



FILE NO:	COMPANY	LARAMIE ENERGY
API NO:	WELL	BRUTON 19-18E
05077103690000	FIELD	VEGA
	COUNTY	MESA
	STATE	COLORADO

Ver. 4.06	LOCATION:	OTHER SERVICES
	SHL: LAT:39.255232N; LONG:107.806537W	RAL
	BHL: LAT:39.257858N; LONG:107.807052W	
	SEC 19 TWP 9S RGE 93W	

PERMANENT DATUM	GL	ELEVATION	7425 FT	KB	7449 FT
LOG MEASURED FROM	KB	24 FT	ABOVE P.D.	DF	7448 FT
DRILL. MEAS. FROM	KB			GL	7425 FT

DATE	20-AUG-2017
RUN	2
TRIP	1
SERVICE ORDER	US126717
DEPTH DRILLER	7728 FT
DEPTH LOGGER	7644 FT
BOTTOM LOGGED INTERVAL	7644 FT
TOP LOGGED INTERVAL	2350 FT
TIME STARTED	13:00
TIME FINISHED	19:00
OPERATOR RIG TIME	6 HOURS
TYPE OF FLUID IN HOLE	WATER
FLUID DENSITY	NA
FLUID SALINITY	NA
FLUID LEVEL	50 FT
LOGGED CEMENT TOP	2267 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	20-AUG-2017
EQUIP. NO.	HL-6670
LOCATION	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 1: RPM/GR/CCL **

LOGGED WITH 0 PSI ON WELLHEAD

SJ: 5808' - 5827'

SJ: 6803' - 6823'

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	10387162	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: Sun Aug 20 17:50:36 2017

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_BRUTON_19_18E/RPM3D03.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 2345.000 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 20 17:05:29 2017	CASING COLLAR LOCATOR
F1:GR	Aug 20 17:05:29 2017	GAMMA RAY
F1:ISS	Aug 20 17:05:29 2017	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Aug 20 17:05:29 2017	LONG SPACE COUNT RATE
F1:RATO	Aug 20 17:05:29 2017	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Aug 20 17:05:29 2017	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Aug 20 17:05:29 2017	CORRECTED FORMATION SIGMA
F1:SS	Aug 20 17:05:29 2017	SHORT SPACE COUNT RATE

CURVE MEASURE POINT OFFSET

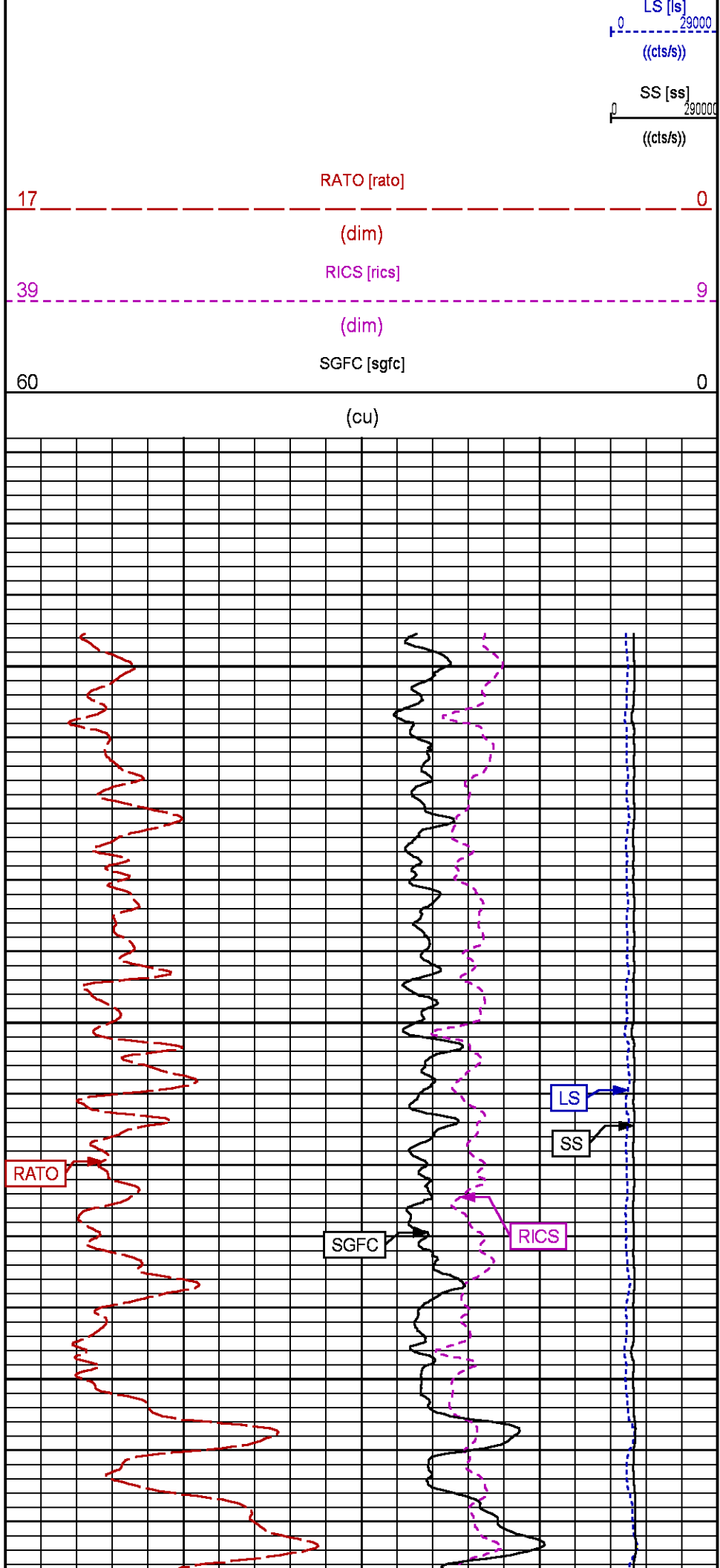
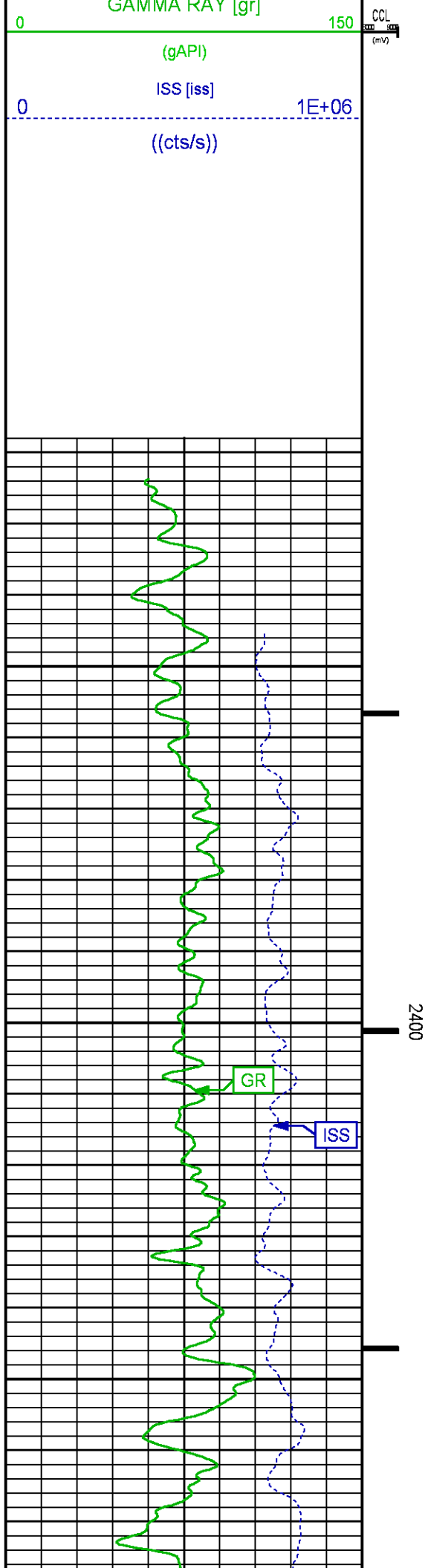
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	26.00	ISS	12.75	RATO	12.75	SGFC	12.75
GR	23.00	LS	12.75	RICS	12.75	SS	12.75

