



FILE NO:

COMPANY

LARAMIE ENERGY

WELL

BRUTON 19-17E

API NO:

FIELD

VEGA

05077103670000

COUNTY

MESA

STATE COLORADO

Ver. 4.06

LOCATION:

SHL: LAT:39.255232N; LONG:107.806537W

OTHER SERVICES

BHL: LAT:39.258531N; LONG:107.807036W  
SEC 19 TWP 9S RGE 93WPERMANENT DATUM GL ELEVATION 7425 FT  
LOG MEASURED FROM KB 24 FT ABOVE P.D.  
DRILL. MEAS. FROM KBELEVATIONS:  
KB 7449 FT  
DF 7448 FT  
GL 7425 FT

DATE 19-AUG-2017

RUN 2 TRIP 1

SERVICE ORDER US126723

DEPTH DRILLER 7799 FT

DEPTH LOGGER 7717 FT

BOTTOM LOGGED INTERVAL 7717 FT

TOP LOGGED INTERVAL 2375 FT

TIME STARTED 07:00

TIME FINISHED 13:00

OPERATOR RIG TIME 6 HOURS

TYPE OF FLUID IN HOLE WATER

FLUID DENSITY NA

FLUID SALINITY NA

FLUID LEVEL 60 FT

LOGGED CEMENT TOP 2060 FT

WELLHEAD PRESSURE 0 PSI

MAXIMUM HOLE DEVIATION NA

NOMINAL LOGGING SPEED 15 FMN

MAX. RECORDED TEMP. 239 DEGF

REFERENCE LOG BAKER GR/RAL

REFERENCE LOG DATE 18-AUG-2017

EQUIP. NO. LOCATION HL-6670 WOODWARD

RECORDED BY S.YASSA

WITNESSED BY MR. CHUCK MALLARY

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.

## REMARKS

RUN 2 TRIP 1: \*2 OPERATIONS IN WELL\*

\*\*OPERATION 2: RPM/GR/CCL RUN FREE \*\*

LOGGED WITH 0 PSI ON WELLHEAD

SJ: 5961' - 5981'

SJ: 6909' - 6928'

CREW: D.HUTCHINSON, J.PENA

## EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
2	1	TELEMETRY	8250EA/8248EA	10185091/10323398	FREE
2	1	GAMMA RAY	8262XA	10485470	FREE
2	1	RPM	8281EA	103098716	FREE
2	1	RPM	8283PA	10184883	FREE
2	1	RPM	8281FA	10315572	FREE
2	1	TEMP	8255XA	120516	FREE

# G-SAND SECTION PNC 3D MODE

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

Plotted: Sat Aug 19 13:41:26 2017

## PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE\_BRUTON\_19\_17E/RPM3D03.prm  
 LOGGING MODE: DEPTH DIRECTION: UP  
 TOP DEPTH: 2358.250 ft BOTTOM DEPTH: 2992.000 ft

### SYMMETRIC FILTER

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

### RPM PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
PNC Parameters	BOREHOLE CONTENTS	FLUID		TOP	BOTTOM
	OPEN/CASED HOLE	CASED HOLE		"	"
	BOREHOLE SIZE	7.88	in	"	"
	CASING SIZE	4.50	in	"	"
	MATRIX	SANDSTONE		"	"
	CORRECTION BUFFER	11		"	"

## CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	Aug 19 12:58:39 2017	CASING COLLAR LOCATOR
F1:GR	Aug 19 12:58:39 2017	GAMMA RAY
F1:ISS	Aug 19 12:58:39 2017	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Aug 19 12:58:39 2017	LONG SPACE COUNT RATE
F1:RATO	Aug 19 12:58:39 2017	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Aug 19 12:58:39 2017	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Aug 19 12:58:39 2017	CORRECTED FORMATION SIGMA
F1:SS	Aug 19 12:58:39 2017	SHORT SPACE COUNT RATE

## CURVE MEASURE POINT OFFSET

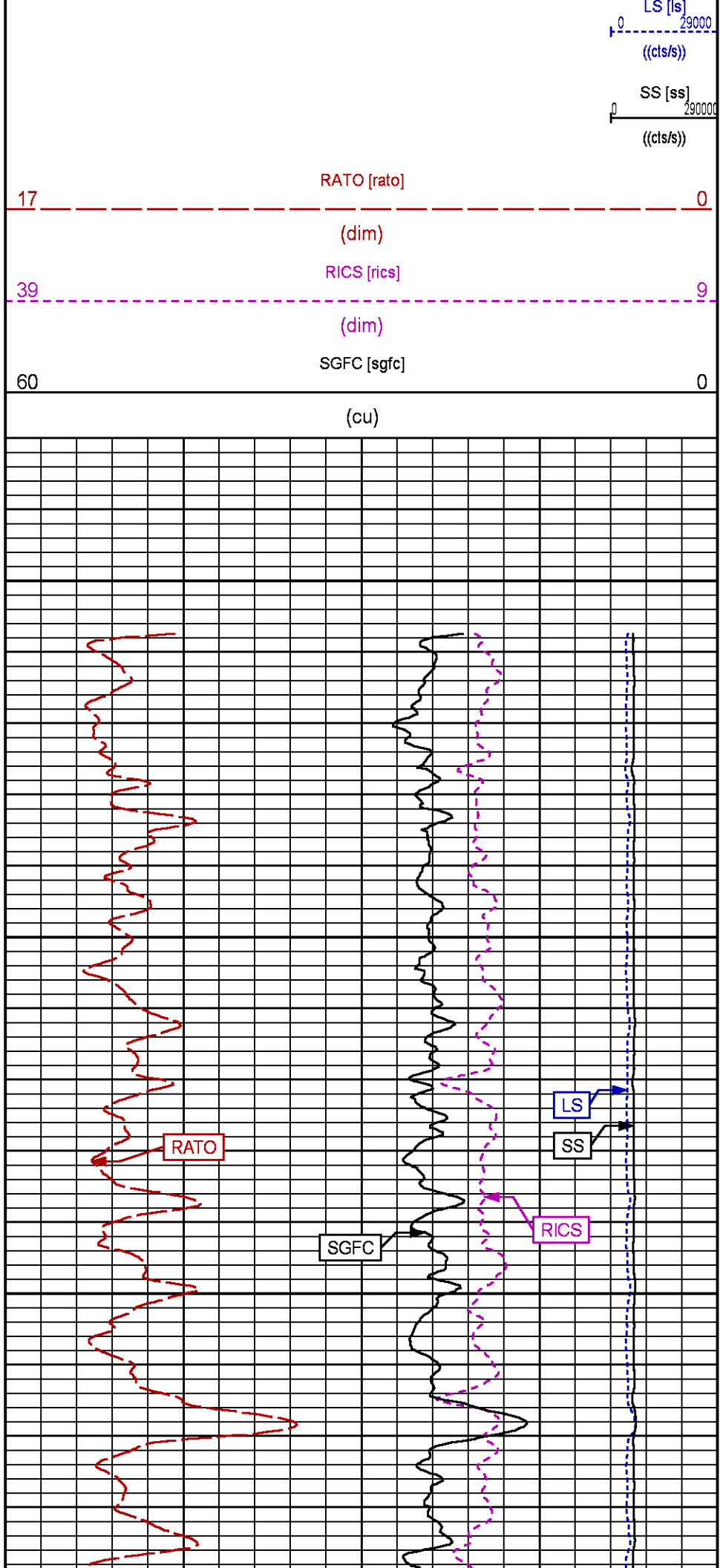
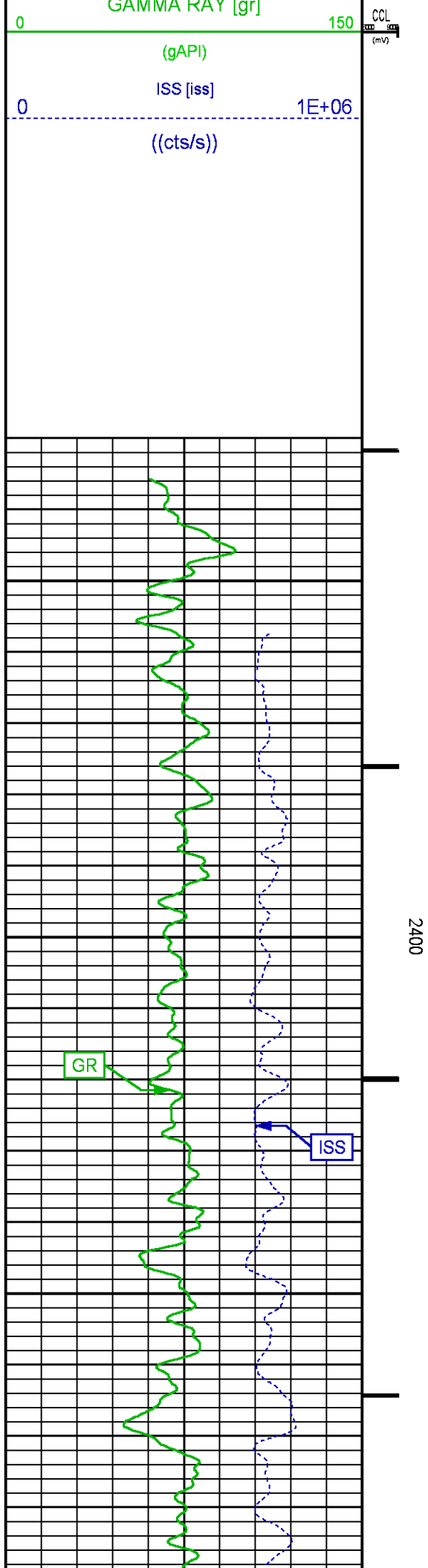
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	26.00	ISS	12.75	RATO	12.75	SGFC	12.75
GR	23.00	LS	12.75	RICS	12.75	SS	12.75

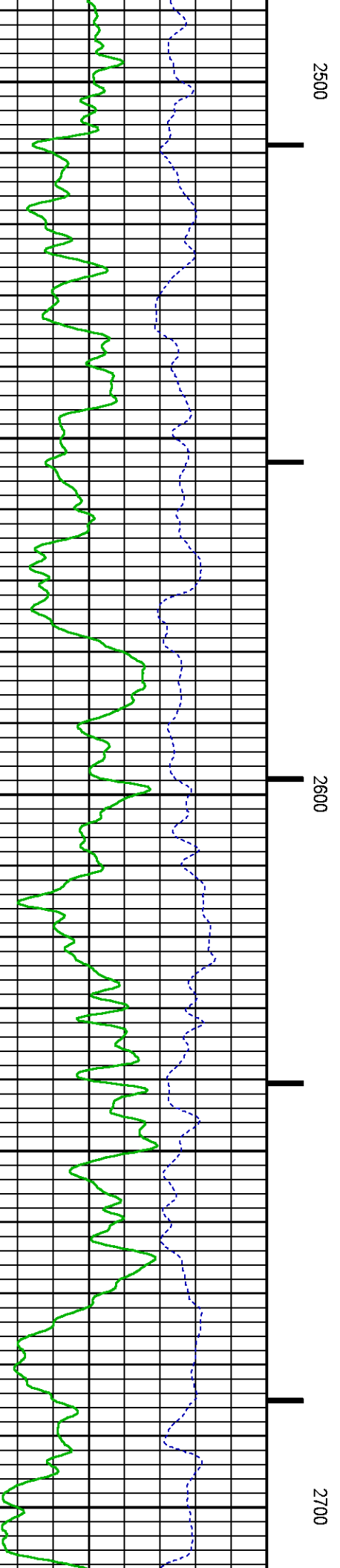
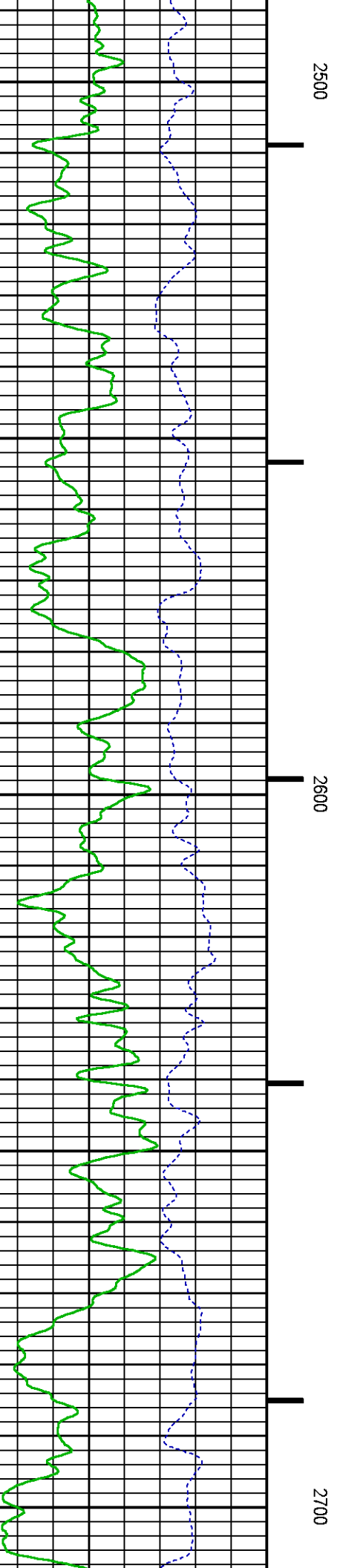
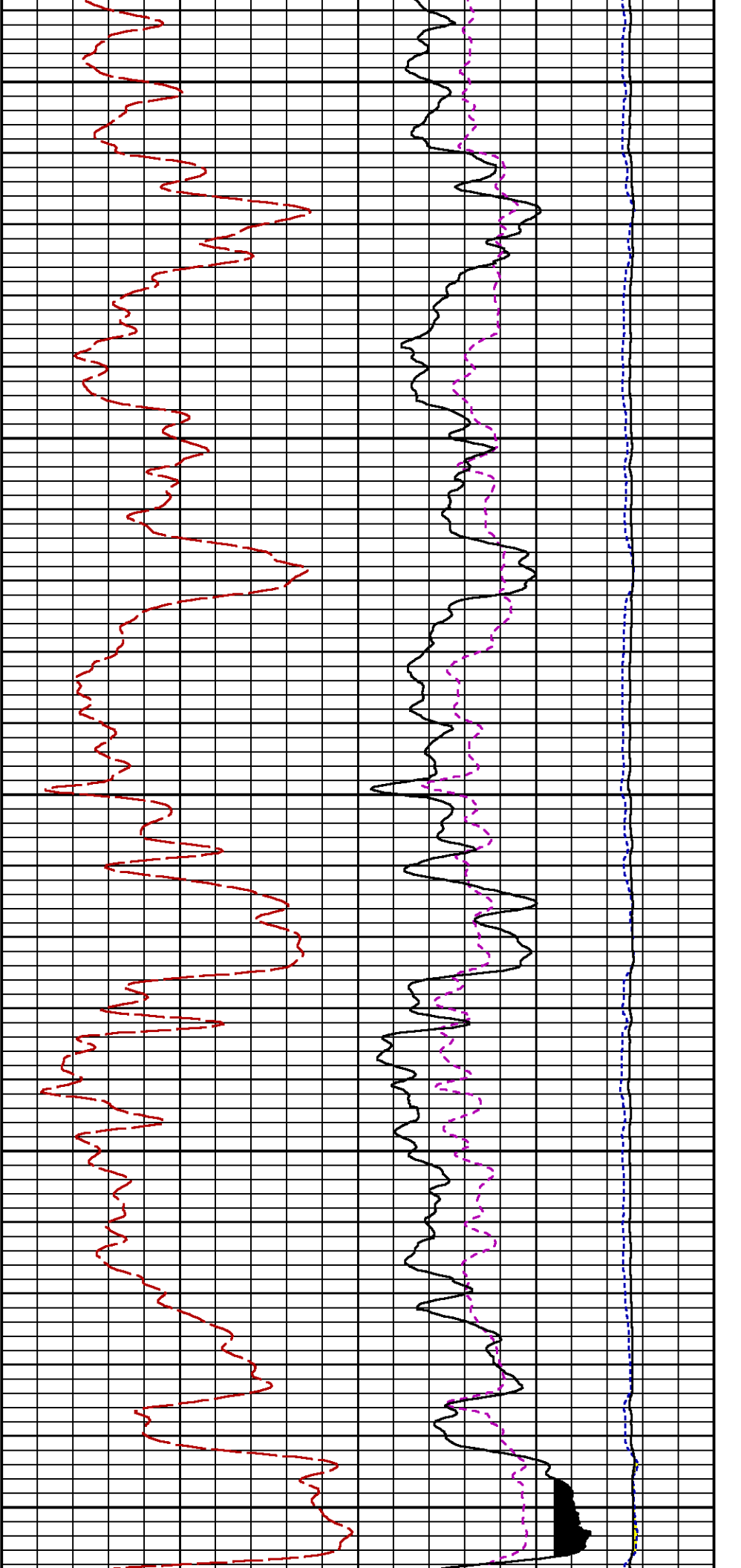
Presentation : cpu100:/dat1a/LARAMIE\_BRUTON\_19\_17E/BRUTON\_19\_17E\_RPM\_GSAND.fvpdf [5"/100' Scale]  
 Plot Interval : 2331.5 - 2981.5 Feet

