



FILE NO: CH108536	COMPANY TERRA ENERGY PARTNERS LLC
API NO: 05045225280000	WELL FEDERAL GM 422-9
	FIELD GRAND VALLEY
	COUNTY GARFIELD
	STATE COLORADO

Ver. 4.06	LOCATION:	OTHER SERVICES
SEC.9 T.7S R.96W	SHL: 644' FNL & 565' FWL	
PAD: MV 16-9	BHL: 1986' FNL & 1898' FWL	RPM
RIG: H&P 318	SEC 9 TWP 7S RGE 96W	

PERMANENT DATUM	GL	ELEVATION	6086 FT
LOG MEASURED FROM	KB	24 FT	ABOVE P.D.
DRILL. MEAS. FROM	KB		
		KB	ELEVATIONS:
		DF	6110 FT
		GL	6086 FT

DATE	28-Jul-2016
RUN	1
TRIP	1
SERVICE ORDER	US108536J
DEPTH DRILLER	6997 FT
DEPTH LOGGER	6937 FT
BOTTOM LOGGED INTERVAL	6936 FT
TOP LOGGED INTERVAL	0 FT
TIME STARTED	14:30
TIME FINISHED	16:30
OPERATOR RIG TIME	2 HOURS
TYPE OF FLUID IN HOLE	WATER
FLUID DENSITY	NA
FLUID SALINITY	NA
FLUID LEVEL	44 FT
LOGGED CEMENT TOP	SEE LOG
WELLHEAD PRESSURE	0 PSI
MAXIMUM HOLE DEVIATION	NA
NOMINAL LOGGING SPEED	100 F/MN
MAX. RECORDED TEMP.	204 DEGF
REFERENCE LOG	NA
REFERENCE LOG DATE	NA
EQUIP. NO.	HL-6685
LOCATION	GRAND JCT.
RECORDED BY	SPENCER
WITNESSED BY	D. WELSH

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

REMARKS
RUN 1 TRIP 1: THIS IS THE FIRST LOGGING RUN ON THIS HOLE ALL DATA HAS BEEN SHIFTED TO PLACE THE TOP CCL MARK (FRAC TREE) AT 10' ABOVE GL WITH RESPECT TO KB HEIGHT AT CLIENT'S REQUEST.  AMOUNT OF LINEAR SHIFT = +12.5 FEET  LOGGED WITH 0PSI AT SURFACE  BHT = 204 DEGF SJ = 3530' - 3552'  THANKS FOR CHOOSING BAKER HUGHES WIRELINE CREW: NEWELL / COATE

## EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	RAL	1426XA	10417452	CENTRALIZED
1	1	GR / CCL	1355XA	11871508	CENTRALIZED

## PRIMARY PRESENTATION 0 PSI

ECLIPS 6.2i ECLIPS General Release Rel 6.2i Wed Jun 12 12:21:40 CDT 2013  
Updates: 1,36 Patches: 9

Plotted: Fri Jul 29 09:45:36 2016

## PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/CH108536/n012g02.prm  
LOGGING MODE: DEPTH DIRECTION: UP  
TOP DEPTH: 0.500 ft BOTTOM DEPTH: 6929.250 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		TOP	BOTTOM

## ANALOG RAL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
AMPLITUDE WINDOW (NEAR)	AMP WINDOW START (fgpn*)	187	us	TOP	BOTTOM
	AMP WINDOW LENGTH	25	us	"	"
TRAVEL TIME WINDOW (NEAR)	TT WINDOW START (ttn*)	174	us	"	"
	TT WINDOW LENGTH	444	us	"	"
	FIRST BRK THRESHOLD (ttn*)	4	mV	"	"
				"	"
RAL CASING PARAMETERS	PPT NEAR	200.391	us	"	"
RAL TOOL DELAY	TOOL DELAY (strn*)	-67	us	"	"
BASELINE NOISE (NEAR)	NOISE WINDOW START	125	us	"	"
	NOISE WINDOW LENGTH	25	us	"	"

## CURVE DESCRIPTION REPORT

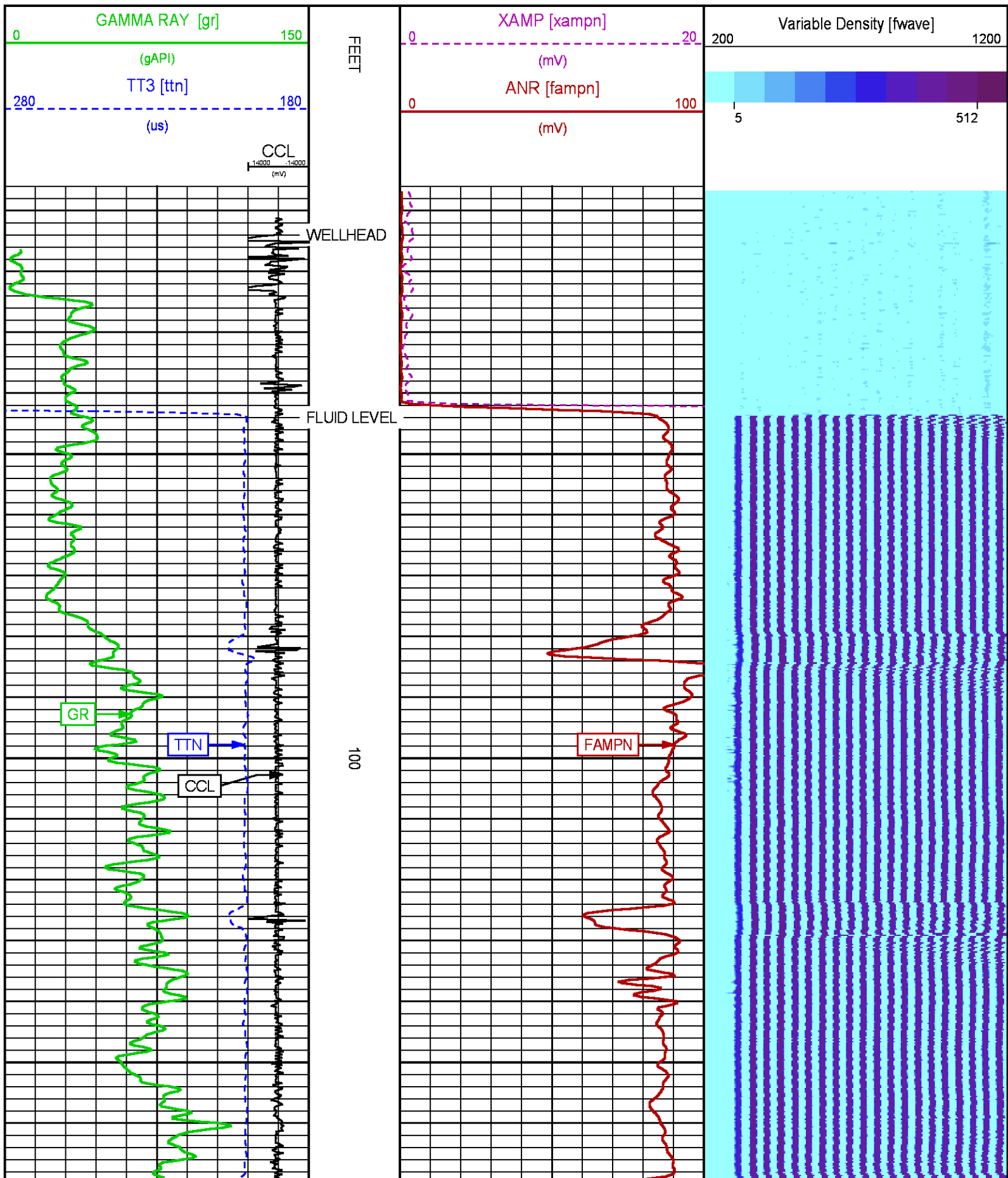
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	Jul 28 15:14:35 2016	CASING COLLAR LOCATOR
F1:FAMPN	Jul 28 15:14:35 2016	FIXED GATE AMPLITUDE NEAR RECEIVER
F1:FWAVE	Jul 28 15:14:35 2016	FAR WAVE FORM
F1:GR	Jul 28 15:14:35 2016	GAMMA RAY
F1:TTN	Jul 28 15:14:35 2016	TRAVELTIME FROM NEAR TRANSMITTER-RECEIVER
F1:XAMPN	Jul 28 15:14:35 2016	FIXED GATE AMPLITUDE NEAR RECEIVER TIMES FIVE

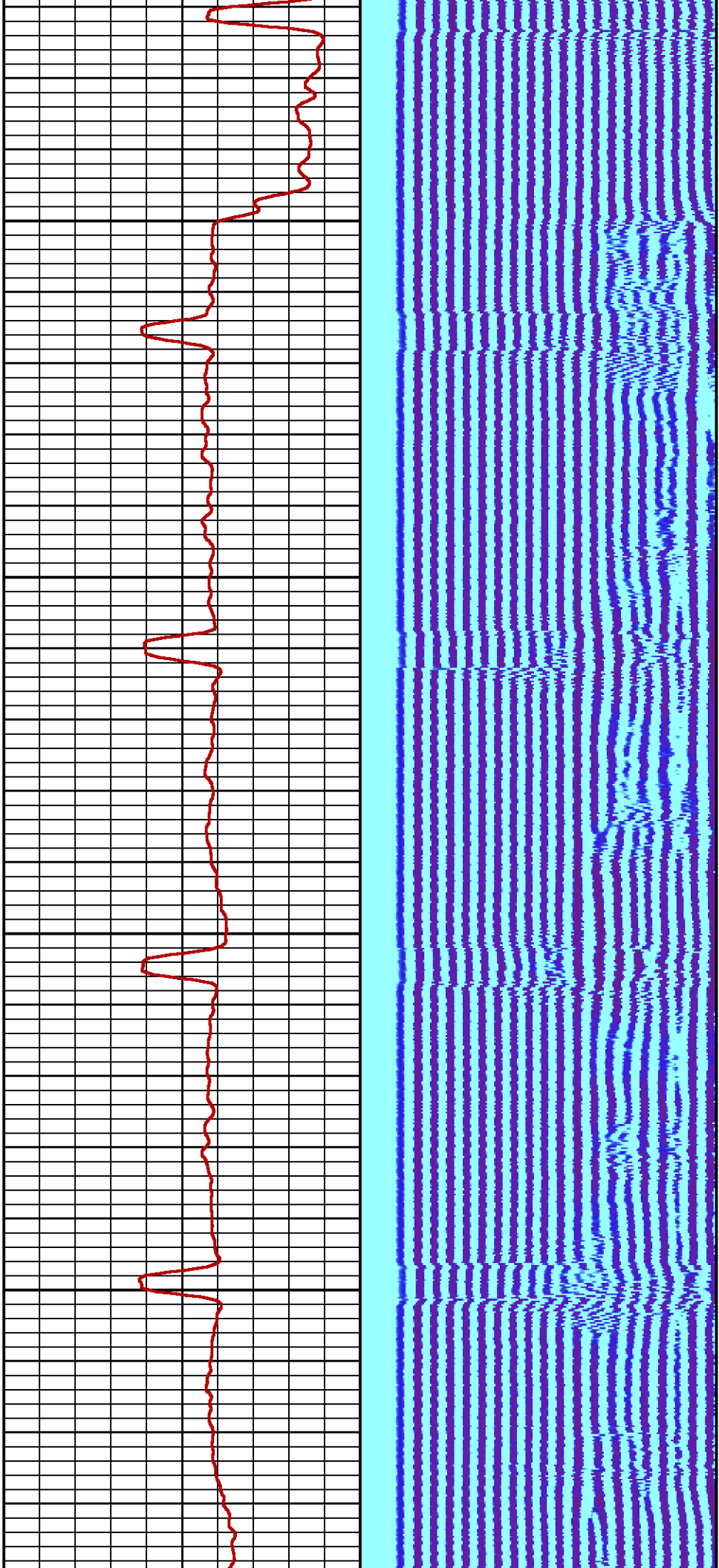
## CURVE MEASURE POINT OFFSET

CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	5.75	GR	1.75	XAMPN	11.25		
FAMPN	11.25	TTN	11.25				

Presentation : cas6685:/dat1a/CH108536/TERRA\_CBL\_MAIN.fvpdf [5"/100' Scale]  
Plot Interval : 6.75 - 6044.5 Feet

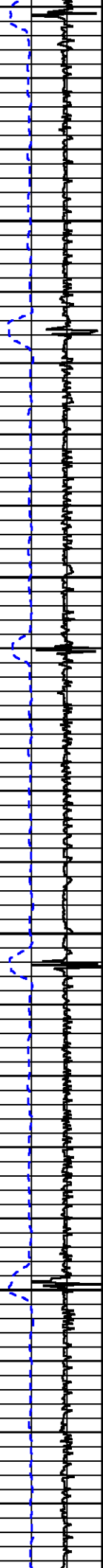
Plot Interval : 0.75 - 6944.5 Feet  
Data File 1 : F1 : cas6685:/dat1a/CH108536/n012g02.xtf  
Created On : Jul 28 15:14:35 2016  
Company : TERRA ENERGY PARTNERS LLC  
Well : FEDERAL GM 422-9  
Field : GRAND VALLEY  
File Interval : -10.75 - 6945.75 Feet  
OCT : n012g

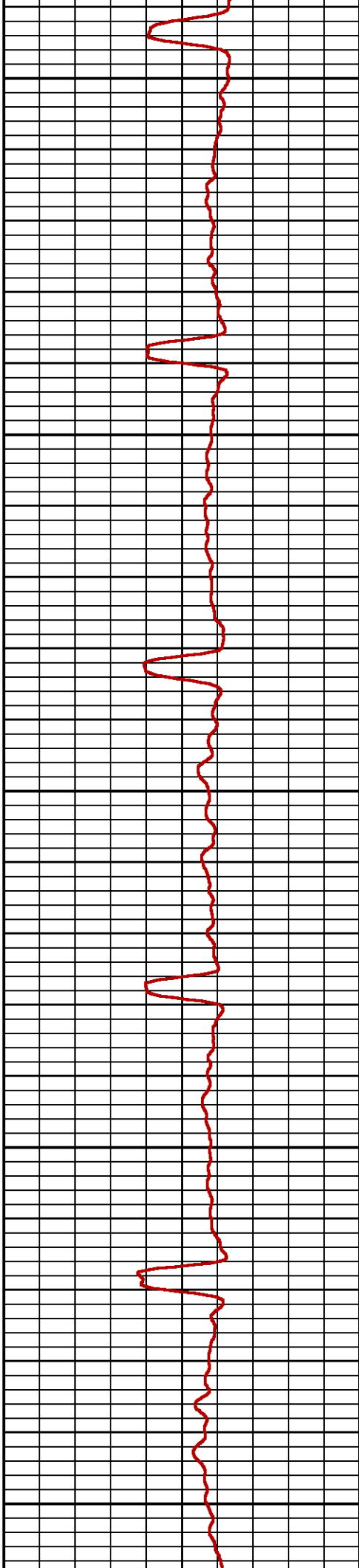
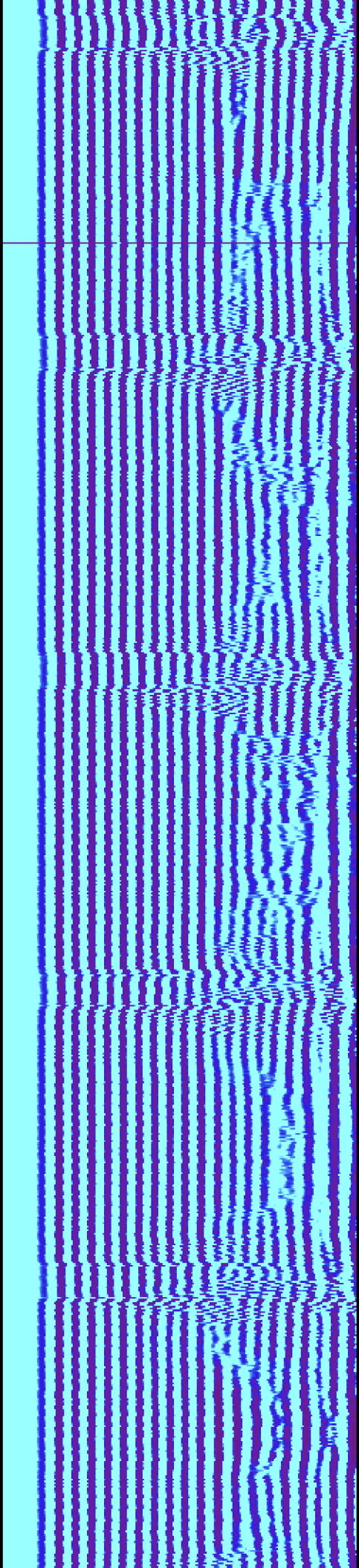




200

300

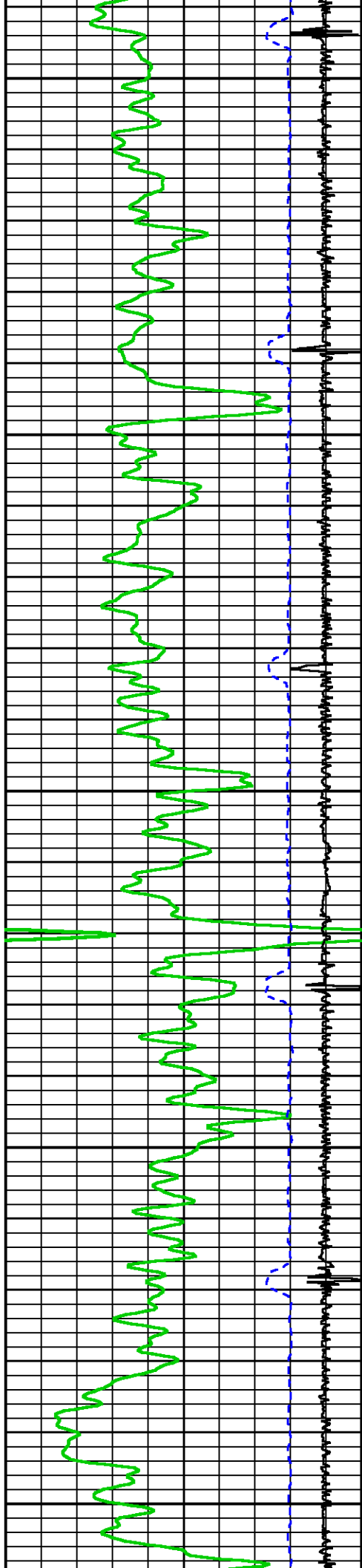




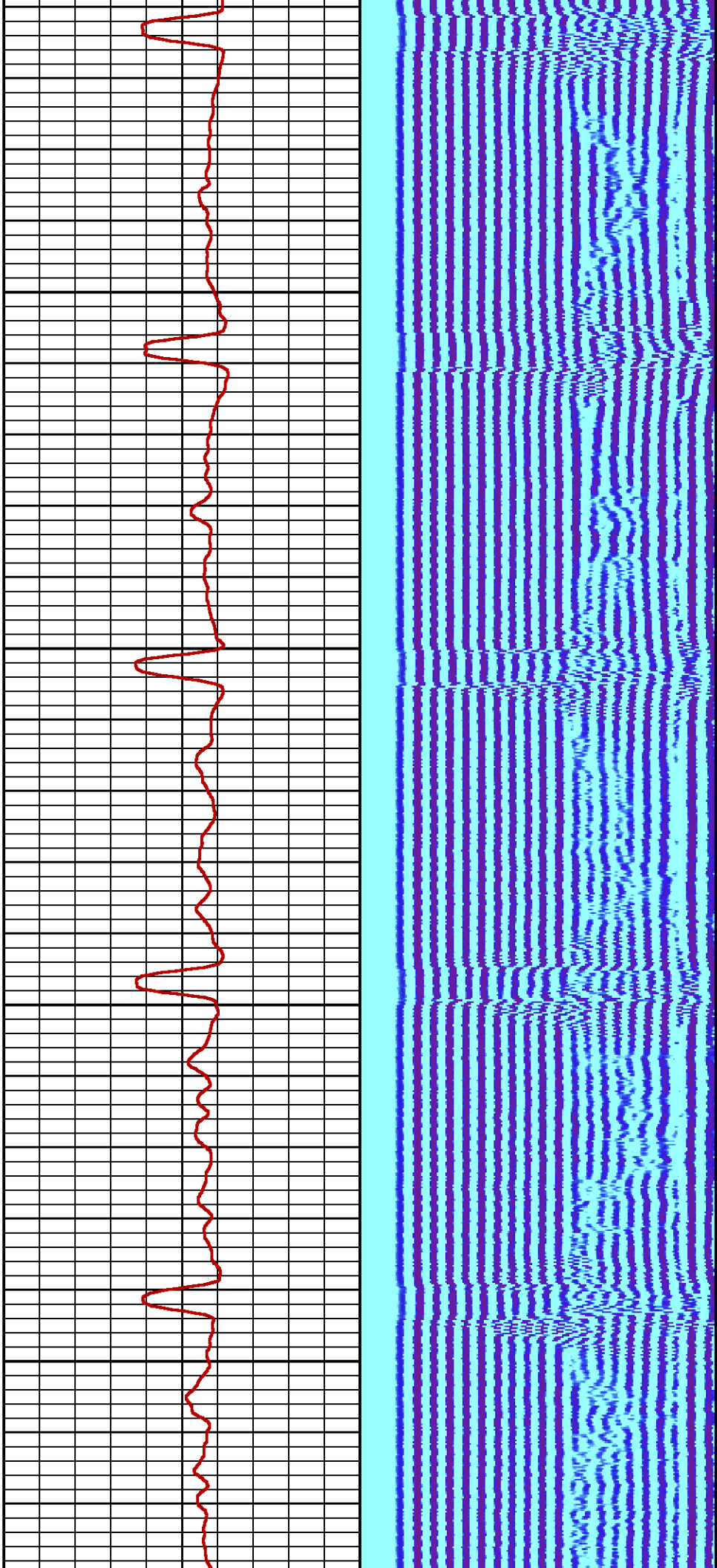
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500

600

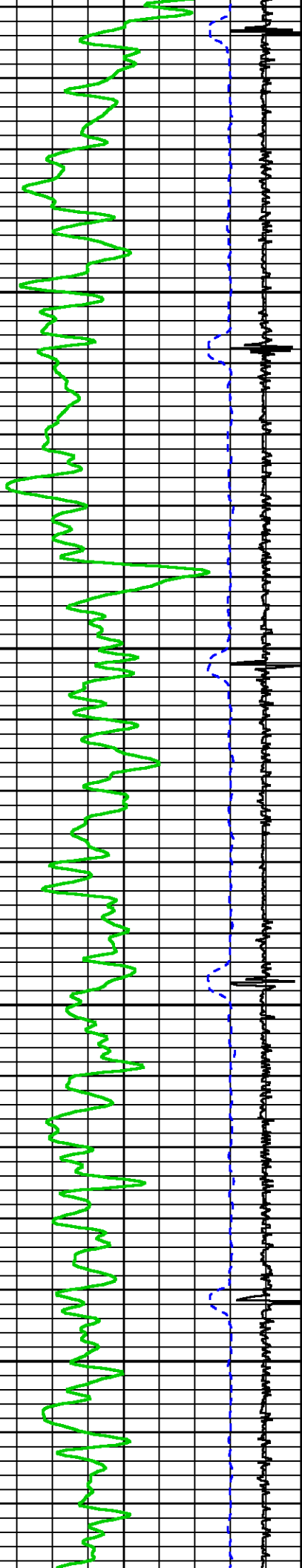


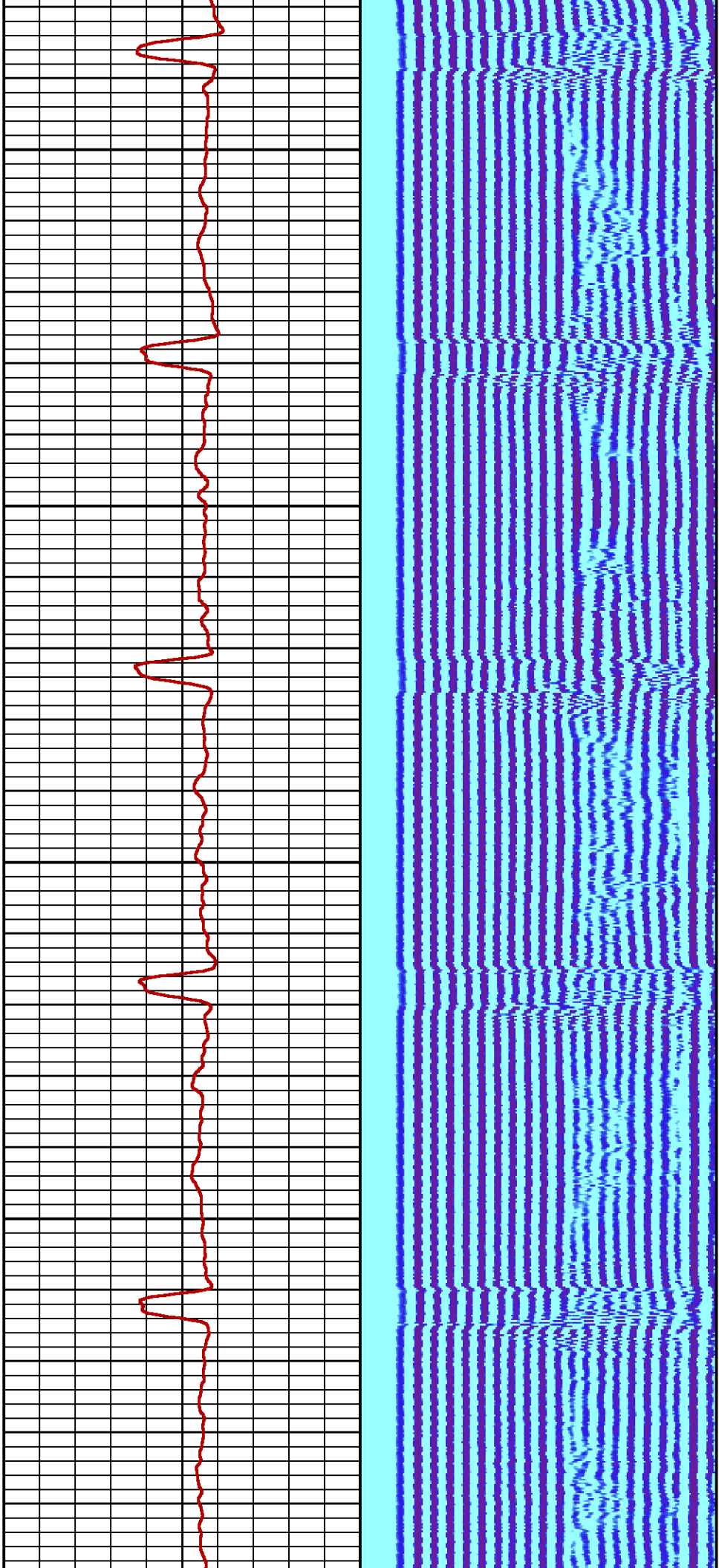




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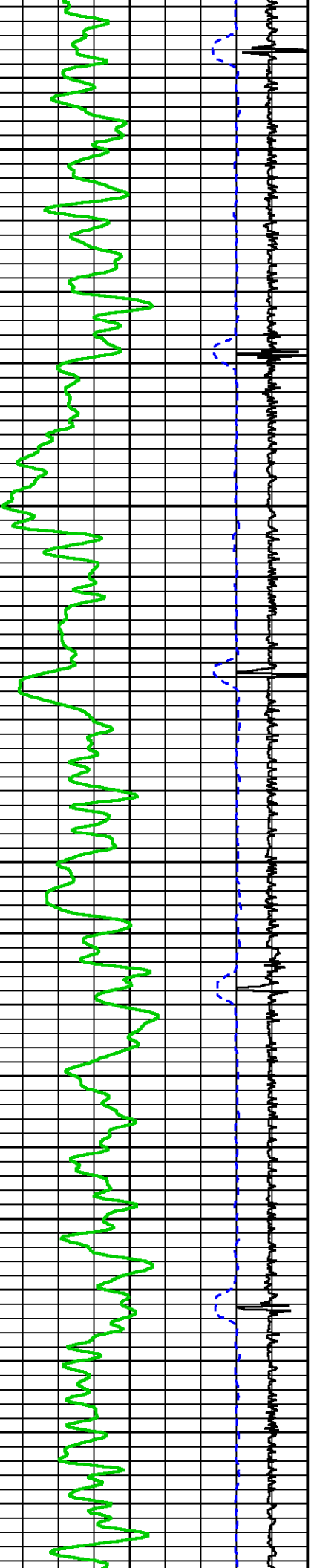
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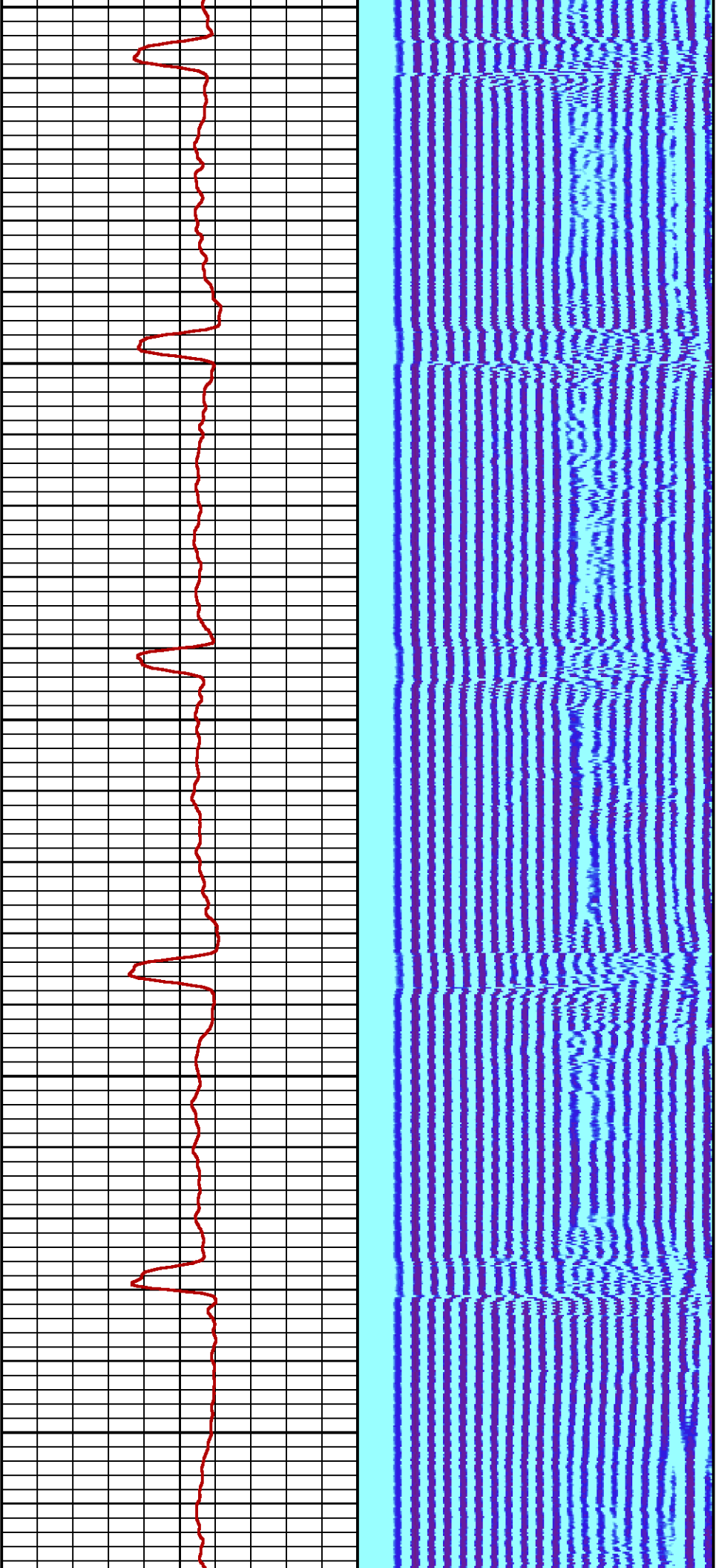




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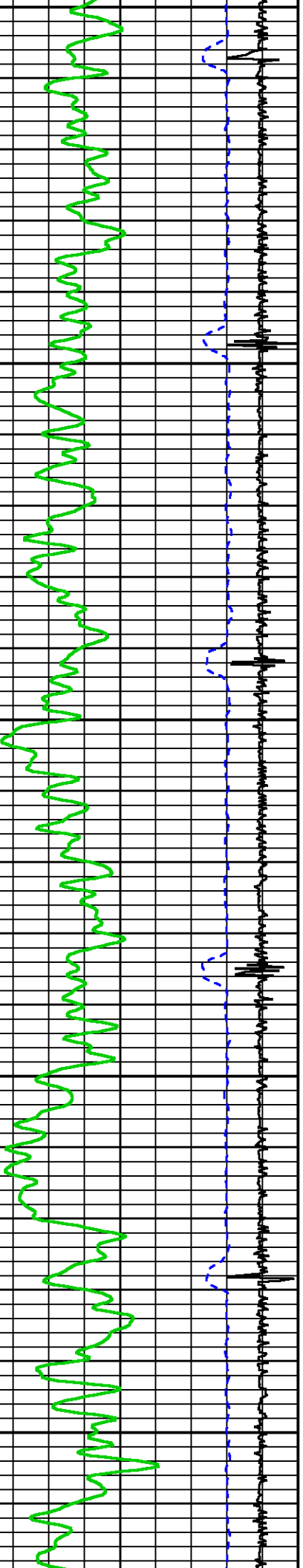
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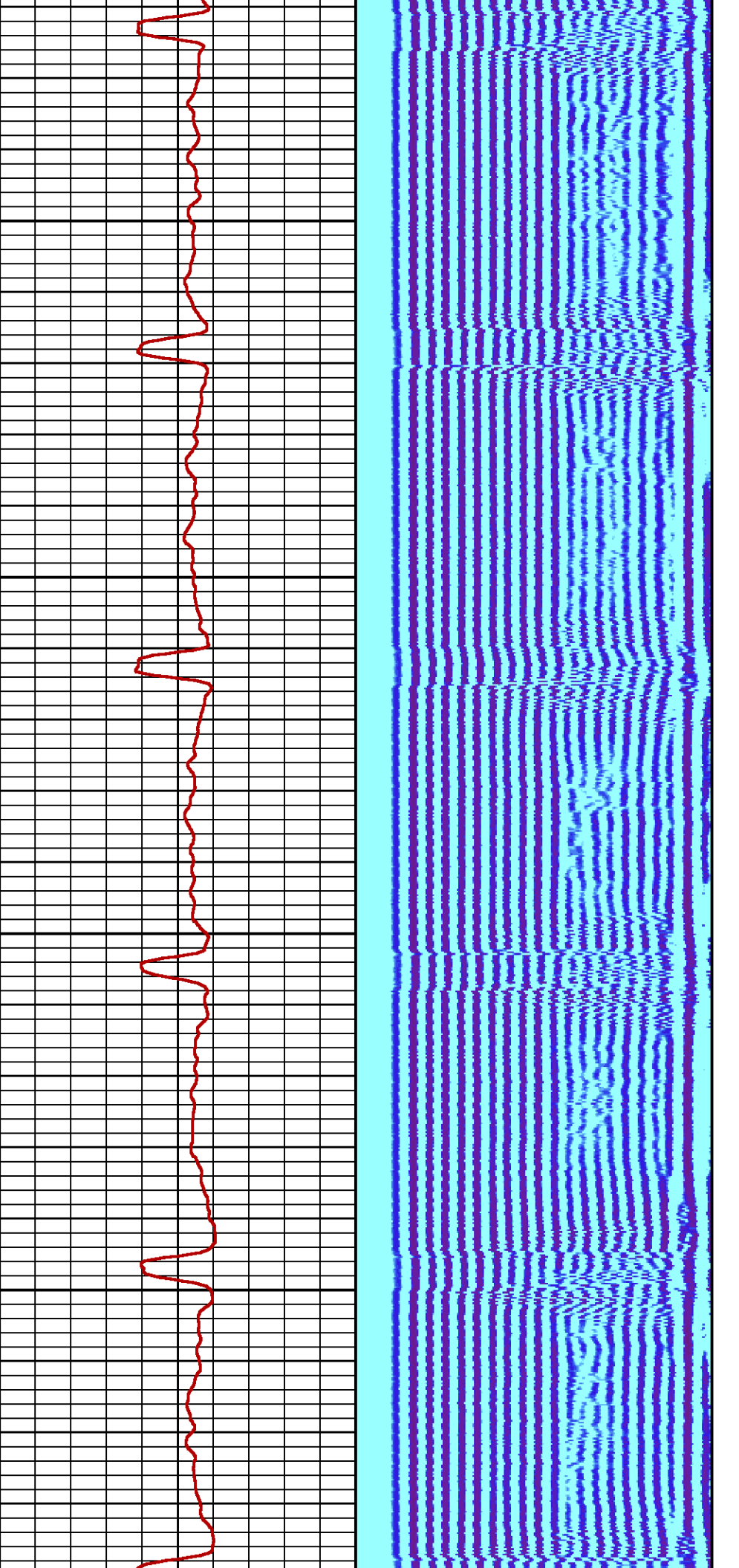


