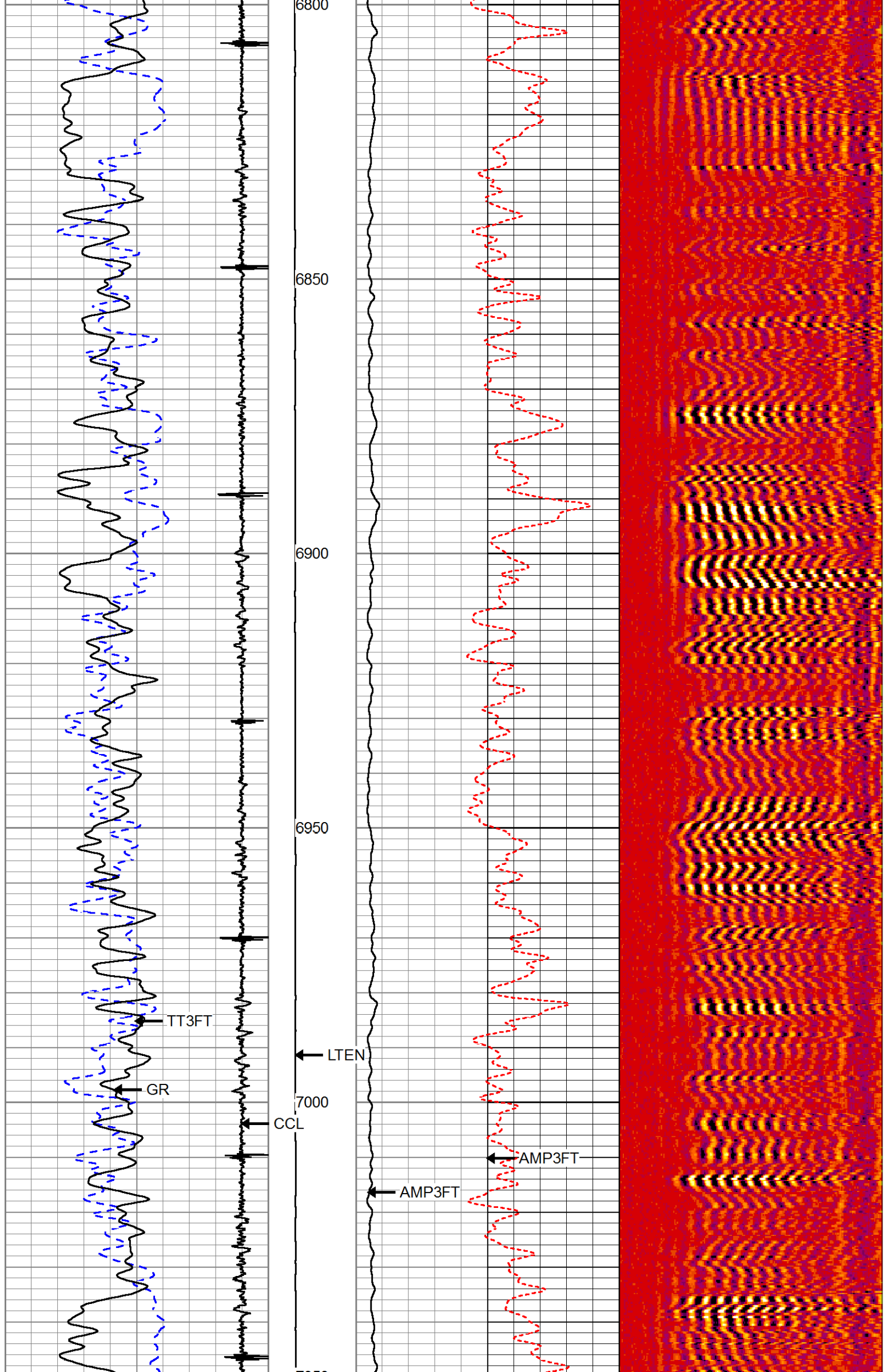