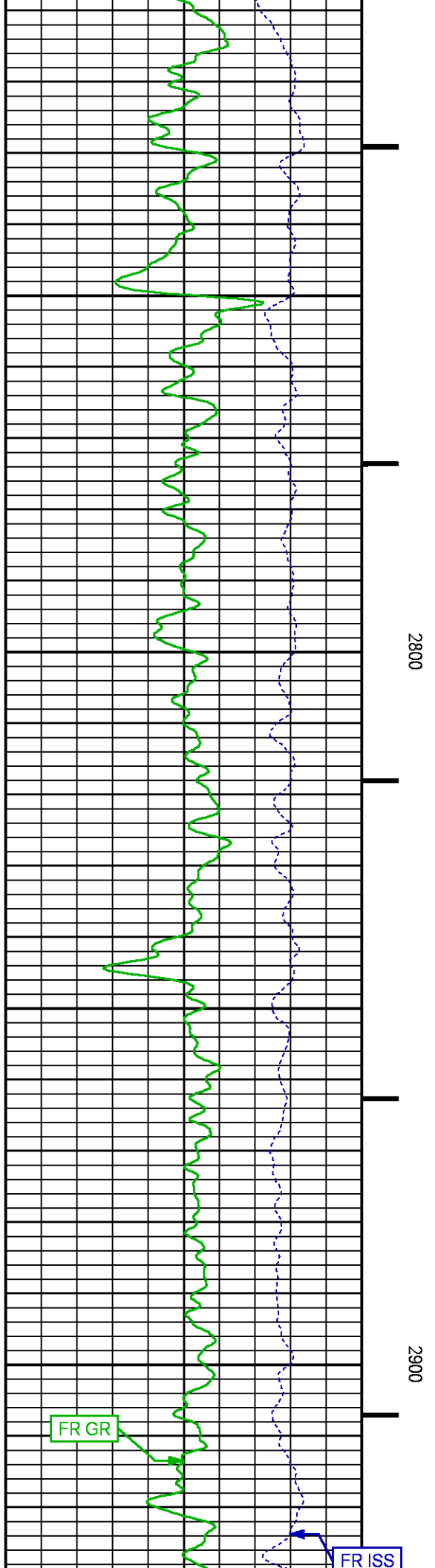
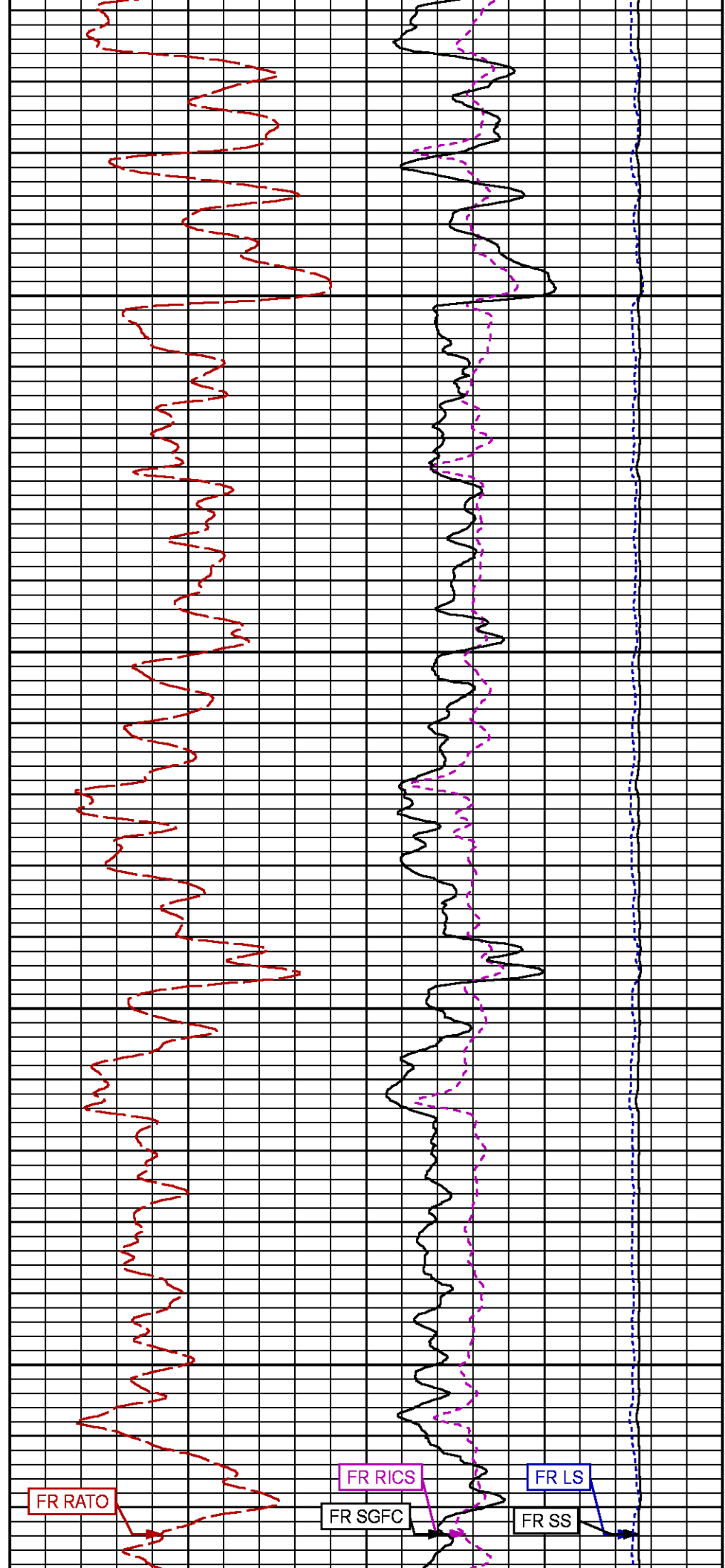
Data File 1 : F1 : cpu100:/dat1a/LARAMIE\_BRUTON\_19\_17E/BRUTON\_19\_17E\_RPM\_GSAND.xtf  
 Created On : Aug 19 12:58:39 2017  
 Company : LARAMIE ENERGY  
 Well : BRUTON 19-17E  
 Field : MESA  
 File Interval : 2330.75 - 2990.25 Feet  
 OCT : RPM3D

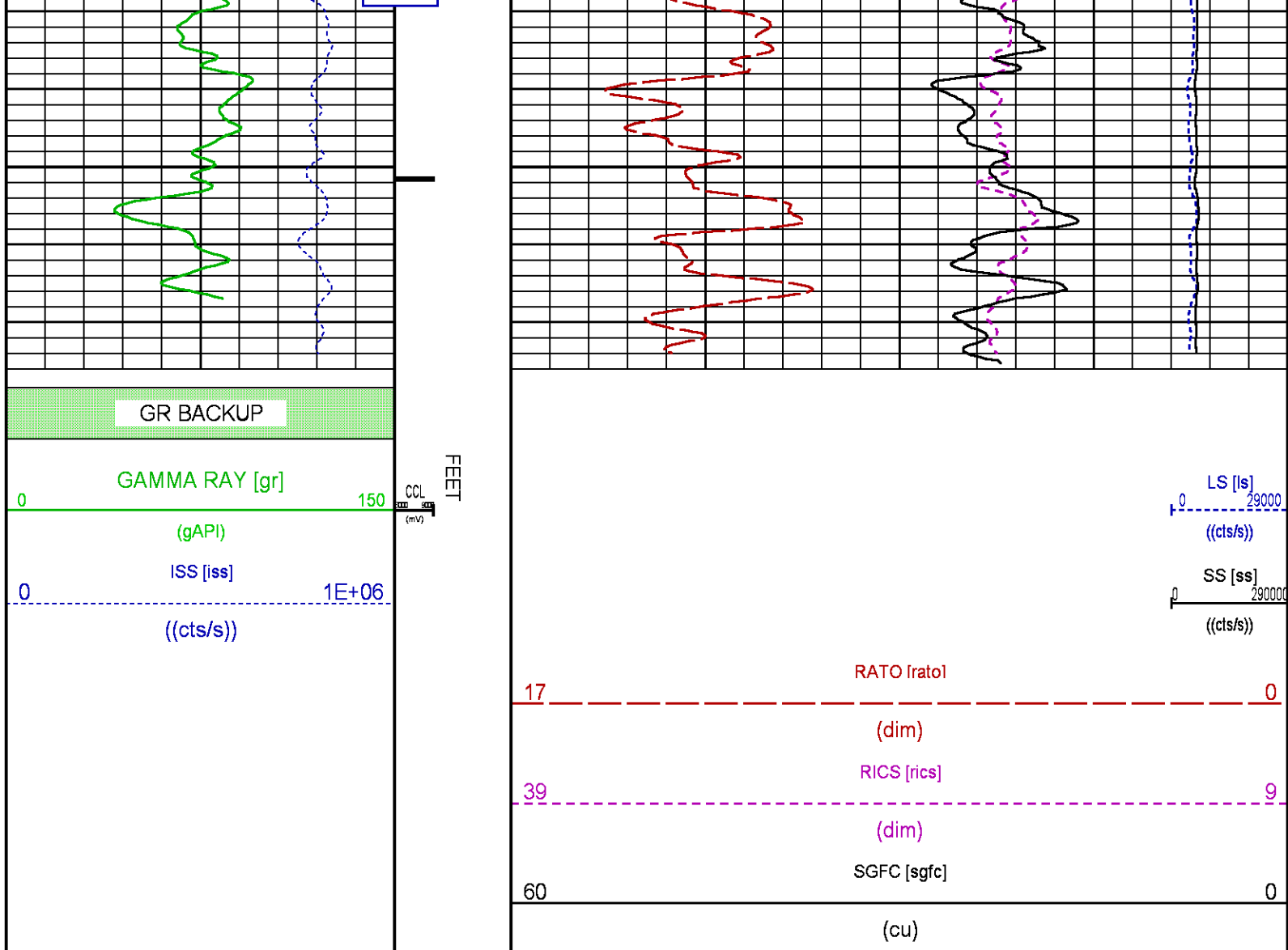
GR BACKUP

FEET









## MAIN PASS PNC-3D MODE

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

Plotted: Sat Aug 19 13:01:05 2017

### PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE\_BRUTON\_19\_17E/RPM3D02.prm  
LOGGING MODE: DEPTH DIRECTION: UP  
TOP DEPTH: 4128.500 ft BOTTOM DEPTH: 7726.647 ft

#### SYMMETRIC FILTER

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

#### RPM PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
PNC Parameters	BOREHOLE CONTENTS	FLUID		TOP BOTTOM

PNC Parameters	BOREHOLE CONTENTS	FLUID	TOP	BOTTOM
	OPEN/CASED HOLE	CASED HOLE	"	"
	BOREHOLE SIZE	7.88 in	"	"
	CASING SIZE	4.50 in	"	"
	MATRIX	SANDSTONE	"	"
	CORRECTION BUFFER	11	"	"

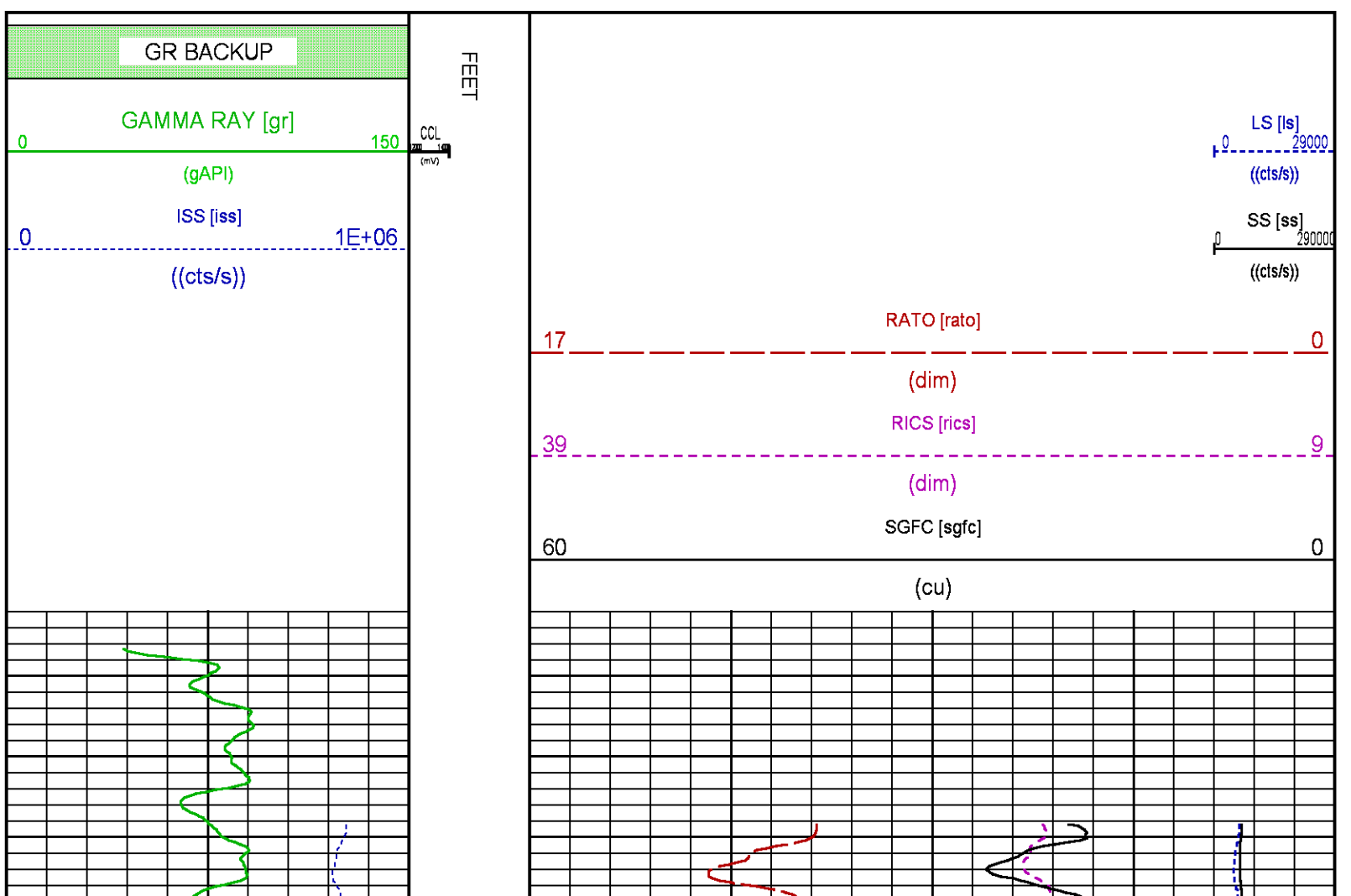
CURVE DESCRIPTION REPORT		
CURVE NAME	CREATION DATE	CURVE DESCRIPTION

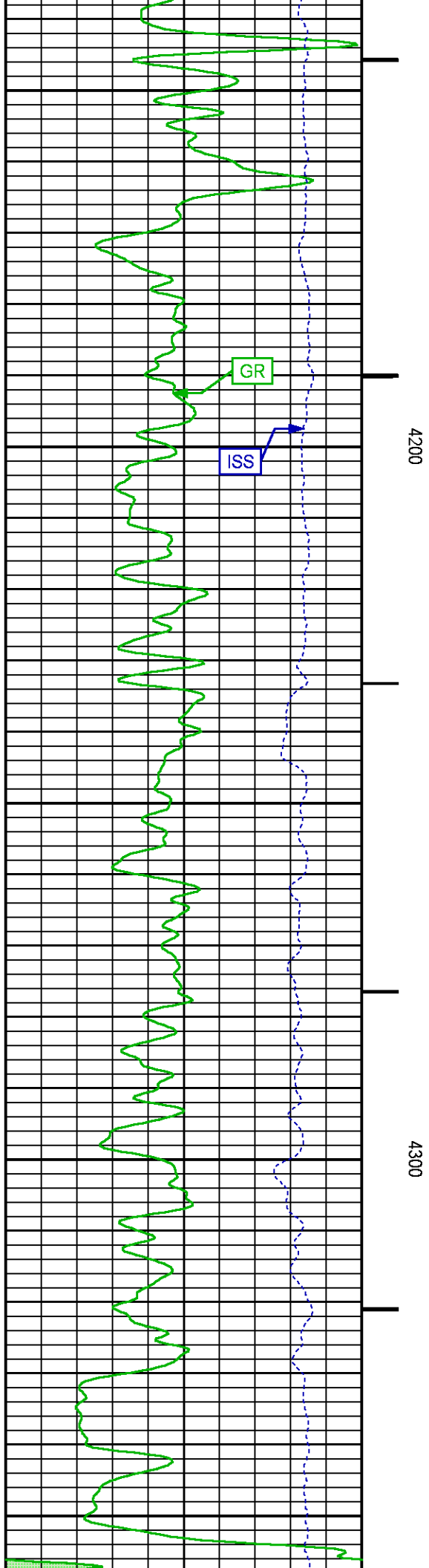
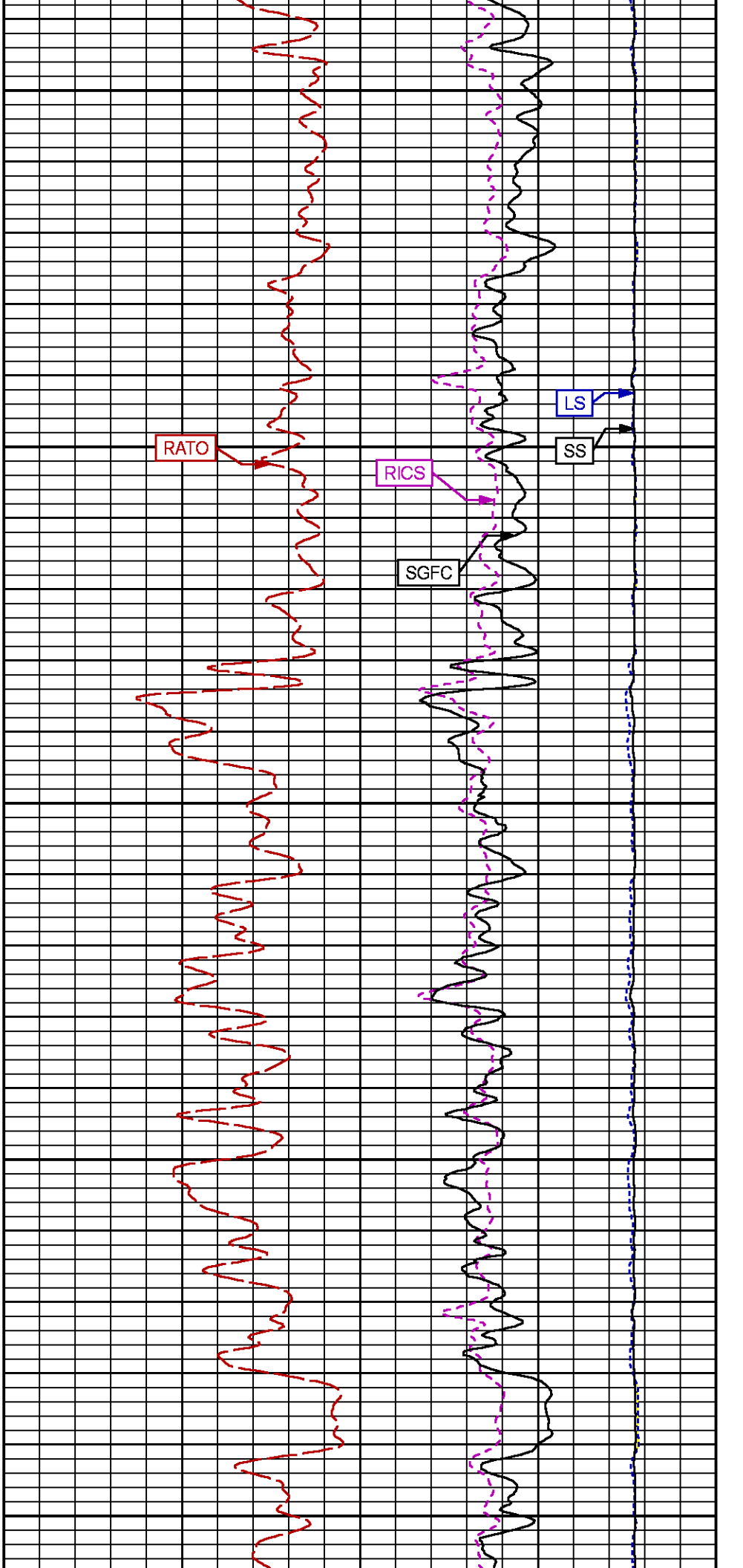
F1:CCL	Aug 19 09:13:29 2017	CASING COLLAR LOCATOR
F1:GR	Aug 19 09:13:29 2017	GAMMA RAY
F1:ISS	Aug 19 09:13:29 2017	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Aug 19 09:13:29 2017	LONG SPACE COUNT RATE
F1:RATO	Aug 19 09:13:29 2017	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Aug 19 09:13:29 2017	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Aug 19 09:13:29 2017	CORRECTED FORMATION SIGMA
F1:SS	Aug 19 09:13:29 2017	SHORT SPACE COUNT RATE