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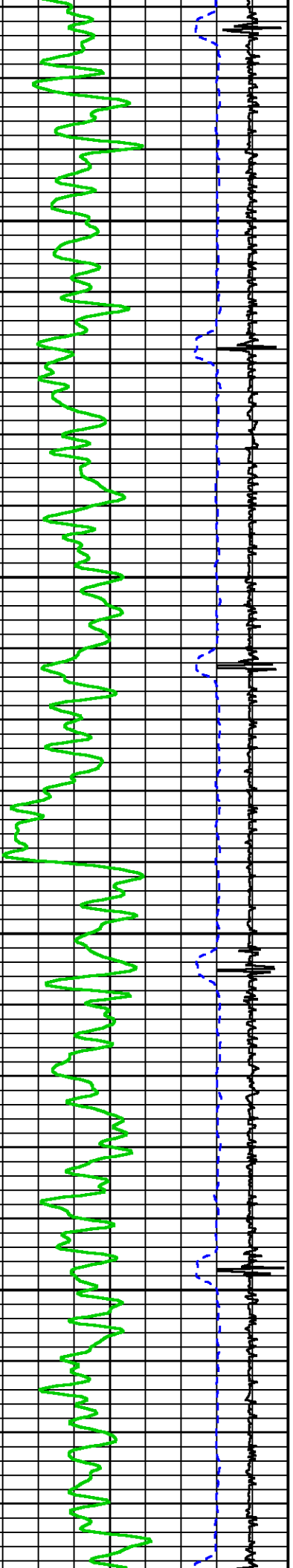


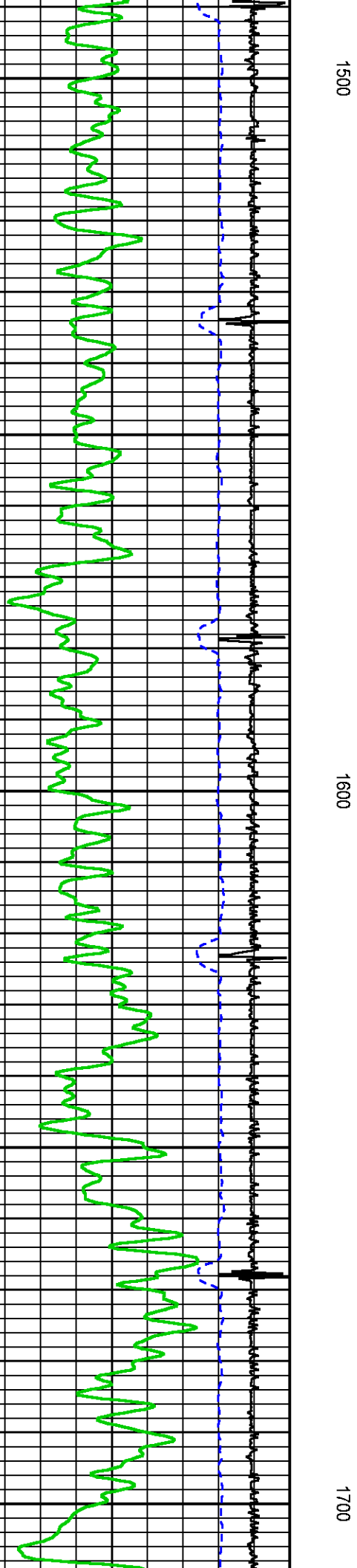
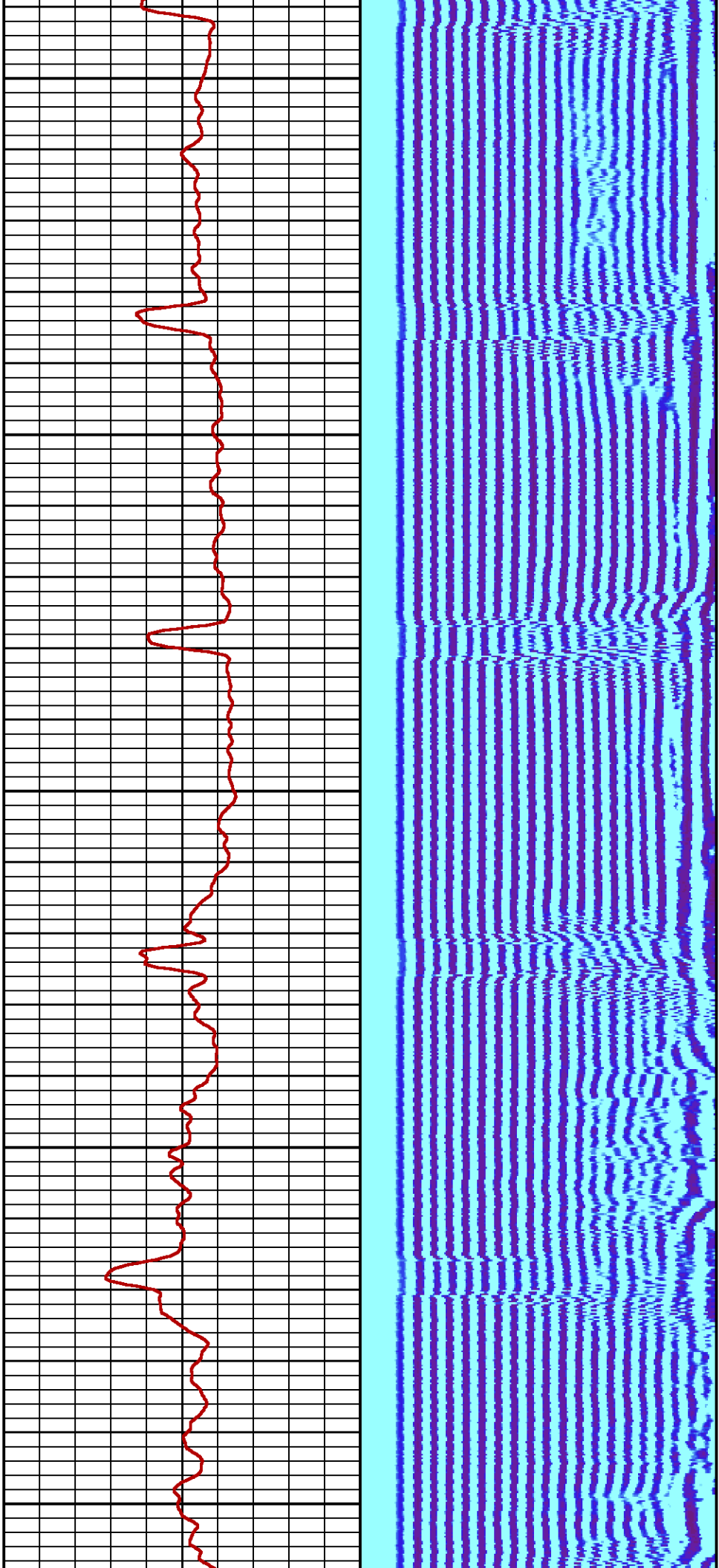


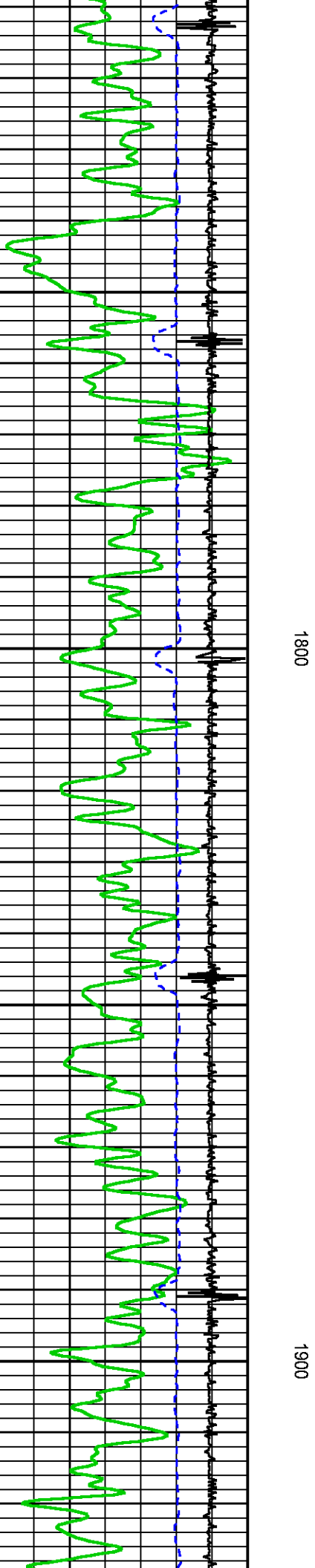
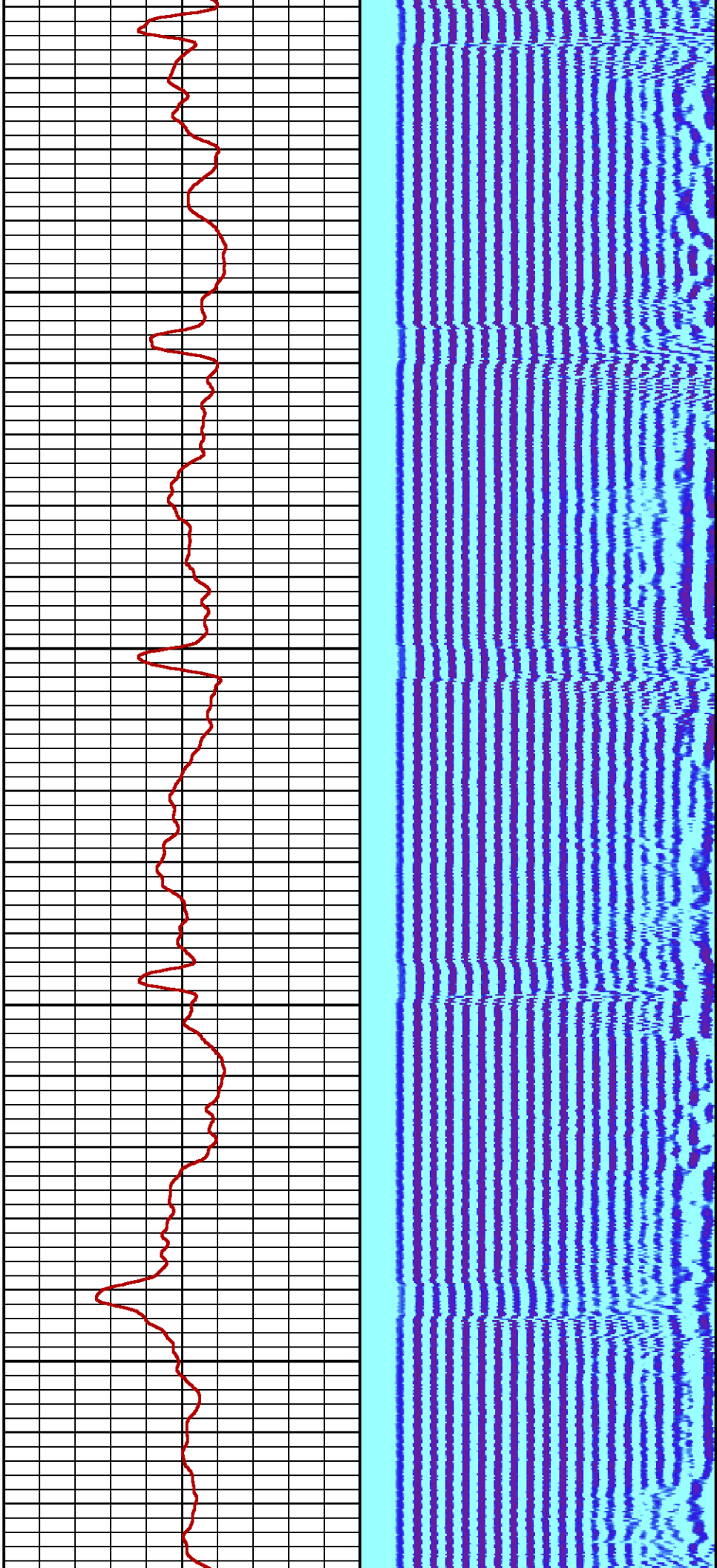


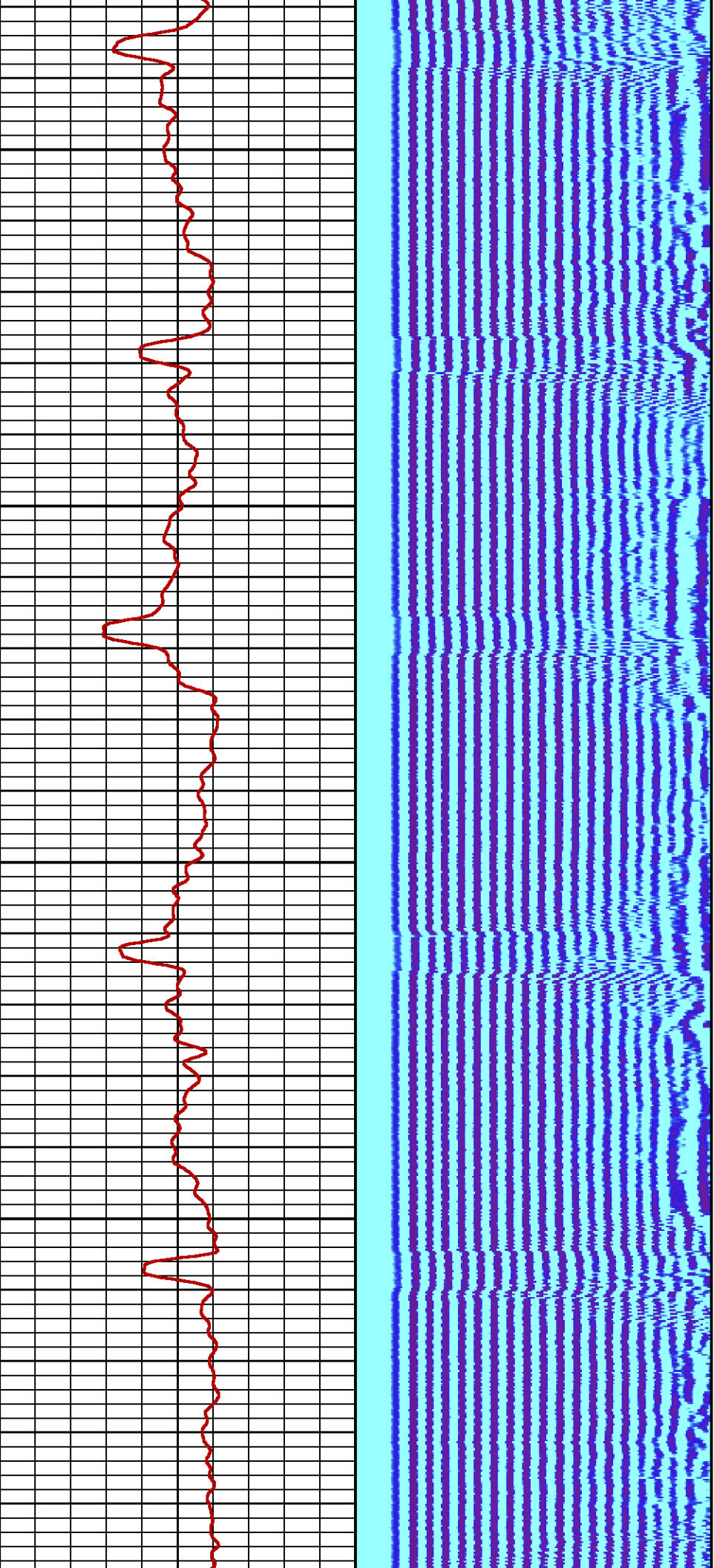
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1400



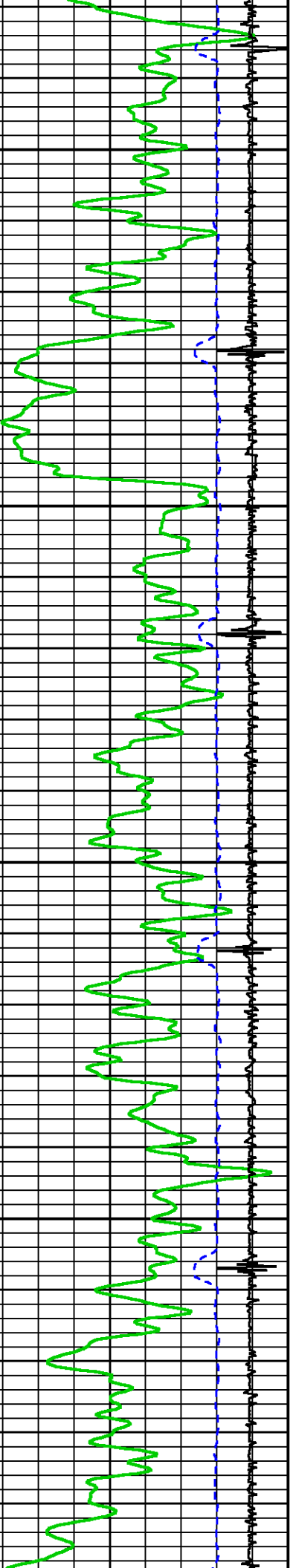




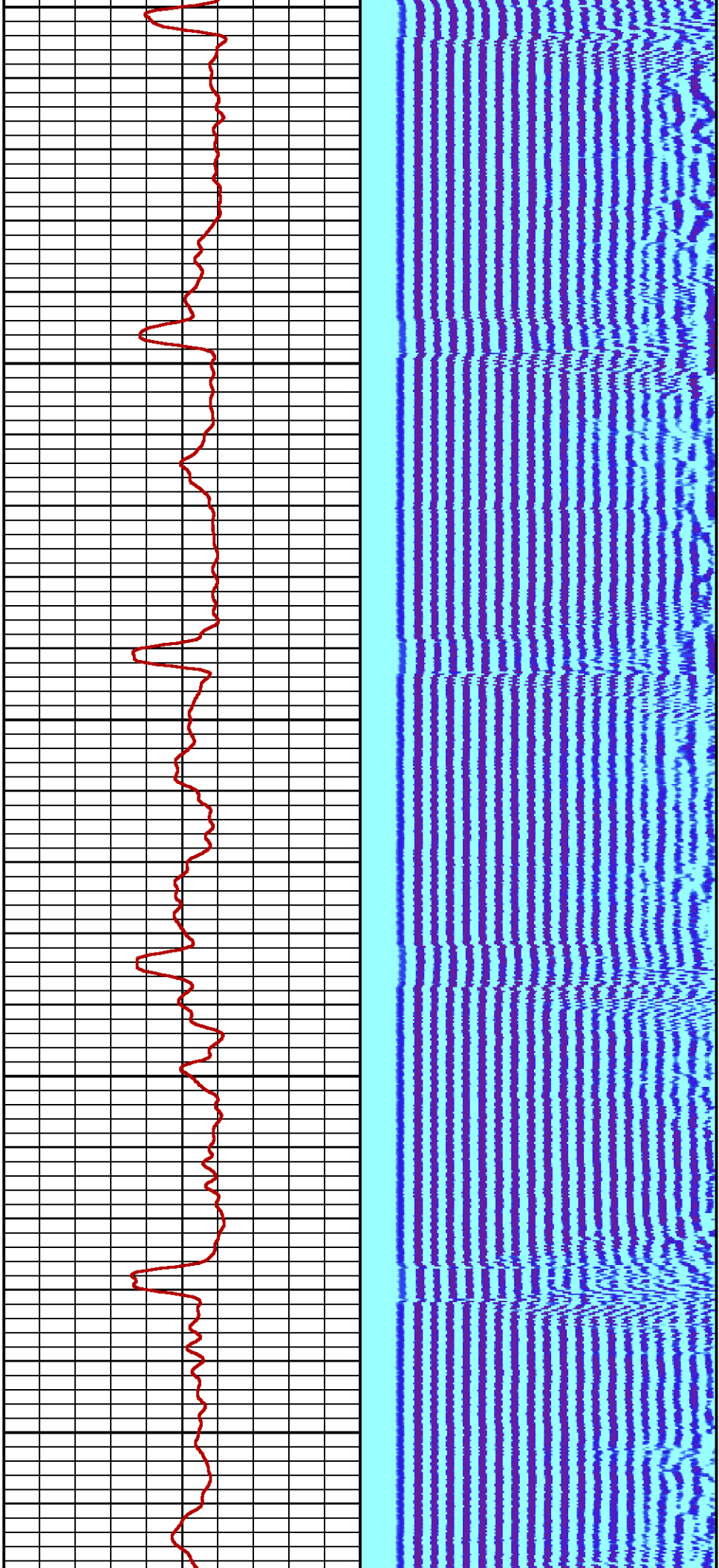


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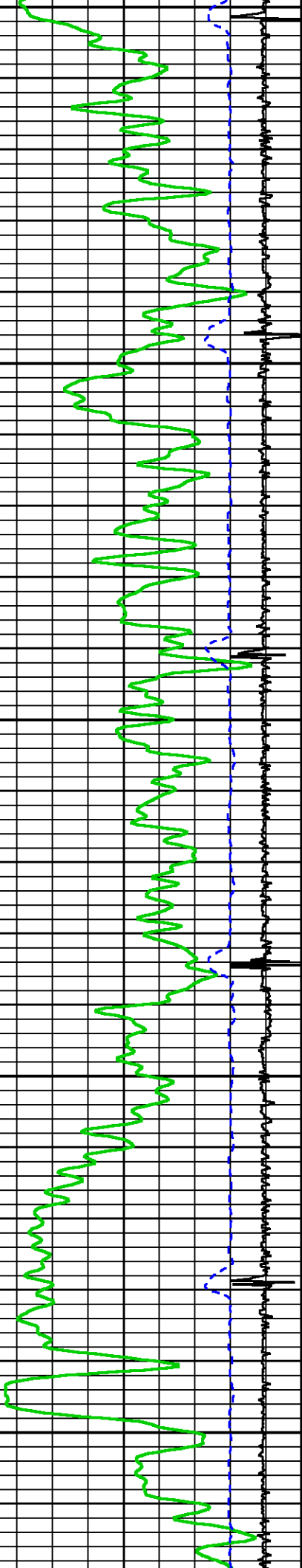




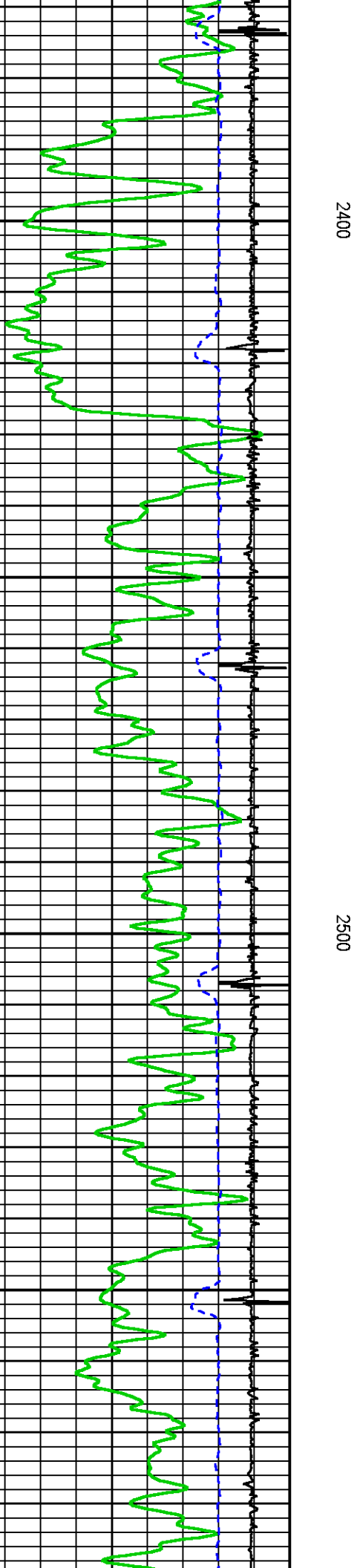
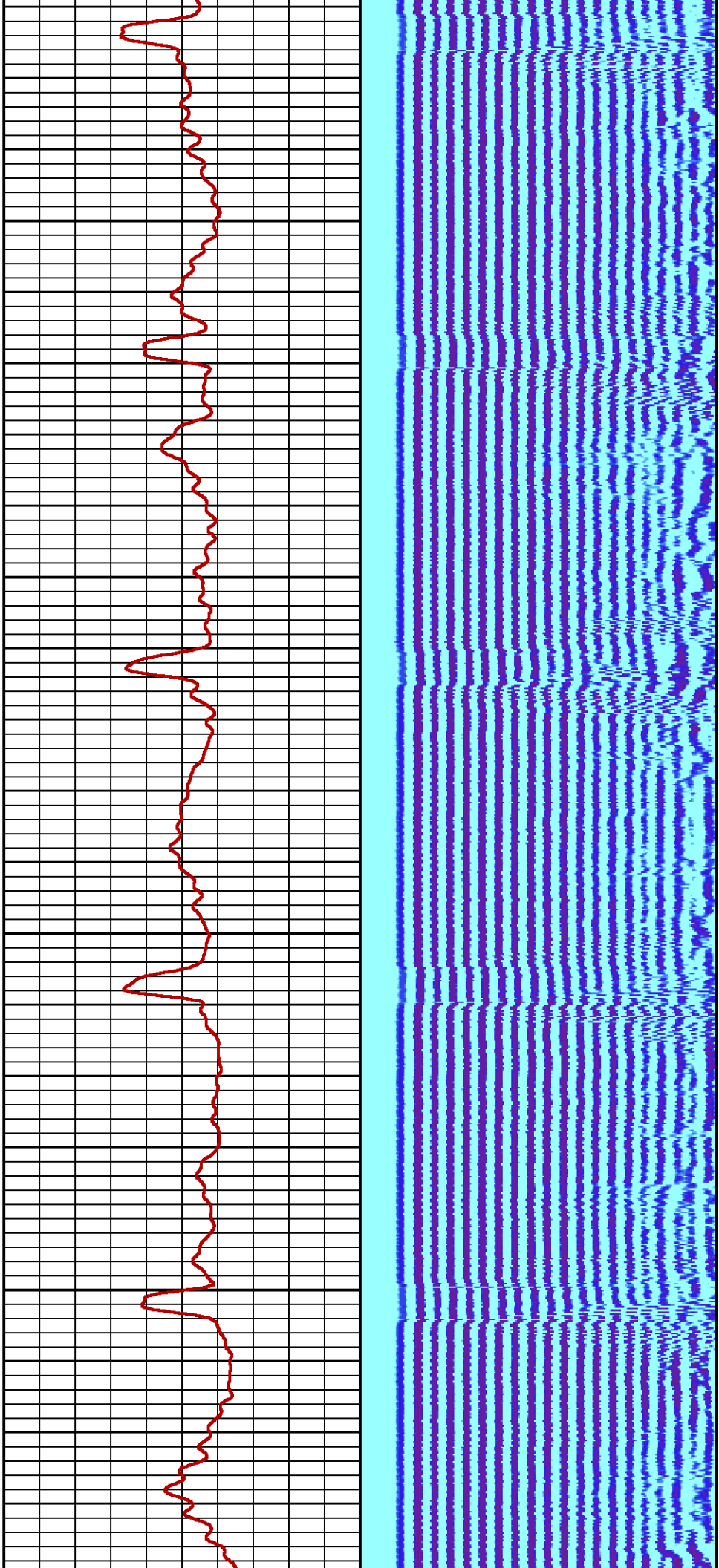


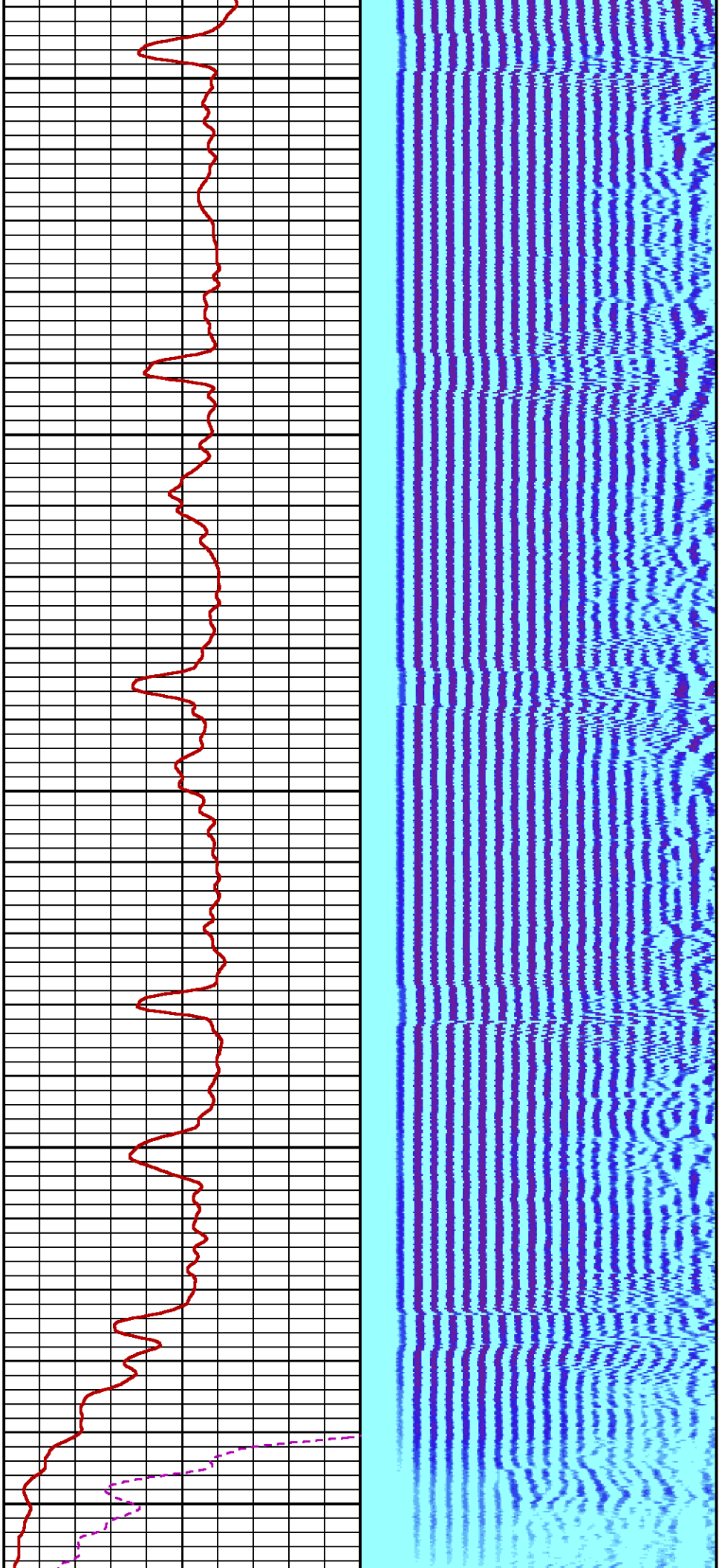
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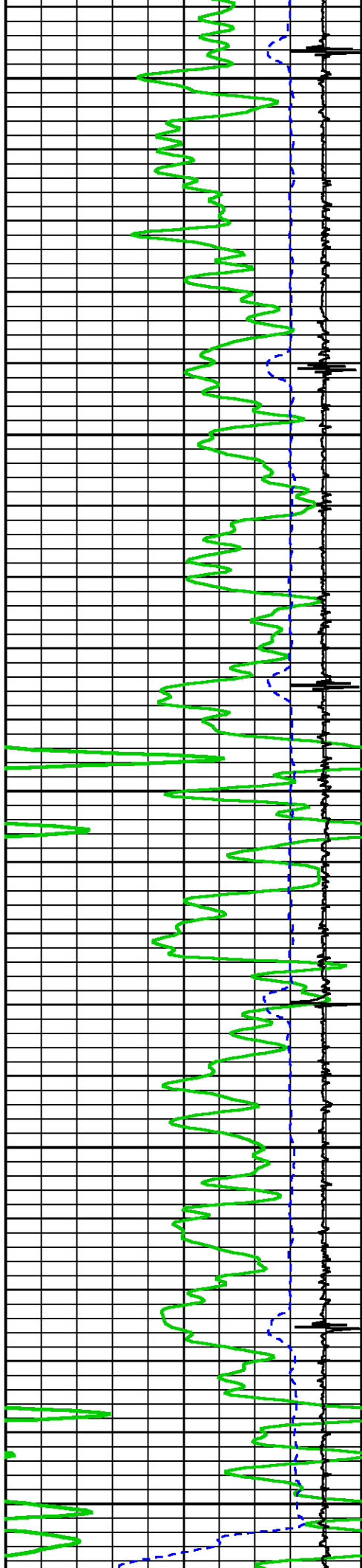