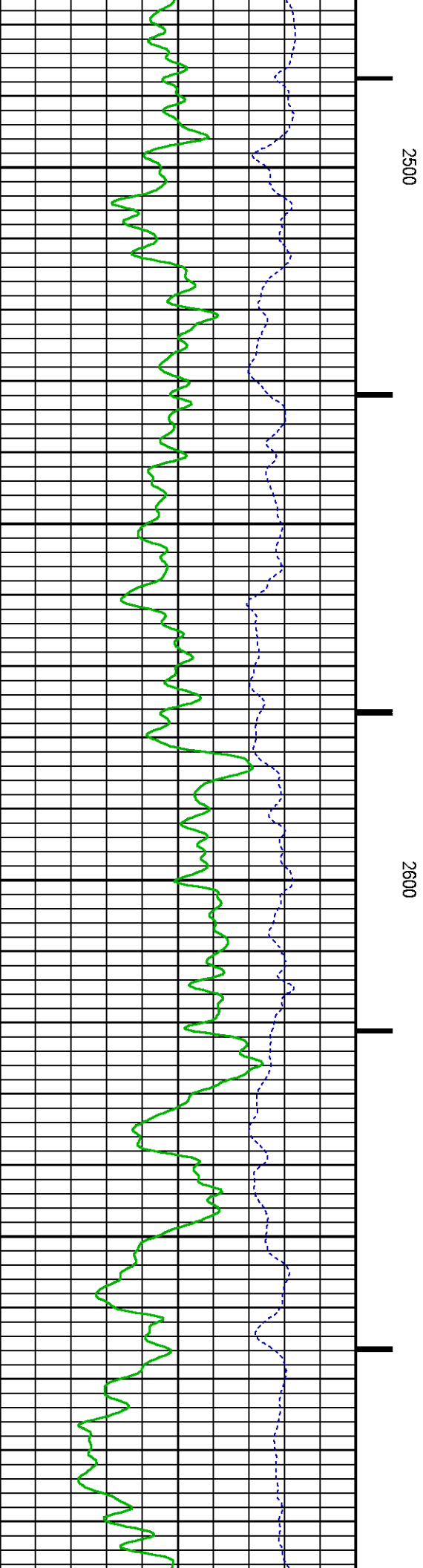
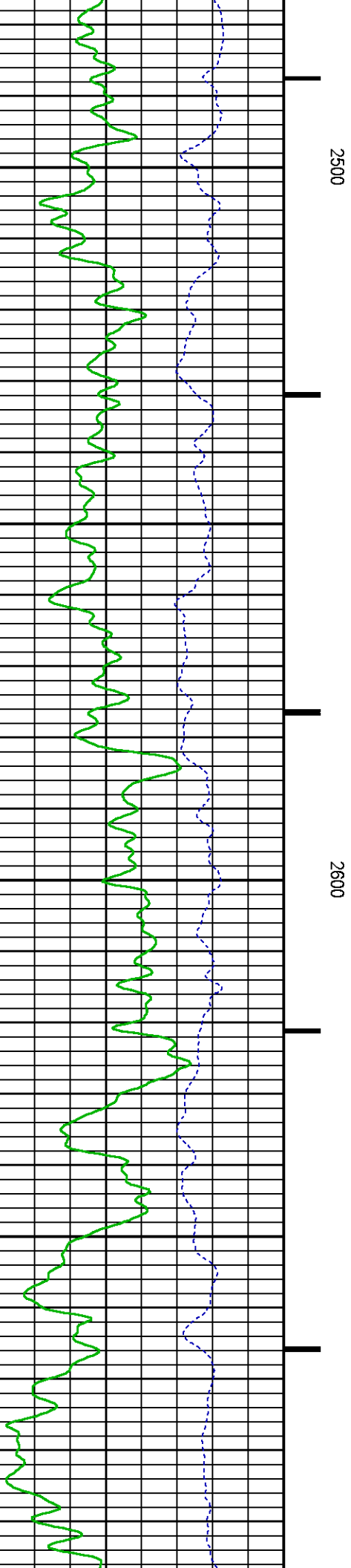
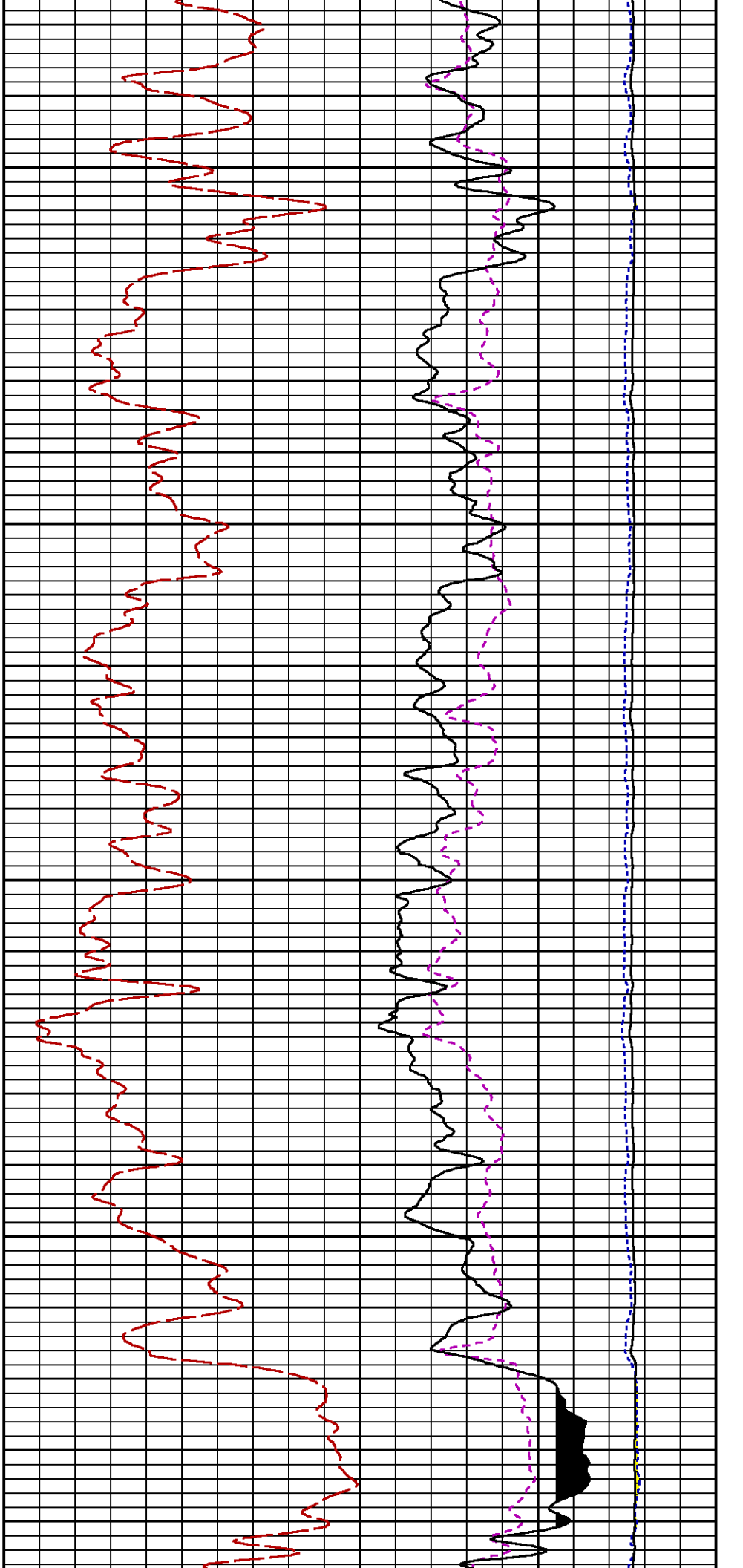
Presentation : cpu100:/dat1a/LARAMIE_BRUTON_19_18E/BRUTON_19_18E_RPM_GSAND.fvpdf [5"/100' Scale]
Plot Interval : 2319.5 - 2982.5 Feet

