



SEGMENTED BOND TOOL<sup>SM</sup>  
GAMMA RAY LOG  
CASING COLLAR LOCATOR

Baker Atlas

FILE NO: <b>1599</b>	COMPANY <b>WELL</b> <b>FIELD</b> <b>COUNTY</b>	EXXON MOBIL EXPLORATION COMPANY <b>FRU 197-33A9</b> <b>PICEANCE CREEK</b> <b>RIO BLANCO</b>	STATE <b>COLORADO</b>
API NO: <b>05-103-11400-0000</b>	LOCATION: <b>SHL: 860' FSL &amp; 2356' FEL</b>	OTHER SERVICES	
Ver. <b>3.87</b> <b>05-103-11400-0000</b>			
PERMANENT DATUM LOG MEASURED FROM DRILL MEAS. FROM	G.L. _____ ELEVATION <b>6388 FT</b> K.B. _____ <b>26.1 FT</b> ABOVE P.D. KELLY BUSHING _____	ELEVATIONS: KB <b>6414.1 FT</b> DF <b>6413.1 FT</b> GL <b>6388 FT</b>	
DATE	24-Jan-2010		
RUN	TRIP	1	1
SERVICE ORDER	576608		
DEPTH DRILLER	8523 FT		
DEPTH LOGGER	8480 FT		
BOTTOM LOGGED INTERVAL	8480 FT		
TOP LOGGED INTERVAL	0 FT		
TIME STARTED	03:00		
TIME FINISHED	8:30		
OPERATOR RIG TIME	5.5 HOURS		
TYPE OF FLUID IN HOLE	WBM		
FLUID DENSITY	9.55 LB/G		
FLUID SALINITY	3000 PPM		
FLUID LEVEL	0 FT		
LOGGED CEMENT TOP	4300 FT		
WELLHEAD PRESSURE	0 PSI		
MAXIMUM HOLE DEVIATION	1.3 DEG		
NOMINAL LOGGING SPEED	350 F/MIN		
MAX. RECORDED TEMP.	N/A		
REFERENCE LOG	N/A		
REFERENCE LOG DATE	N/A		
EQUIP. NO.	LOCATION	HL-6741	VERNAL
RECORDED BY	DONALDSON		
WITNESSED BY	STRUM		

IN MAKING INTERPRETATIONS OF LOGS OUR EMPLOYEES WILL GIVE 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
9.875 IN	3891 FT	8523 FT

CASING RECORD

SIZE	WEIGHT	GRADE	FROM	TO
7.0 IN	26 LB/F	N/A	0 FT	8523 FT
10.75 IN	45 LB/F	N/A	0 FT	3891 FT

REMARKS

RUN 1 TRIP 1 :  
\* RIG: H&P 215  
\* CREW: CUMMINGS/VICKERS/WICHERS  
\* THANK YOU FOR CHOOSING BAKER ATLAS

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	CCL	4236XA	1024571	CENTRALIZED
1	1	GR	1309XA	Z72835	FREE
1	1	TELEMETRY	1633EA	117100	FREE
1	1	CENTRALIZER	4341XA	5892456	CENTRALIZED
1	1	SPT	1424XA	146773	RAD. BEACON

1	1	SBT	1424XA	148773	PAD DEVICE
1	1	VDL	1424PA	118033	CENTRALIZED
1	1	CENTRALIZER	4341XA	965124	CENTRALIZED

## MAIN LOG 5"/100FT SCALE

ECLIPS 6.0i Feb 21, 2008  
Updates: 1,39 Patches: 4

Mon Jan 25 08:34:57 2010

Pcrplt /main/62

Cplot

Pdf\_Cpp /main/16

Fileview 5.42

### PARAMETER AND FILTER SUMMARY REPORT

FILE: /data1a/1599/k391a02.prm  
LOGGING MODE: DEPTH DIRECTION: UP  
TOP DEPTH: 3507.500 ft BOTTOM DEPTH: 8499.504 ft

### SYMMETRIC FILTER

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

### SBT PROCESSING

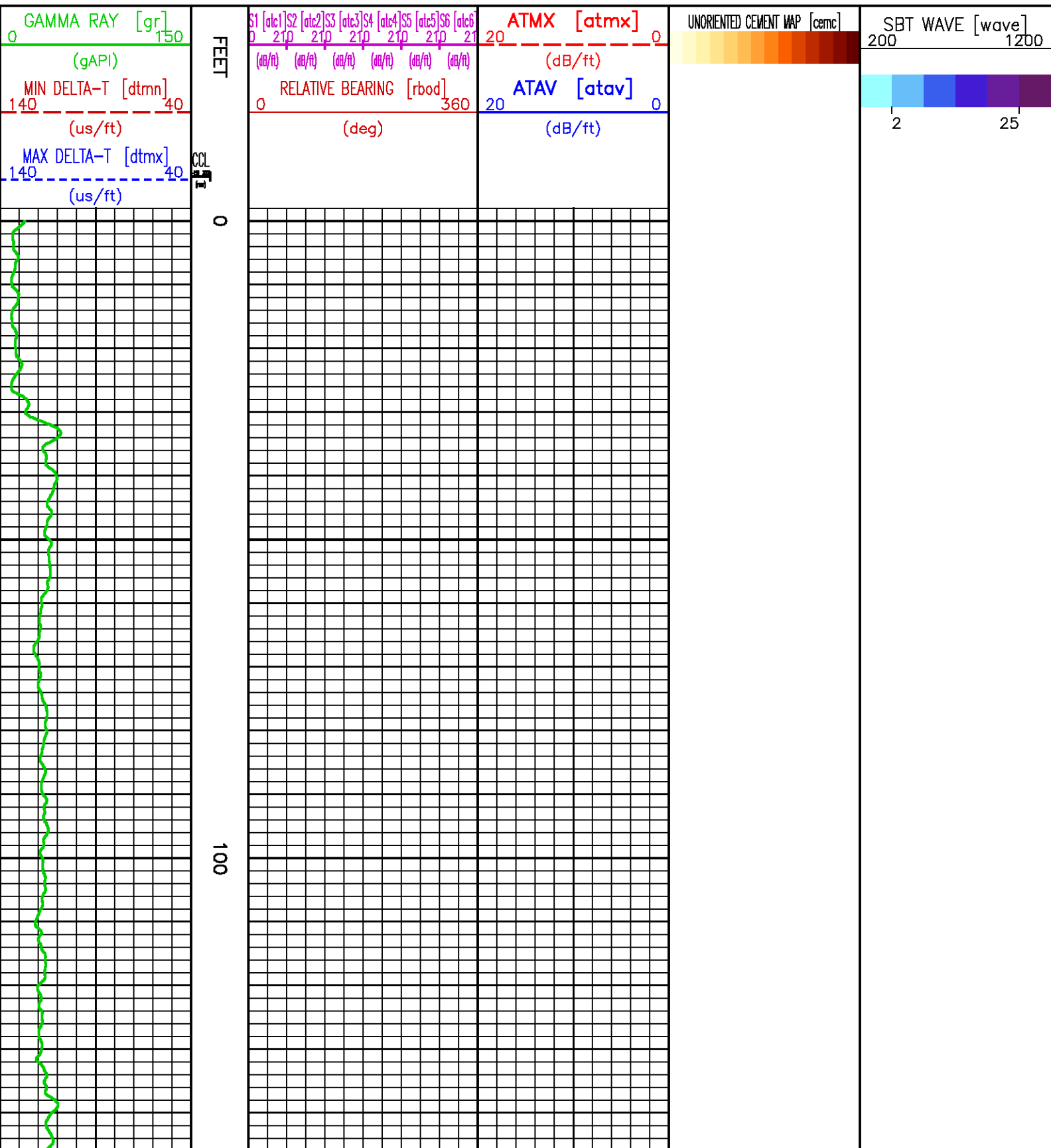
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
SBT	CASING OD	7.000	ln	TOP	BOTTOM
	CASING WT	26.000	lbm/ft	"	"
	CORR. FACTOR 1	0.445	dB/ft	"	"
	CORR. FACTOR 2	-1.901	dB/ft	"	"
	CORR. FACTOR 3	-1.014	dB/ft	"	"
	CORR. FACTOR 4	1.046	dB/ft	"	"
	CORR. FACTOR 5	1.908	dB/ft	"	"
	CORR. FACTOR 6	-0.484	dB/ft	"	"
	SPACING	0.654	ft	"	"
	SPREADING FACTOR	4.589	dB/ft	"	"
	CEMENT STRENGTH	500	psi	"	"
	HI CUTOFF	5.603	dB/ft	"	"
	LOW CUTOFF	2.295	dB/ft	"	"

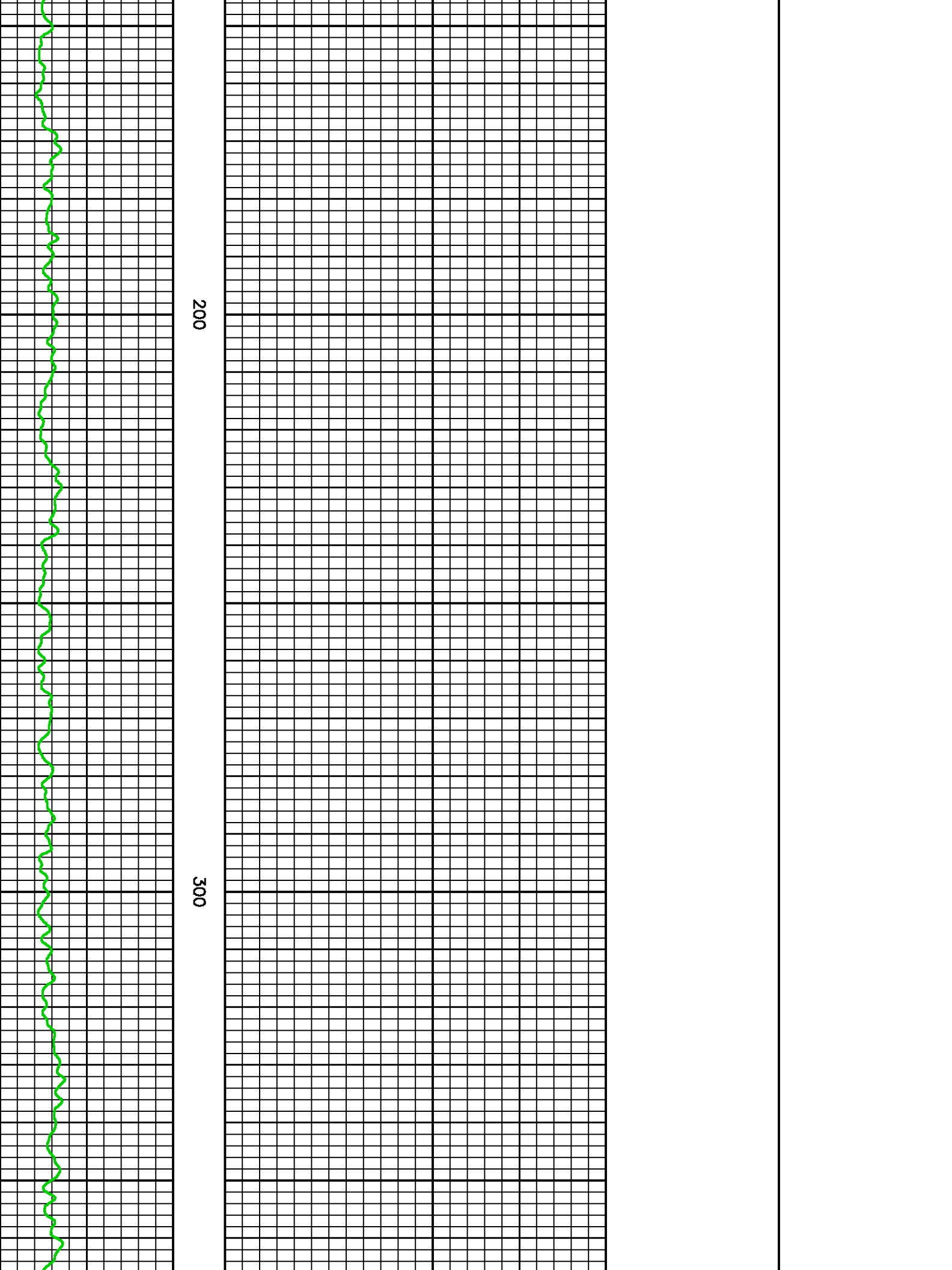
### CURVE DESCRIPTION REPORT

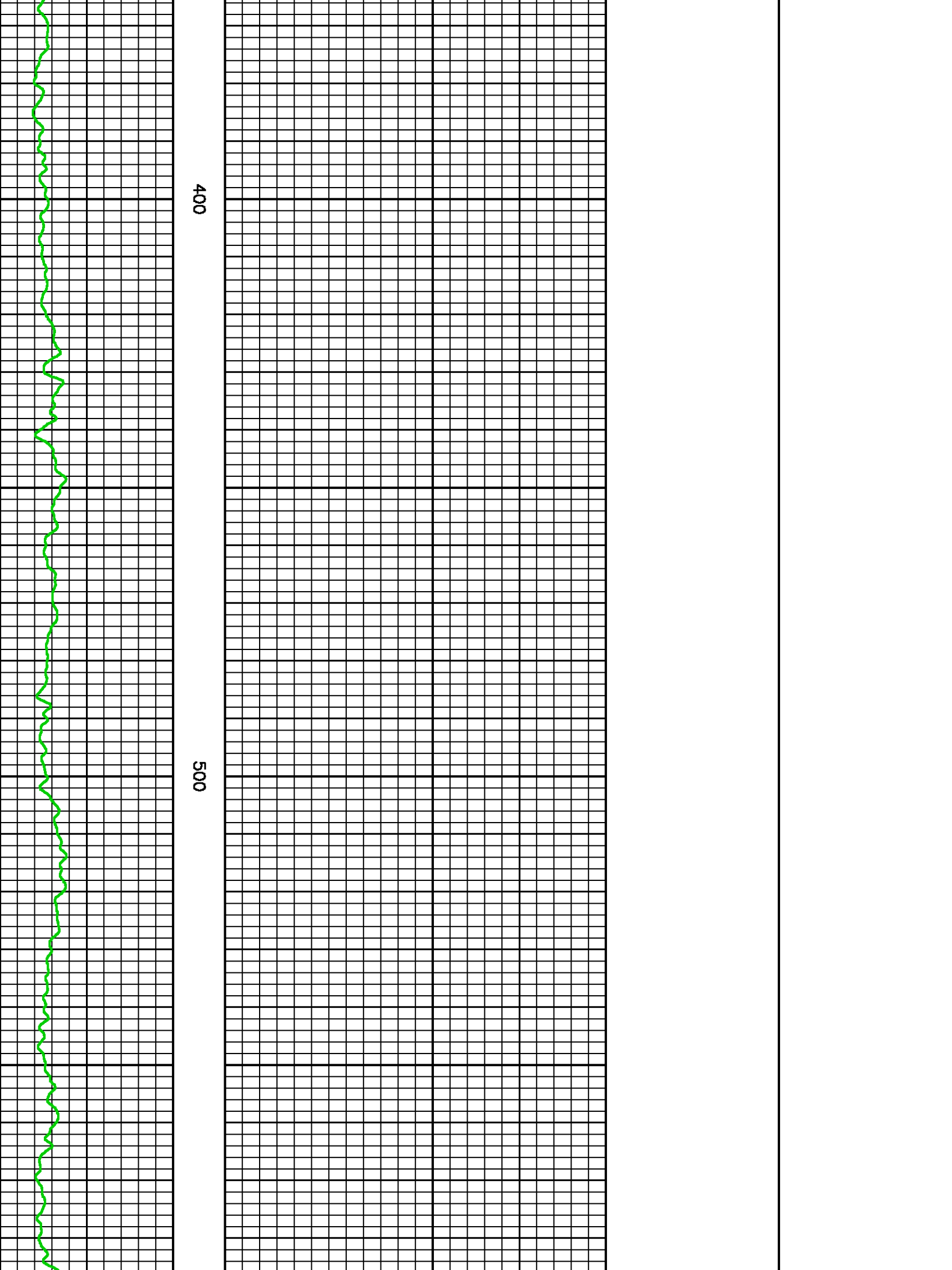
CURVE NAME	CURVE ALIAS	CREATION DATE	CURVE DESCRIPTION
F1:ATAV	ATAV	Jan 25 04:23:10 2010	AVERAGE ATTENUATION
F1:ATC1	ATC1	Jan 25 04:23:10 2010	ATTENUATION PAD 1
F1:ATC2	ATC2	Jan 25 04:23:10 2010	ATTENUATION PAD 2
F1:ATC3	ATC3	Jan 25 04:23:10 2010	ATTENUATION PAD 3
F1:ATC4	ATC4	Jan 25 04:23:10 2010	ATTENUATION PAD 4
F1:ATC5	ATC5	Jan 25 04:23:10 2010	ATTENUATION PAD 5
F1:ATC6	ATC6	Jan 25 04:23:10 2010	ATTENUATION PAD 6
F1:ATMX	ATMX	Jan 25 04:23:10 2010	ATTENUATION MAXIMUM
F1:CCL	CCL	Jan 25 04:23:10 2010	CASING COLLAR LOCATOR
F1:CEMC	UNORIENTED CEMENT MAP	Jan 25 04:23:10 2010	CALIBRATED CEMENT MAP
F1:DTMN	DTMN	Jan 25 04:23:10 2010	MINIMAL DELTA-T
F1:DTMX	DTMX	Jan 25 04:23:10 2010	MAXIMAL DELTA-T
F1:GR	GR	Jan 25 04:23:10 2010	GAMMA RAY
F1:RBOD	RBOD	Jan 25 04:23:10 2010	RELATIVE BEARING (RELATIVE TO HIGH SIDE OF BOREHOLE)
F1:WAVE	WAVE	Jan 25 04:23:10 2010	250 BYTES DIGITIZED WAVEFORM