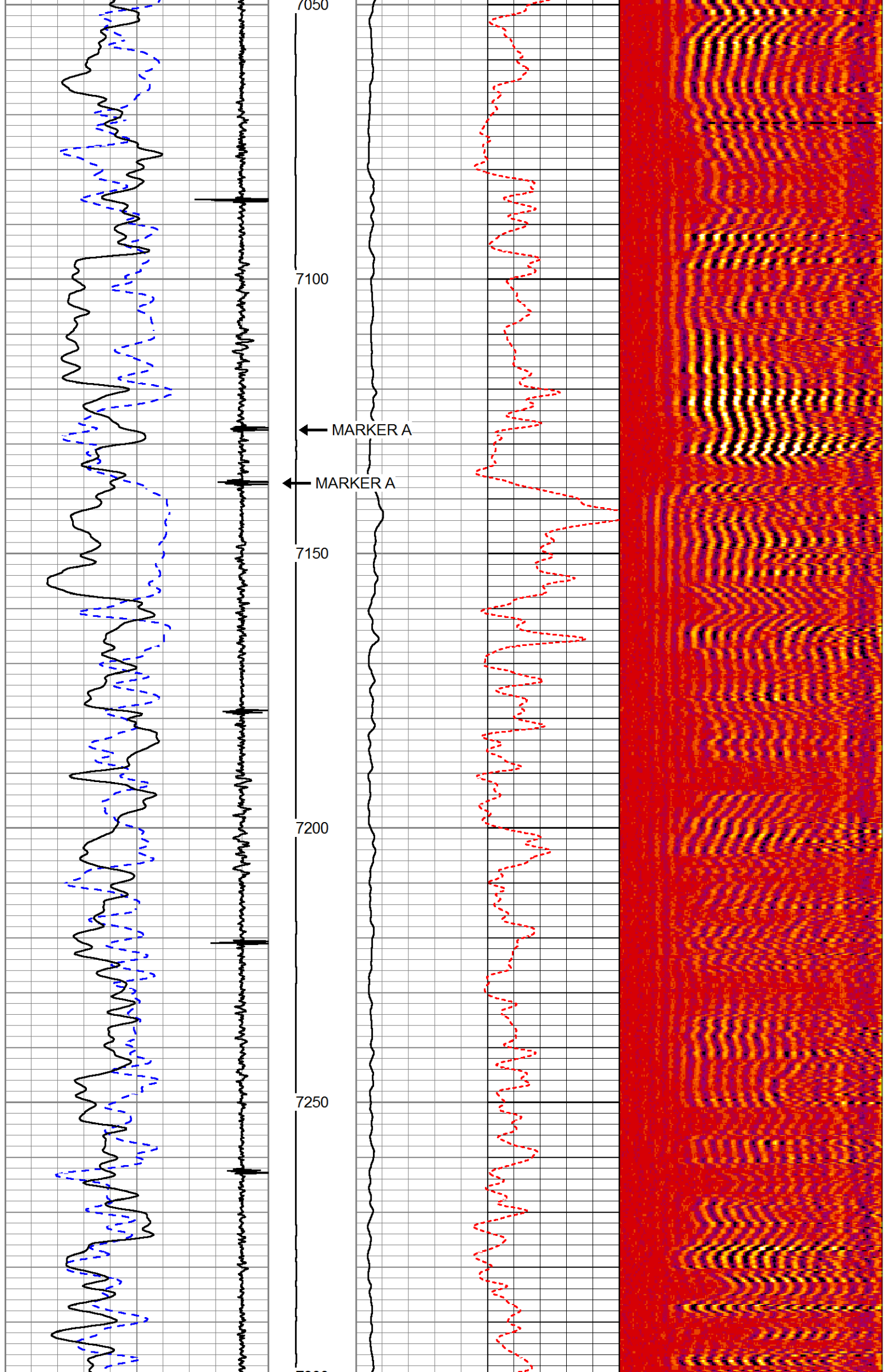


