



# RADIAL CEMENT BOND LOG

FILE NO: CH145366	COMPANY <b>LARAMIE ENERGY LLC</b>
API NO: 05077105110000	WELL <b>BCU 0993-21-04W</b>
	FIELD <b>BUZZARD CREEK</b>
	COUNTY <b>MESA</b> STATE <b>COLORADO</b>

Ver. 4.11	LOCATION: SHL: 871' FNL & 1321' FWL	OTHER SERVICES RPM
	SEC <u>21</u> TWP <u>9 S</u> RGE <u>93 W</u>	

PERMANENT DATUM	GL	ELEVATION	7257 FT	ELEVATIONS: KB 7287 FT DF GL 7257 FT
LOG MEASURED FROM	KB	301 FT	ABOVE P.D.	
DRILL. MEAS. FROM	KB			

DATE	27-NOV-2018
RUN	1
TRIP	1
SERVICE ORDER	US145366
DEPTH DRILLER	7636 FT
DEPTH LOGGER	7621 FT
BOTTOM LOGGED INTERVAL	7621 FT
TOP LOGGED INTERVAL	0 FT
TIME STARTED	9:30
TIME FINISHED	12:00
OPERATOR RIG TIME	2.5 HOURS
TYPE OF FLUID IN HOLE	WATER
FLUID DENSITY	NA
FLUID SALINITY	NA
FLUID LEVEL	71 FT
LOGGED CEMENT TOP	1050 FT
WELLHEAD PRESSURE	0 PSI
MAXIMUM HOLE DEVIATION	NA
NOMINAL LOGGING SPEED	100 F/MN
MAX. RECORDED TEMP.	253 DEGF
REFERENCE LOG	NA
REFERENCE LOG DATE	NA
EQUIP. NO.	ML-4268
LOCATION	GRAND JCT.
RECORDED BY	TIM NEWELL
WITNESSED BY	NA

IN MAKING INTERPRETATIONS OF LOGS OUR EMPLOYEES WILL GIVE THE CUSTOMER THE BENEFIT OF THEIR BEST JUDGEMENT. BUT SINCE ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS, WE CANNOT, AND WE DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION. WE SHALL NOT BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COST, DAMAGES, OR EXPENSES WHATSOEVER INCURRED OR SUSTAINED BY THE CUSTOMER RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR EMPLOYEES.

BOREHOLE RECORD		
BIT SIZE	FROM	TO

CASING RECORD				
SIZE	WEIGHT	GRADE	FROM	TO
4.5 IN	11.6 LB/F		30 FT	

REMARKS
RUN 1 TRIP 1: SJ: 5727' - 5748' SJ: 6790' - 6809'

EQUIPMENT DATA				
RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.
1	1	RAL	1426XA	10222301
1	1	GR/CCL	1355XA	12568545

# RAL MAIN PASS 0 PSI

ECLIPS 7.0i ECLIPS General Release Rel 7.0i Thu Jun 08 20:36:10 CDT 2017

Updates: 1

Plotted: Tue Nov 27 13:05:34 2018

## PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE\_BCU\_0993\_21\_04W/p012g02.prm  
 LOGGING MODE: DEPTH DIRECTION: UP  
 TOP DEPTH: 14.250 ft BOTTOM DEPTH: 7614.750 ft

### SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GR	FILTER ()	medium (1)		TOP	BOTTOM
AMPLITUDE	FILTER ()	medium (1)		"	"
TRAVEL TIME	FILTER ()	medium (1)		"	"

### RAL CCL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CCL FLOOR	CCL FLOOR	0.00		TOP	BOTTOM

### ANALOG RAL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
AMPLITUDE WINDOW (NEAR)	AMP WINDOW START (fgp1*)	187	us	TOP	BOTTOM
	AMP WINDOW START (fgp2*)	187	us	"	"
	AMP WINDOW START (fgp3*)	187	us	"	"
	AMP WINDOW START (fgp4*)	187	us	"	"
	AMP WINDOW START (fgp5*)	187	us	"	"
	AMP WINDOW START (fgp6*)	187	us	"	"
	AMP WINDOW START (fgp7*)	187	us	"	"
	AMP WINDOW START (fgp8*)	187	us	"	"
	AMP WINDOW START (fgpn*)	187	us	"	"
	AMP WINDOW LENGTH	25	us	"	"
TRAVEL TIME WINDOW (NEAR)	TT WINDOW START (ttn*)	199	us	"	"
	TT WINDOW LENGTH	500	us	"	"
	FIRST BRK THRESHOLD (ttn*)	4	mV	"	"
RAL CASING PARAMETERS	PPT NEAR	202.185	us	"	"
RAL TOOL DELAY	TOOL DELAY (str1*)	-72	us	"	"
	TOOL DELAY (str2*)	-72	us	"	"
	TOOL DELAY (str3*)	-72	us	"	"
	TOOL DELAY (str4*)	-72	us	"	"
	TOOL DELAY (str5*)	-72	us	"	"
	TOOL DELAY (str6*)	-72	us	"	"
	TOOL DELAY (str7*)	-72	us	"	"
	TOOL DELAY (str8*)	-72	us	"	"
	TOOL DELAY (strn*)	-72	us	"	"
BASELINE NOISE (NEAR)	NOISE WINDOW START	127	us	"	"
	NOISE WINDOW LENGTH	25	us	"	"

### PERCENT BOND CEMENT MAP

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
RAL FREE PIPE AMPLITUDE	FREE AMP REC 1	80	mV	TOP	BOTTOM
	FREE AMP REC 2	80	mV	"	"
	FREE AMP REC 3	80	mV	"	"
	FREE AMP REC 4	80	mV	"	"
	FREE AMP REC 5	80	mV	"	"
	FREE AMP REC 6	80	mV	"	"
	FREE AMP REC 7	80	mV	"	"
	FREE AMP REC 8	80	mV	"	"
RAL FULL BOND AMPLITUDE	FULL BOND AMP REC 1	2	mV	"	"
	FULL BOND AMP REC 2	2	mV	"	"
	FULL BOND AMP REC 3	2	mV	"	"
	FULL BOND AMP REC 4	2	mV	"	"
	FULL BOND AMP REC 5	2	mV	"	"

	FULL BOND AMP REC 5	2	mV	"	"
	FULL BOND AMP REC 6	2	mV	"	"
	FULL BOND AMP REC 7	2	mV	"	"
	FULL BOND AMP REC 8	2	mV	"	"

PARAMETER AND FILTER SUMMARY REPORT					
FILE: /dat1a/LARAMIE_BCU_0993_21_04W/p012g01.prm LOGGING MODE: DEPTH DIRECTION: UP TOP DEPTH: 7380.750 ft BOTTOM DEPTH: 7627.750 ft					
SYMMETRIC FILTER					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GR	FILTER ()	medium (1)		TOP	BOTTOM
AMPLITUDE	FILTER ()	medium (1)		"	"
TRAVEL TIME	FILTER ()	medium (1)		"	"
RAL CCL PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CCL FLOOR	CCL FLOOR	0.00		TOP	BOTTOM
ANALOG RAL PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
AMPLITUDE WINDOW (NEAR)	AMP WINDOW START (fgp1*)	187	us	TOP	BOTTOM
	AMP WINDOW START (fgp2*)	187	us	"	"
	AMP WINDOW START (fgp3*)	187	us	"	"
	AMP WINDOW START (fgp4*)	187	us	"	"
	AMP WINDOW START (fgp5*)	187	us	"	"
	AMP WINDOW START (fgp6*)	187	us	"	"
	AMP WINDOW START (fgp7*)	187	us	"	"
	AMP WINDOW START (fgp8*)	187	us	"	"
	AMP WINDOW START (fgpn*)	187	us	"	"
TRAVEL TIME WINDOW (NEAR)	AMP WINDOW LENGTH	25	us	"	"
	TT WINDOW START (ttn*)	199	us	"	"
	TT WINDOW LENGTH	500	us	"	"
	FIRST BRK THRESHOLD (ttn*)	4	mV	"	"
RAL CASING PARAMETERS	PPT NEAR	202.185	us	"	"
RAL TOOL DELAY	TOOL DELAY (str1*)	-72	us	"	"
	TOOL DELAY (str2*)	-72	us	"	"
	TOOL DELAY (str3*)	-72	us	"	"
	TOOL DELAY (str4*)	-72	us	"	"
	TOOL DELAY (str5*)	-72	us	"	"
	TOOL DELAY (str6*)	-72	us	"	"
	TOOL DELAY (str7*)	-72	us	"	"
	TOOL DELAY (str8*)	-72	us	"	"
BASELINE NOISE (NEAR)	TOOL DELAY (strn*)	-72	us	"	"
	NOISE WINDOW START	127	us	"	"
	NOISE WINDOW LENGTH	25	us	"	"
PERCENT BOND CEMENT MAP					
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	FREE AMP REC 6	80	mV	"	"
	FREE AMP REC 7	80	mV	"	"
	FREE AMP REC 8	80	mV	"	"
RAL FULL BOND AMPLITUDE	FULL BOND AMP REC 1	2	mV	"	"
	FULL BOND AMP REC 2	2	mV	"	"
	FULL BOND AMP REC 3	2	mV	"	"
	FULL BOND AMP REC 4	2	mV	"	"
	FULL BOND AMP REC 5	2	mV	"	"
	FULL BOND AMP REC 6	2	mV	"	"
	FULL BOND AMP REC 7	2	mV	"	"
	FULL BOND AMP REC 8	2	mV	"	"

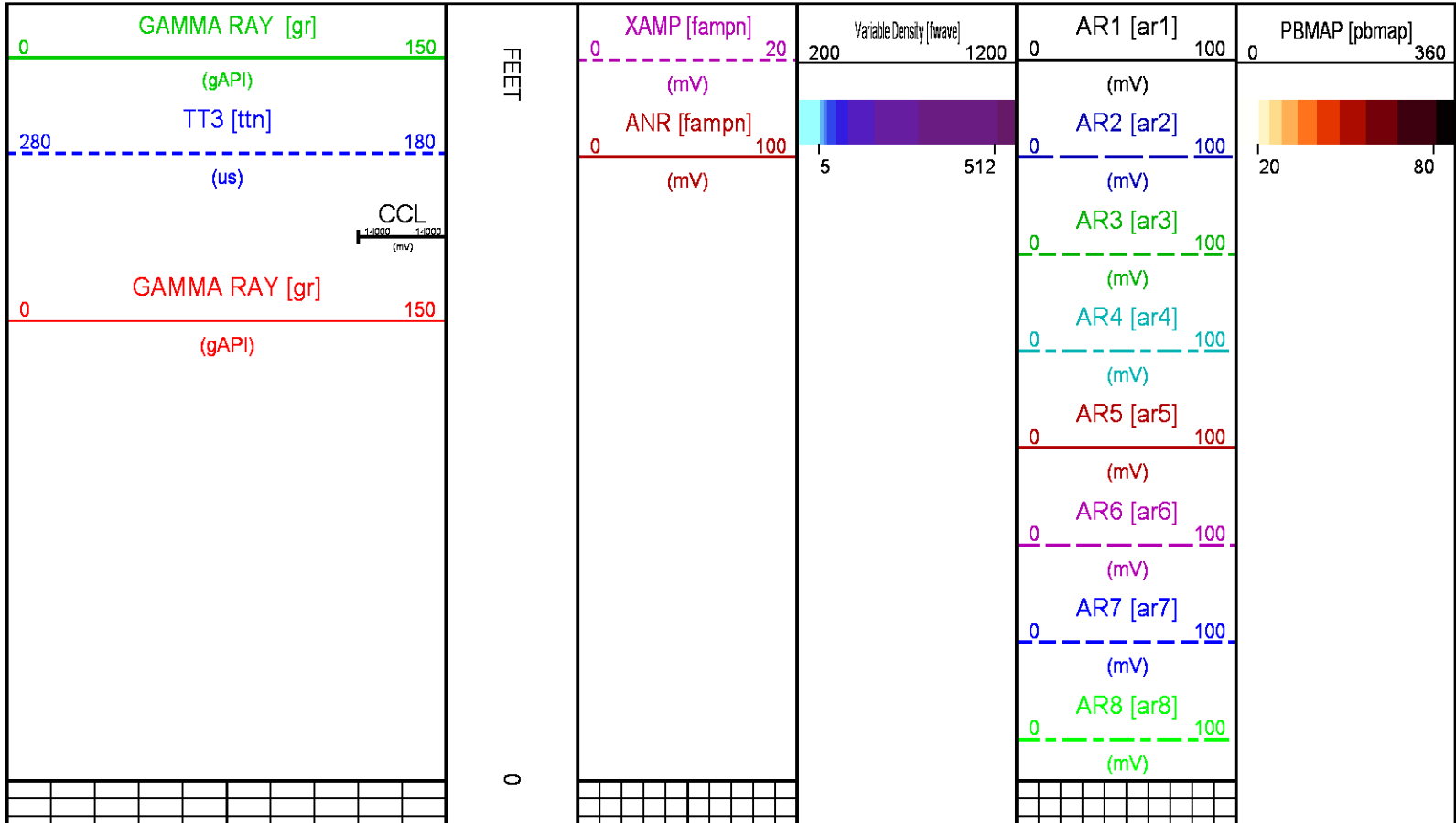
CURVE DESCRIPTION REPORT					
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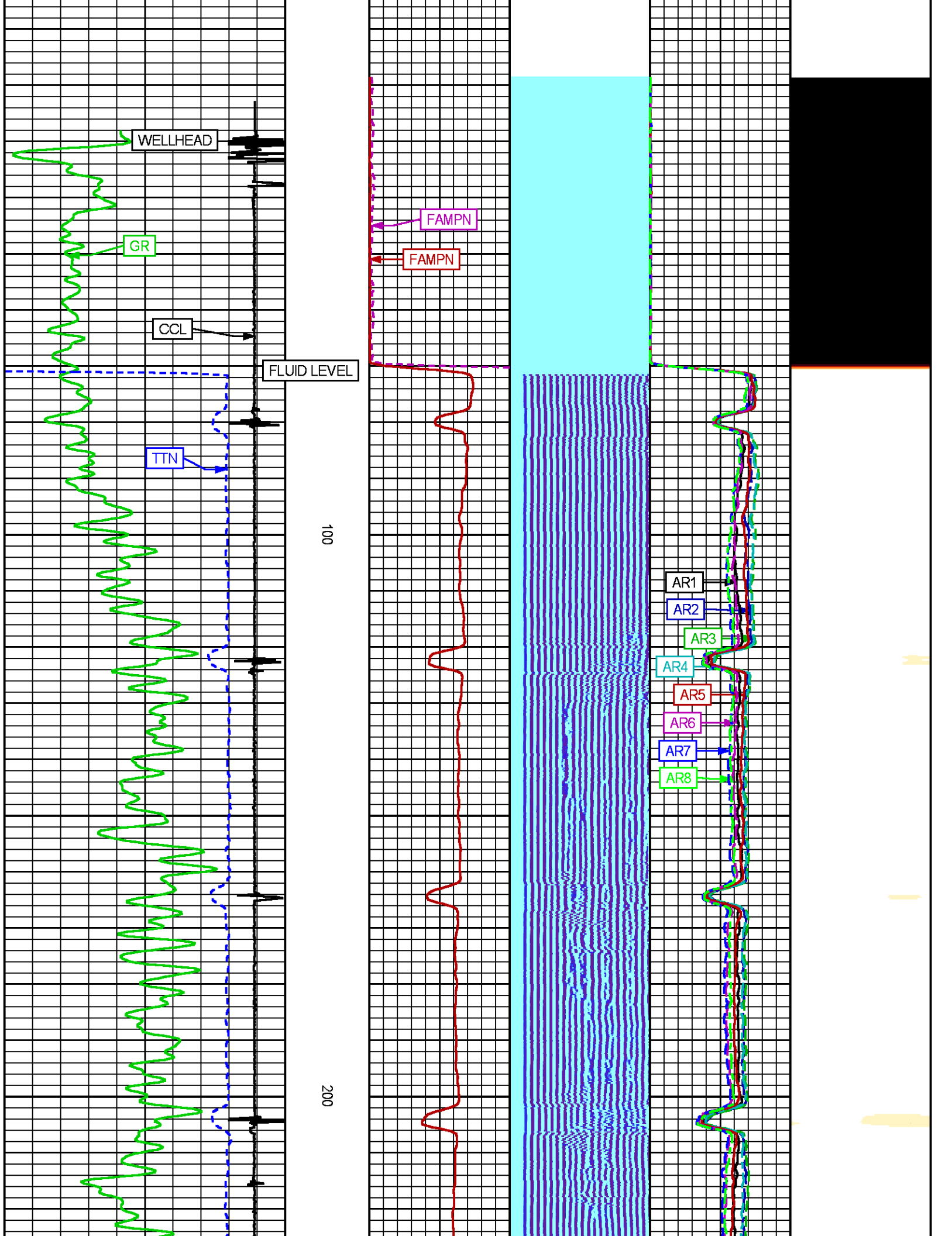
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:AR1	Nov 27 10:34:46 2018	FIXED GATE AMPLITUDE T-R1
F1:AR2	Nov 27 10:34:46 2018	FIXED GATE AMPLITUDE T-R2
F1:AR3	Nov 27 10:34:46 2018	FIXED GATE AMPLITUDE T-R3
F1:AR4	Nov 27 10:34:46 2018	FIXED GATE AMPLITUDE T-R4
F1:AR5	Nov 27 10:34:46 2018	FIXED GATE AMPLITUDE T-R5
F1:AR6	Nov 27 10:34:46 2018	FIXED GATE AMPLITUDE T-R6
F1:AR7	Nov 27 10:34:46 2018	FIXED GATE AMPLITUDE T-R7
F1:AR8	Nov 27 10:34:46 2018	FIXED GATE AMPLITUDE T-R8
F1:CCL	Nov 27 10:34:46 2018	CASING COLLAR LOCATOR
F1:FAMPN	Nov 27 10:34:46 2018	FIXED GATE AMPLITUDE NEAR RECEIVER
F1:FWAVE	Nov 27 10:34:46 2018	FAR WAVE FORM
F1:GR	Nov 27 10:34:46 2018	GAMMA RAY
F1:PBMAP	Nov 27 10:34:46 2018	PERCENT BOND CEMENT MAP
F1:TTN	Nov 27 10:34:46 2018	TRAVELTIME FROM NEAR TRANSMITTER-RECEIVER

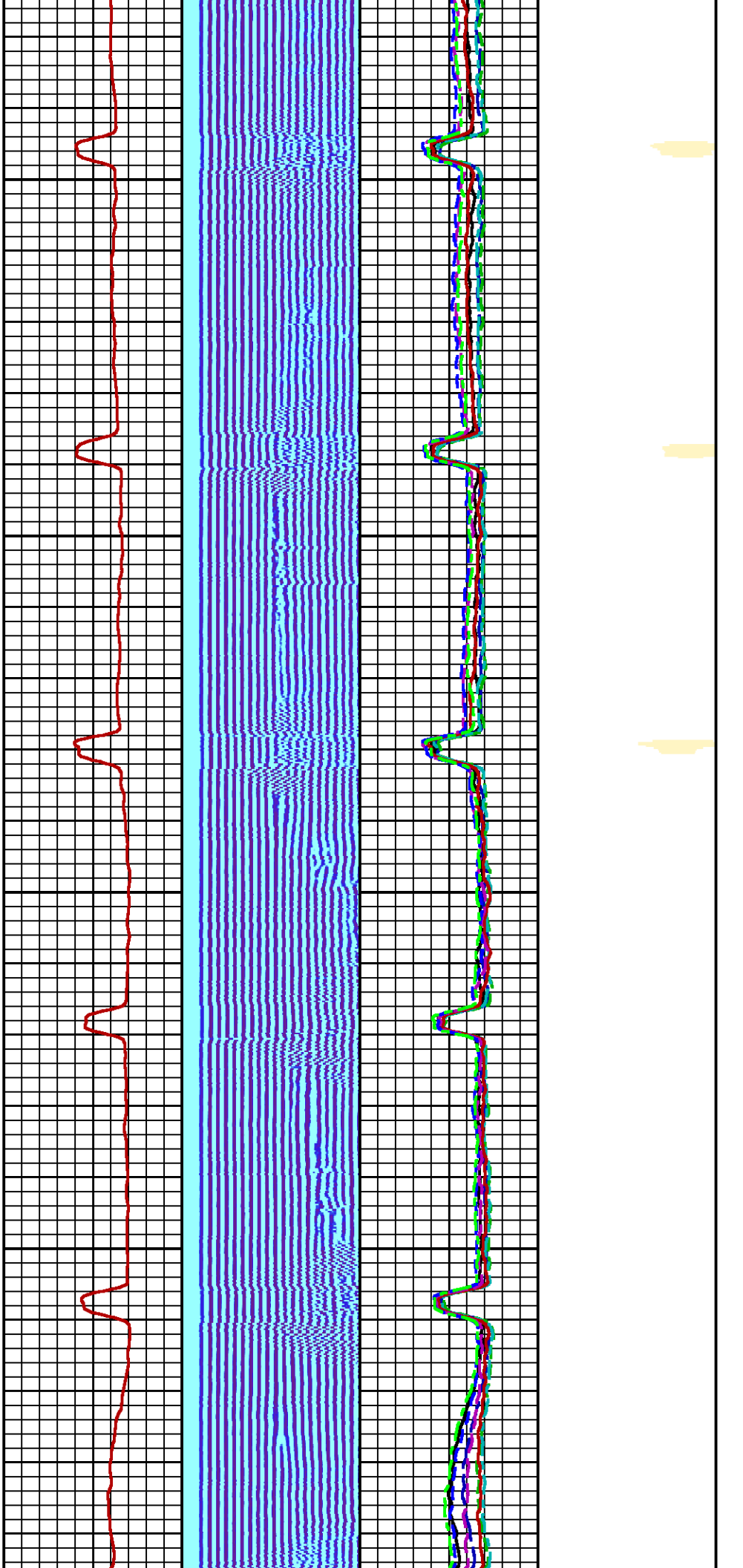
### CURVE MEASURE POINT OFFSET

CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
AR1	-11.25	AR4	-11.25	AR7	-11.25	FAMPN	-11.25
AR2	-11.25	AR5	-11.25	AR8	-11.25	GR	-1.75
AR3	-11.25	AR6	-11.25	CCL	-5.75	TTN	-11.25

<b>Presentation</b>	: SysA:/dat1a/LARAMIE_BCU_0993_21_04W/04W_RAL_MAIN.fvpdf [5"/100' Scale]
<b>Plot Interval</b>	: 0 - 7635 Feet
<b>Data File 1</b>	: F1 : SysA:/dat1a/LARAMIE_BCU_0993_21_04W/04W_RAL_MAIN.xtf
<b>Created On</b>	: Nov 27 10:34:46 2018
<b>Company</b>	: LARAMIE ENERGY LLC
<b>Well</b>	: BCU 0993-21-04W
<b>Field</b>	: BUZZARD CREEK
<b>File Interval</b>	: 14.25 - 7629.25 Feet
<b>OCT</b>	: p012g
<b>Data File 2</b>	: F2 : SysA:/dat1a/LARAMIE_BCU_0993_21_04W/p04W_RAL_REPEAT.xtf
<b>Created On</b>	: Nov 27 10:29:38 2018
<b>Company</b>	: LARAMIE ENERGY LLC
<b>Well</b>	: BCU 0993-21-04W
<b>Field</b>	: BUZZARD CREEK
<b>File Interval</b>	: 7380.25 - 7642 Feet
<b>OCT</b>	: p012g