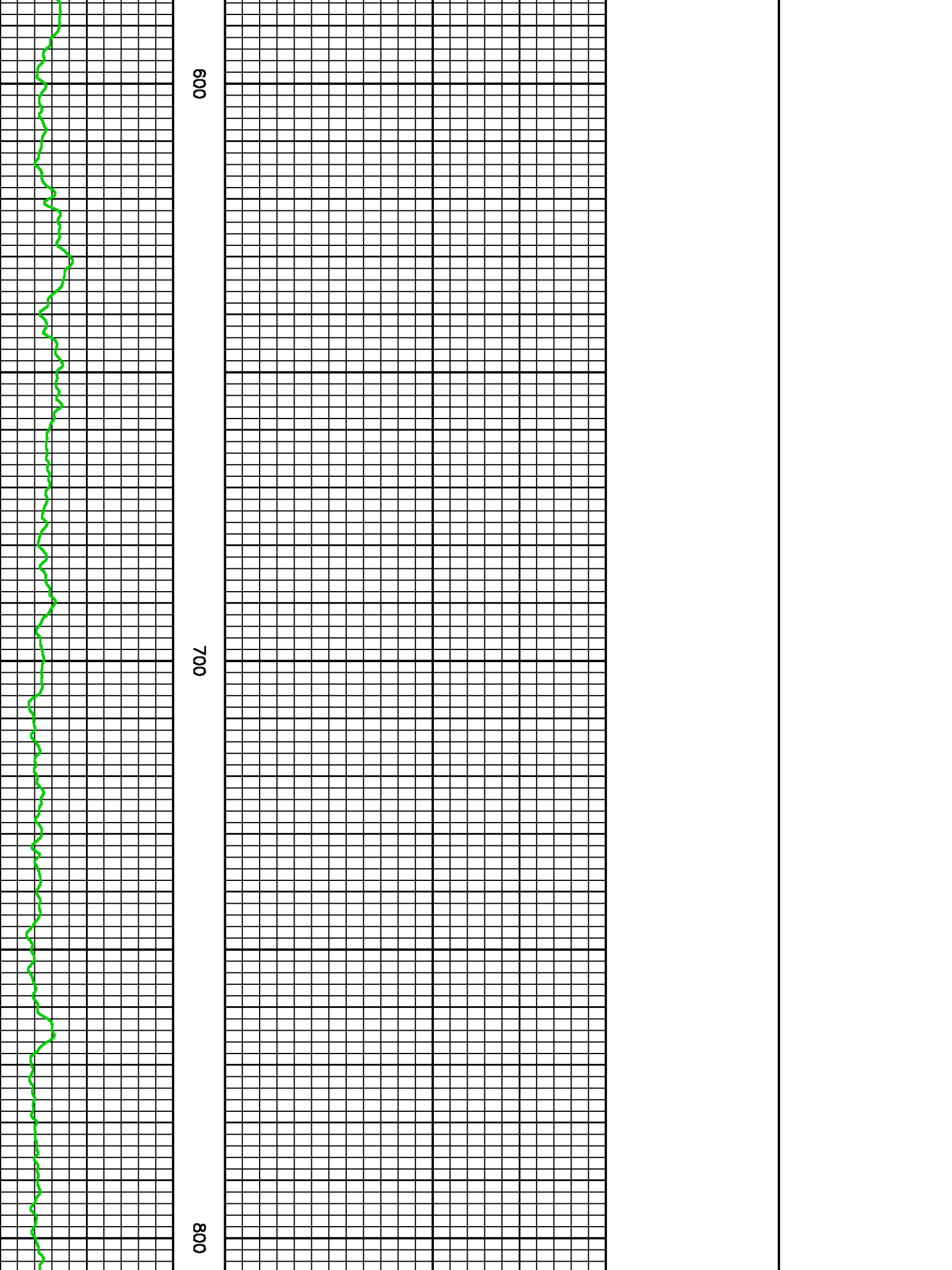
### CURVE MEASURE POINT OFFSET

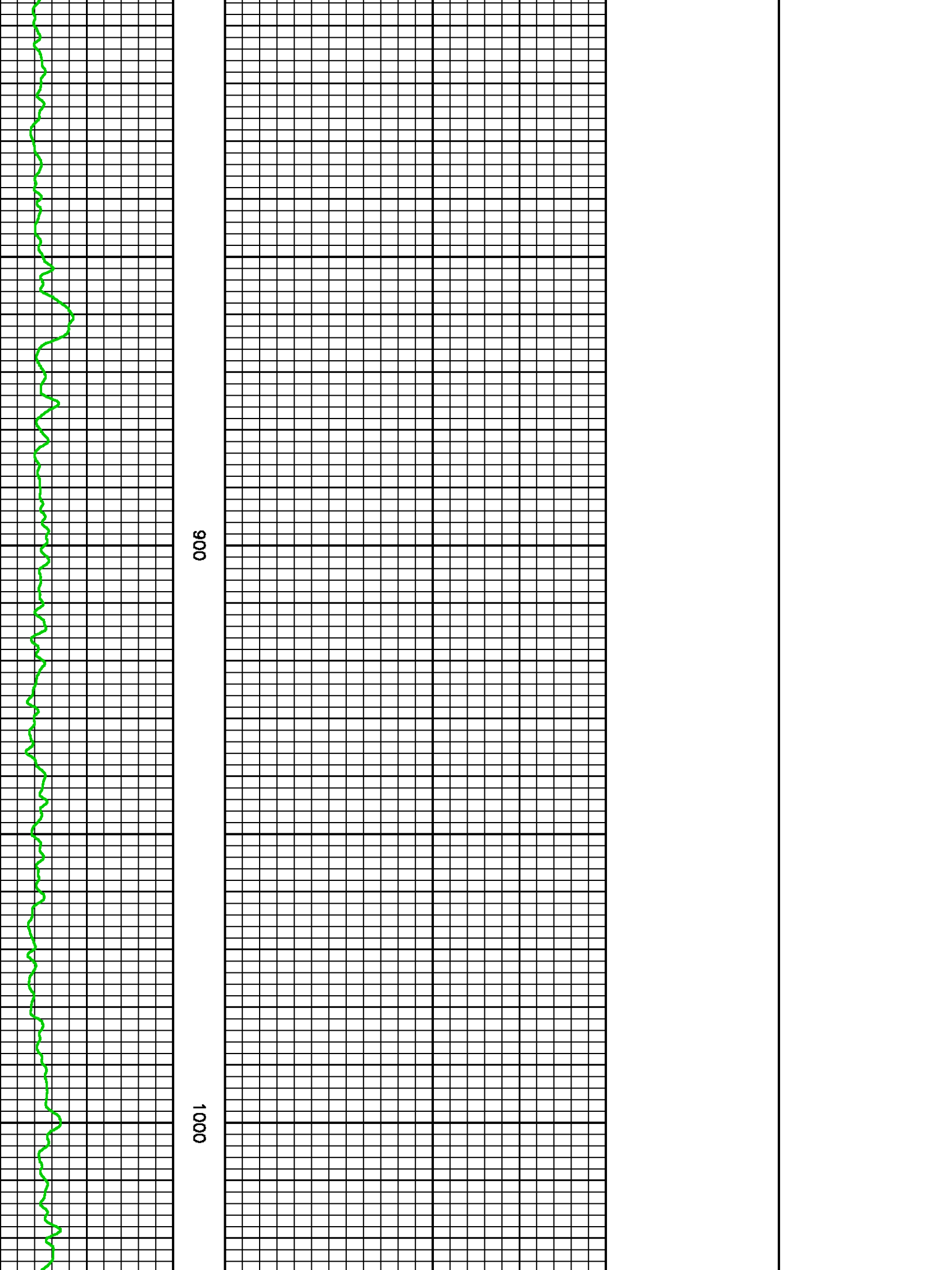
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
ATAV	19.75	ATC4	19.75	CCL	52.00	RBOD	19.75
ATC1	19.75	ATC5	19.75	DTMN	19.75		