CURVE MEASURE POINT OFFSET							
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)

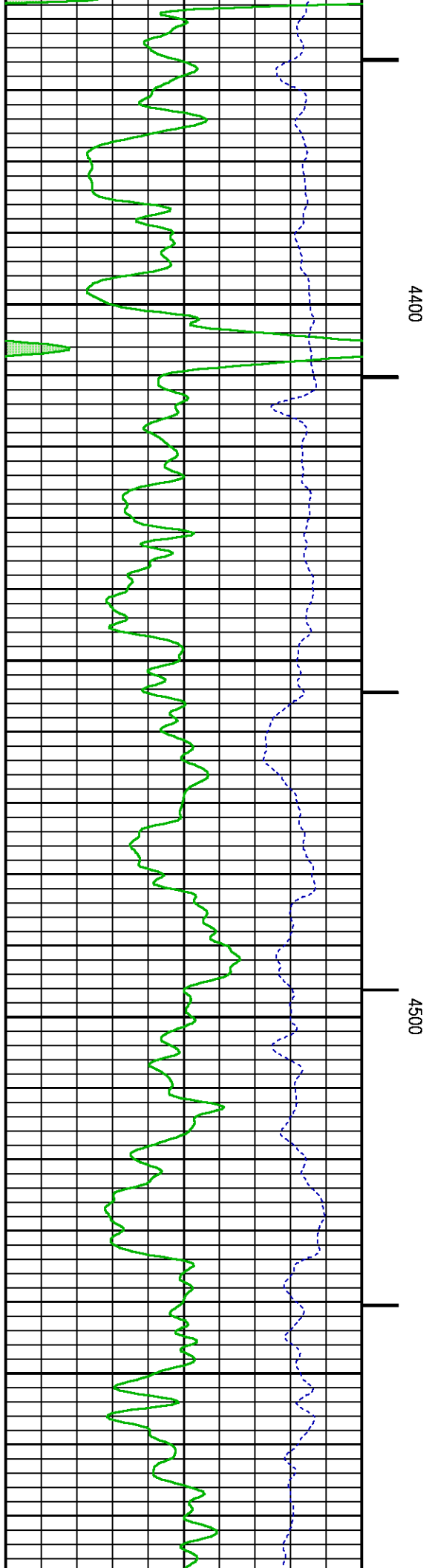
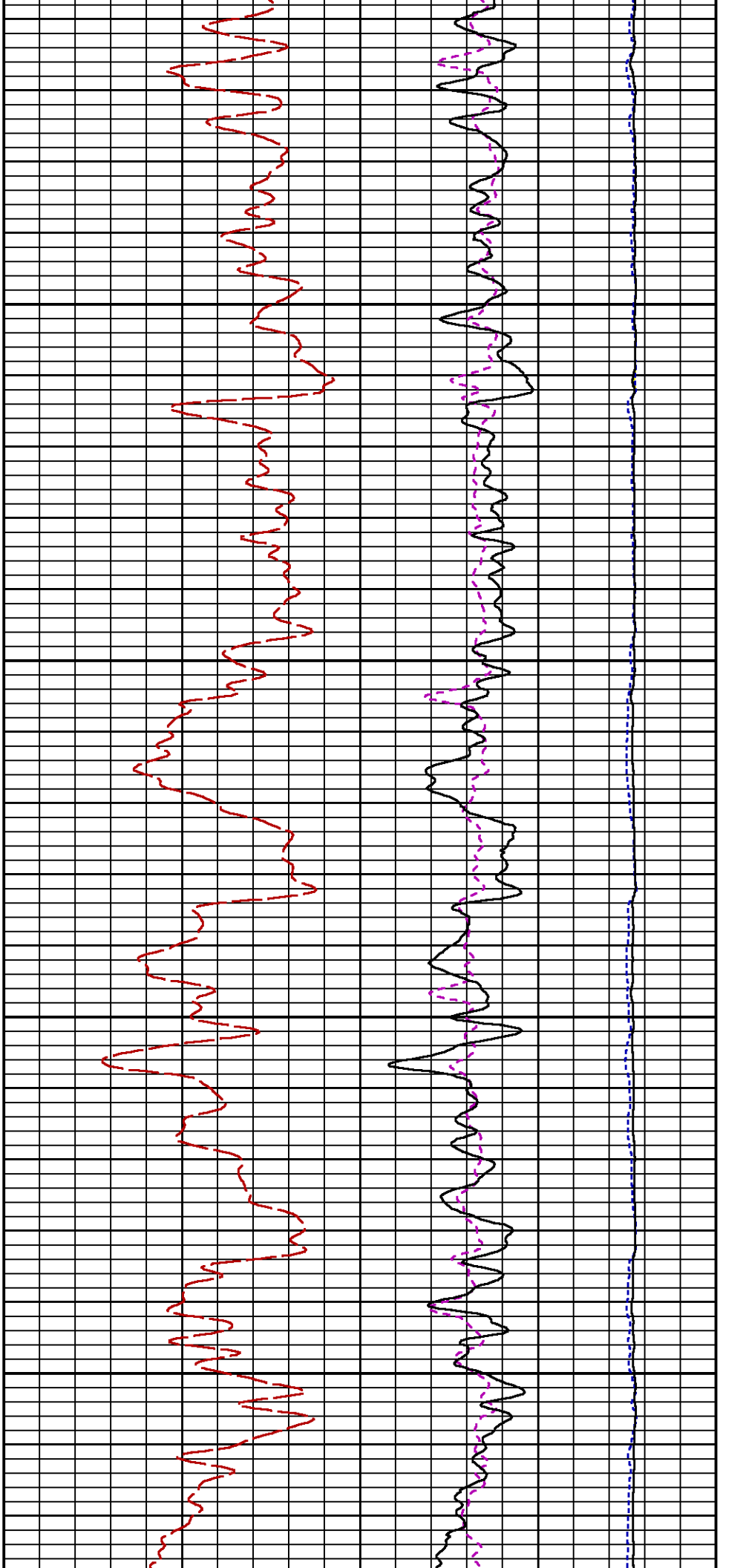
CCL	26.00	ISS	12.75	RATO	12.75	SGFC	12.75
GR	23.00	LS	12.75	RICS	12.75	SS	12.75

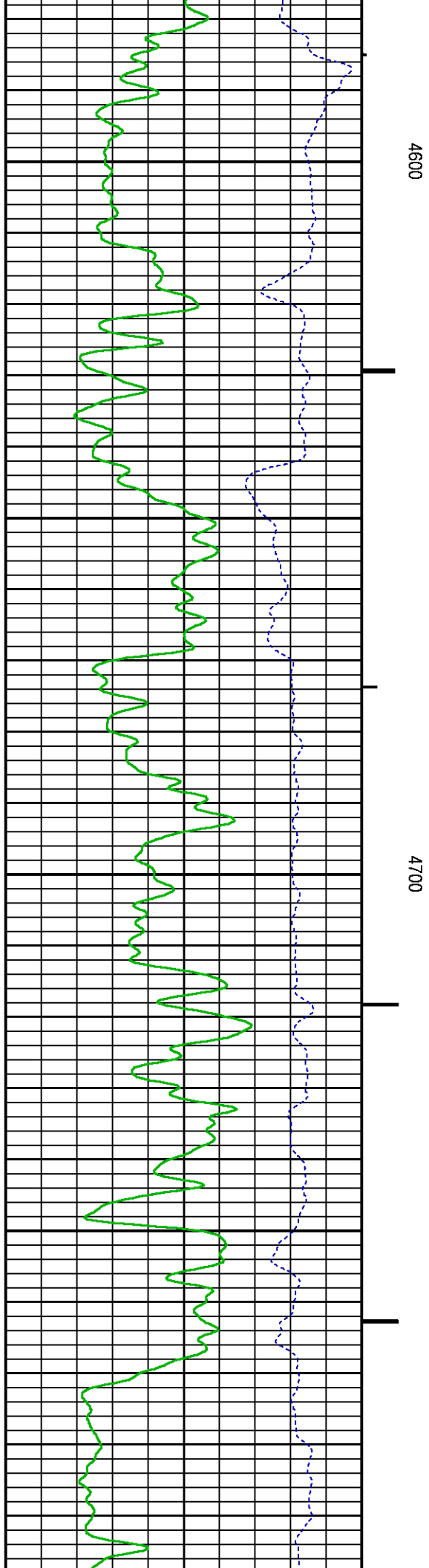
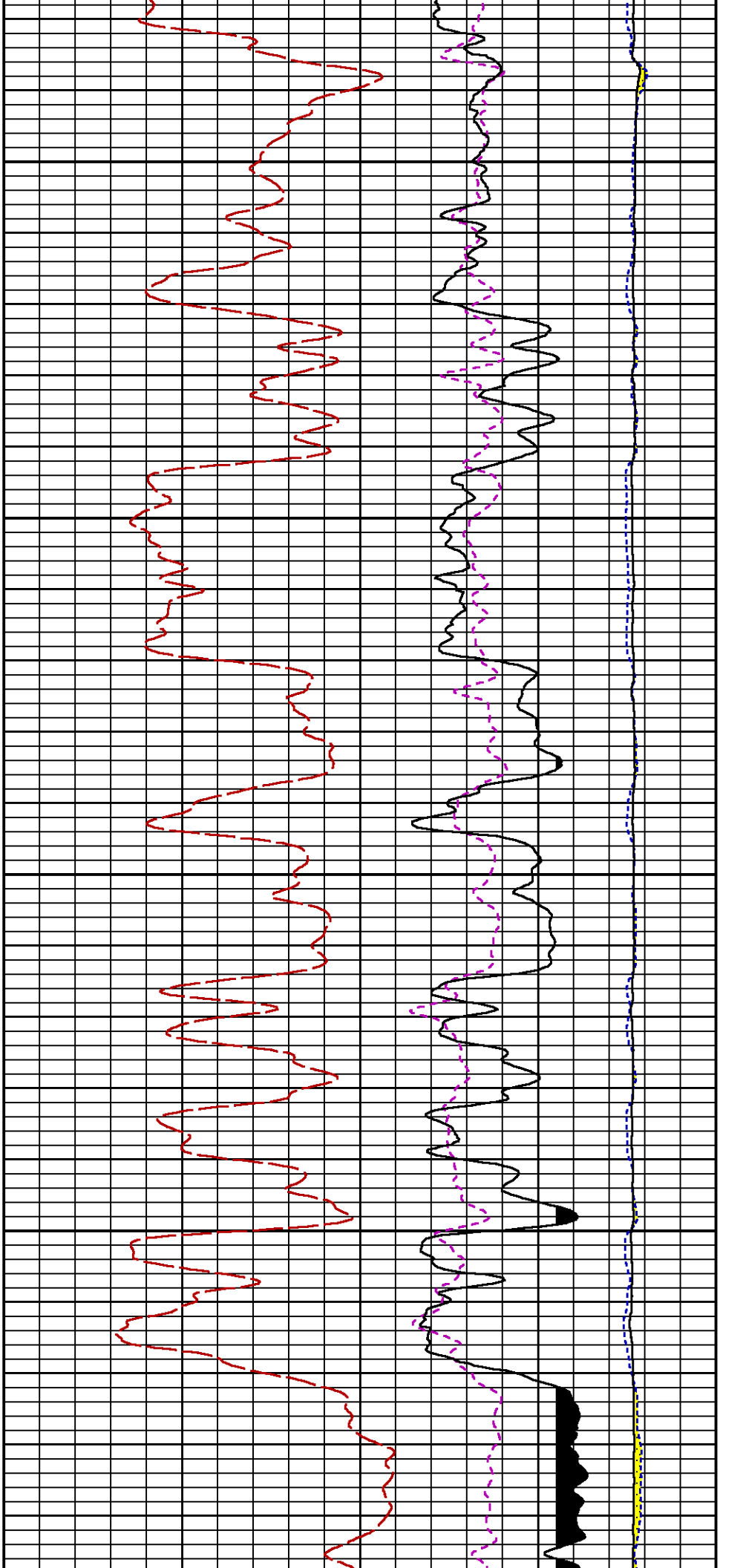
Presentation	: cpu100:BRUTON_19_17E_RPM_MAIN.fvpdf [5"/100' Scale]
Plot Interval	: 4102.5 - 7730 Feet
Data File 1	: F1 : cpu100:/dat1a/LARAMIE_BRUTON_19_17E/BRUTON_19_17E_RPM_MAIN.xtf
Created On	: Aug 19 09:13:29 2017
Company	: LARAMIE ENERGY
Well	: BRUTON 19-17E
Field	: MESA
File Interval	: 4101.75 - 7722 Feet
OCT	: RPM3D

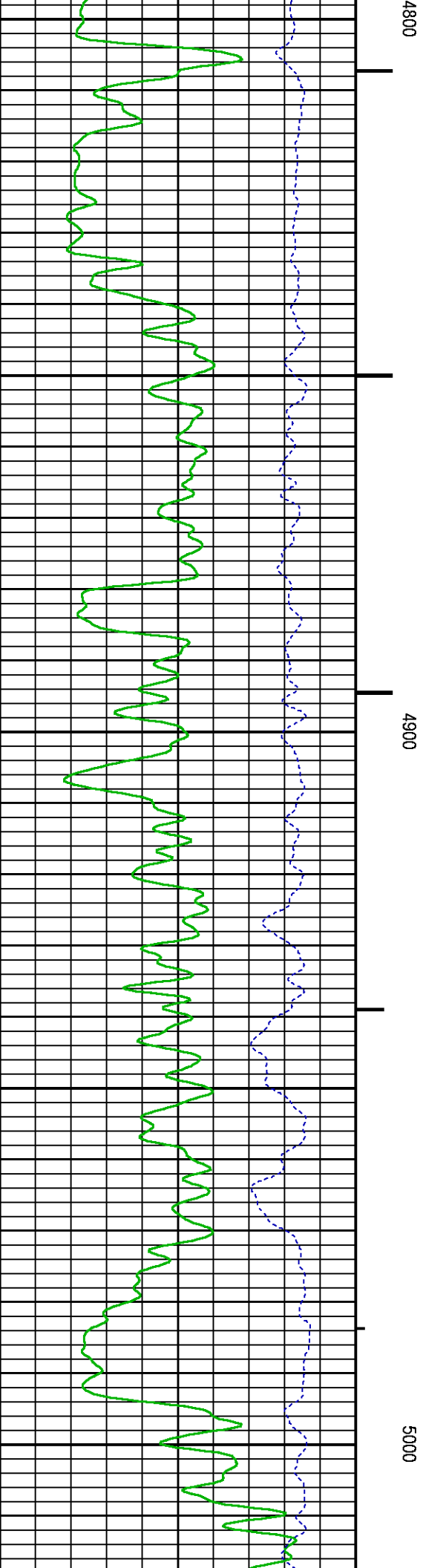
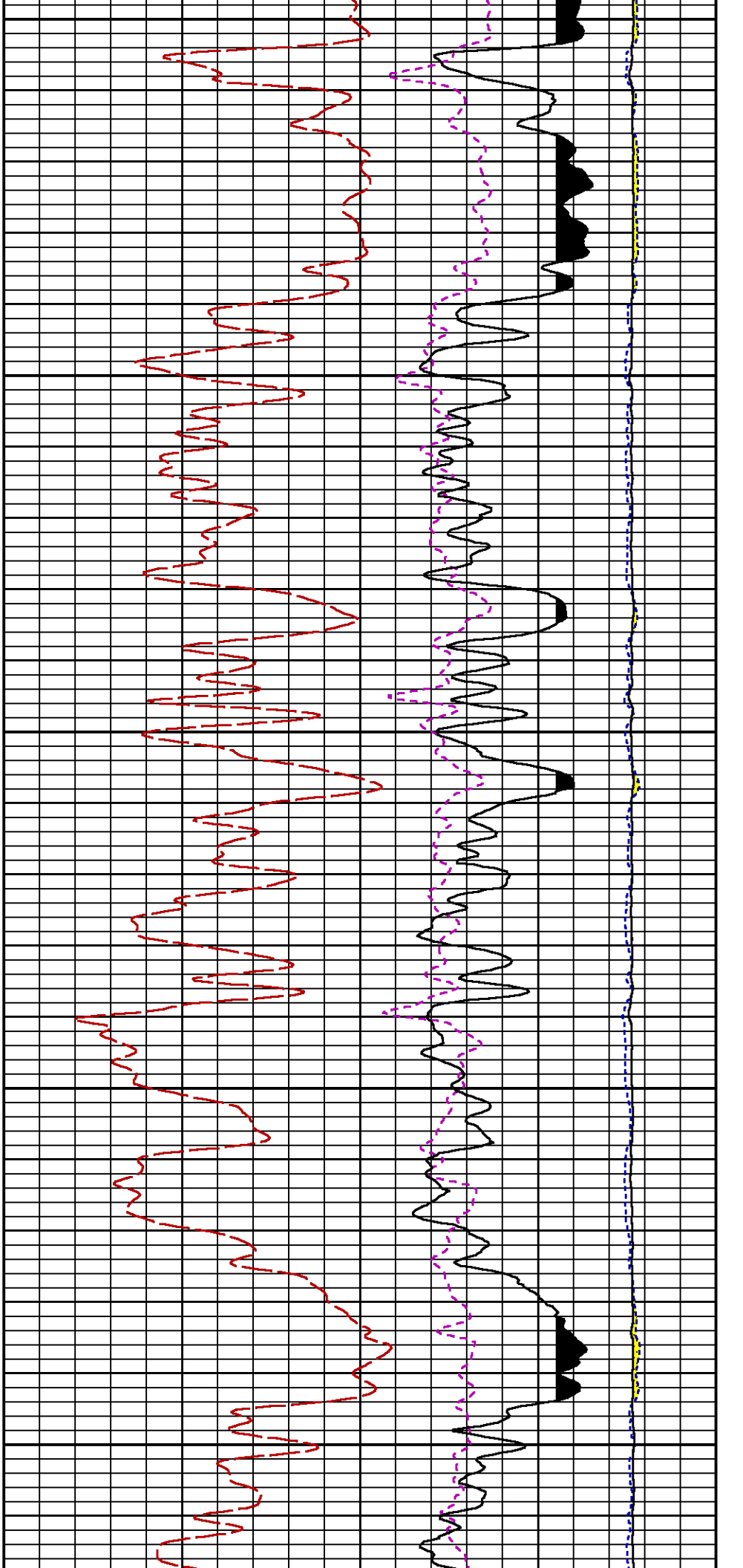