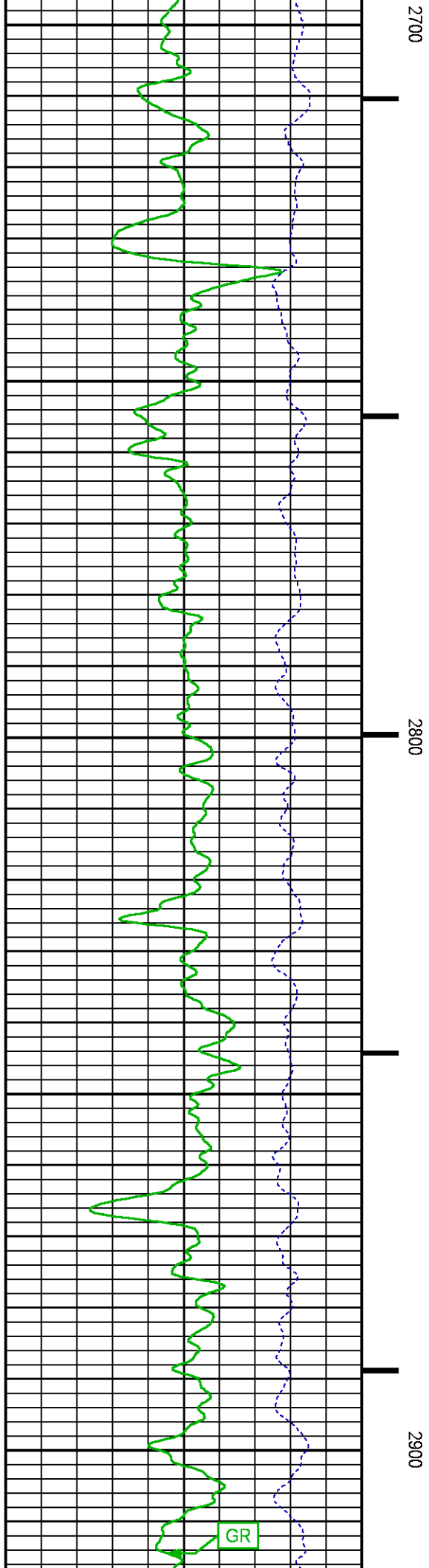
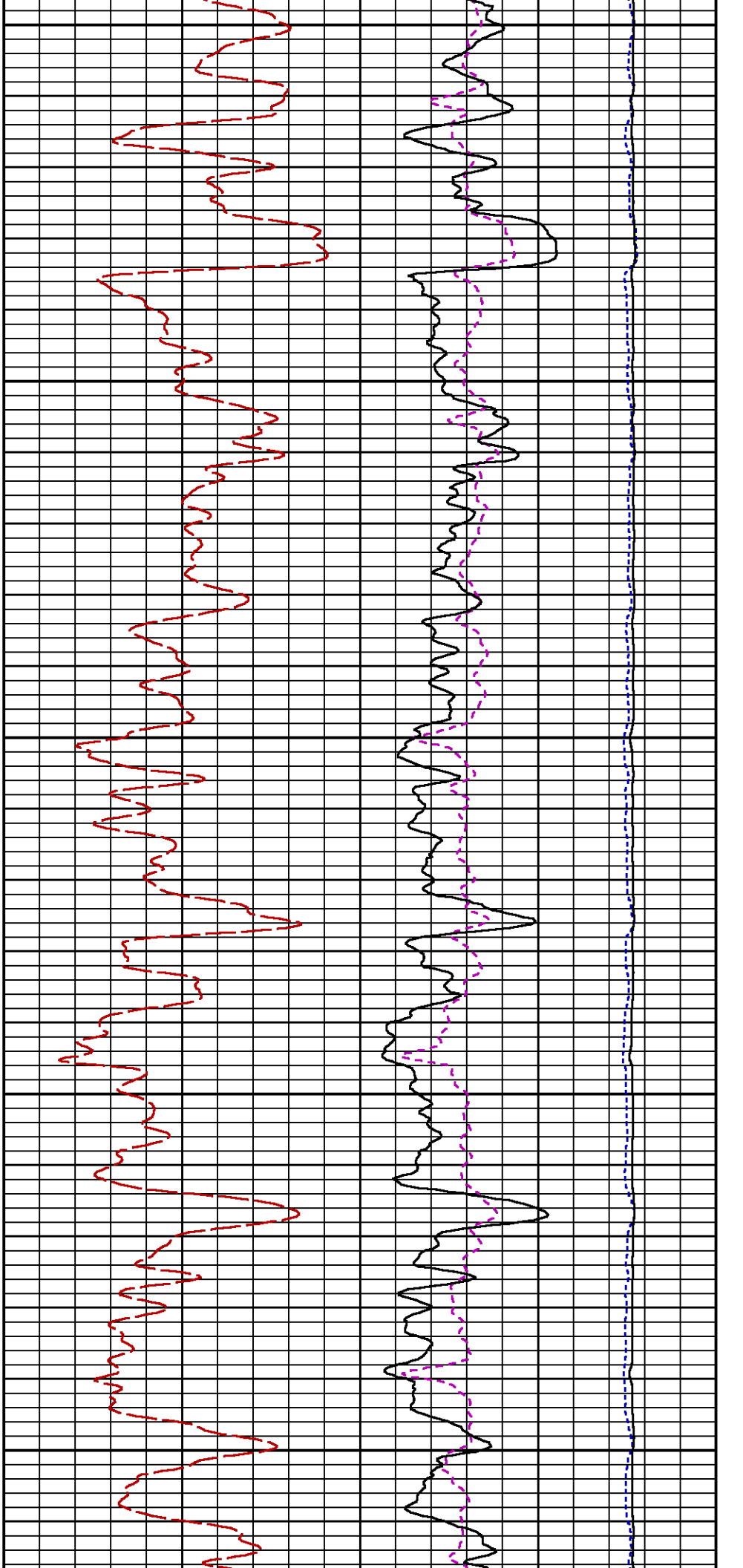
Data File 1 : F1 : cpu100:/dat1a/LARAMIE_BRUTON_19_18E/BRUTON_19_18E_RPM_GSAND.xtf
Created On : Aug 20 17:05:29 2017
Company : LARAMIE ENERGY
Well : BRUTON 19-18E
Field : MESA
File Interval : 2318.75 - 2991.25 Feet
OCT : RPM3D