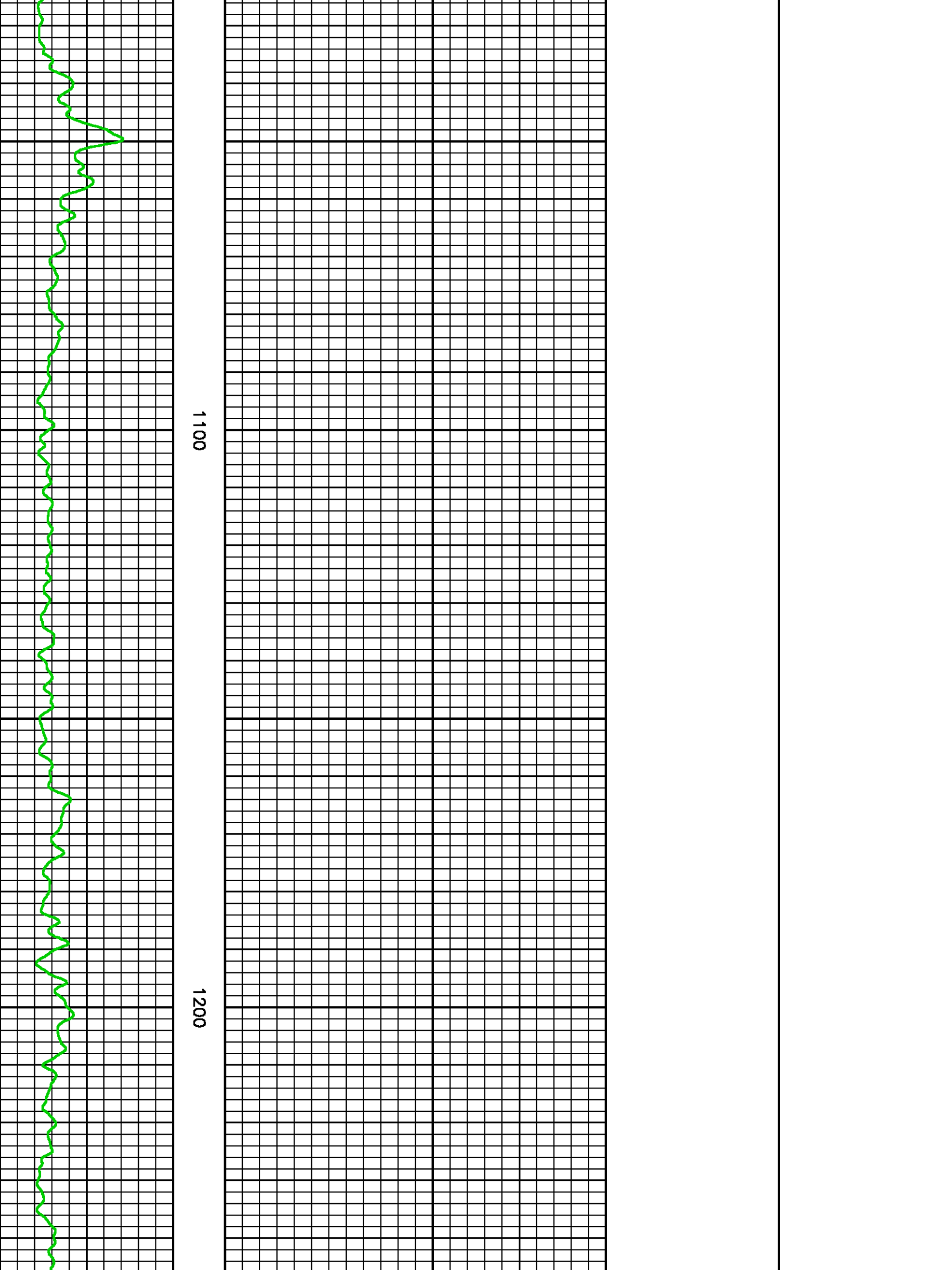




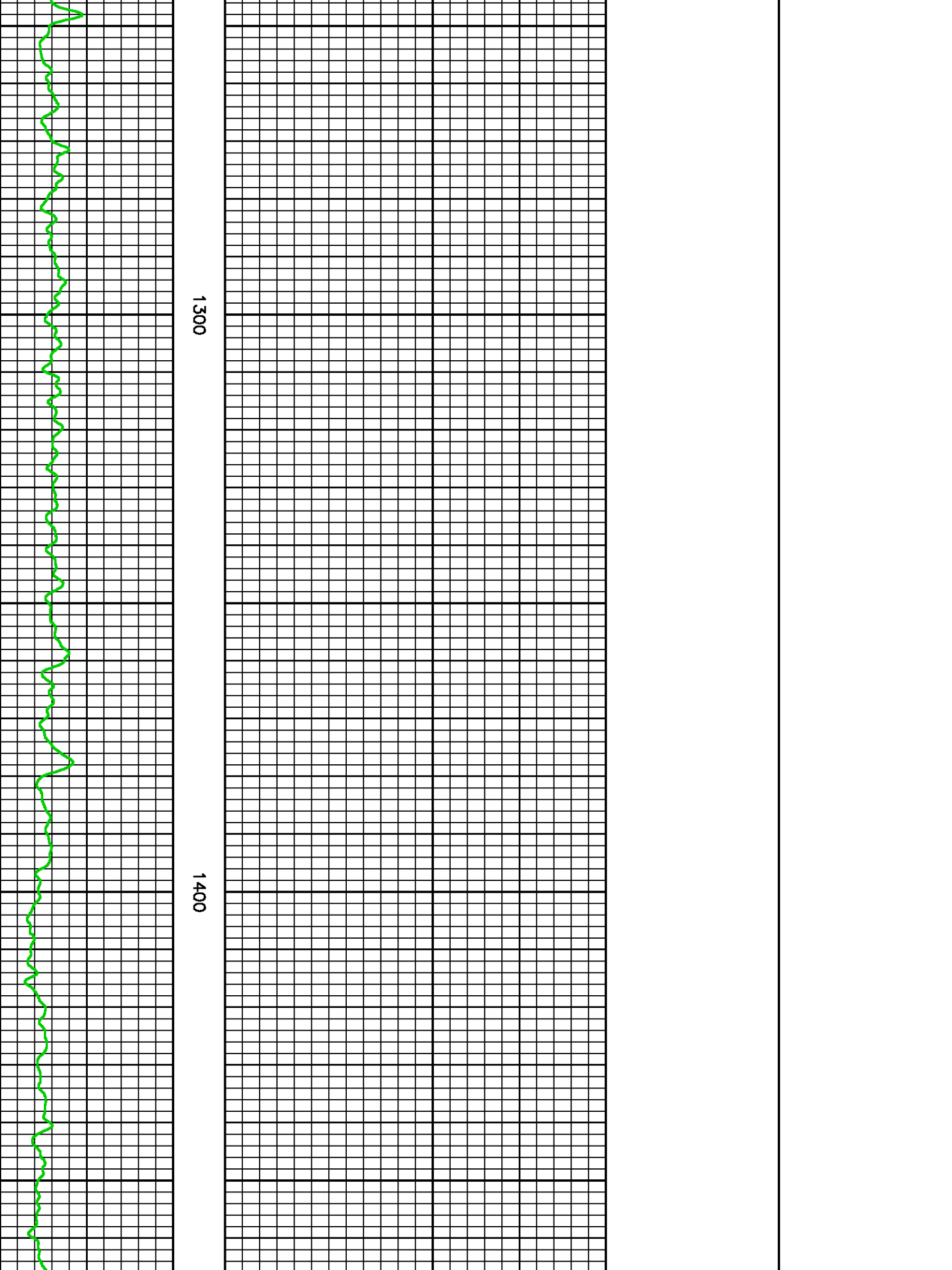


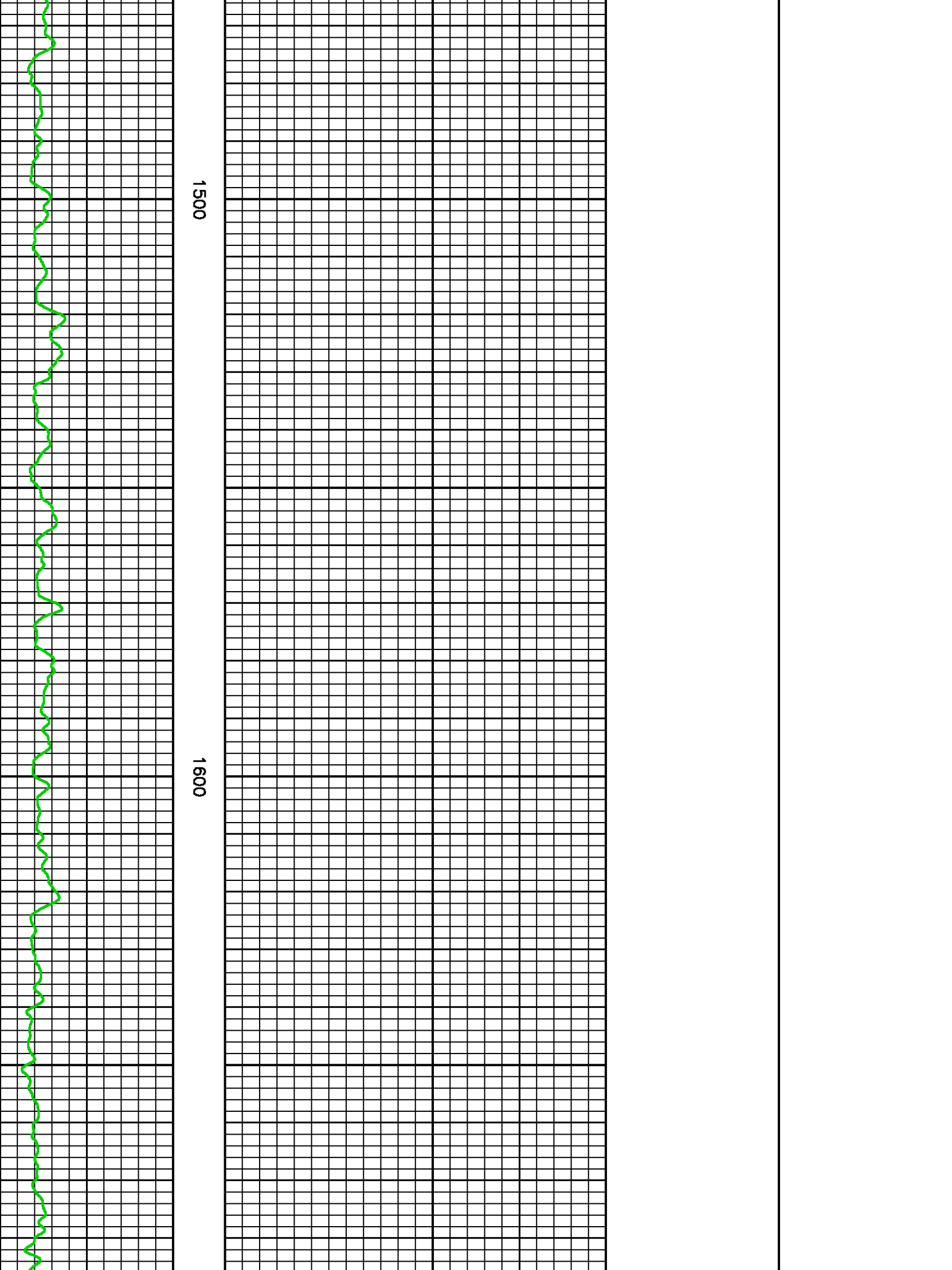


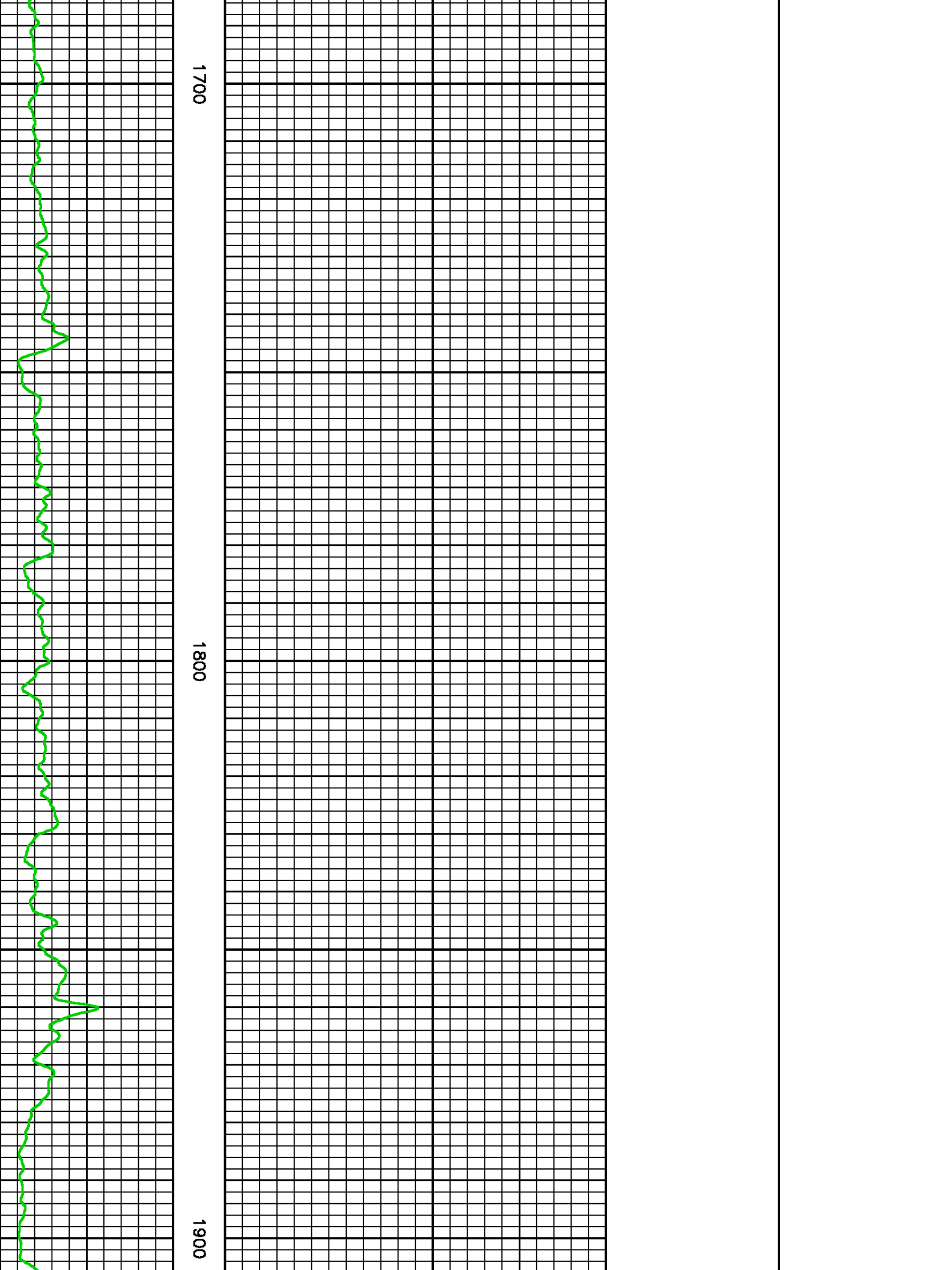


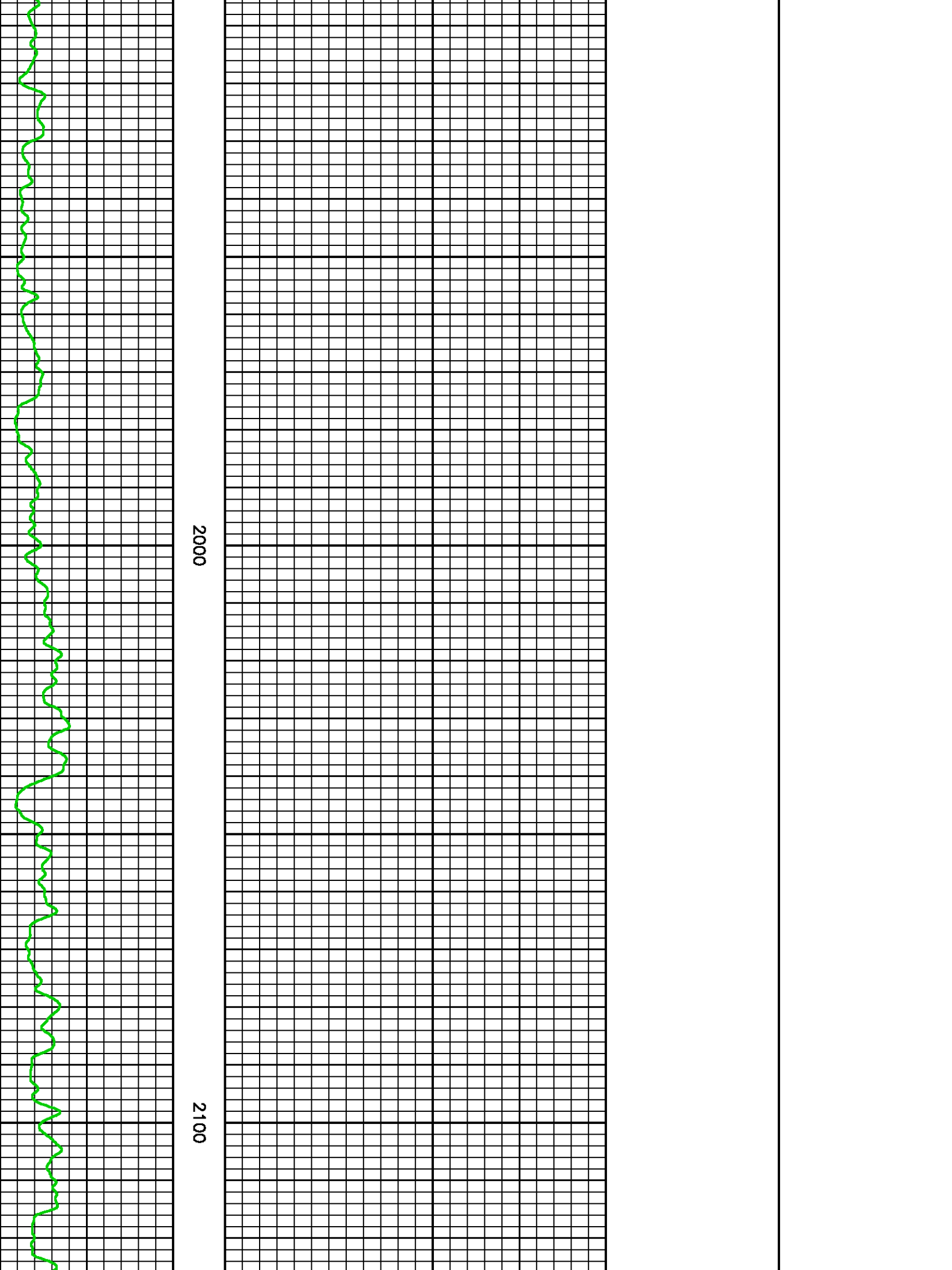


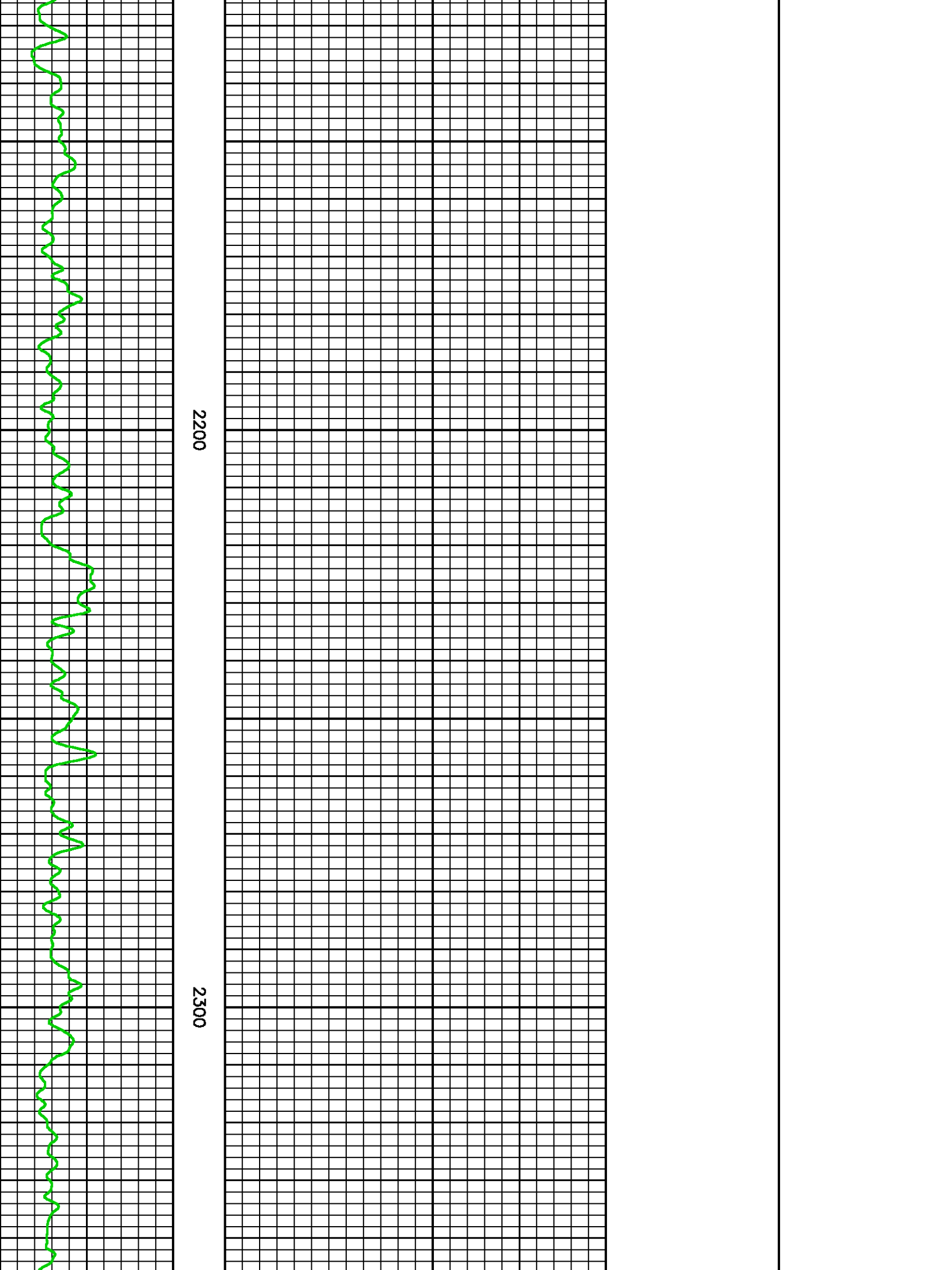


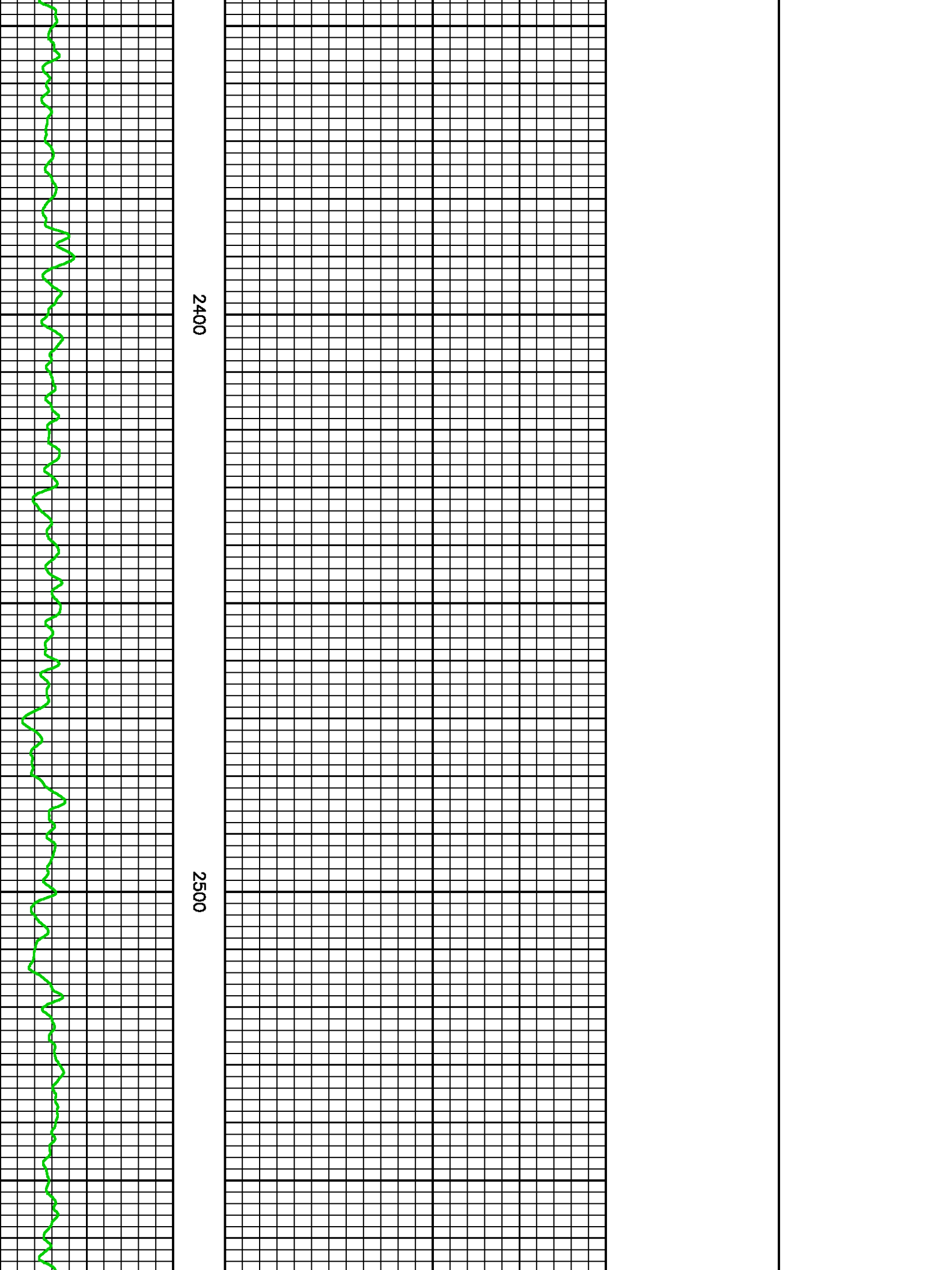


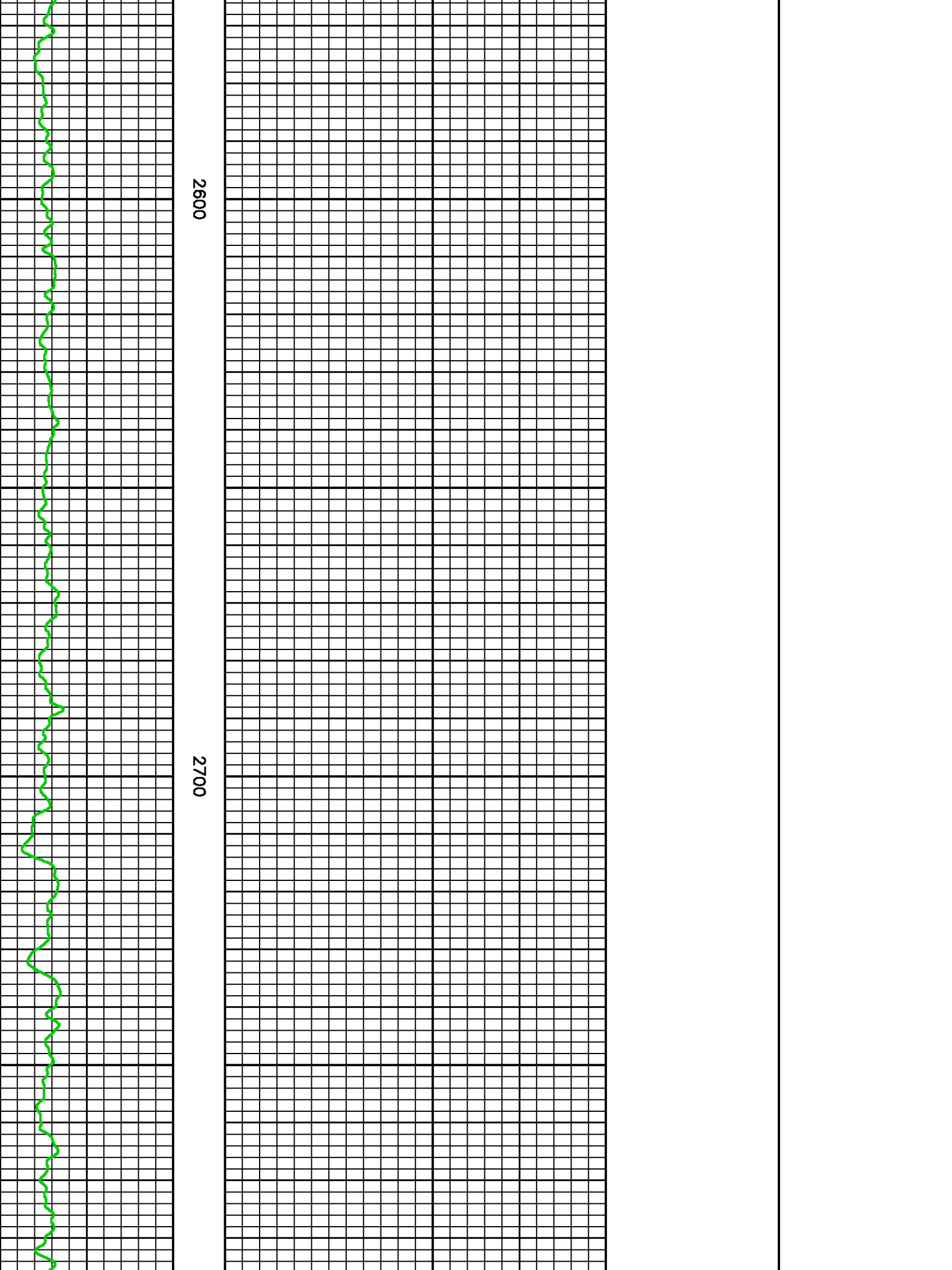