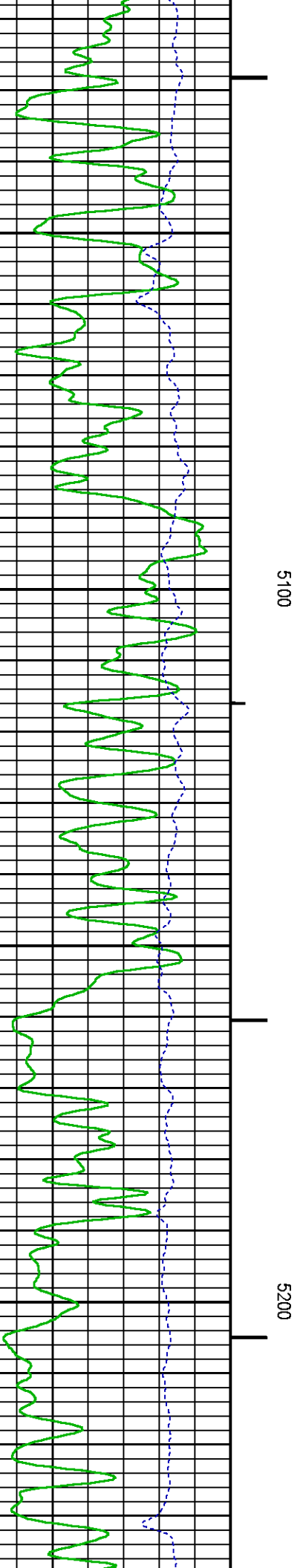
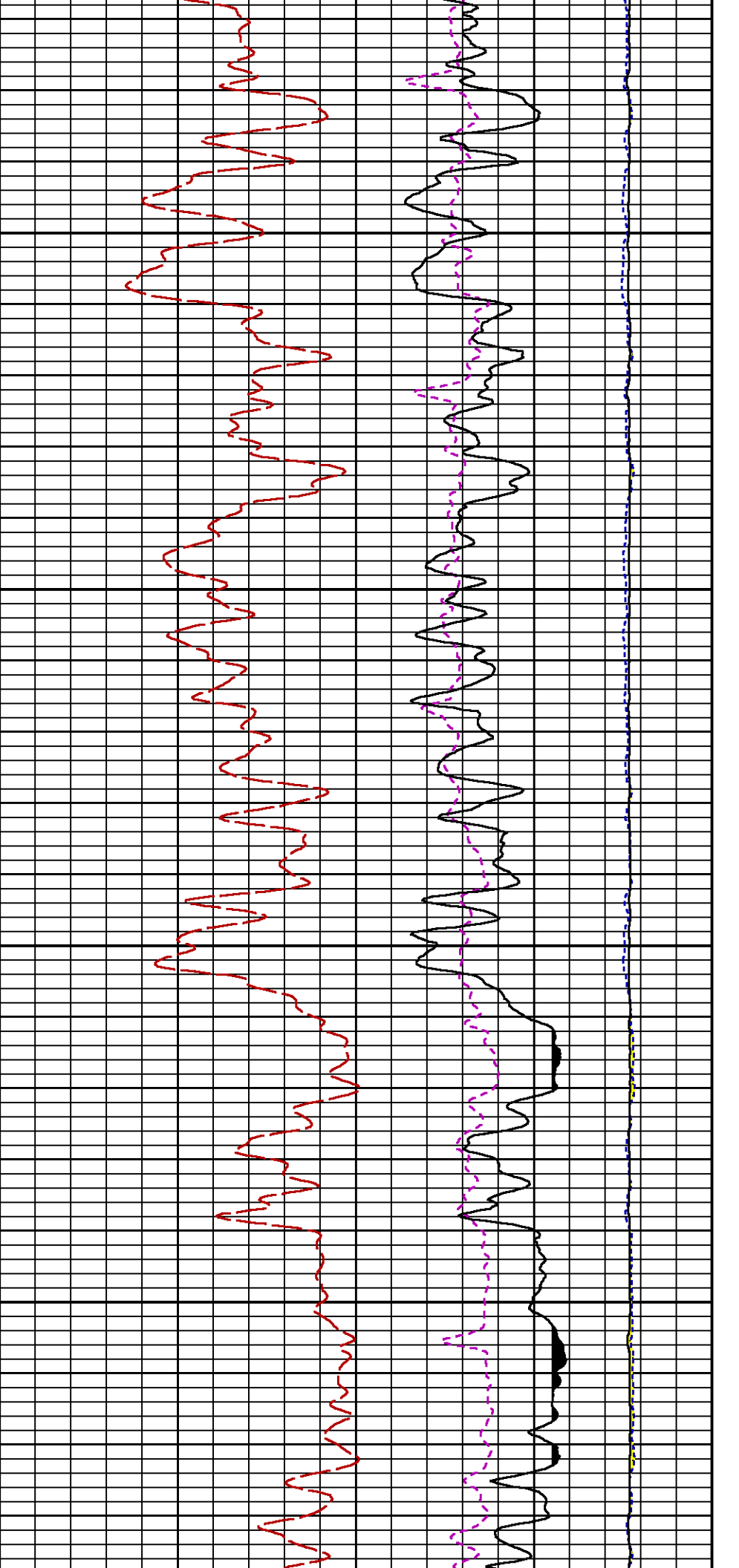


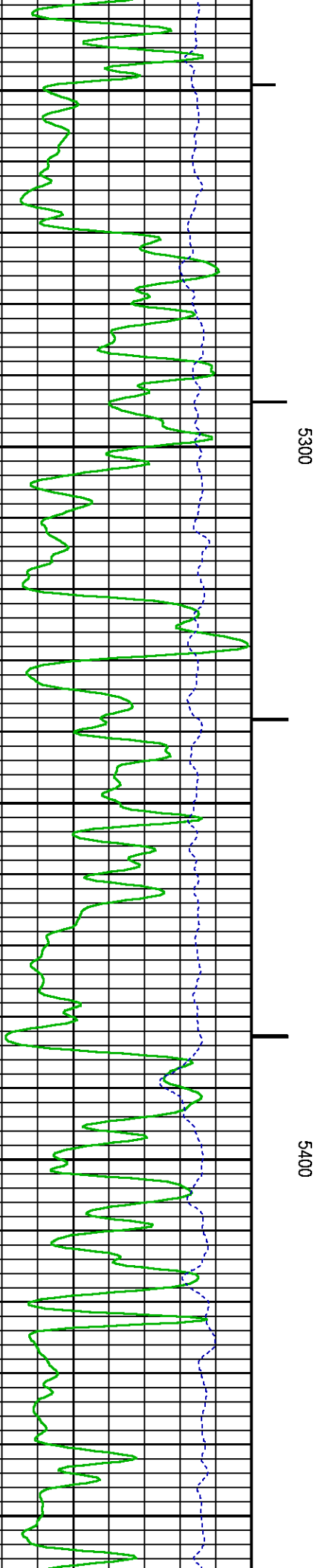
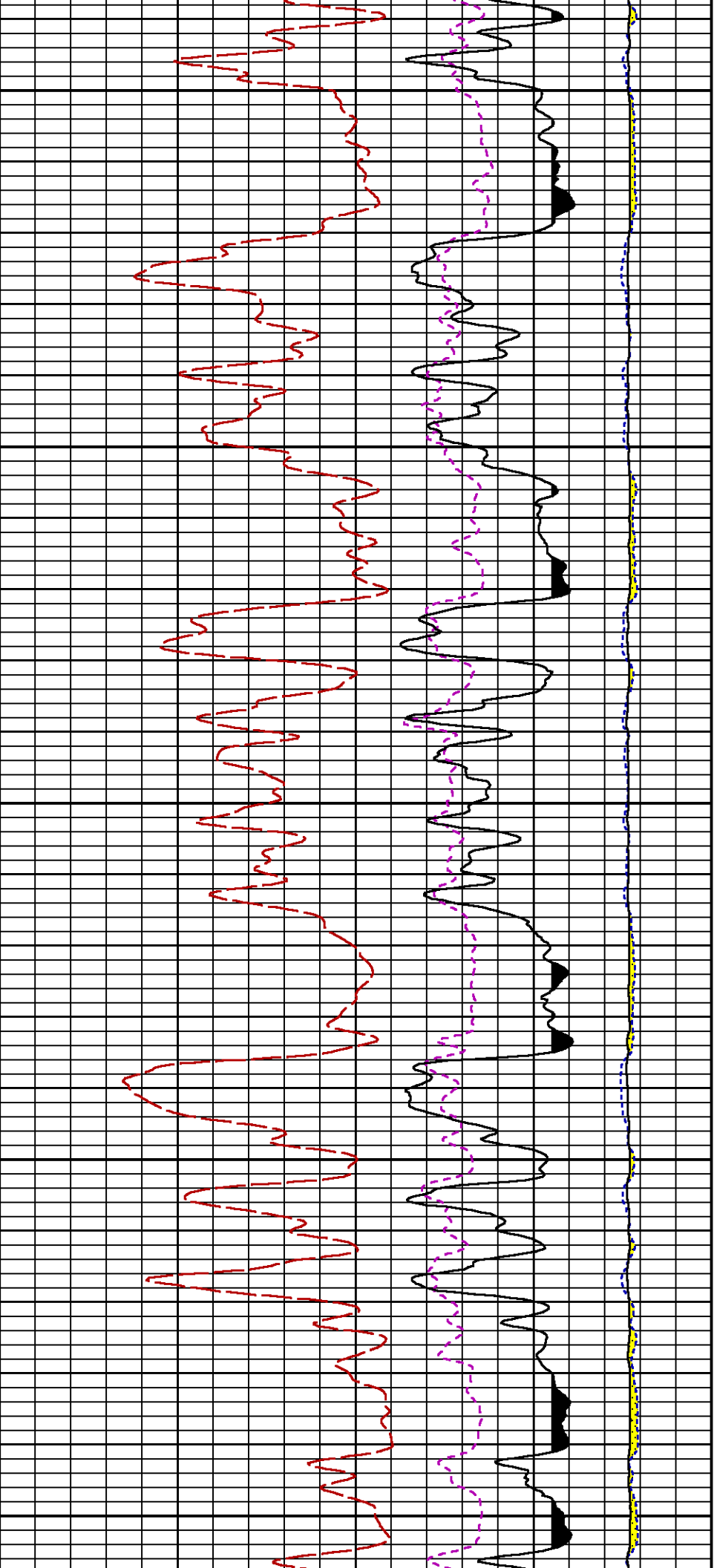


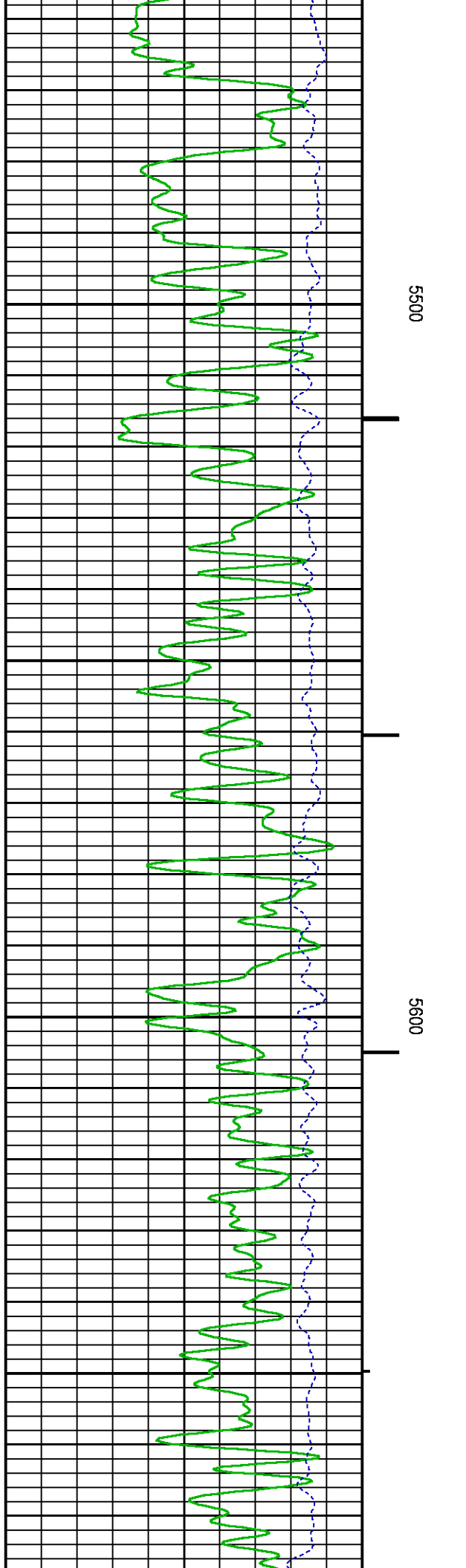
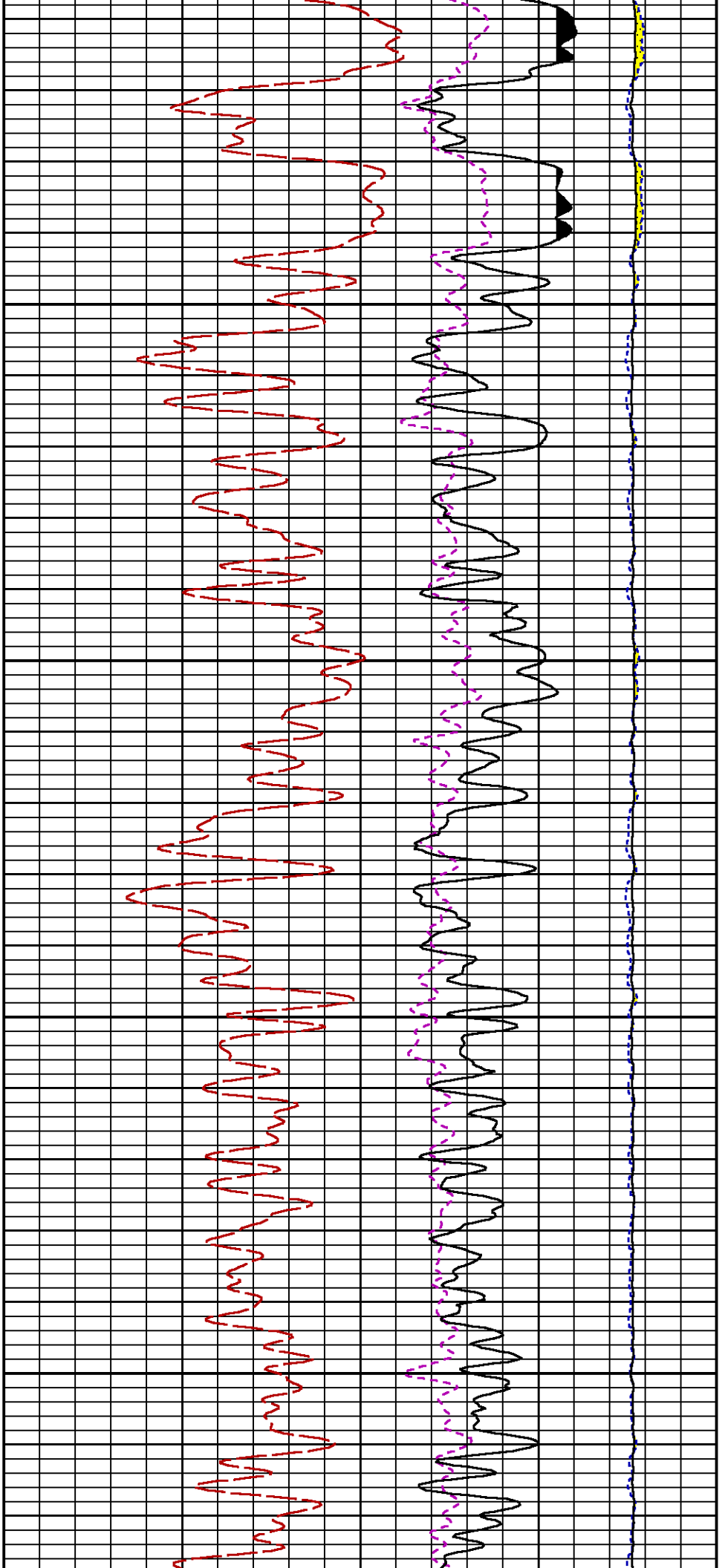