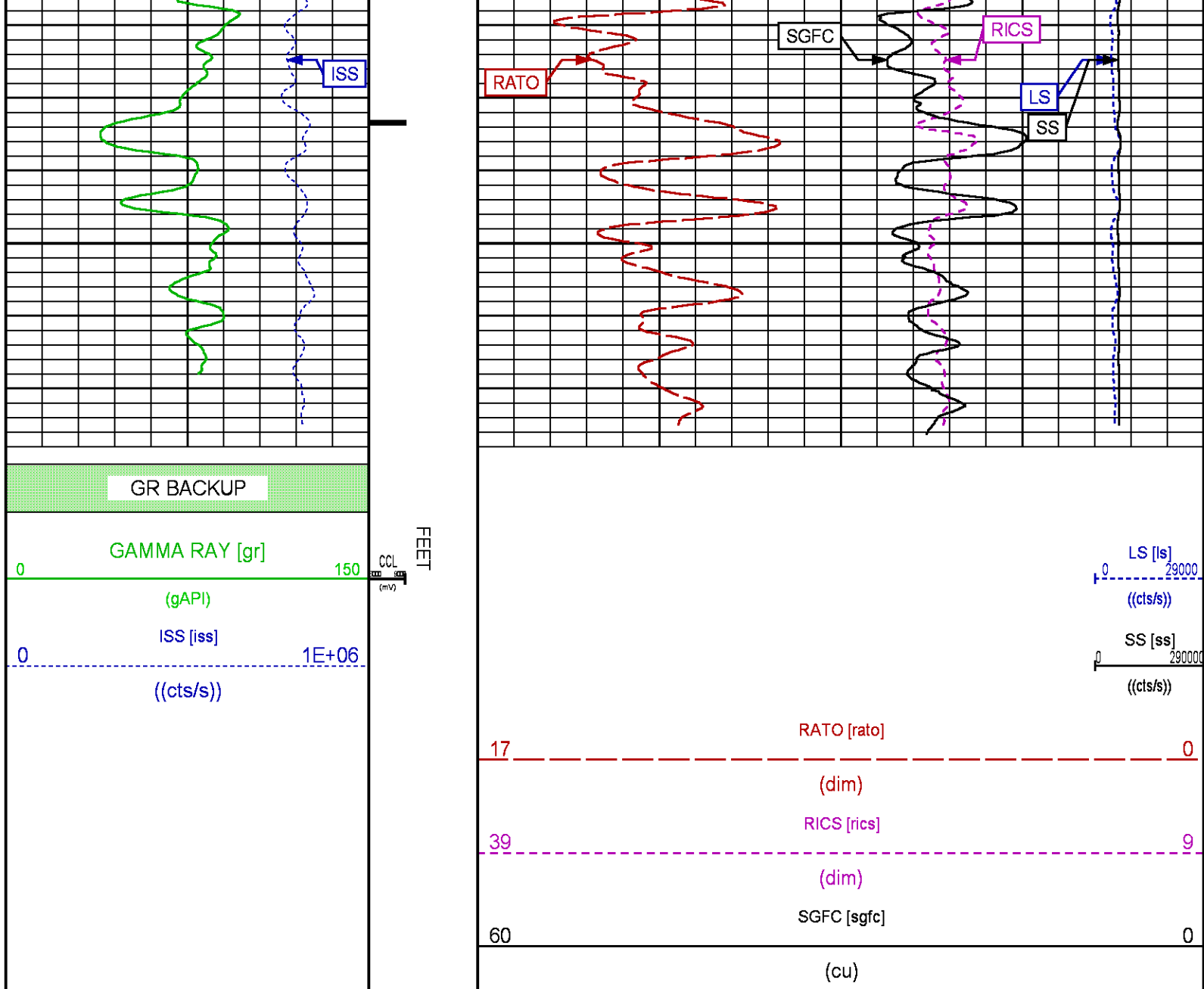
GR BACKUP

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: Sun Aug 20 17:08:15 2017

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_BRUTON_19_18E/RPM3D02.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 4048.000 ft BOTTOM DEPTH: 7657.500 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