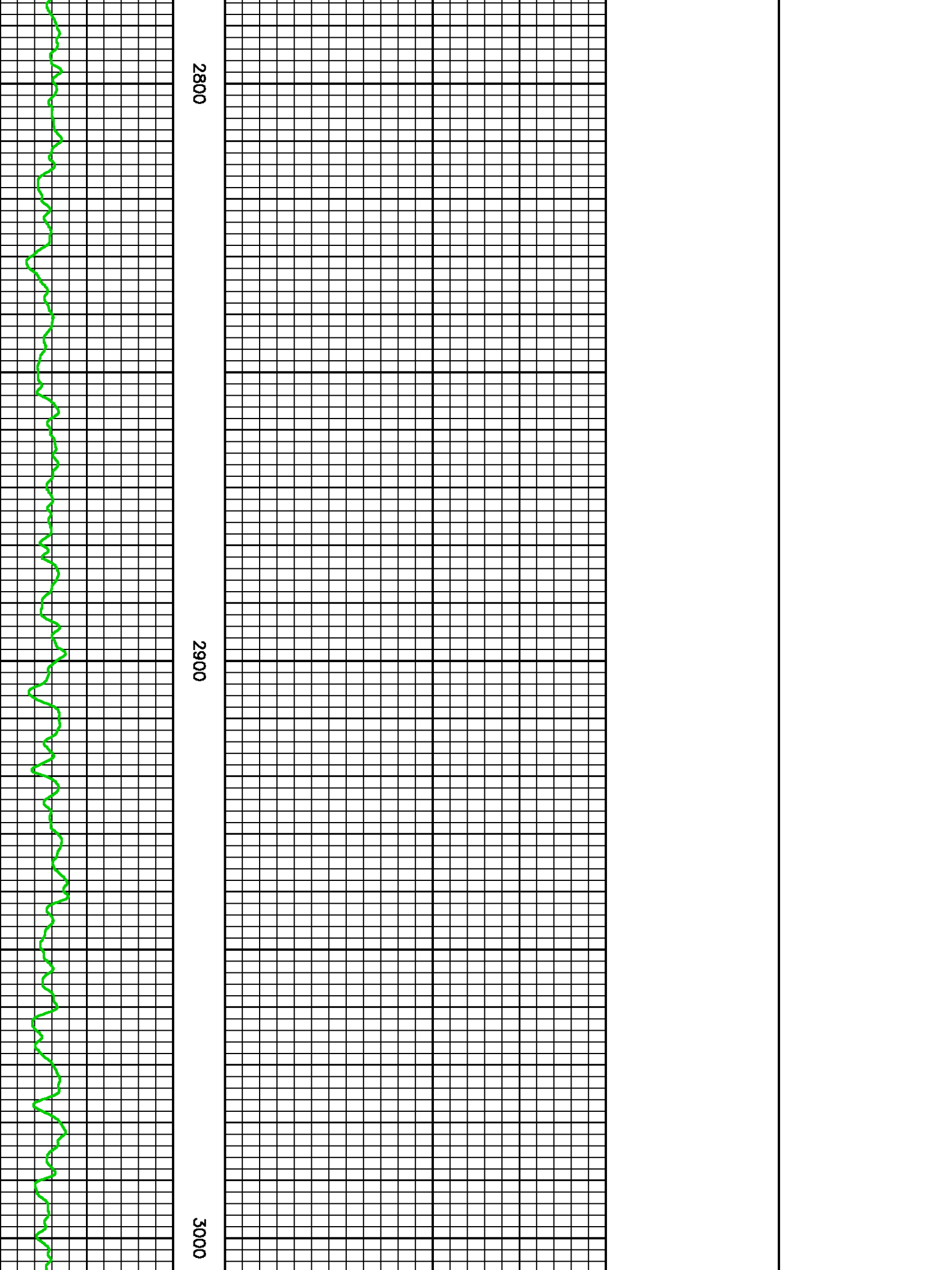




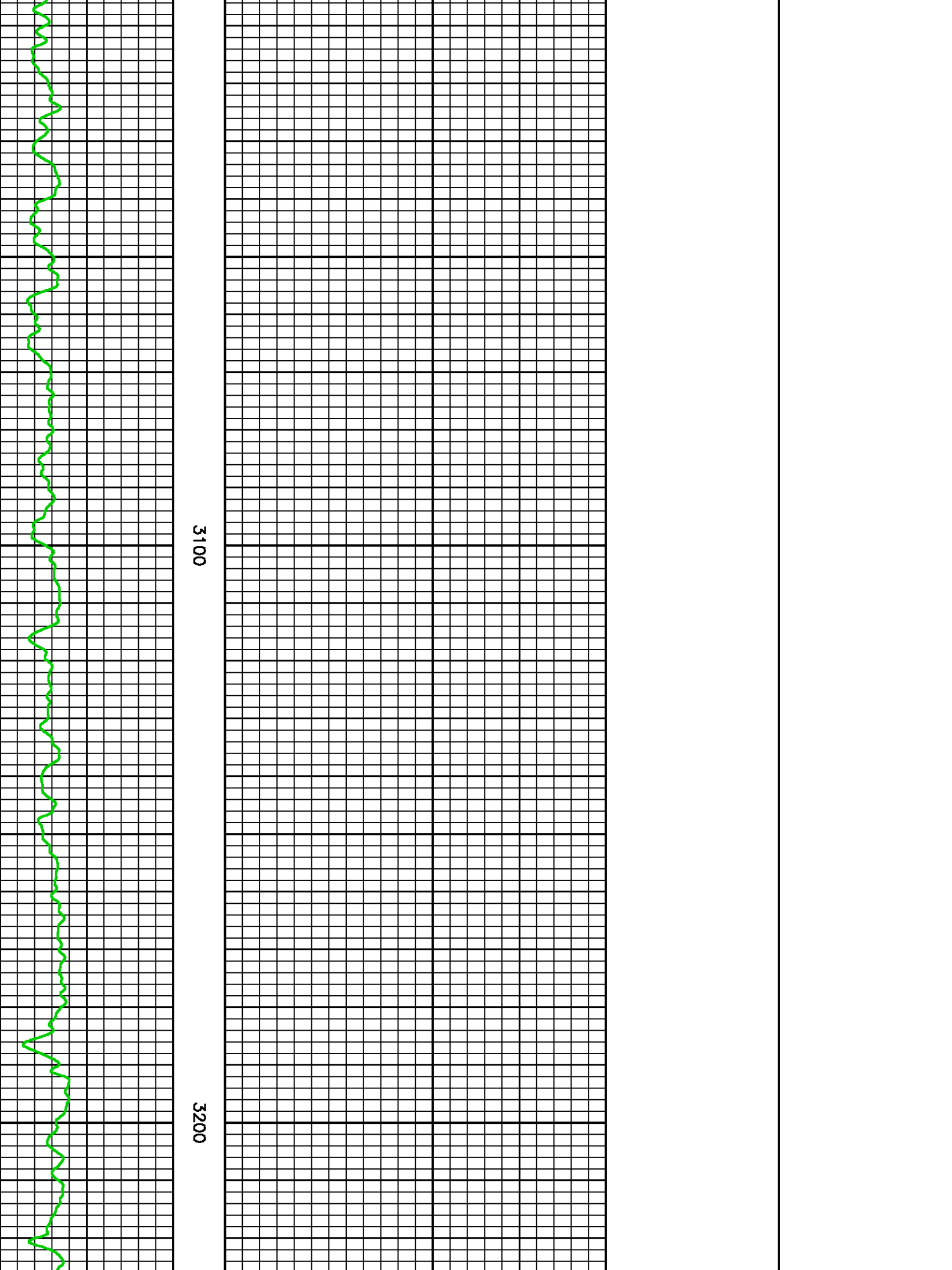


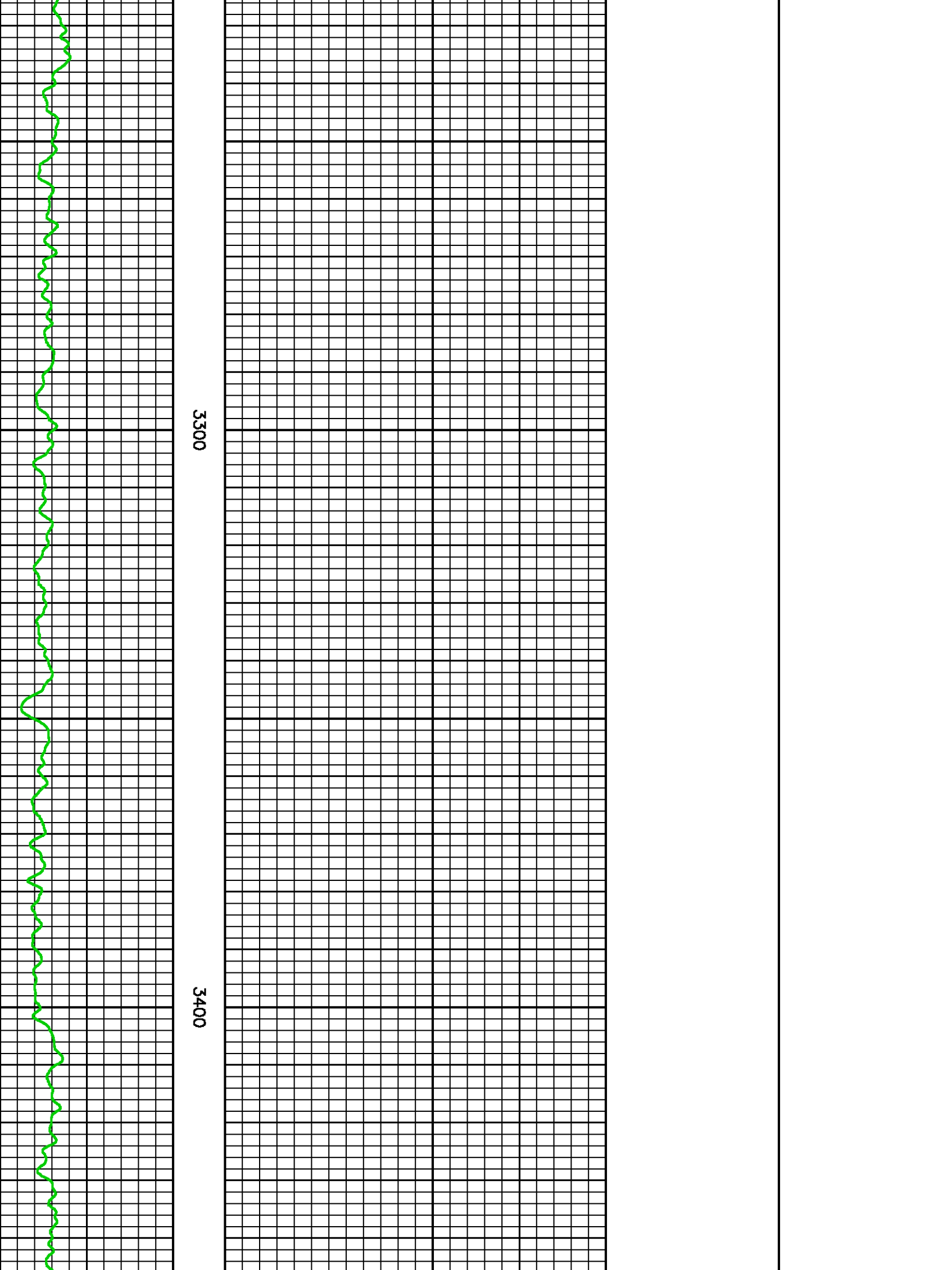


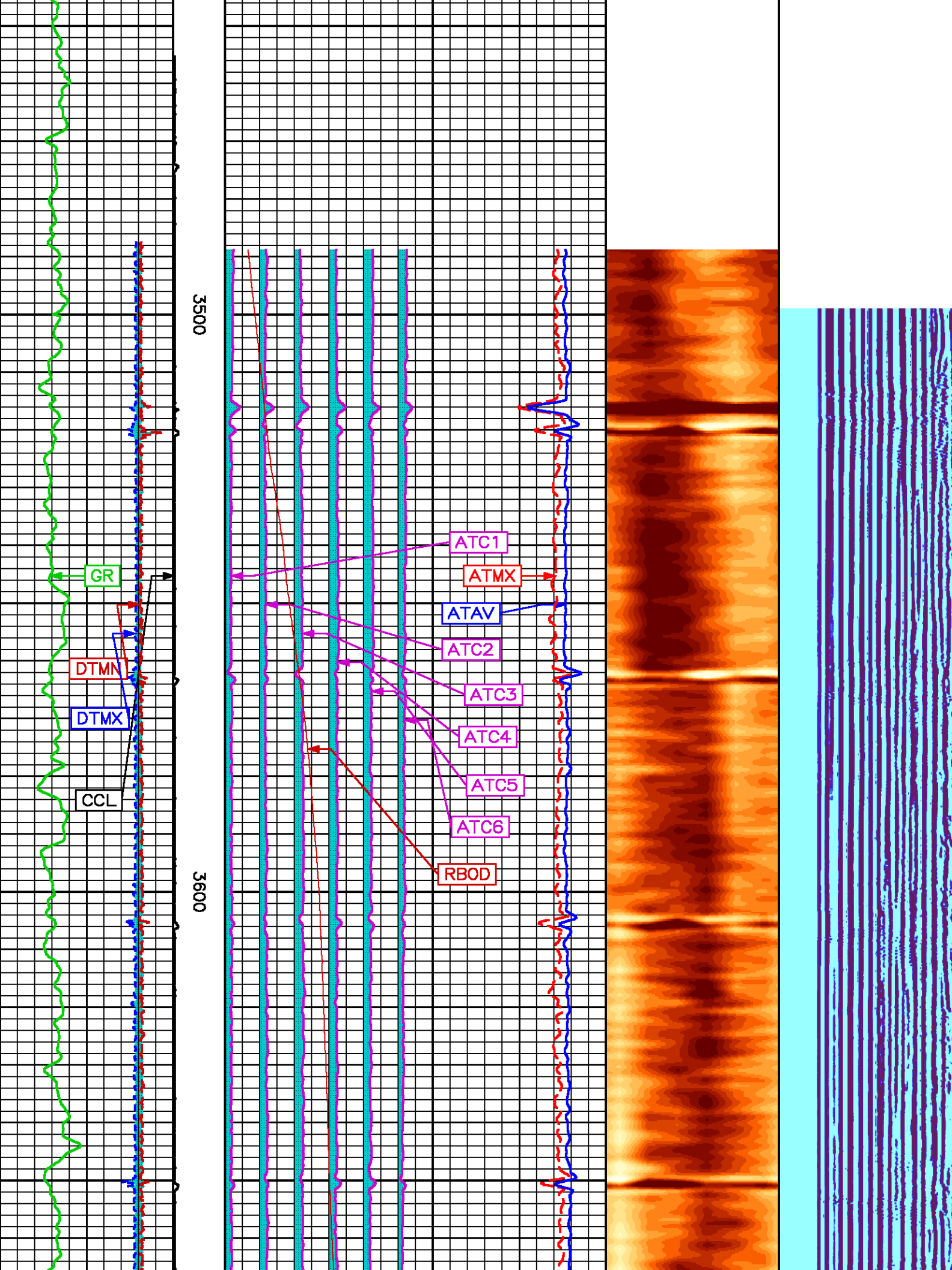


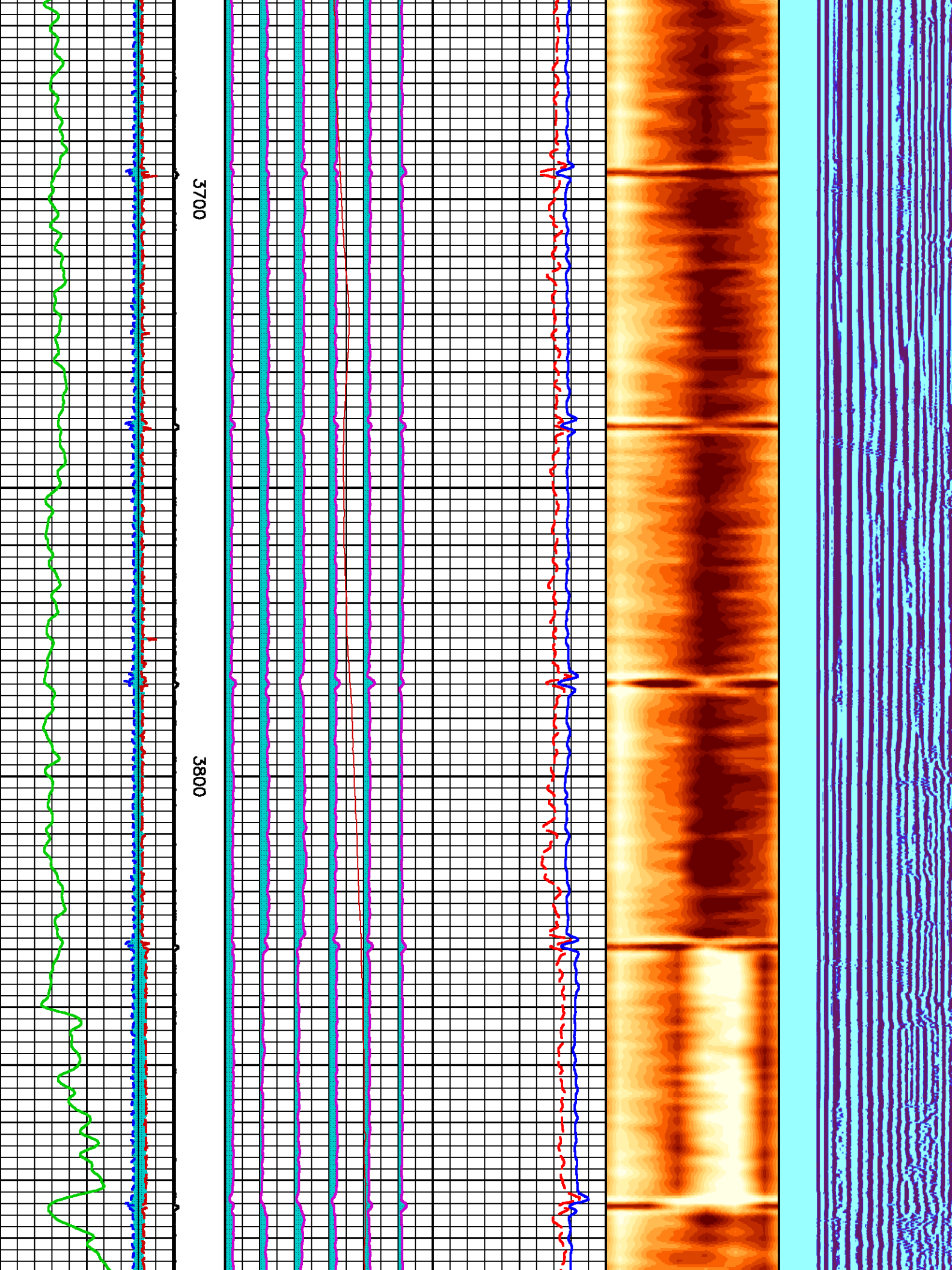


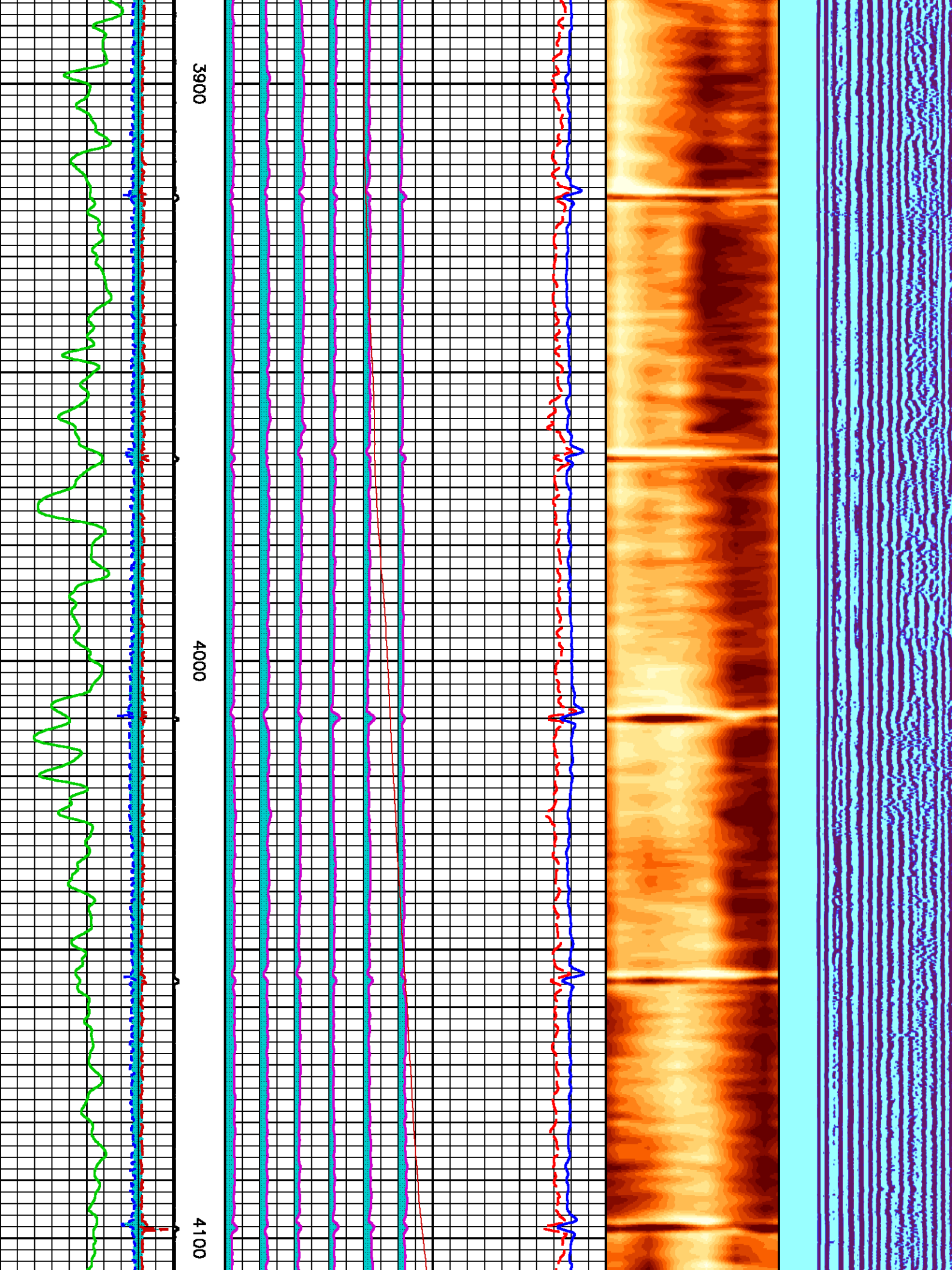


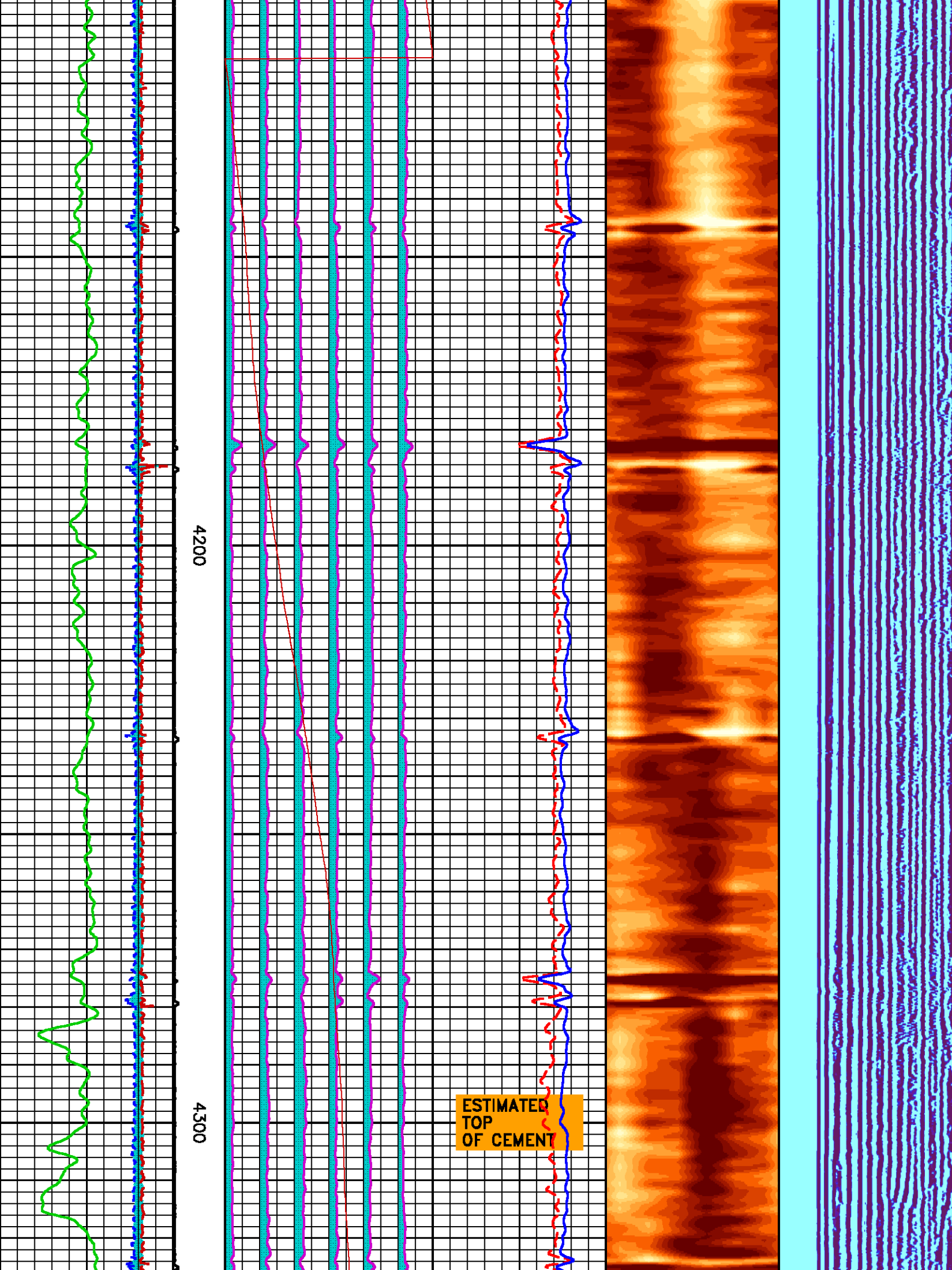




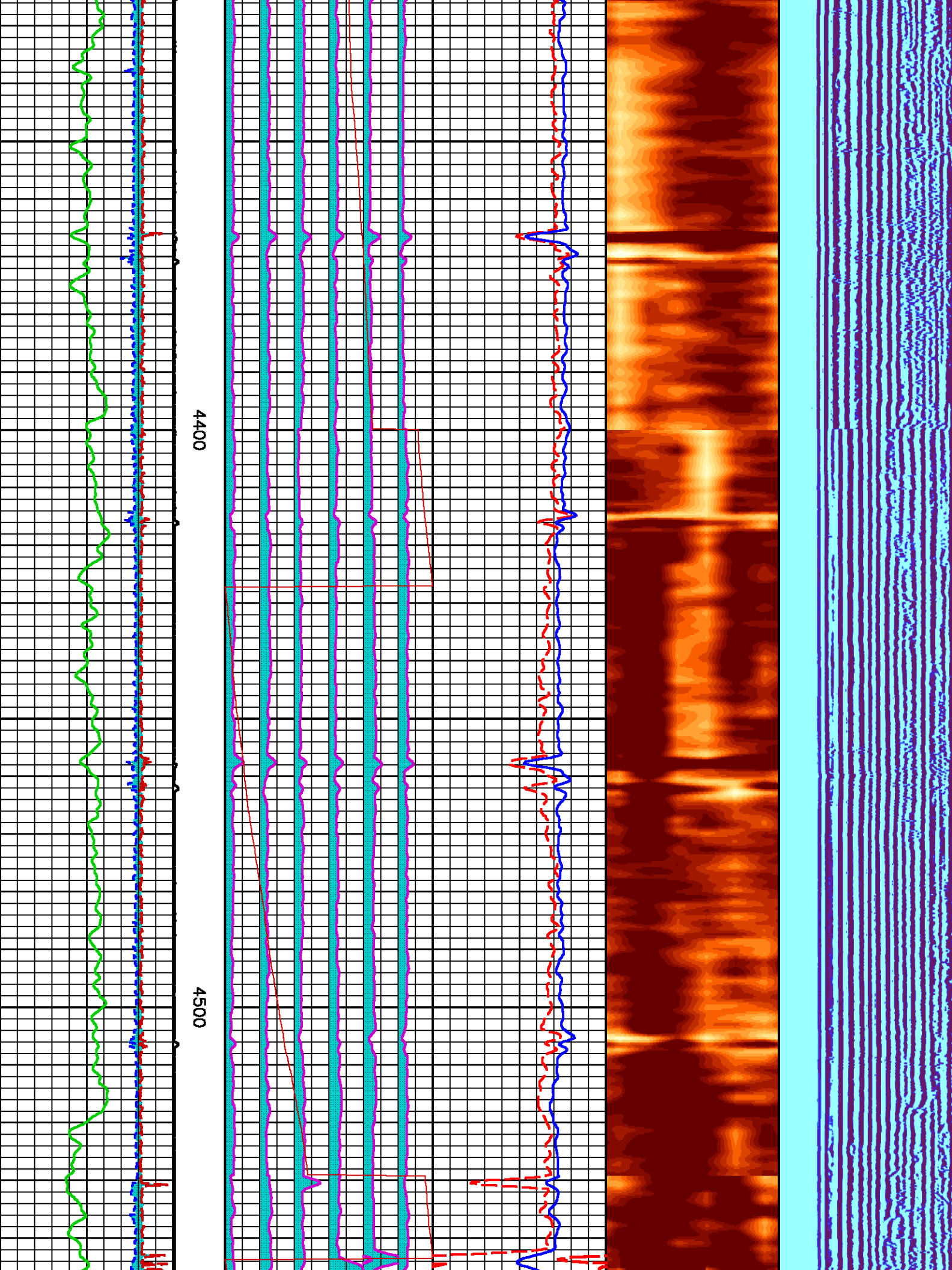