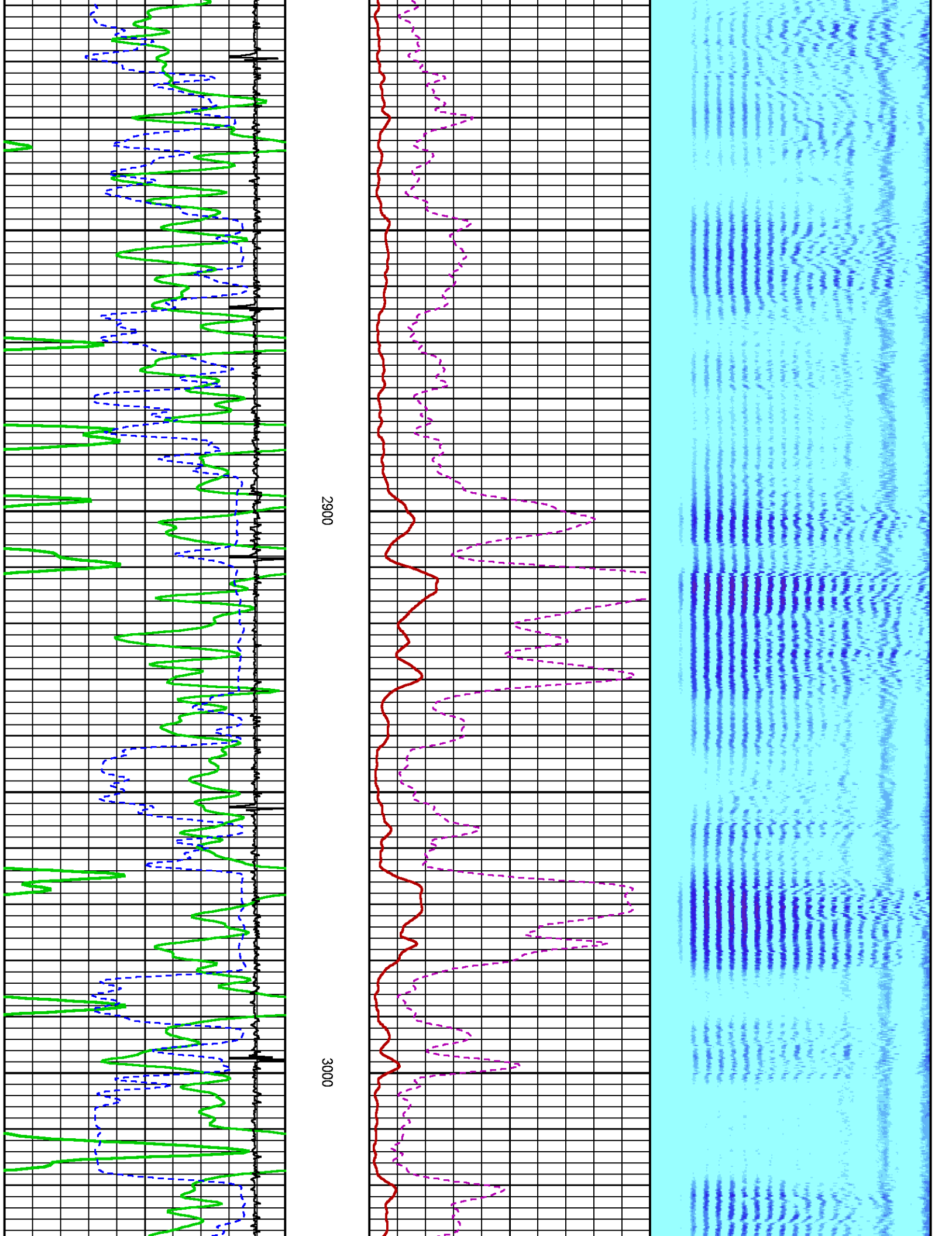


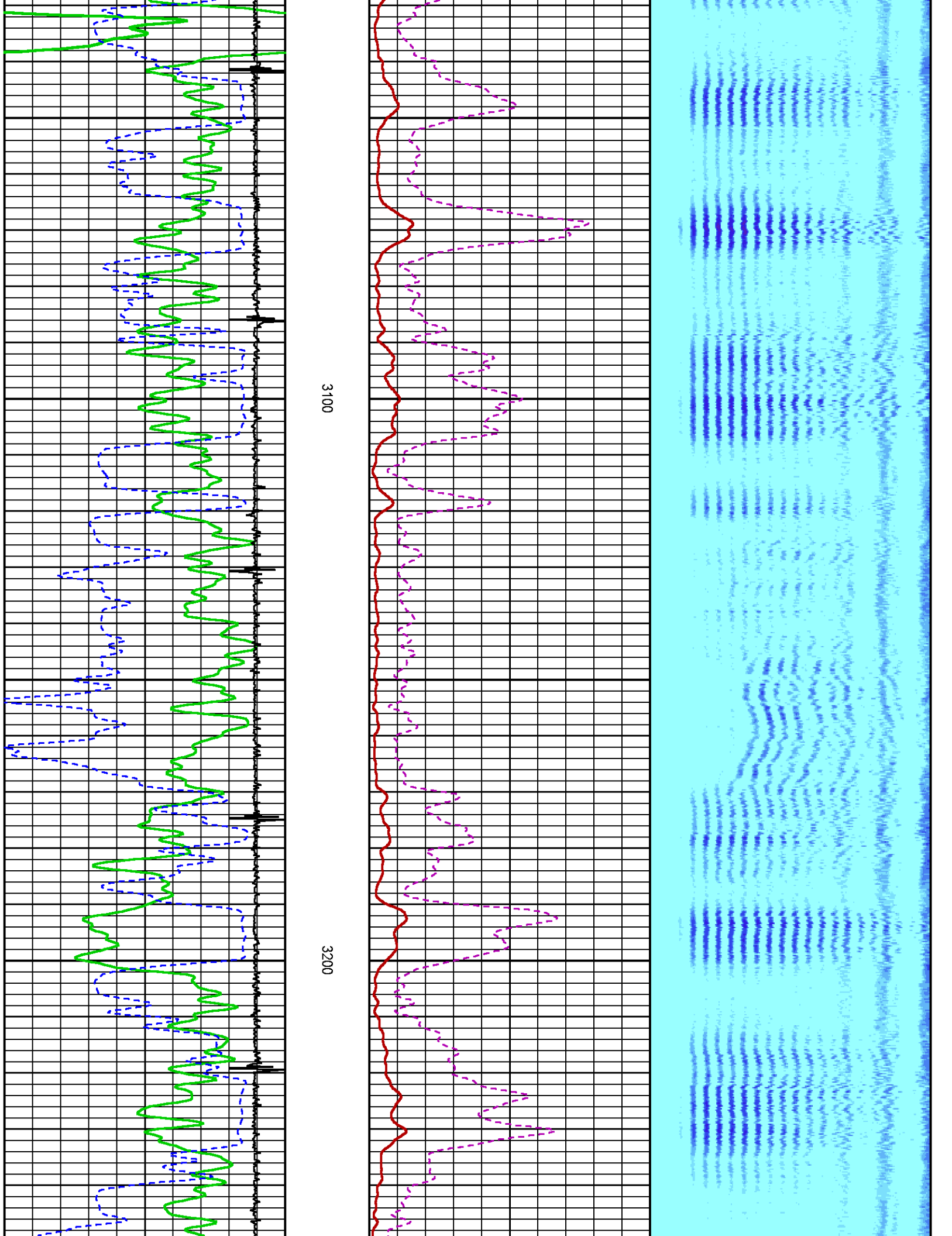
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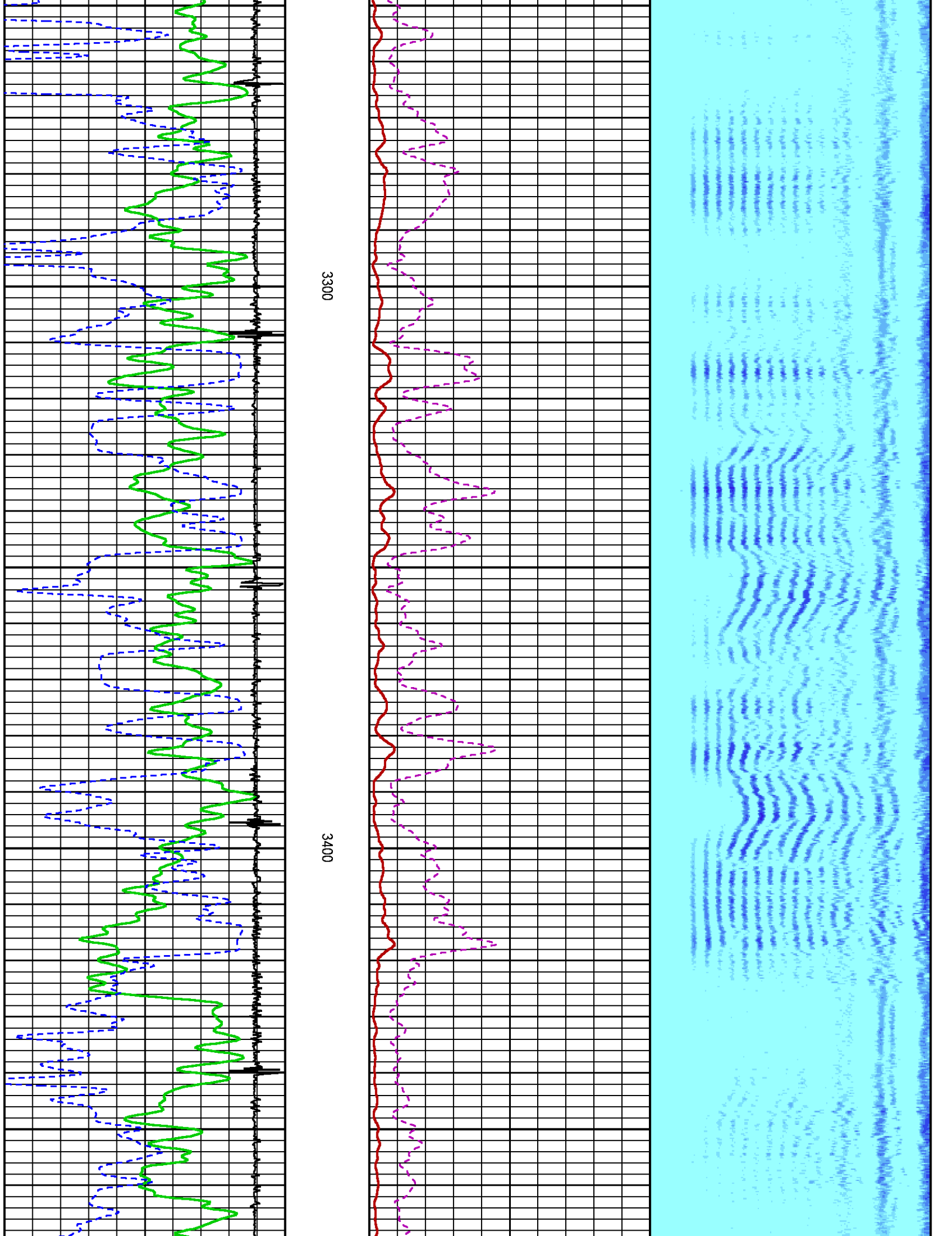
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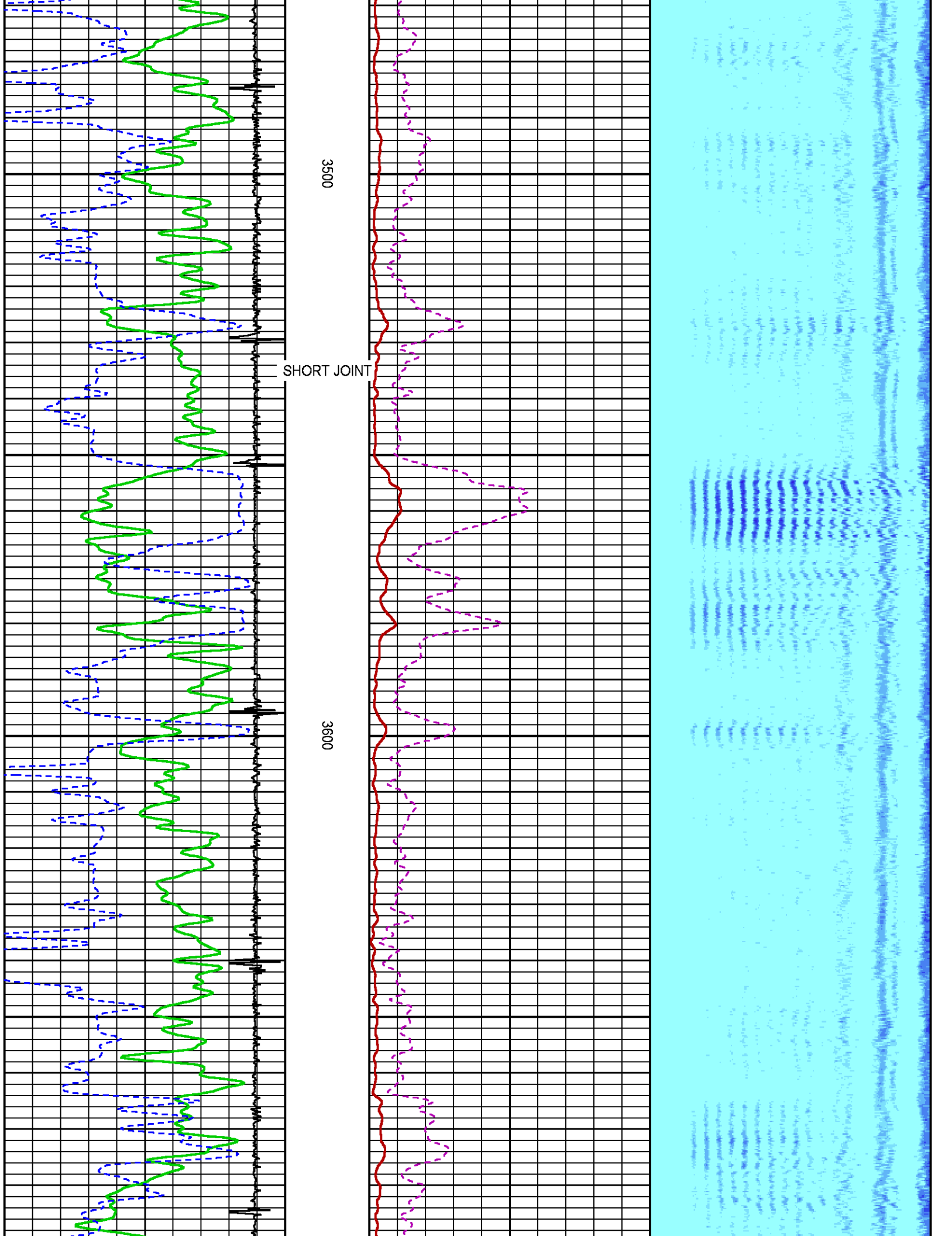


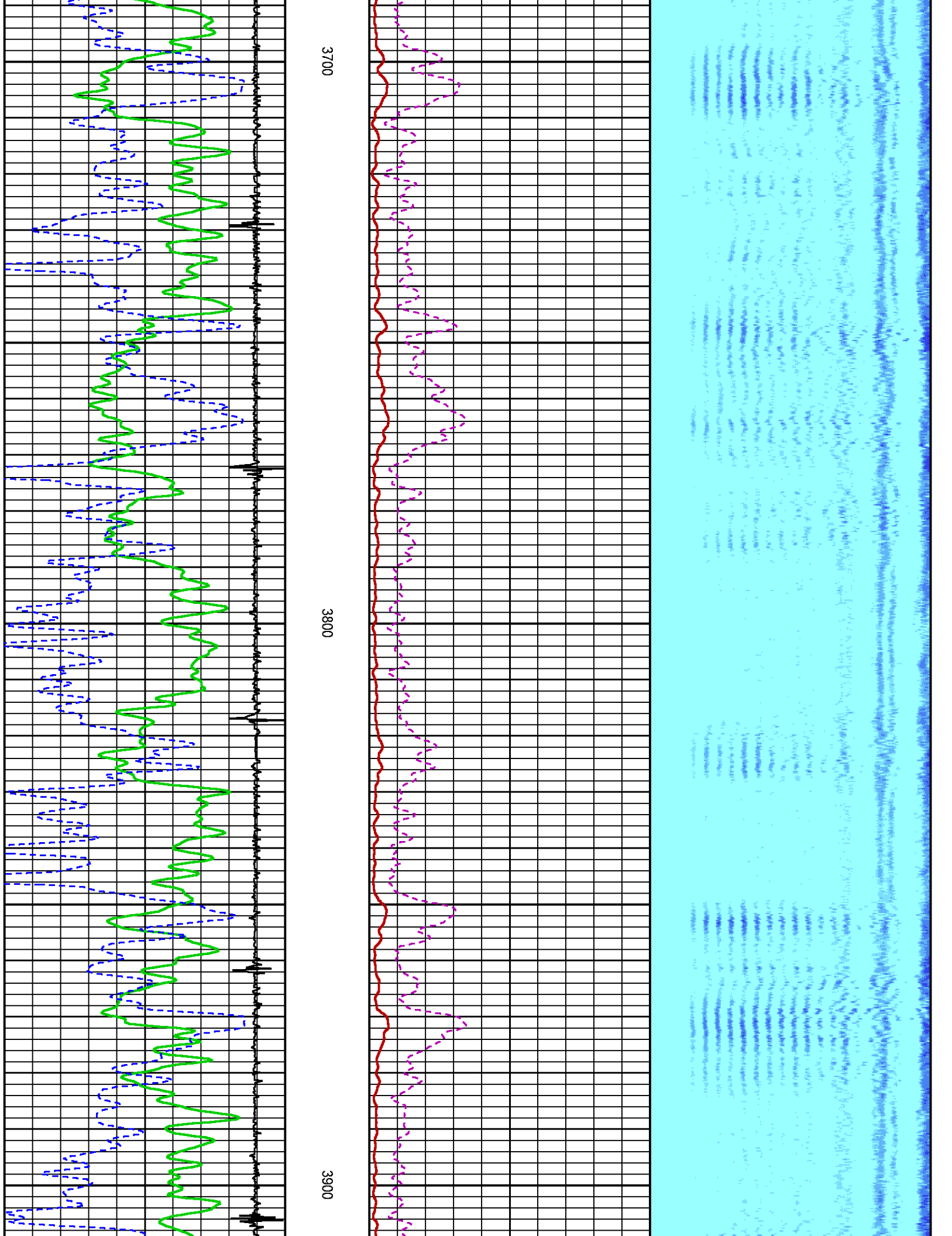


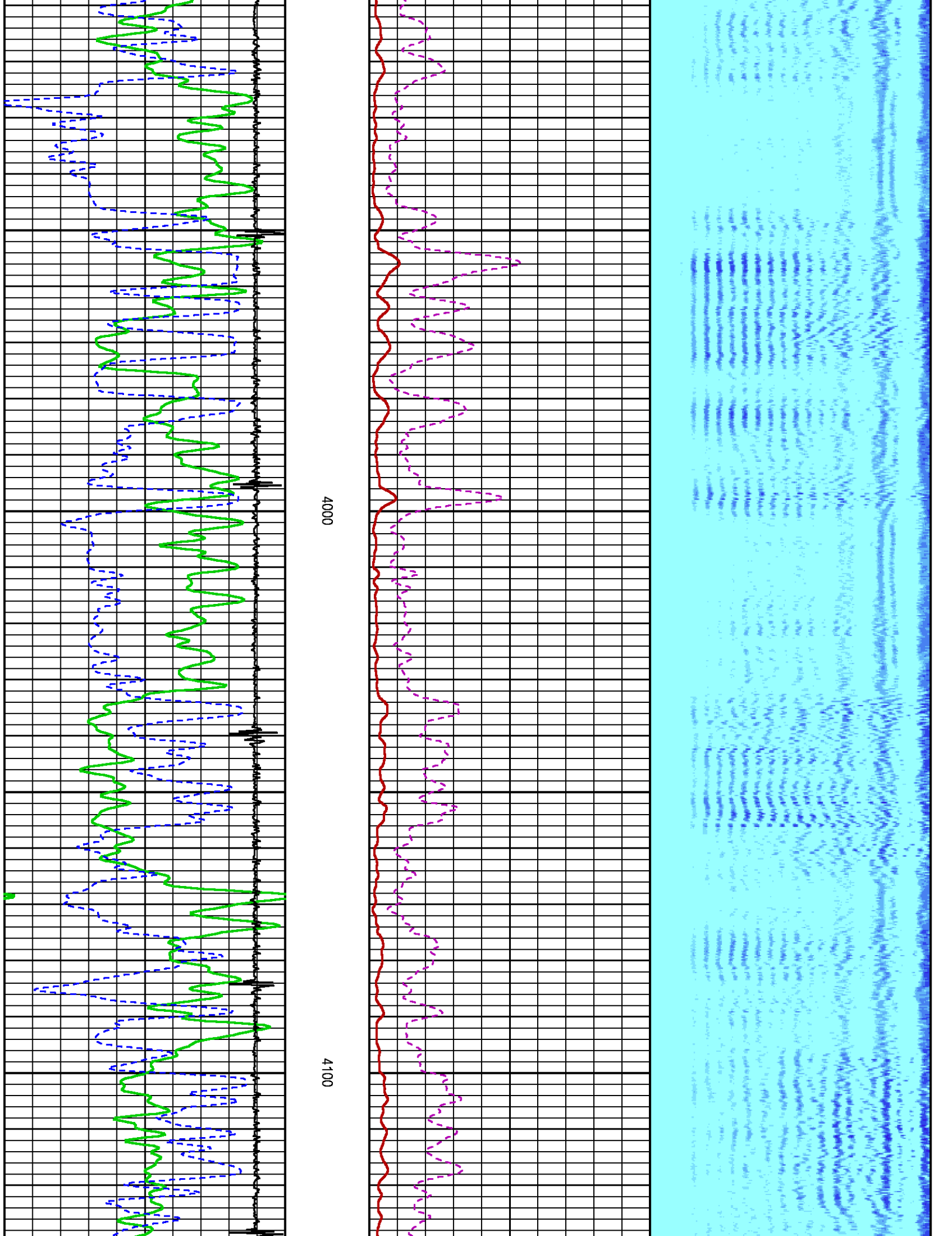


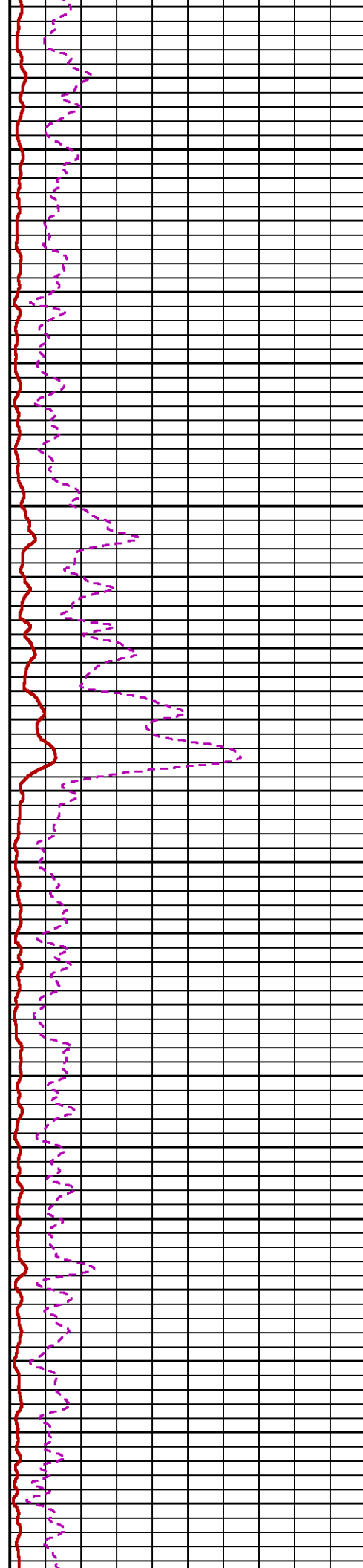
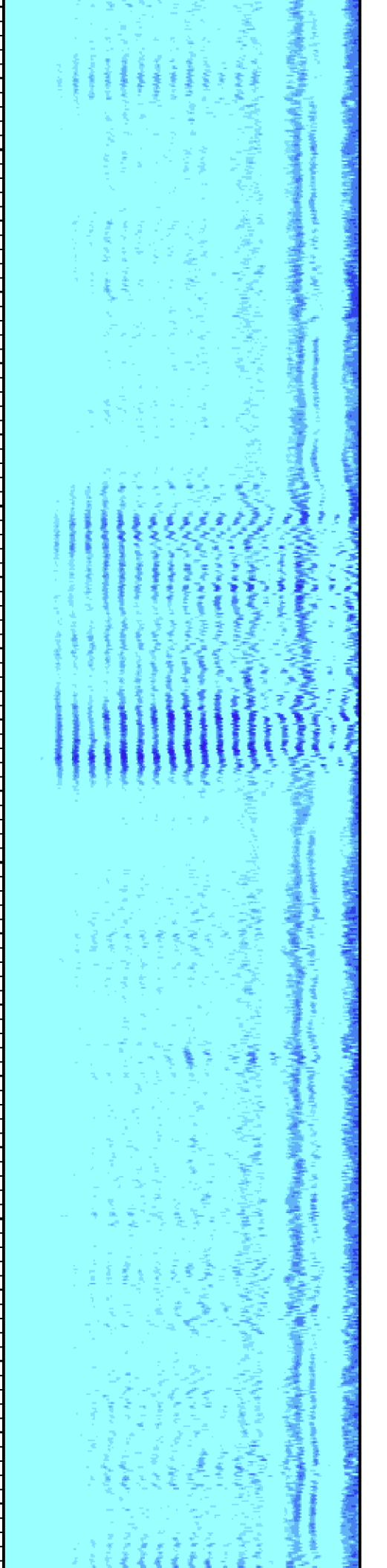






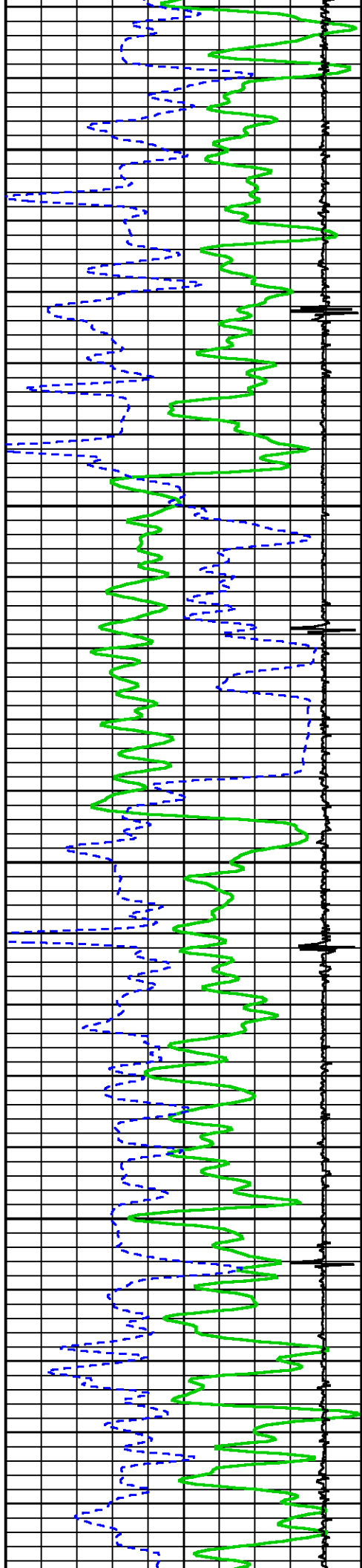


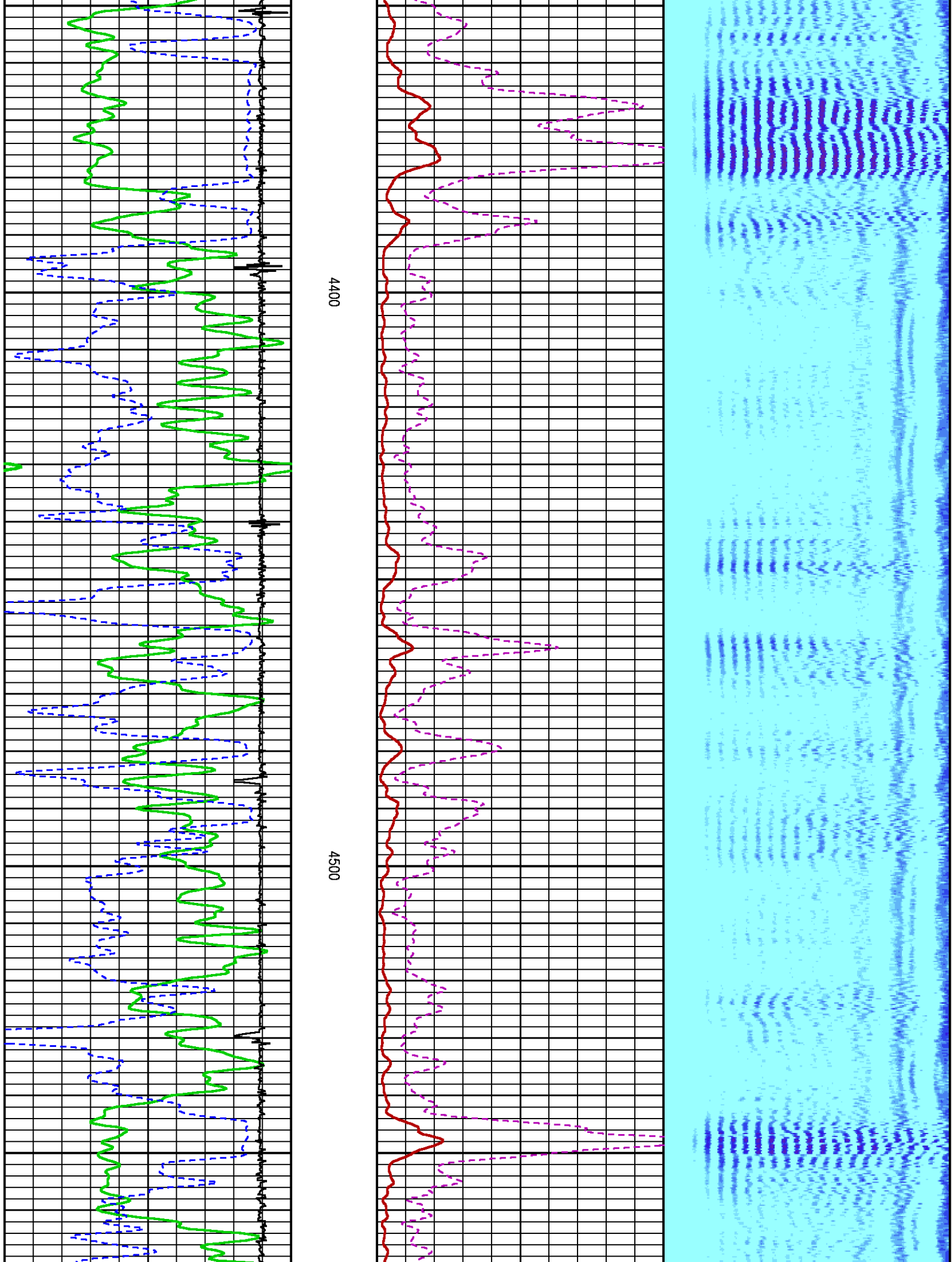




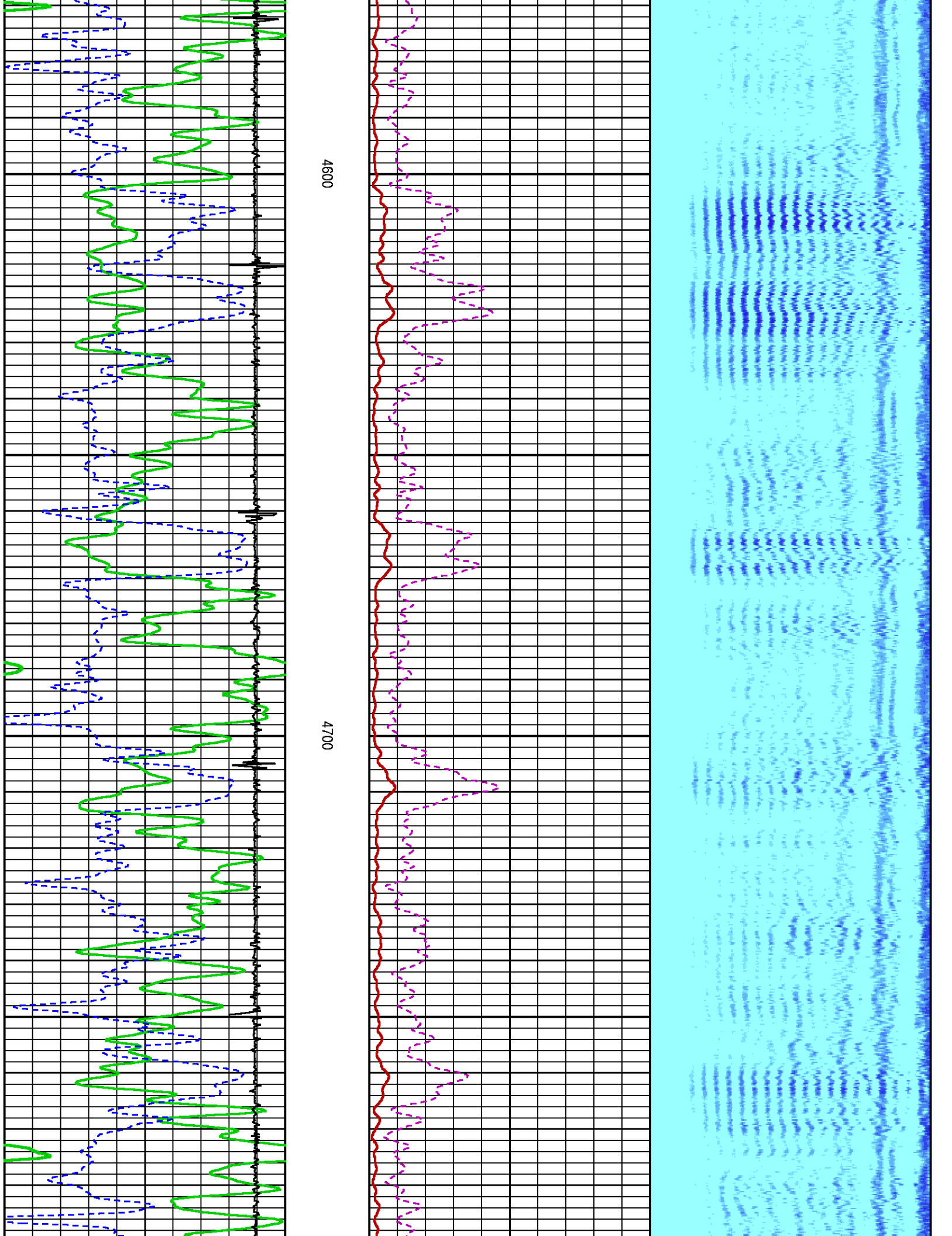
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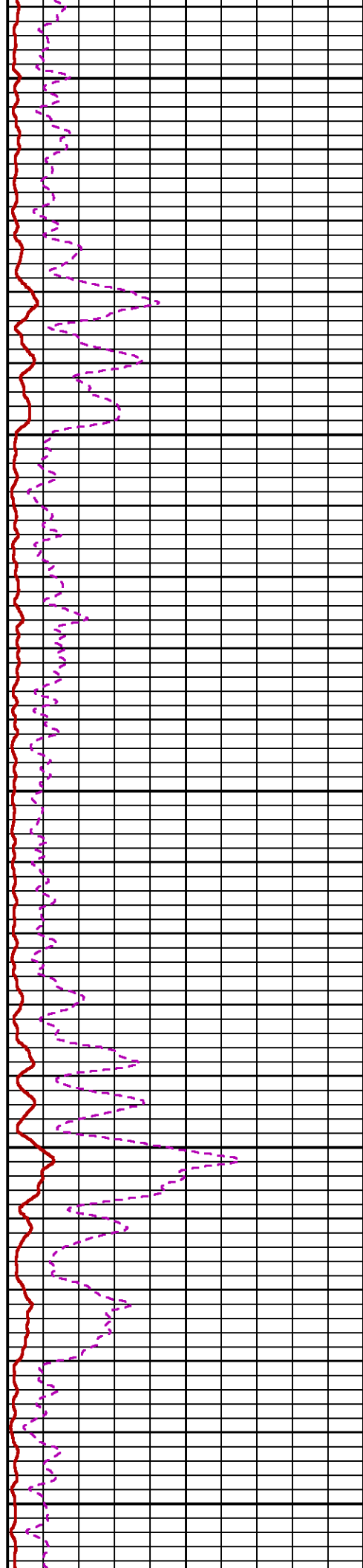
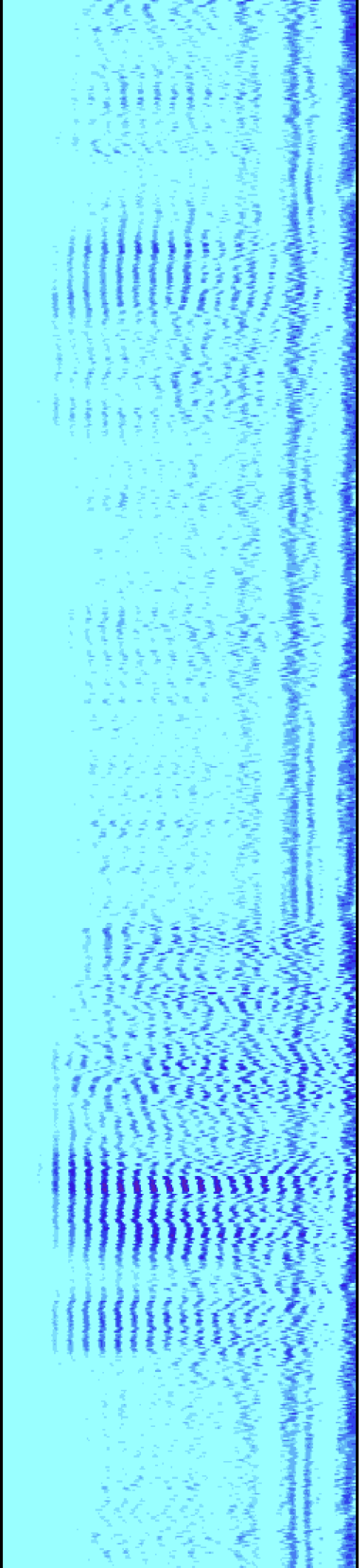
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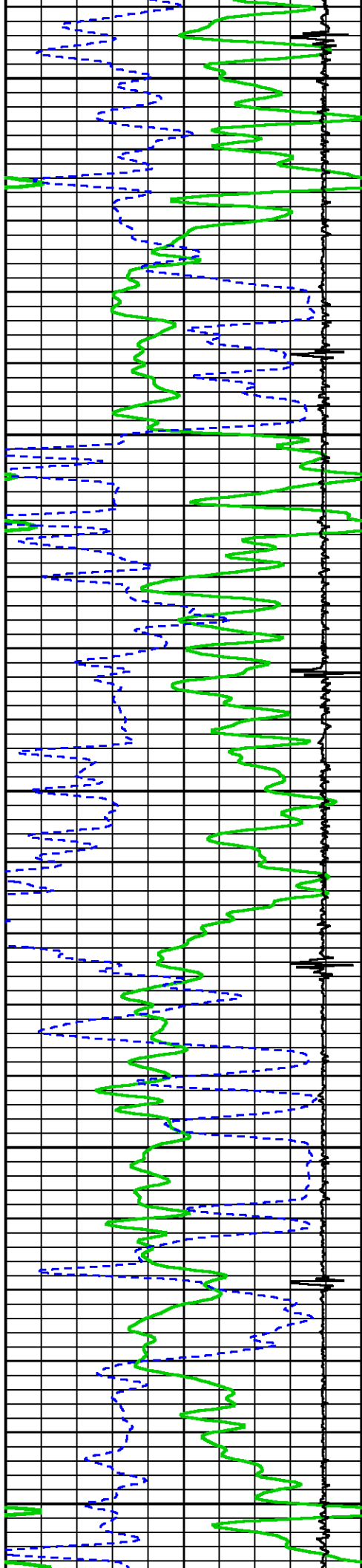