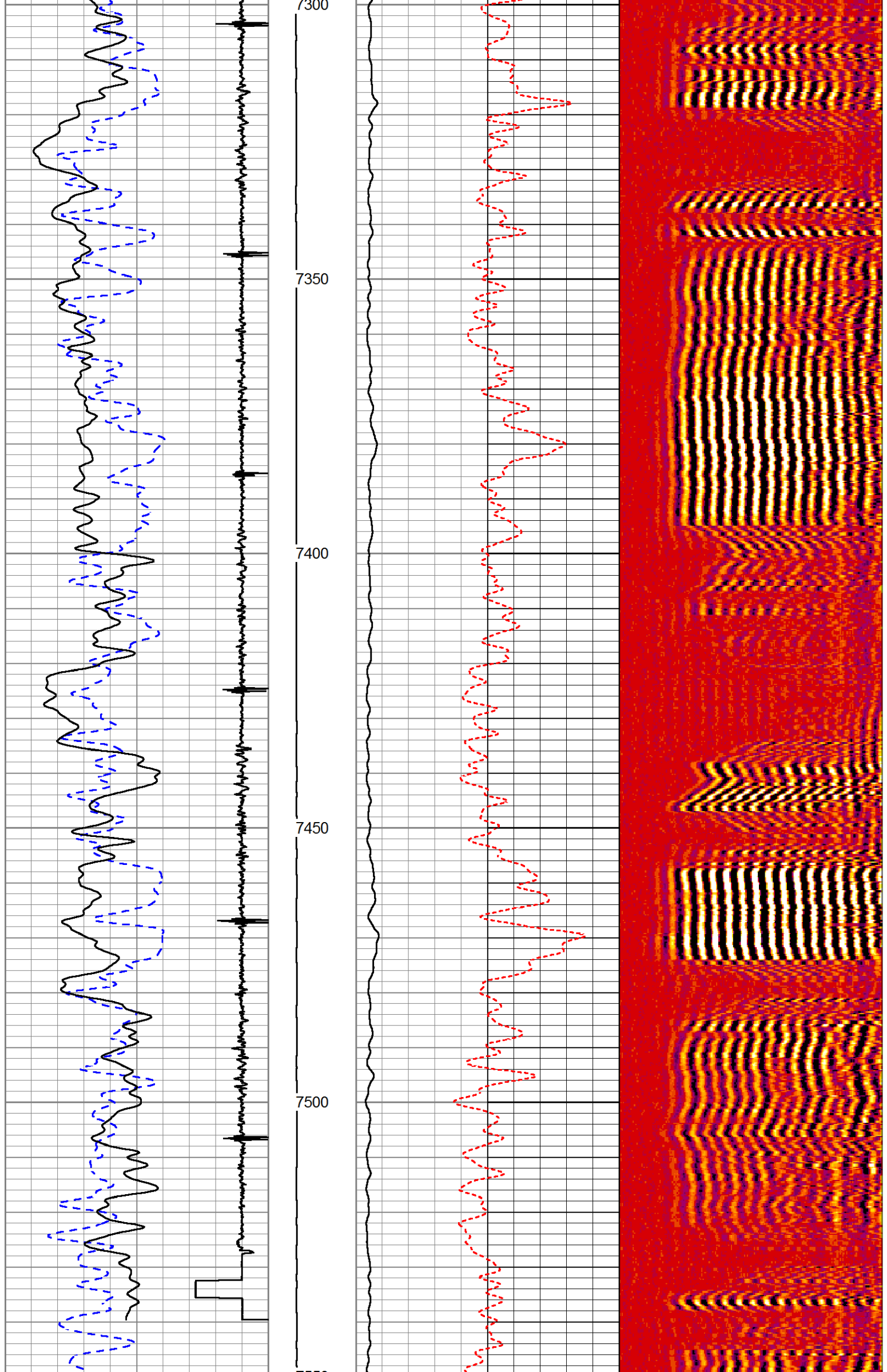


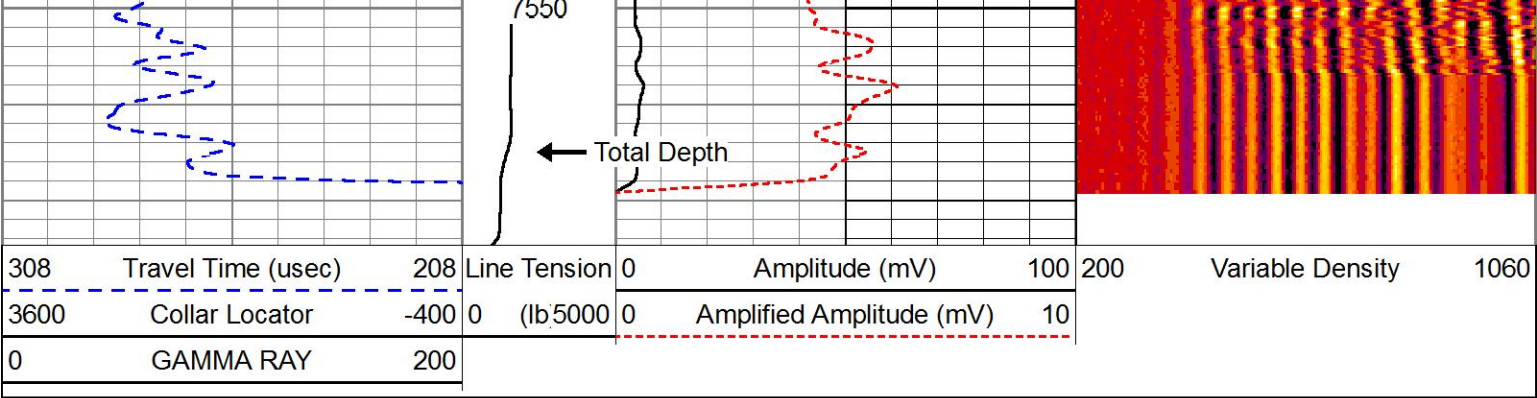