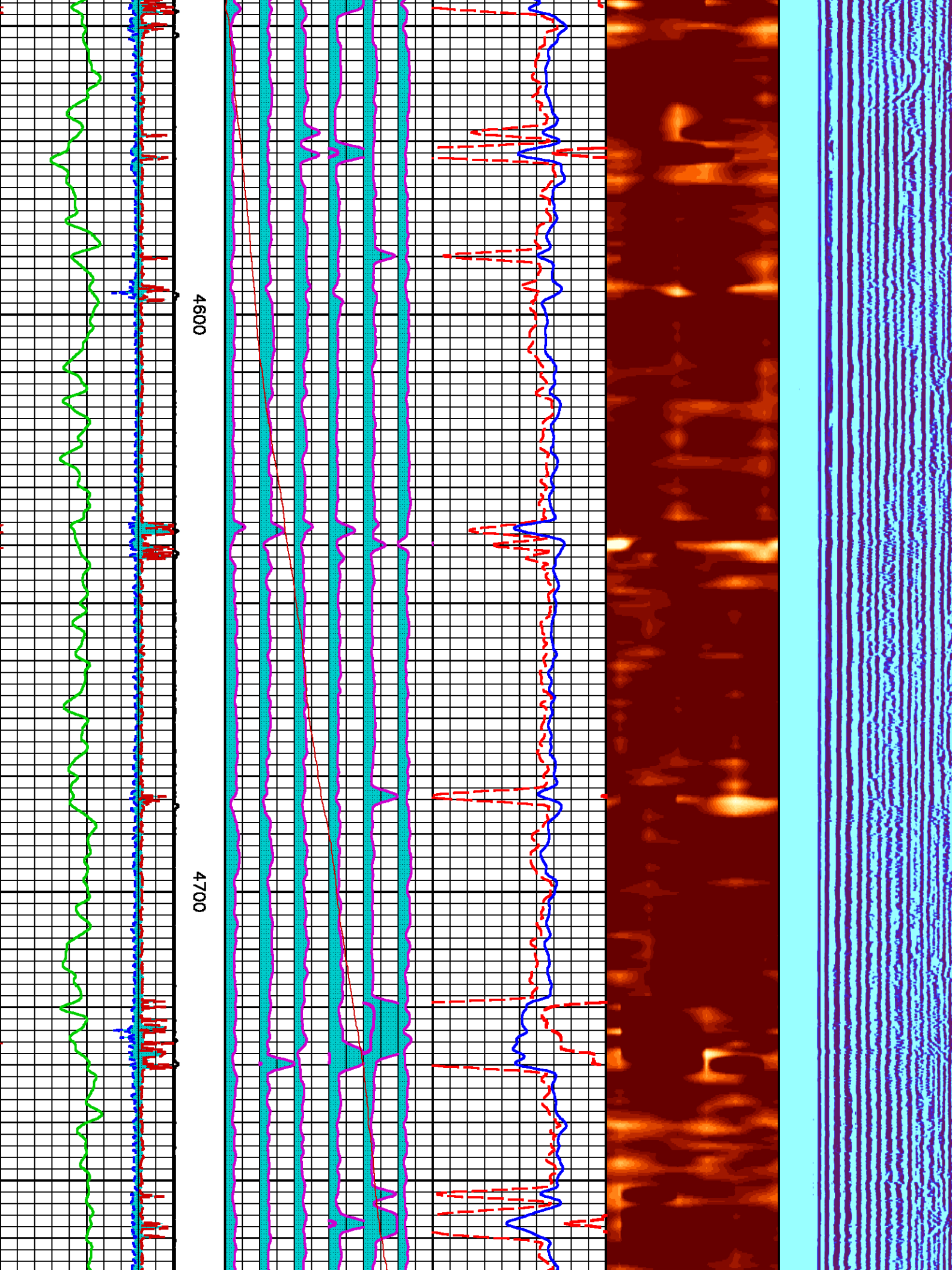




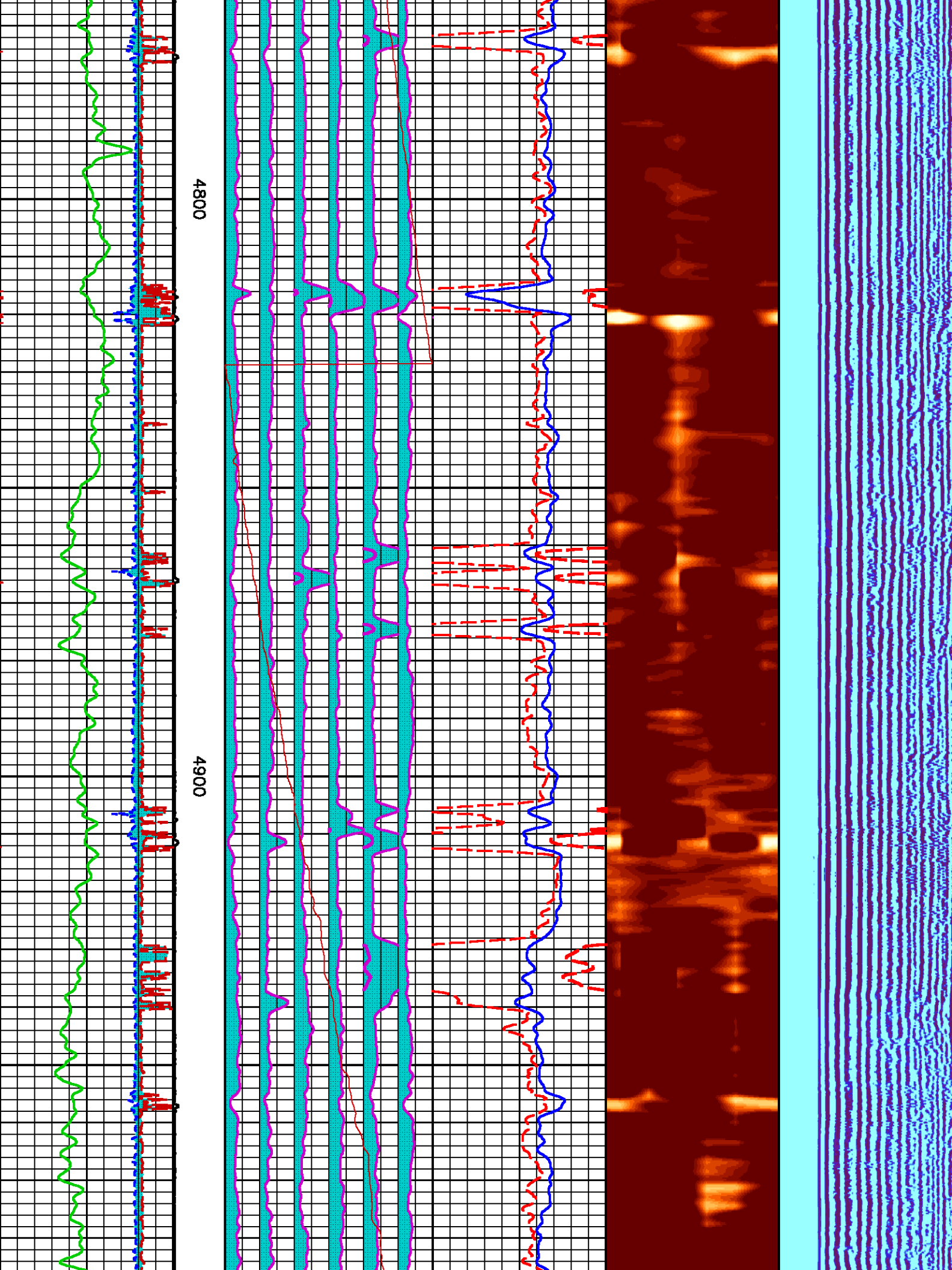


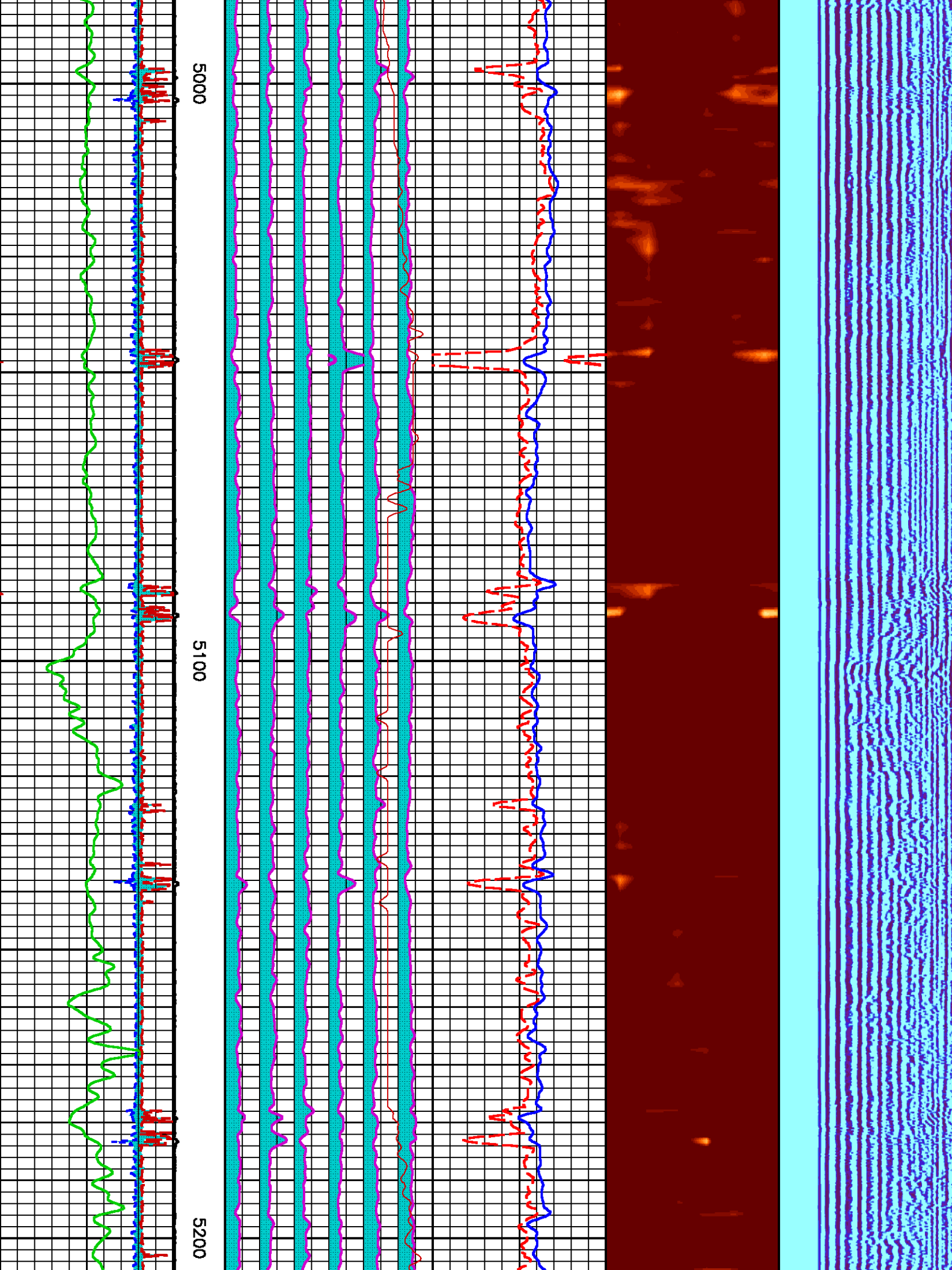


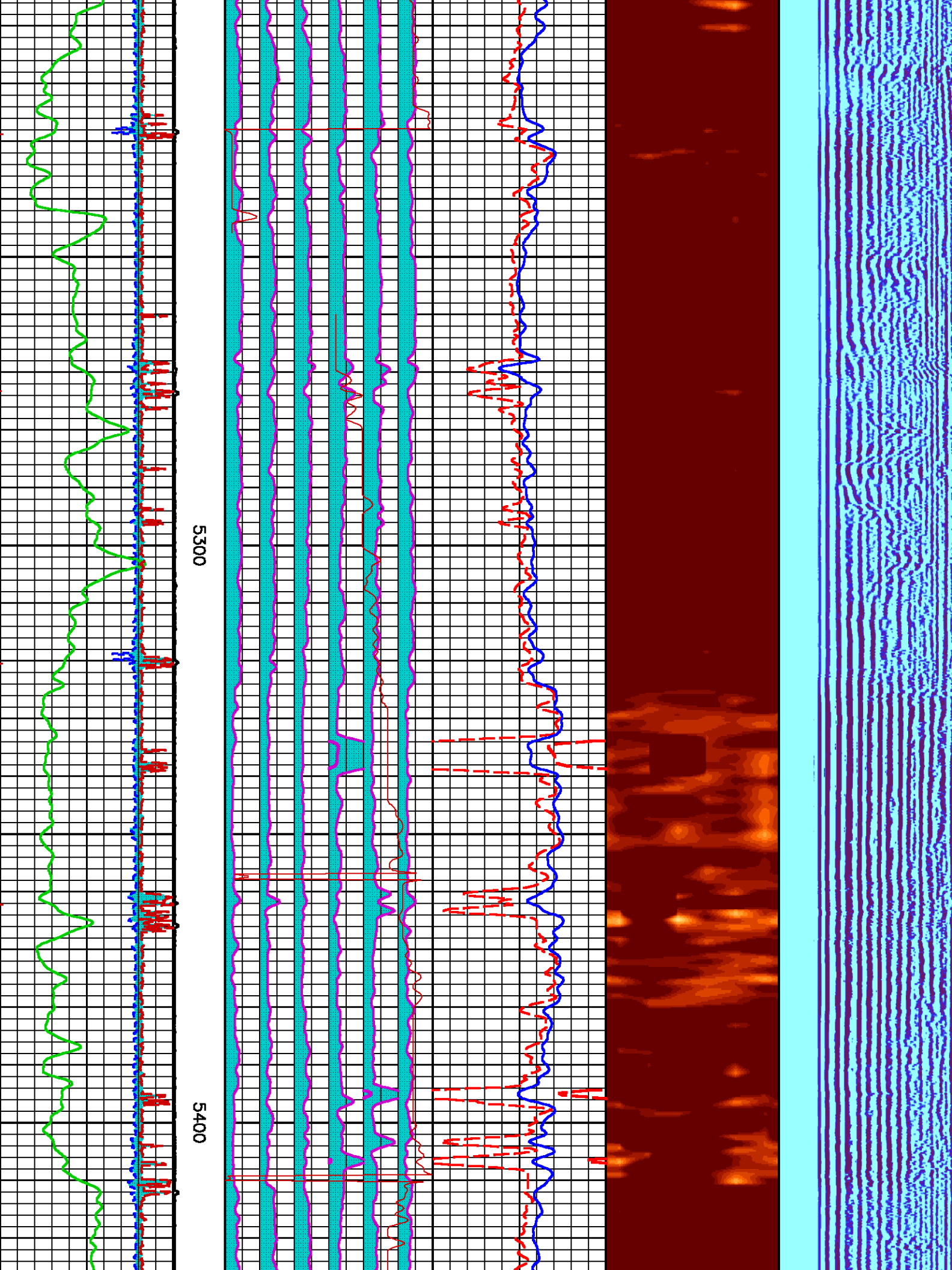




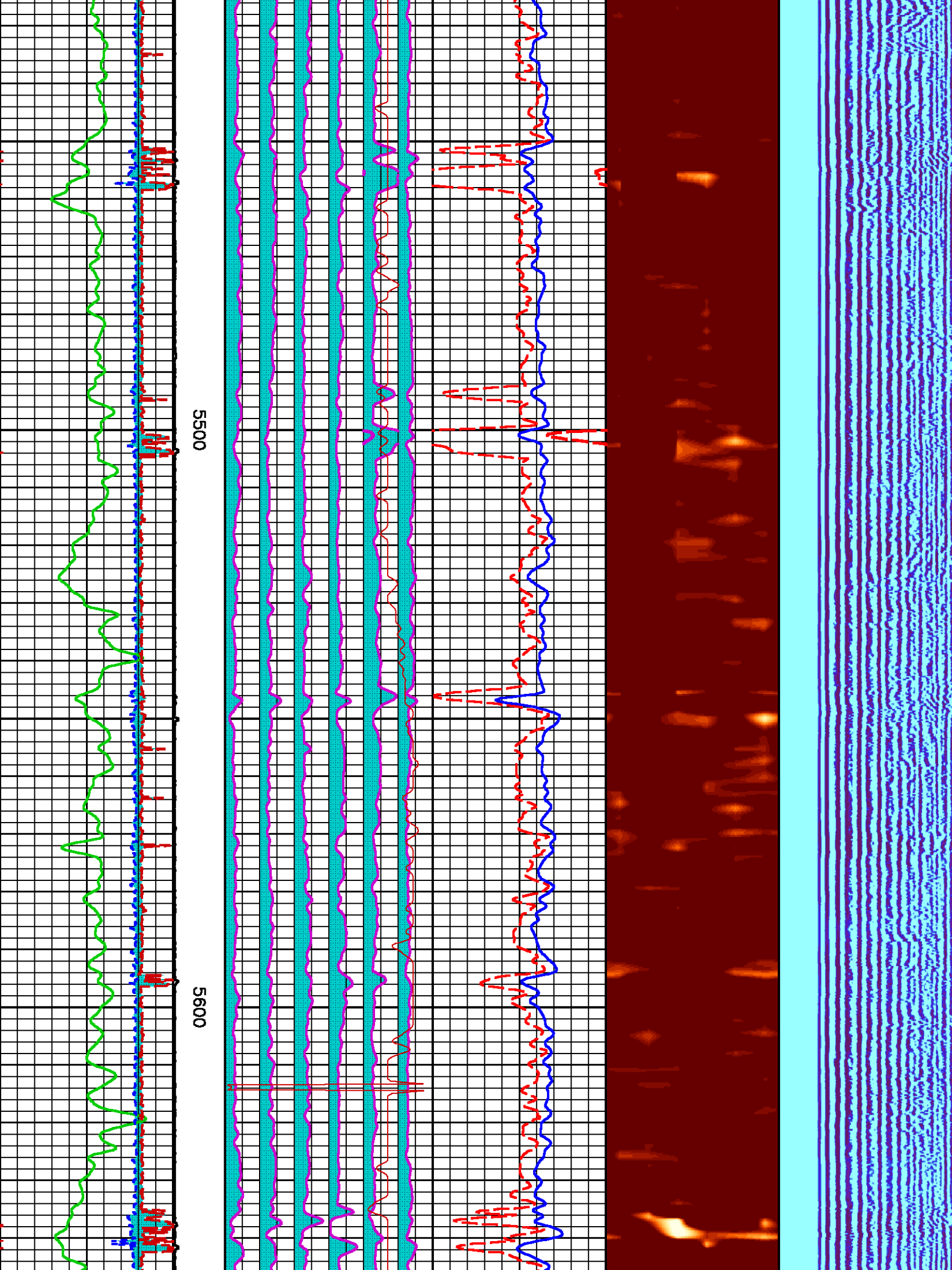


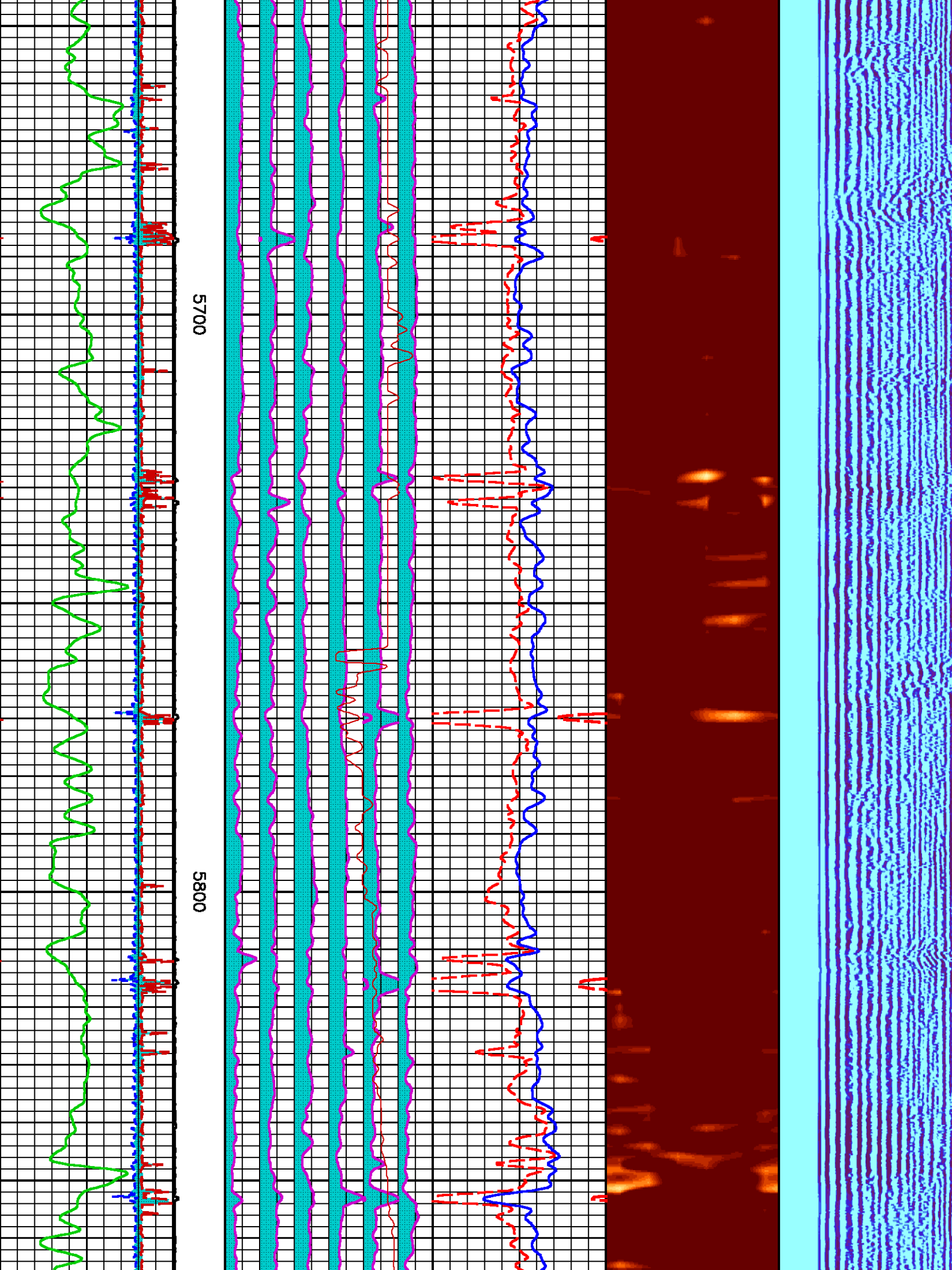


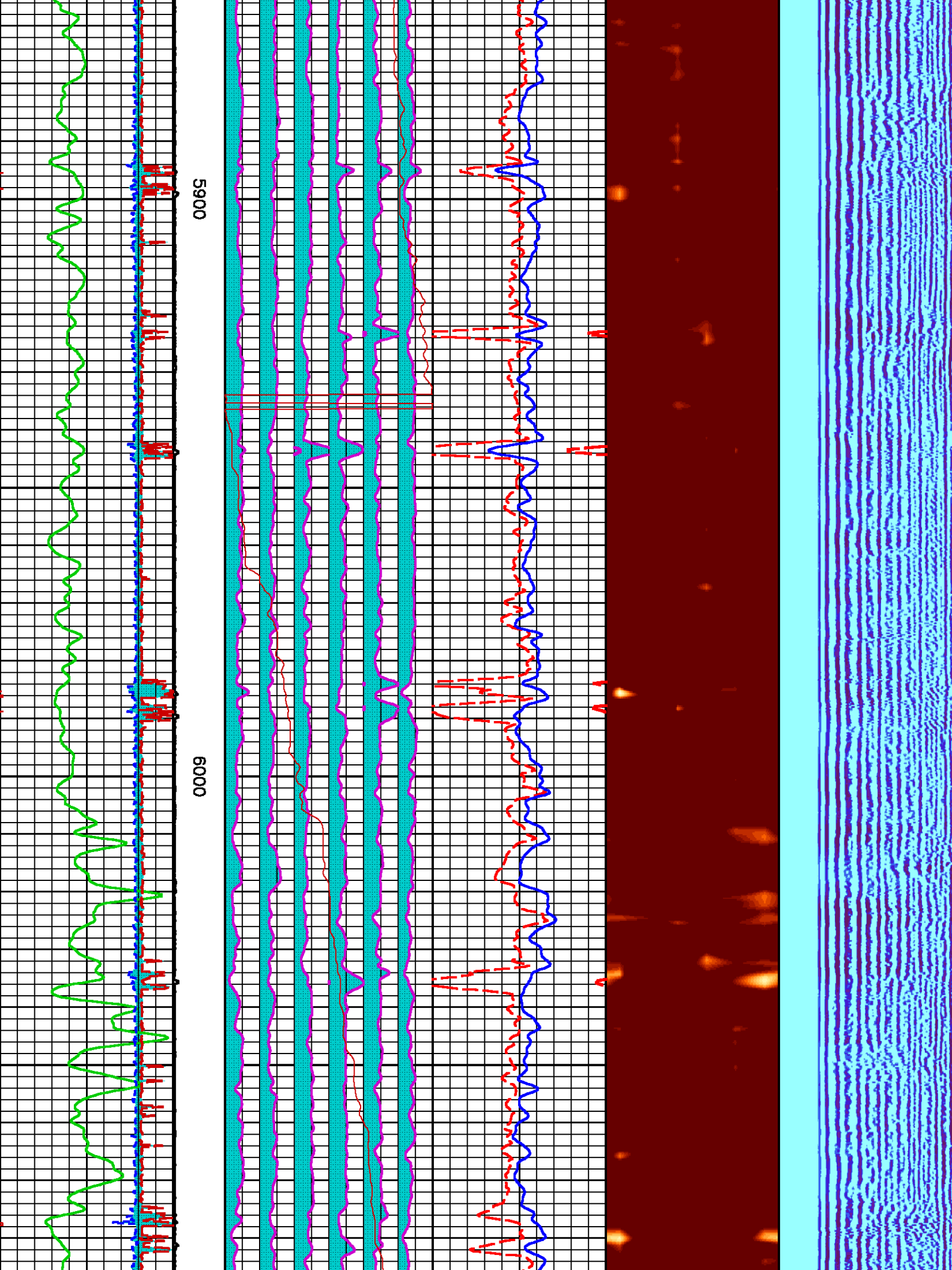




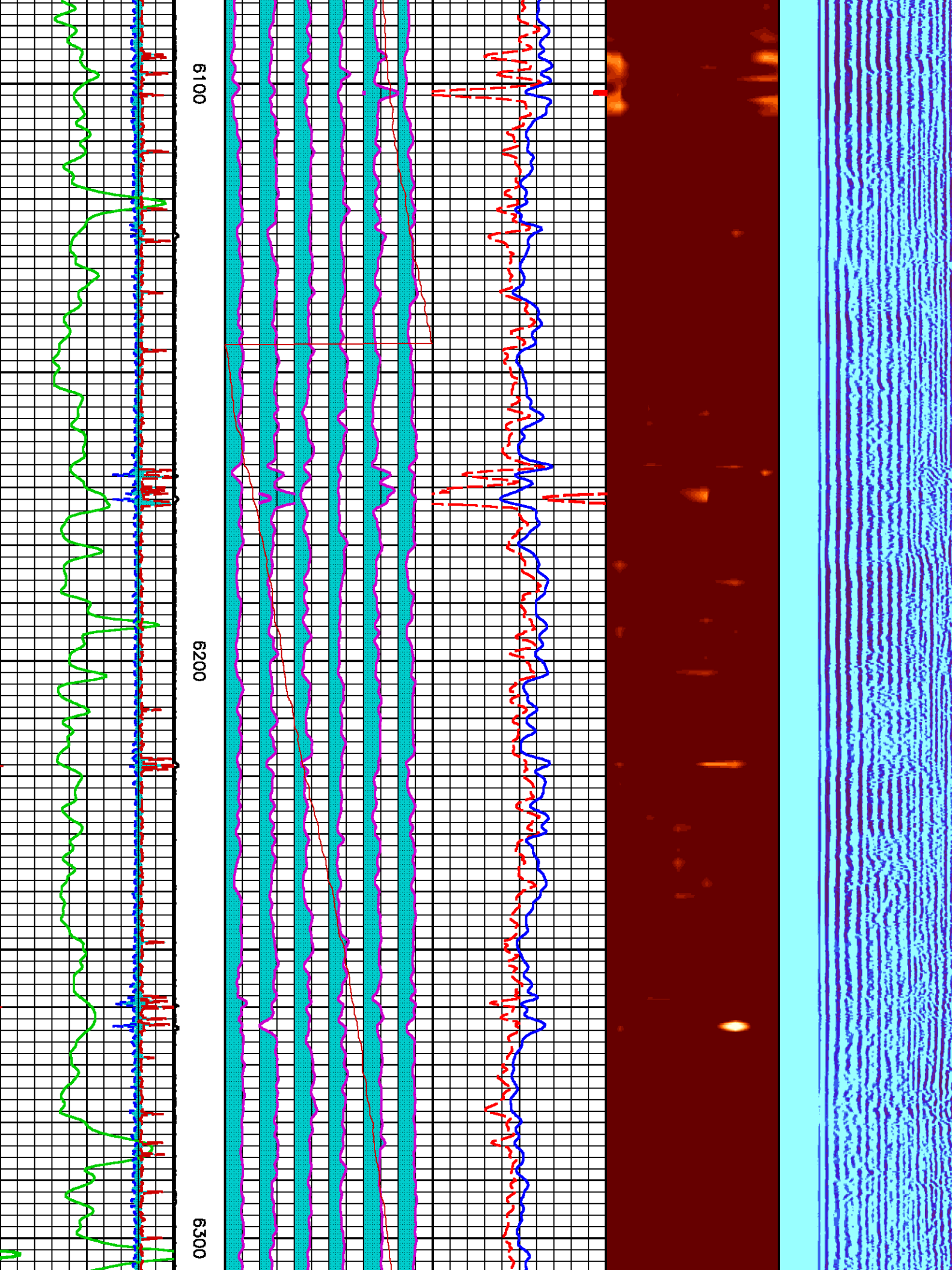