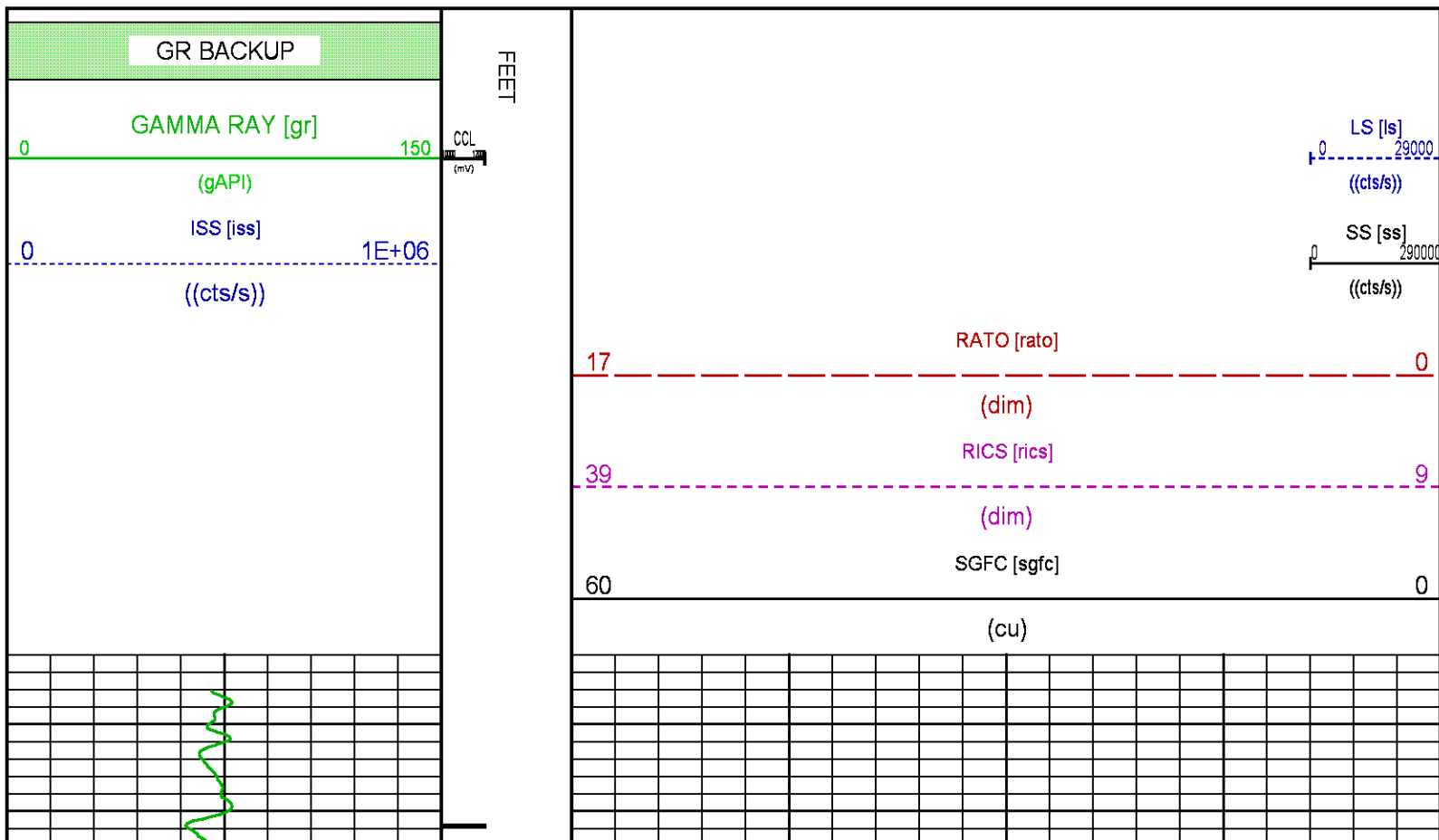
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	Aug 20 13:06:37 2017	CASING COLLAR LOCATOR
F1:GR	Aug 20 13:06:37 2017	GAMMA RAY
F1:ISS	Aug 20 13:06:37 2017	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Aug 20 13:06:37 2017	LONG SPACE COUNT RATE
F1:RATO	Aug 20 13:06:37 2017	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Aug 20 13:06:37 2017	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Aug 20 13:06:37 2017	CORRECTED FORMATION SIGMA
F1:SS	Aug 20 13:06:37 2017	SHORT SPACE COUNT RATE

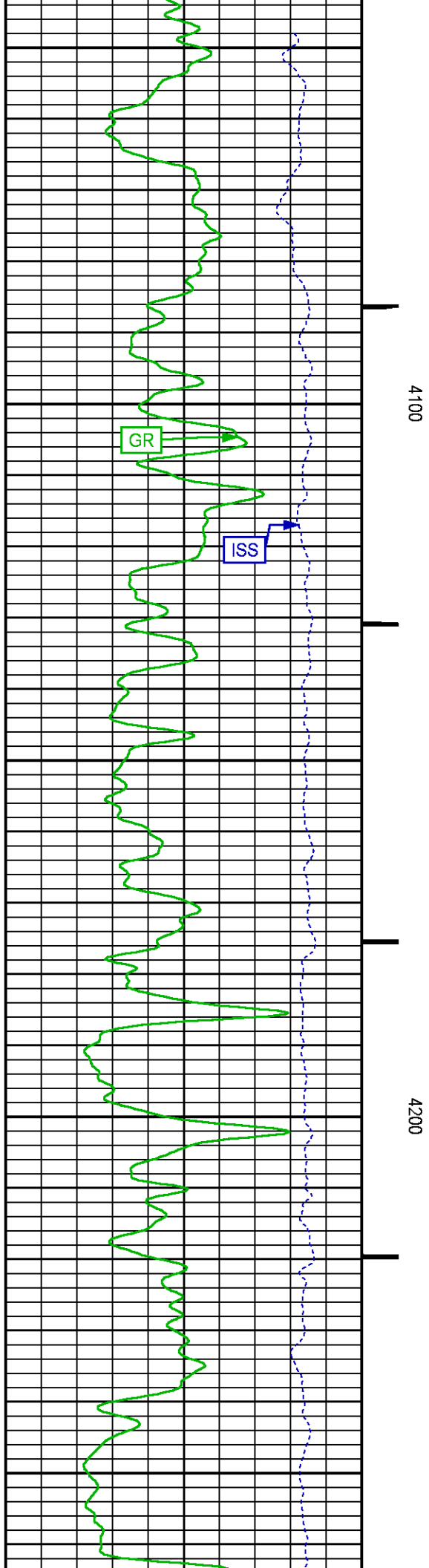
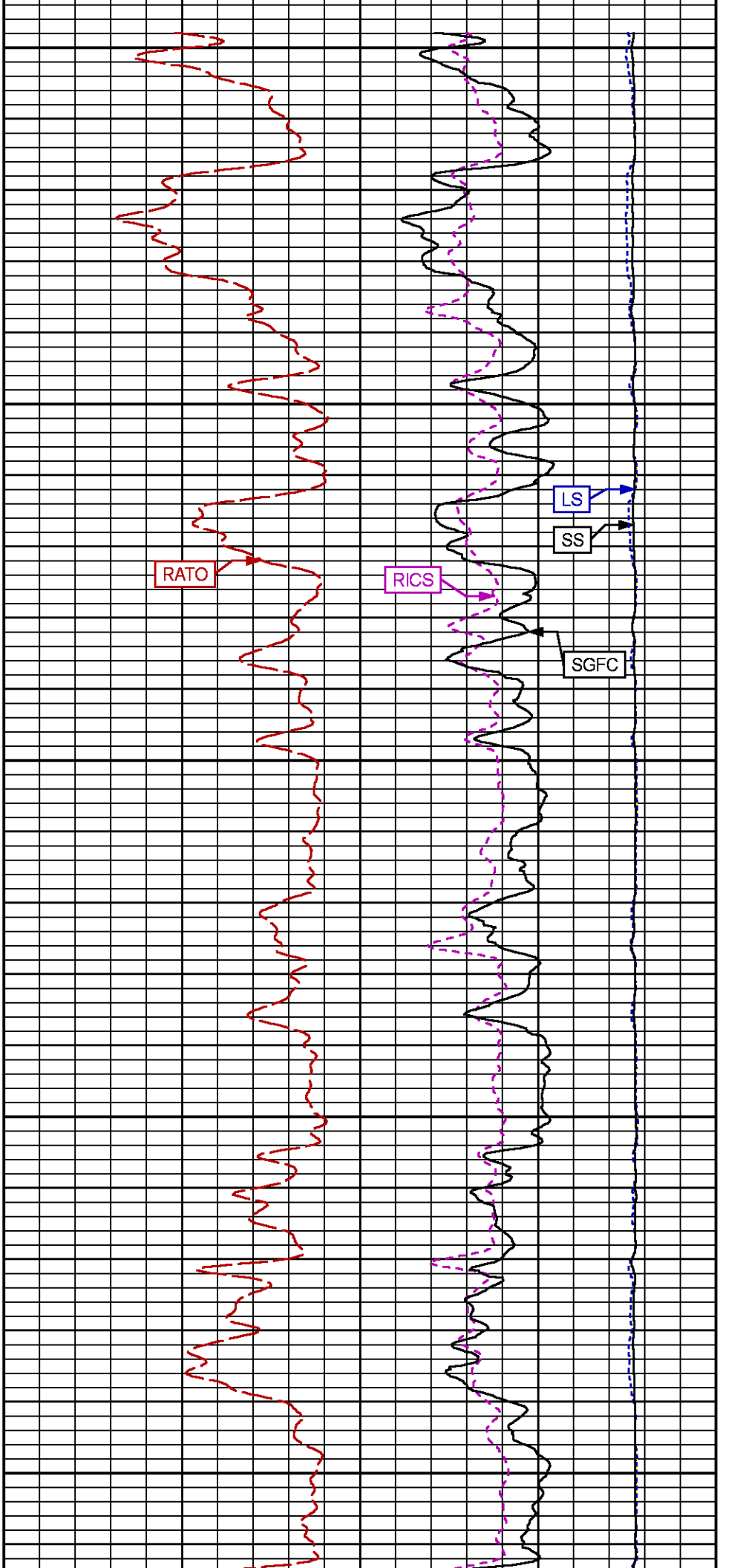
CURVE MEASURE POINT OFFSET