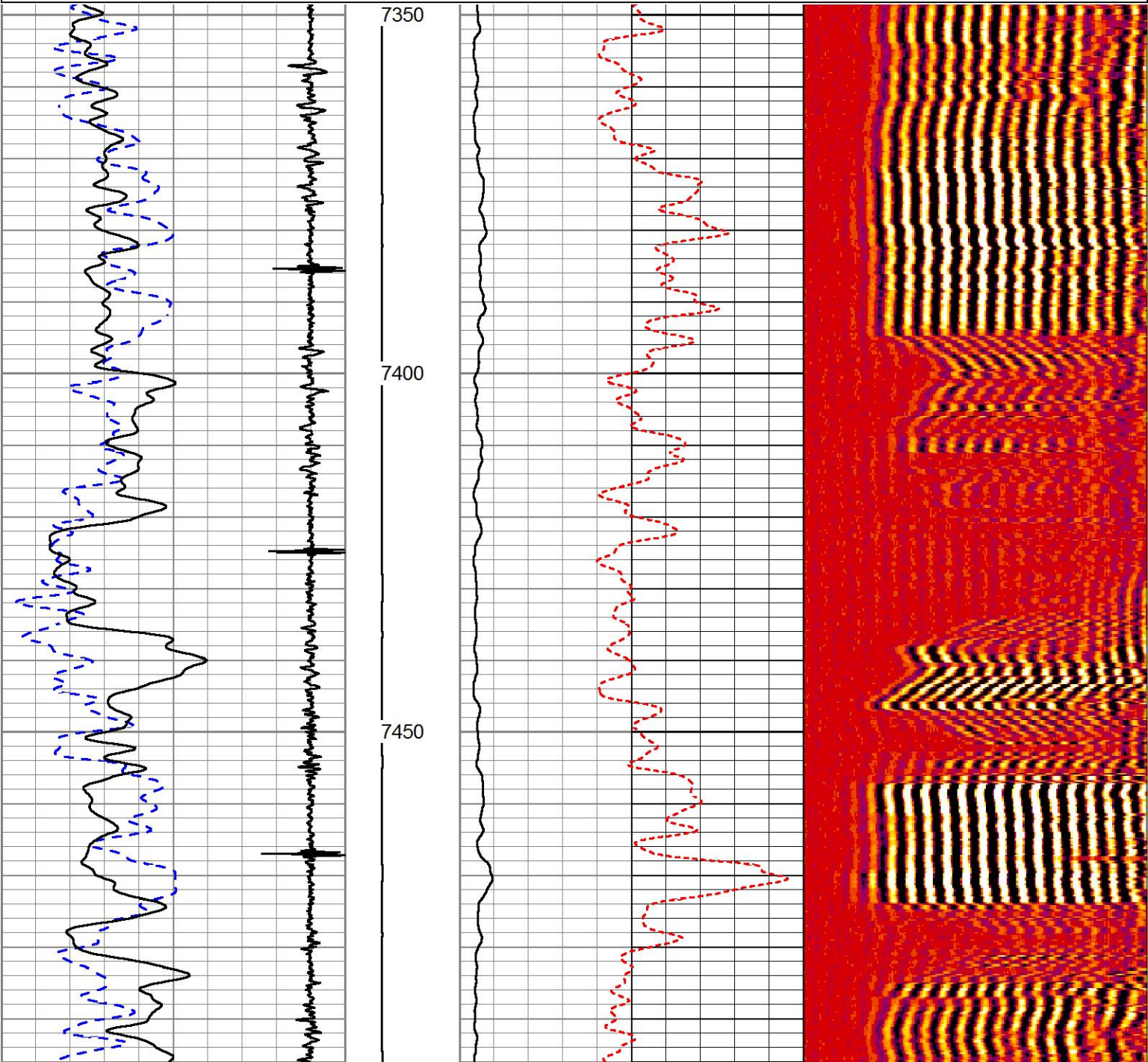
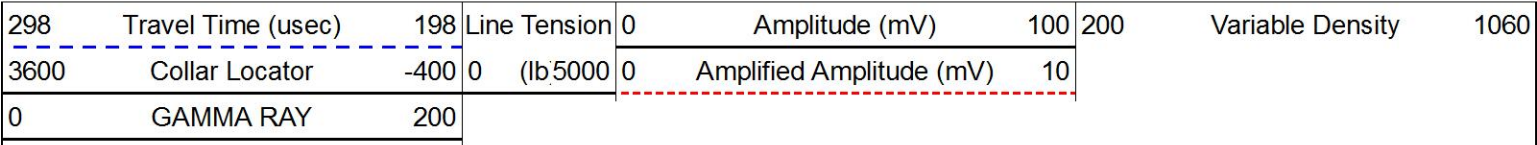