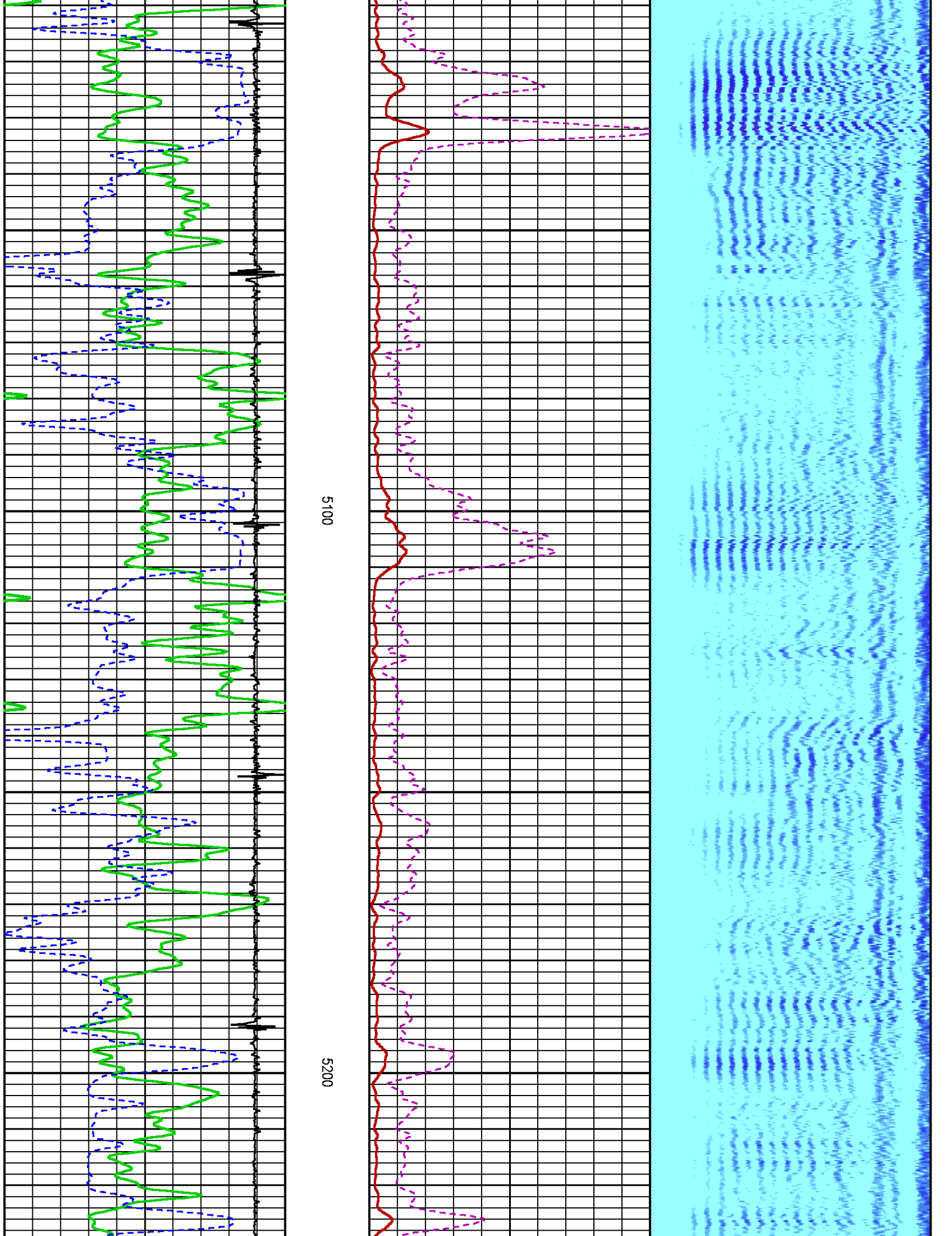


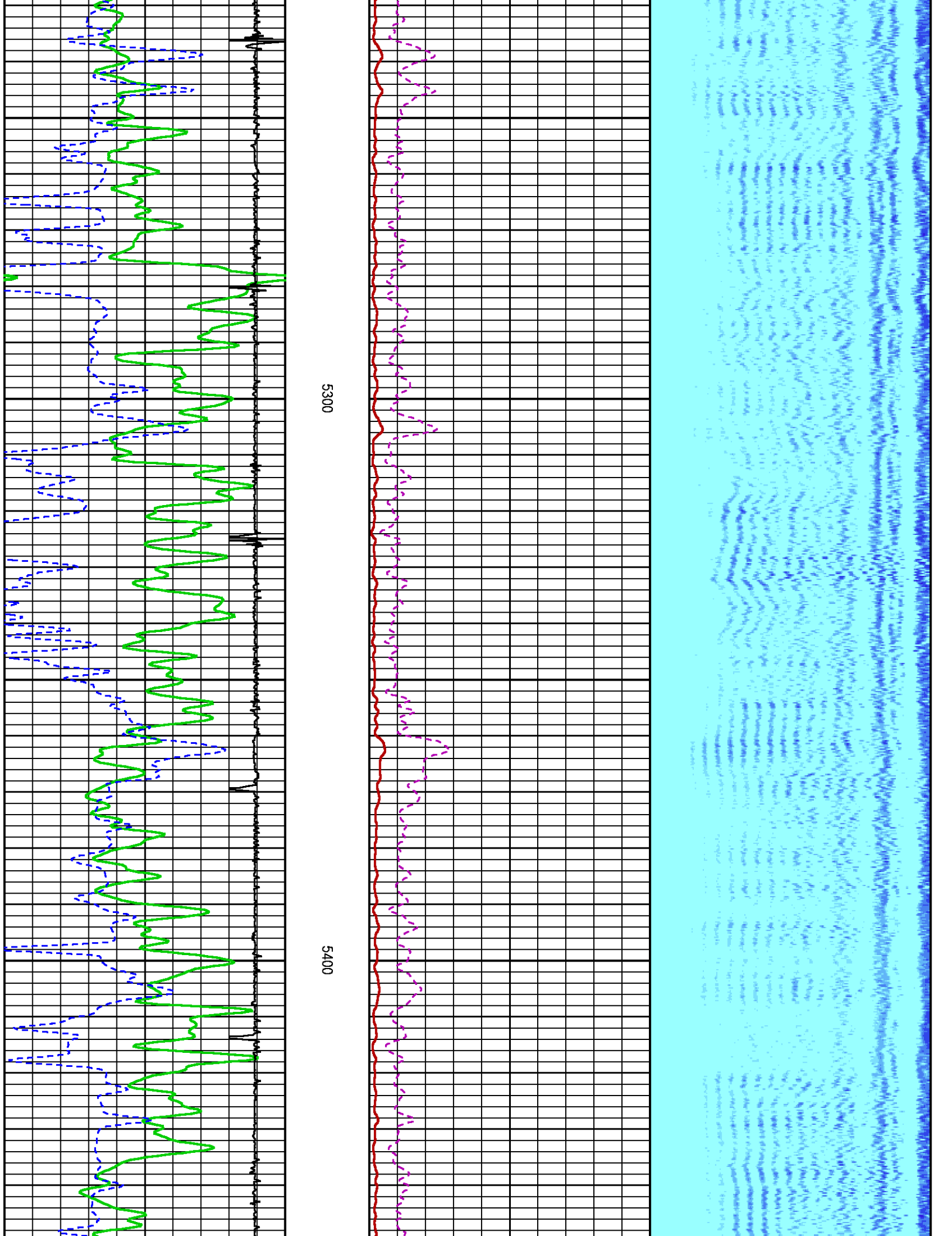
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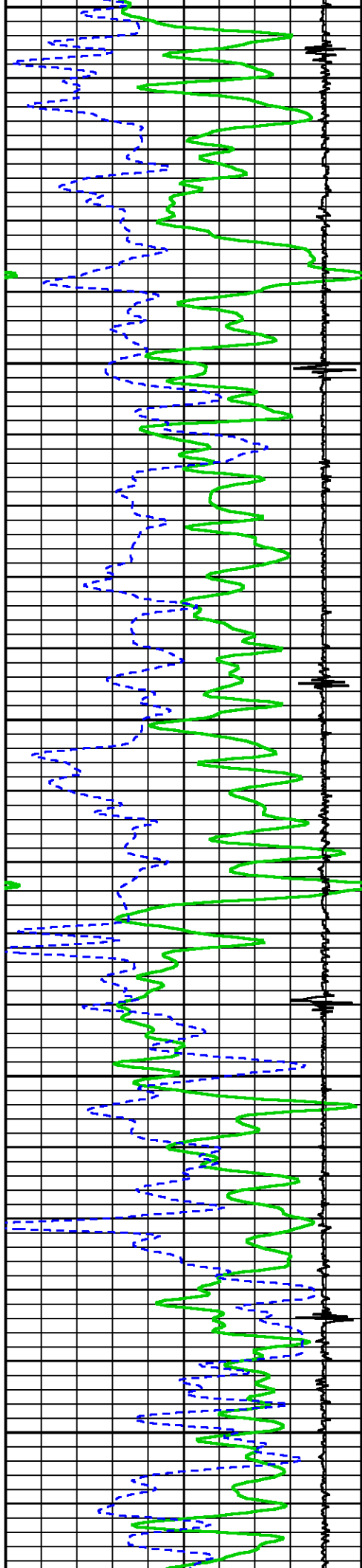
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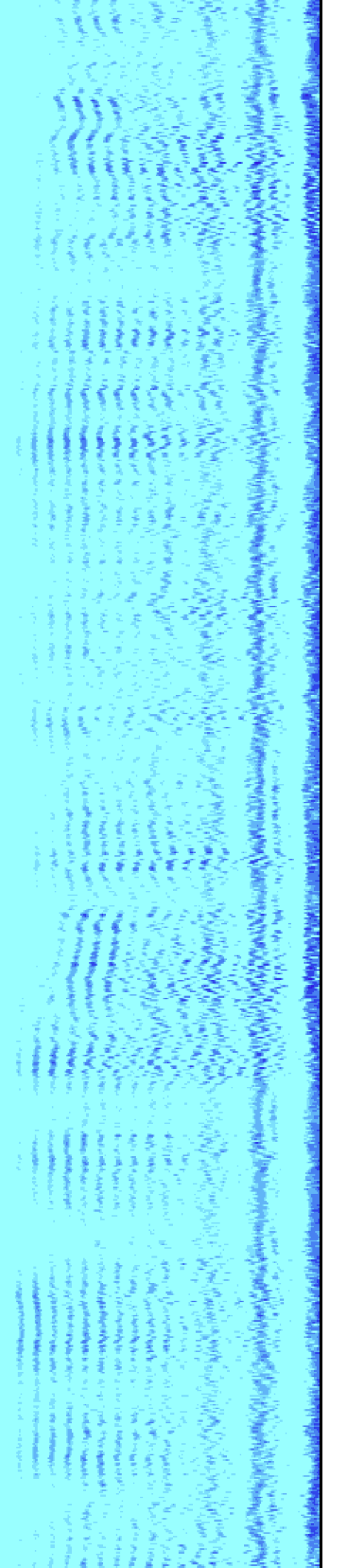
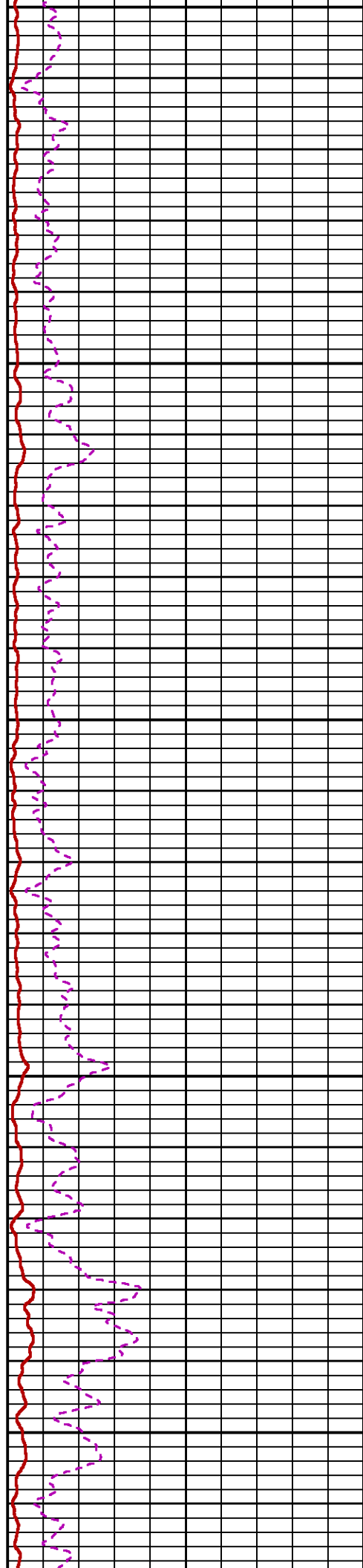


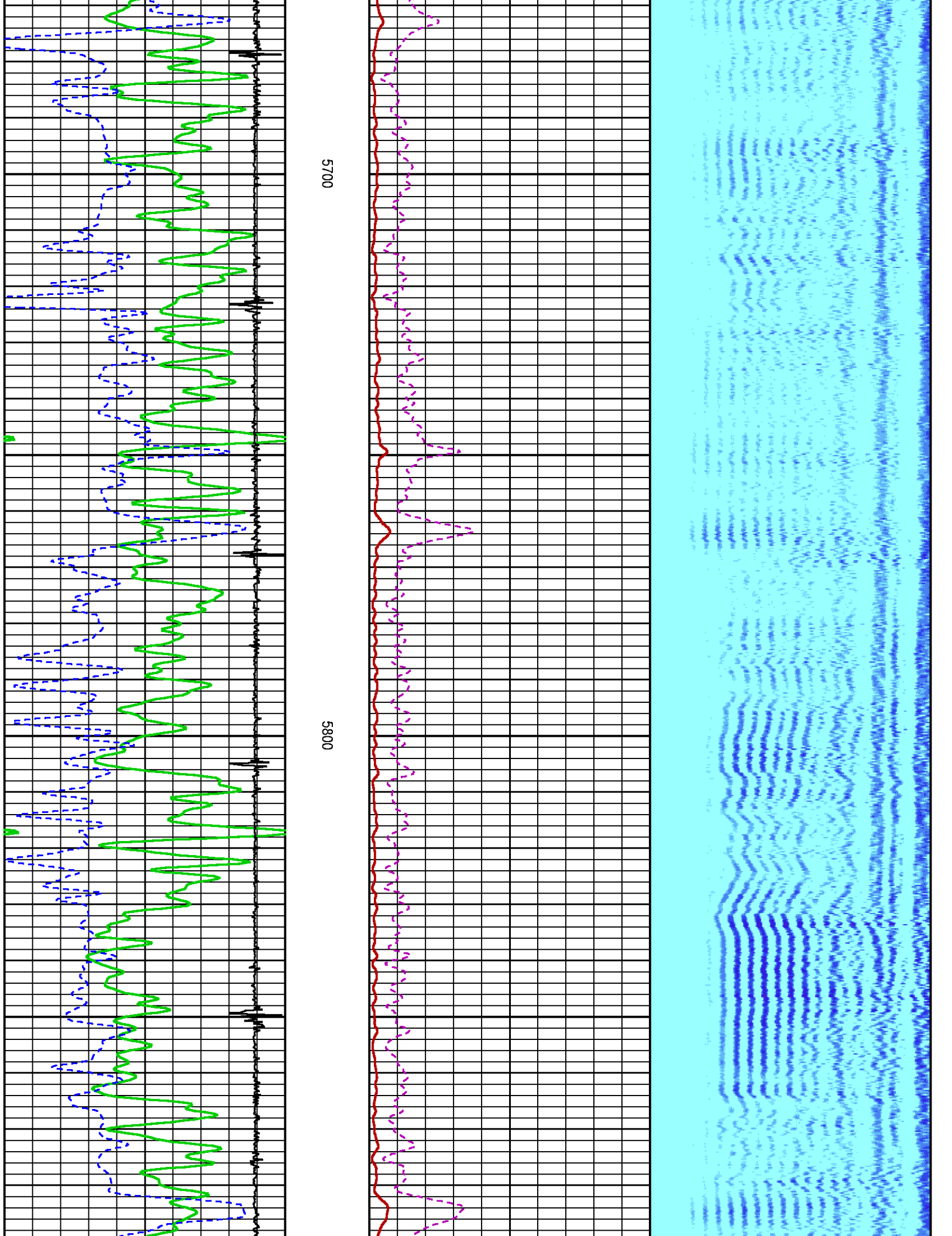


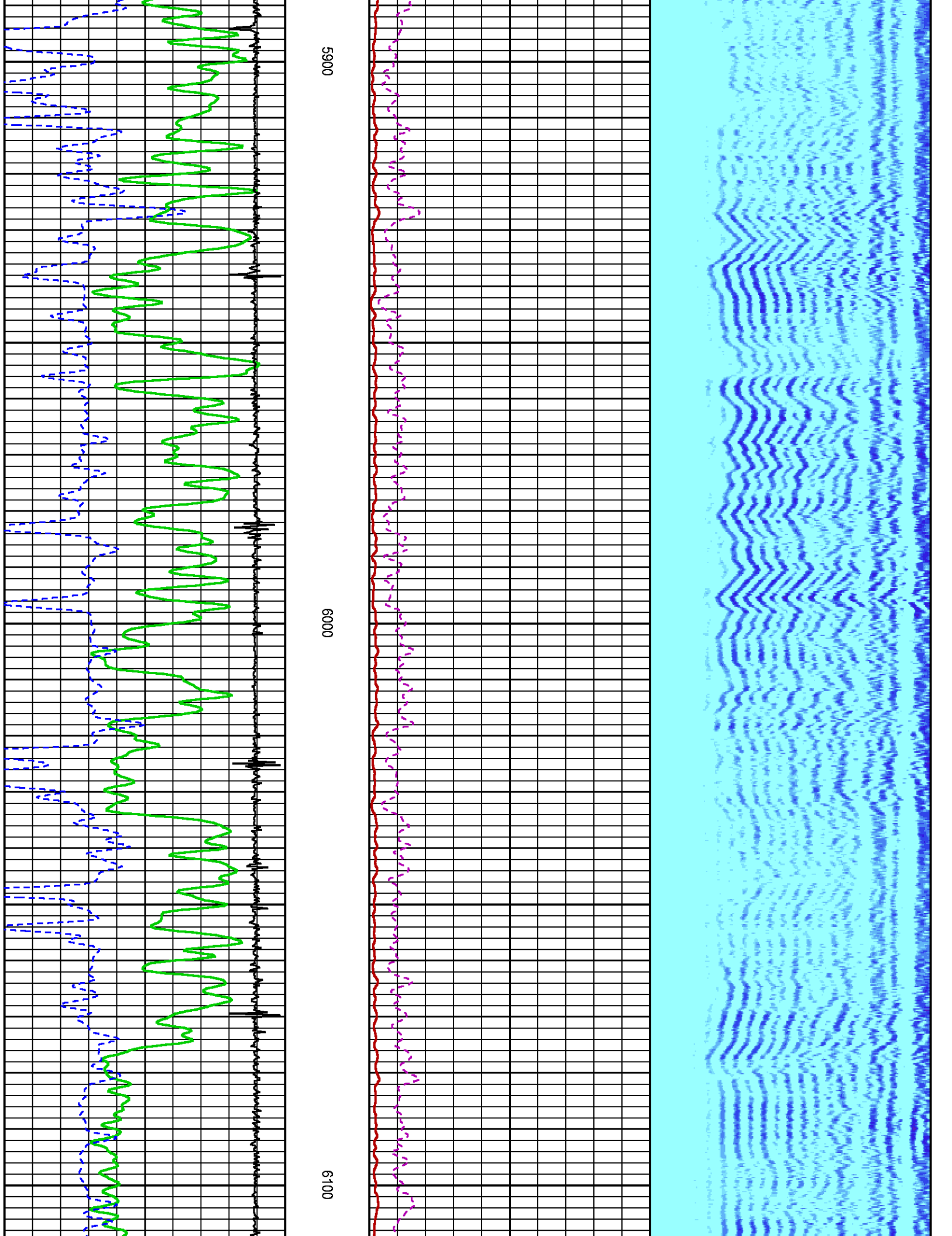


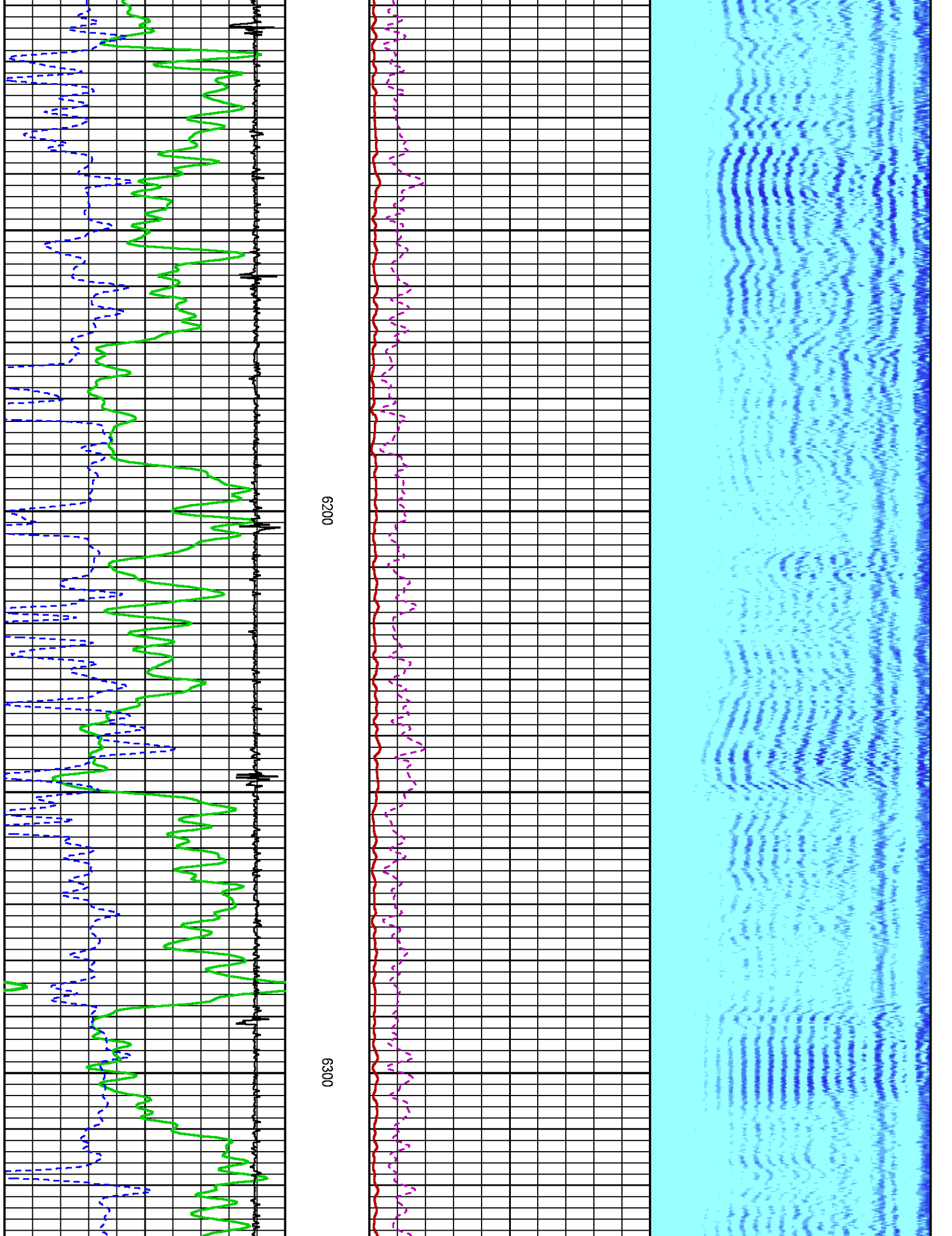
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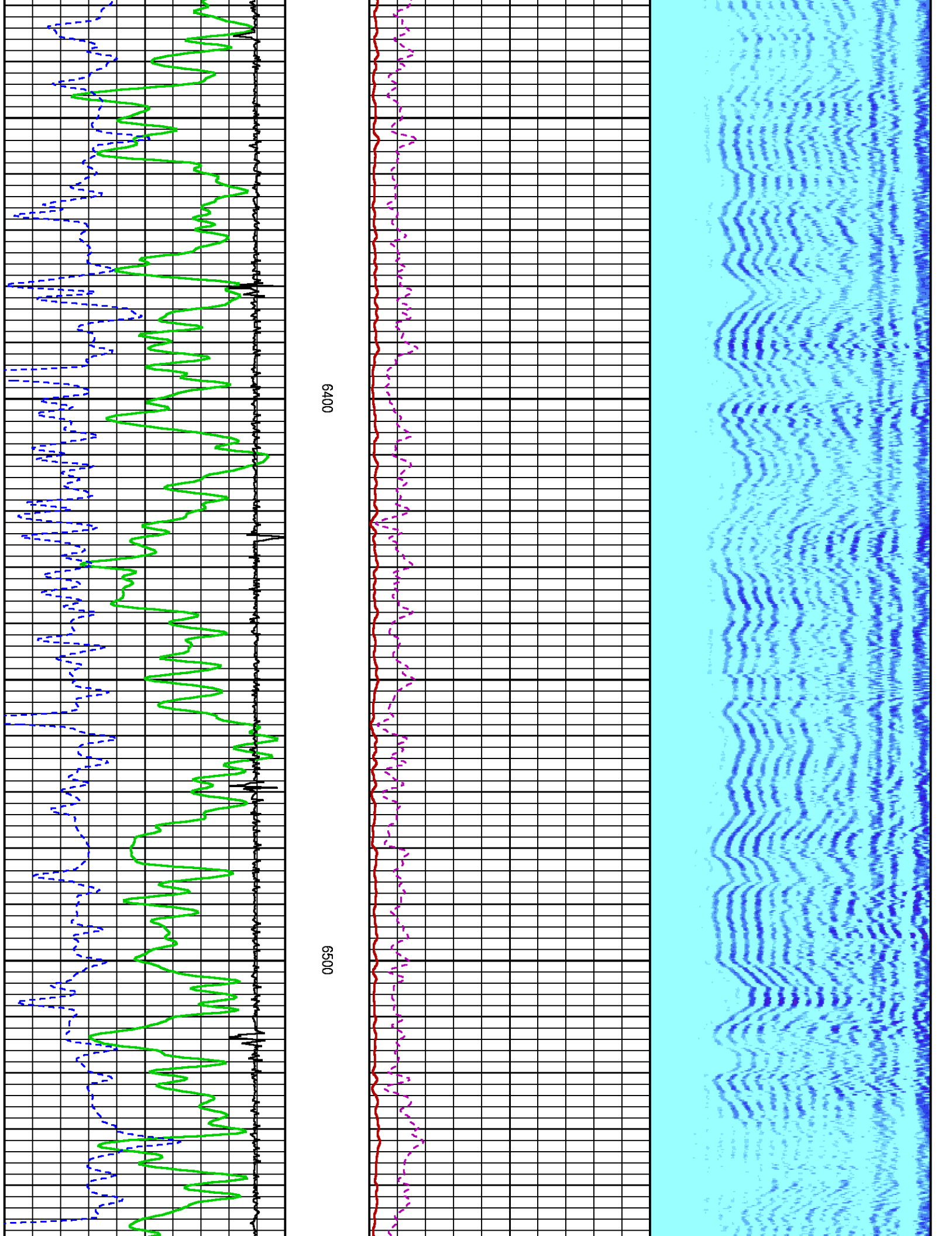


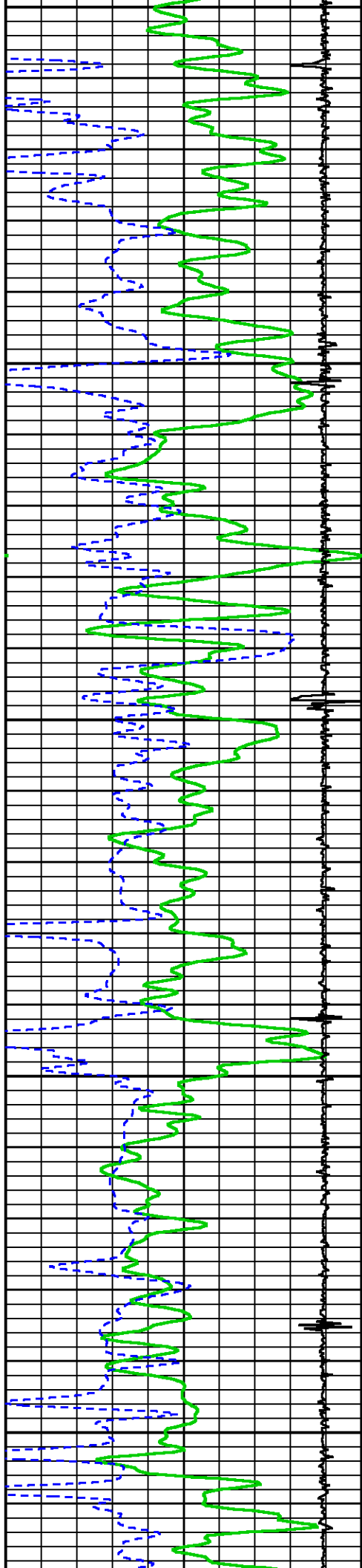






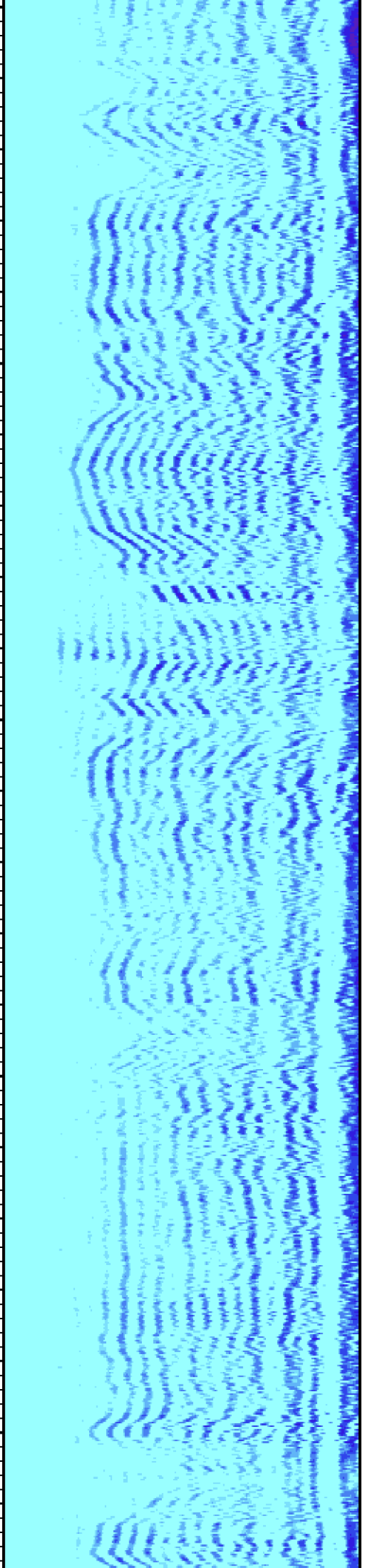
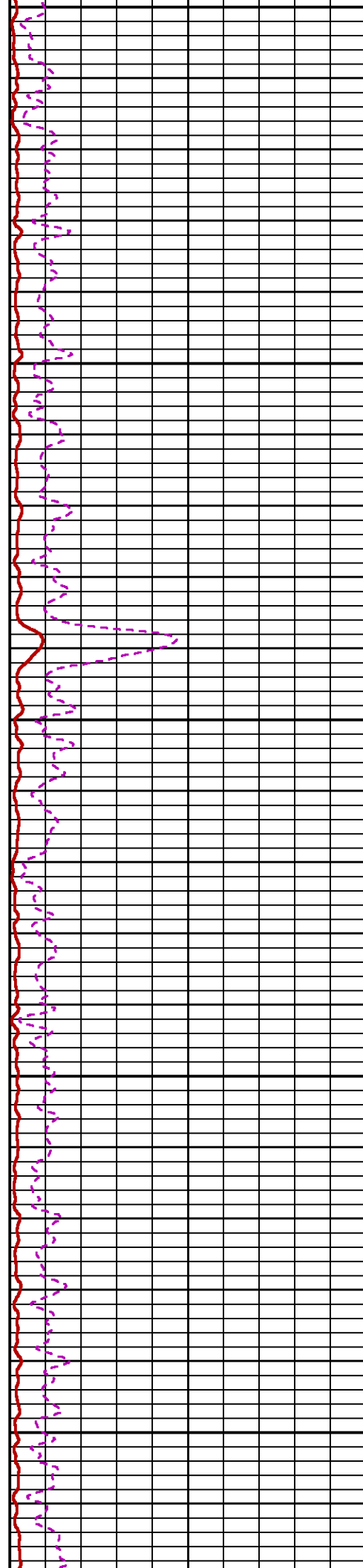


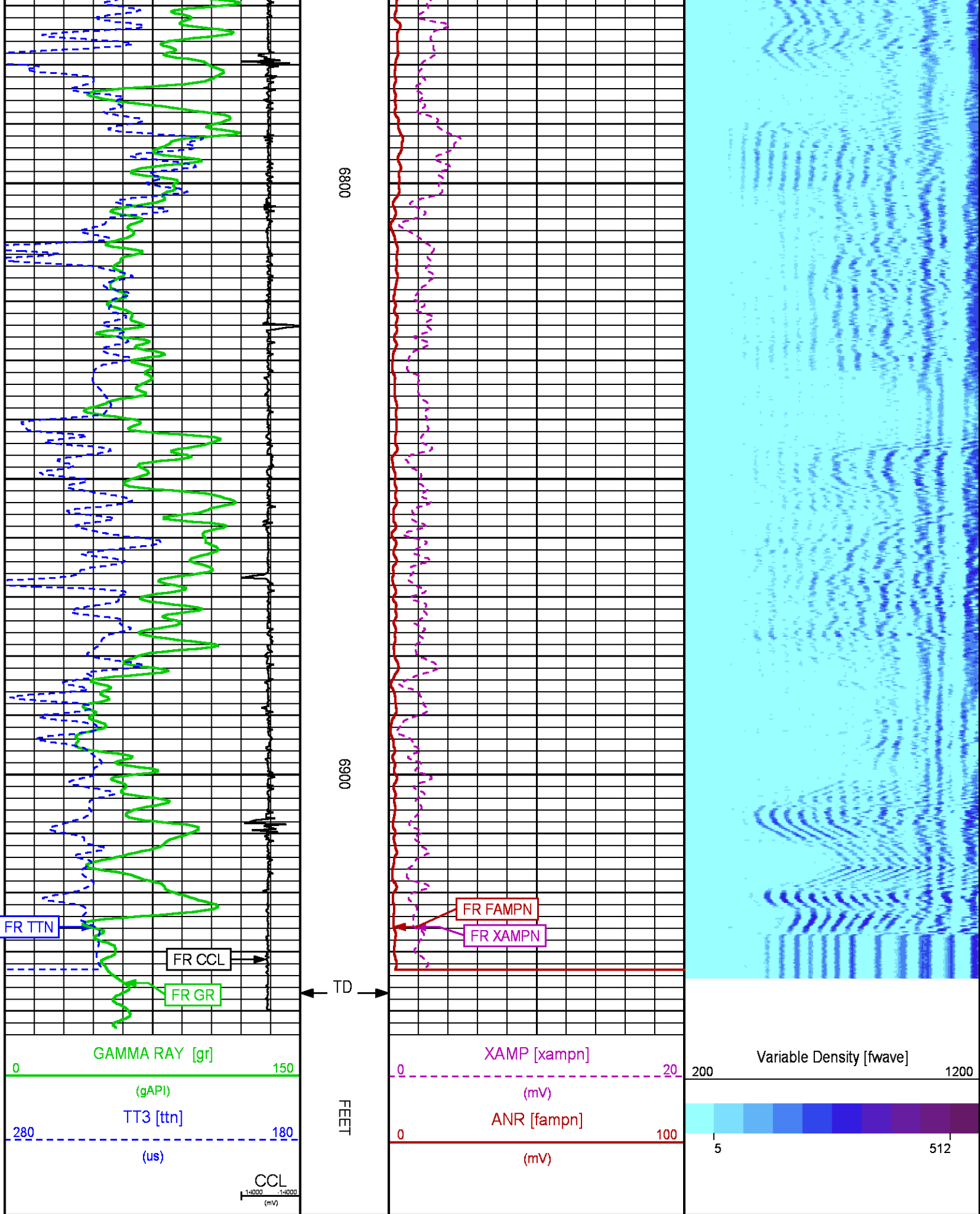




6600

6700





# REPEAT PRESENTATION 0 PSI

ECLIPS 6.2i ECLIPS General Release Rel 6.2i Wed Jun 12 12:21:40 CDT 2013  
Updates: 1,36 Patches: 9

Plotted: Thu Jul 28 15:33:25 2016

## PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/CH108536/n012g01.prm  
LOGGING MODE: DEPTH DIRECTION: UP  
TOP DEPTH: 6700.750 ft BOTTOM DEPTH: 6928.488 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		TOP	BOTTOM

### ANALOG RAL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
AMPLITUDE WINDOW (NEAR)	AMP WINDOW START (fgpn*)	187	us	TOP	BOTTOM
	AMP WINDOW LENGTH	25	us	"	"
TRAVEL TIME WINDOW (NEAR)	TT WINDOW START (ttn*)	174	us	"	"
	TT WINDOW LENGTH	444	us	"	"
	FIRST BRK THRESHOLD (ttn*)	4	mV	"	"
RAL CASING PARAMETERS	PPT NEAR	200.391	us	"	"
RAL TOOL DELAY	TOOL DELAY (strn*)	-67	us	"	"
BASELINE NOISE (NEAR)	NOISE WINDOW START	125	us	"	"
	NOISE WINDOW LENGTH	25	us	"	"

## CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	Jul 28 15:09:37 2016	CASING COLLAR LOCATOR
F1:FAMPN	Jul 28 15:09:37 2016	FIXED GATE AMPLITUDE NEAR RECEIVER
F1:FWAVE	Jul 28 15:09:37 2016	FAR WAVE FORM
F1:GR	Jul 28 15:09:37 2016	GAMMA RAY
F1:TTN	Jul 28 15:09:37 2016	TRAVELTIME FROM NEAR TRANSMITTER-RECEIVER
F1:XAMPN	Jul 28 15:09:37 2016	FIXED GATE AMPLITUDE NEAR RECEIVER TIMES FIVE