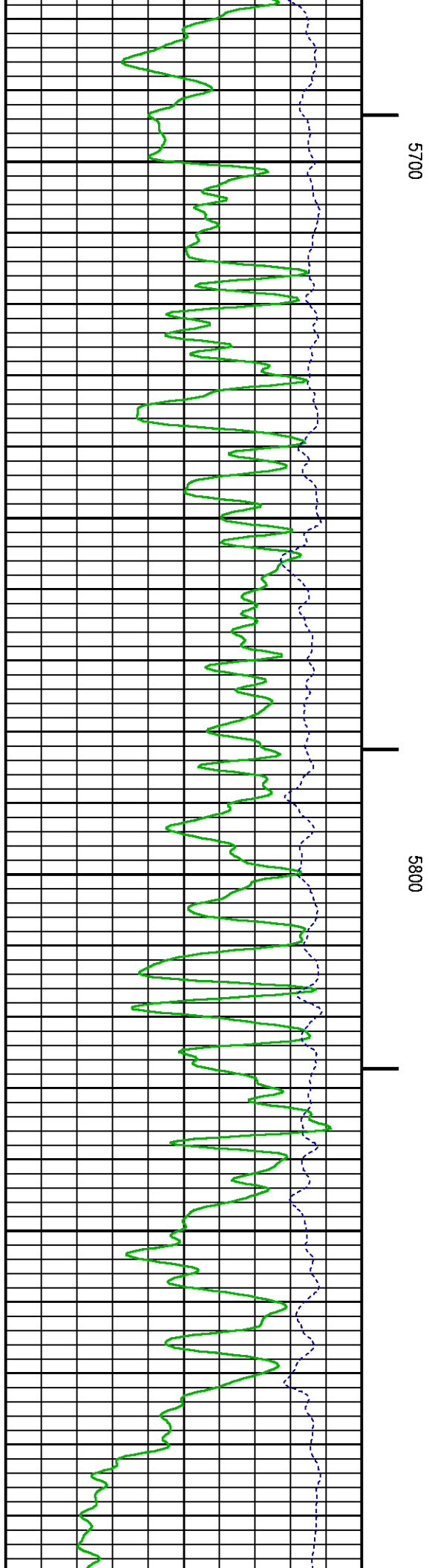
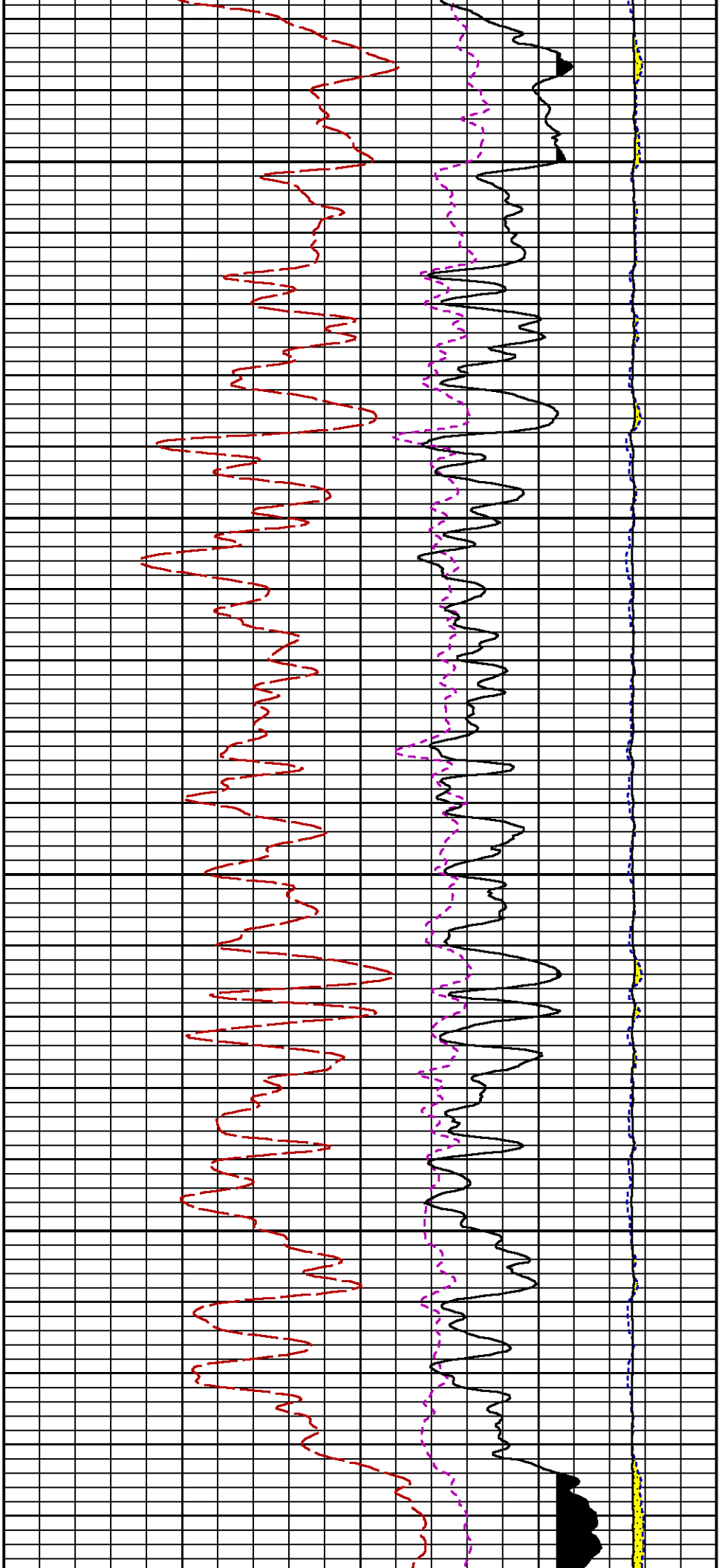


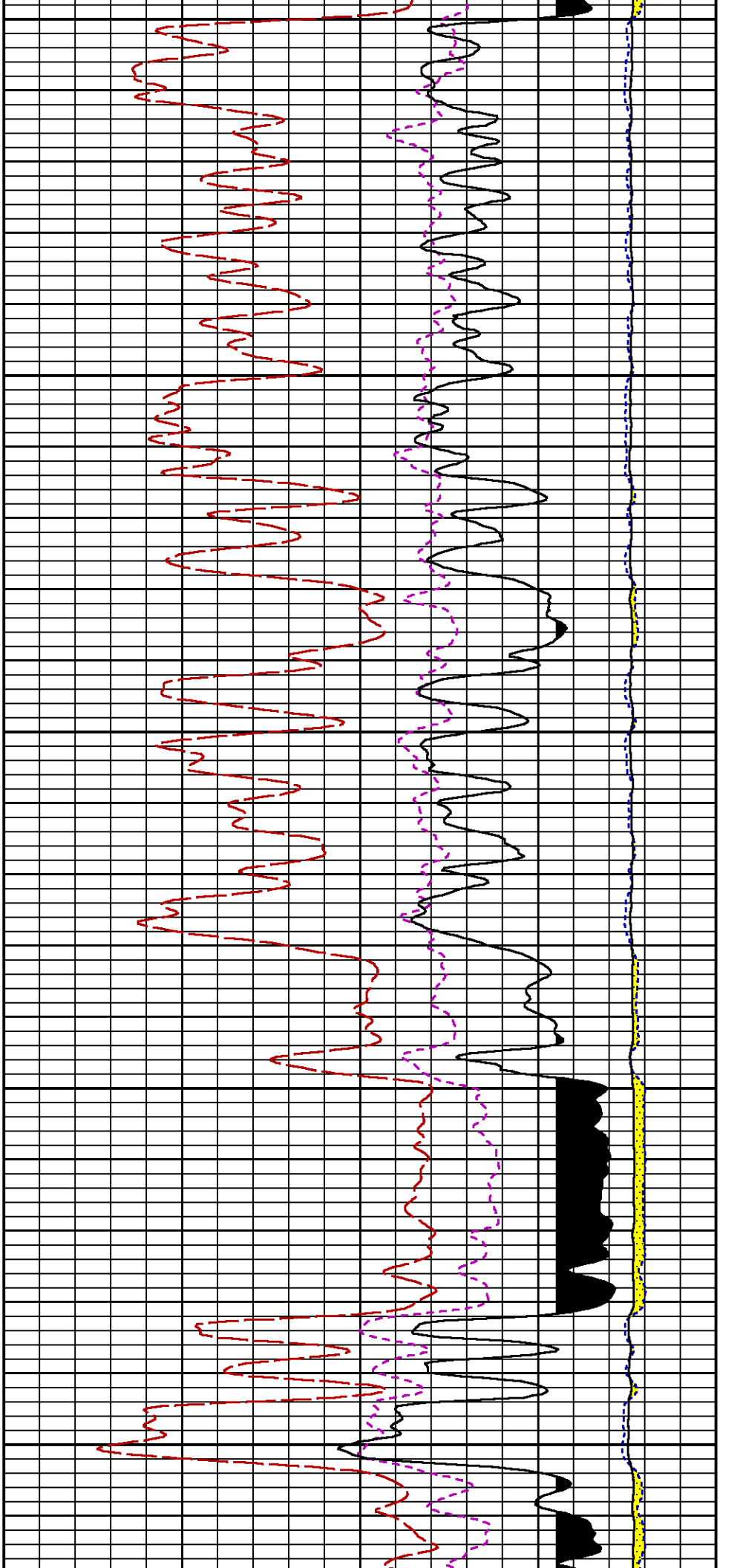








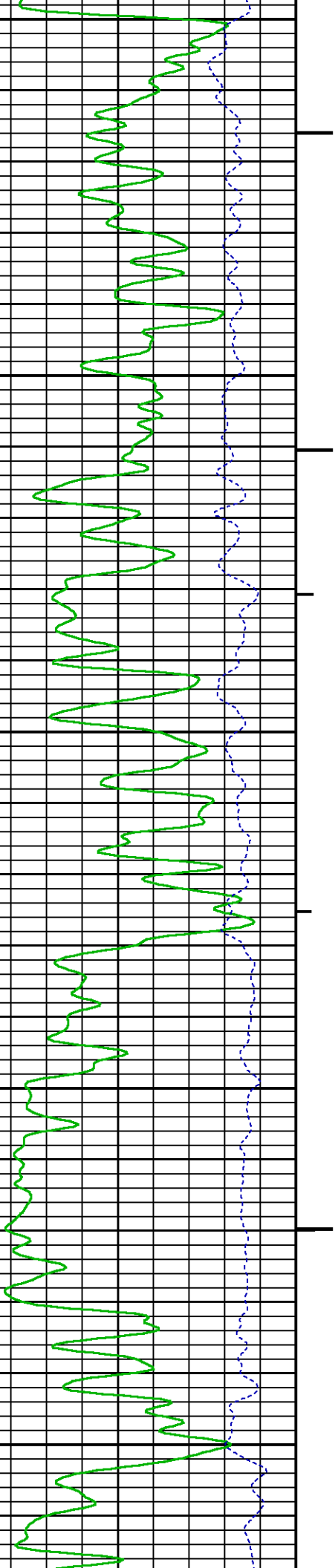




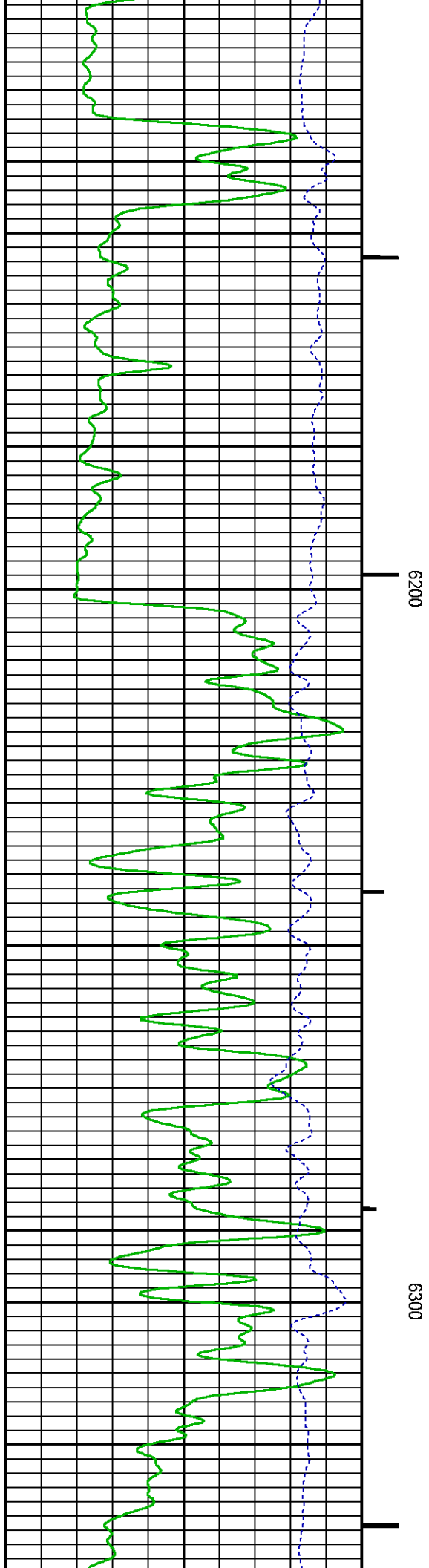
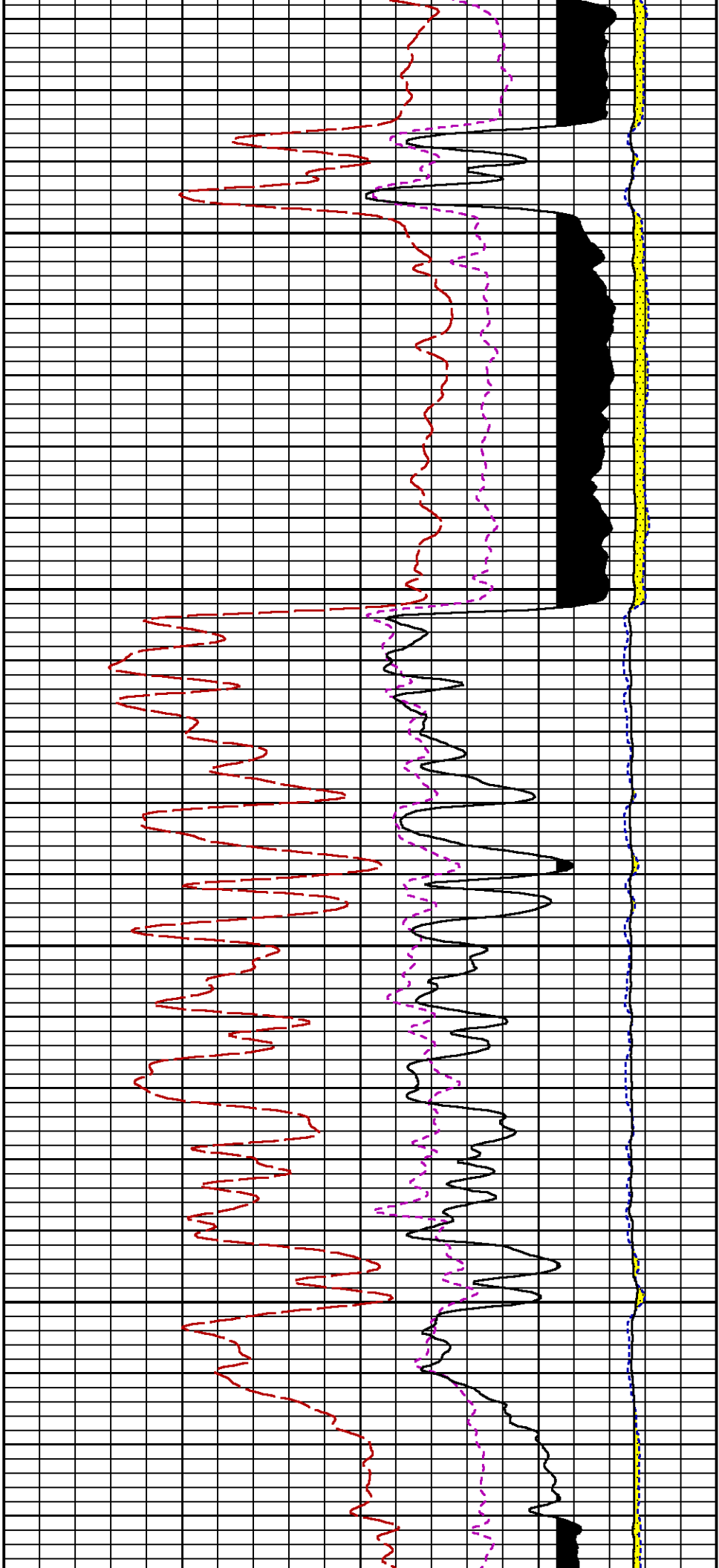
5900