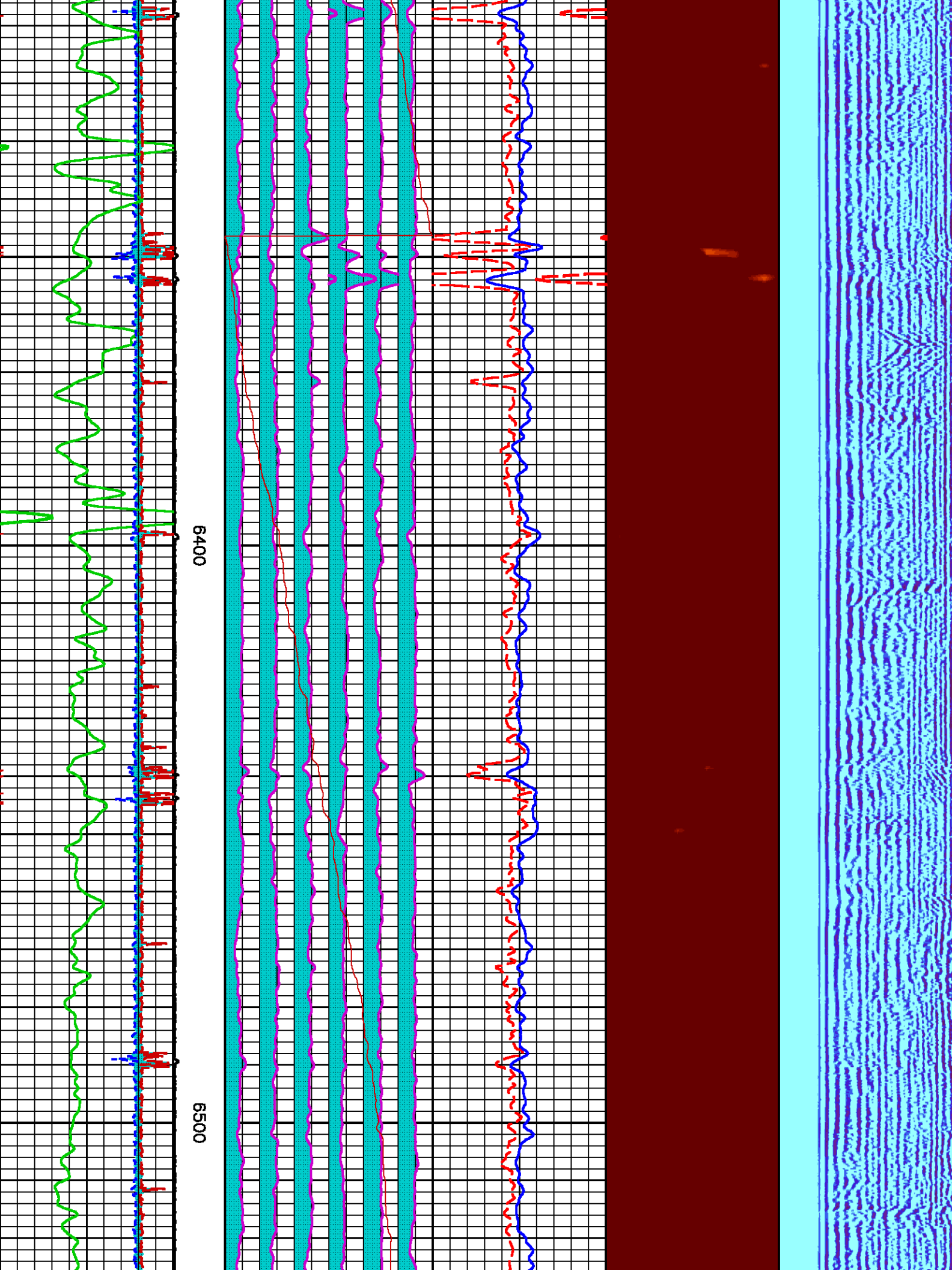




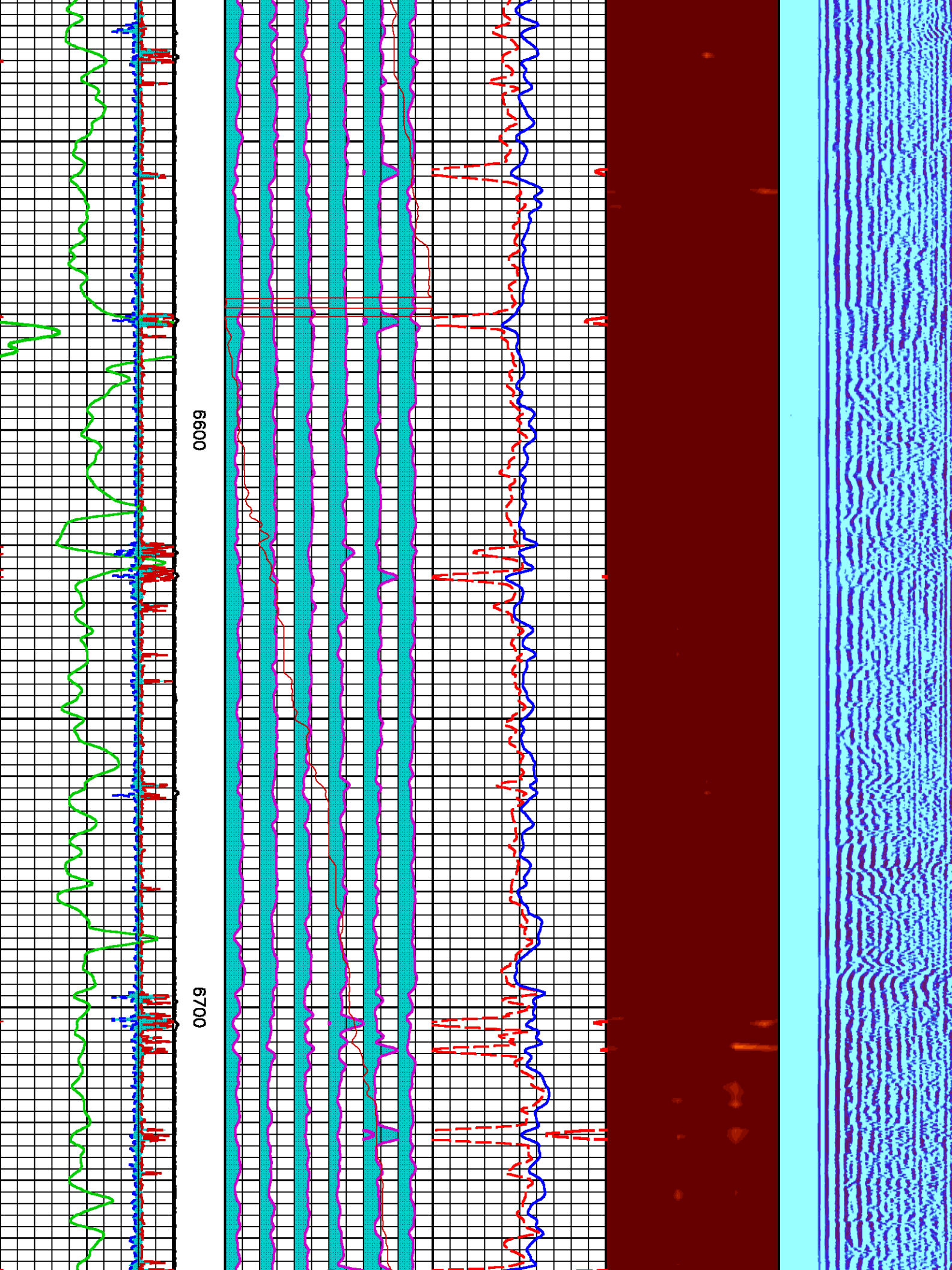


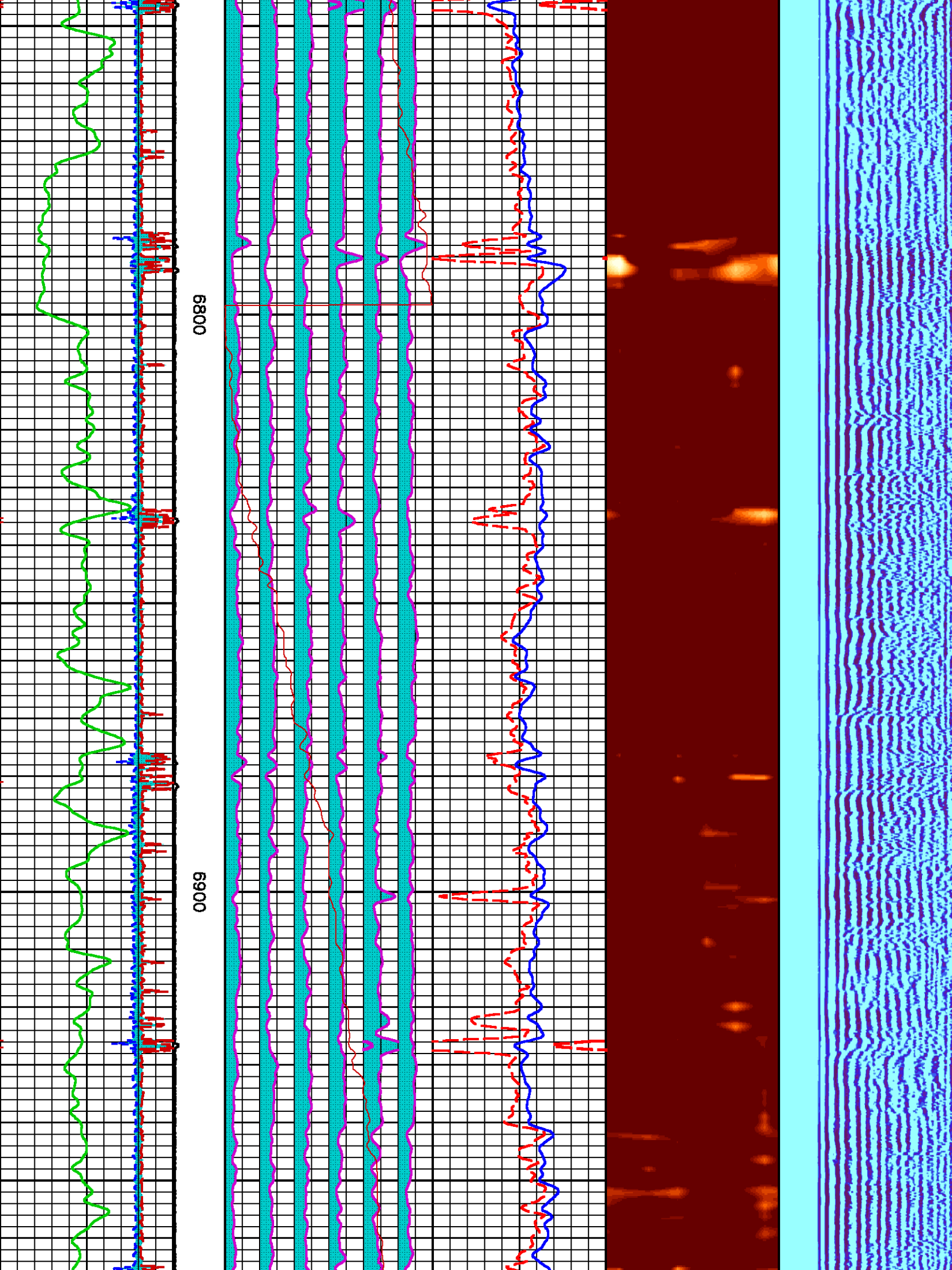


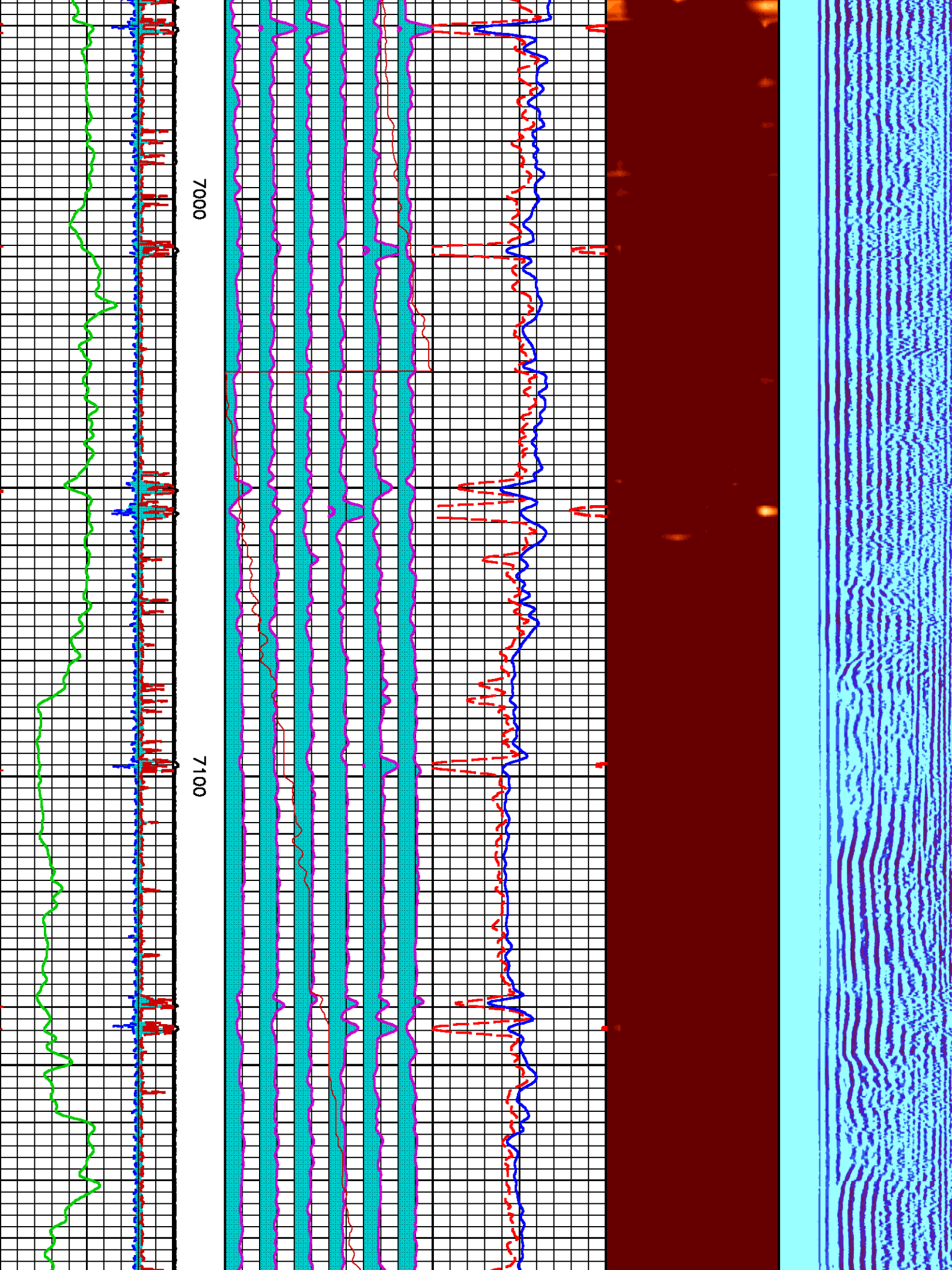




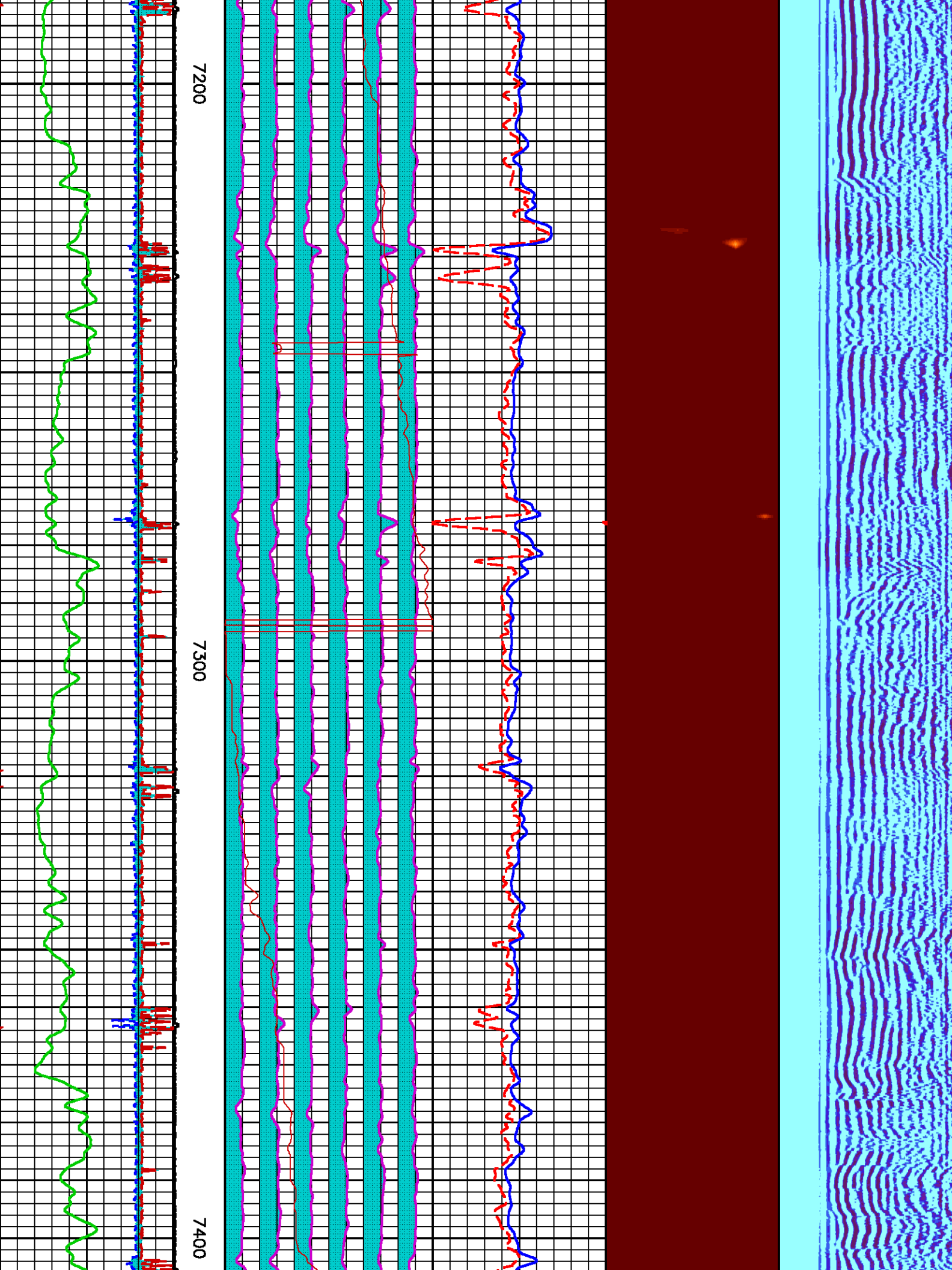


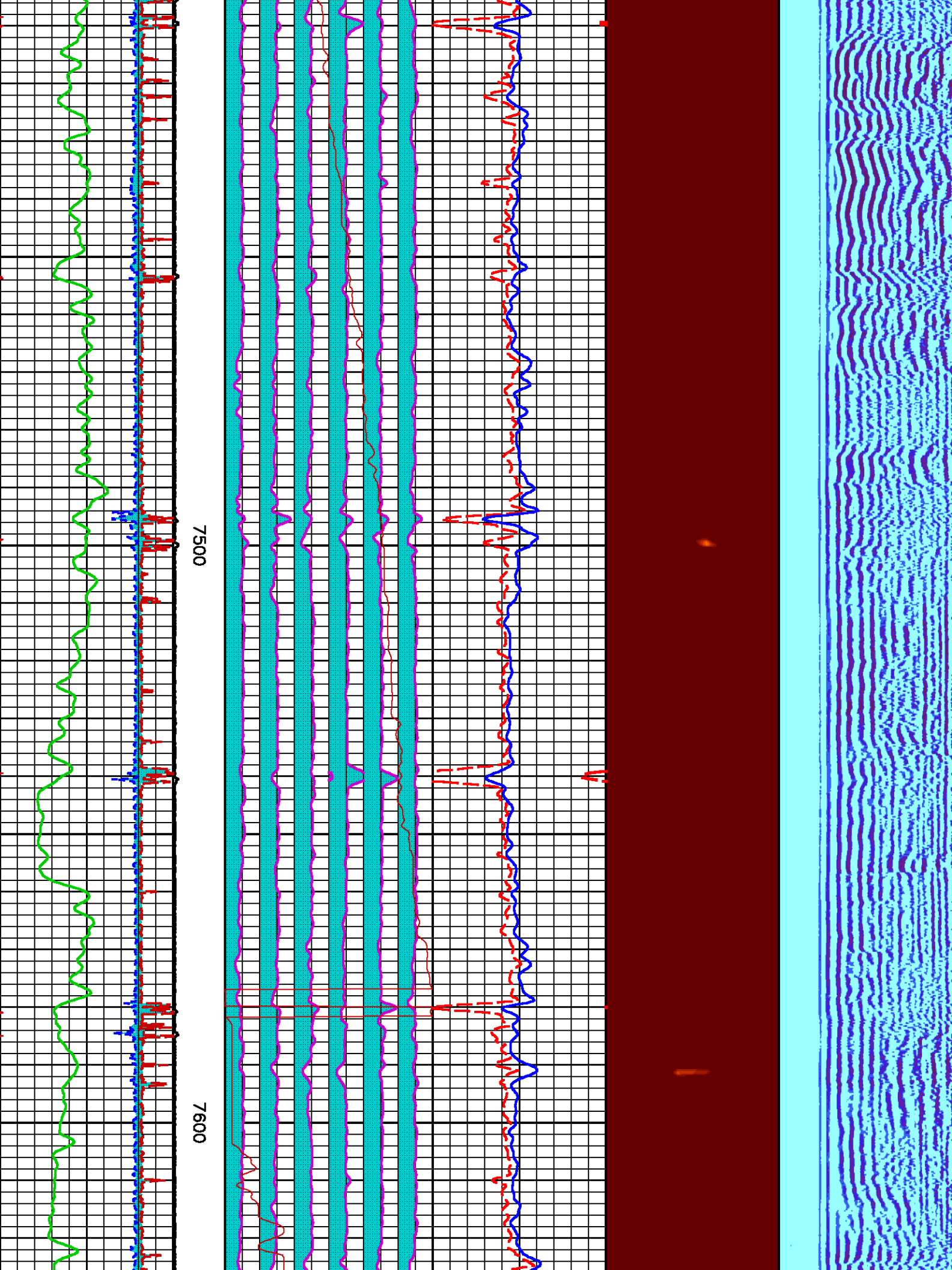


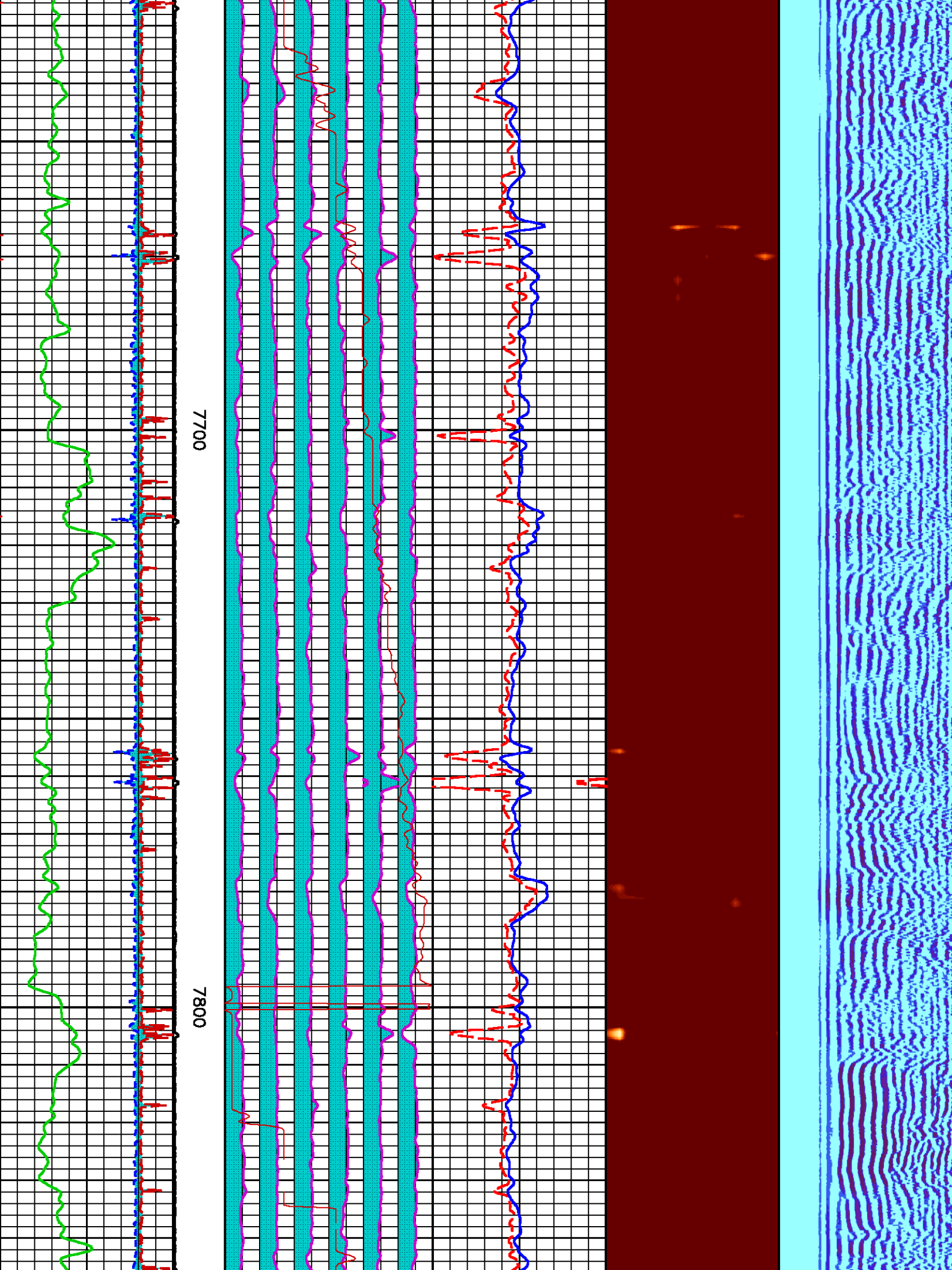