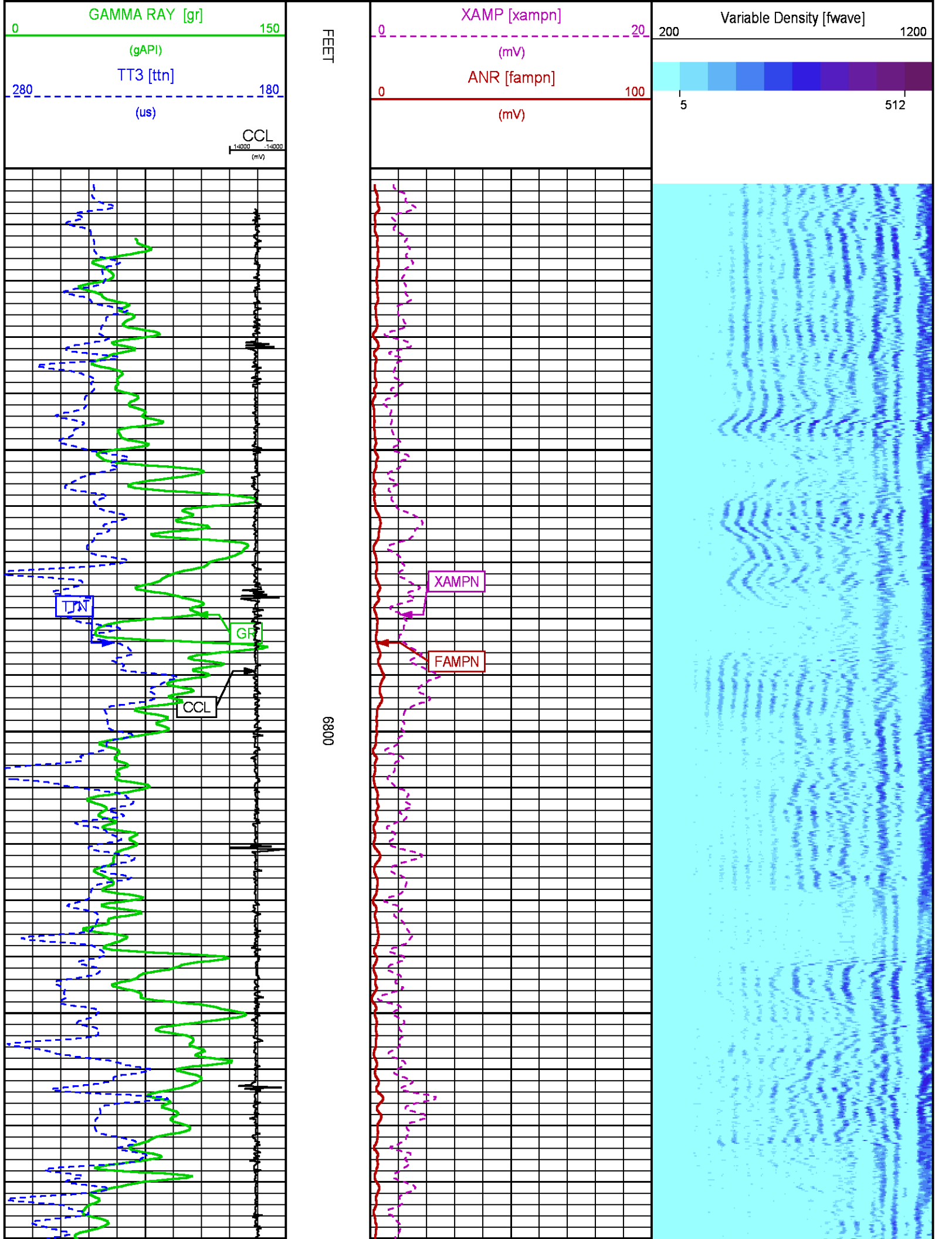
## CURVE MEASURE POINT OFFSET

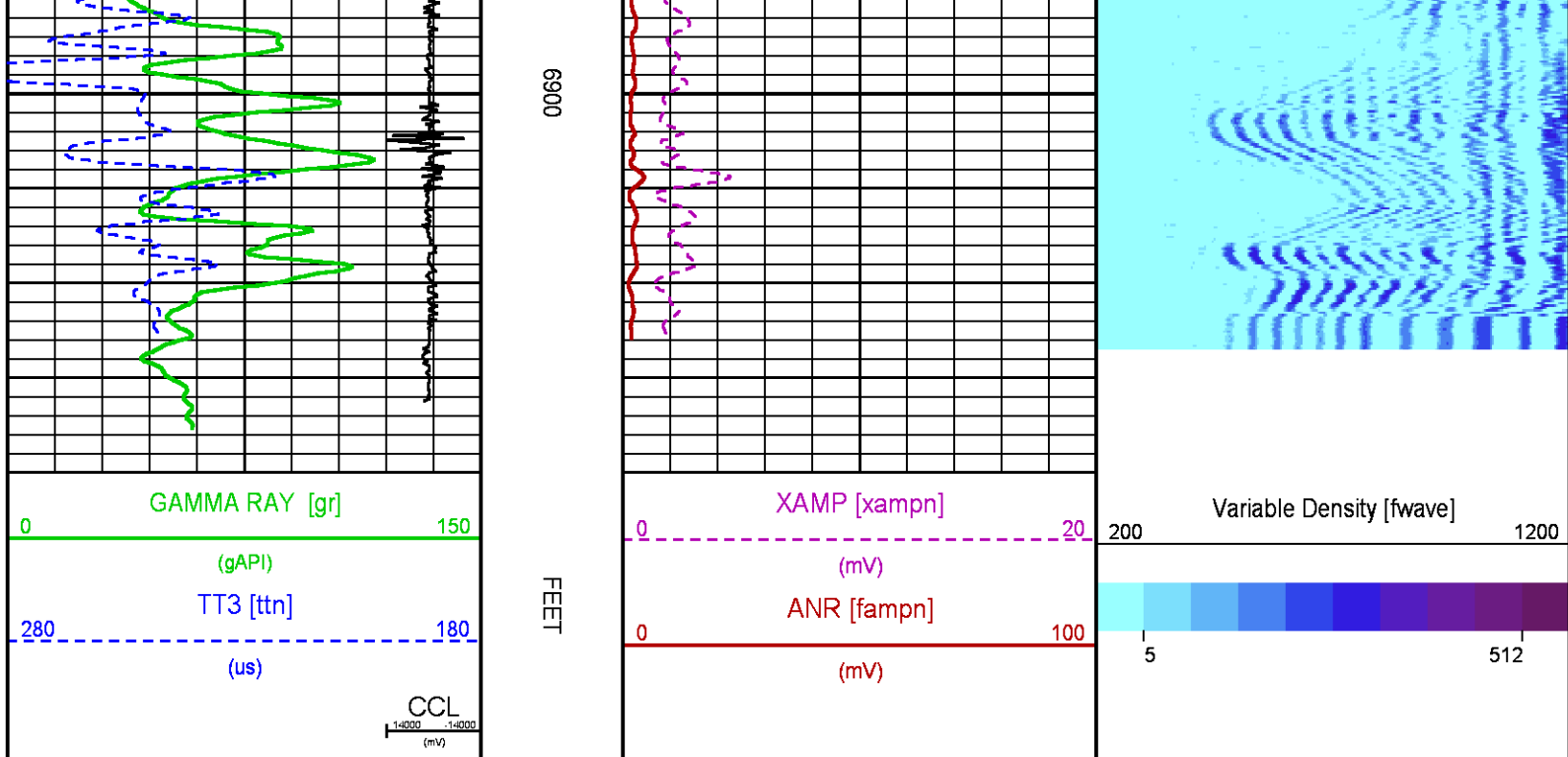
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	5.75	GR	1.75	XAMPN	11.25		
FAMPN	11.25	TTN	11.25				

Presentation : cas6685:/dat1a/CH108536/TERRA\_CBL\_RPT.fvpdf [5"/100' Scale]  
Plot Interval : 6689.25 - 6925.75 Feet

Data File 1 : F1 : cas6685:/dat1a/CH108536/n012g01.xtf  
Created On : Jul 28 15:09:37 2016  
Company : TERRA ENERGY PARTNERS LLC  
Well : FEDERAL GM 422-9  
Field : GRAND VALLEY  
File Interval : 6689.25 - 6925.75 Feet  
OCT : n012g







## SECONDARY PRESENTATION 0 PSI

ECLIPS 6.2i ECLIPS General Release Rel 6.2i Wed Jun 12 12:21:40 CDT 2013

Updates: 1,36 Patches: 9

Plotted: Sat Jul 30 07:34:30 2016

### PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/CH108536/n012g02.prm  
 LOGGING MODE: DEPTH DIRECTION: UP  
 TOP DEPTH: 0.500 ft BOTTOM DEPTH: 6929.250 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)		"	"
TENSION	FILTER ()	medium (1)		"	"

#### RAL CCL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CCL FLOOR	CCL FLOOR	0		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 (fgp7 )	187	us	"	"
	AMP WINDOW START (fgp8*)	187	us	"	"
	AMP WINDOW LENGTH	25	us	"	"
	TT WINDOW START (ttn*)	174	us	"	"
TRAVEL TIME WINDOW (NEAR)	TT WINDOW LENGTH	444	us	"	"
	FIRST BRK THRESHOLD (ttn*)	4	mV	"	"
	PPT NEAR	200.391	us	"	"
RAL CASING PARAMETERS	TOOL DELAY (str1*)	-67	us	"	"
RAL TOOL DELAY	TOOL DELAY (str2*)	-67	us	"	"
	TOOL DELAY (str3*)	-67	us	"	"
	TOOL DELAY (str4*)	-67	us	"	"
	TOOL DELAY (str5*)	-67	us	"	"
	TOOL DELAY (str6*)	-67	us	"	"
	TOOL DELAY (str7*)	-67	us	"	"
	TOOL DELAY (str8*)	-67	us	"	"
	TOOL DELAY (strn*)	-67	us	"	"
BASELINE NOISE (NEAR)	NOISE WINDOW START	125	us	"	"
	NOISE WINDOW LENGTH	25	us	"	"

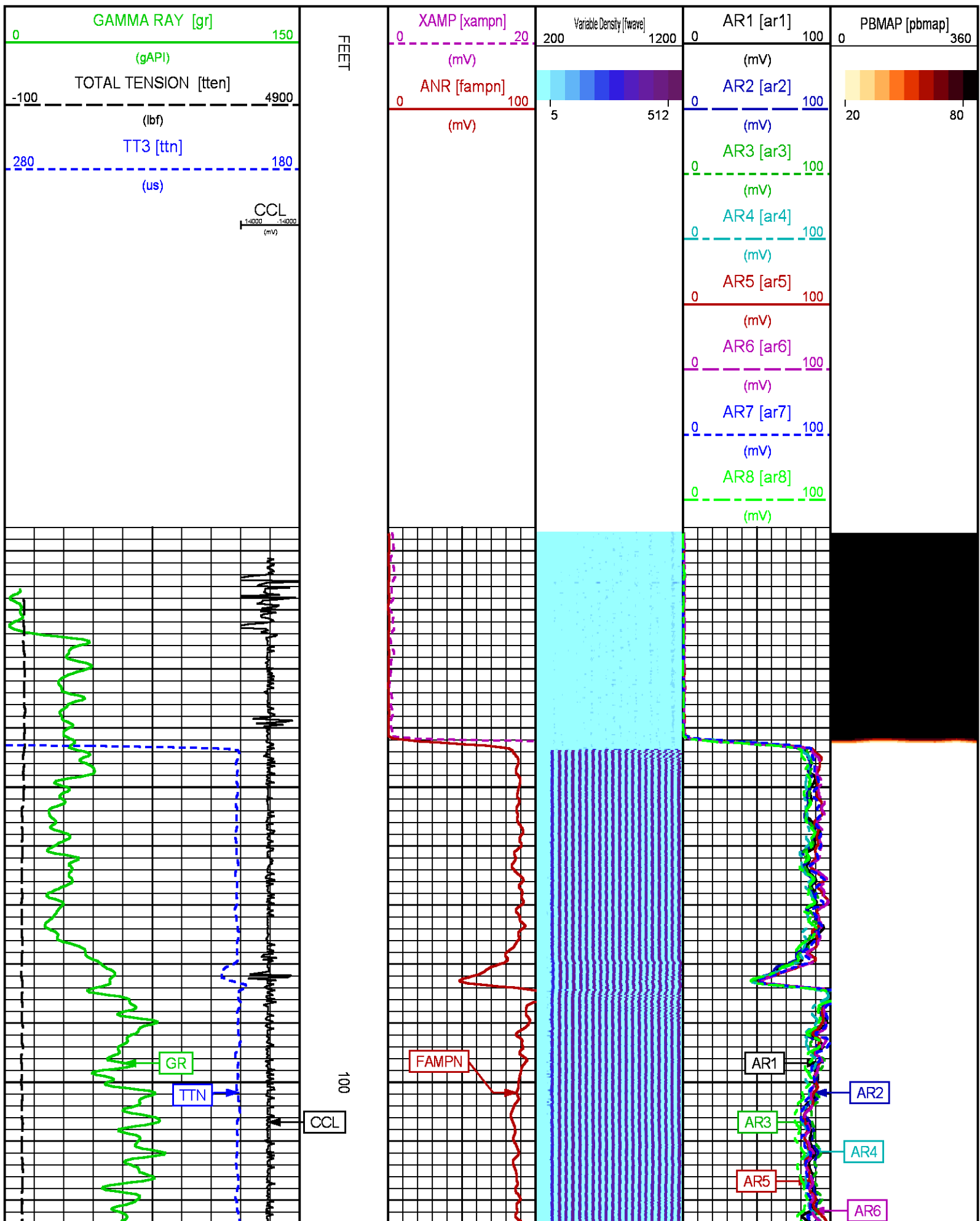
PERCENT BOND CEMENT MAP					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
RAL FREE PIPE AMPLITUDE	FREE AMP REC 1	81	mV	TOP	BOTTOM
	FREE AMP REC 2	81	mV	"	"
	FREE AMP REC 3	81	mV	"	"
	FREE AMP REC 4	81	mV	"	"
	FREE AMP REC 5	81	mV	"	"
	FREE AMP REC 6	81	mV	"	"
	FREE AMP REC 7	81	mV	"	"
	FREE AMP REC 8	81	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	Jul 28 15:14:35 2016	FIXED GATE AMPLITUDE T-R1
F1:AR2	Jul 28 15:14:35 2016	FIXED GATE AMPLITUDE T-R2
F1:AR3	Jul 28 15:14:35 2016	FIXED GATE AMPLITUDE T-R3
F1:AR4	Jul 28 15:14:35 2016	FIXED GATE AMPLITUDE T-R4
F1:AR5	Jul 28 15:14:35 2016	FIXED GATE AMPLITUDE T-R5
F1:AR6	Jul 28 15:14:35 2016	FIXED GATE AMPLITUDE T-R6
F1:AR7	Jul 28 15:14:35 2016	FIXED GATE AMPLITUDE T-R7
F1:AR8	Jul 28 15:14:35 2016	FIXED GATE AMPLITUDE T-R8
F1:CCL	Jul 28 15:14:35 2016	CASING COLLAR LOCATOR
F1:FAMPN	Jul 28 15:14:35 2016	FIXED GATE AMPLITUDE NEAR RECEIVER
F1:FWAVE	Jul 28 15:14:35 2016	FAR WAVE FORM
F1:GR	Jul 28 15:14:35 2016	GAMMA RAY
F1:PBMAP	Jul 28 15:14:35 2016	PERCENT BOND CEMENT MAP
F1:TTEN	Jul 28 15:14:35 2016	TOTAL TENSION
F1:TTN	Jul 28 15:14:35 2016	TRAVELTIME FROM NEAR TRANSMITTER-RECEIVER
F1:XAMPN	Jul 28 15:14:35 2016	FIXED GATE AMPLITUDE NEAR RECEIVER TIMES FIVE

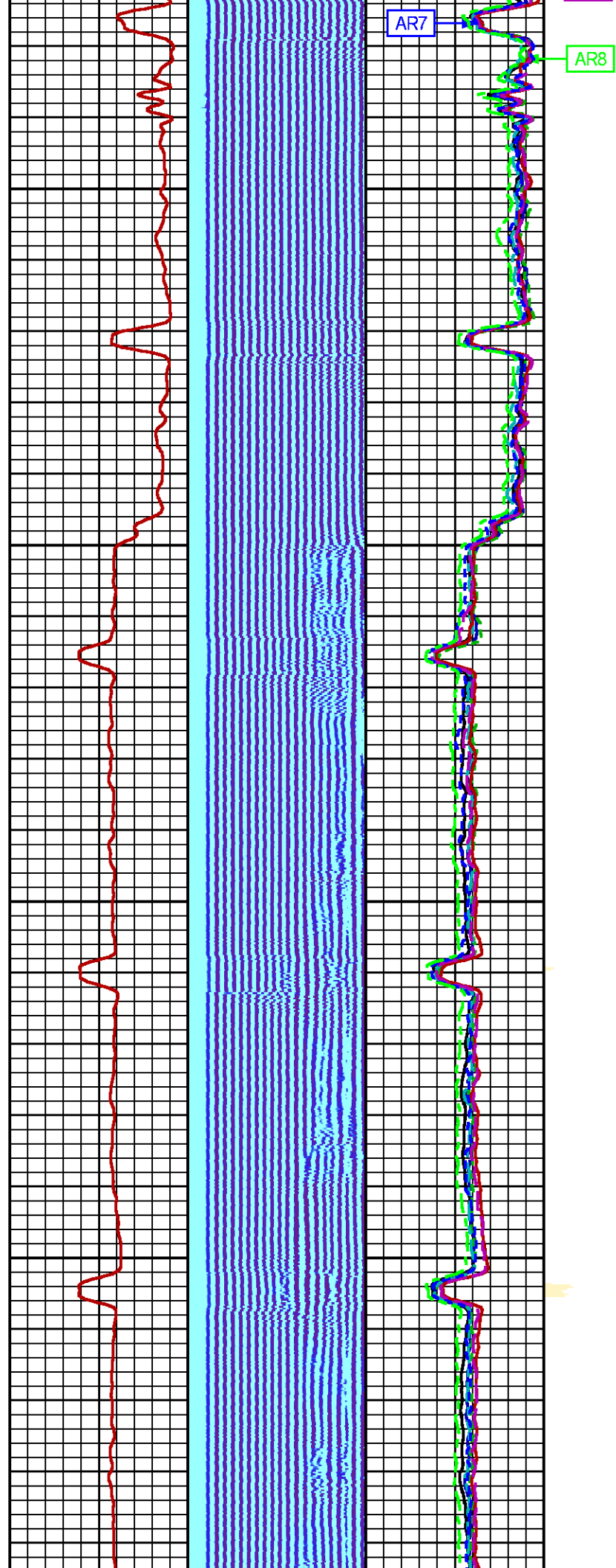
CURVE MEASURE POINT OFFSET							
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
AR1	11.25	AR5	11.25	CCL	5.75	TTN	11.25
AR2	11.25	AR6	11.25	FAMPN	11.25	XAMPN	11.25
AR3	11.25	AR7	11.25	GR	1.75		
AR4	11.25	AR8	11.25	TTEN	0.00		

Presentation	: cas6685:/dat1a/CH108536/TERRA_CBL_SECONDARY.fvpdf [5"/100' Scale]
Plot Interval	: 6.75 - 6944.5 Feet
Data File 1	: F1 : cas6685:/dat1a/CH108536/n012g02.xtf
Created On	: Jul 28 15:14:35 2016
Company	: TERRA ENERGY PARTNERS LLC

Well : FEDERAL GM 422-9  
Field : GRAND VALLEY  
File Interval : -10.75 - 6945.75 Feet  
OCT : n012g

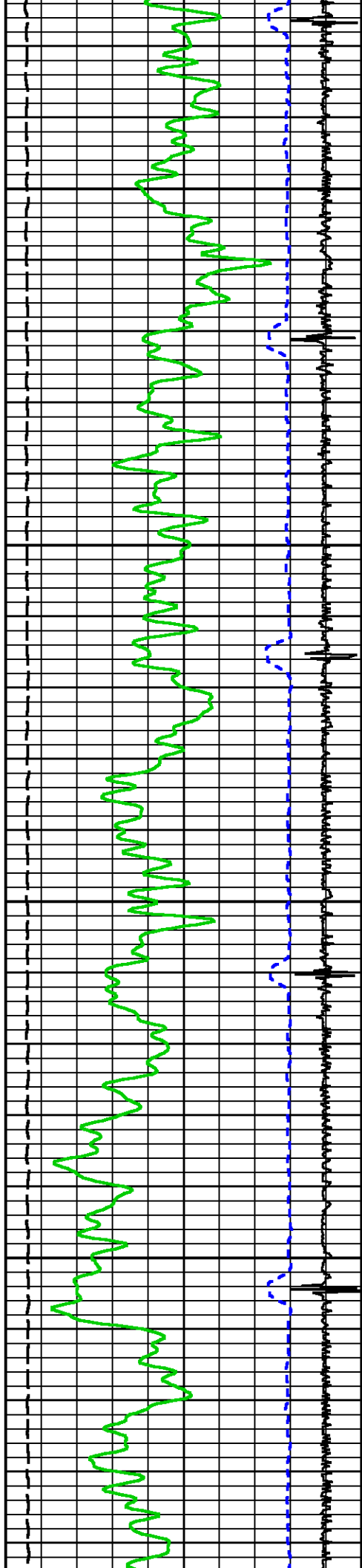


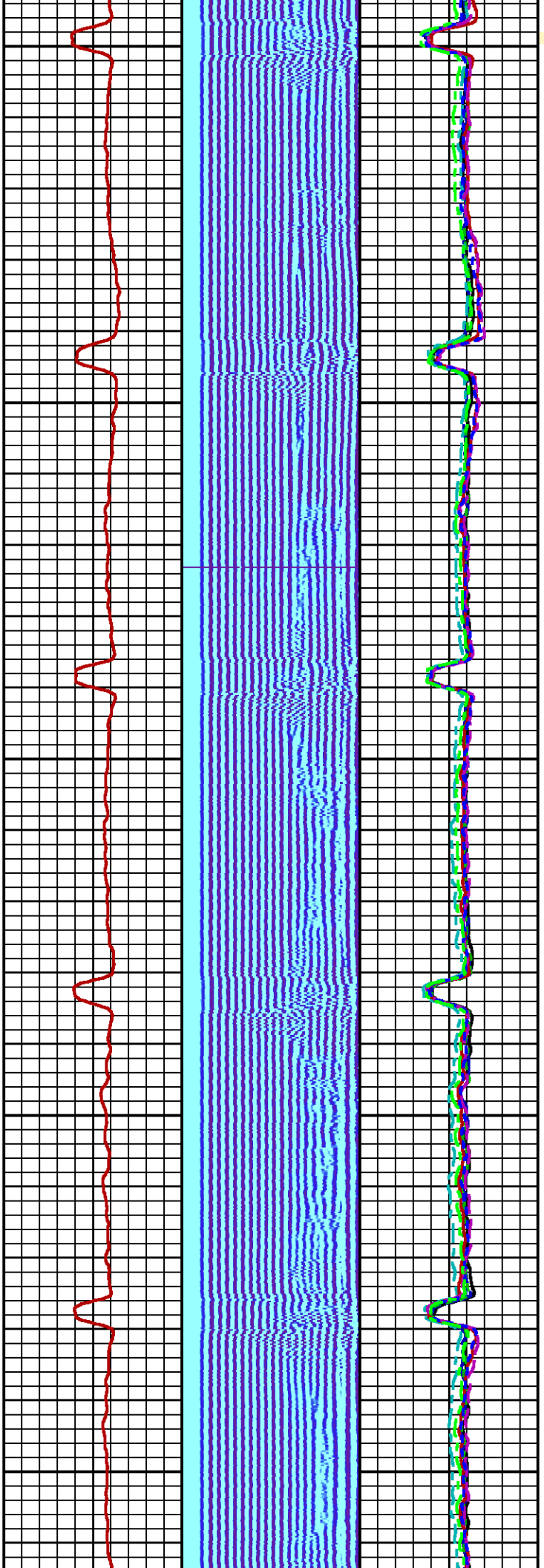




200

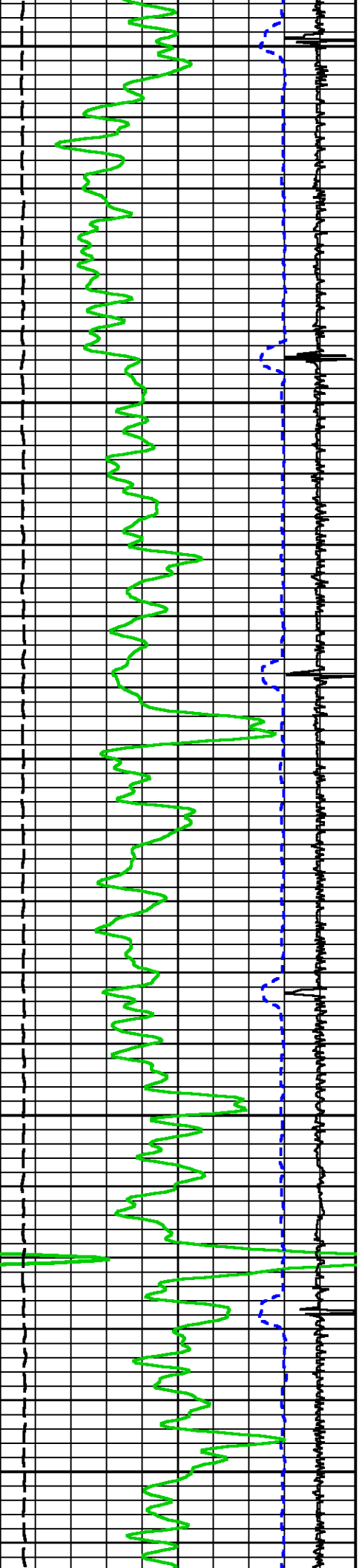
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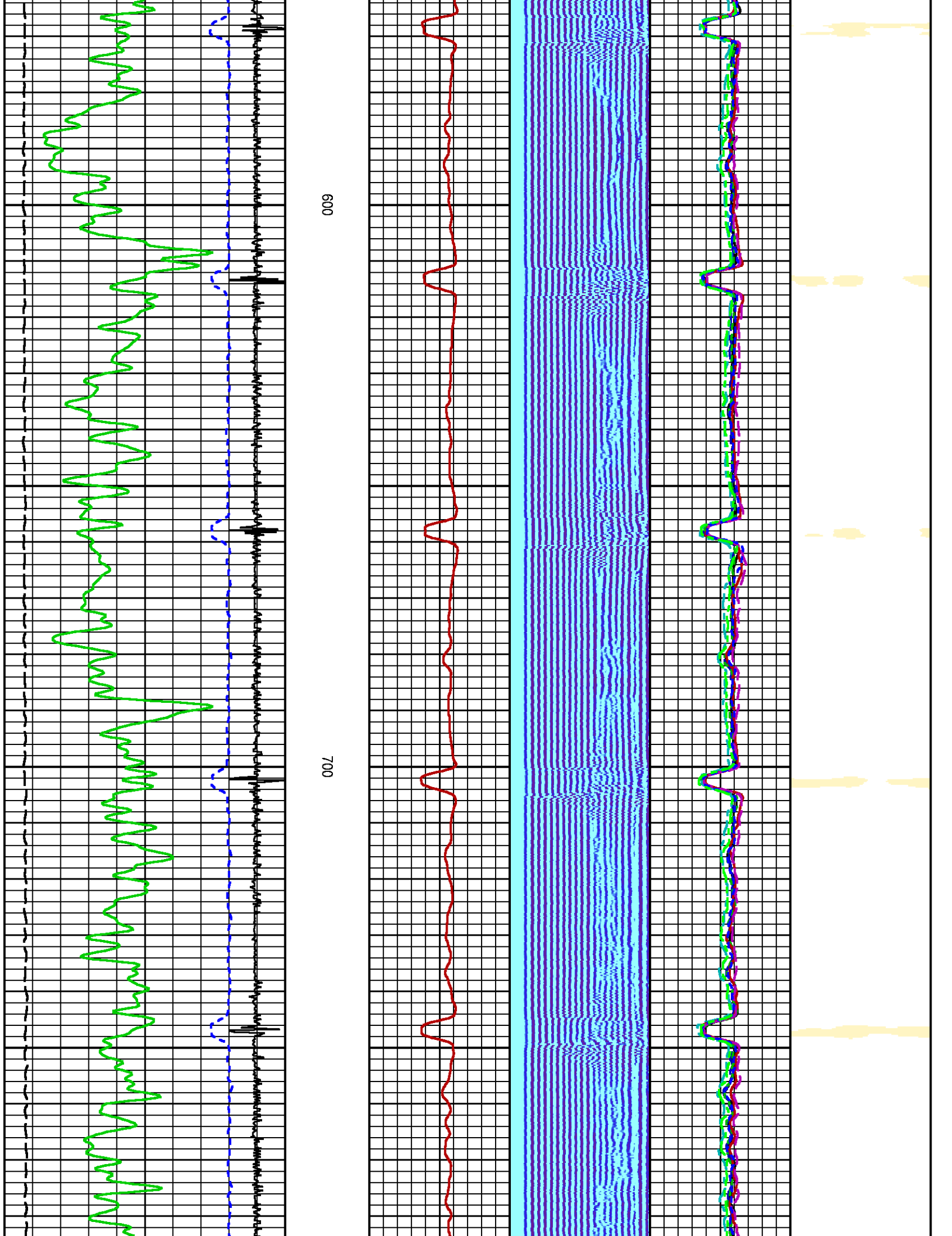