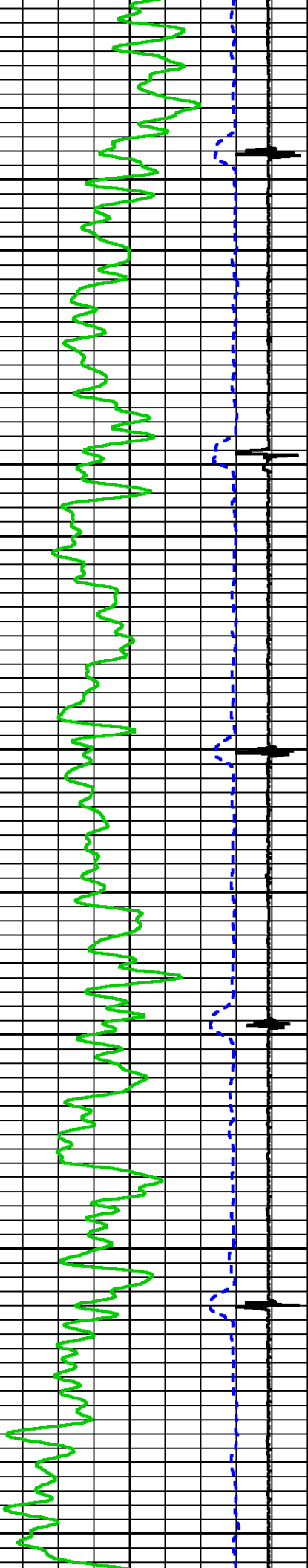


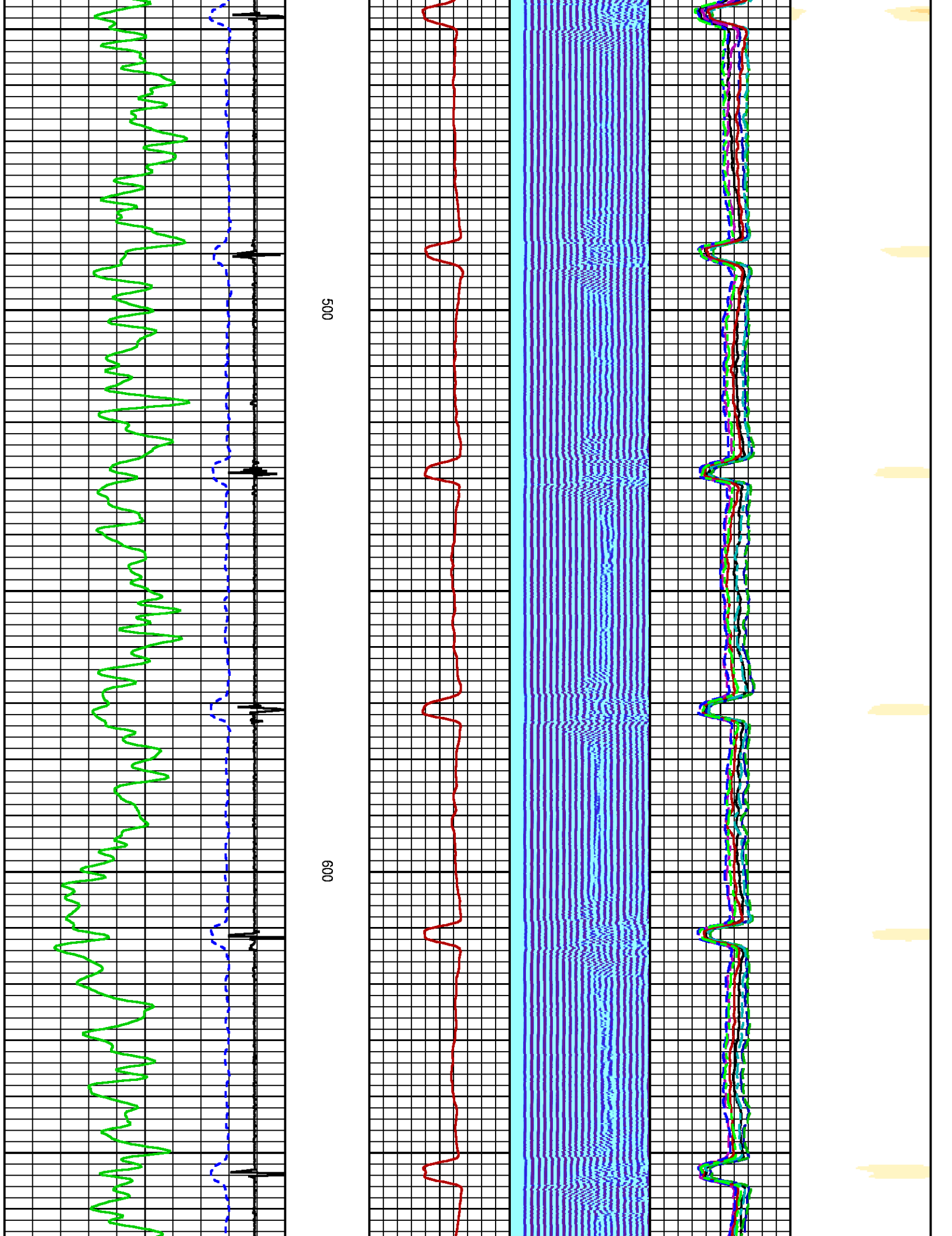




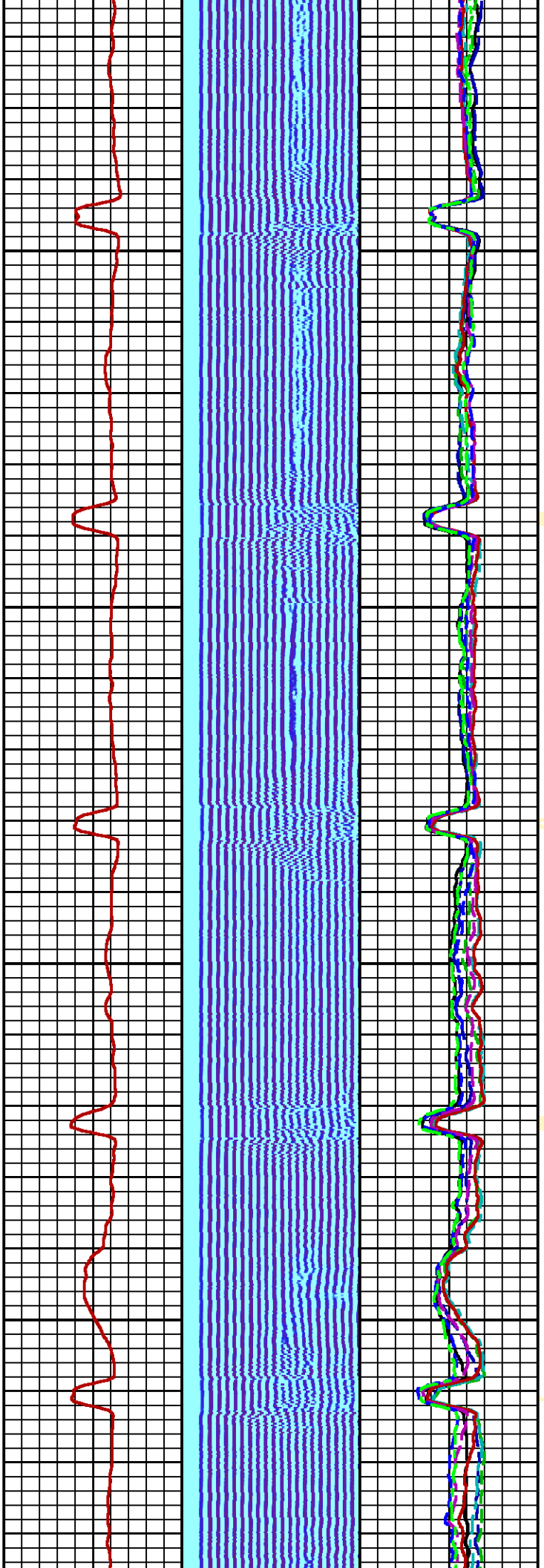
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400



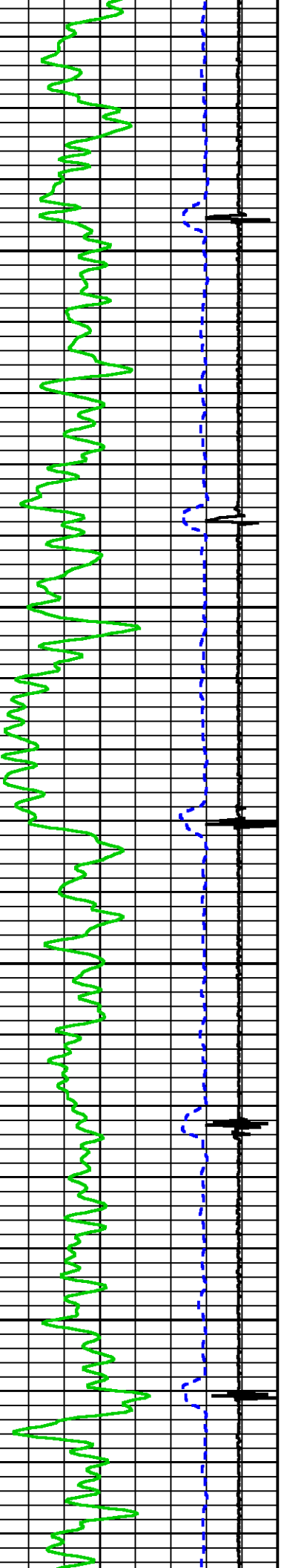




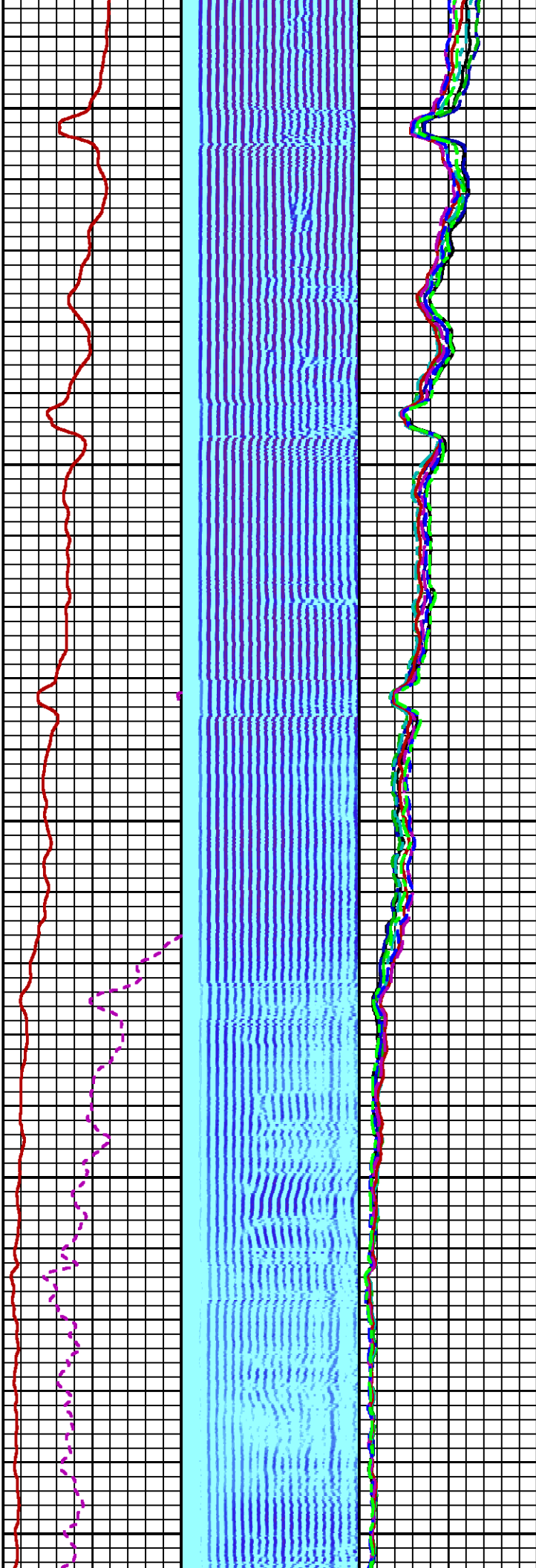
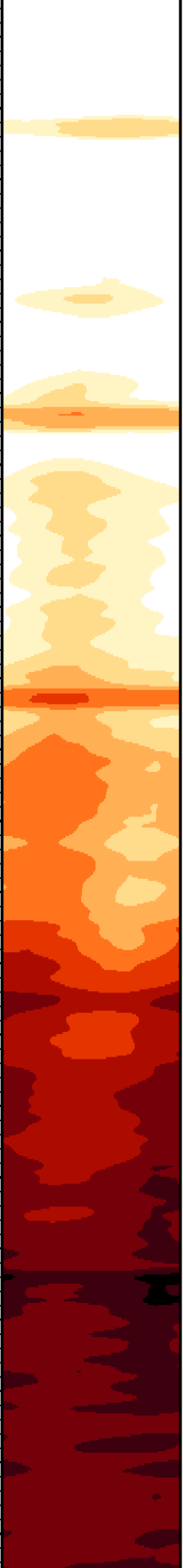


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800





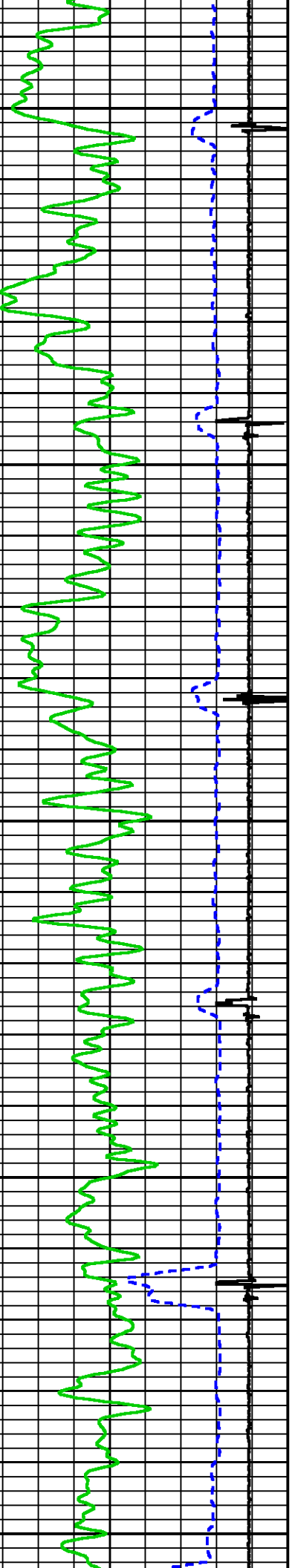


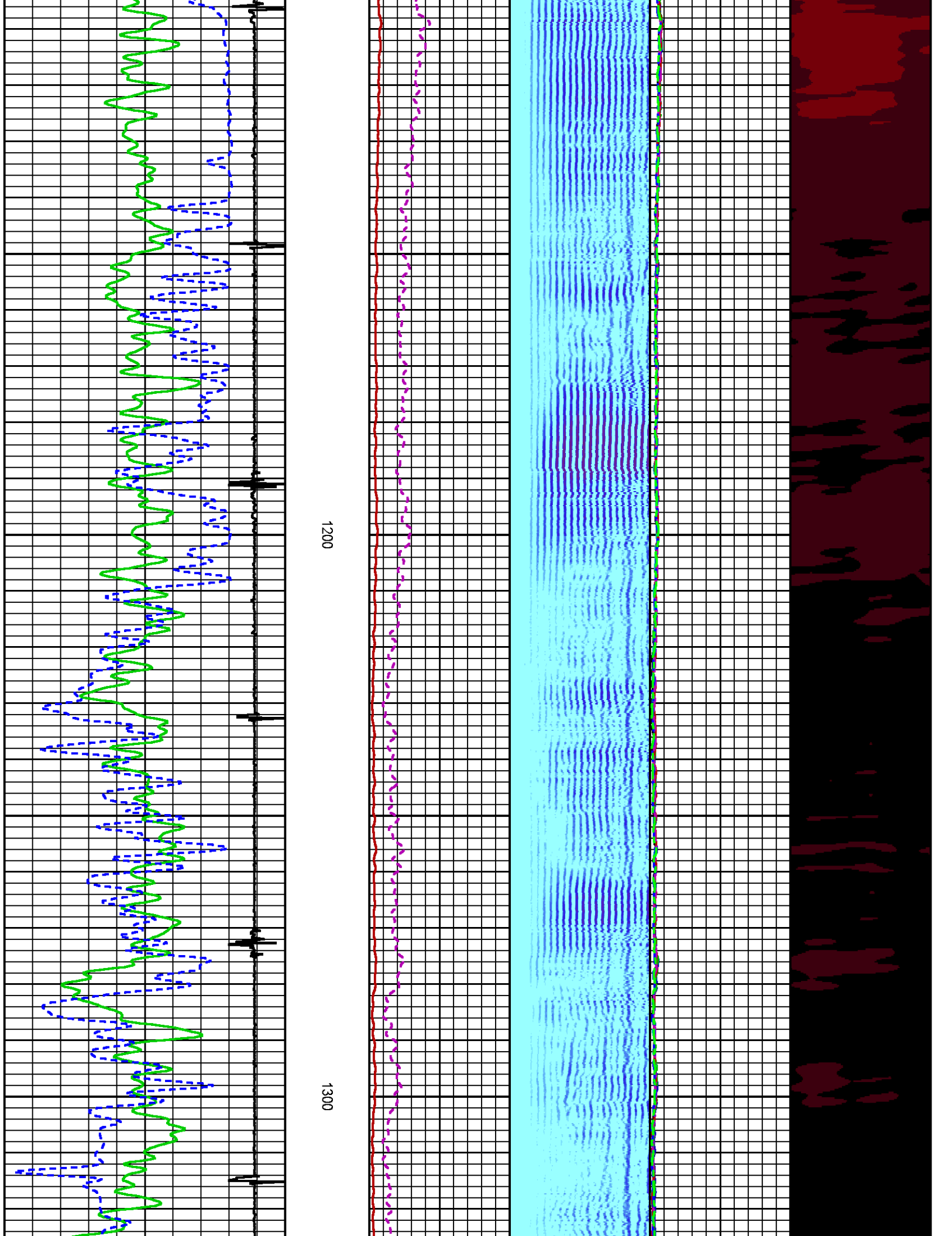
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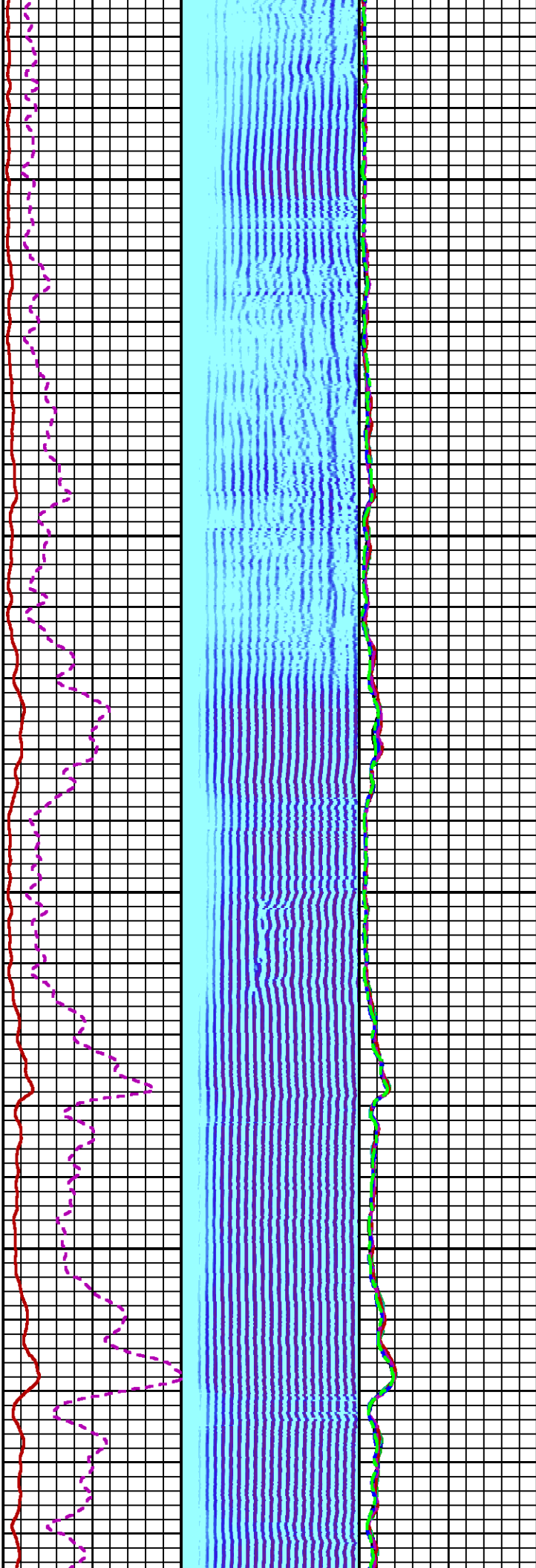
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1100