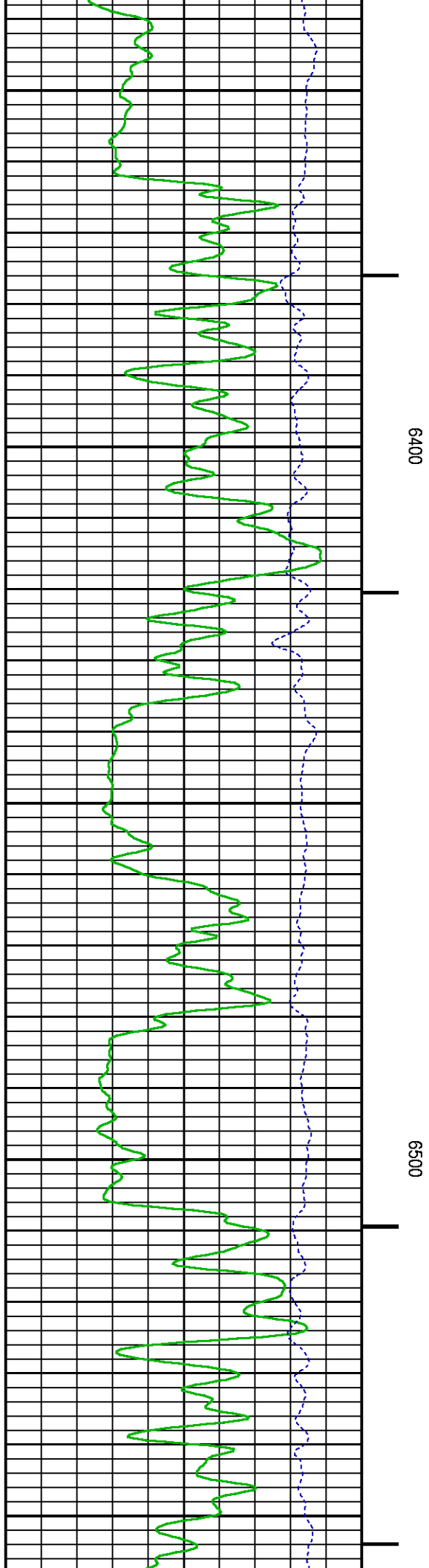
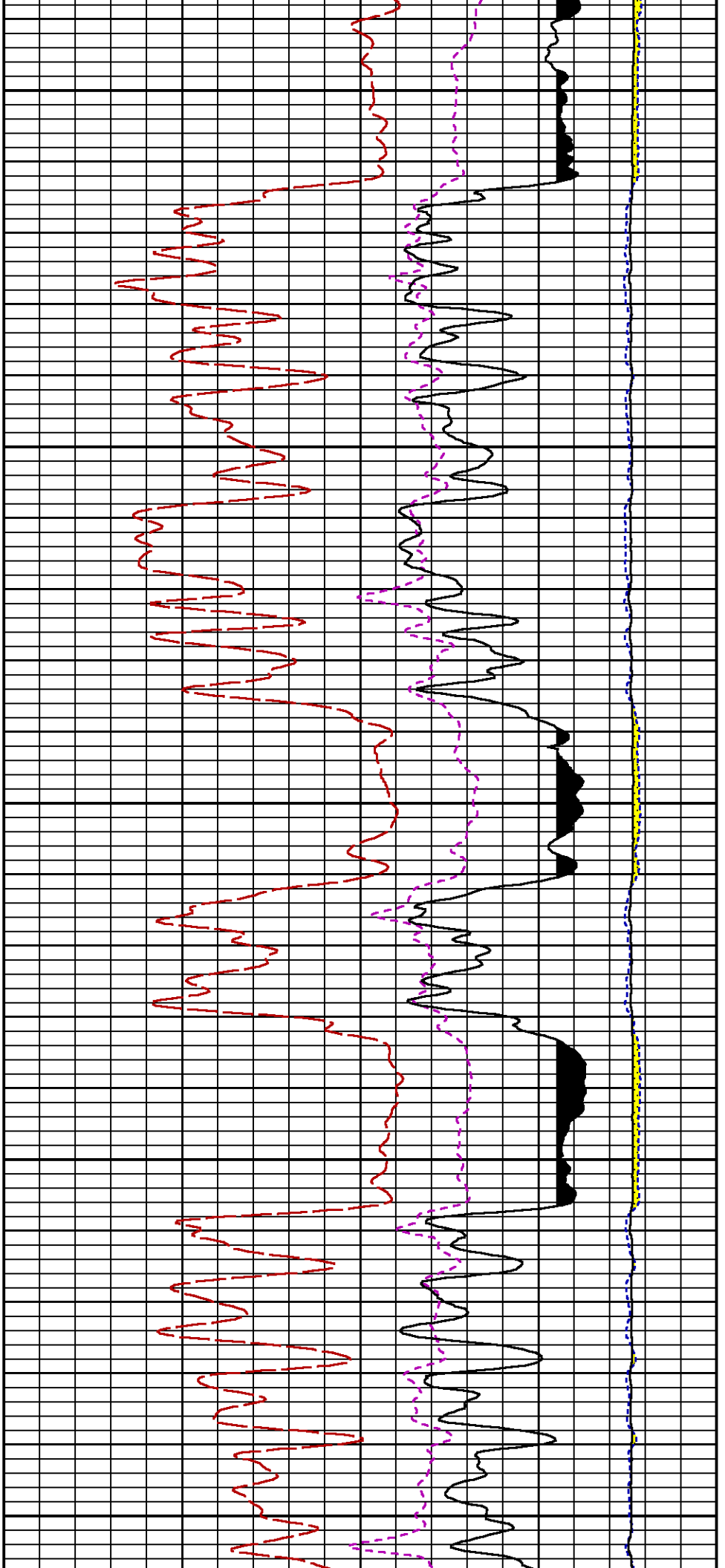
6000

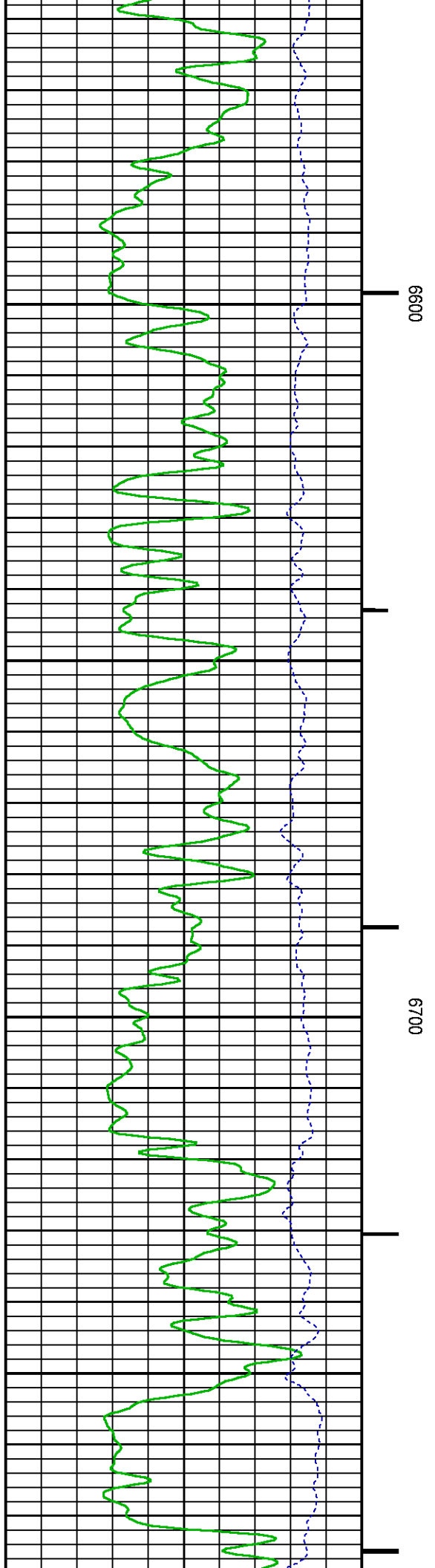
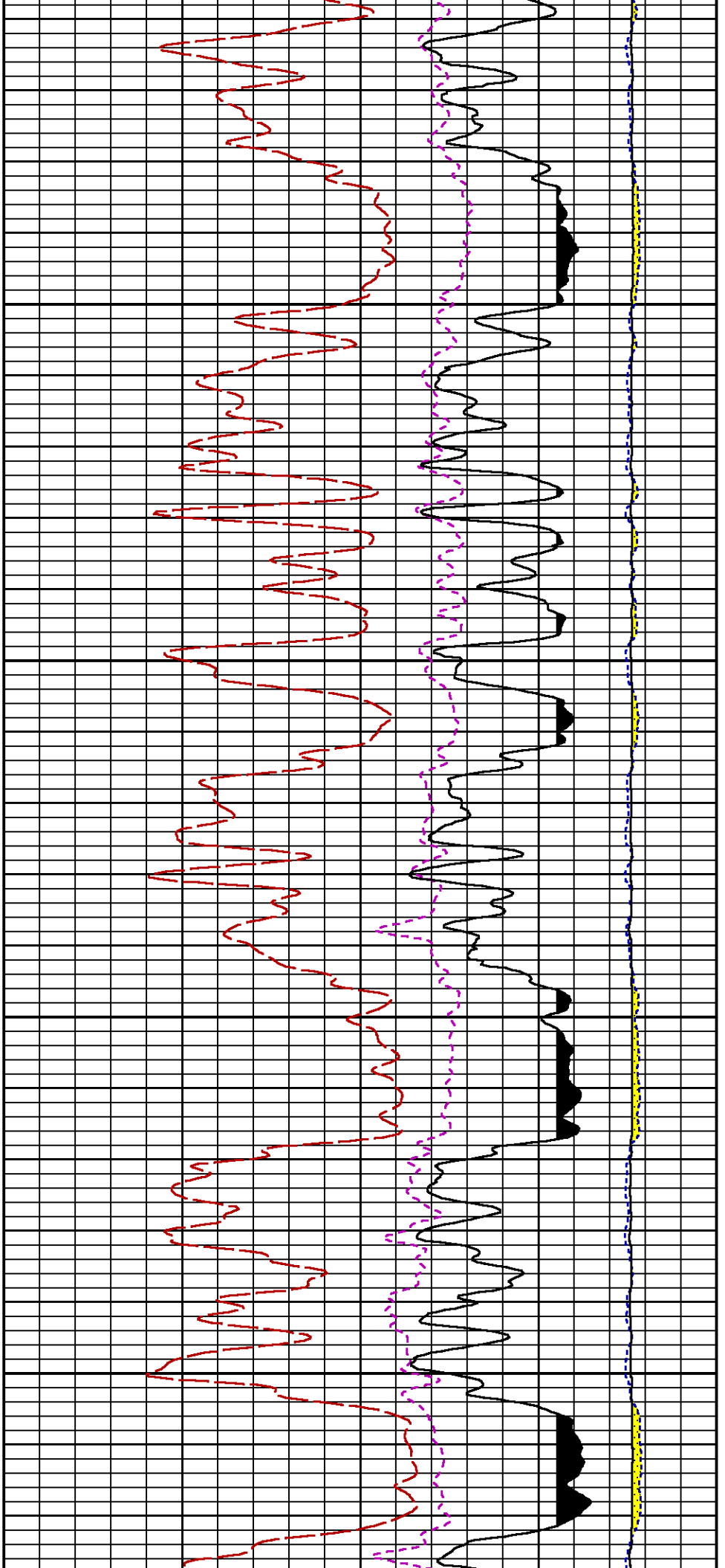
6100

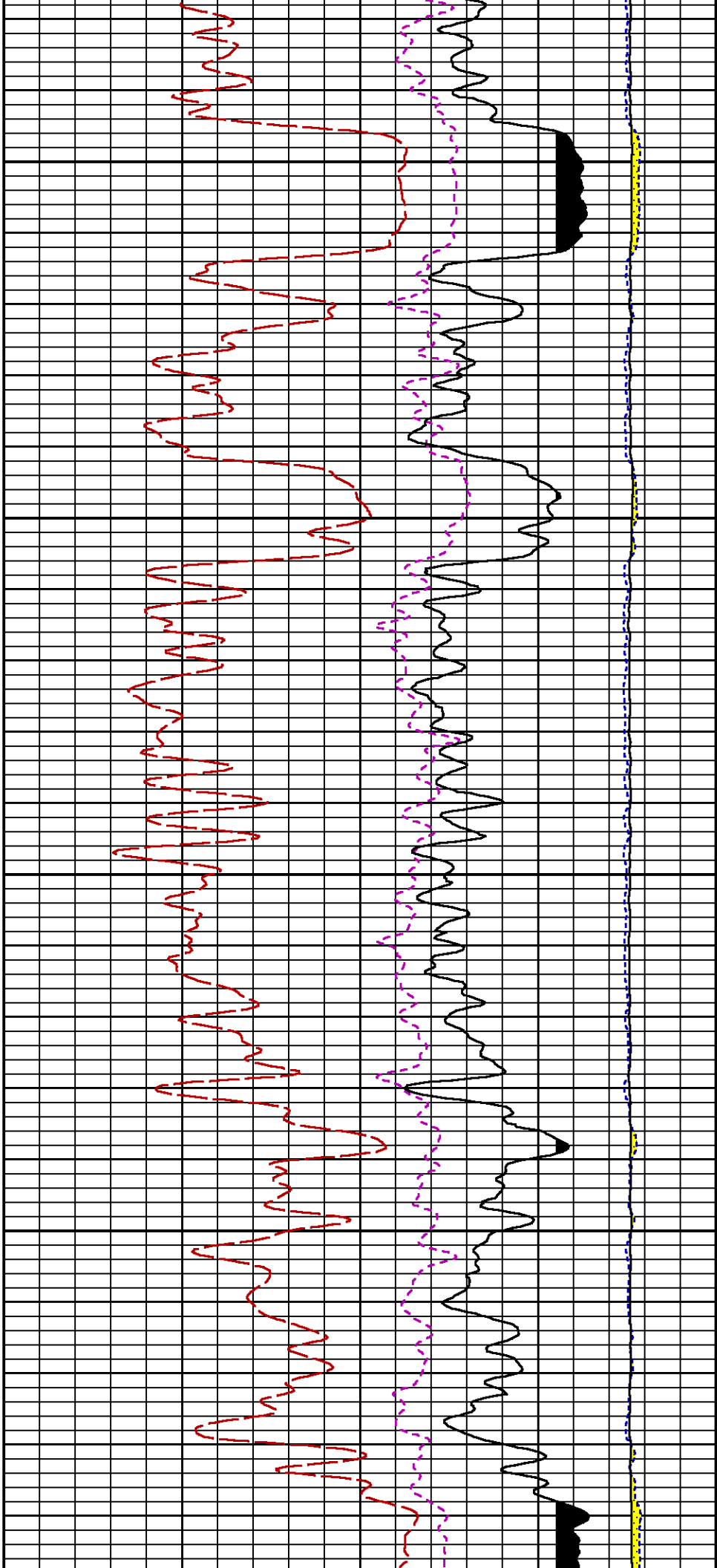






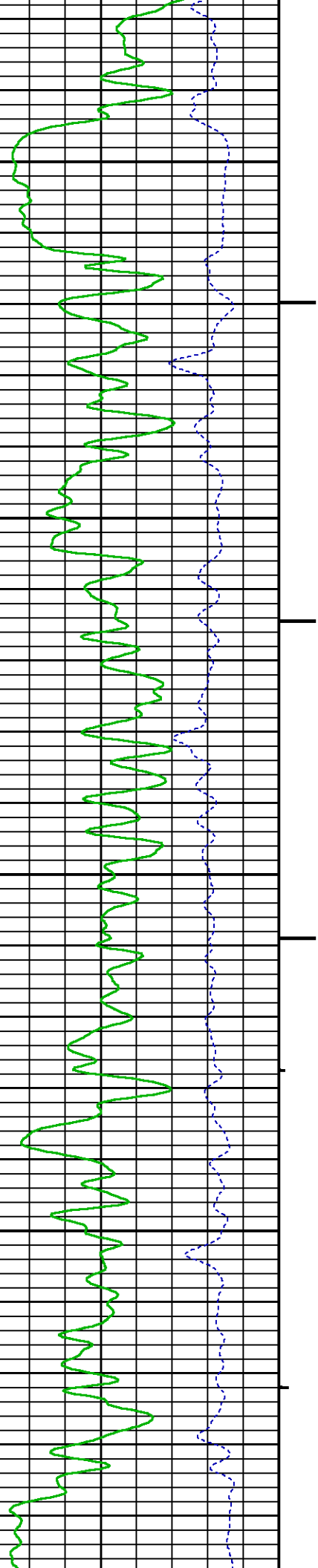


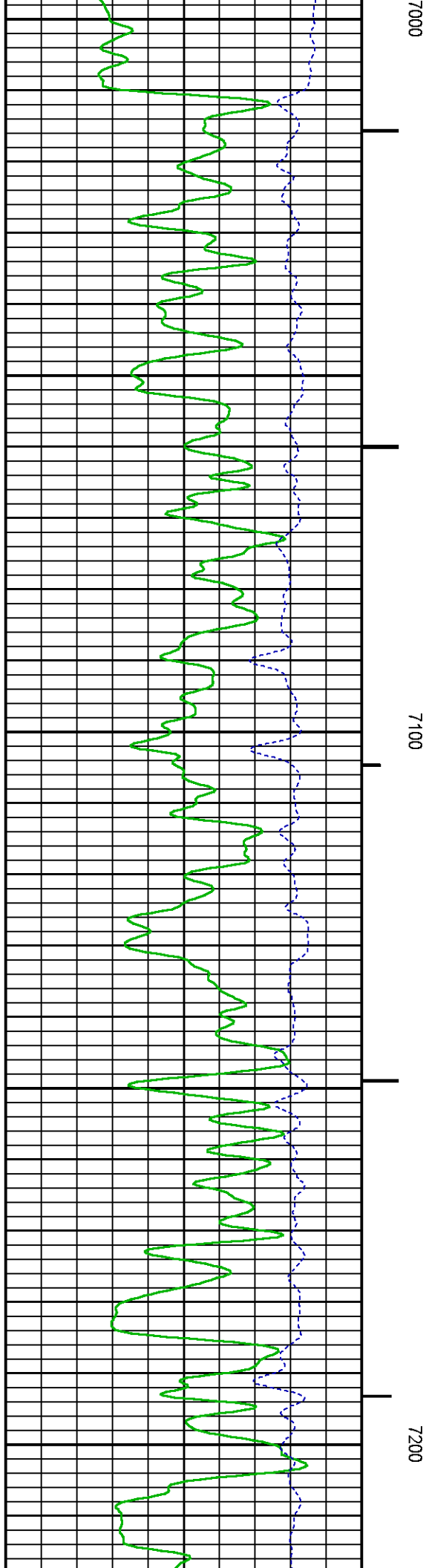
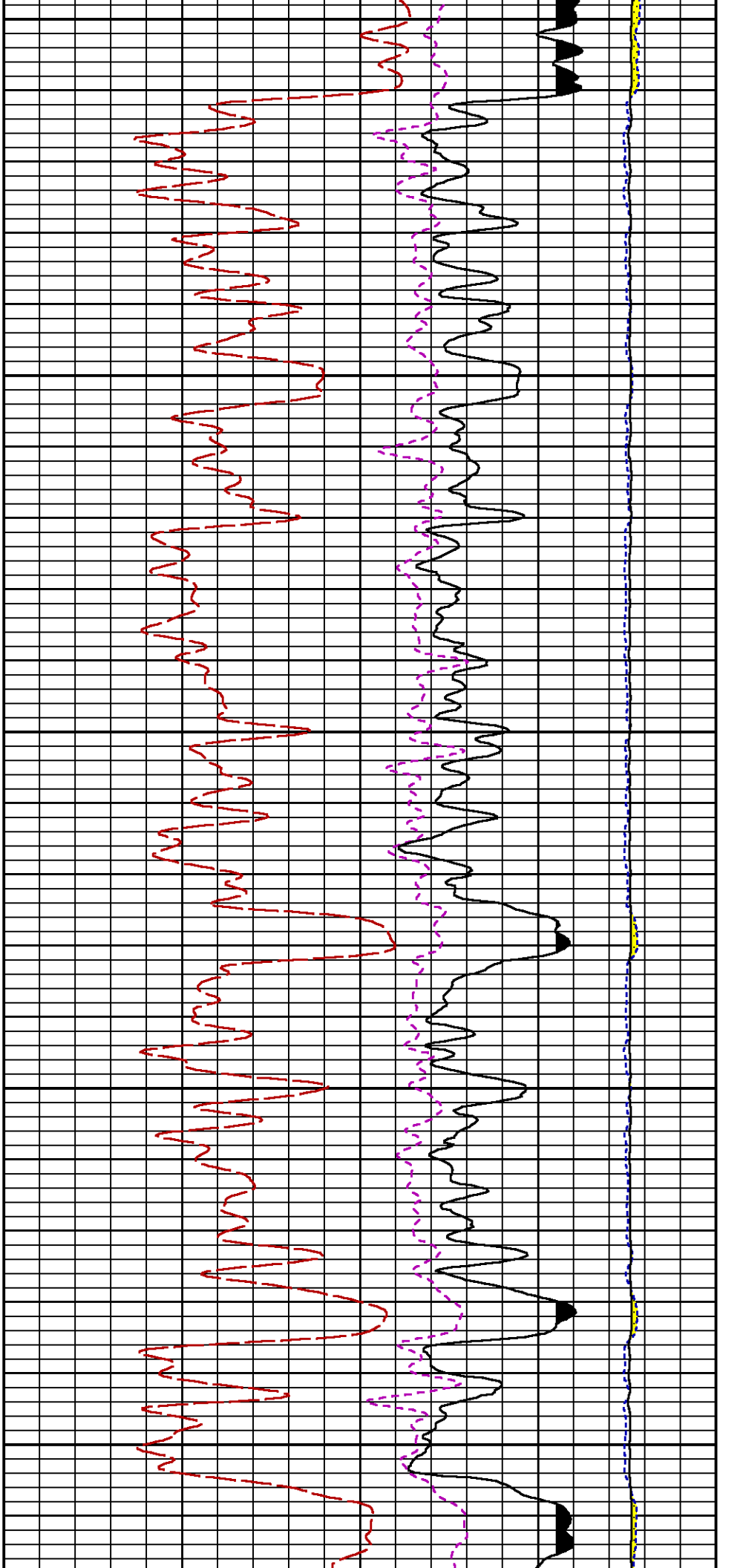