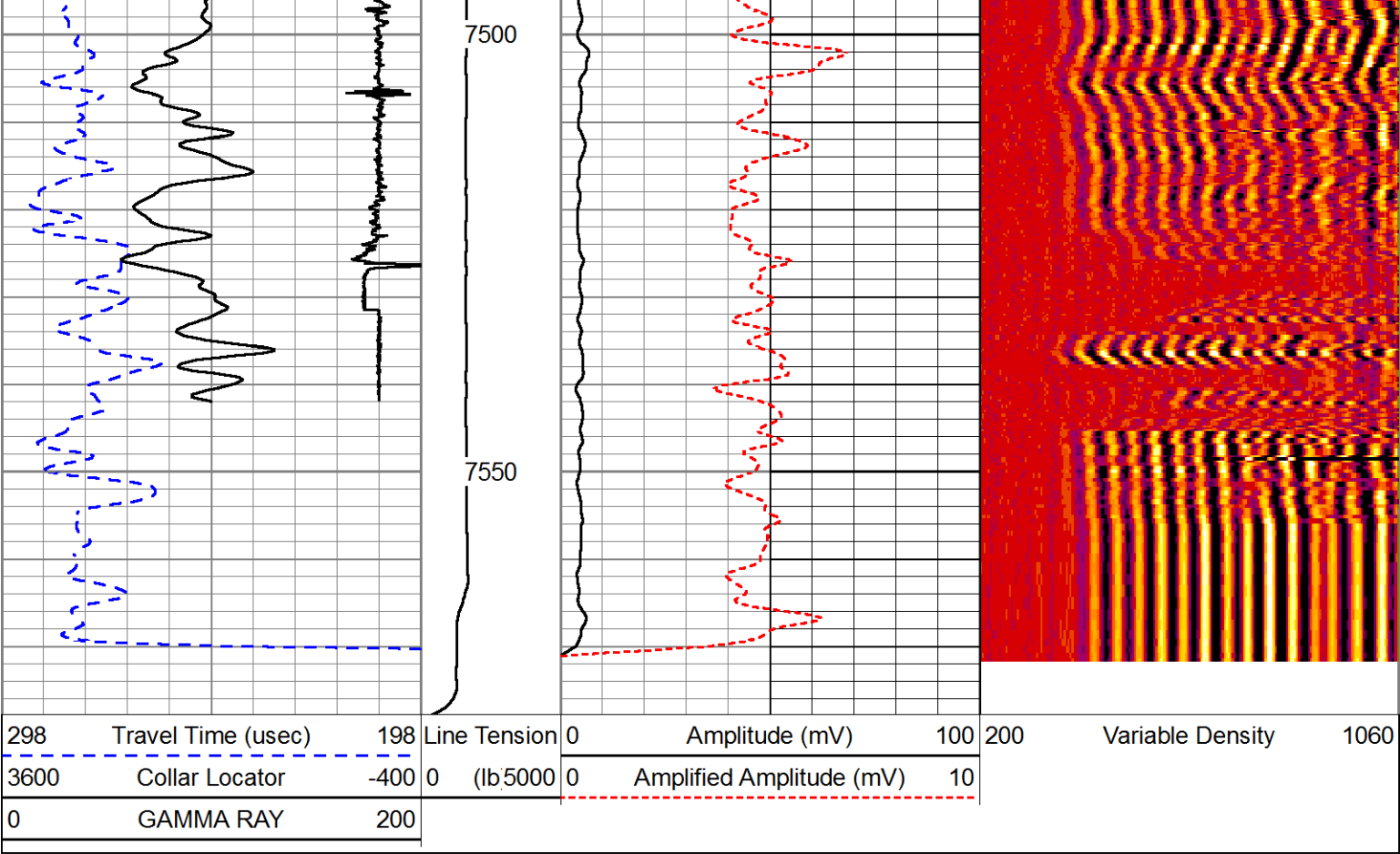


HALLIBURTON

REPEAT PASS

Database File ursa-tom-21c_sigma.db
Dataset Pathname pass3
Presentation Format !1!!cbl_rmti
Dataset Creation Tue Aug 30 15:37:57 2016
Charted by Depth in Feet scaled 1:240





Log Variables

DatabaseD:\Warrior_data\ursa-tom-31d_sigmacbl.db
Dataset field/well/run1/pass5/_vars_


Top - Bottom							
BHSAL1 1	BHSAL2 0	BHTEMP_Src TEMP	BITSIZE in 7.875	BORSAL kppm 150	BOTTEMP degF 120	CASED? Yes	CASEID in 5.012
CASEOD in 4.5	CASETHCK in 0.25	CASEWGHT lb/ft 11.6	LTH Sandstone	MSGGN 1	MudWgt lb/gal 8.45	PERFS 0	POROS1 1
POROS2 0	RHOCF 0.25	SO in 0	SRFTEMP degF 0	TDEPTH ft 0	UHSGC NONE	USERFTT usec/ft 0	ZREF MRayl 1.7


Calibration Report			
Database File	ursa-tom-21c3_sigma.db		
Dataset Pathname	pass1		
Dataset Creation	Wed Aug 31 08:02:44 2016		
Cement Bond Log Shop Calibration Report			
Serial-Model:		12091451-A	
Calibration Performed:		Tue Aug 30 10:10:25 2016	
Free Pipe Calibration			
TT	Measured	Units	
Amplitude	245.6	usec	
Log Base Line	573.8	mV	
	7.6	mV	
Calibration References and Gain			
Name	Value	Units	
Pipe O.D.	4.500	in	
Pipe Weight	11.6	lb/ft	
Pipe Ref. Amp.	79.0	mV	
Avg. Gain	2.122		