TOC

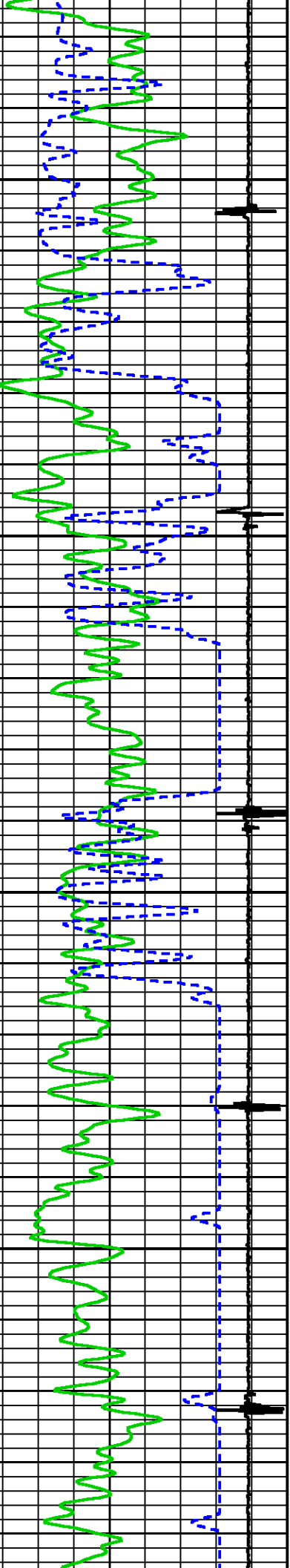


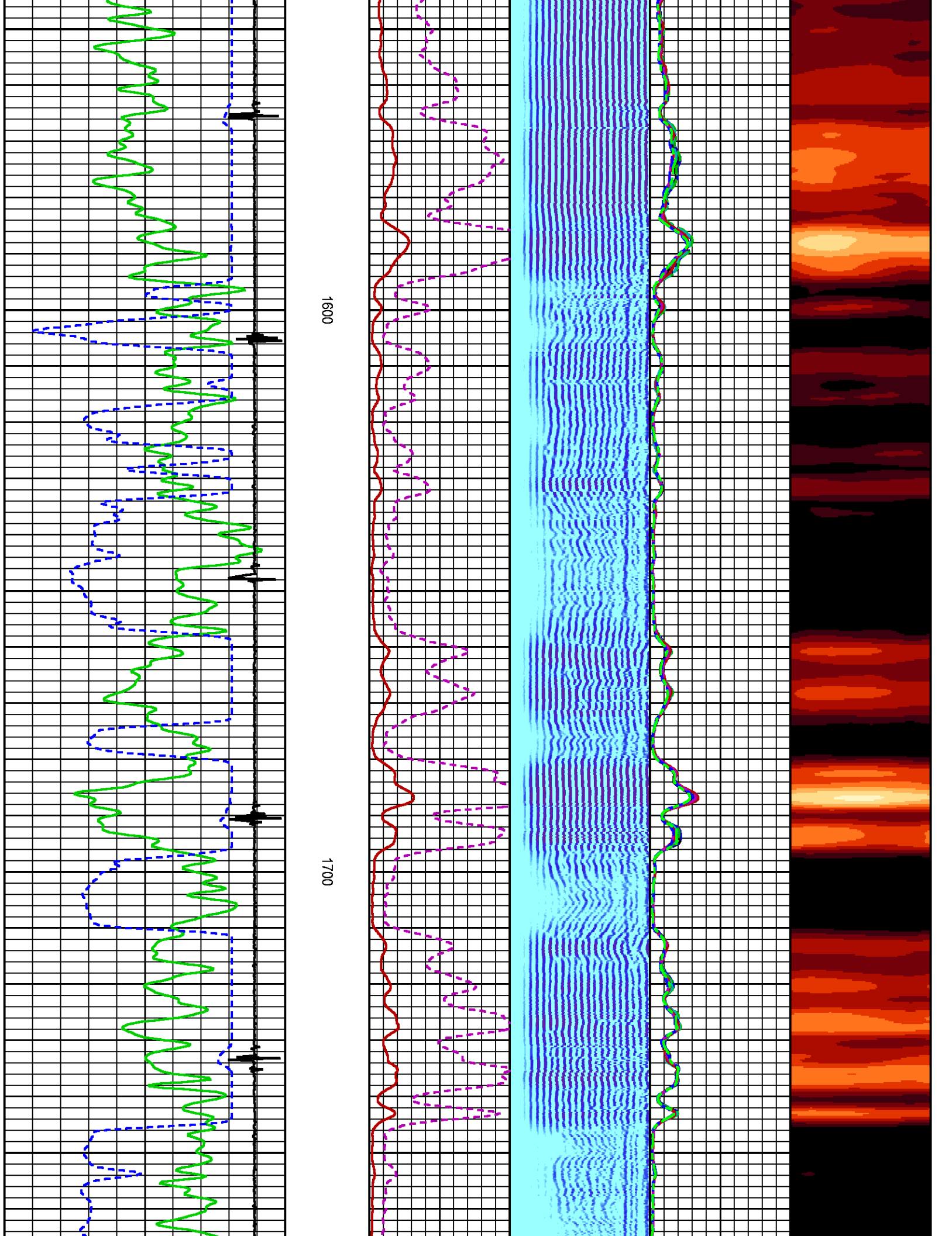


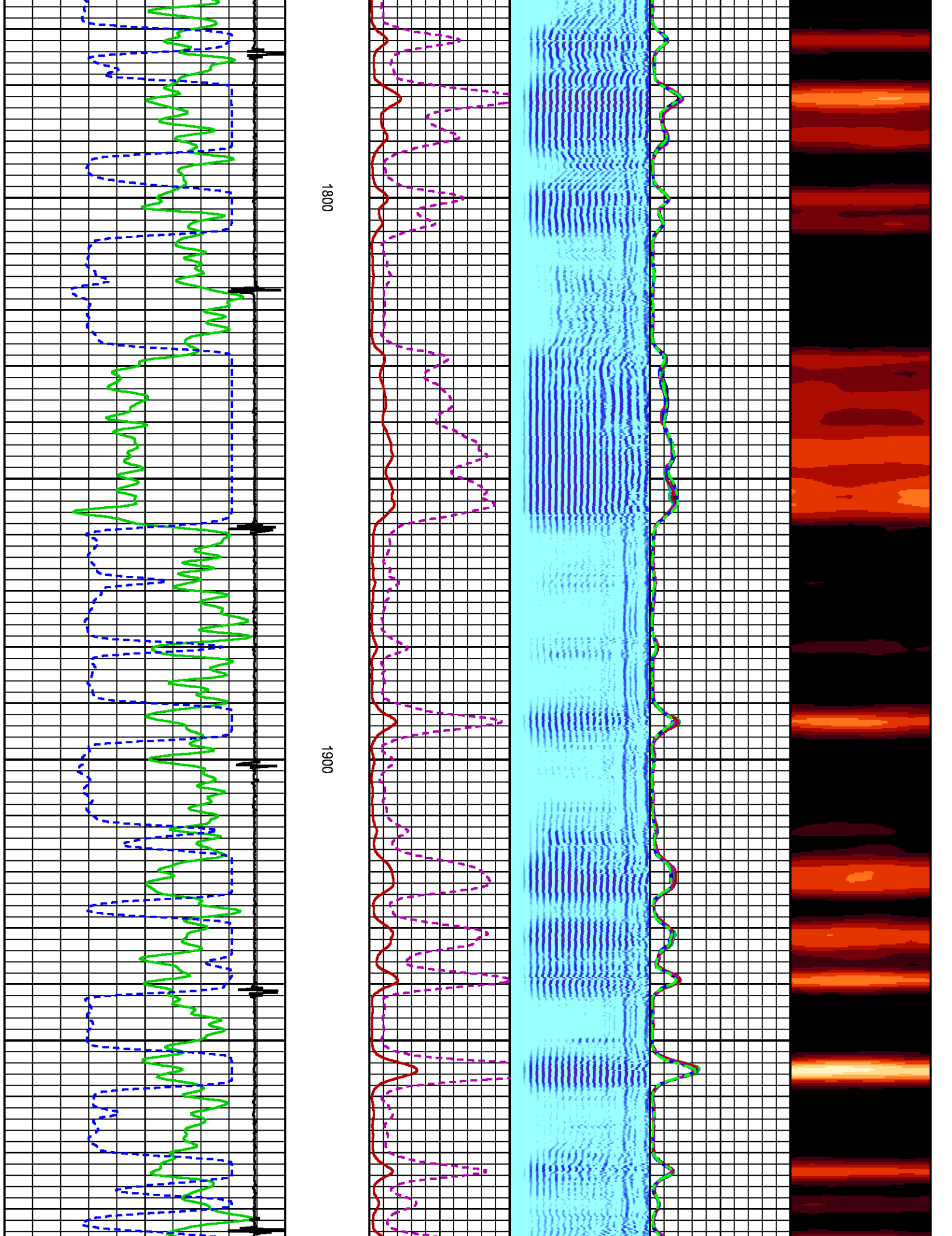


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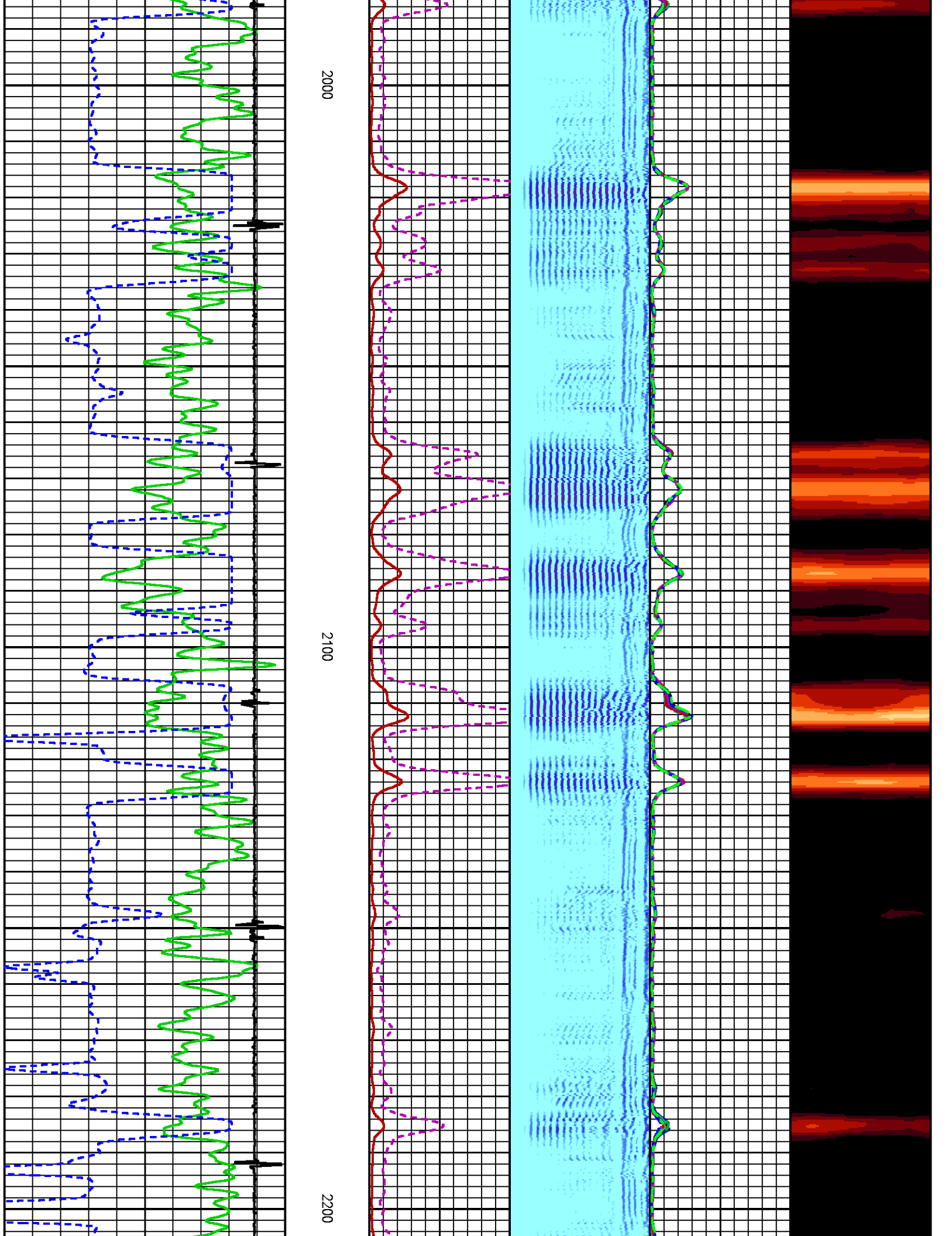
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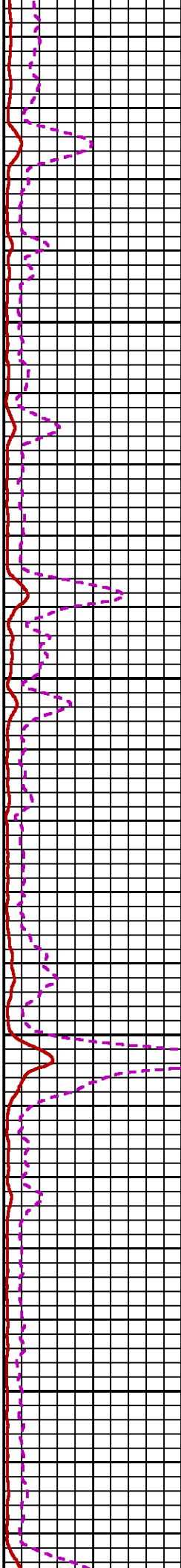
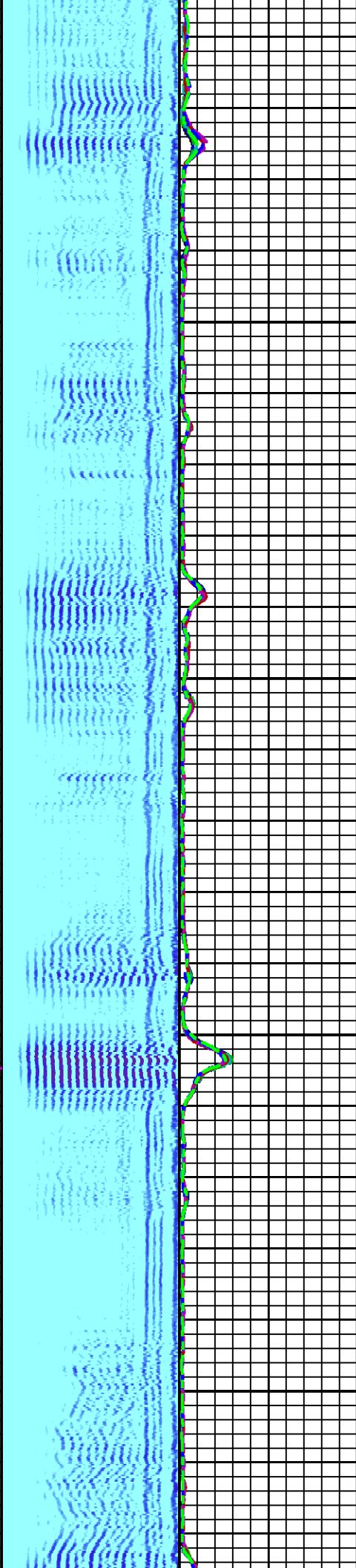