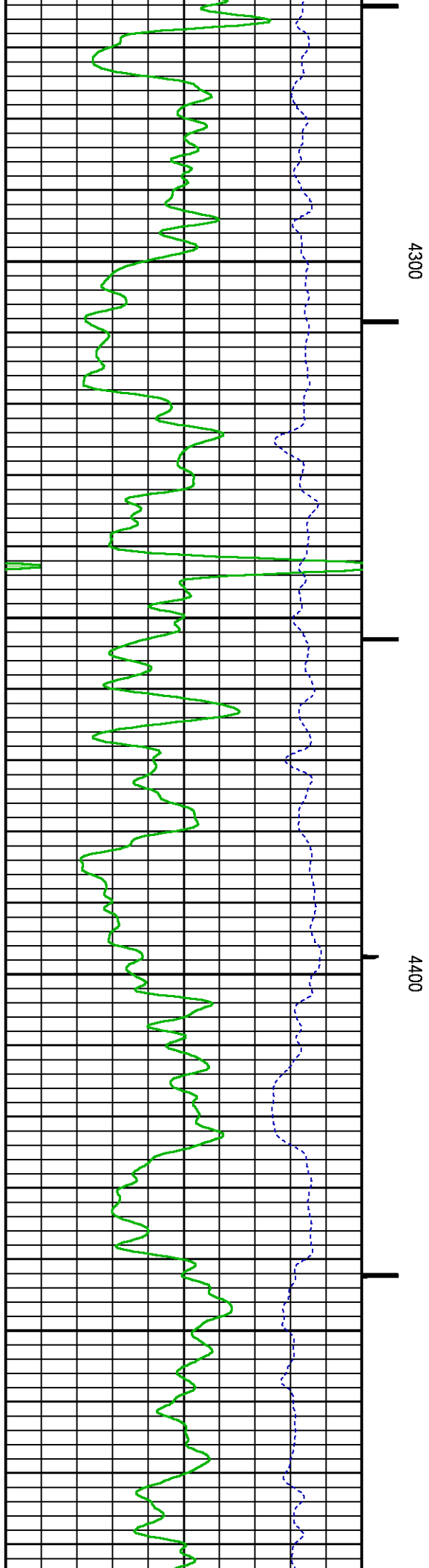
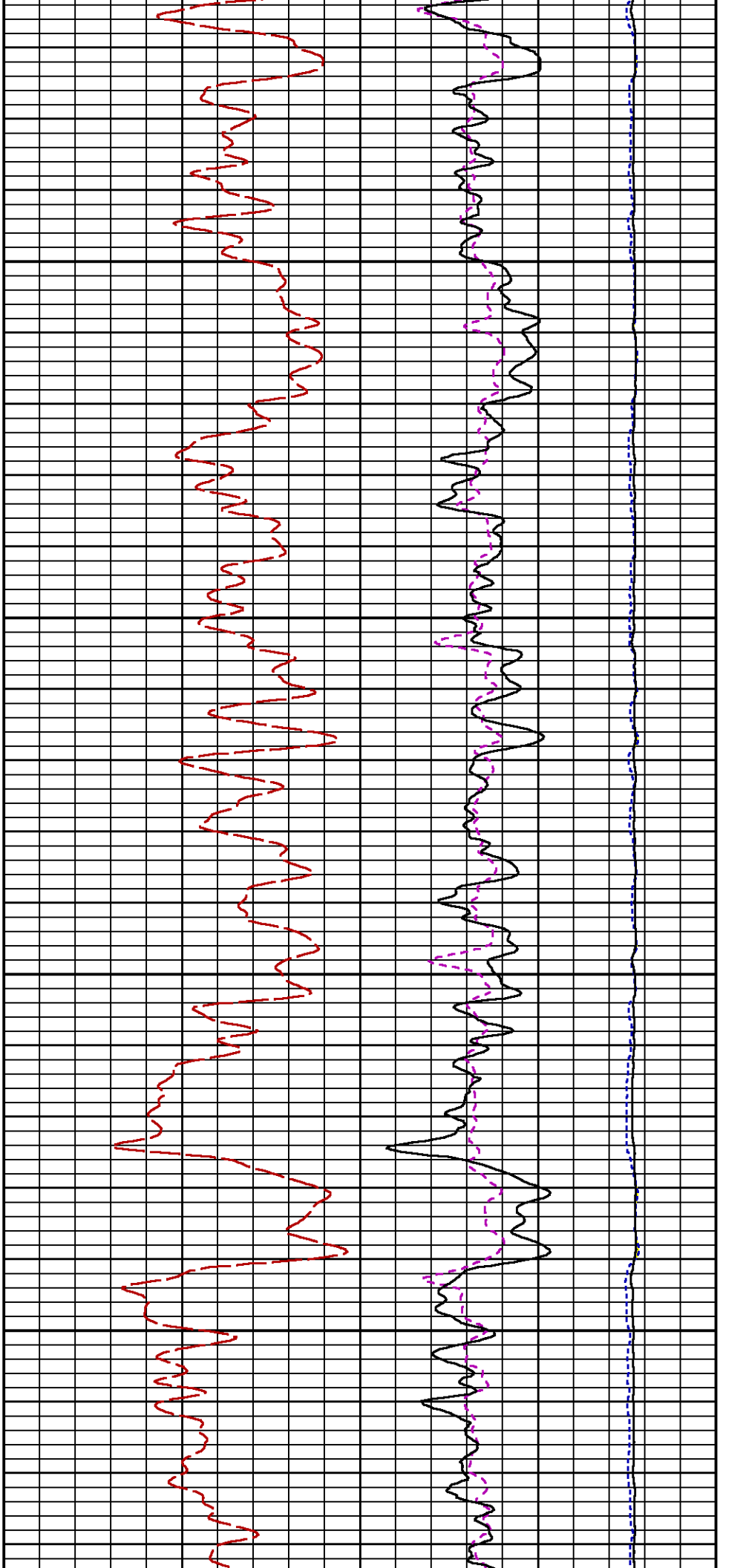
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	26.00	ISS	12.75	RATO	12.75	SGFC	12.75
GR	23.00	LS	12.75	RICS	12.75	SS	12.75