Amp. Gain		0.120			
Reservoir Monitor Tool I Calibration Report					
Serial-Model:		11680597-A			
Shop Calibration Performed:		Sat Aug 27 17:21:57 2016			
Carbon/Oxygen Mode					
Stabilization					
Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	84.00	80.00	4.00	+/-15.00	V
ITCR2	3130	3250	-120	+/-250	cps
Near Detector					
	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0278	5.69	<6.00
Fe	207	206 +/-2	0.0967	-----	-----
NGAIN = 0.992	NZOFF = 0.8				
Far Detector					
	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0382	5.90	<6.50
Fe	209	208 +/-2	0.0926	-----	-----
FGAIN = 0.992	FZOFF = 0.8				
Flask Temperature	57.6 degF				
Result	Logged	Expected Value	Diff.	Tol.	Units
COIR2	0.44	0.45	-0.01	+/-0.02	
LIRI2	1.37	1.36	0.01	+/-0.05	
TCCR2	3766	4000	-234	+/-1000	cps
ITCR2	3102	3200	-98	+/-250	cps
Sigma Mode					
Stabilization					
Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	84.00	80.00	4.00	+/-15.00	V
FCAP	9744	10000	-256	+/-500	cps
Horizontal Water Tank					
Result	Logged	Expected Value	Diff.	Tol.	Units
N/F Normalizer	0.92	0.95	-0.03		
N/F Inel Norm	0.60	0.61	-0.01		
RNF	1.09	1.07	0.02	+/-0.12	
RINC	1.68	1.64	0.04	+/-0.18	
SGFN	24.13	24.00	0.13	+/-0.50	cu
SGFF	22.93	22.85	0.08	+/-0.50	cu
FSIN	23037	24000	-963	+/-2000	cps
FCAP	9704	10000	-296	+/-1000	cps
NFTR	0.80			<5.00	
FFTR	0.91			<5.00	
NBKG	216			<500	cps
FBKG	105			<500	cps
RTN	0.37	0.40	-0.03	+/-0.10	usec
RTF	0.42	0.40	0.02	+/-0.10	usec

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 / 12105780			
SHOP CALIBRATION		Wed Aug 17 17:47:54 2016				
	Counts/Sec.	Gain	Offset	Jig	Units	
Background	27.8				cps	
Calibrator	295.2				cps	
		1.3760			GAPI/cps	
PRIMARY VERIFICATION						
Background	39.3				cps	
Calibrator	407.7				cps	
Difference				368.5	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)	
CCL	35.78		STNDCH-STND_CH 1.4375 IN CABLE HEAD	1.50	1.44	1.00	
GR	33.52			TTTCU-002 (12105780) 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 RmtTNGT	22.87 22.37			RMTI-A (11680597) Halliburton RMTI Tool	14.00	2.13	77.00

RmtFP5V	14.62		X-OVER-SondexxGo Sondex Box x Go Pin Cross Over	0.31	1.69	1.00
RmtNFwvMcsP	14.62		CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00
RmtCommFWa	14.62					
Temp	9.49					
TT3FT	7.24		HCBLM-A (12091451) Halliburton HCBLM Tool	9.38	2.75	116.00
AMP3FT	7.24					
WVF5FT	6.28					
WVF3FT	2.76		CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00
			AUH-001 (000001) Adaptor Ultrawire/Halliburton	0.38	1.69	3.00
LLMTEN	0.00		BUL-006 (000002) Bullnose Terminator	0.22	1.69	1.20
<div>Dataset: ursa-tom-21c3_sigma.db: field/well/run1/pass1</div> <div>Total length: 39.35 ft</div> <div>Total weight: 356.20 lb</div> <div>O.D.: 3.13 in</div>						

	Company	URSA OPERATING CO., LLC.				
	Well	TOMPKINS 21C-08-07-95				
	Field	PARACHUTE				
	County	GARFIELD				
	State	CO				Country U.S.A.