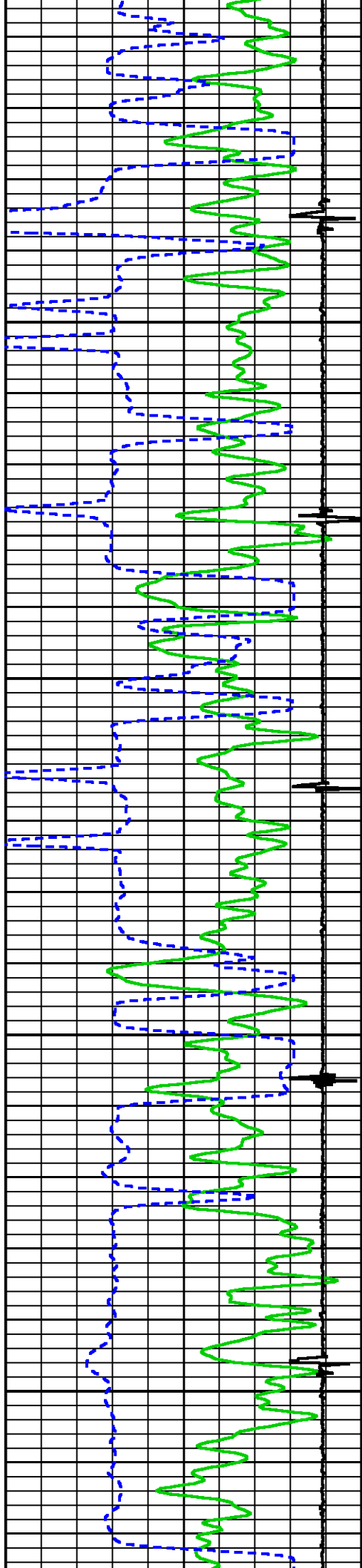




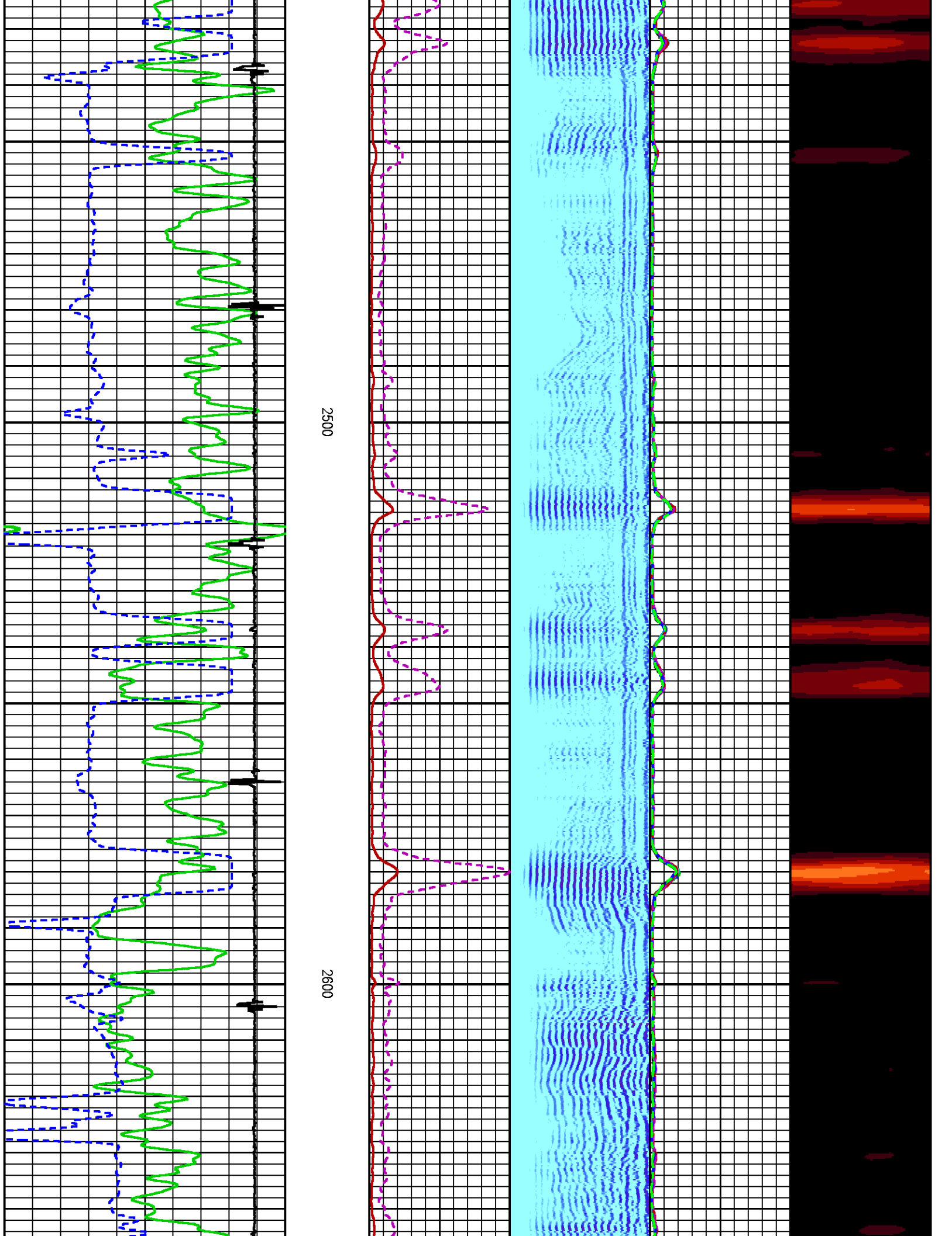


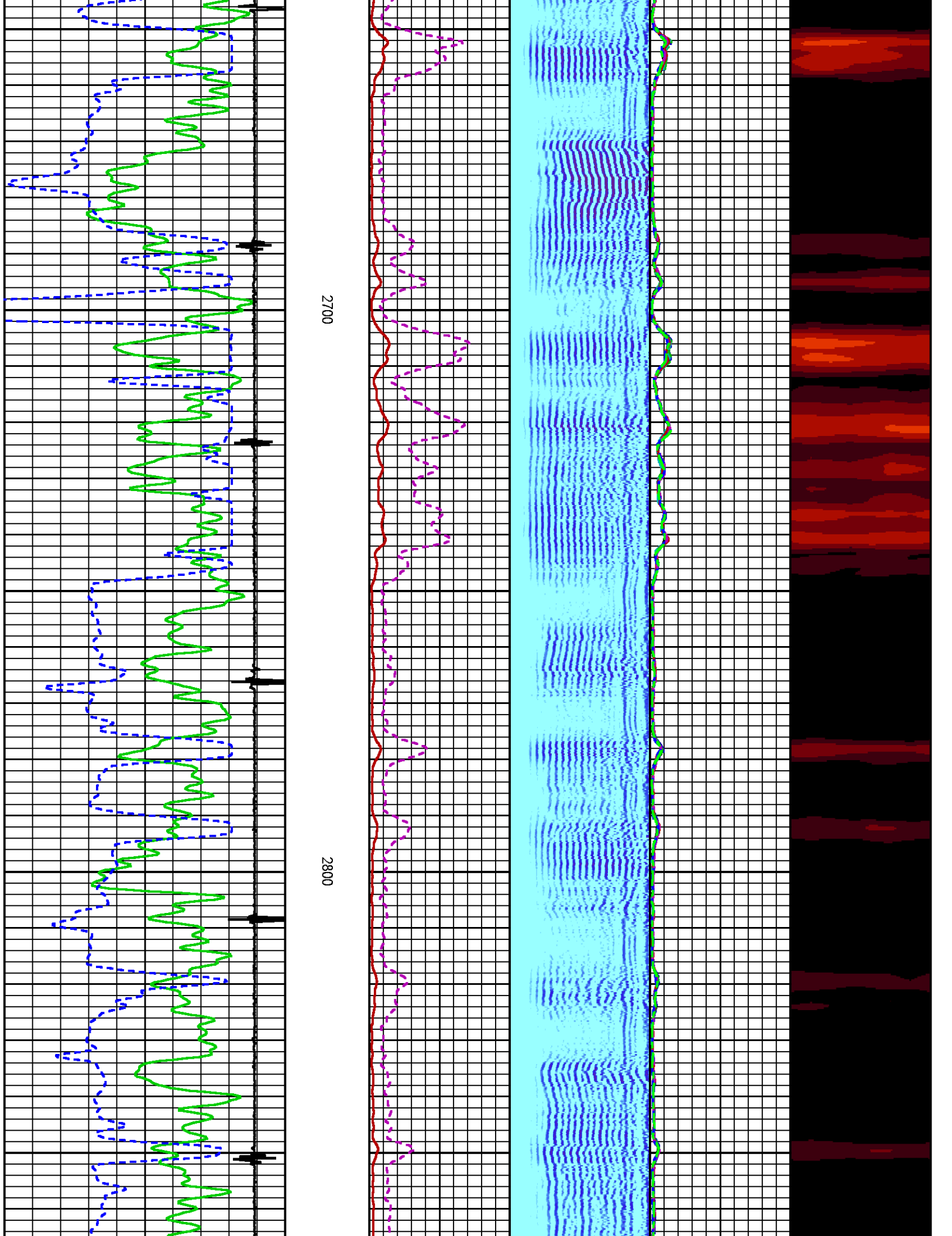
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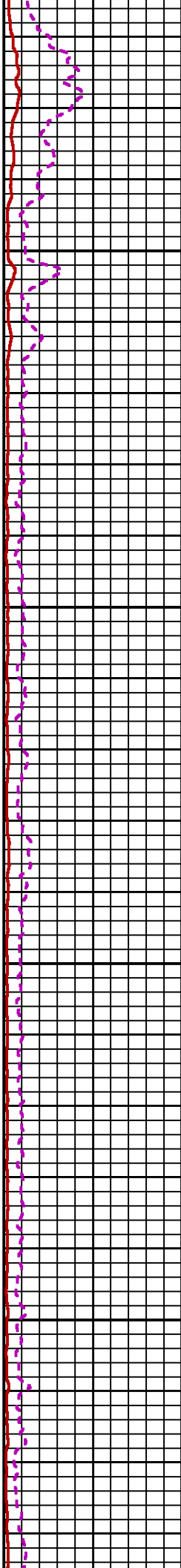
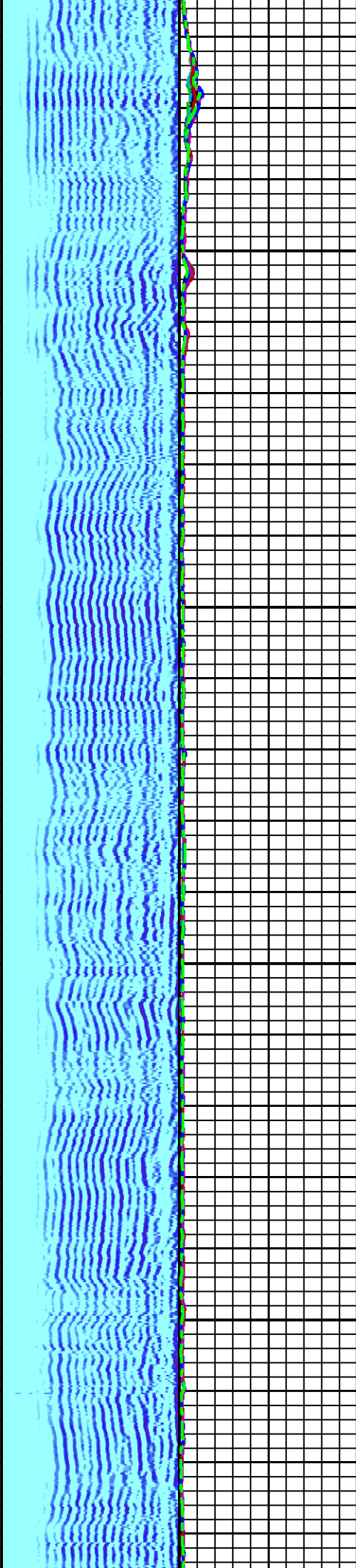
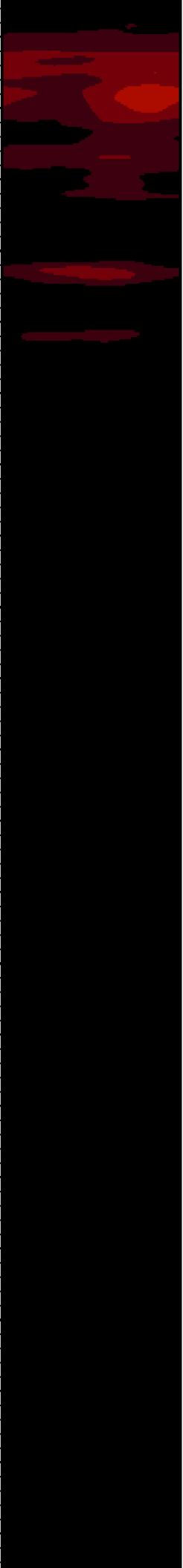
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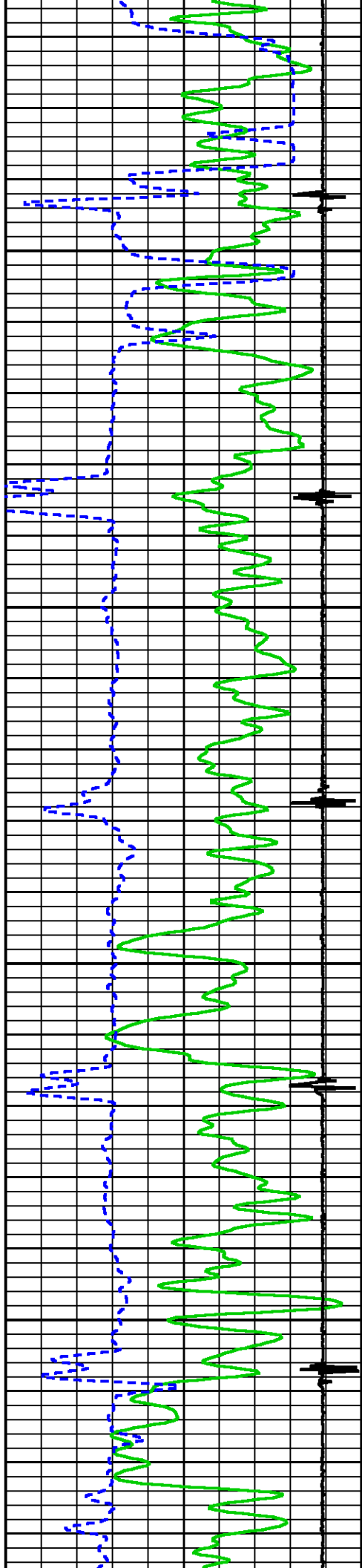


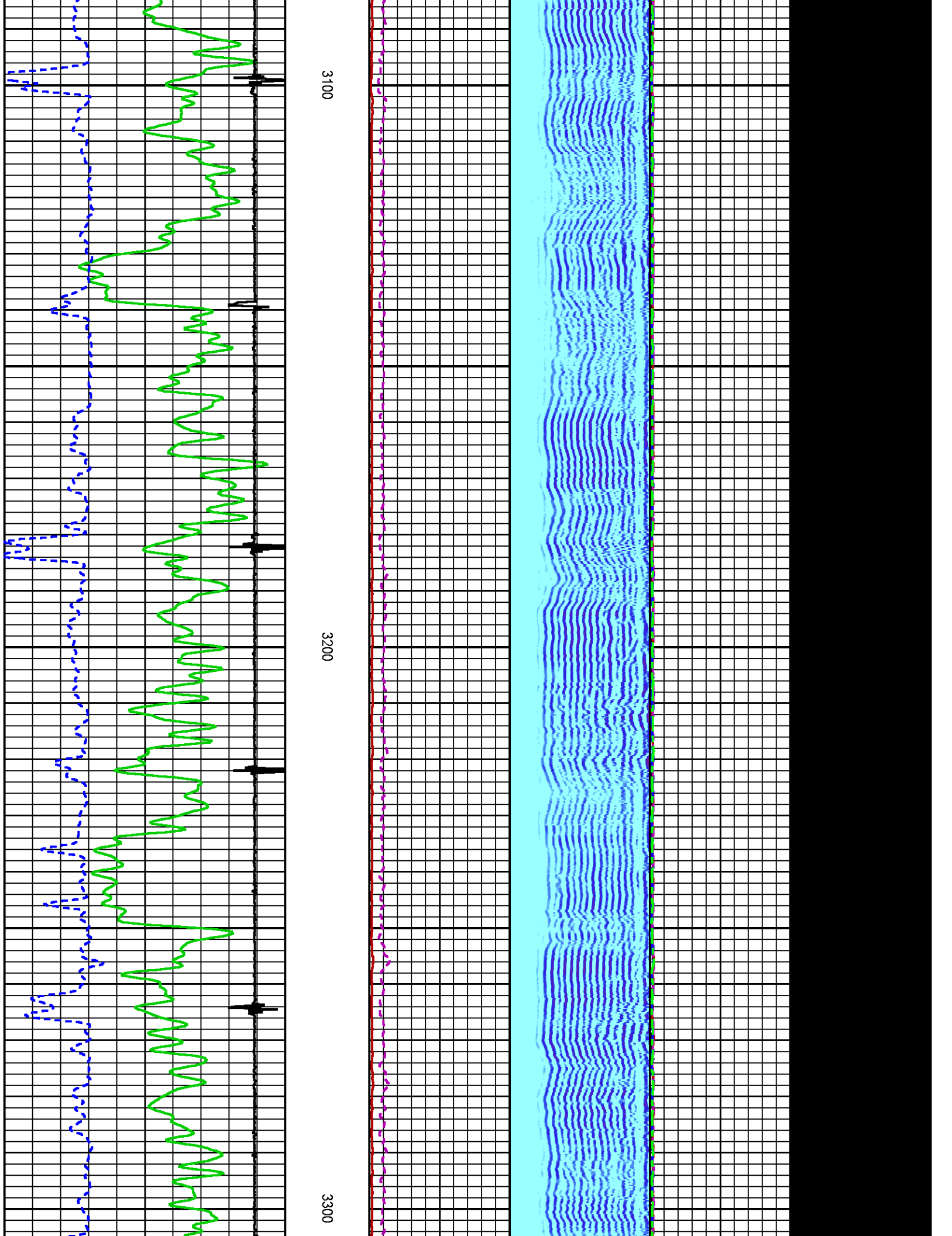


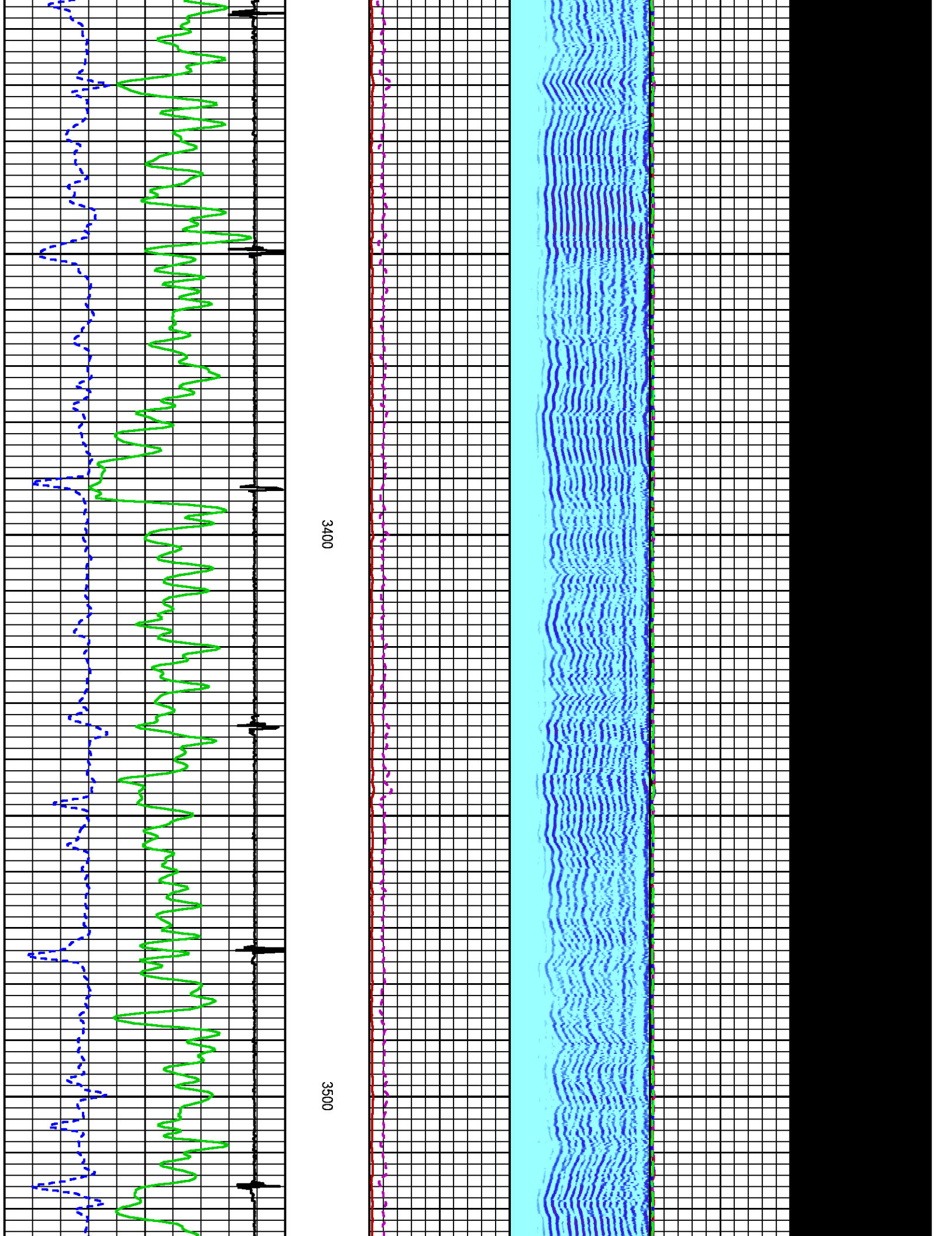


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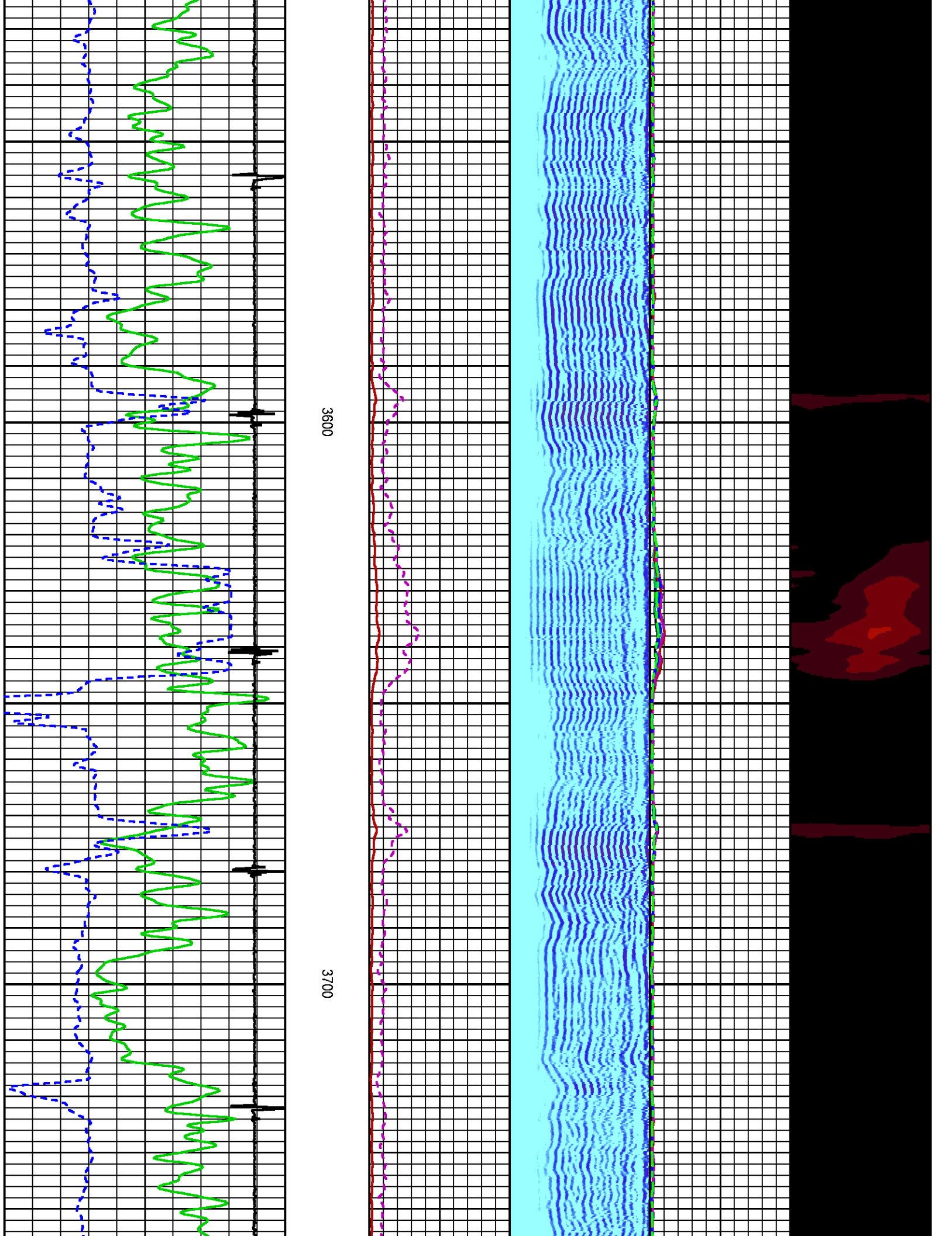
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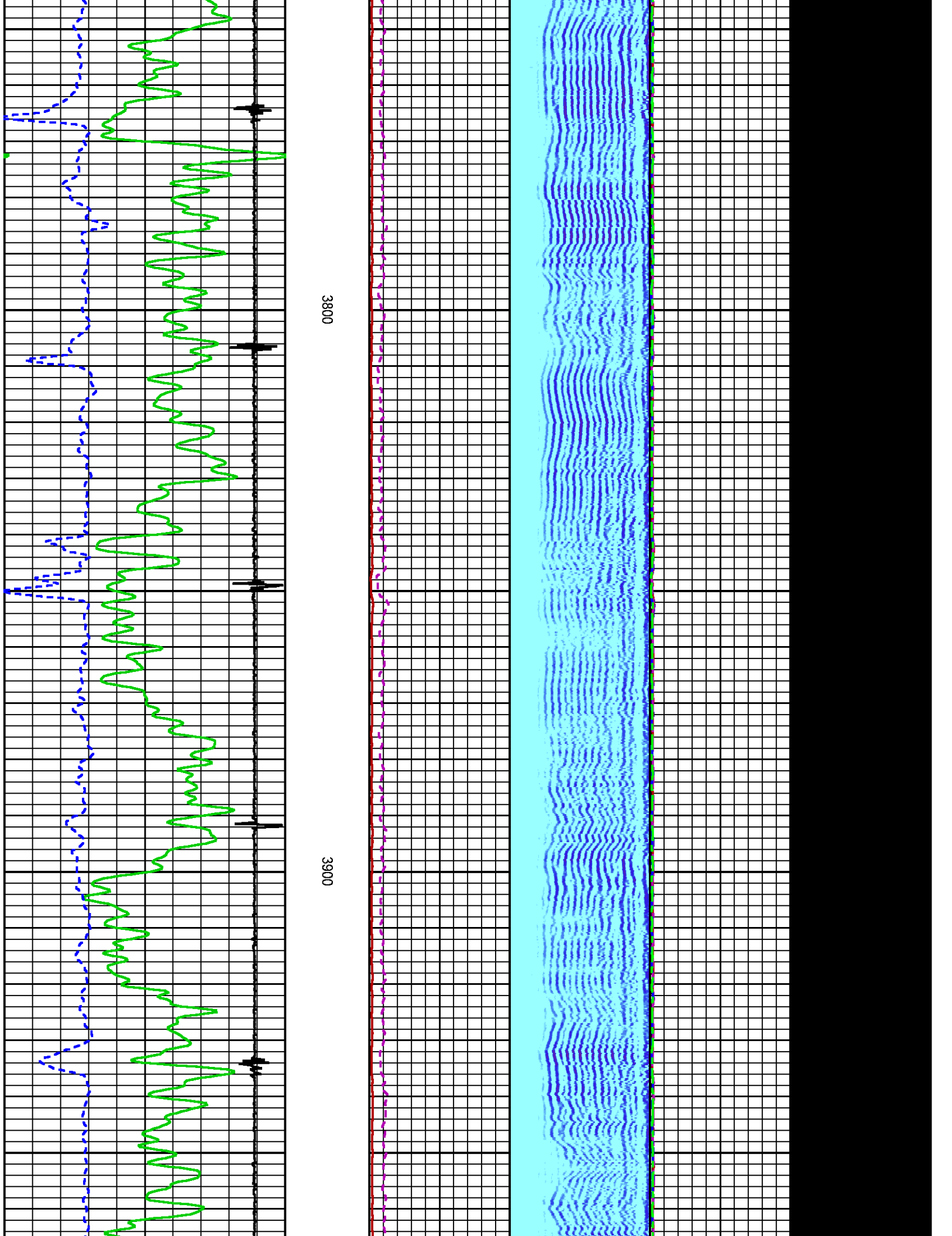