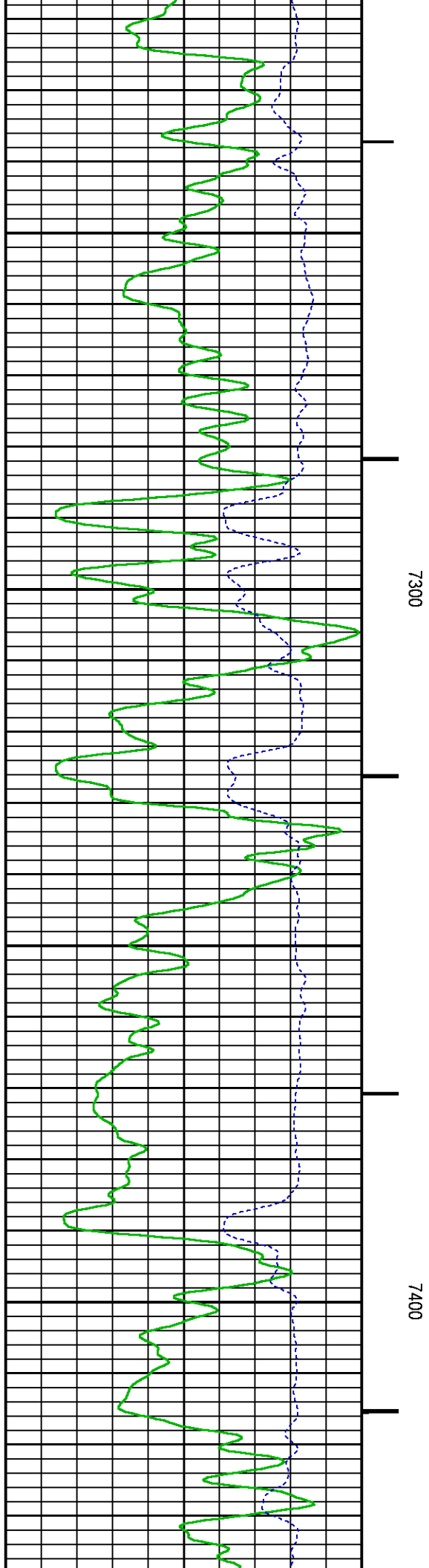
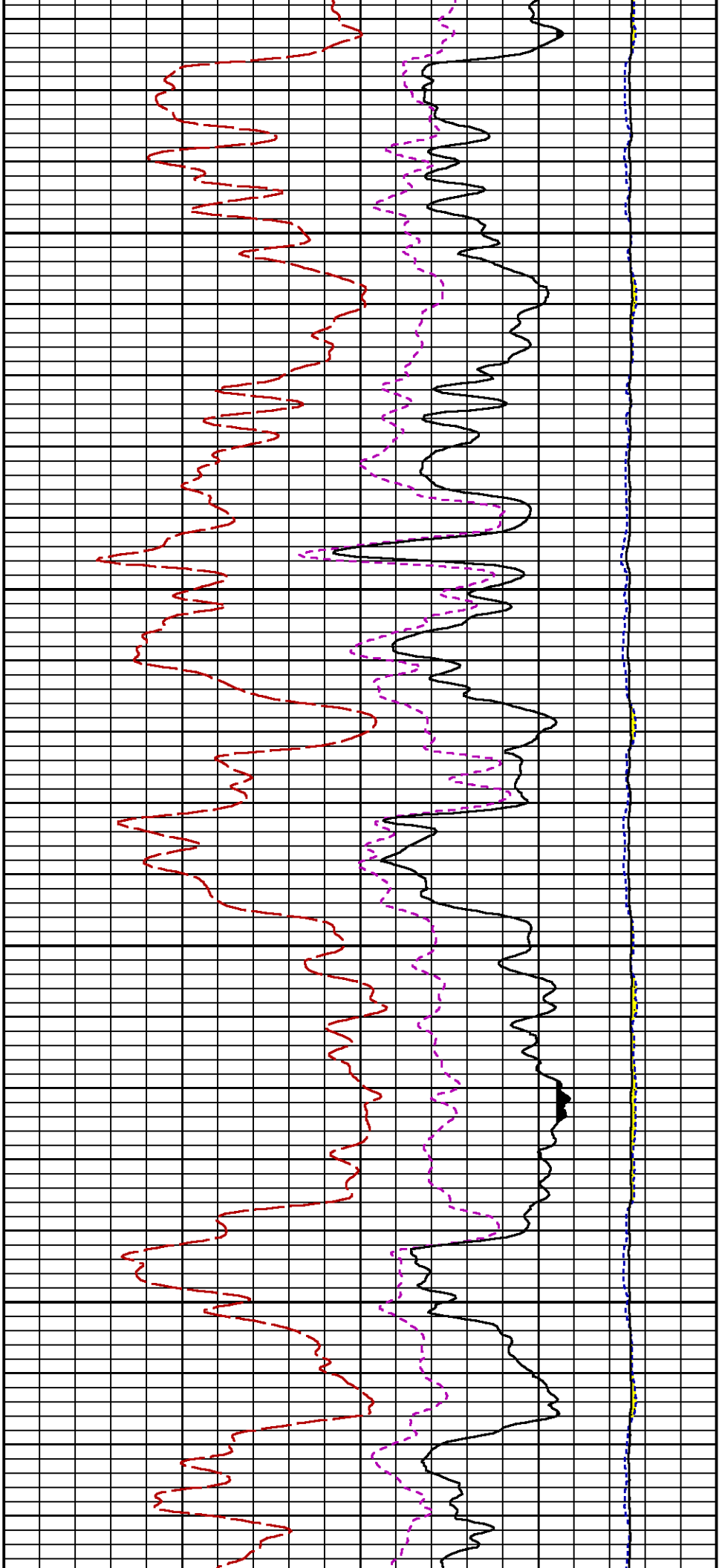