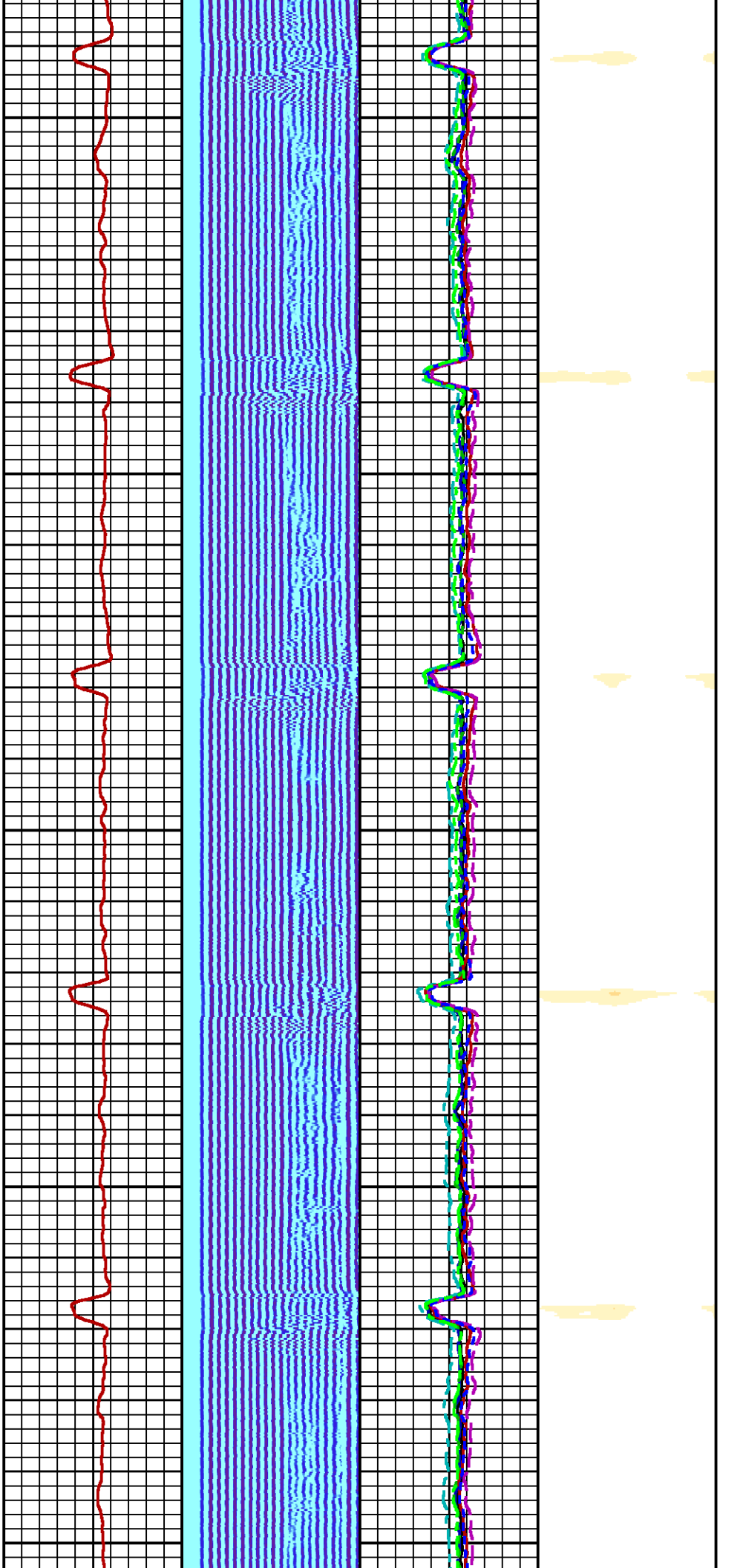


400

500



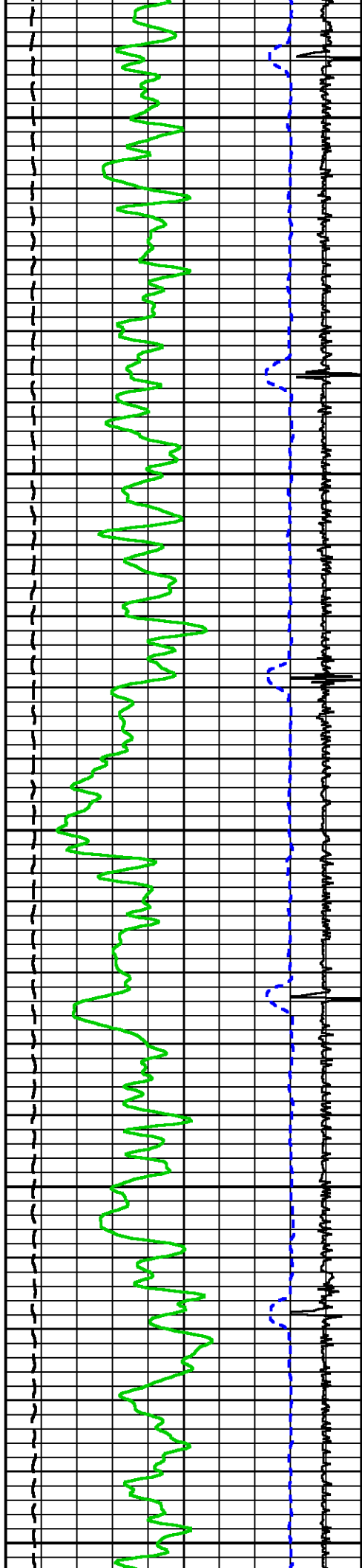




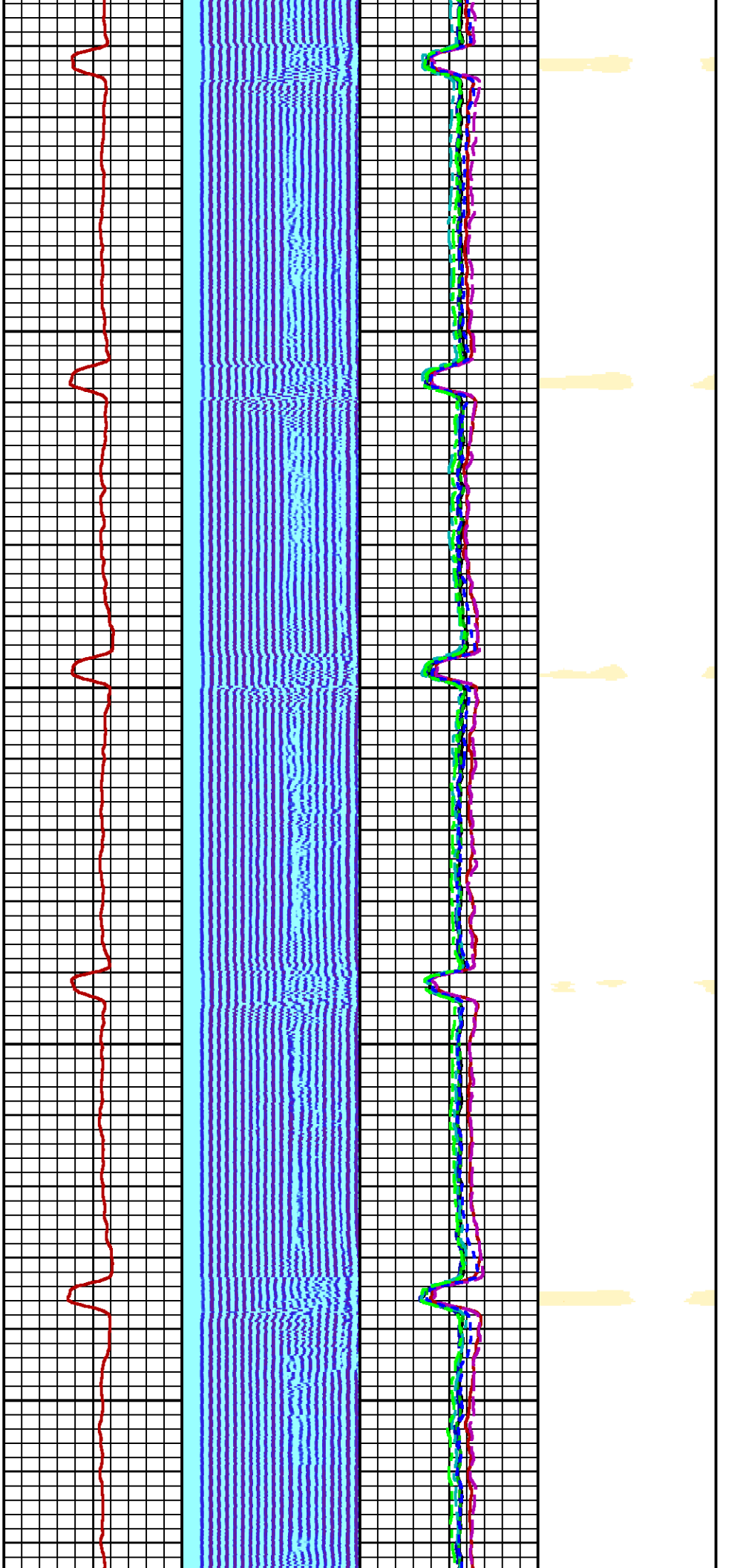
800

900

1000

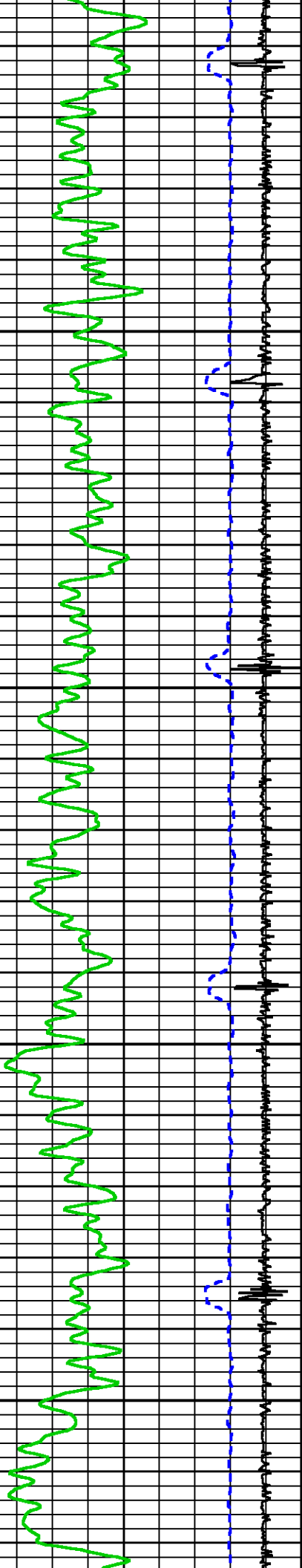




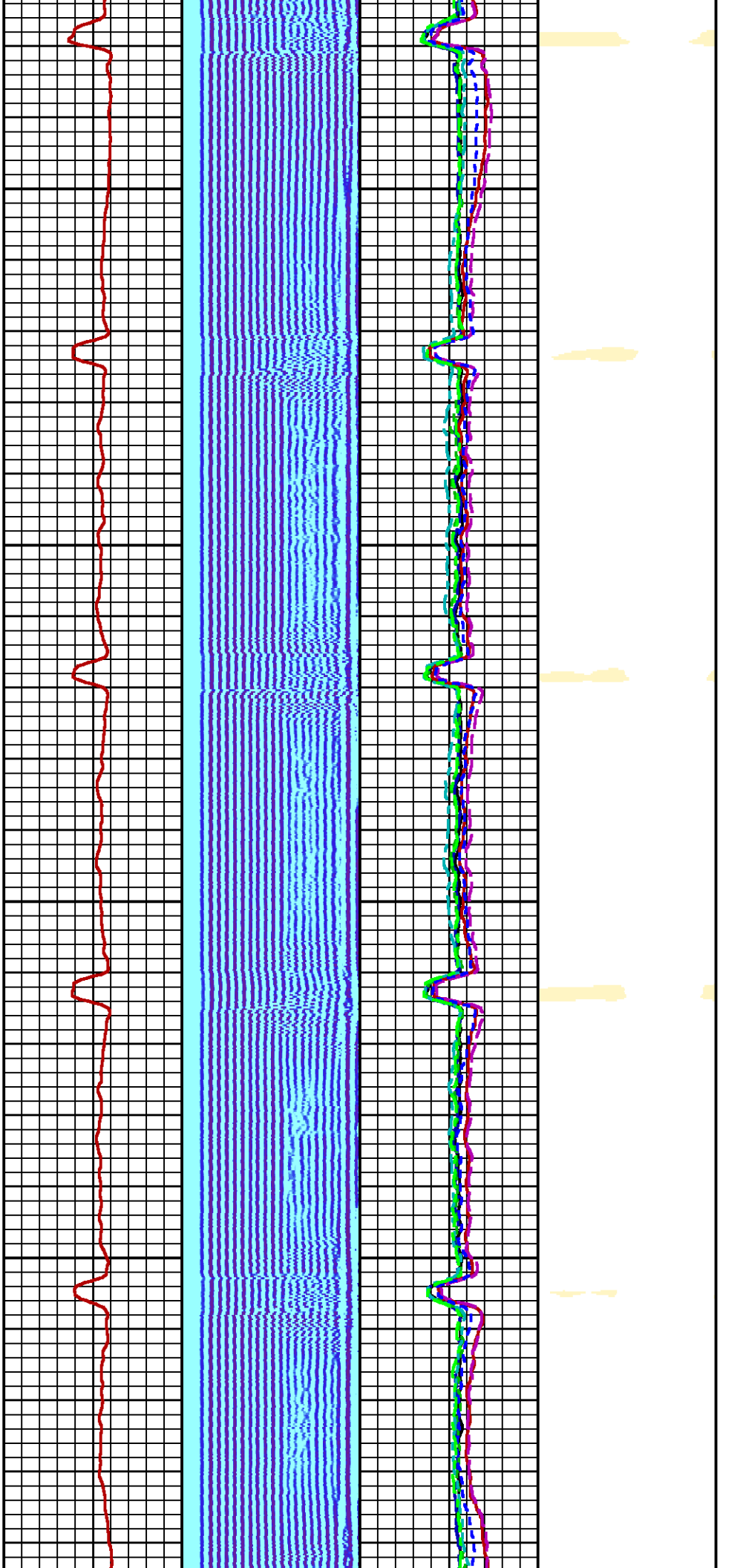


1100

1200

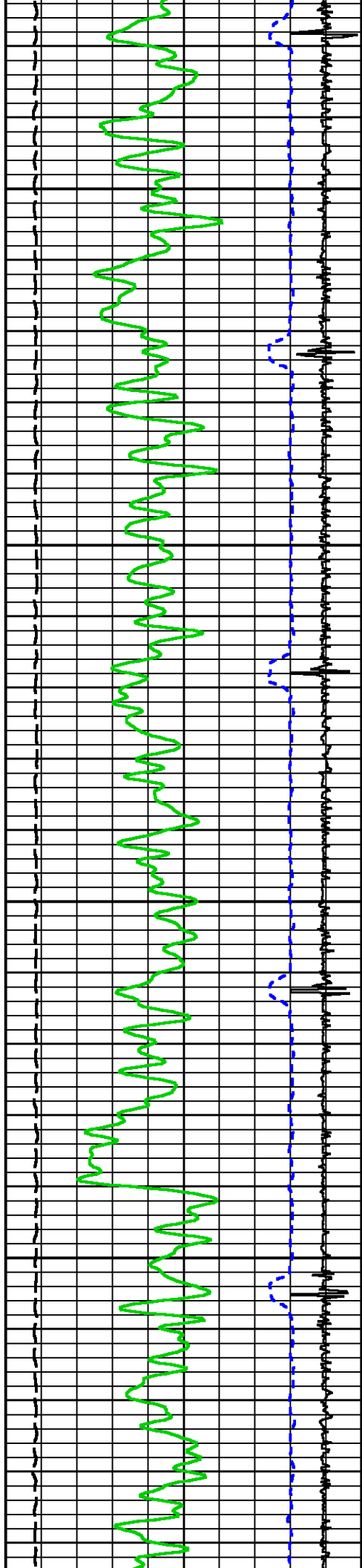


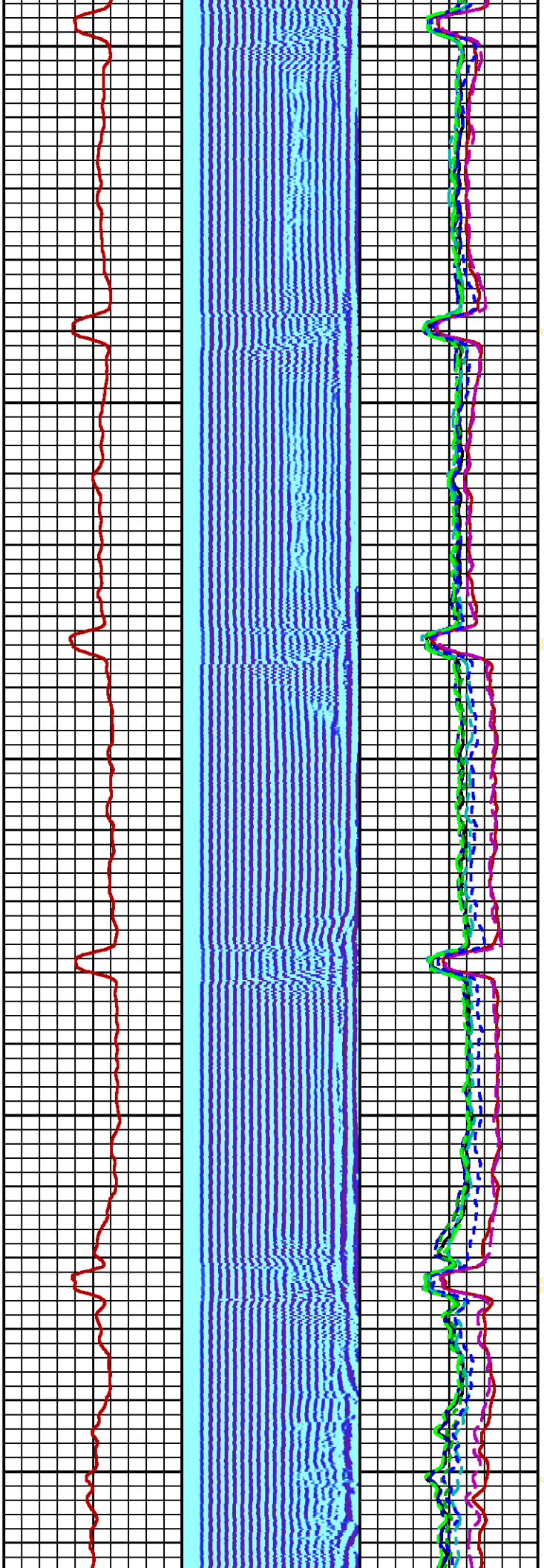




1300

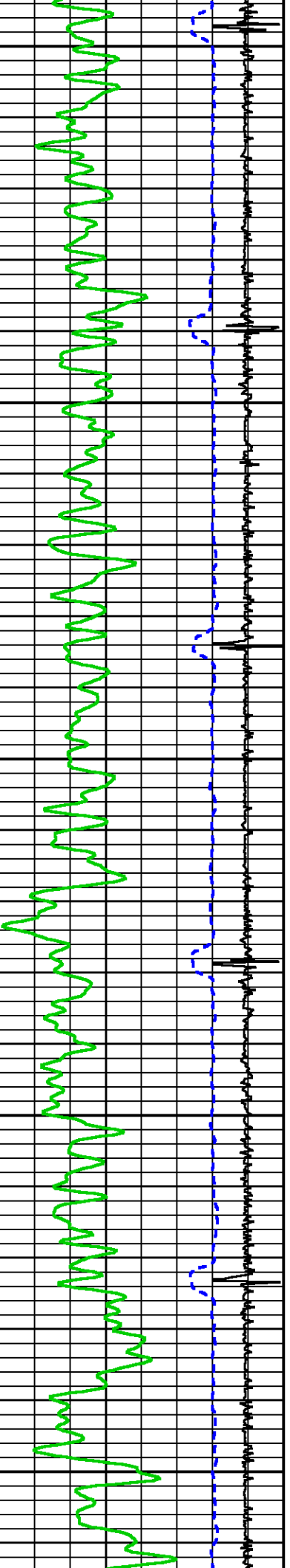
1400

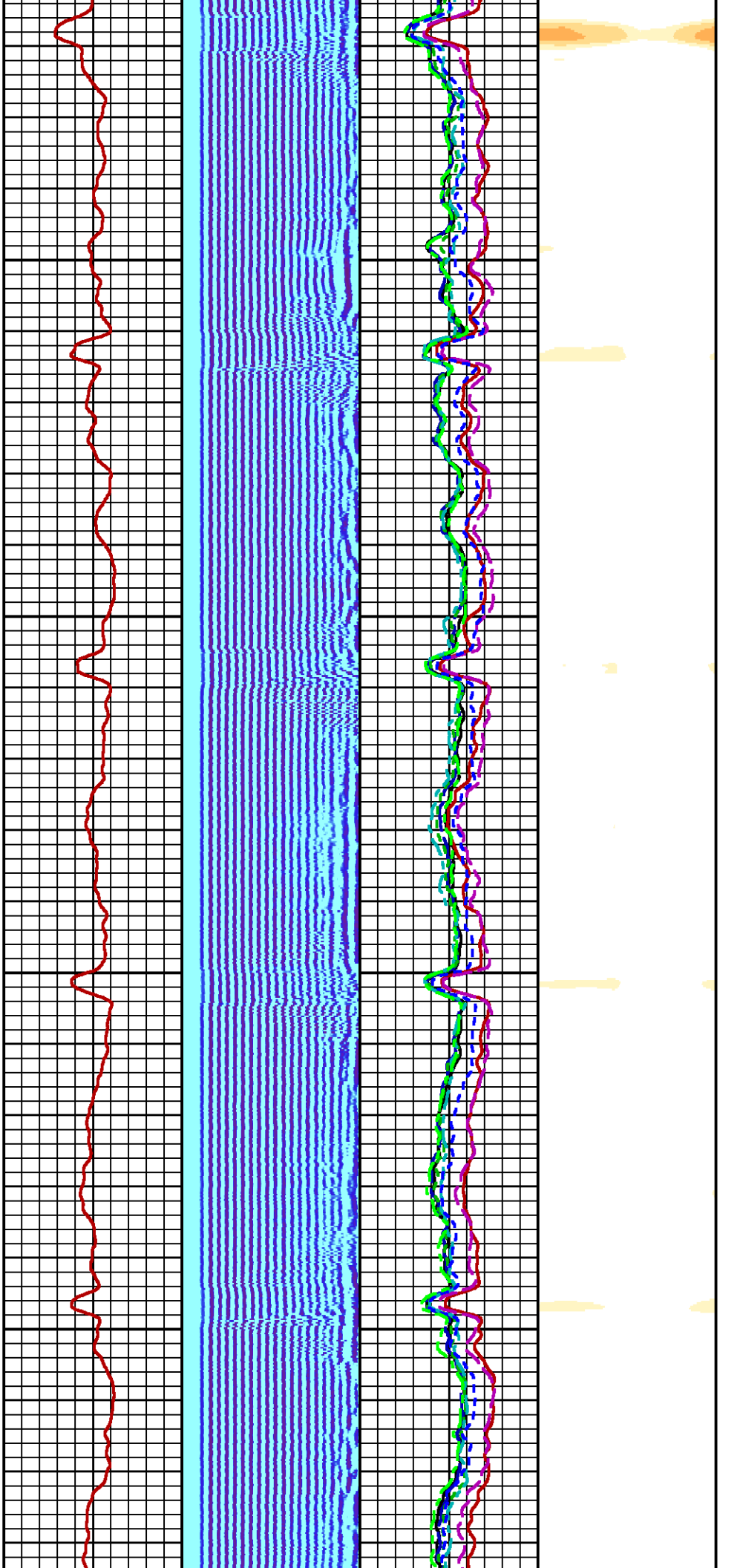




1500

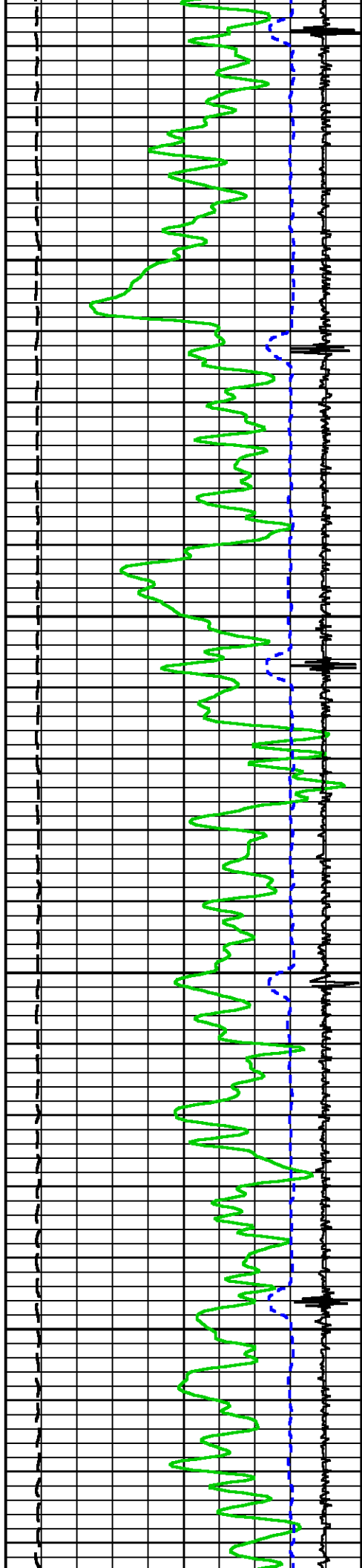
1600

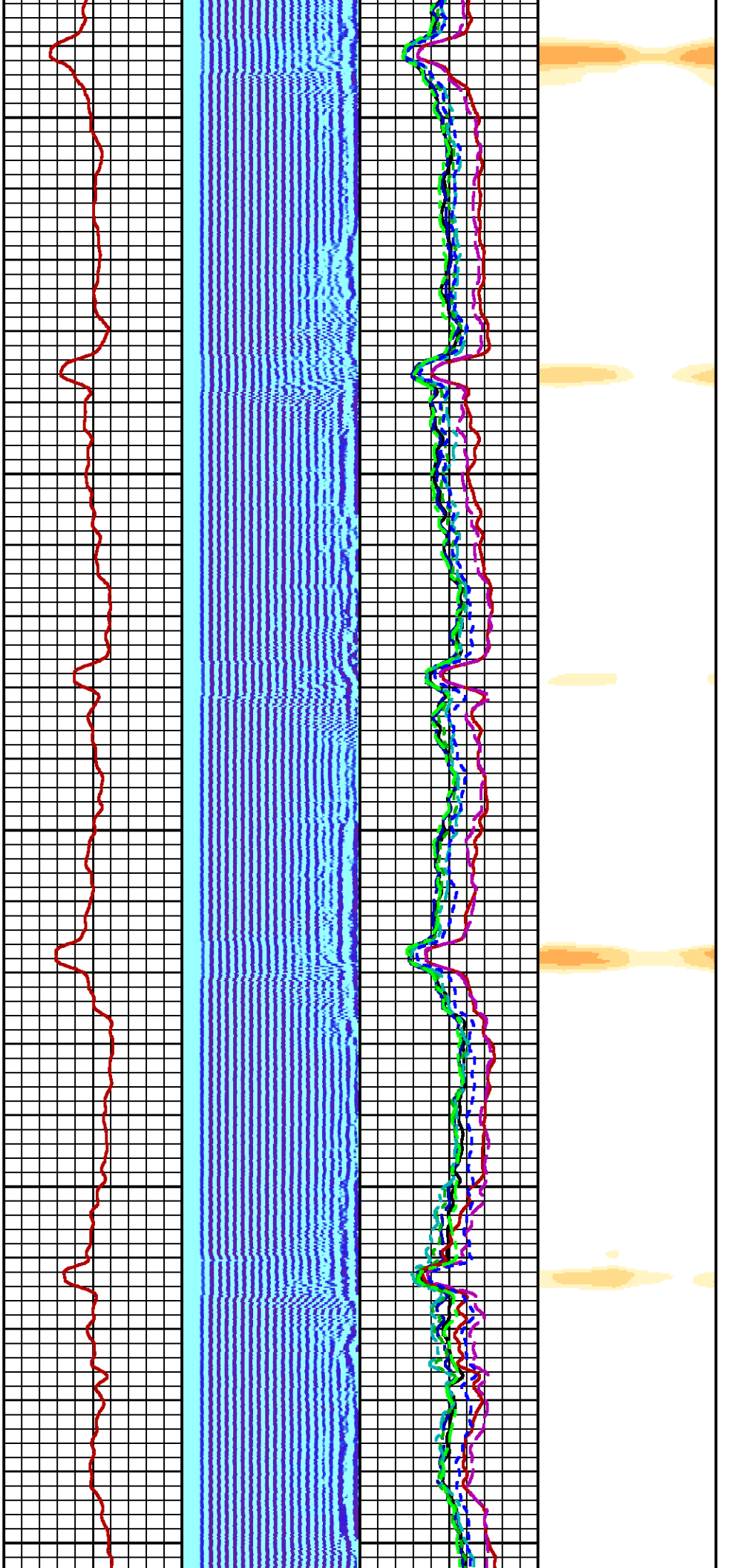




1700

1800

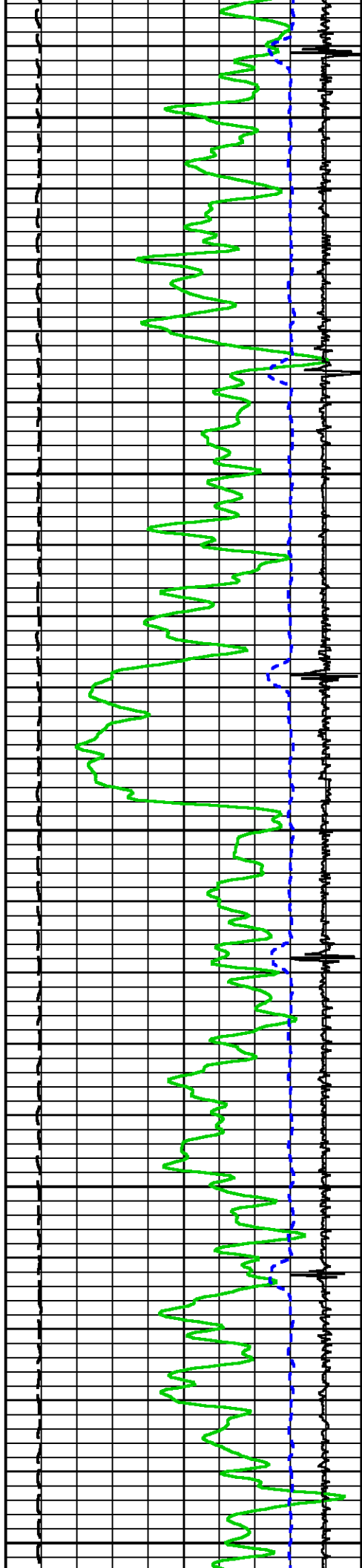




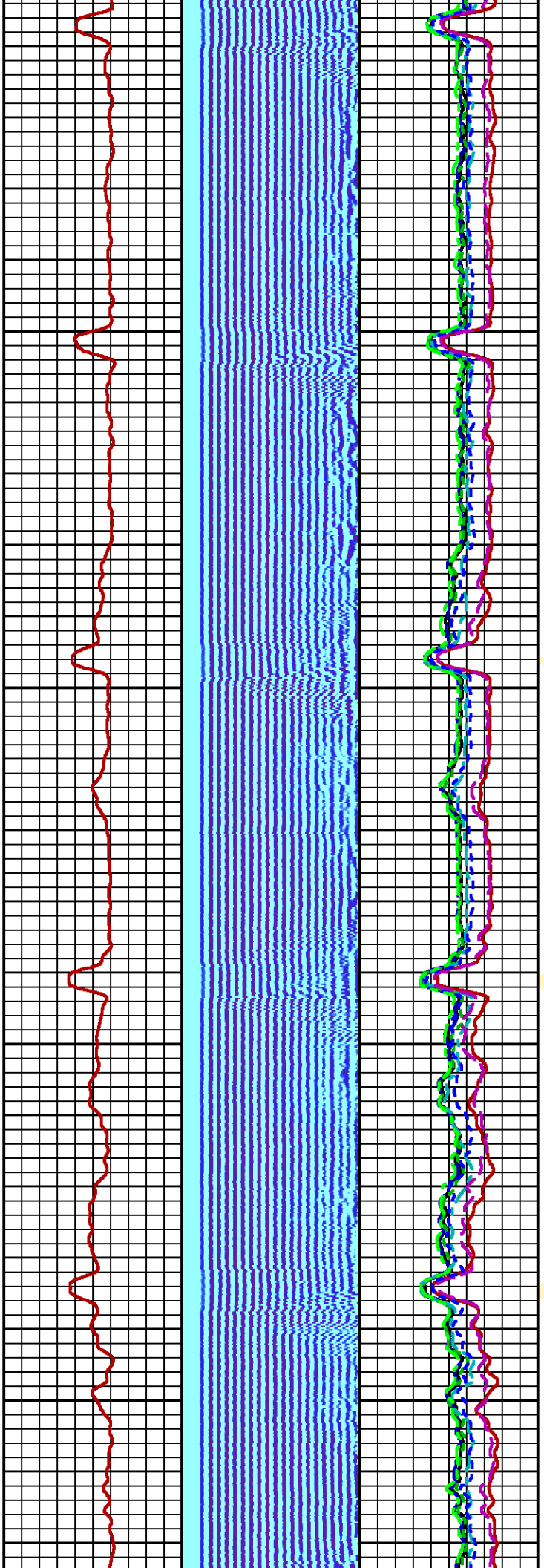
1900

2000

2100

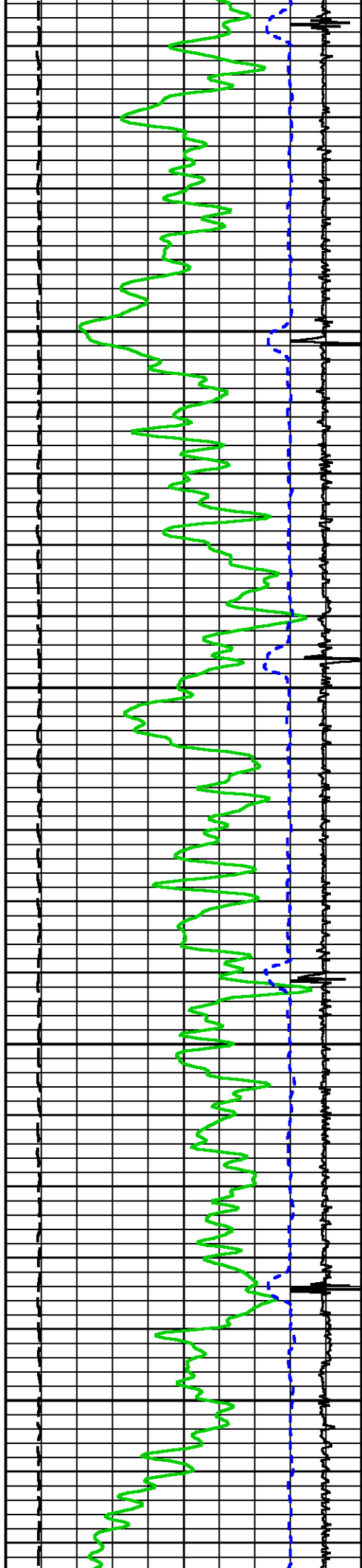