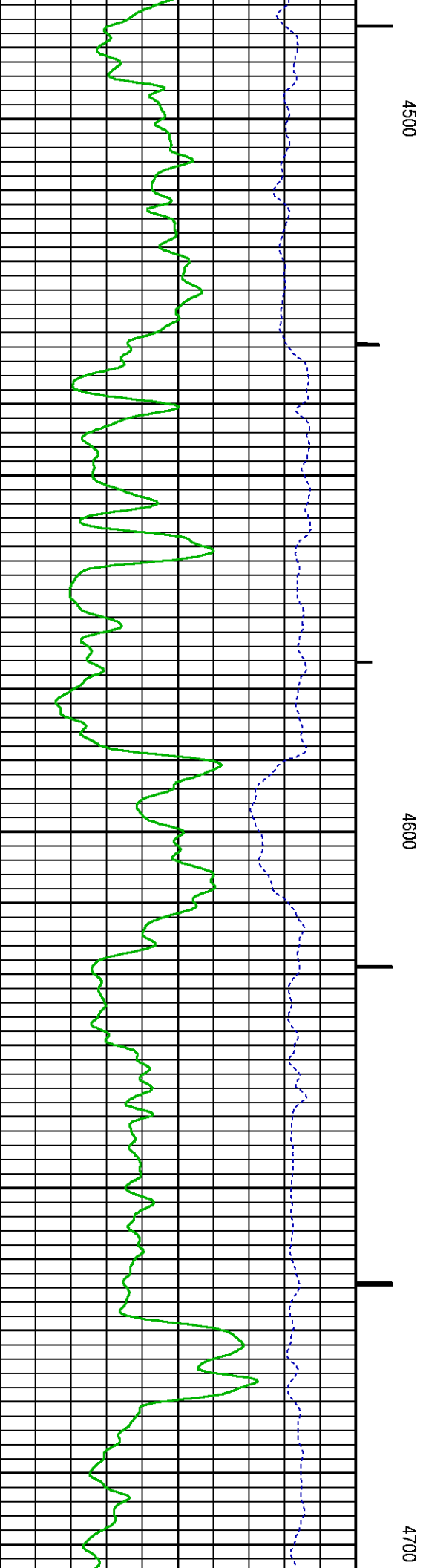
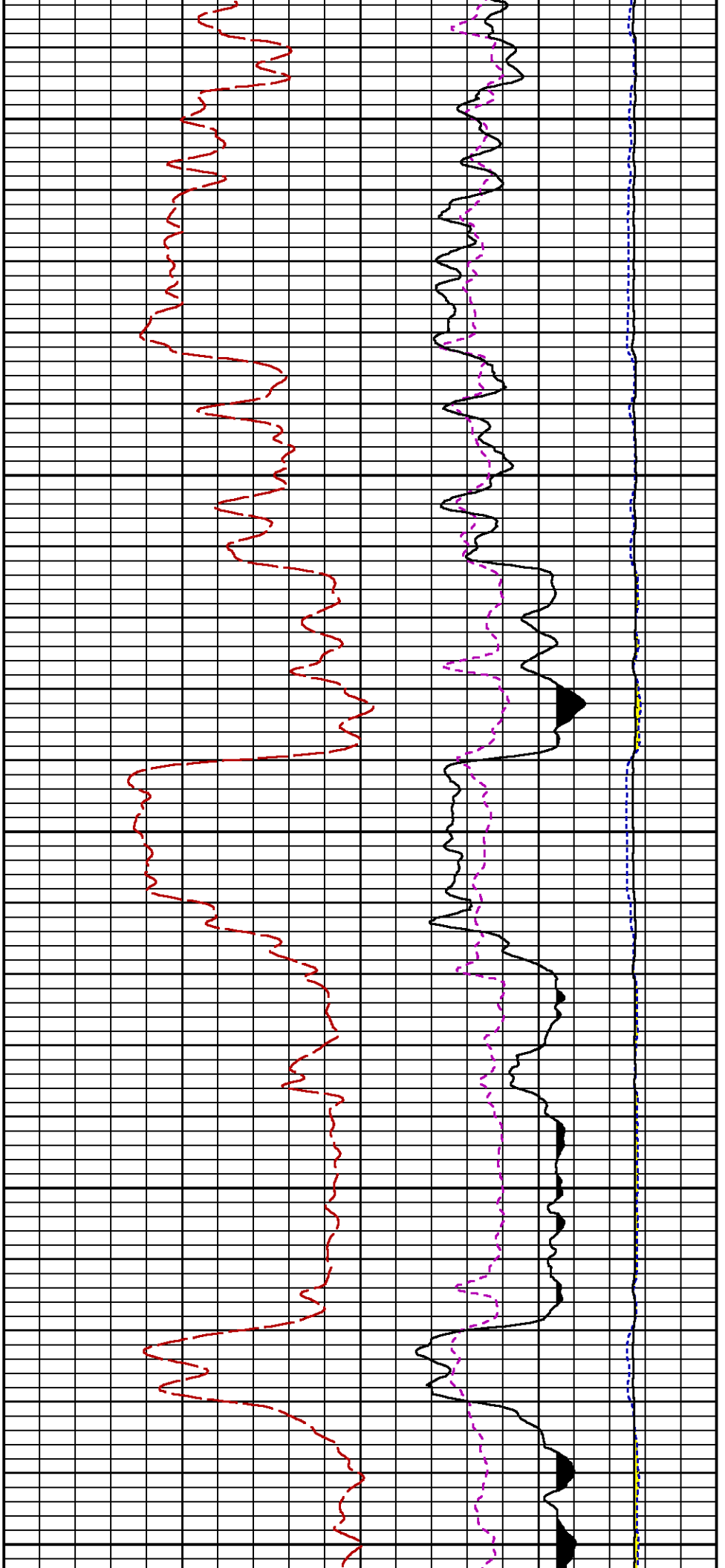
Presentation : cpu100:BRUTON_19_18E_RPM_MAIN.fvpdf [5"/100' Scale]
Plot Interval : 4022 - 7647.75 Feet