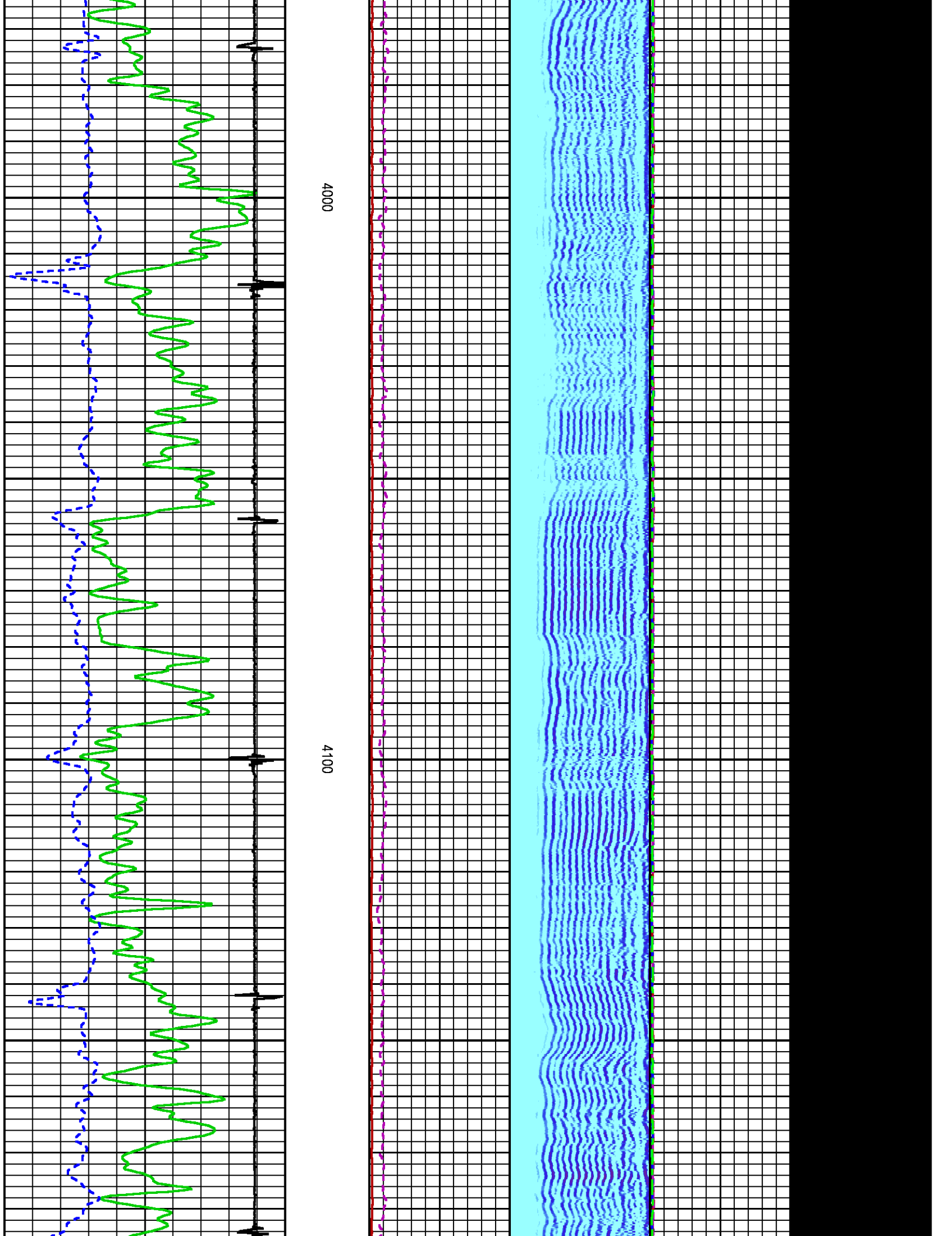


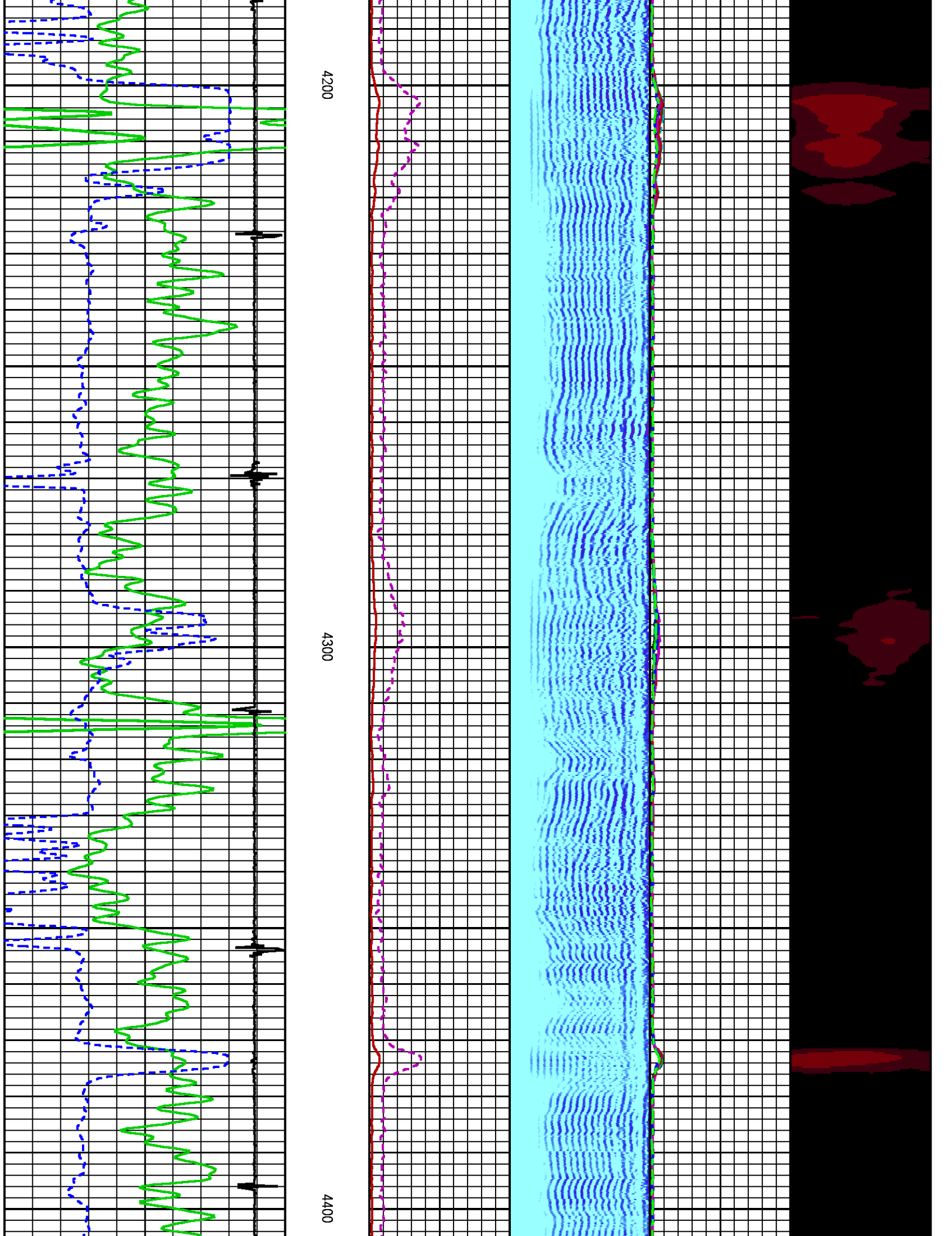


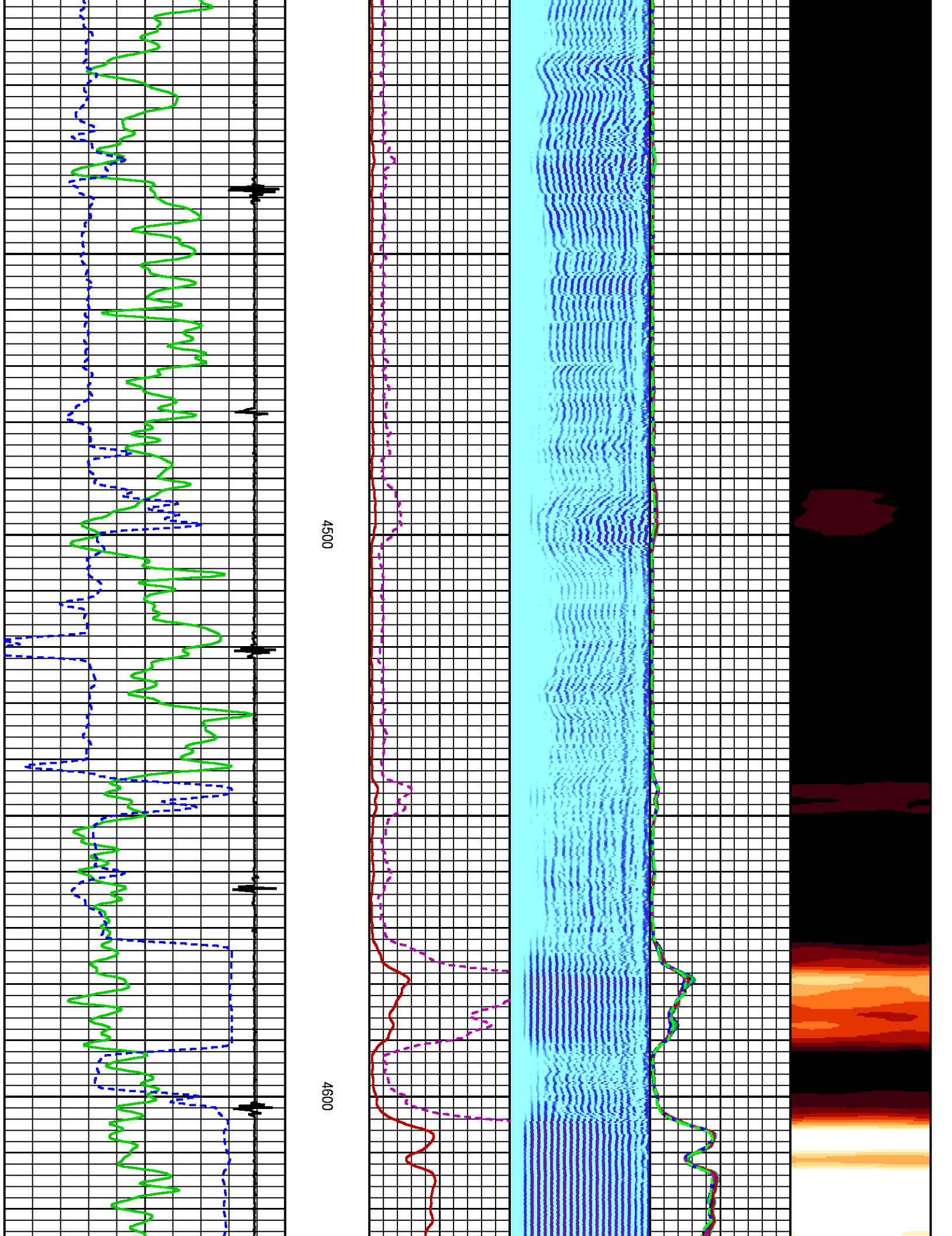


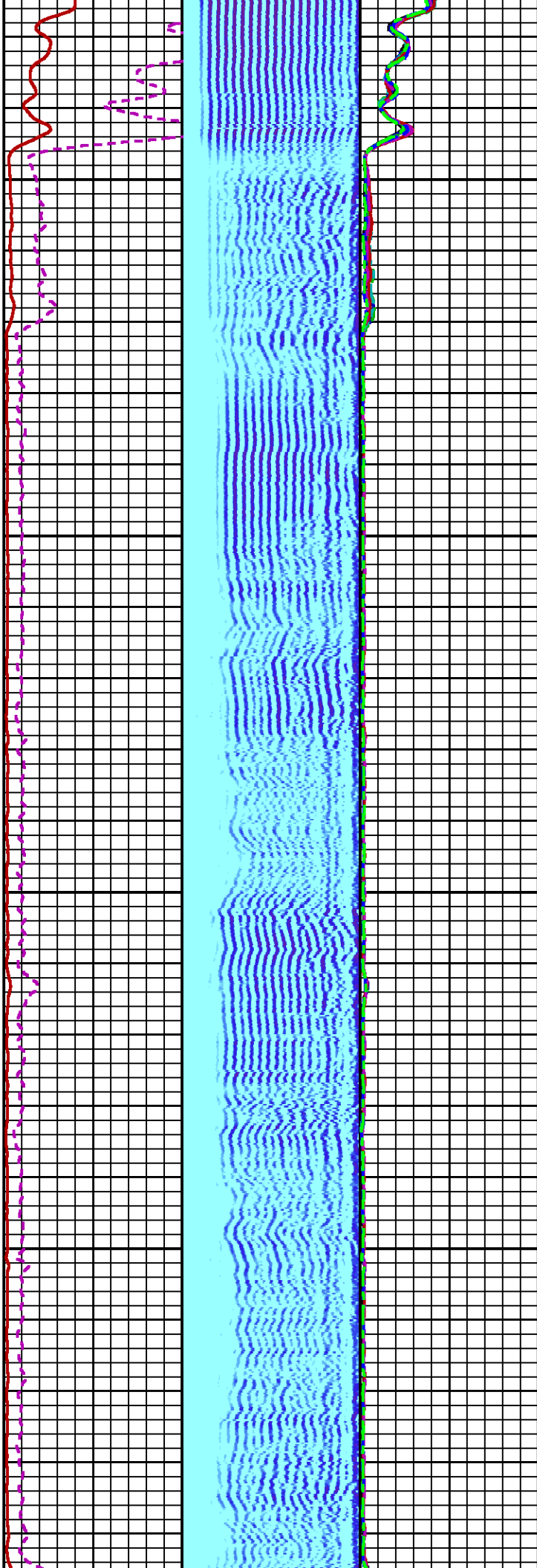
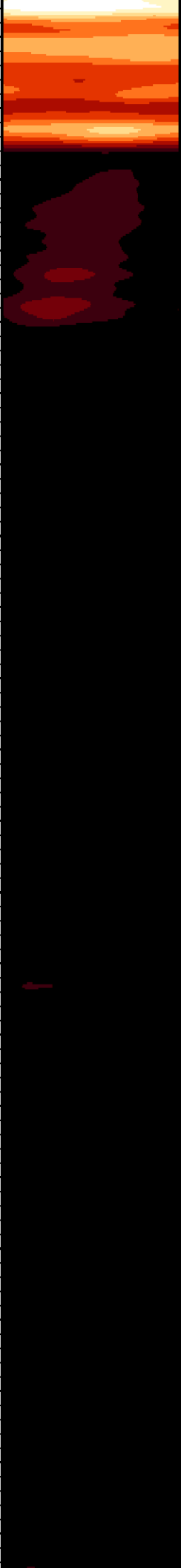






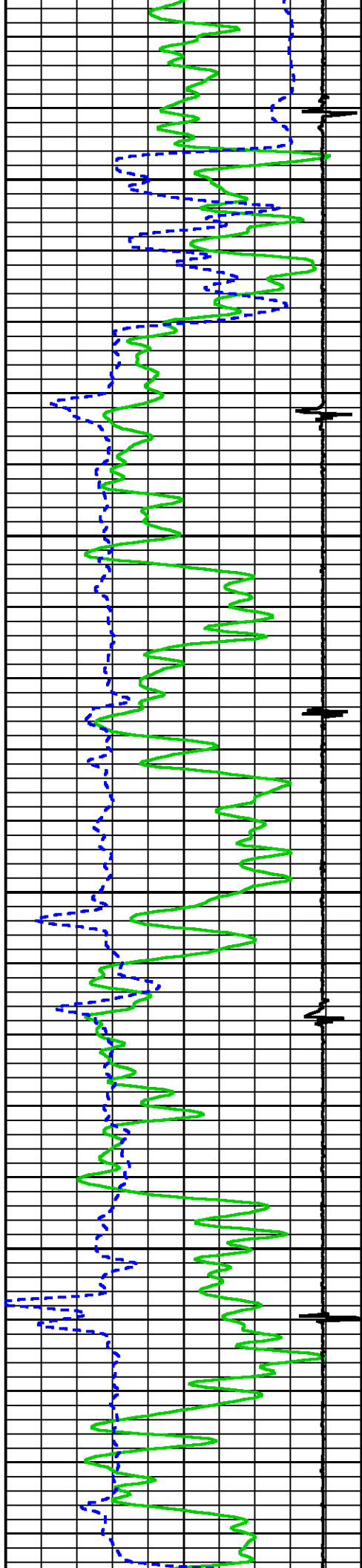


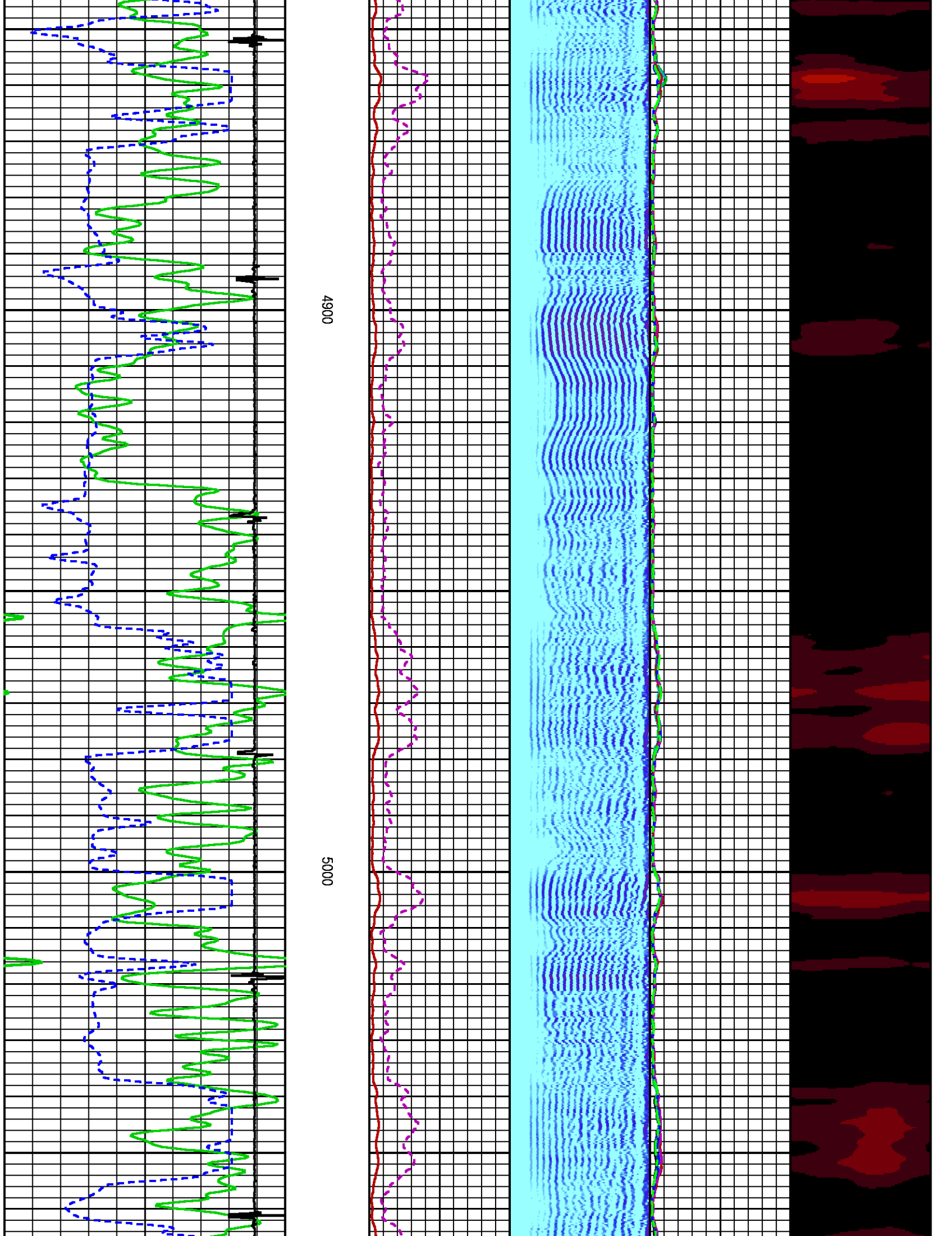




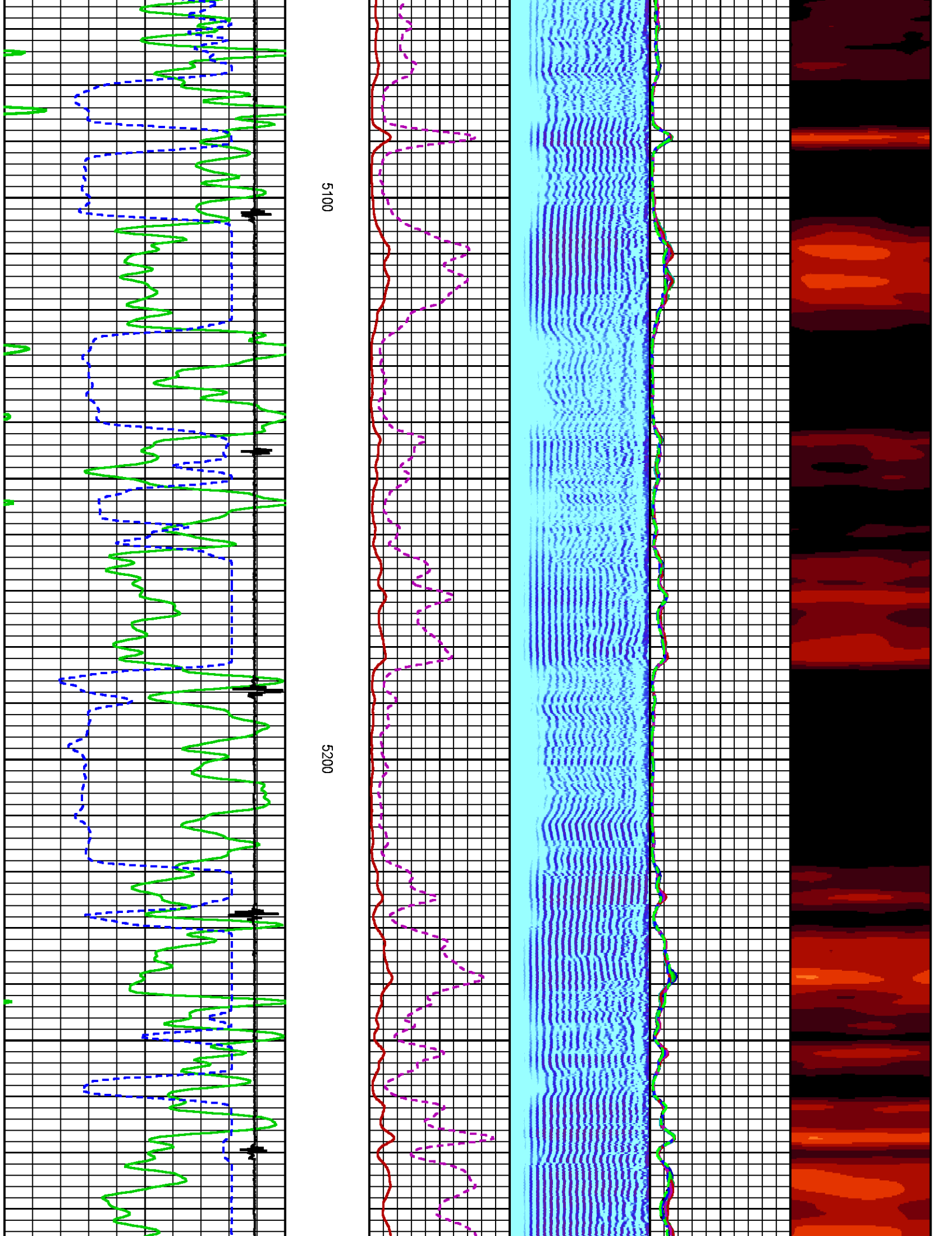
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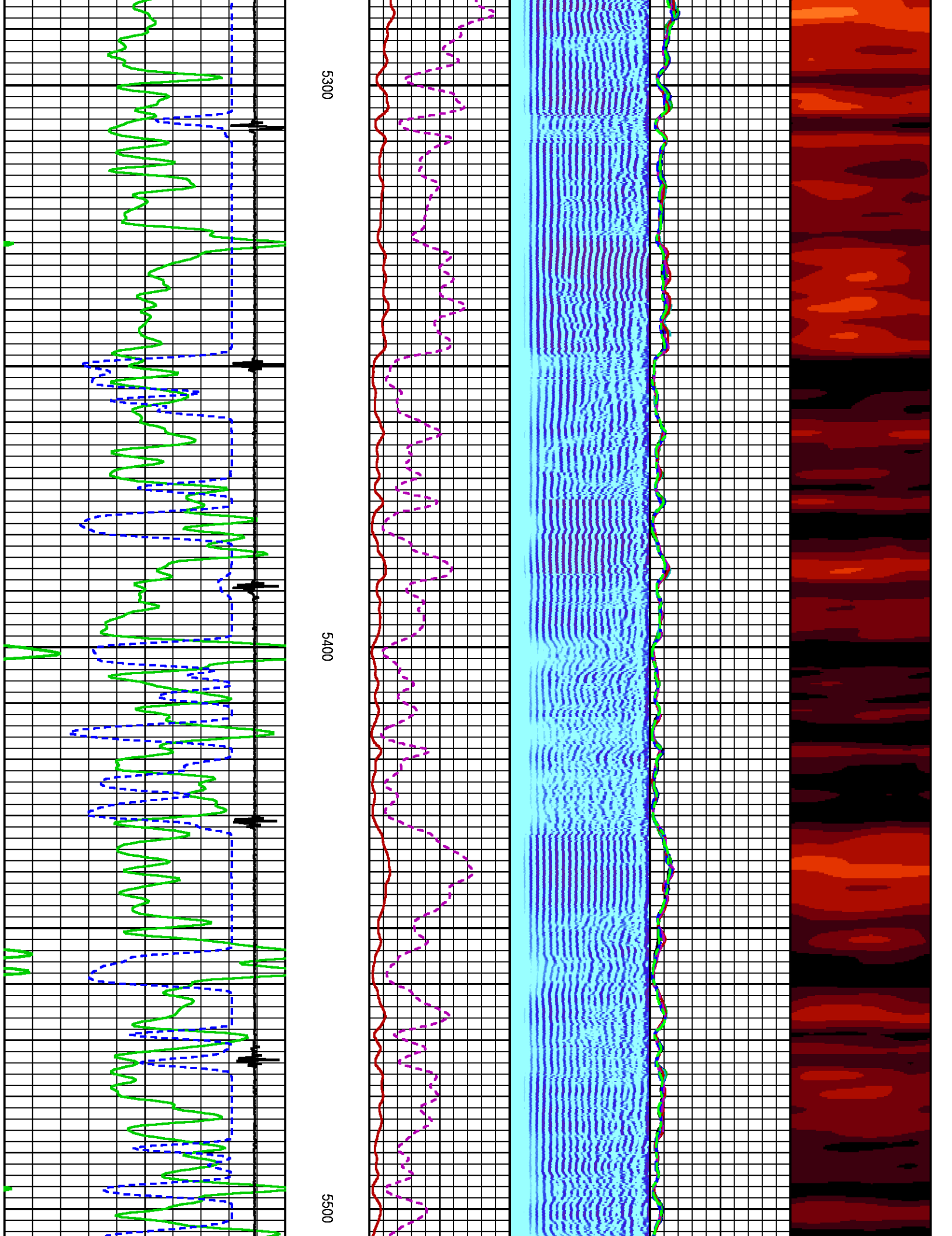
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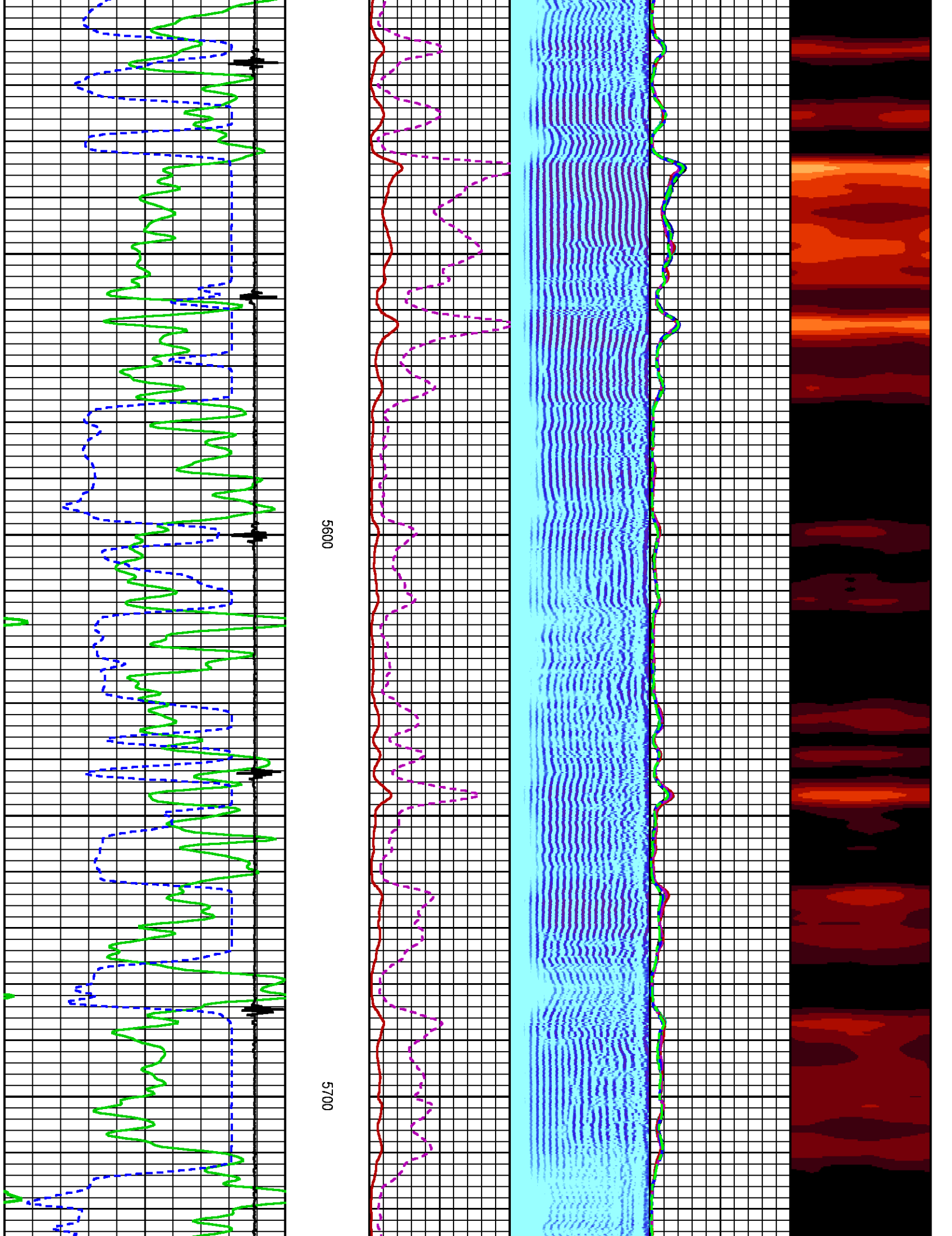