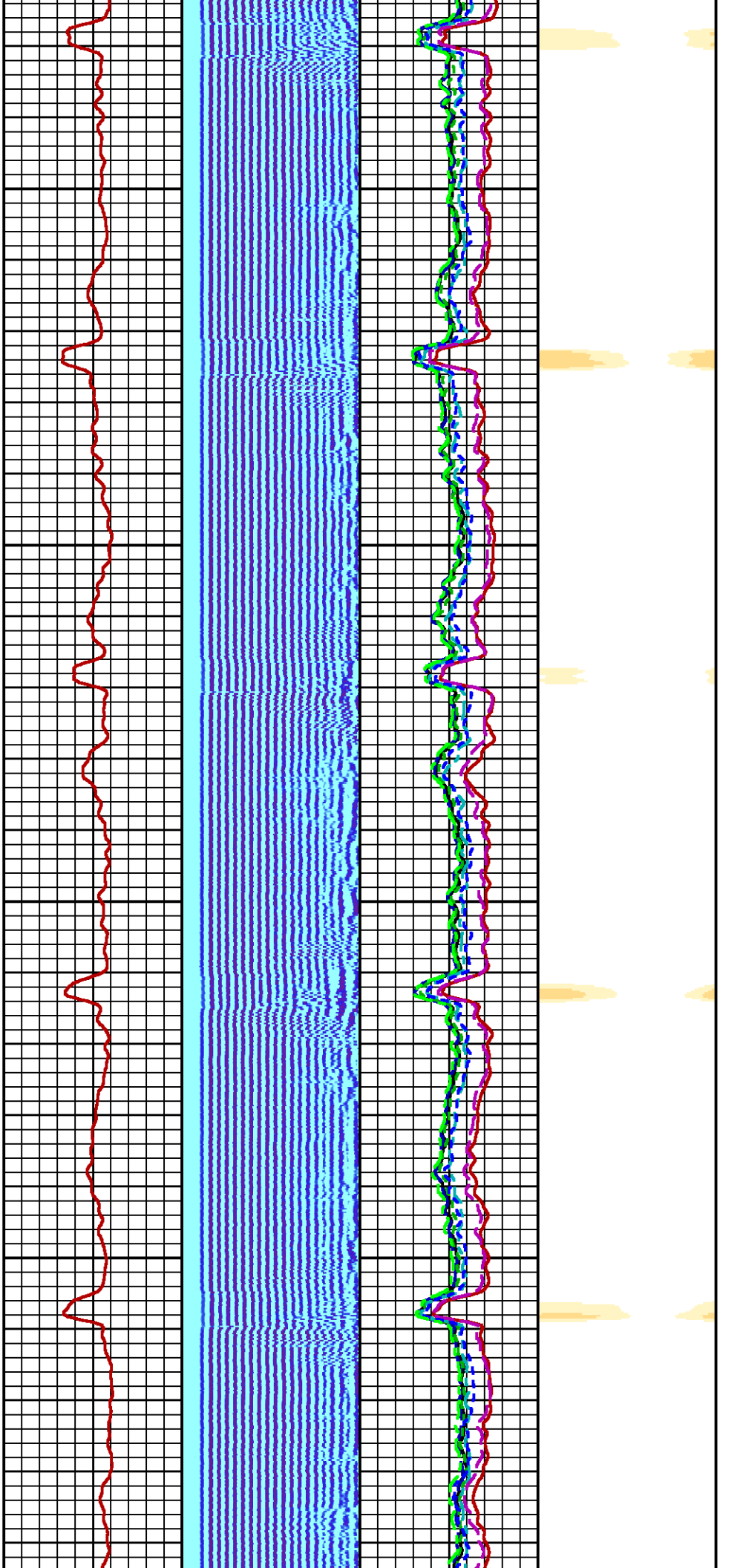


2200

2300

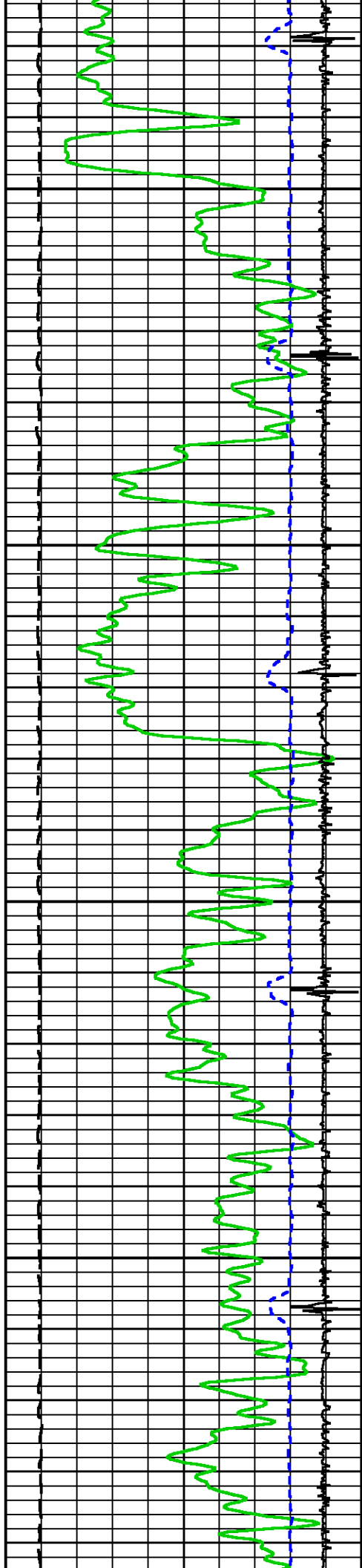


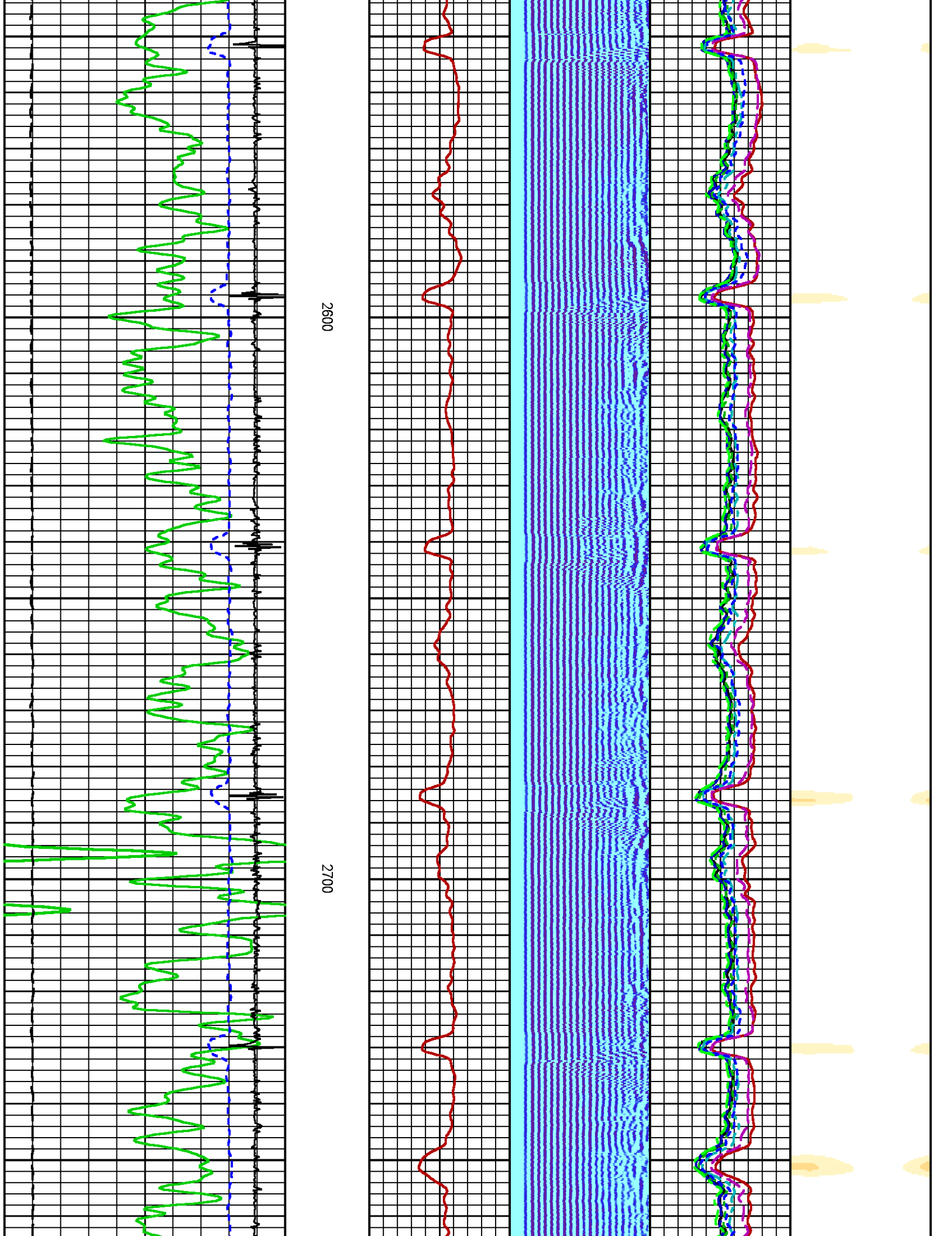


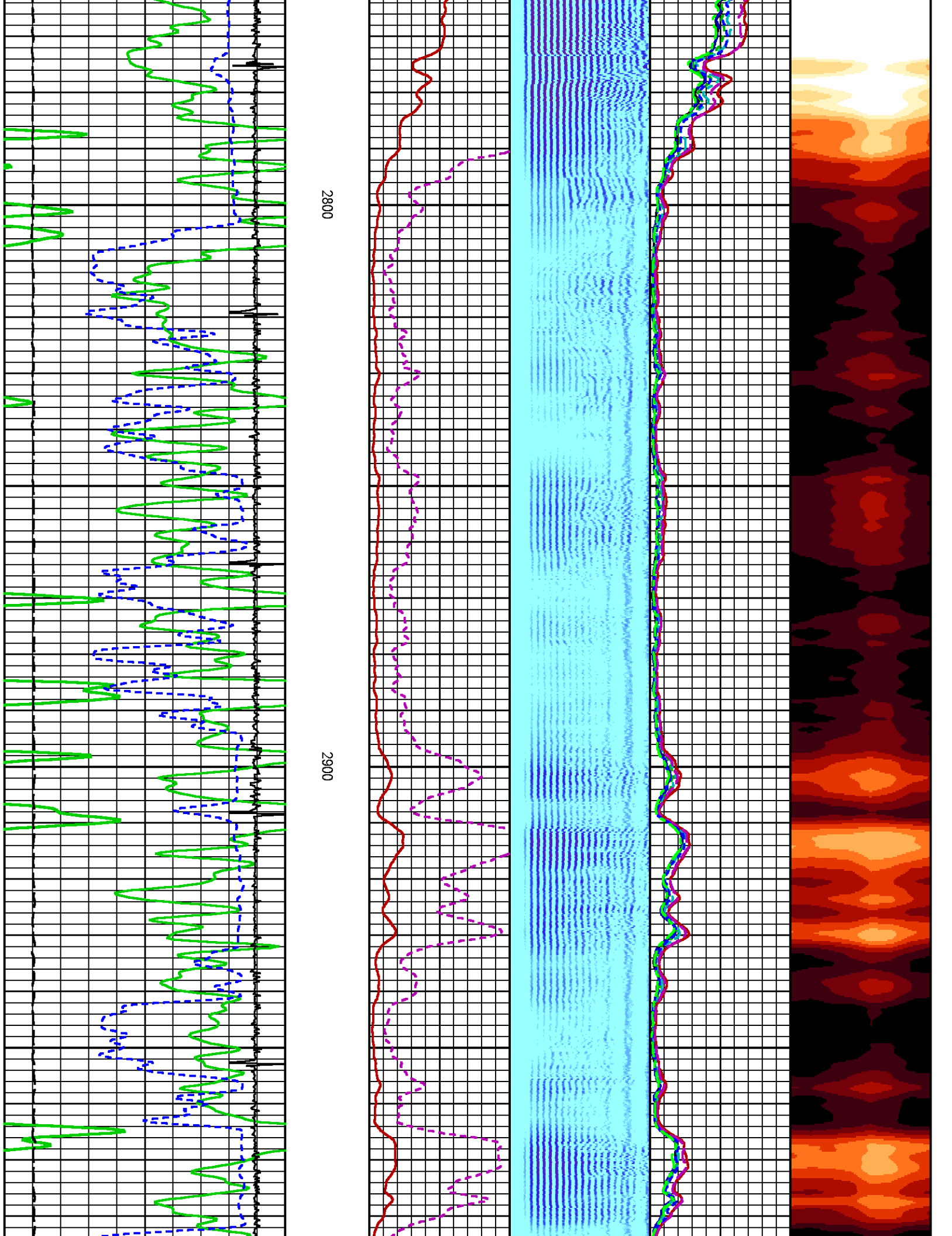


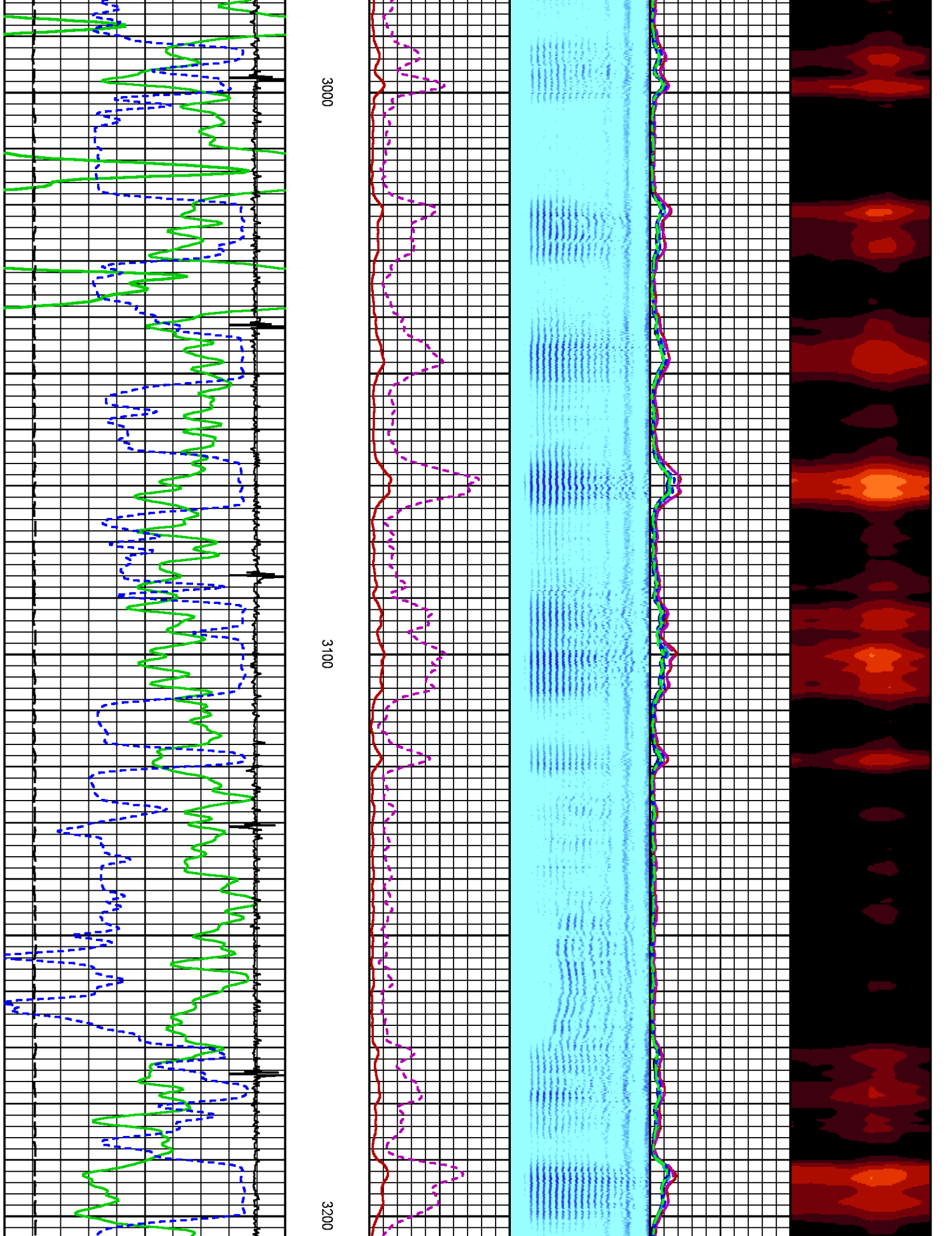
2400

2500

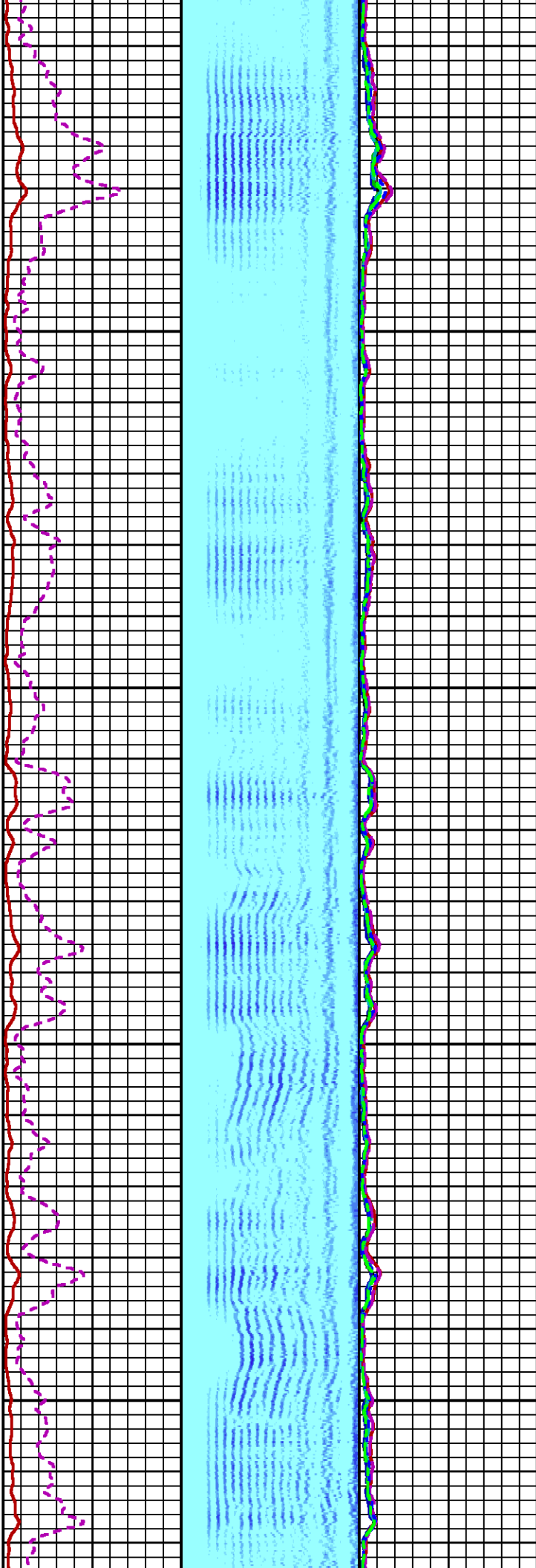
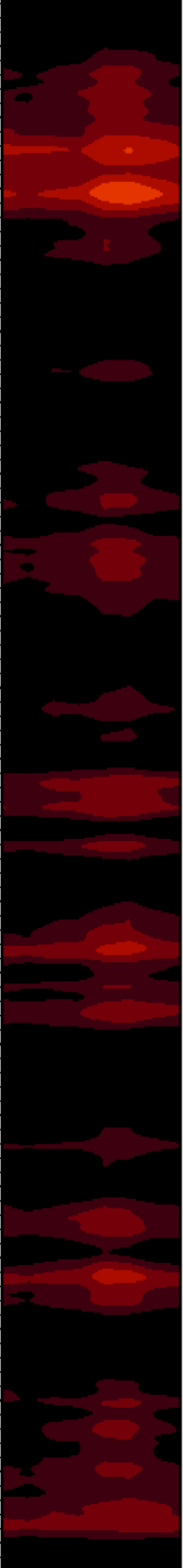






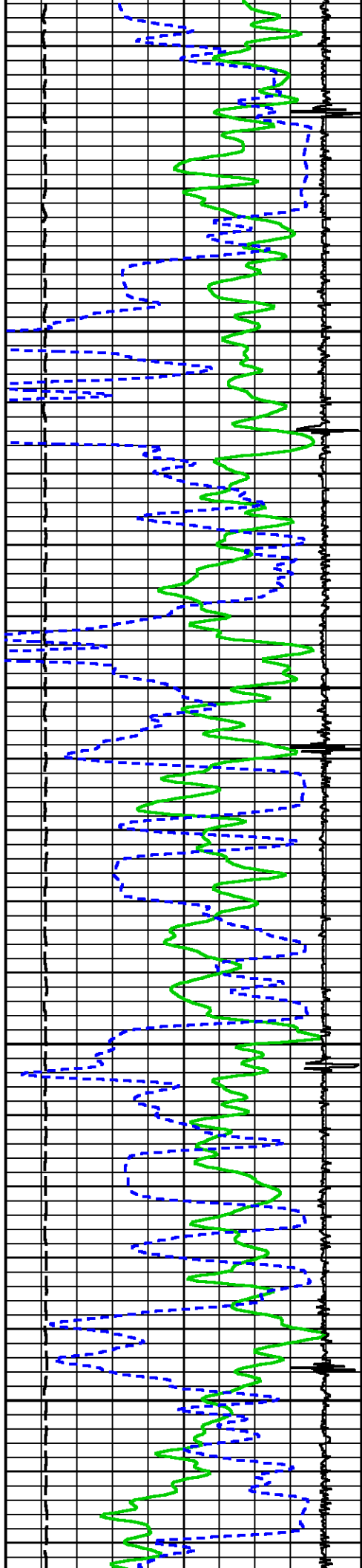




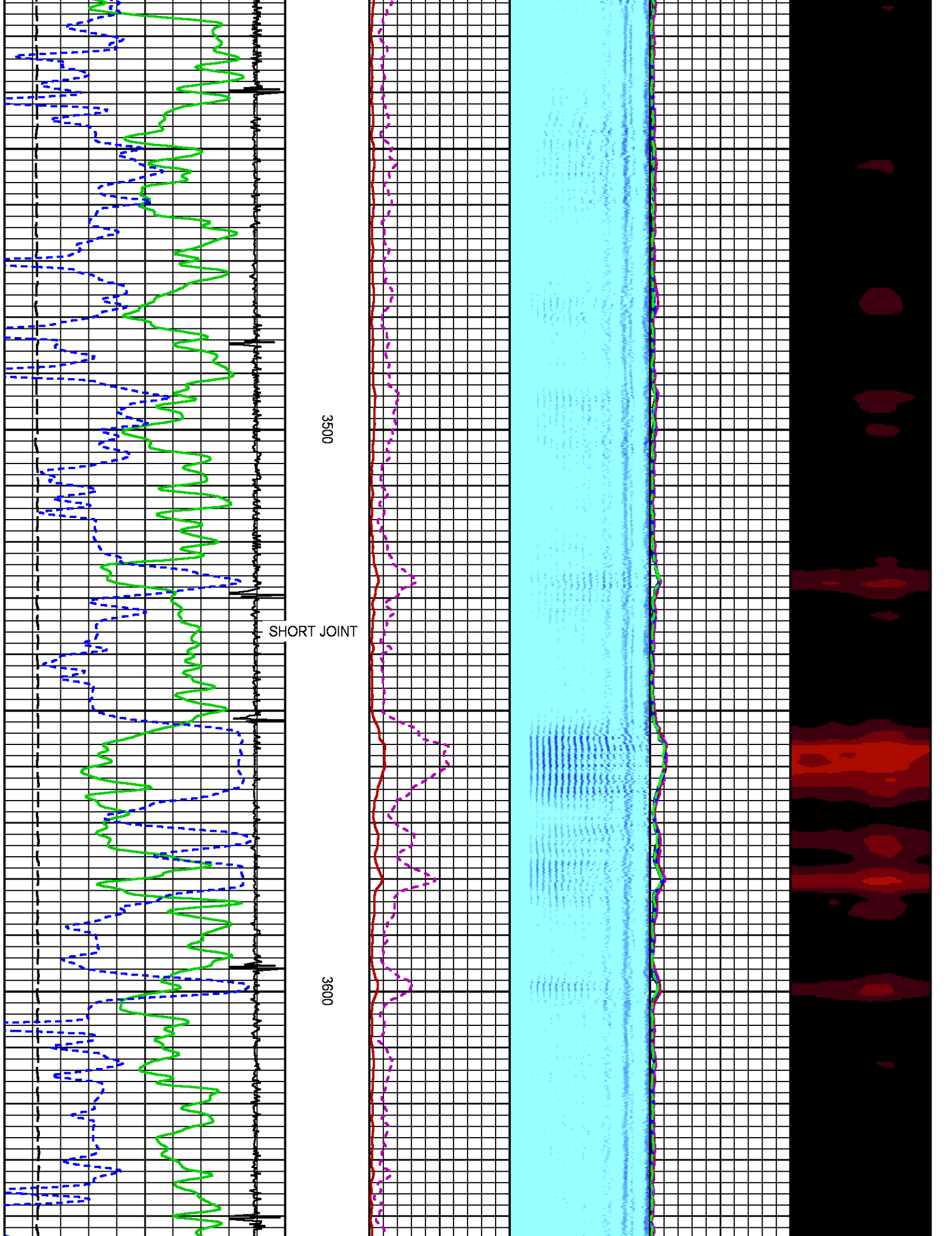


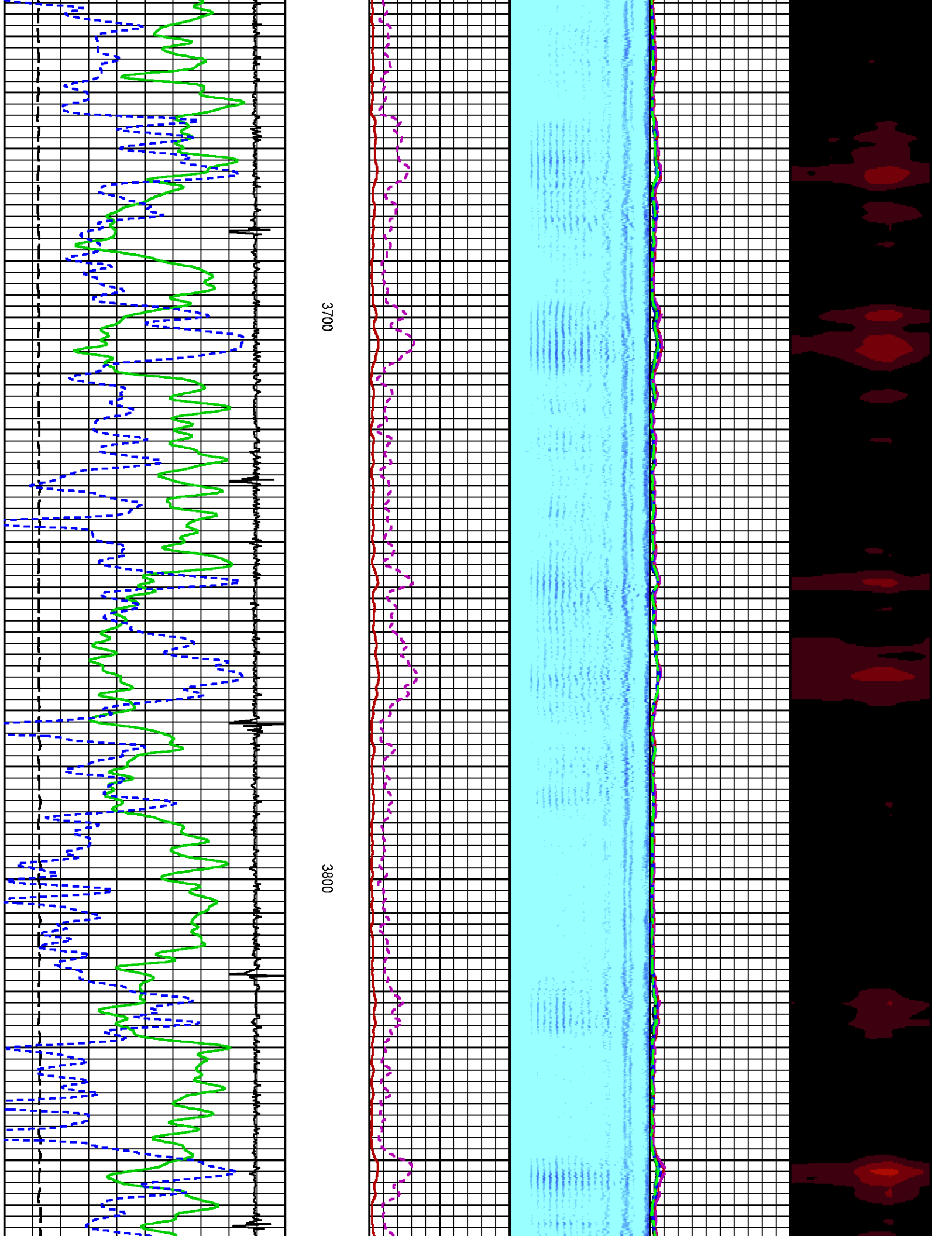
3300

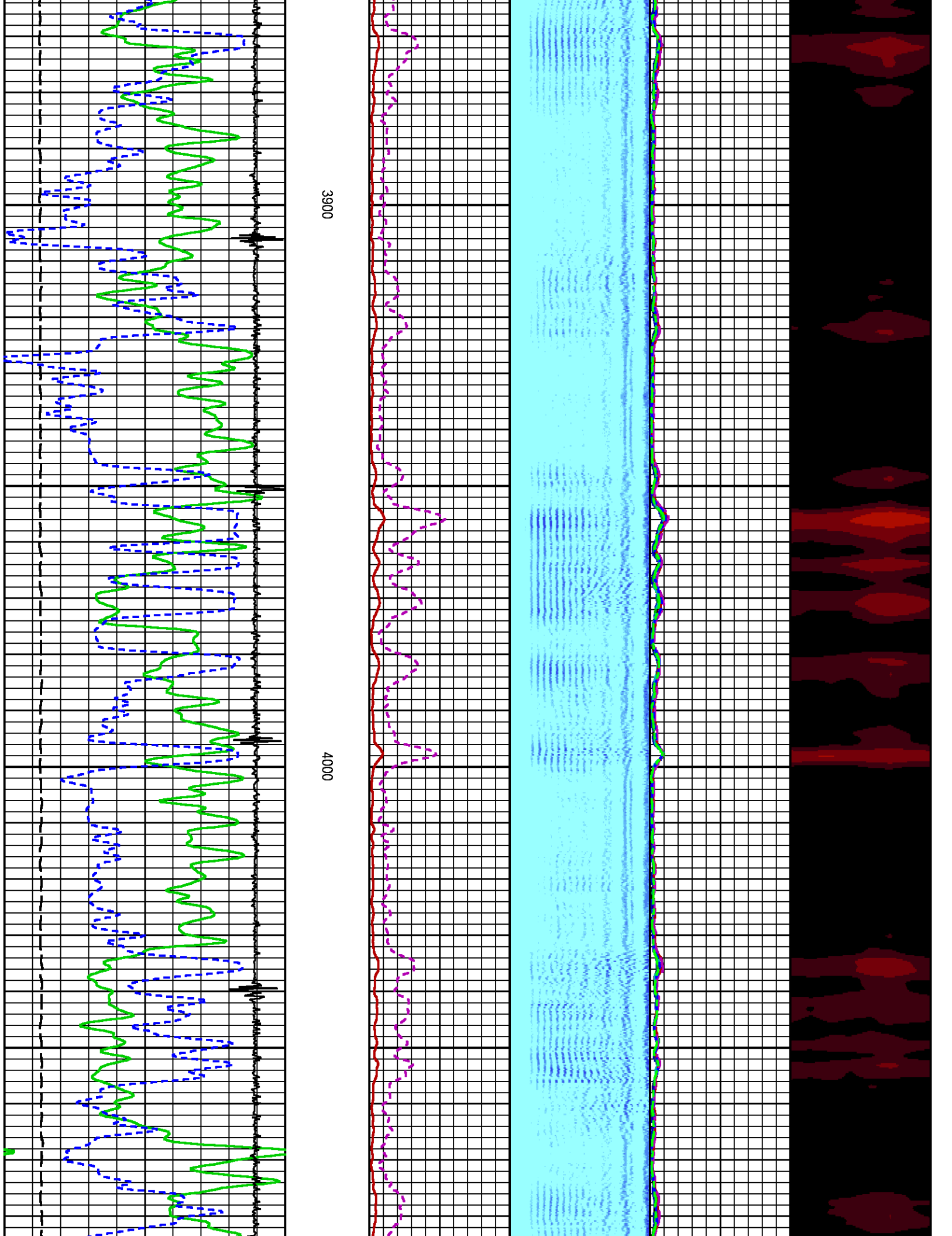
3400

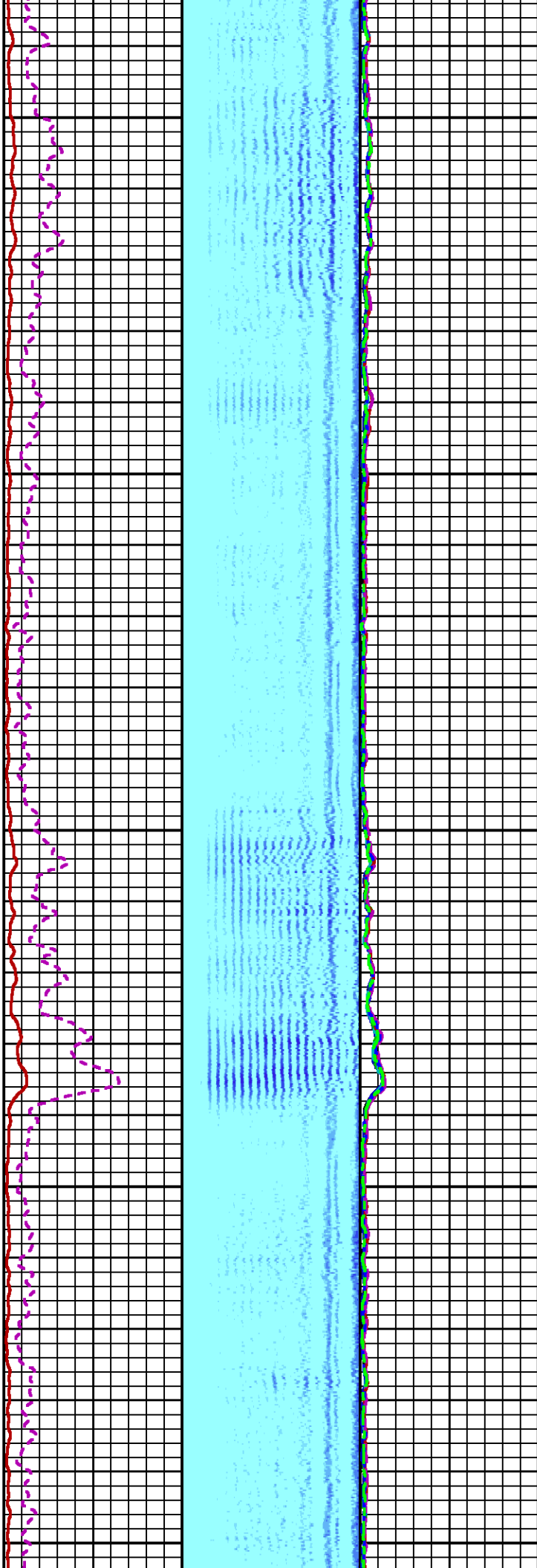








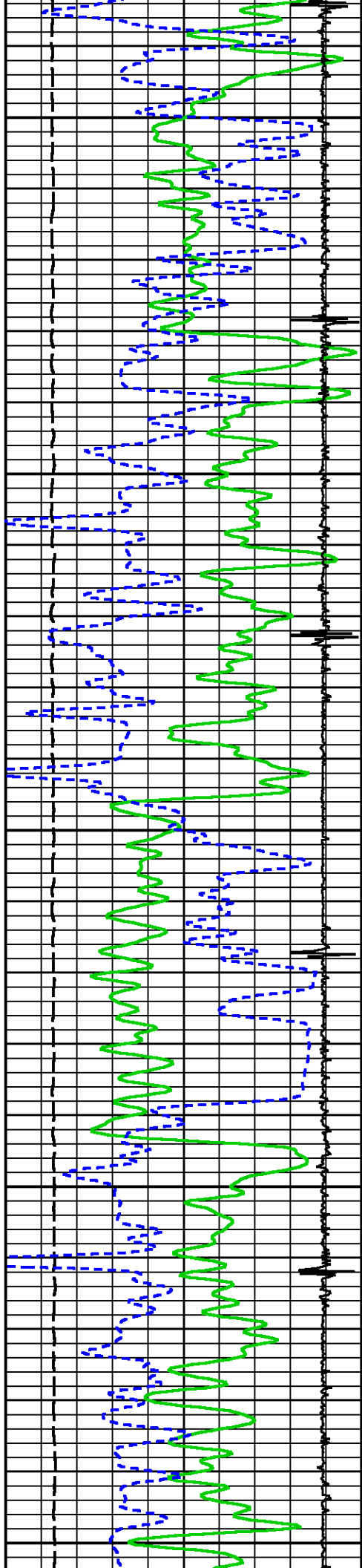


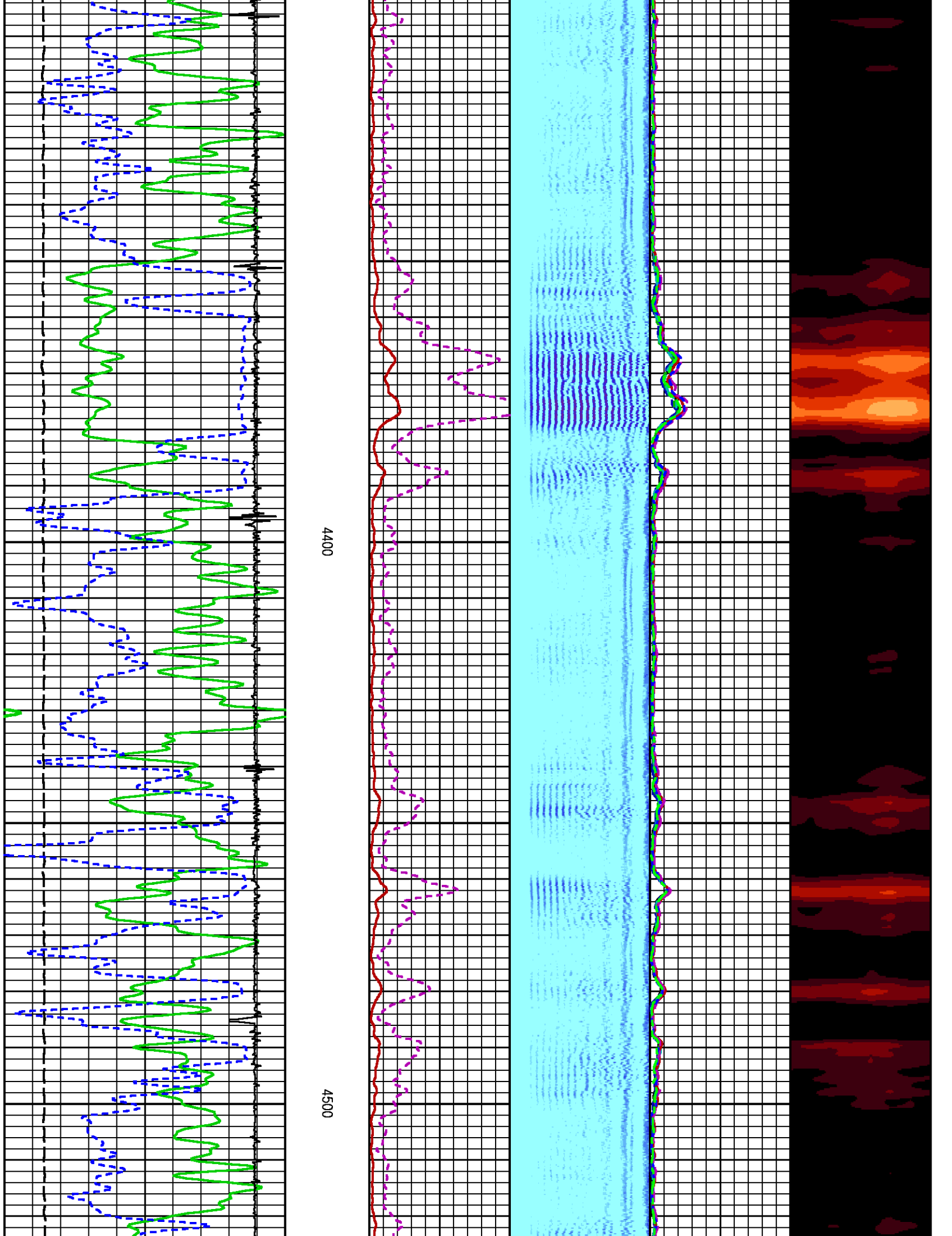


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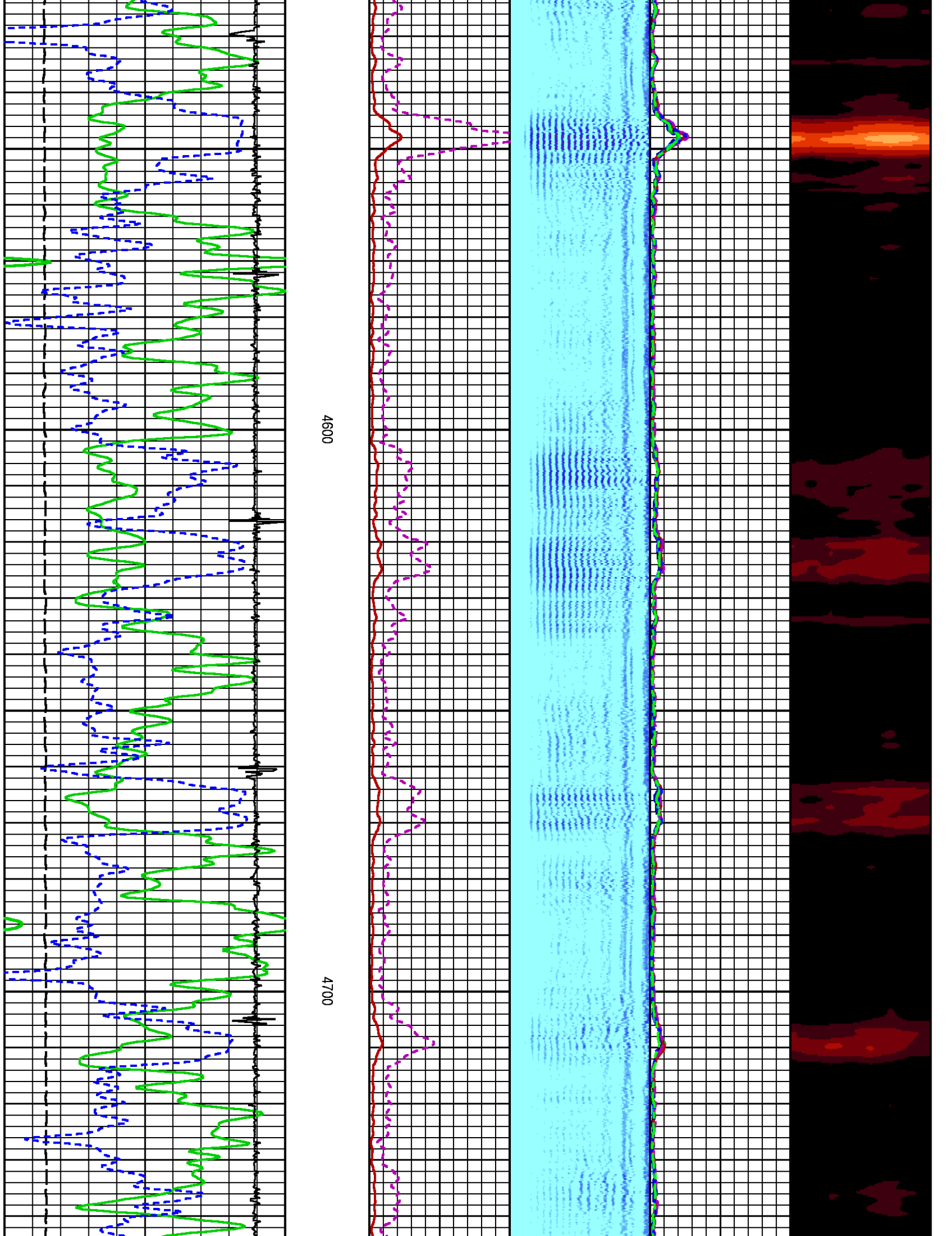
4200