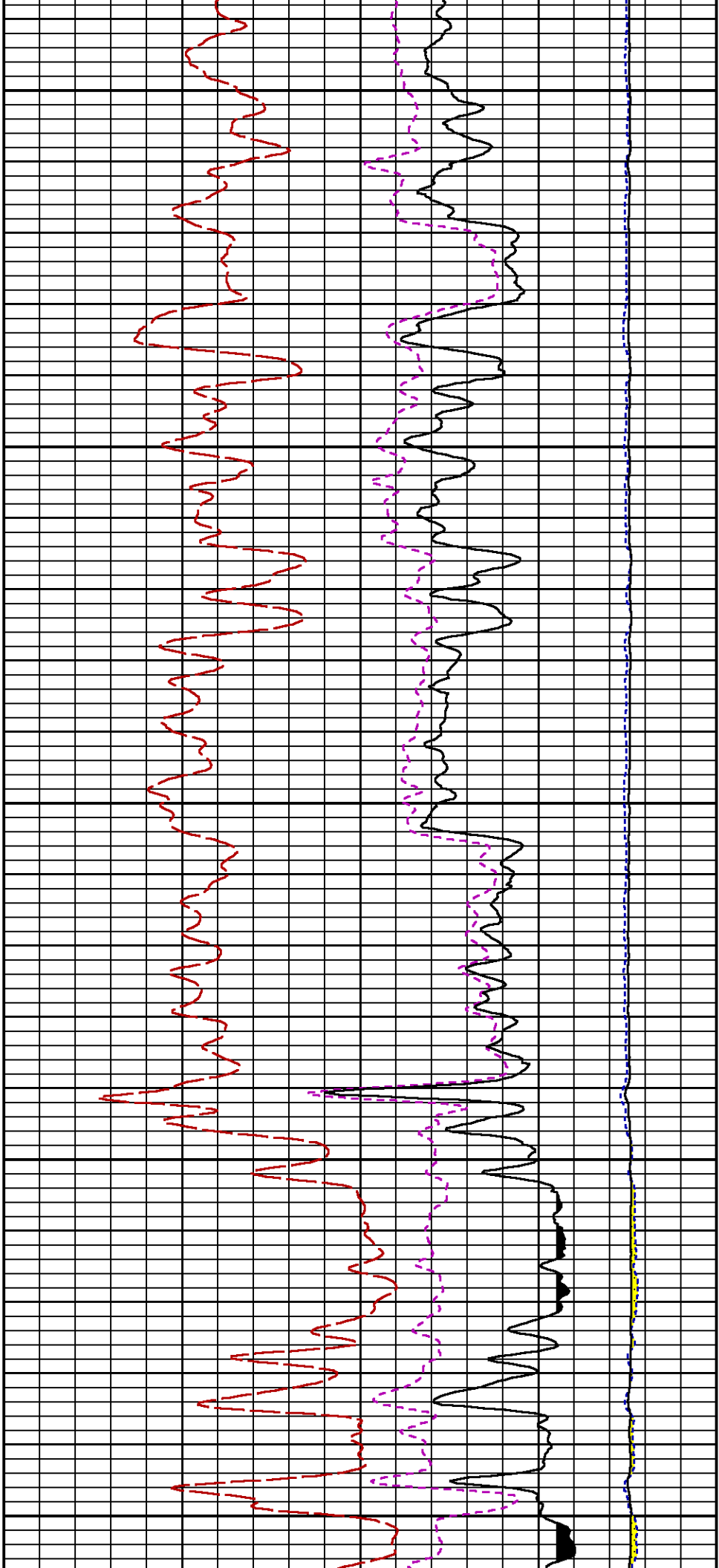
0089

0069



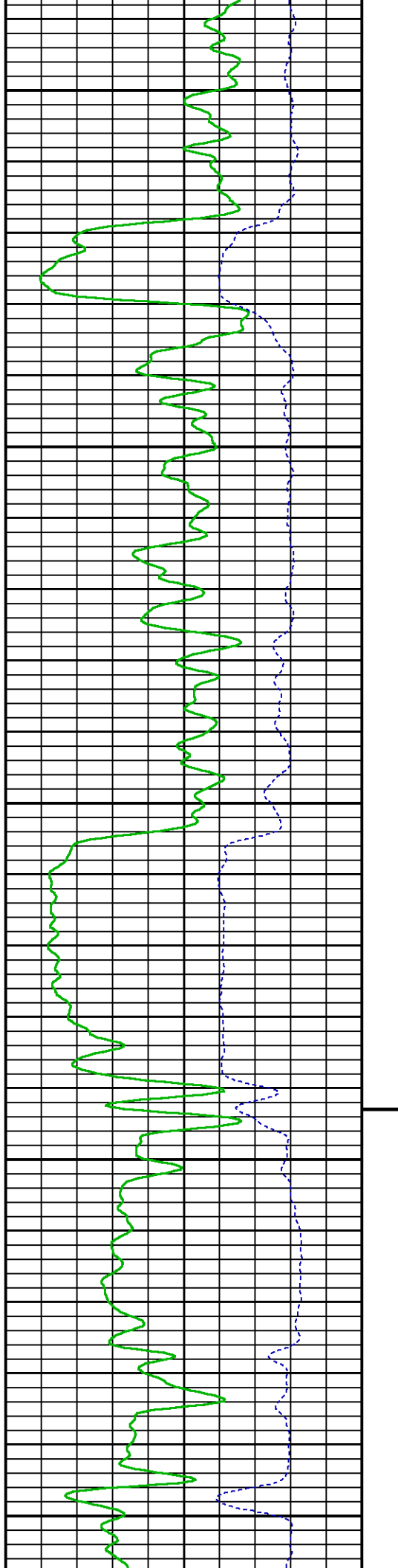


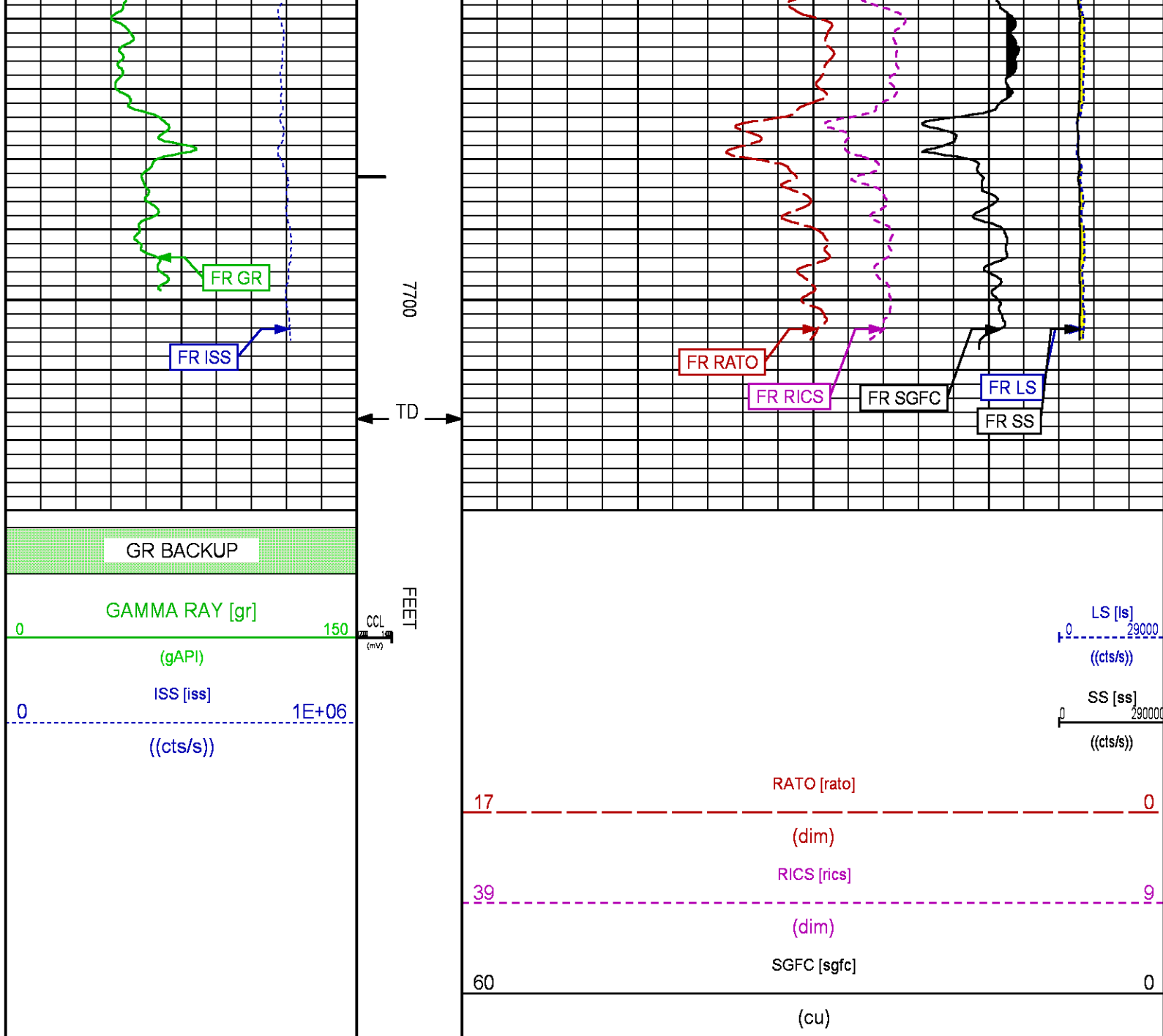




7500

7600





REPEAT PASS PNC-3D MODE

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

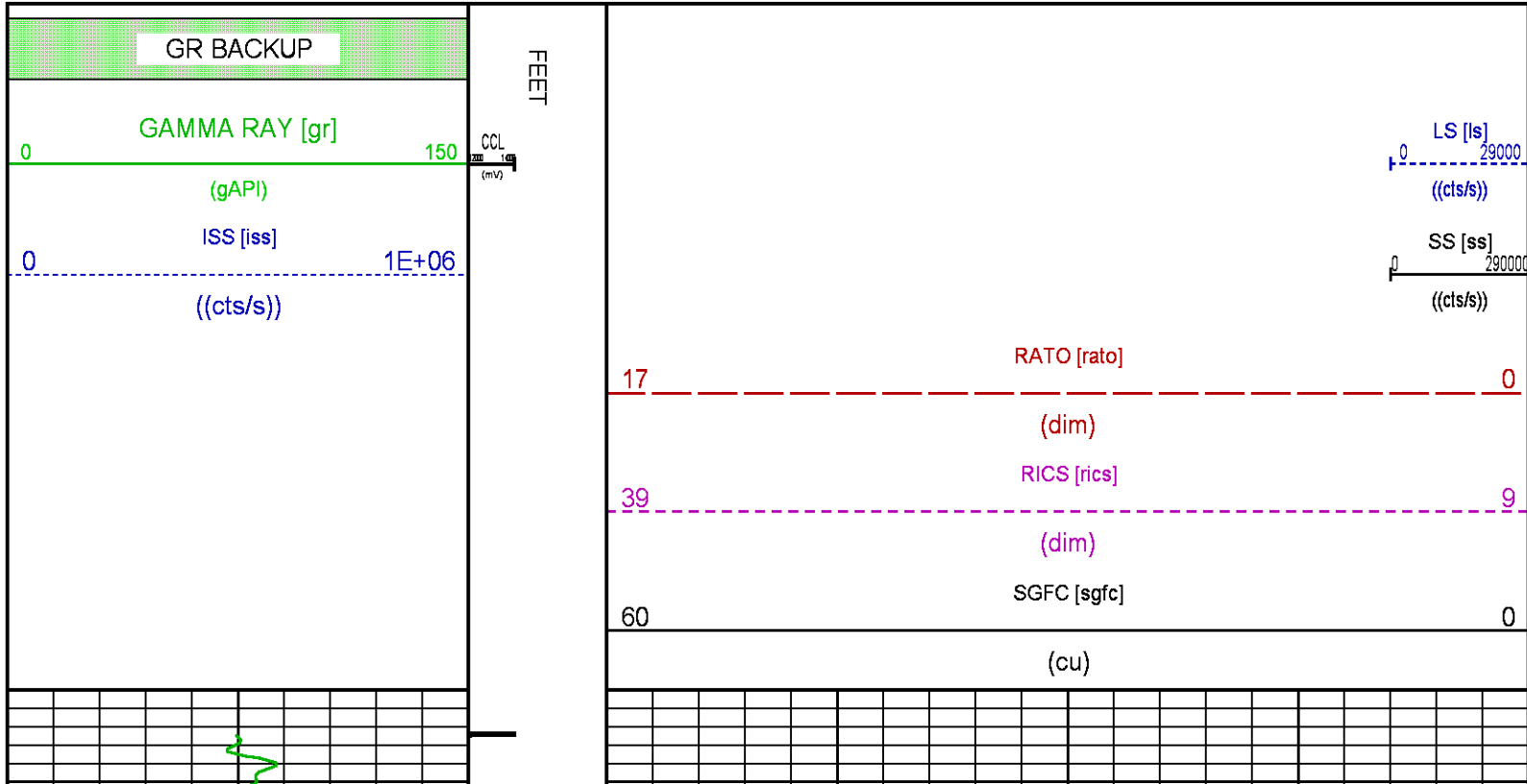
Plotted: Sat Aug 19 09:28:51 2017

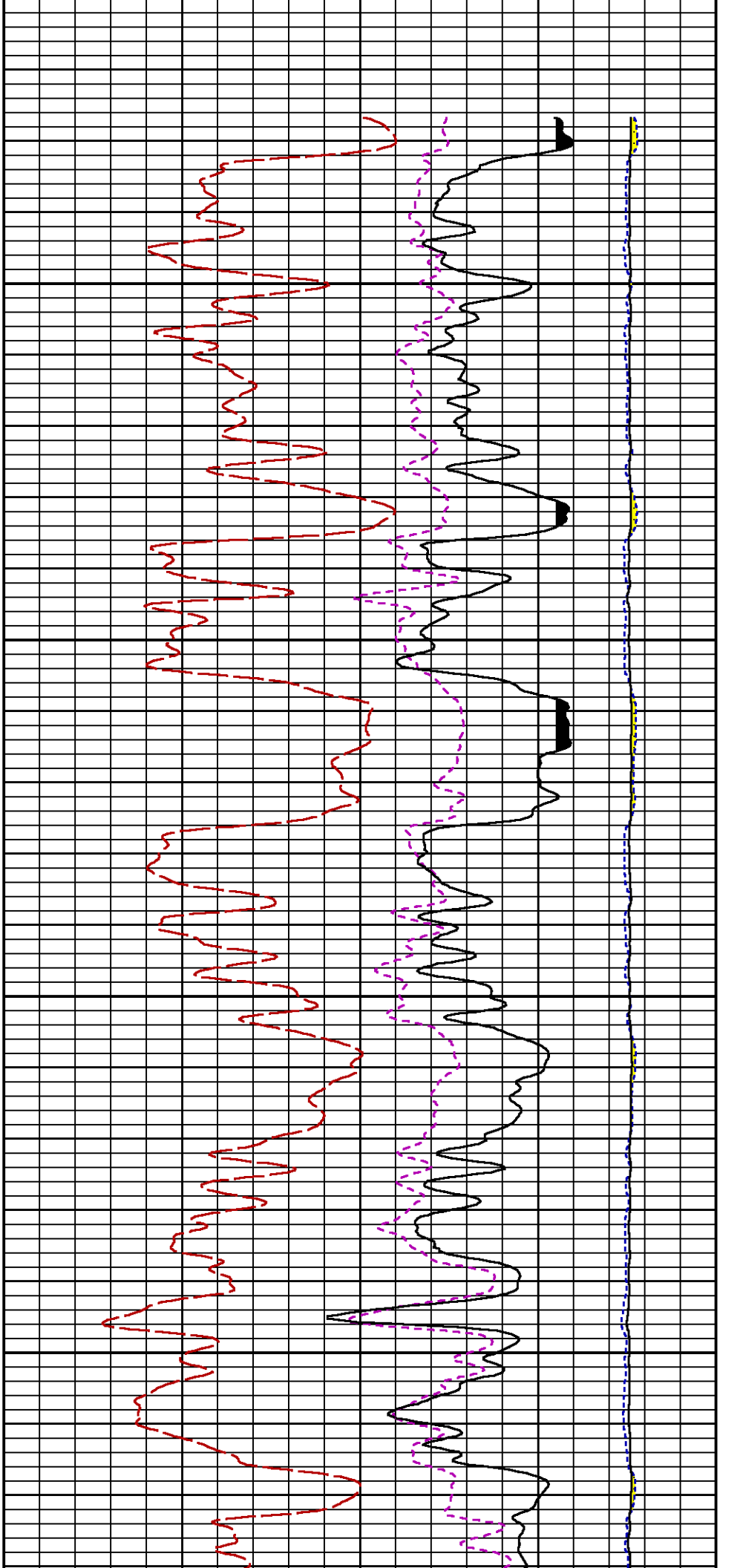
## PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE\_BRUTON\_19\_17E/RPM3D01.prm  
LOGGING MODE: DEPTH DIRECTION: UP  
TOP DEPTH: 7119.750 ft BOTTOM DEPTH: 7345.750 ft

SYMMETRIC FILTER

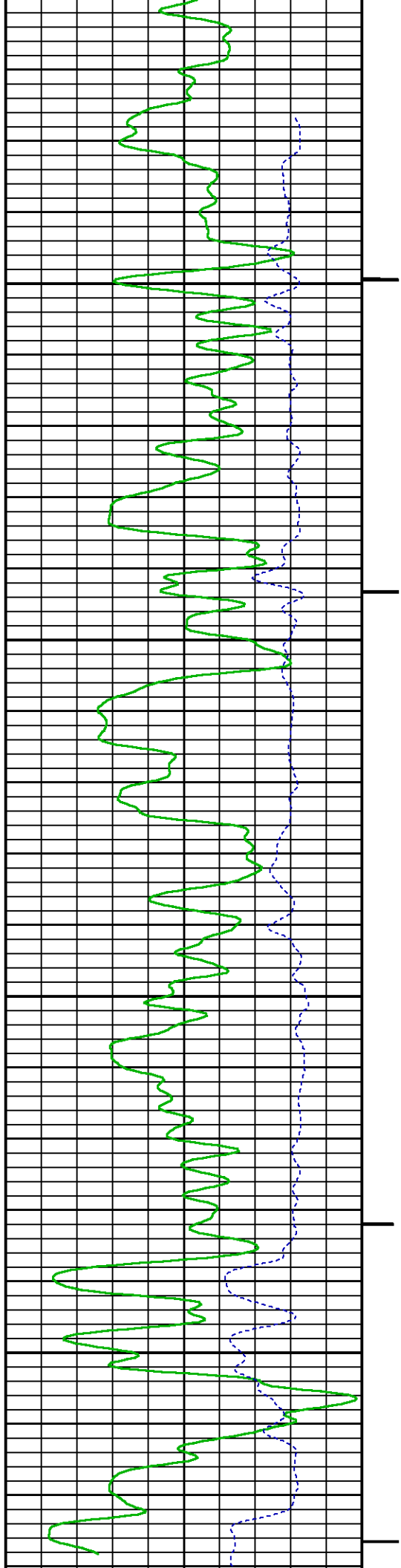


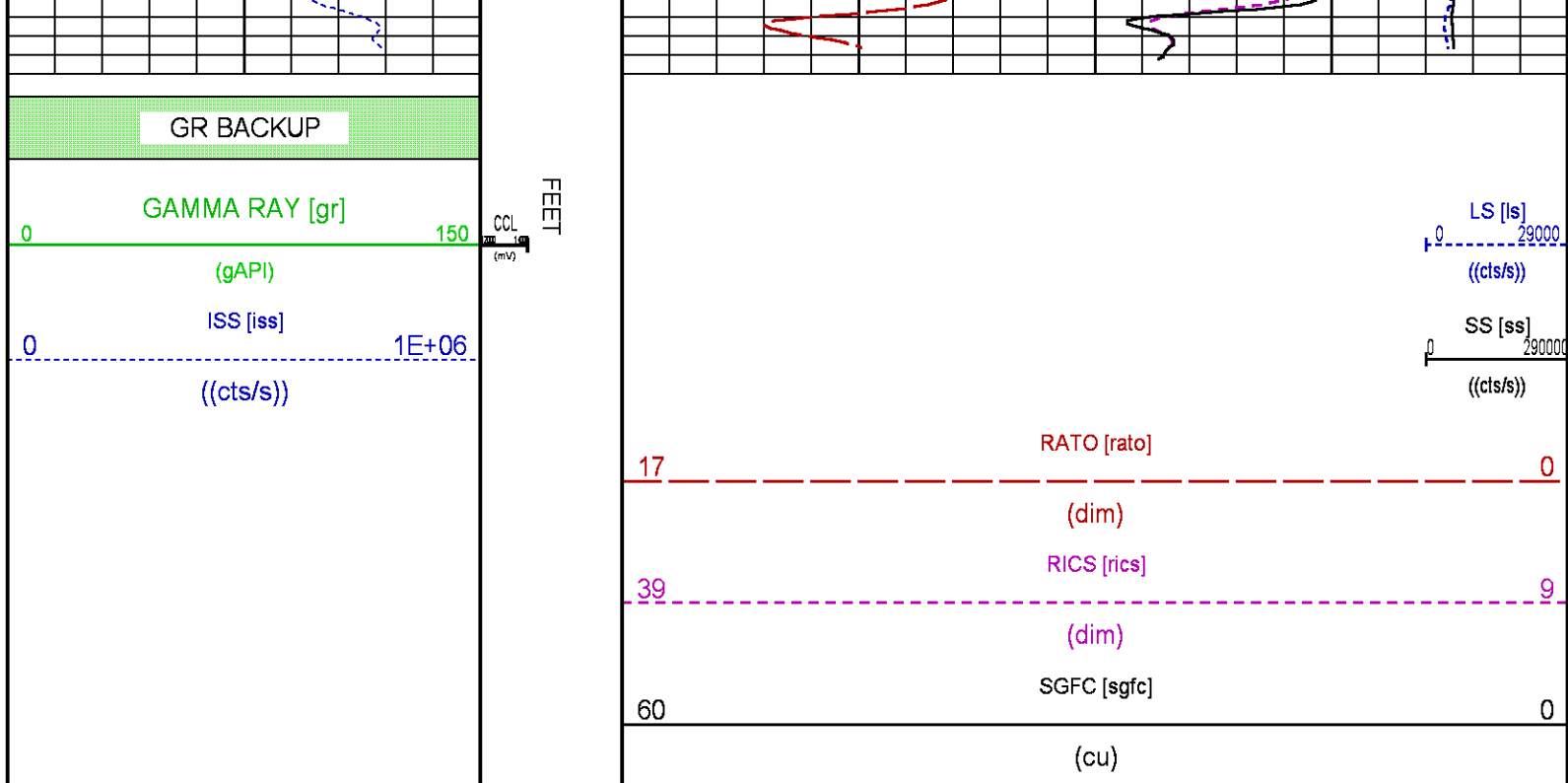




7200

7300





**CALIBRATION / VERIFICATION SUMMARY**

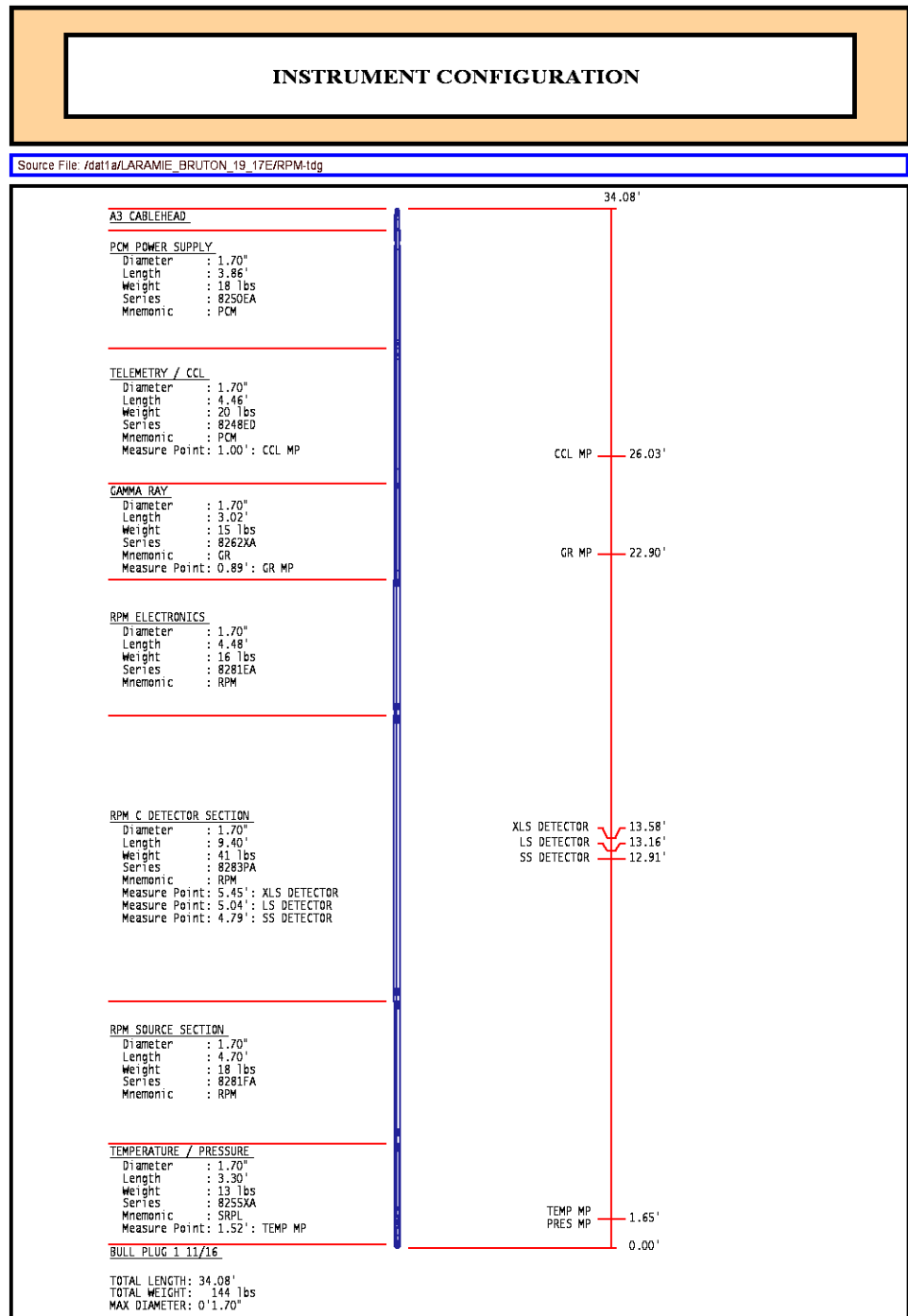
Source File: /data1a/LARAMIE\_BRUTON\_19\_17E/RPM3D.tpt

GR PRIMARY CALIBRATION SUMMARY						
TOOL #: 8262XA 10485470		DATE/TIME PERFORMED: Tue Jan 17 13:32:11 2017				
UNIT #: 3882ML ML4352		CALB JIG #: 4702NK DA_228				
	BACKGROUND (cts/s)	CALBTR ON (cts/s)	CR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBTR ON (gAPI)
GR	63.76	399.13	335.4	0.552	35.17	220.17

GR PRIMARY VERIFICATION SUMMARY						
TOOL #: 8262XA 10485470		DATE/TIME PERFORMED: Tue Jan 17 13:34:45 2017				
UNIT #: 3882ML ML4352		VERI JIG #: 4702NK DA_228				
	BACKGROUND (cts/s)	CALBTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBTR ON (gAPI)	DIFF. (gAPI)
GR	63.44	394.18	0.552	35.00	217.44	182.44
						175.00 185.00

RPM_PNC_3D PRIMARY CALIBRATION SUMMARY								
TOOL: 8283PA 10184883		DATE/TIME PERFORMED: Thu Jul 13 15:08:49 2017						
UNIT: 3882TD HL6728	CALIBRATOR: 2437XB 120057	SOURCE: 8281AA 10180595	HOURS: 8281AA 228					
	ISS	Mtr Vits (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	807240	123	2232	2259	2285	137	9.0	0.9874
Interpolated	13000000	146	2216	2251	2283			
	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	807240	6543	1352	236	25.88	0.15	24.03	0.34
					25.35 26.40	0.00 0.20	23.60 24.80	0.00 0.40

	ISS	ILS	IXS	SS	SS2	LS	CSS	CLS
Raw Data	807240	164687	25336	86104	30690	8086	52299	12945
Fit Quality %	0.492	0.443	0.487	0.490	0.506	0.462	0.494	
	ISS	RBOR	RIN	RIN13	RICS	RATO	RTWO	RONE
		ISS/ILS	ISS/IXS	ISS/CSS	SS/LS	SS2/LS	CSS/CLS	
Raw Data	807240	1.44	4.90	31.88	15.44	10.65	3.80	4.04
		1.42	1.46	3.55	5.52	22.20	32.70	10.88
						16.34	10.08	11.10
Fit Quality %		0.052	0.128	0.117	0.144	0.021	0.011	0.031
Reduced	1232260	1.44	4.91	31.91	15.45	10.65	3.80	4.04
		1.42	1.46	4.33	5.52	27.60	32.70	13.70
						16.34	10.08	11.10
							3.57	3.85
								3.78
								4.22





COUNTY	MESA	STATE	COLORADO	05077103670000
LOCATION:  SHL: LAT:39.255232N;LONG:107.806537W  BHL: LAT:39.258531N;LONG:107.807036W SEC 19 TWP 9S RGE 93W		ELEVATIONS:		
		KB 7449 FT DF 7448 FT GL 7425 FT		
		DATE		19-AUG-2017