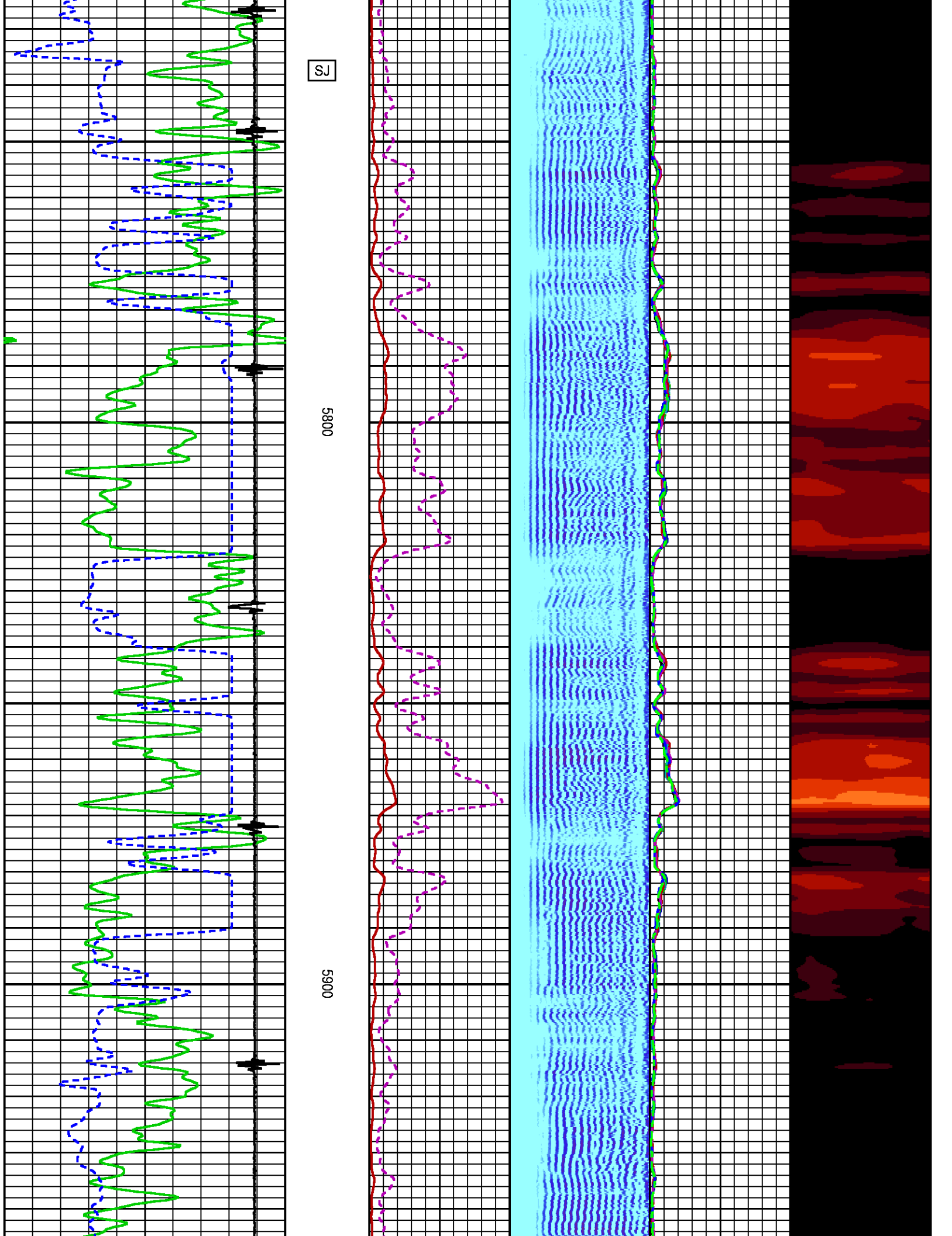


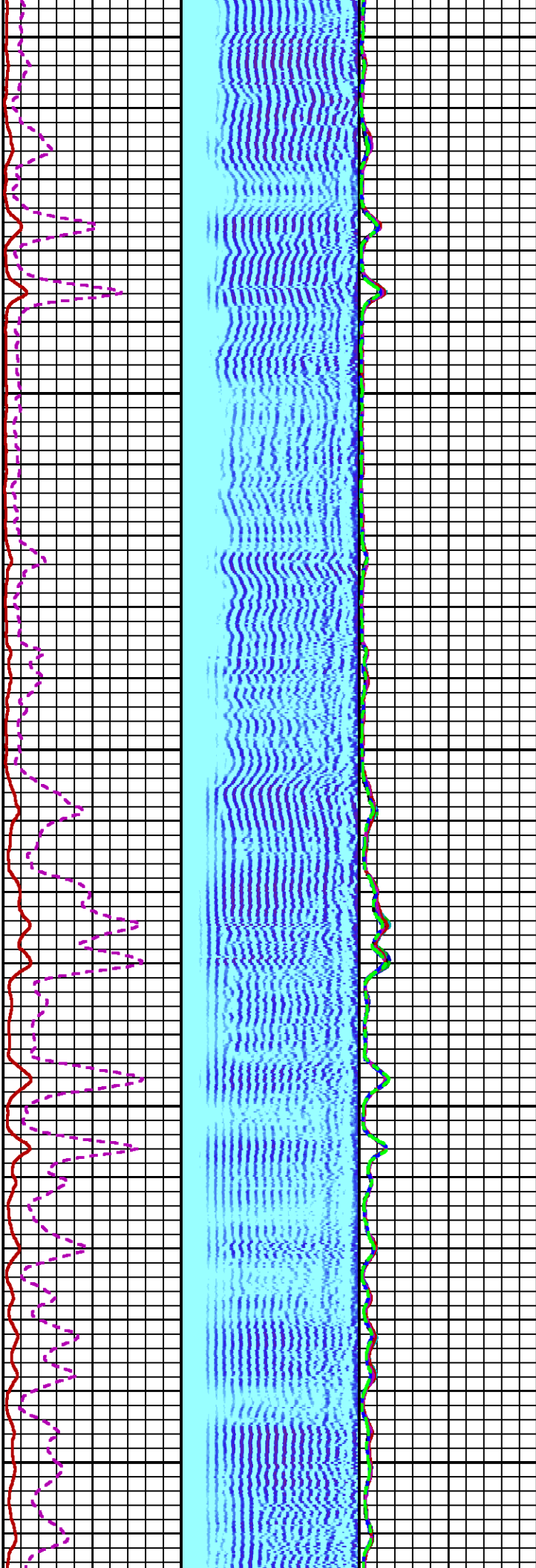
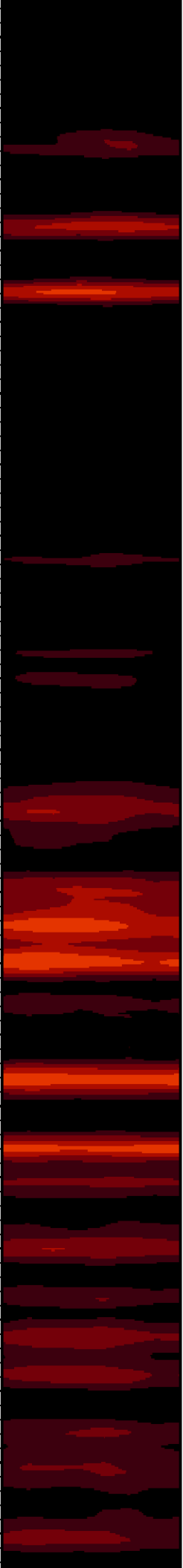






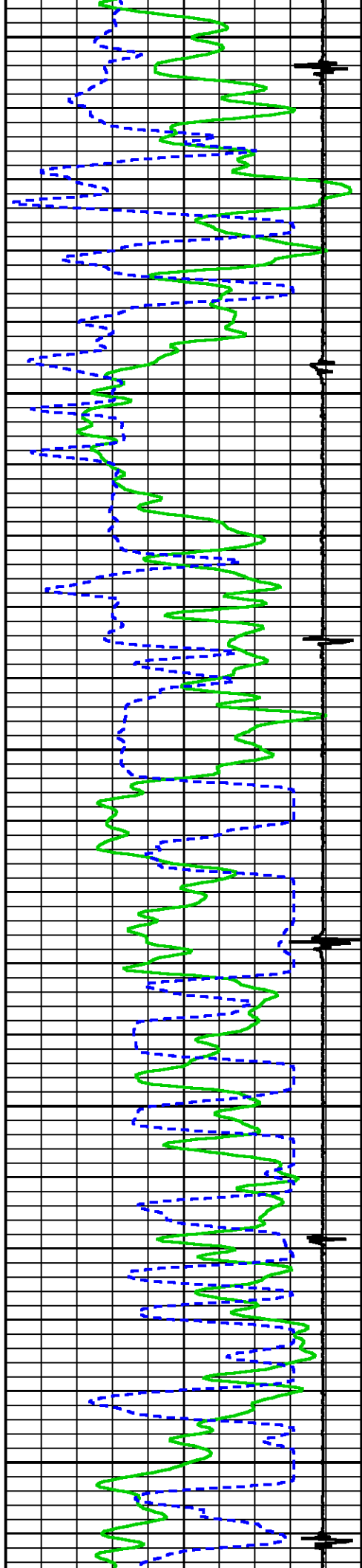


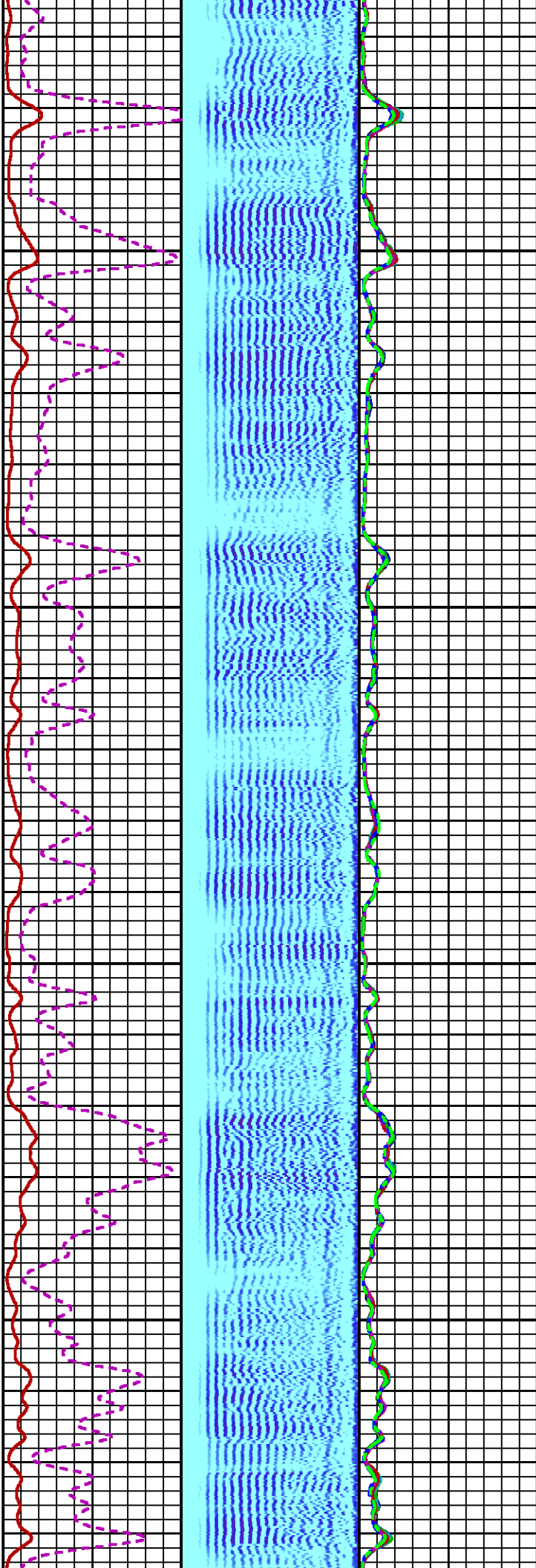




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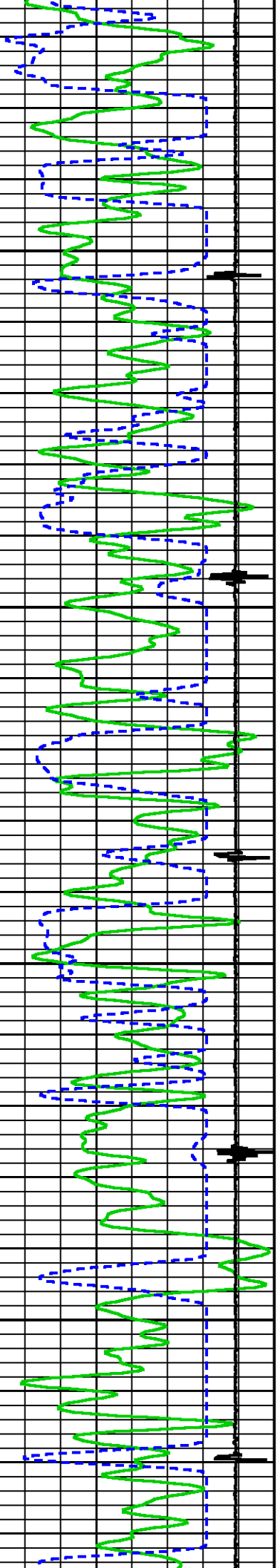
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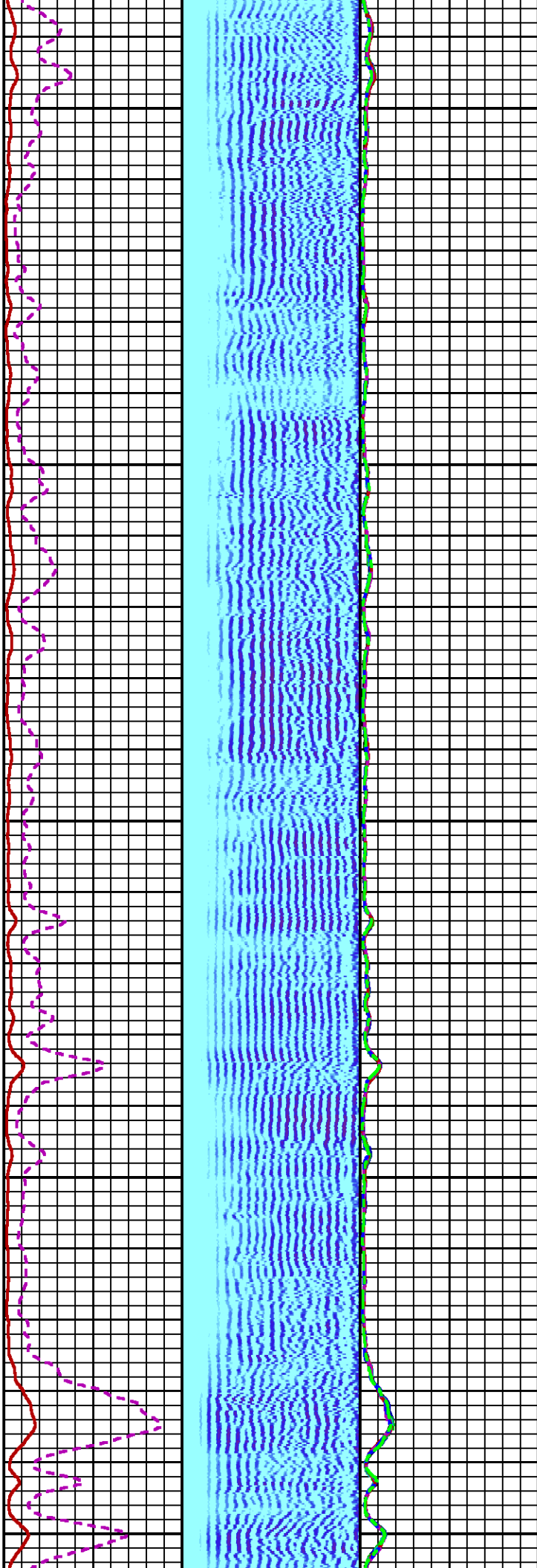


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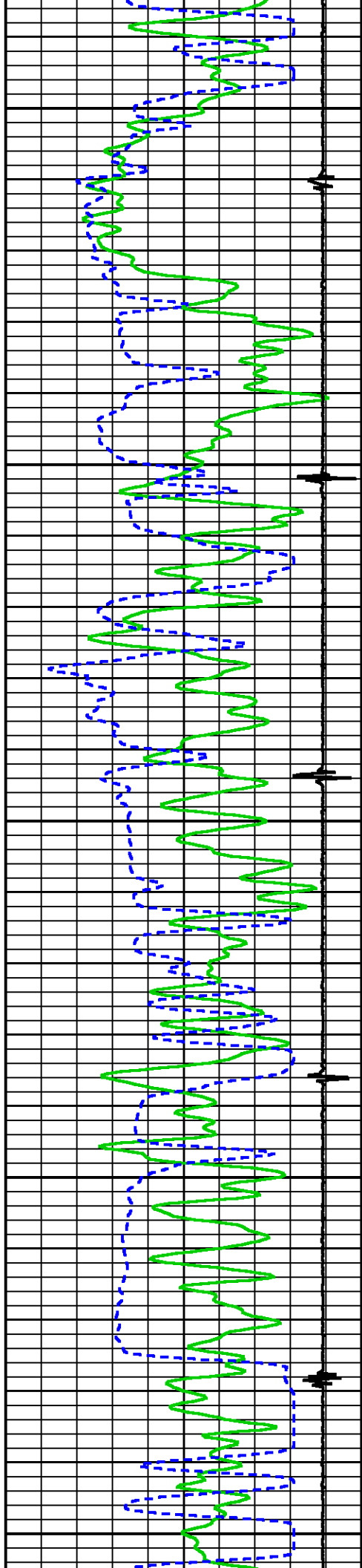