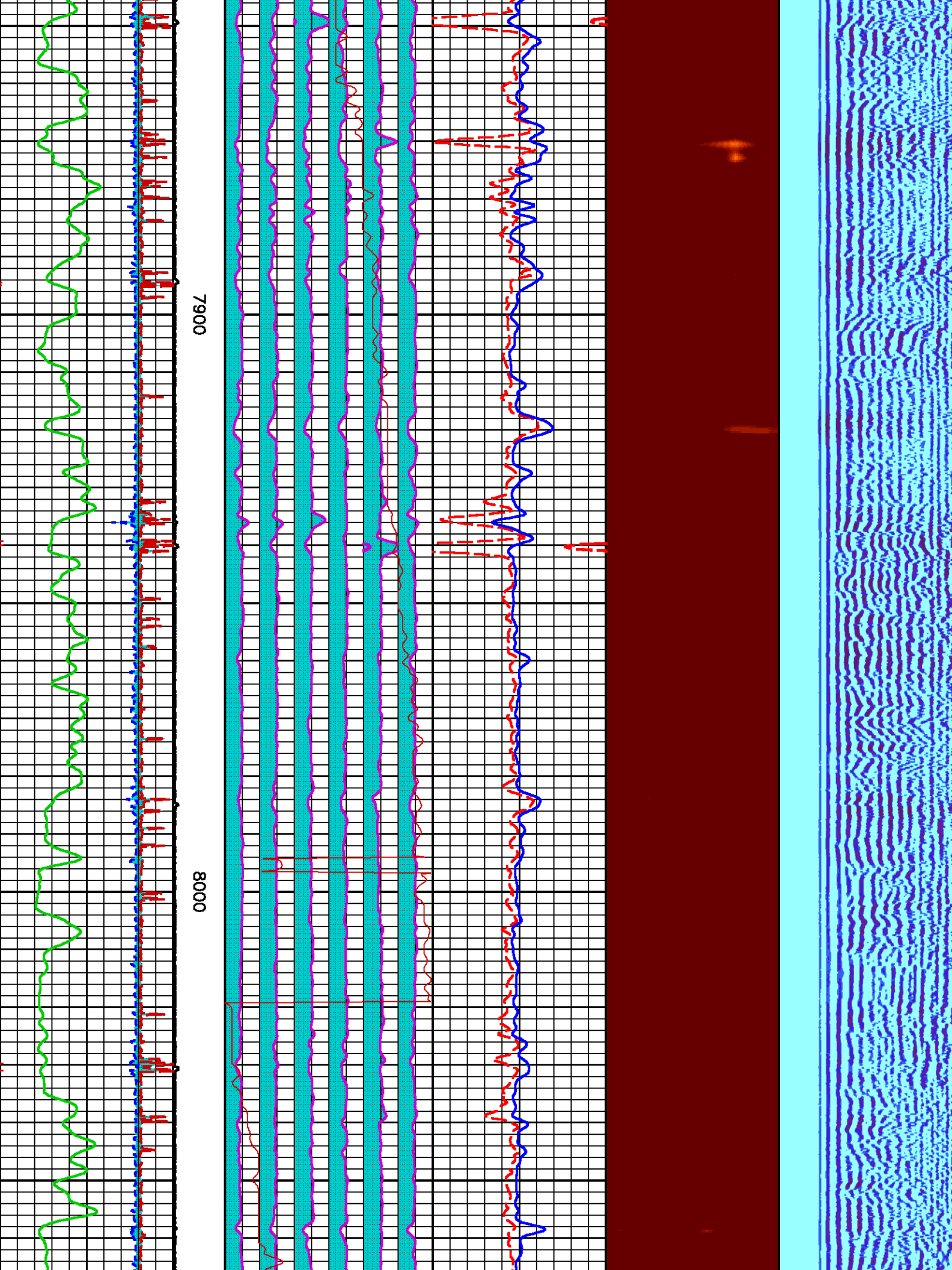




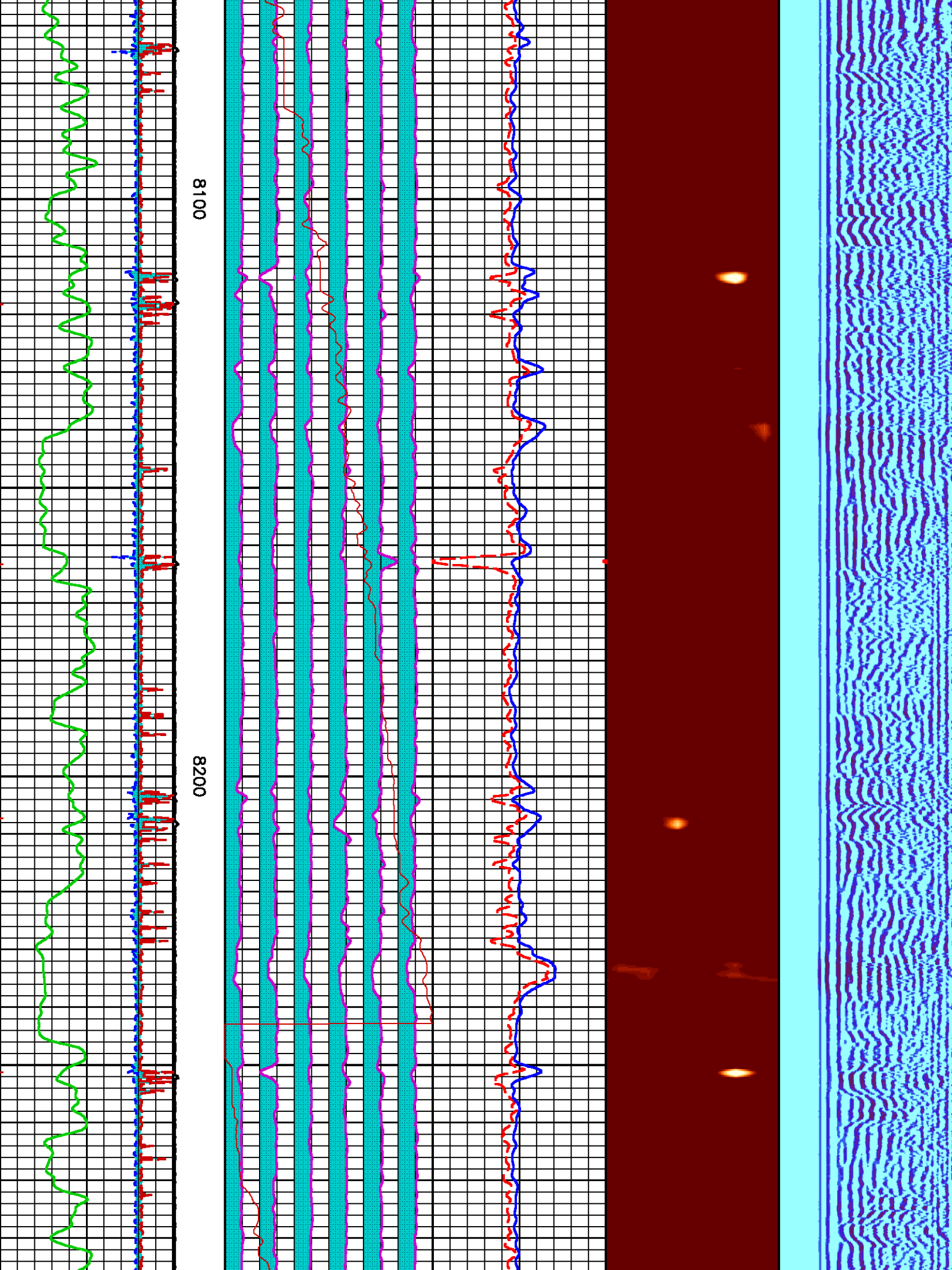


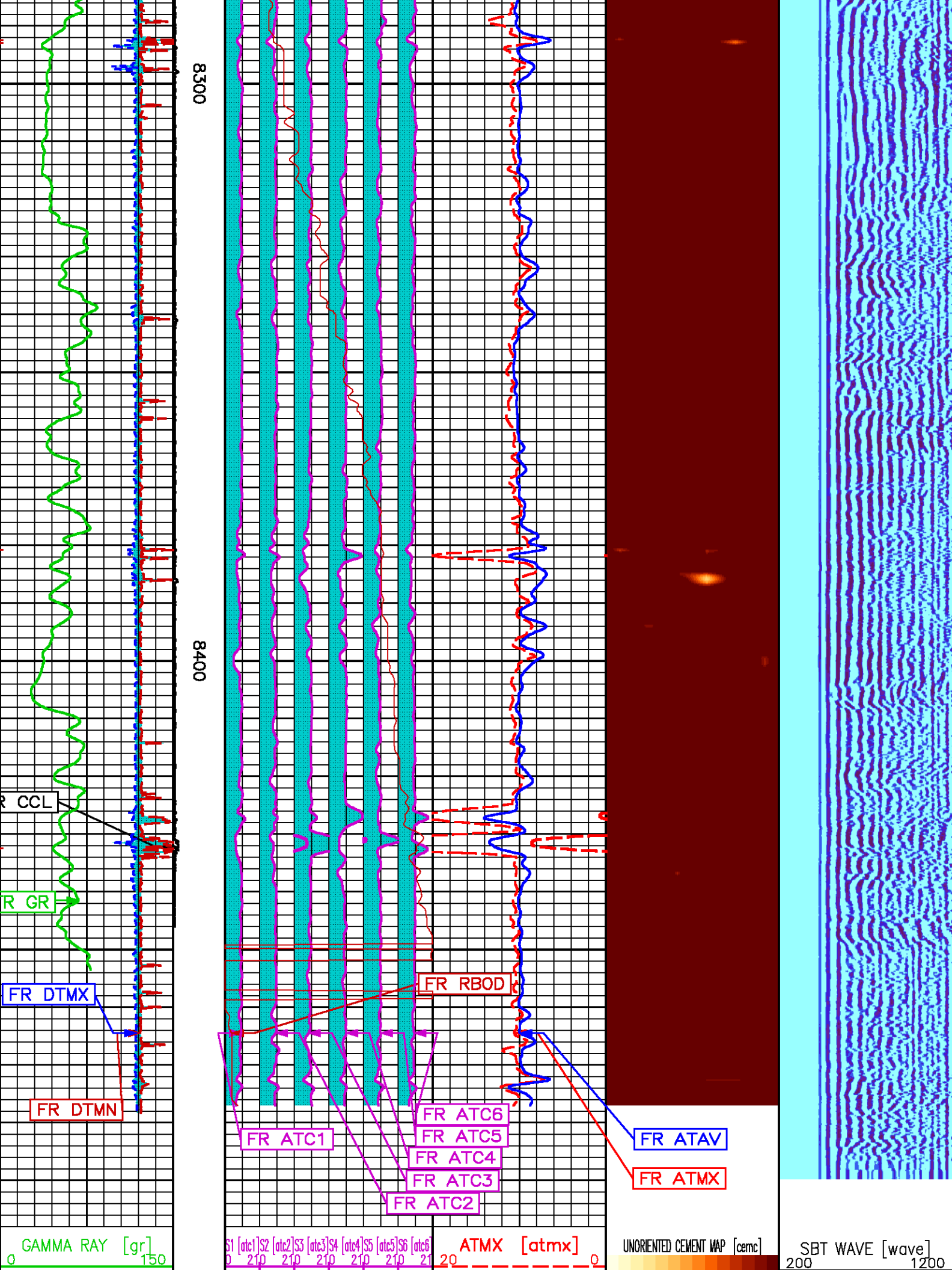


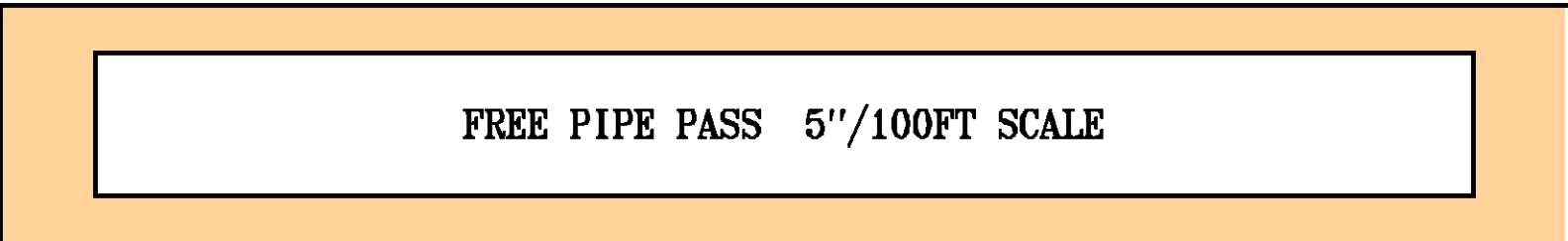












Mon Jan 25 06:52:07 2010

### Fileview 5.42

```
FILE: /data/1599/k391a01.prm
LOGGING MODE: DEPTH      DIRECTION: UP
TOP DEPTH: 726.500 ft    BOTTOM DEPTH: 1186.000 ft
```