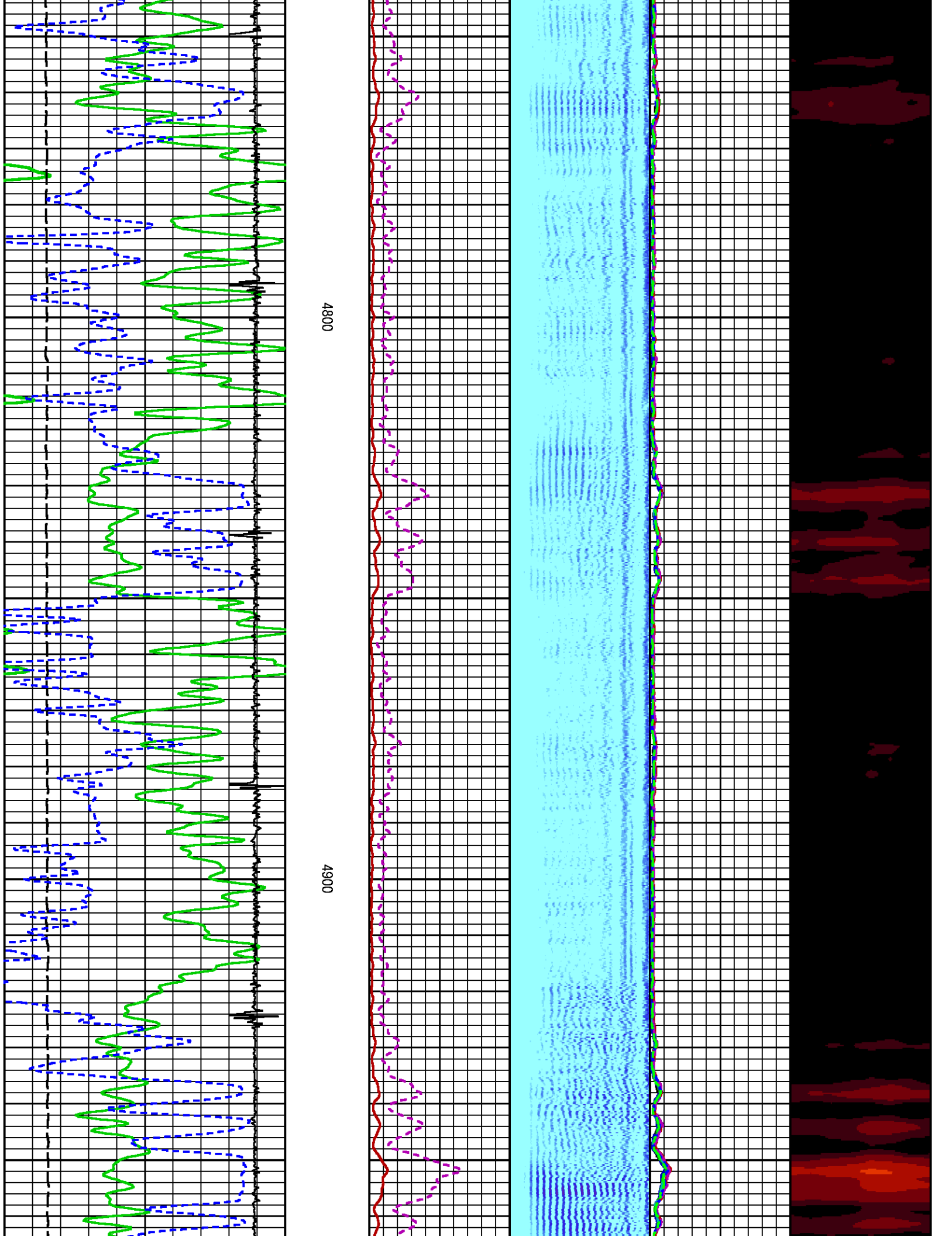
4300

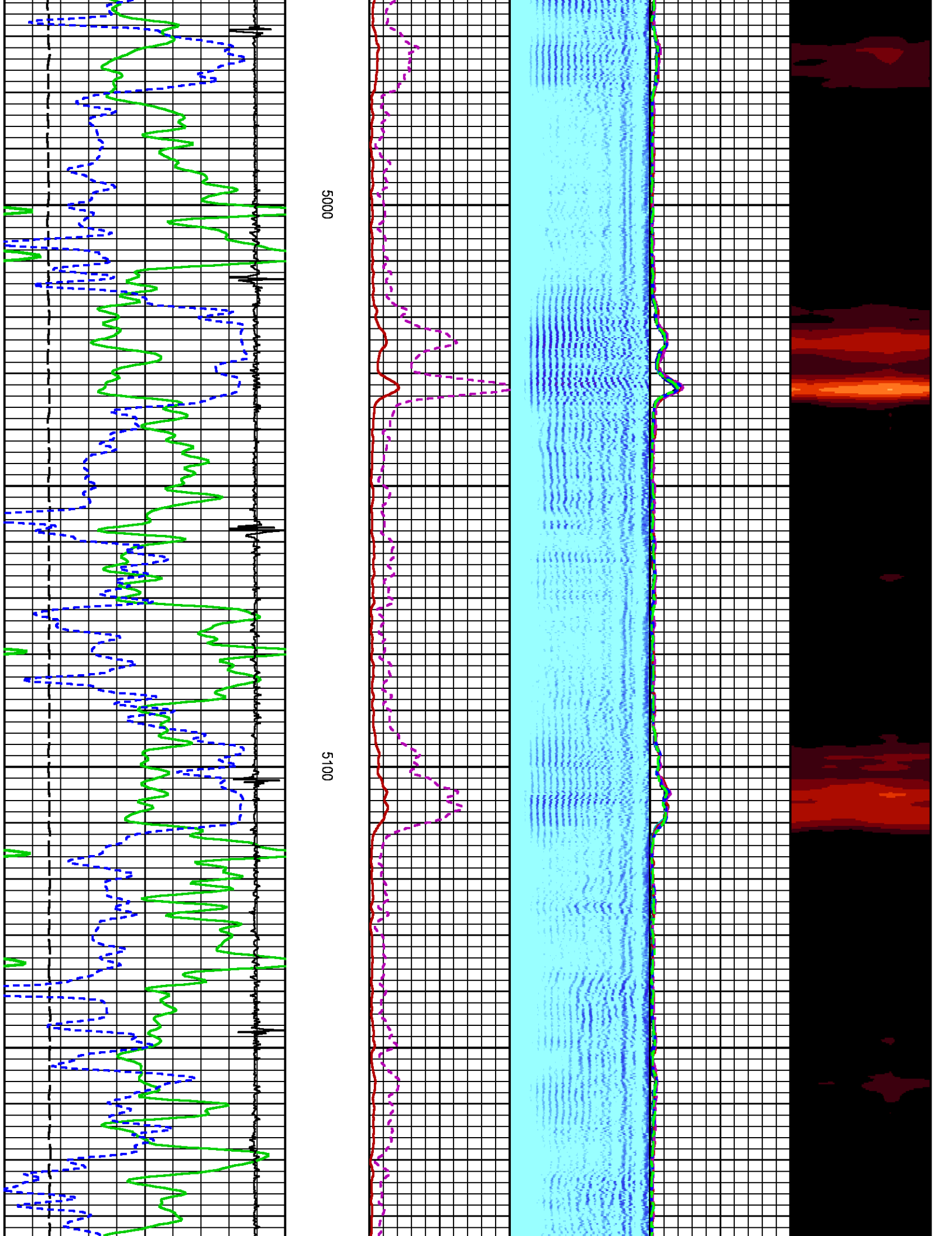


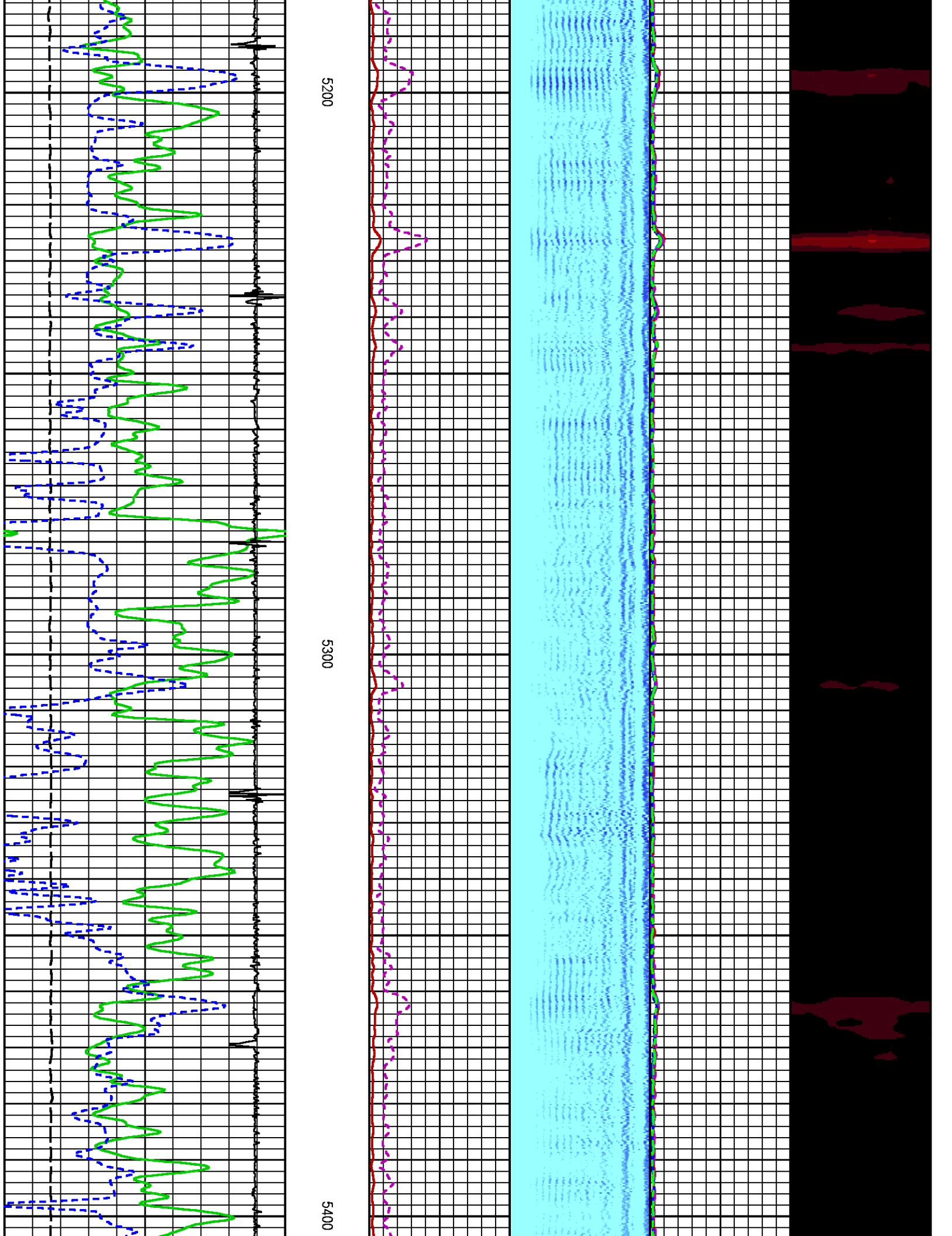


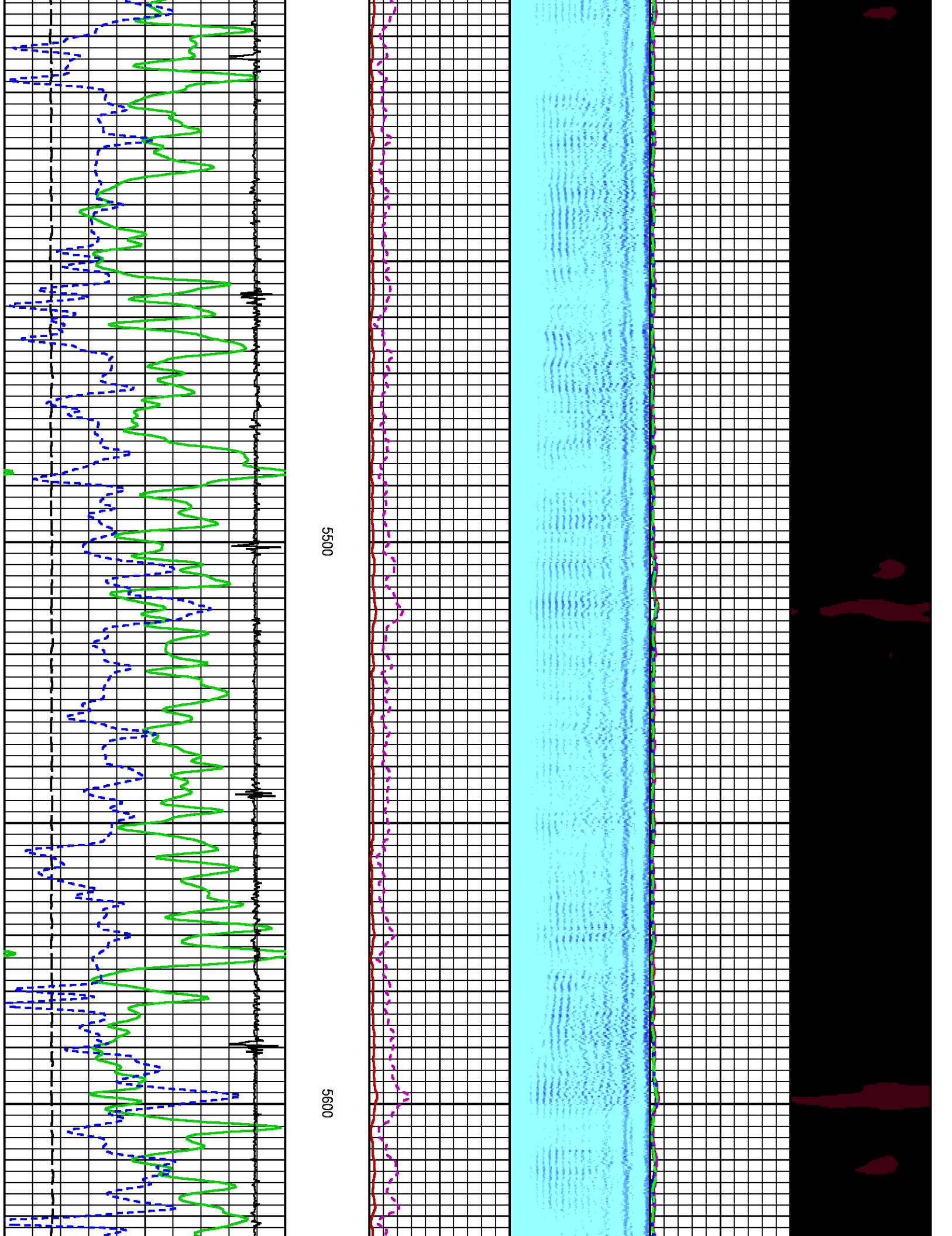




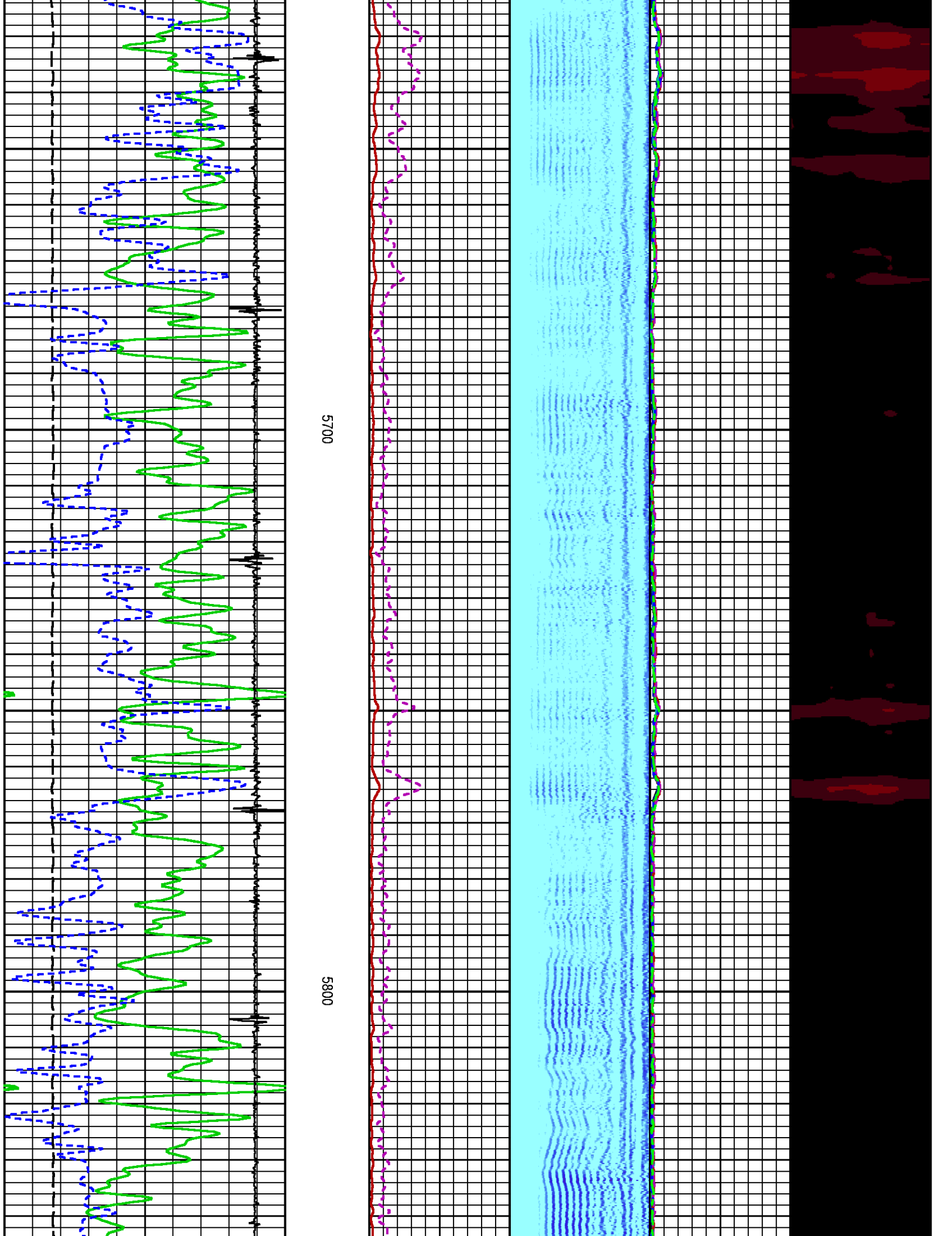


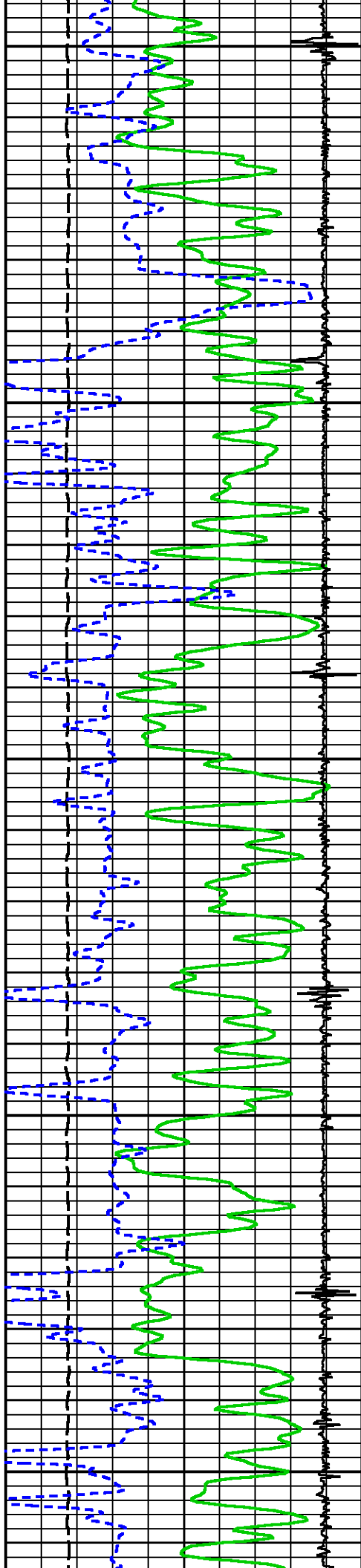






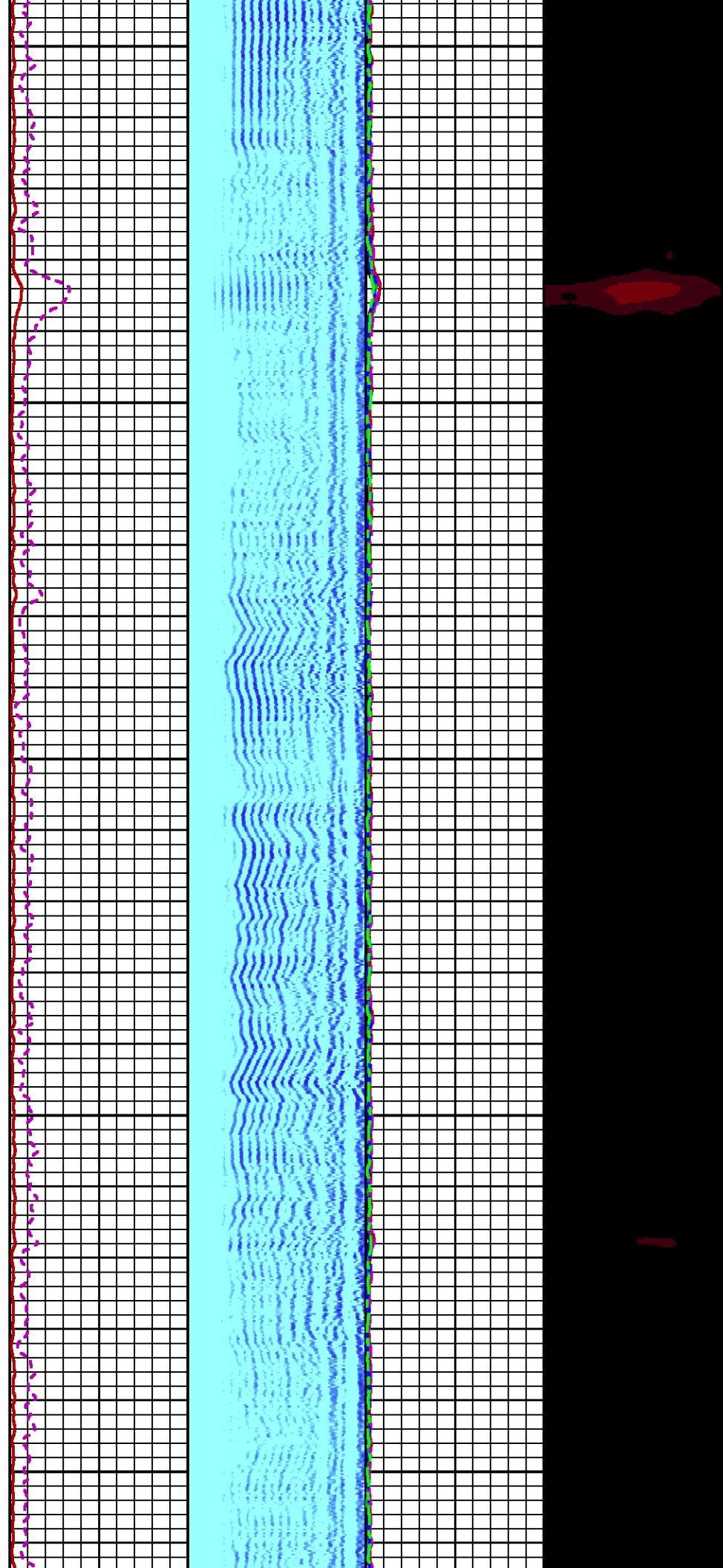


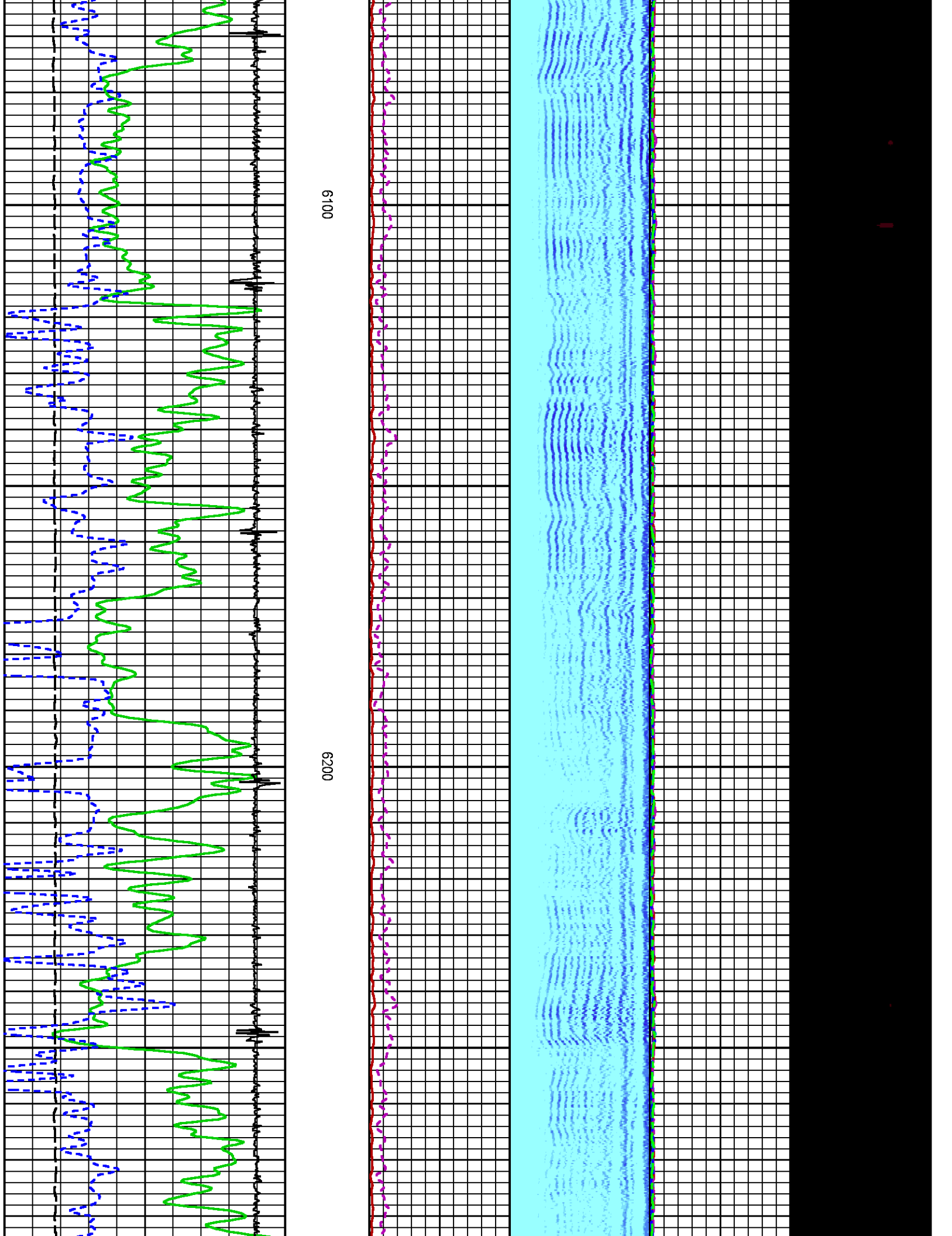


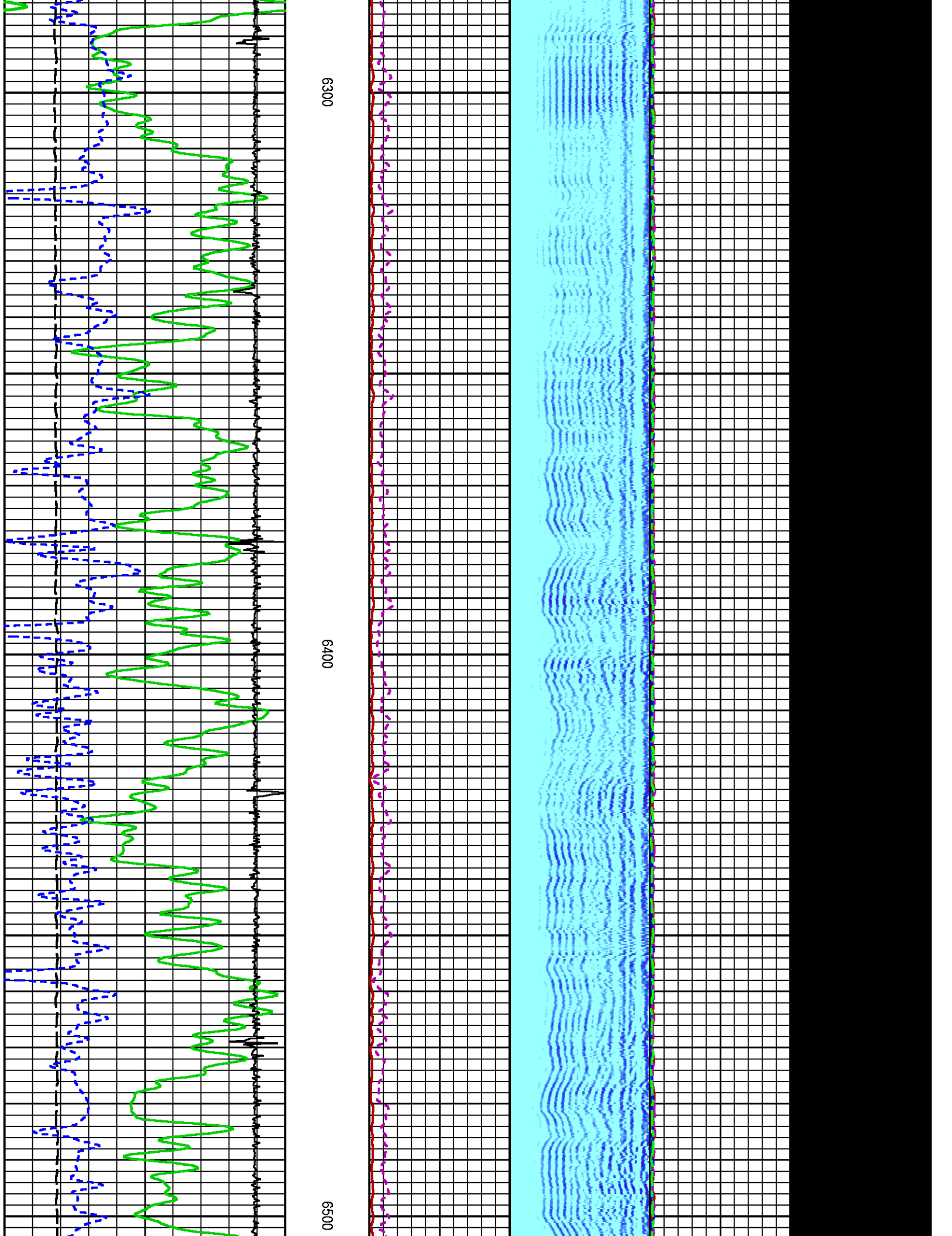


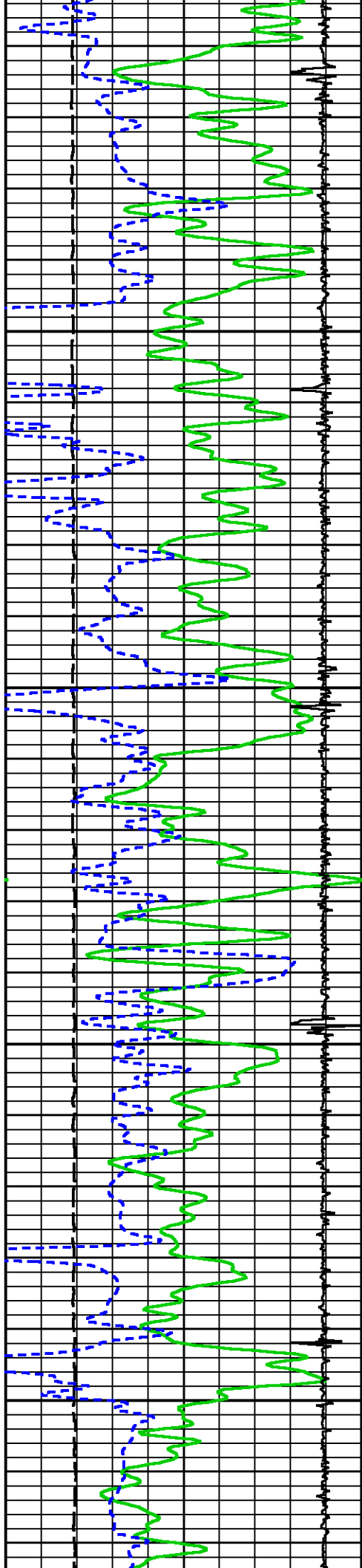
0065

0009



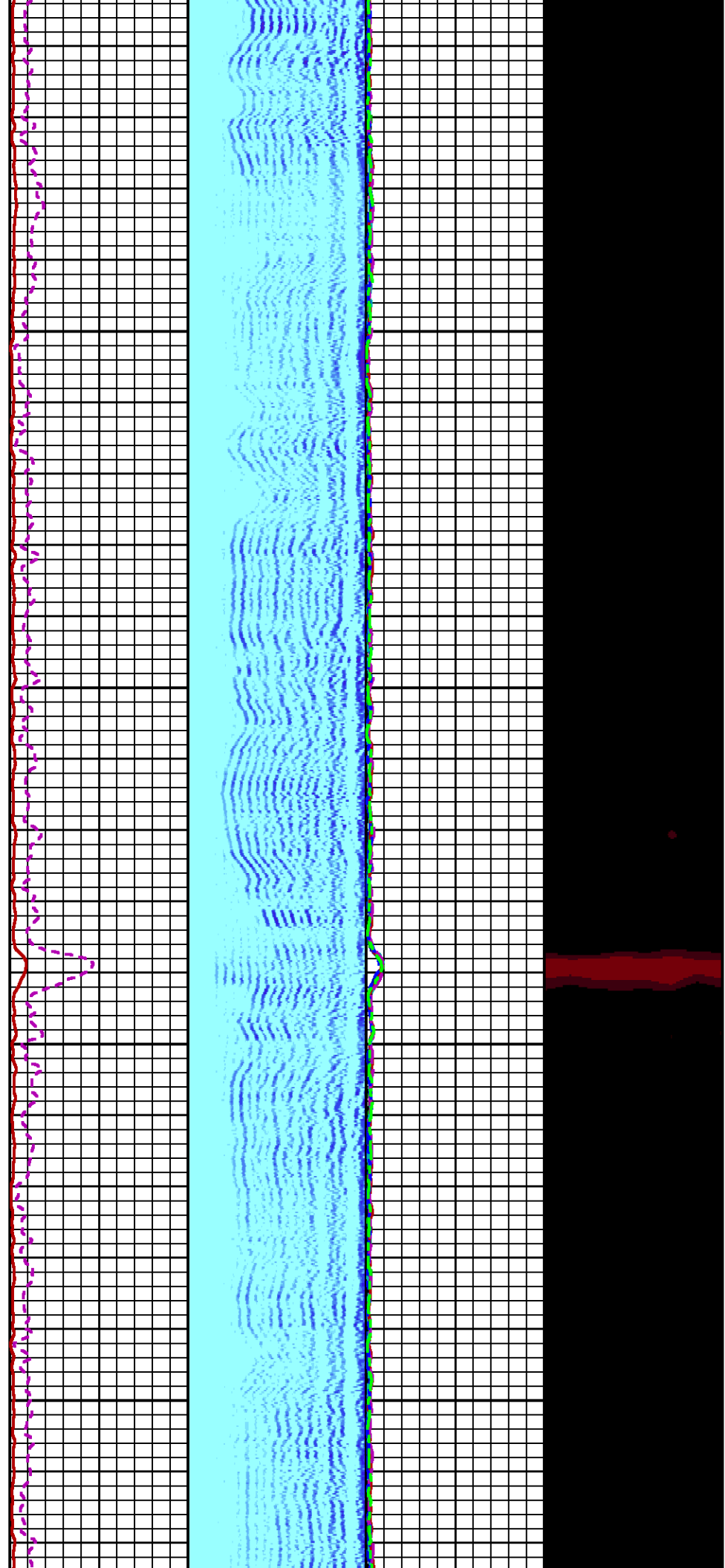




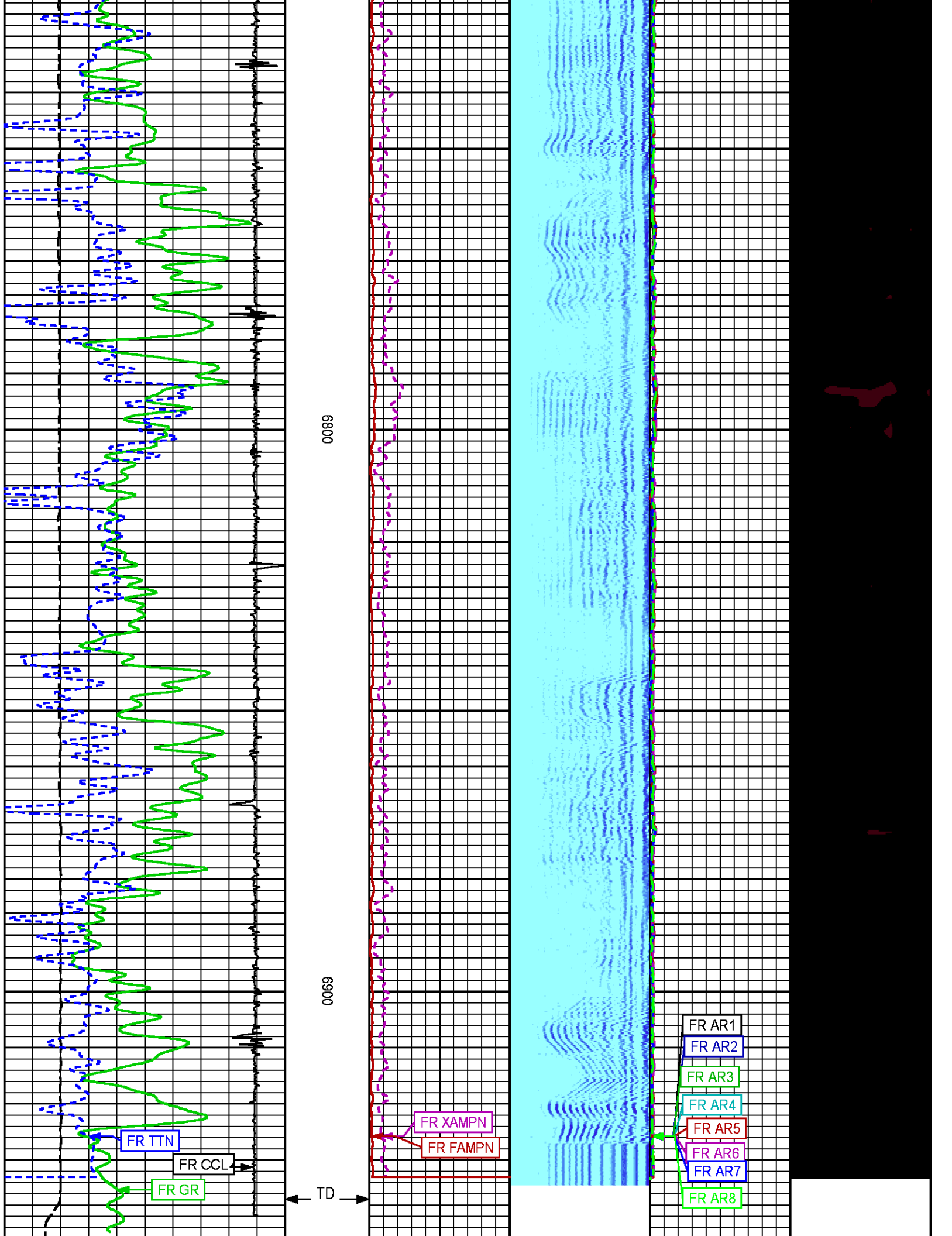


6600

6700









AMP AIR 0.33 0.01 -0.05 0.51 0.46 0.89 0.97 0.19 0.21 0.85 97.65

SHOP M FACTOR	SHOP A FACTOR	WIRELINE FACTOR
0.89	0.00	1.02

## GR PRIMARY CALIBRATION SUMMARY

TOOL #: 1355XA 11871508

DATE/TIME PERFORMED: Mon Jul 25 09:27:32 2016

UNIT #: 3885TC 6685

CALB JIG #: 4702NK BA-905

	BACKGROUND (cts)	CALBRTR ON (cts)	CR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	CALBRTR (gAPI)
GR	54.76	202.27	147.5	1.017	55.68	205.68	150

## INSTRUMENT CONFIGURATION

Source File: /dat1a/CH108536/n012g--tdg

### CABLEHEAD

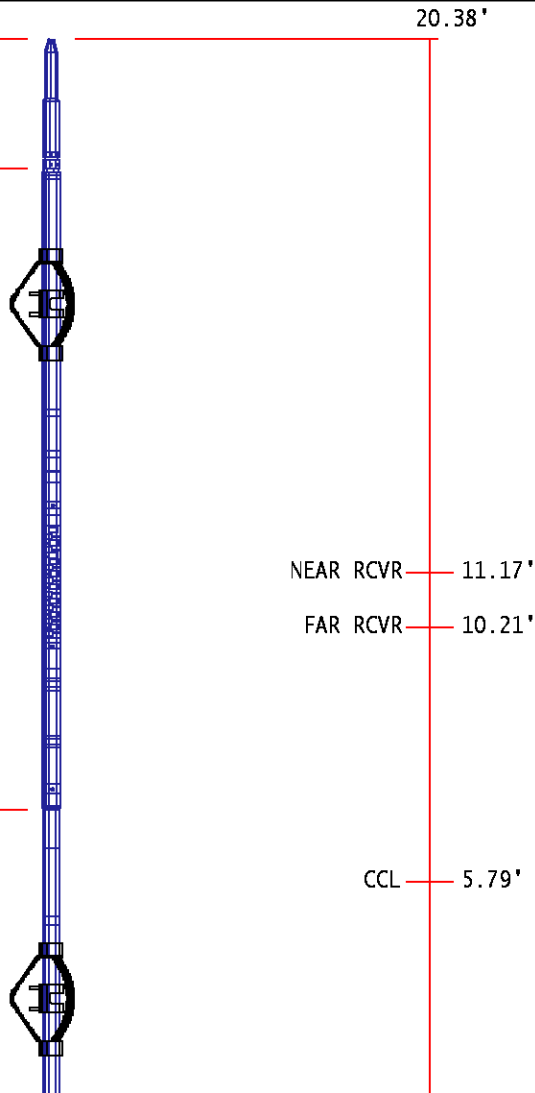
Diameter : 2.75"  
Length : 2.25'  
Weight : 10 lbs  
Series : CABL234

### RADIAL BOND TOOL

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

### 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: 1.62': CB




Measure Point: 1.67' GR  
Measure Point: 0.17' TEMP

GR 1.67'

TEMP 0.17'

TOTAL LENGTH: 20.38'  
TOTAL WEIGHT: 235 lbs  
MAX DIAMETER: 0'4.00"

	COMPANY	TERRA ENERGY PARTNERS LLC		FILE NO:	CH108536	
	WELL	FEDERAL GM 422-9		API NO:	05045225280000	
	FIELD	GRAND VALLEY				
	COUNTY	GARFIELD	STATE	COLORADO		
	LOCATION:		ELEVATIONS:		SEC.9 T.7S R.96W	
	SHL: 644' FNL & 565' FWL		KB 6110 FT		PAD: MV 16-9	
	BHL: 1986' FNL & 1898' FWL		DF		RIG: H&P 318	
	GL 6086 FT		DATE		28-Jul-2016	
	SEC	9	TWP	7S	RGE	96W