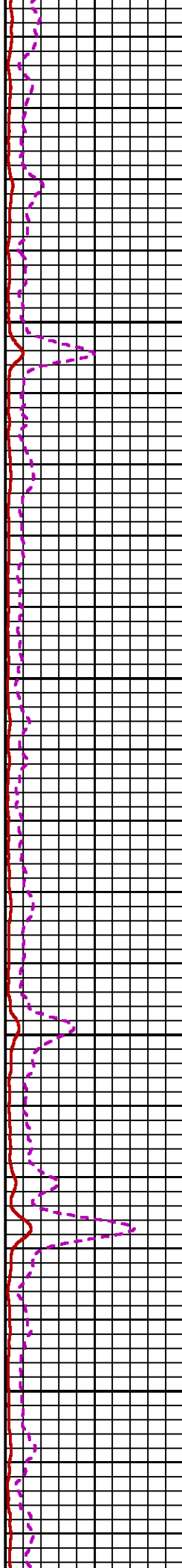
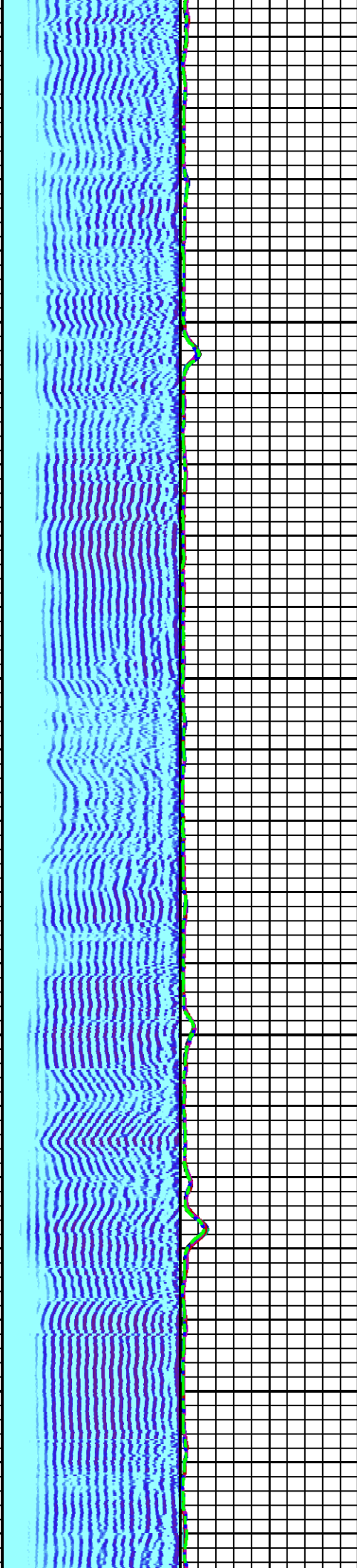
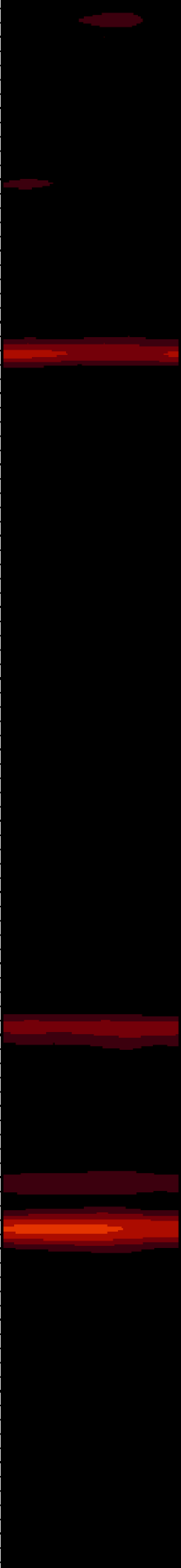


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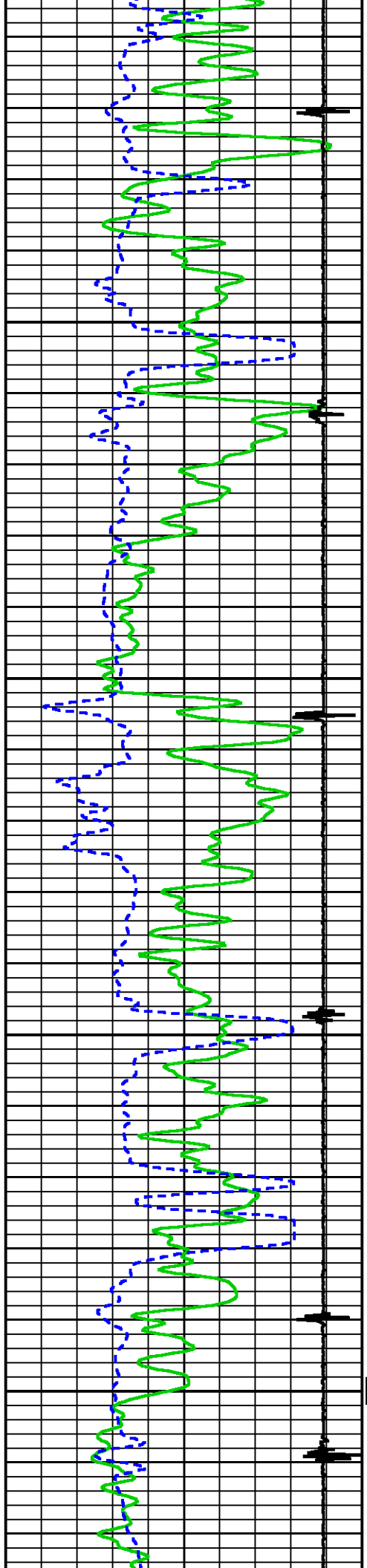


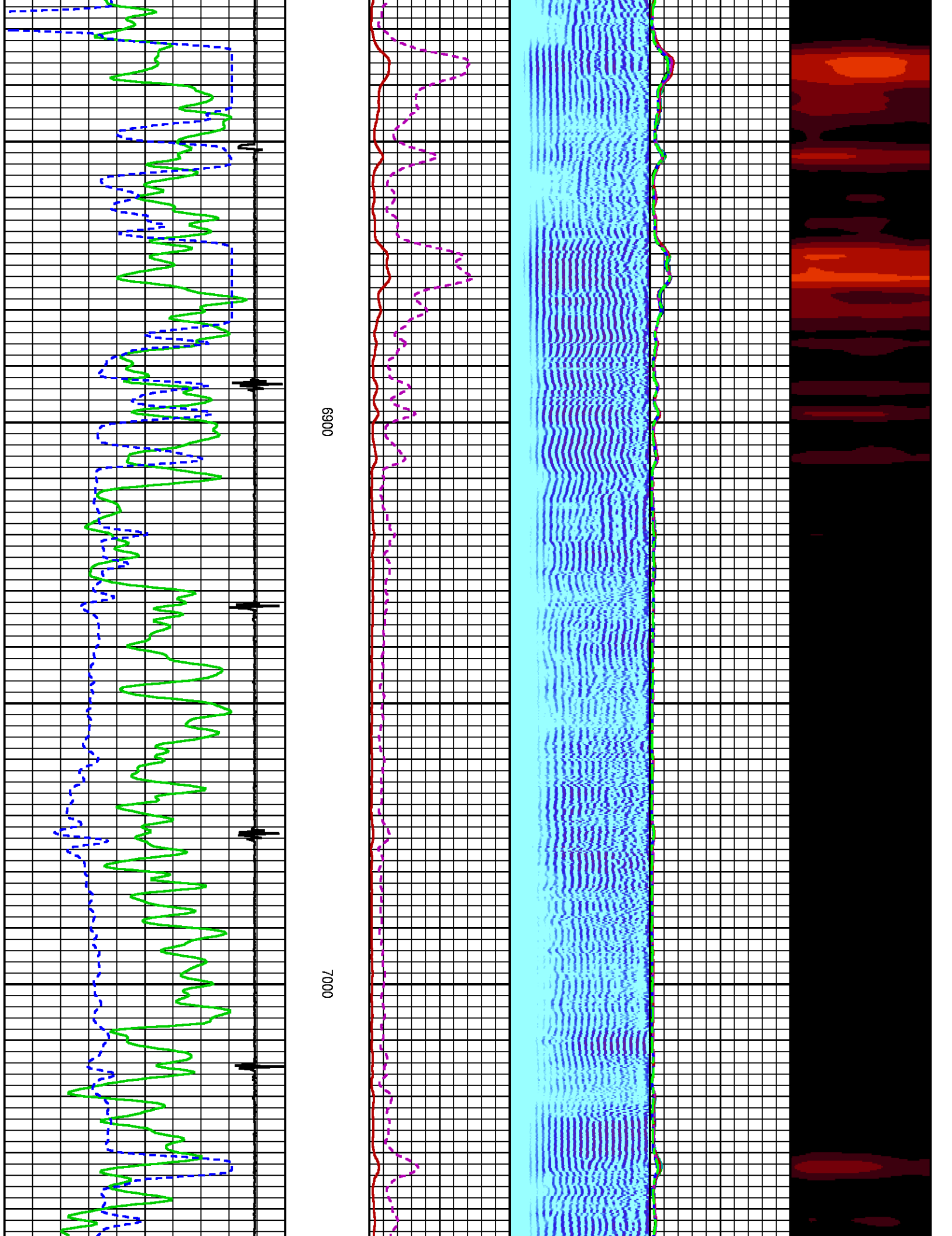


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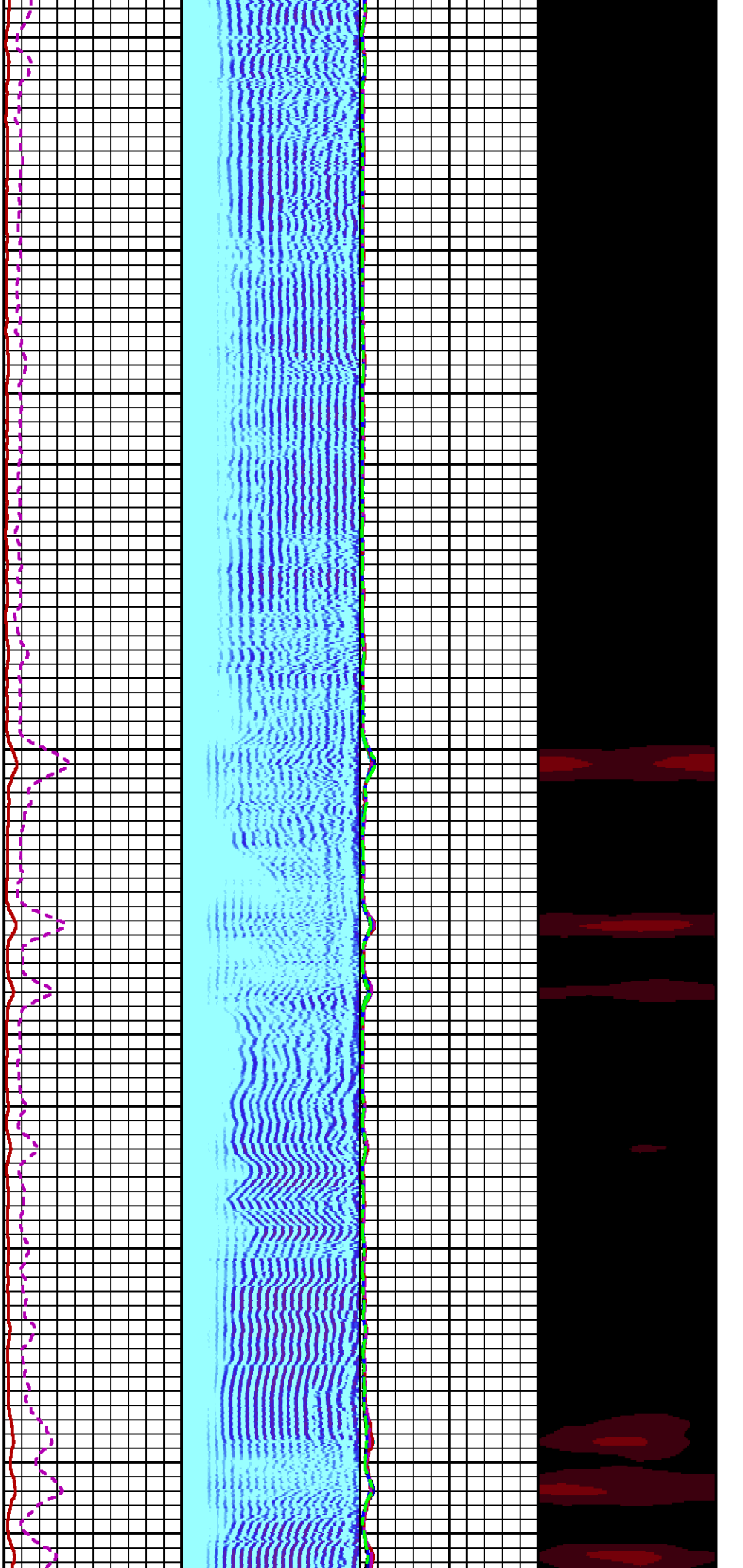
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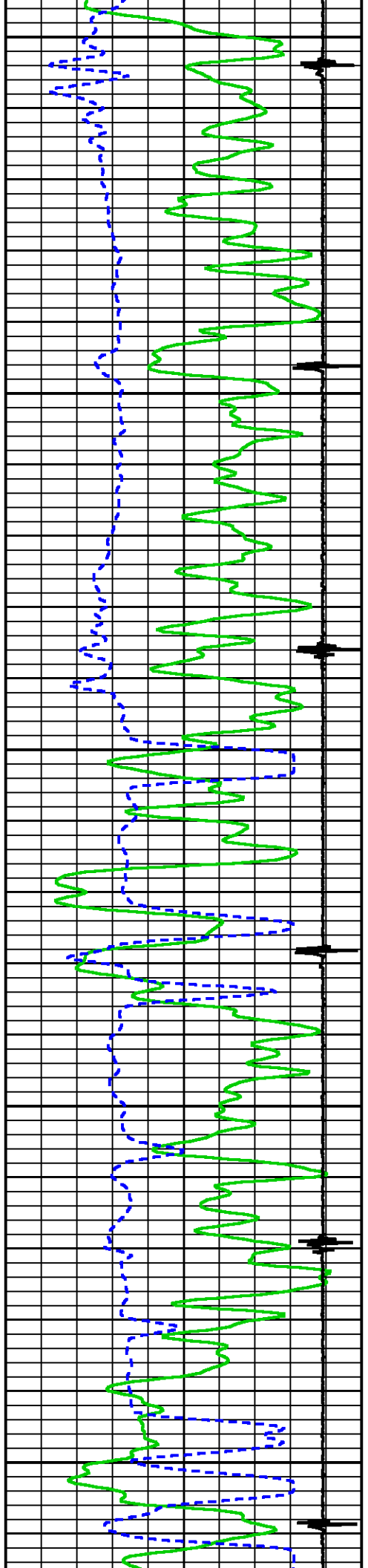


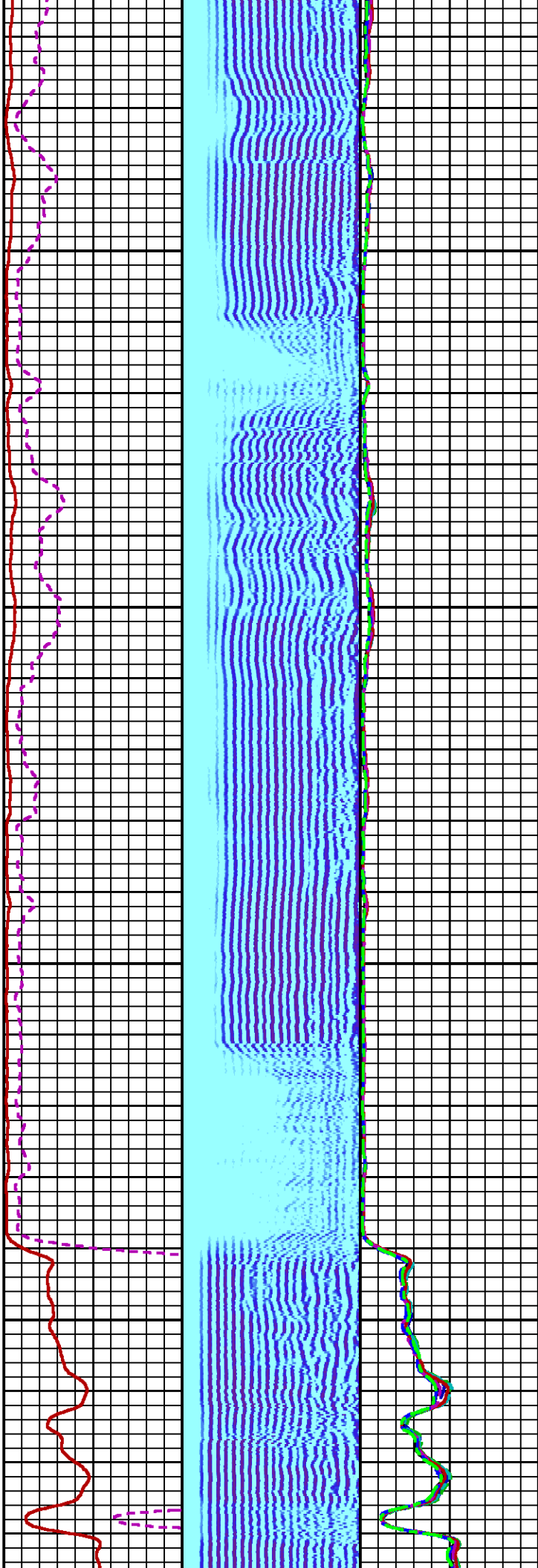
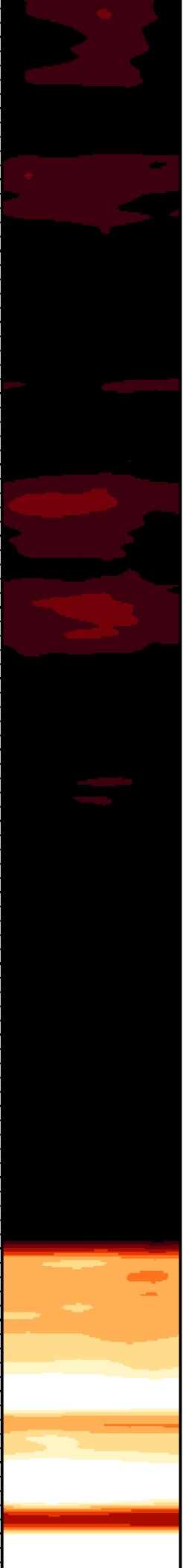




7100

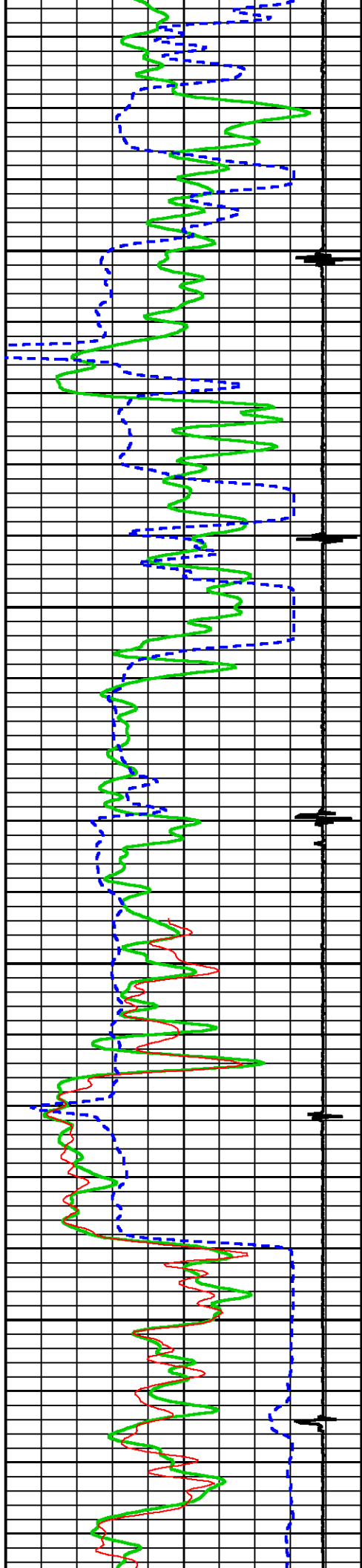
7200

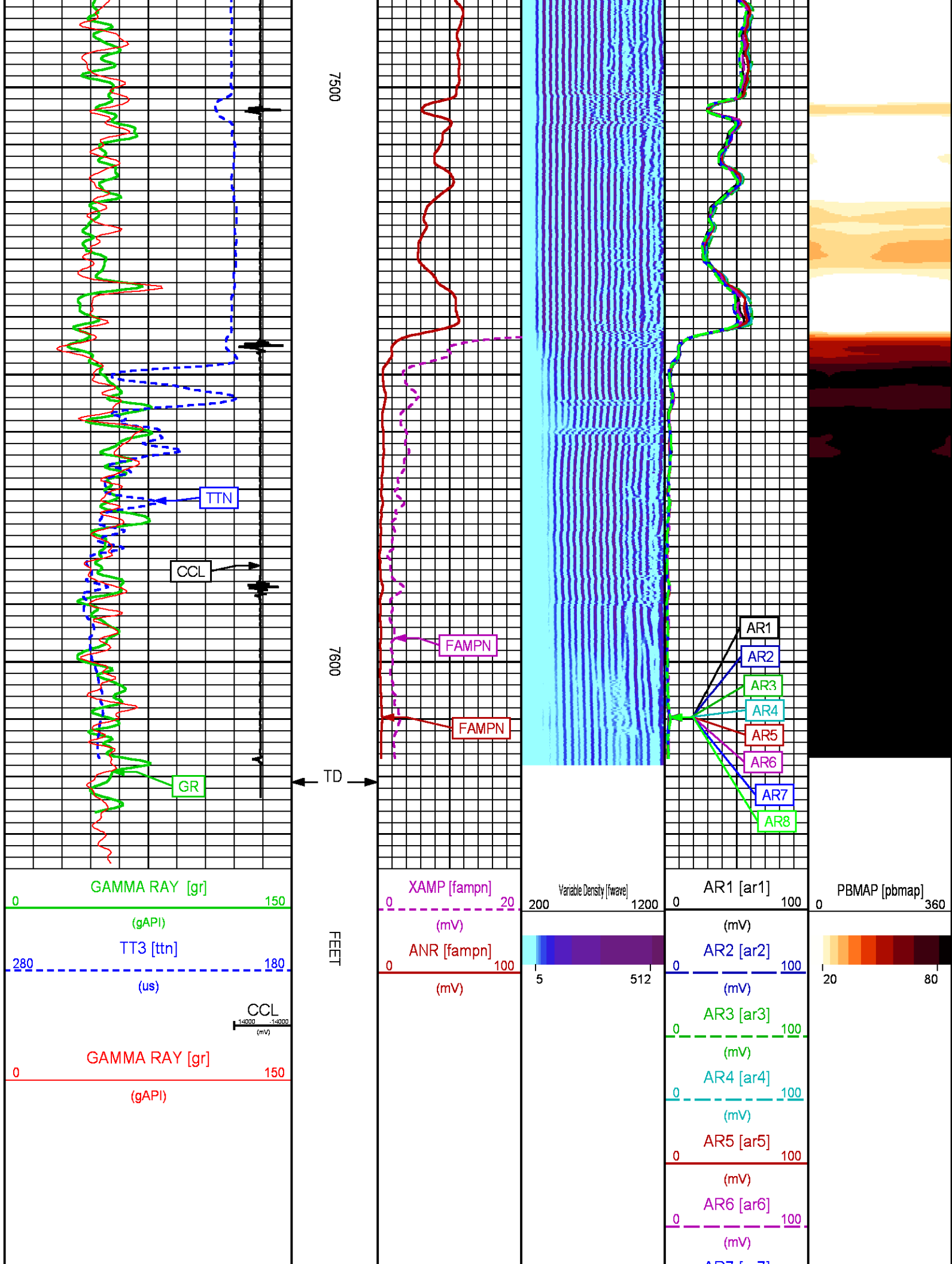


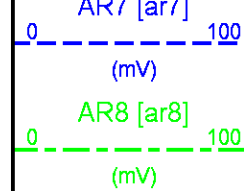


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REPEAT PASS

ECLIPS 7.0i ECLIPS General Release Rel 7.0i Thu Jun 08 20:36:10 CDT 2017  
Updates: 1