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

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
SBT	CASING OD	7.000	ln	TOP	BOTTOM
	CASING WT	26.000	lbm/ft	"	"
	CORR. FACTOR 1	0.000	dB/ft	"	"
	CORR. FACTOR 2	0.000	dB/ft	"	"
	CORR. FACTOR 3	0.000	dB/ft	"	"
	CORR. FACTOR 4	0.000	dB/ft	"	"
	CORR. FACTOR 5	0.000	dB/ft	"	"
	CORR. FACTOR 6	0.000	dB/ft	"	"
	SPACING	0.654	ft	"	"
	SPREADING FACTOR	4.589	dB/ft	"	"
	CEMENT STRENGTH	500	psi	"	"
	HI CUTOFF	5.603	dB/ft	"	"
LOW CUTOFF	2.295	dB/ft	"	"	

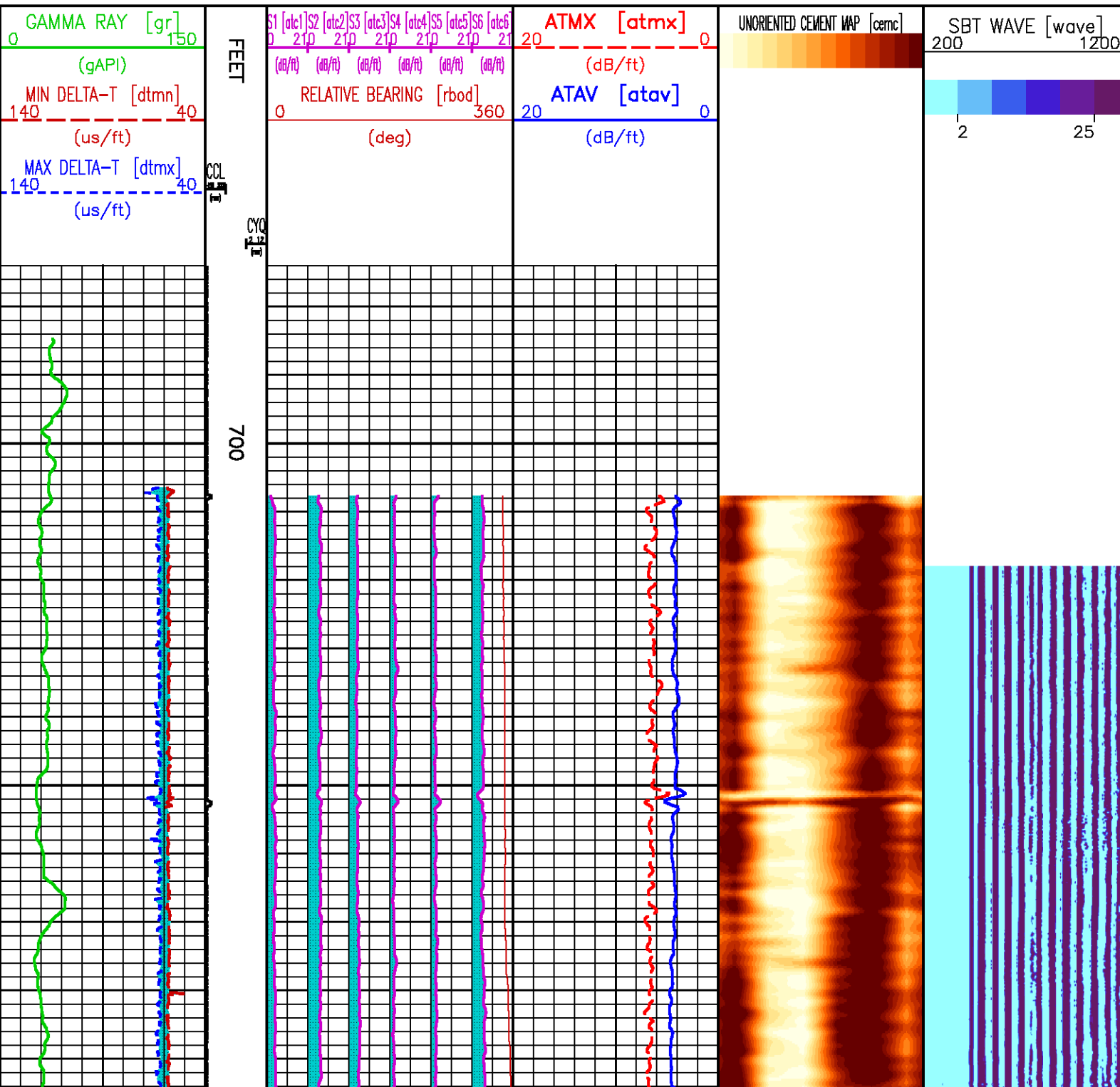
CURVE NAME	CURVE ALIAS	CREATION DATE	CURVE DESCRIPTION
F1:ATAV	ATAV	Jan 25 03:33:23 2010	AVERAGE ATTENUATION
F1:ATC1	ATC1	Jan 25 03:33:23 2010	ATTENUATION PAD 1
F1:ATC2	ATC2	Jan 25 03:33:23 2010	ATTENUATION PAD 2
F1:ATC3	ATC3	Jan 25 03:33:23 2010	ATTENUATION PAD 3
F1:ATC4	ATC4	Jan 25 03:33:23 2010	ATTENUATION PAD 4
F1:ATC5	ATC5	Jan 25 03:33:23 2010	ATTENUATION PAD 5
F1:ATC6	ATC6	Jan 25 03:33:23 2010	ATTENUATION PAD 6
F1:ATMX	ATMX	Jan 25 03:33:23 2010	ATTENUATION MAXIMUM
F1:CCL	CCL	Jan 25 03:33:23 2010	CASING COLLAR LOCATOR
F1:CEMC	UNORIENTED CEMENT MAP	Jan 25 03:33:23 2010	CALIBRATED CEMENT MAP
F1:CYQ	CYQ	Jan 25 03:33:23 2010	CYCLE QUALITY
F1:DTMN	DTMN	Jan 25 03:33:23 2010	MINIMAL DELTA-T
F1:DTMX	DTMX	Jan 25 03:33:23 2010	MAXIMAL DELTA-T
F1:GR	GR	Jan 25 03:33:23 2010	GAMMA RAY
F1:RBOD	RBOD	Jan 25 03:33:23 2010	RELATIVE BEARING (RELATIVE TO HIGH SIDE OF BOREHOLE)
F1:WAVE	WAVE	Jan 25 03:33:23 2010	250 BYTES DIGITIZED WAVEFORM

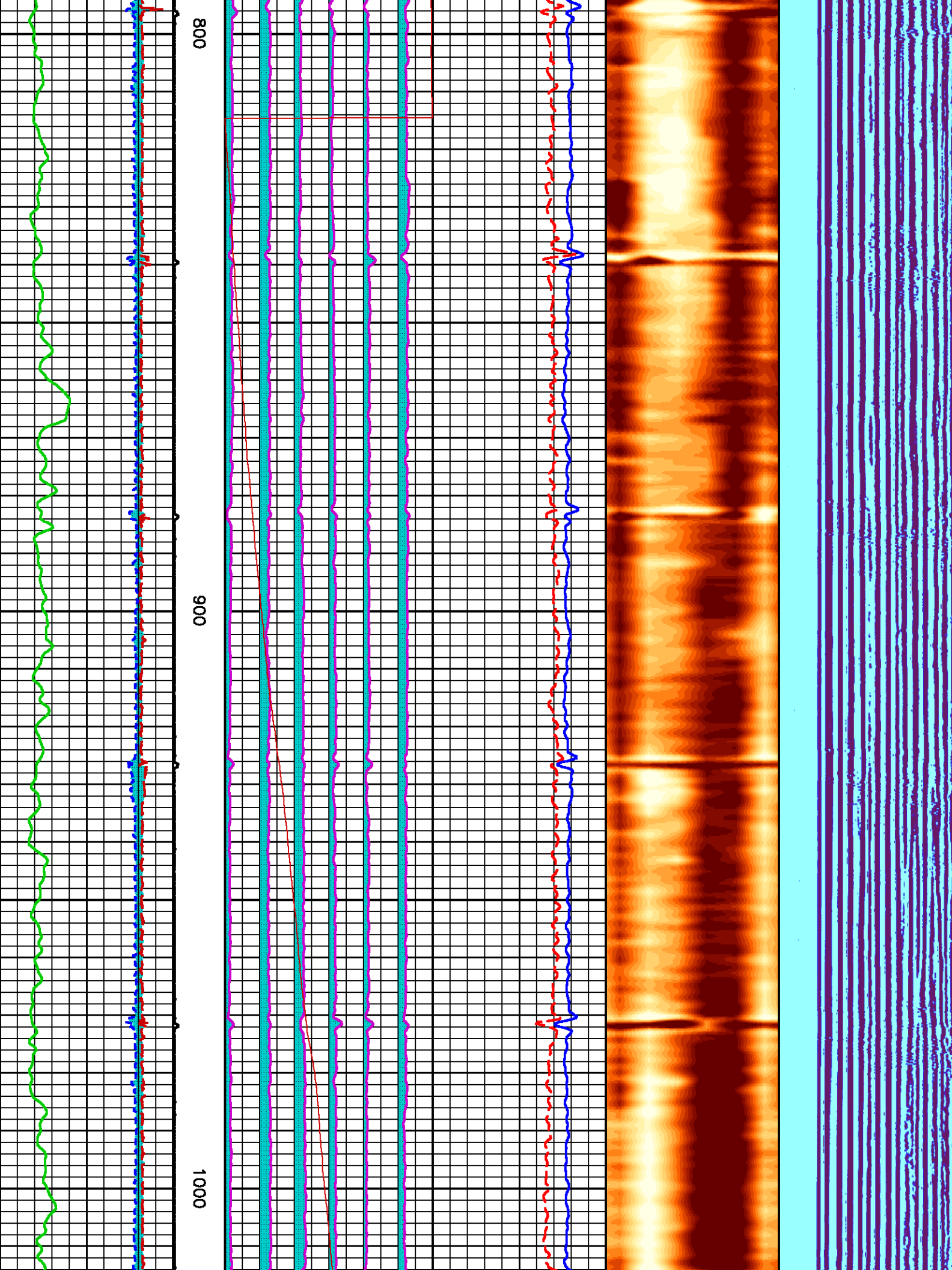
# CURVE MEASURE POINT OFFSET

CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
ATAV	19.75	ATC4	19.75	CCL	52.00	GR	42.75
ATC1	19.75	ATC5	19.75	CYQ	19.75	RBOD	19.75
ATC2	19.75	ATC6	19.75	DTMN	19.75		
ATC3	19.75	ATMX	19.75	DTMX	19.75		

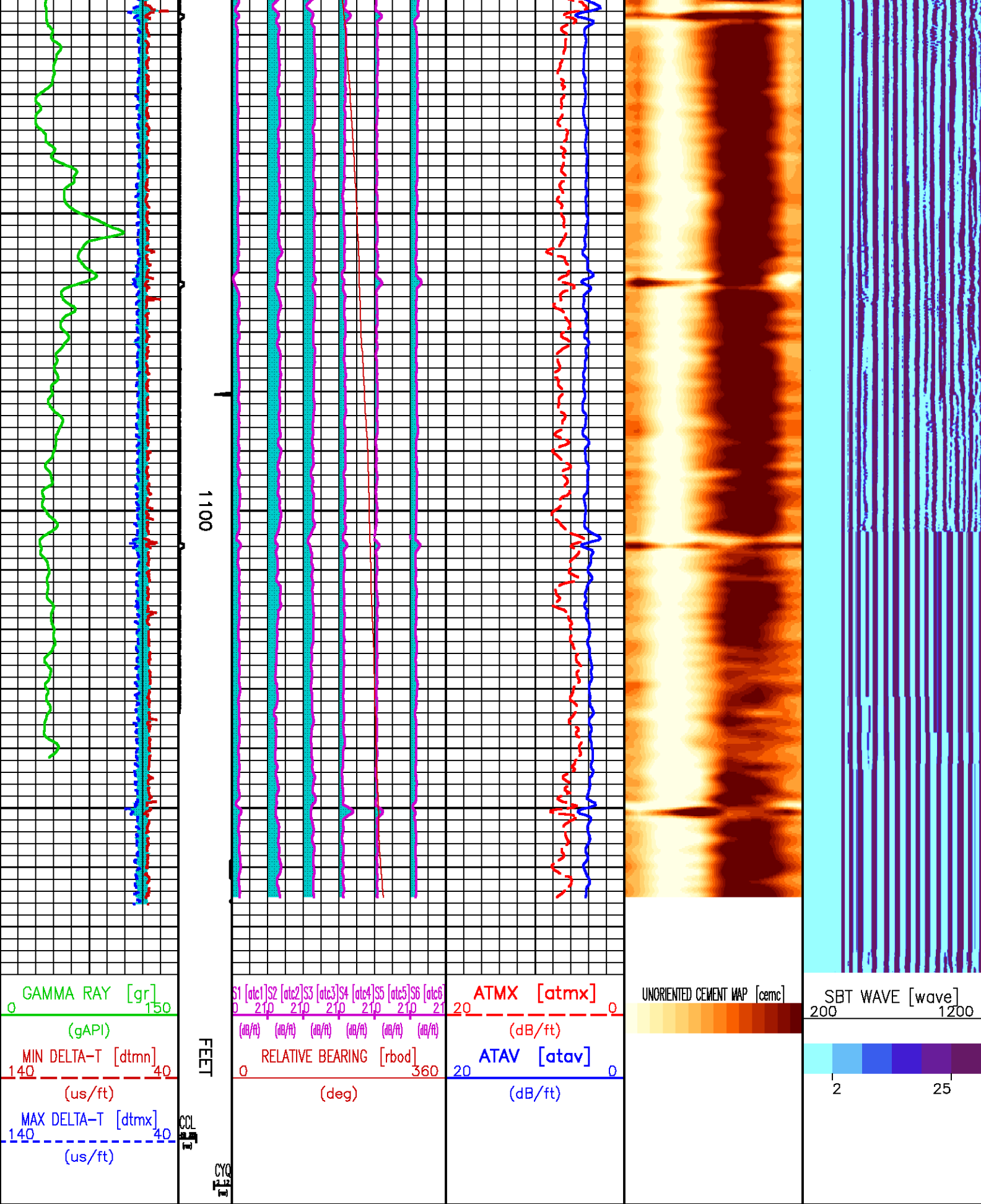
Presentation : mfg1:/dat1a/1599/FREE.pdf [5"/100' Scale]  
 Plot Interval : 674.25 - 1184.75 Feet

Data File 1 : F1 : mfg1:/dat1a/1599/k391a01\_FREE.xtf  
 Created On : Jan 25 03:33:23 2010  
 Company : EXXON MOBIL EXPLORATION COMPANY  
 Well : FRU 197-33A9  
 Field : PICEANCE CREEK  
 File Interval : 674.25 - 1186 Feet  
 Oct : k391a









Source File: /data/1599/k391a.tp1

### GR PRIMARY CALIBRATION SUMMARY

TOOL #: **1309XA Z72385**      DATE/TIME PERFORMED: **Sun Jan 24 23:28:01 2010**  
 UNIT #: **3880TA HL6741**      CALB JIG #: **4702NK BA-858**

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	CR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	CALBRTR (gAPI)
GR	157.53	369.82	212.3 <small>170.0    242.0</small>	0.707	111.31	261.31	150

### GR PRIMARY VERIFICATION SUMMARY

TOOL #: **1309XA Z72385**      DATE/TIME PERFORMED: **Sun Jan 24 23:28:05 2010**  
 UNIT #: **3880TA HL6741**      VERI JIG #: **4702NK BA-858**

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	161.78	372.82	0.707	114.31	263.43	149.12 <small>140.00    180.00</small>

### GR BEFORE LOG VERIFICATION SUMMARY

TOOL #: **1309XA Z72385**      DATE/TIME PERFORMED: **Sun Jan 24 23:30:16 2010**      DAYS SINCE CAL: **0**  
 UNIT #: **3880TA HL6741**      VERI JIG #: **4702NK BA-858**

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	161.67	371.98	0.707	114.23	262.83	148.60 <small>139.12    159.12</small>

### RB PRIMARY CALIBRATION SUMMARY

TOOL #: **1424XA 118033**      DATE/TIME PERFORMED: **Sun Jan 24 23:02:06 2010**  
 UNIT #: **3880TA HL6741**

	X-ATT (raw)	Y-ATT (raw)	OFFSET (deg)	X-MAX	Y-MAX	RB (deg)
PAD 2	-87.0	-419.2				0.00 <small>355.00    5.00</small>
PAD 3	309.2	-293.6				59.37 <small>55.00    65.00</small>
			77.94	-416.45	-428.66	

### RB BEFORE LOG VERIFICATION SUMMARY

TOOL #: **1424XA 118033**      DATE/TIME PERFORMED: **Sun Jan 24 23:04:31 2010**      DAYS SINCE CAL: **0**  
 UNIT #: **3880TA HL6741**

	X-ATT (raw)	Y-ATT (raw)	RB (deg)
PAD 3	308.7	-293.0	59.4 <small>55.0    65.0</small>
PAD 4	405.7	105.9	116.3 <small>115.0    125.0</small>
PAD 5	112.2	397.0	175.8 <small>175.0    185.0</small>
PAD 6	-300.9	304.5	237.6 <small>235.0    245.0</small>
PAD 1	-422.4	-108.6	296.1 <small>295.0    305.0</small>
PAD 2	-114.0	-413.8	356.2 <small>355.0    5.0</small>



**CABLEHEAD**

Series : CABL338  
Mnemonic : CBLH  
Diameter : 3.38"  
Measure Point: 2.75': CABLEHEAD TOP

**CCL**

Series : 2346XA  
Mnemonic : CCL  
Diameter : 4.50"  
Measure Point: 4.15': CCL MP

**GAMMA RAY**

Series : 1309XA  
Mnemonic : GR  
Diameter : 3.83"  
Measure Point: 1.33': GR MP

**ACOUSTIC DIGITIZER**

Series : 1833EA  
Mnemonic : AC  
Diameter : 3.38"

**4 ARM BOW SPRING CENTRALIZER**

Series : 4341XA  
Mnemonic : CENT  
Diameter : 3.38"

**SEGMENTED BOND TOOL**

Series : 1424XA  
Mnemonic : SBT  
Diameter : 4.50"  
Measure Point: 7.84': ATT MP

**SEGMENTED BOND TOOL VDL SUB**

Series : 1424PA  
Mnemonic : SBT  
Diameter : 3.38"  
Measure Point: 4.00': SBT MP

**4 ARM BOW SPRING CENTRALIZER**

Series : 4341XA  
Mnemonic : CENT  
Diameter : 3.38"

**BULL PLUG 3 3/8**

TOTAL LENGTH: 60.53'  
TOTAL WEIGHT: 868 lbs  
MAX DIAMETER: 0'4.50"



60.53'

CABLEHEAD TOP 57.78'

CCL MP 52.40'

GR MP 43.07'

ATT MP 19.83'

SBT MP 8.40'

0.00'



Baker Atlas



COMPANY  
WELL  
FIELD  
COUNTY

EXXON MOBIL EXPLORATION COMPANY  
FRU 197-33A9  
PICEANCE CREEK  
RIO BLANCO

STATE COLORADO

LOCATION:

SHL: 860' FSL & 2356' FEL

ELEVATIONS:

KB 6414.1 FT  
DF 6413.1 FT  
GL 6388 FT

DATE

24-Jan-2010

FILE NO:

1599

API NO:

05-103-11400-0000

05-103-11400-0000