Plotted: Tue Nov 27 13:07:22 2018

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_BCU_0993_21_04W/p012g01.prm LOGGING MODE: DEPTH DIRECTION: UP TOP DEPTH: 7380.750 ft BOTTOM DEPTH: 7627.750 ft					
SYMMETRIC FILTER					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GR	FILTER ( )	medium (1)		TOP	BOTTOM
AMPLITUDE	FILTER ( )	medium (1)		"	"
TRAVEL TIME	FILTER ( )	medium (1)		"	"
RAL CCL PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CCL FLOOR	CCL FLOOR	0.00		TOP	BOTTOM
ANALOG RAL PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
AMPLITUDE WINDOW (NEAR)	AMP WINDOW START (fgp1*)	187	us	TOP	BOTTOM
	AMP WINDOW START (fgp2*)	187	us	"	"
	AMP WINDOW START (fgp3*)	187	us	"	"
	AMP WINDOW START (fgp4*)	187	us	"	"
	AMP WINDOW START (fgp5*)	187	us	"	"
	AMP WINDOW START (fgp6*)	187	us	"	"
	AMP WINDOW START (fgp7*)	187	us	"	"
	AMP WINDOW START (fgp8*)	187	us	"	"
	AMP WINDOW START (fgpn*)	187	us	"	"
	AMP WINDOW LENGTH	25	us	"	"
TRAVEL TIME WINDOW (NEAR)	TT WINDOW START (ttn*)	199	us	"	"
	TT WINDOW LENGTH	500	us	"	"
	FIRST BRK THRESHOLD (ttn*)	4	mV	"	"
RAL CASING PARAMETERS	PPT NEAR	202.185	us	"	"
RAL TOOL DELAY	TOOL DELAY (str1*)	-72	us	"	"
	TOOL DELAY (str2*)	-72	us	"	"
	TOOL DELAY (str3*)	-72	us	"	"
	TOOL DELAY (str4*)	-72	us	"	"
	TOOL DELAY (str5*)	-72	us	"	"
	TOOL DELAY (str6*)	-72	us	"	"
	TOOL DELAY (str7*)	-72	us	"	"
	TOOL DELAY (str8*)	-72	us	"	"
	TOOL DELAY (strn*)	-72	us	"	"
BASELINE NOISE (NEAR)	NOISE WINDOW START	127	us	"	"
	NOISE WINDOW LENGTH	25	us	"	"

PERCENT BOND CEMENT MAP

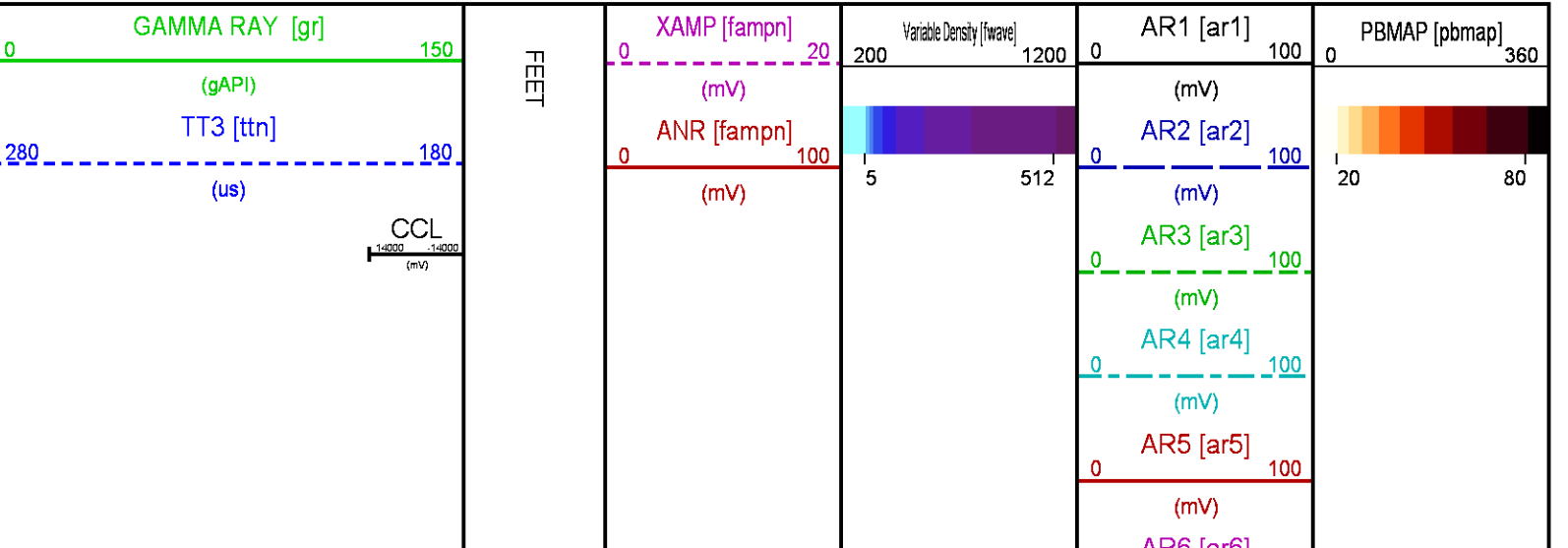
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
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RAL FREE PIPE AMPLITUDE	FREE AMP REC 1	80	mV	TOP	BOTTOM
	FREE AMP REC 2	80	mV	"	"
	FREE AMP REC 3	80	mV	"	"
	FREE AMP REC 4	80	mV	"	"
	FREE AMP REC 5	80	mV	"	"
	FREE AMP REC 6	80	mV	"	"
	FREE AMP REC 7	80	mV	"	"
	FREE AMP REC 8	80	mV	"	"
RAL FULL BOND AMPLITUDE	FULL BOND AMP REC 1	2	mV	"	"
	FULL BOND AMP REC 2	2	mV	"	"
	FULL BOND AMP REC 3	2	mV	"	"
	FULL BOND AMP REC 4	2	mV	"	"
	FULL BOND AMP REC 5	2	mV	"	"
	FULL BOND AMP REC 6	2	mV	"	"
	FULL BOND AMP REC 7	2	mV	"	"
	FULL BOND AMP REC 8	2	mV	"	"

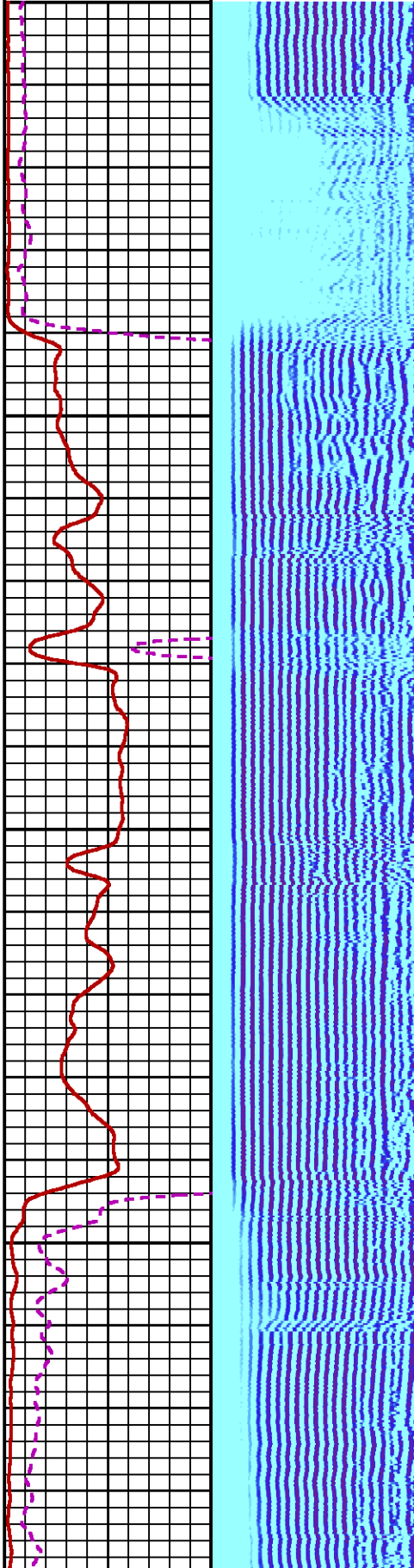
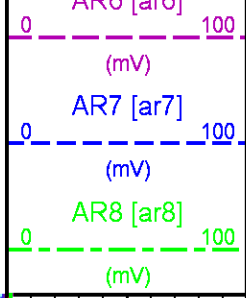
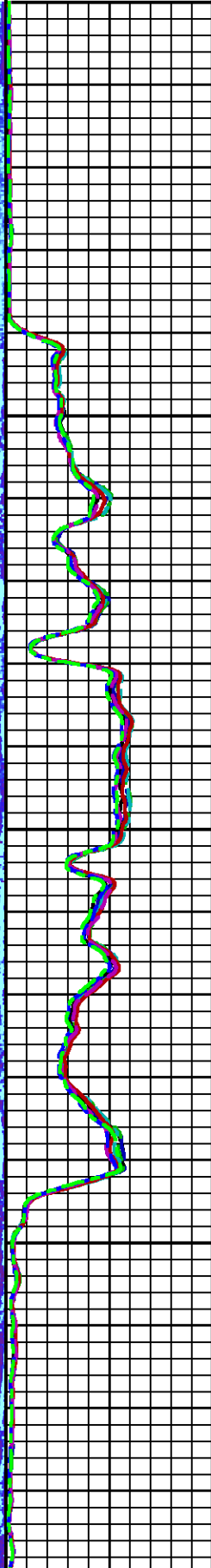
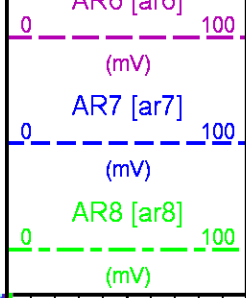
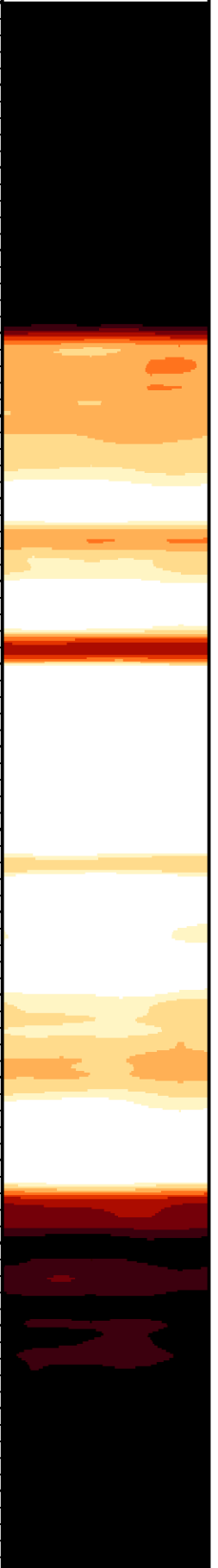
CURVE DESCRIPTION REPORT		
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:AR1	Nov 27 10:29:38 2018	FIXED GATE AMPLITUDE T-R1
F1:AR2	Nov 27 10:29:38 2018	FIXED GATE AMPLITUDE T-R2
F1:AR3	Nov 27 10:29:38 2018	FIXED GATE AMPLITUDE T-R3
F1:AR4	Nov 27 10:29:38 2018	FIXED GATE AMPLITUDE T-R4
F1:AR5	Nov 27 10:29:38 2018	FIXED GATE AMPLITUDE T-R5
F1:AR6	Nov 27 10:29:38 2018	FIXED GATE AMPLITUDE T-R6
F1:AR7	Nov 27 10:29:38 2018	FIXED GATE AMPLITUDE T-R7
F1:AR8	Nov 27 10:29:38 2018	FIXED GATE AMPLITUDE T-R8
F1:CCL	Nov 27 10:29:38 2018	CASING COLLAR LOCATOR
F1:FAMPN	Nov 27 10:29:38 2018	FIXED GATE AMPLITUDE NEAR RECEIVER
F1:FWAVE	Nov 27 10:29:38 2018	FAR WAVE FORM
F1:GR	Nov 27 10:29:38 2018	GAMMA RAY
F1:PBMAP	Nov 27 10:29:38 2018	PERCENT BOND CEMENT MAP
F1:TTN	Nov 27 10:29:38 2018	TRAVELTIME FROM NEAR TRANSMITTER-RECEIVER

CURVE MEASURE POINT OFFSET							
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
AR1	-11.25	AR4	-11.25	AR7	-11.25	FAMPN	-11.25
AR2	-11.25	AR5	-11.25	AR8	-11.25	GR	-1.75
AR3	-11.25	AR6	-11.25	CCL	-5.75	TTN	-11.25

Presentation	: SysA:/dat1a/LARAMIE_BCU_0993_21_04W/04W_RAL_REPEAT.fvpdf [5"/100' Scale]
Plot Interval	: 7400 - 7635 Feet
Data File 1	: F1 : SysA:/dat1a/LARAMIE_BCU_0993_21_04W/p04W_RAL_REPEAT.xtf
Created On	: Nov 27 10:29:38 2018
Company	: LARAMIE ENERGY LLC
Well	: BCU 0993-21-04W
Field	: BUZZARD CREEK
File Interval	: 7380.25 - 7642 Feet
OCT	: p012g

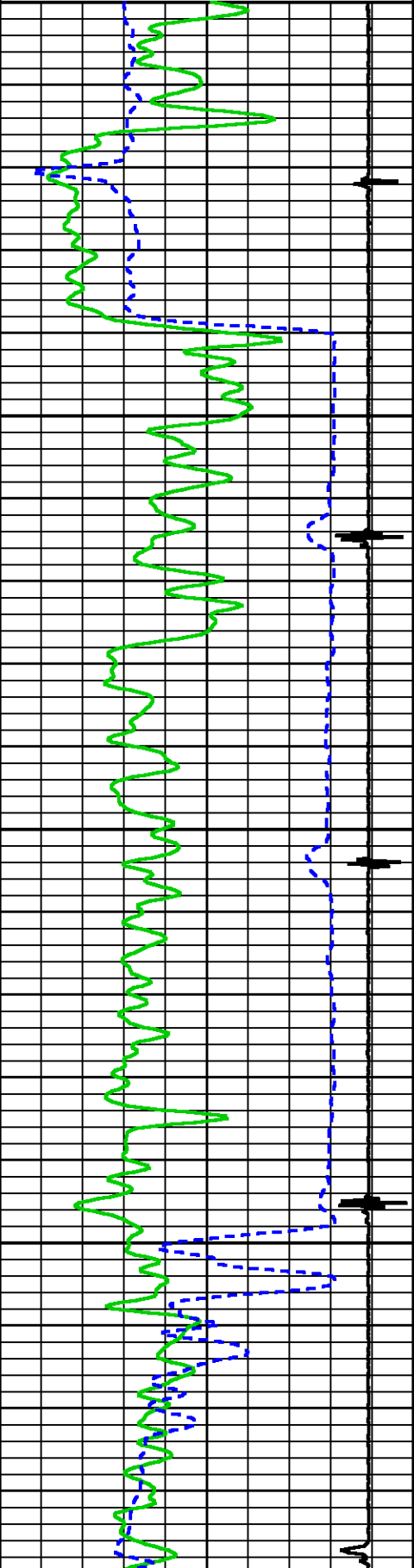


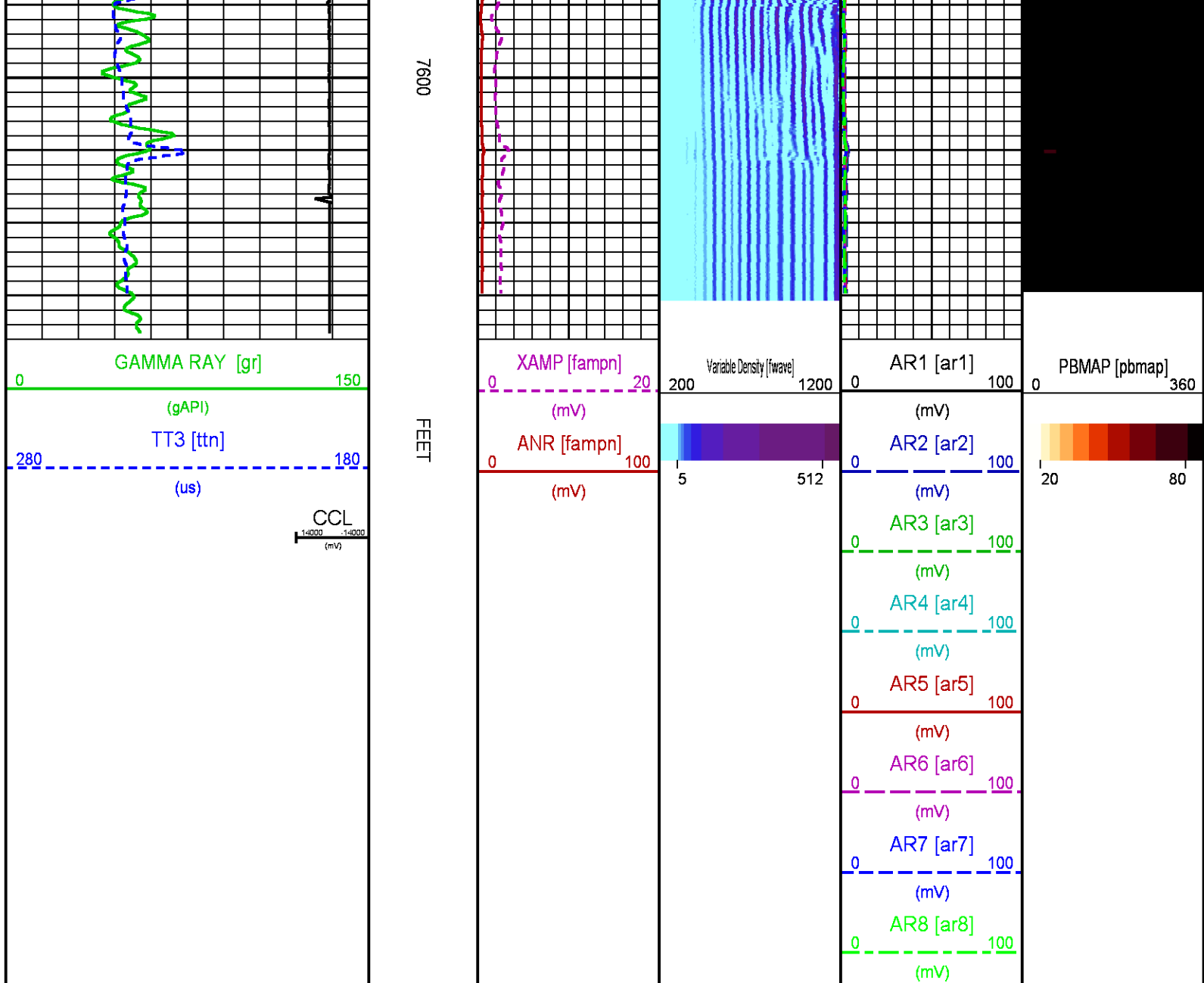




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## CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/LARAMIE\_BCU\_0993\_21\_04W/p012g.tp1

## RAL PRIMARY CALIBRATION SUMMARY

TOOL #: 1426XA 1022301

DATE/TIME PERFORMED: Tue Nov 27 09:54:09 2018

UNIT #: 5753XD 10412898

	NEAR (mV)	RADIAL (mV)	FAR (mV)
TARGETS	100.00	100.00	150.00

	NEAR	R1	R2	R3	R4	R5	R6	R7	R8	FAR	CAL
ZERO (mV)	-0.10	0.05	0.06	-0.09	0.03	0.03	-0.05	0.02	0.03	0.05	0.03
AMP FLUID (mV)	217	215	217	219	218	216	215	214	215	245	213

TT (us)	217	218	217	217	217	217	217	217	219	325	217
M FACTOR	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.47	0.46	0.61	0.47

RAL BEFORE LOG VERIFICATION SUMMARY

TOOL #:	1426XA 10222301	DATE/TIME PERFORMED:	Tue Nov 27 09:59:47 2018	DAYS SINCE CAL:	0
UNIT #:	5753XD 10412898	CABLE #:	4268SM SMALL1		

	NEAR (mV)	R1 (mV)	R2 (mV)	R3 (mV)	R4 (mV)	R5 (mV)	R6 (mV)	R7 (mV)	R8 (mV)	FAR (mV)	CAL (mV)
ZERO	-0.01	-0.01	-0.03	-0.01	-0.02	-0.03	-0.01	-0.02	-0.04	0.20	-0.02
AMP AIR	0.72	0.39	0.47	0.40	0.30	0.88	0.89	0.46	0.41	1.69	100.06

GR PRIMARY CALIBRATION SUMMARY

TOOL #:	1355XA 12568545	DATE/TIME PERFORMED:	Mon Nov 12 16:42:42 2018
UNIT #:	5753XD 10412898	CALB JIG #:	4702NK VBA-917

	BACKGROUND (cts)	CALBRTR ON (cts)	CR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	CALBRTR (gAPI)
GR	151.47	498.84	347.4	0.576	87.21	287.21	200

GR PRIMARY VERIFICATION SUMMARY

TOOL #:	1355XA 12568545	DATE/TIME PERFORMED:	Mon Nov 12 16:45:14 2018
UNIT #:	5753XD 10412898	VERI JIG #:	4702NK VBA-917

	BACKGROUND (cts)	CALBRTR ON (cts)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	163.42	497.64	0.576	94.09	286.51	192.43
						190.00 210.00

INSTRUMENT CONFIGURATION

Source File: /dat1a/LARAMIE\_BCU\_0993\_21\_04W/RAL-tdg

A3 CABLEHEAD  
Diameter : 1.37"



RADIAL BOND TOOL  
Diameter : 2.75"

Diameter : 2.75"  
 Length : 11.17'  
 Weight : 126 lbs  
 Series : 1426XA  
 Mnemonic : RAL  
 Measure Point: 5.75': XMTR  
 Measure Point: 4.21': NEAR MP  
 Measure Point: 3.25': FAR MP  
 Measure Point: 2.67': NEAR RCVR  
 Measure Point: 0.75': FAR RCVR

XMTR 12.71'

NEAR MP 11.17'

FAR MP 10.21'

NEAR RCVR 9.62'

FAR RCVR 7.71'

CCL 5.79'

**RAL GR/TEMP/CCL/CHV DETECTOR**

Diameter : 2.75"  
 Length : 6.96'  
 Weight : 85 lbs  
 Series : 1355XA  
 Mnemonic : RAL  
 Measure Point: 5.79': CCL  
 Measure Point: 1.67': GR  
 Measure Point: 0.17': TEMP

GR 1.67'

TEMP 0.17'

TOTAL LENGTH: 18.85'  
 TOTAL WEIGHT: 227 lbs  
 MAX DIAMETER: 0'4.00"

**BAKER  
HUGHES**  
 a GE company



**COMPANY** LARAMIE ENERGY LLC

**WELL** BCU 0993-21-04W

**FIELD** BUZZARD CREEK

**COUNTY** MESA **STATE** COLORADO

**FILE NO:**

CH145366

**API NO:**

05077105110000

**LOCATION:**

SHL: 871' FNL & 1321' FWL

**ELEVATIONS:**

KB 7287 FT

DF

GL 7257 FT

**SEC** 21 **TWP** 9 S **RGE** 93 W

**DATE** 27-NOV-2018

**ECLIPS**