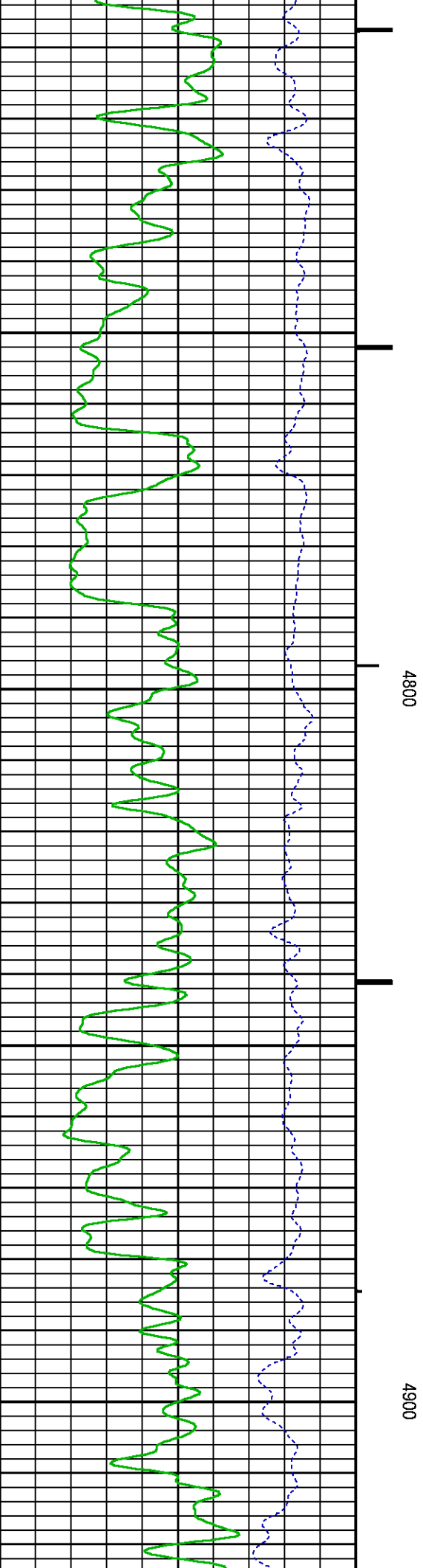
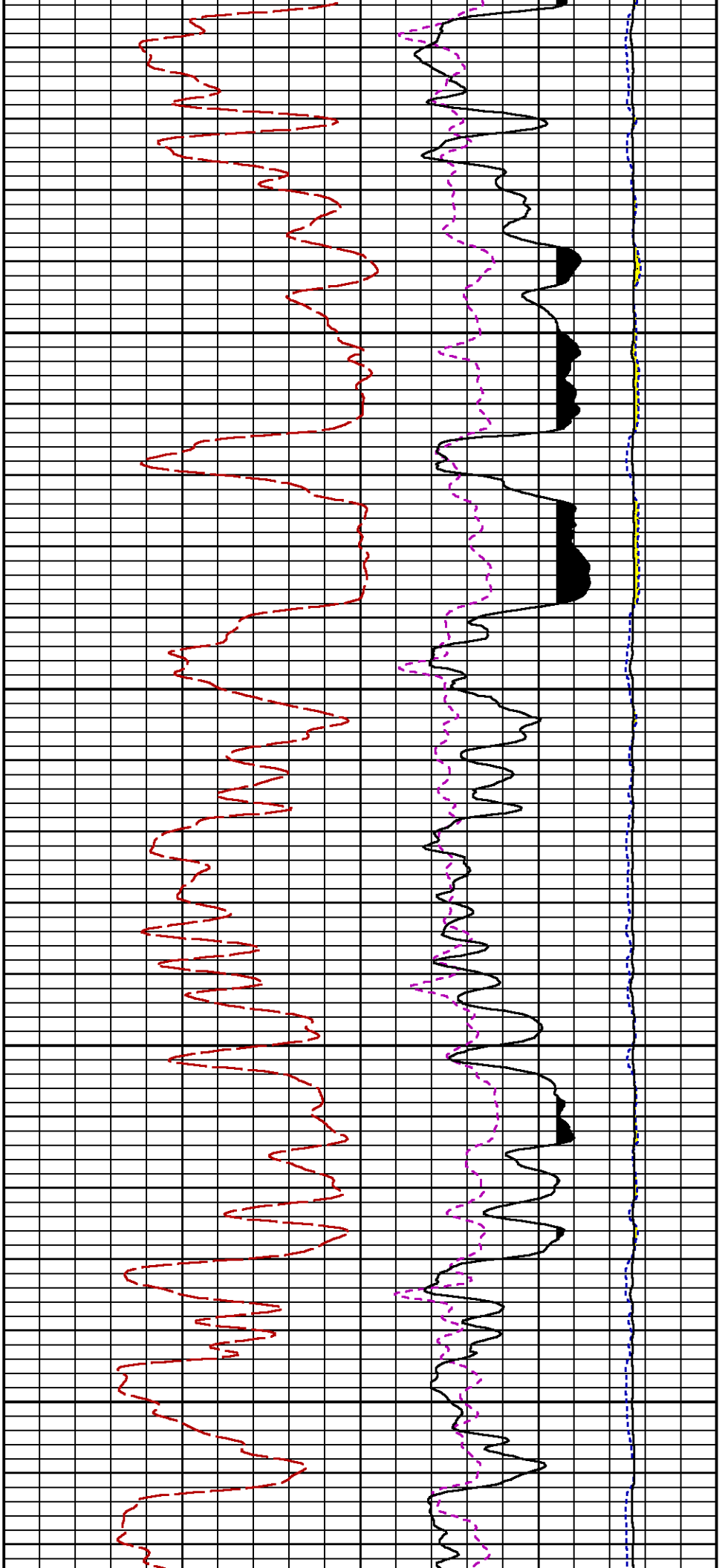
Data File 1 : F1 : cpu100:/dat1a/LARAMIE_BRUTON_19_18E/BRUTON_19_18E_RPM_MAIN.xtf
Created On : Aug 20 13:06:37 2017
Company : LARAMIE ENERGY
Well : BRUTON 19-18E
Field : MESA
File Interval : 4021.25 - 7656.5 Feet
OCT : RPM3D

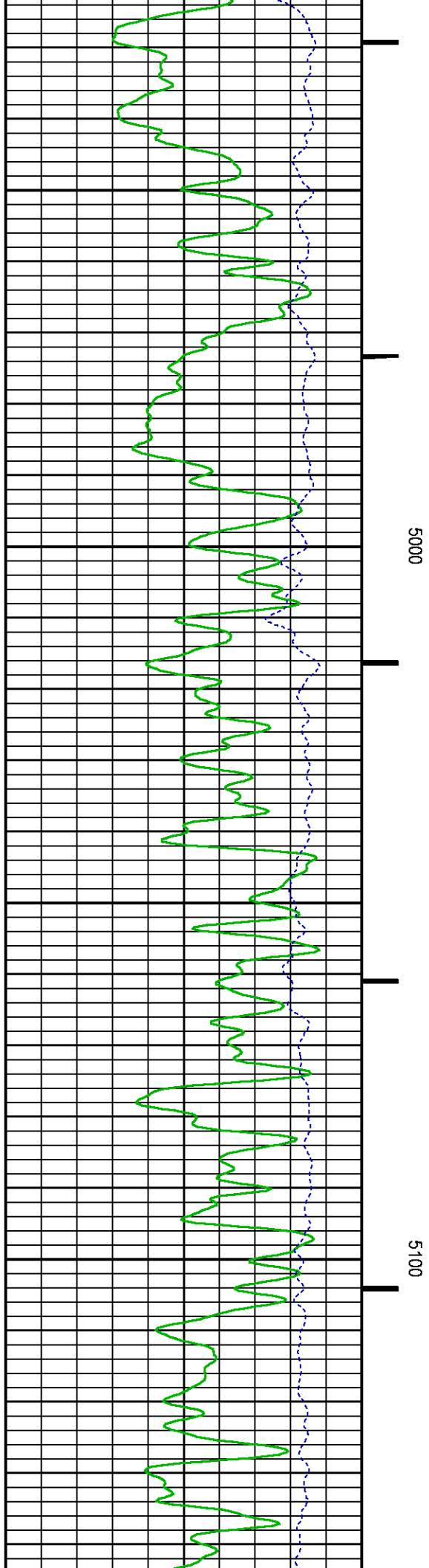
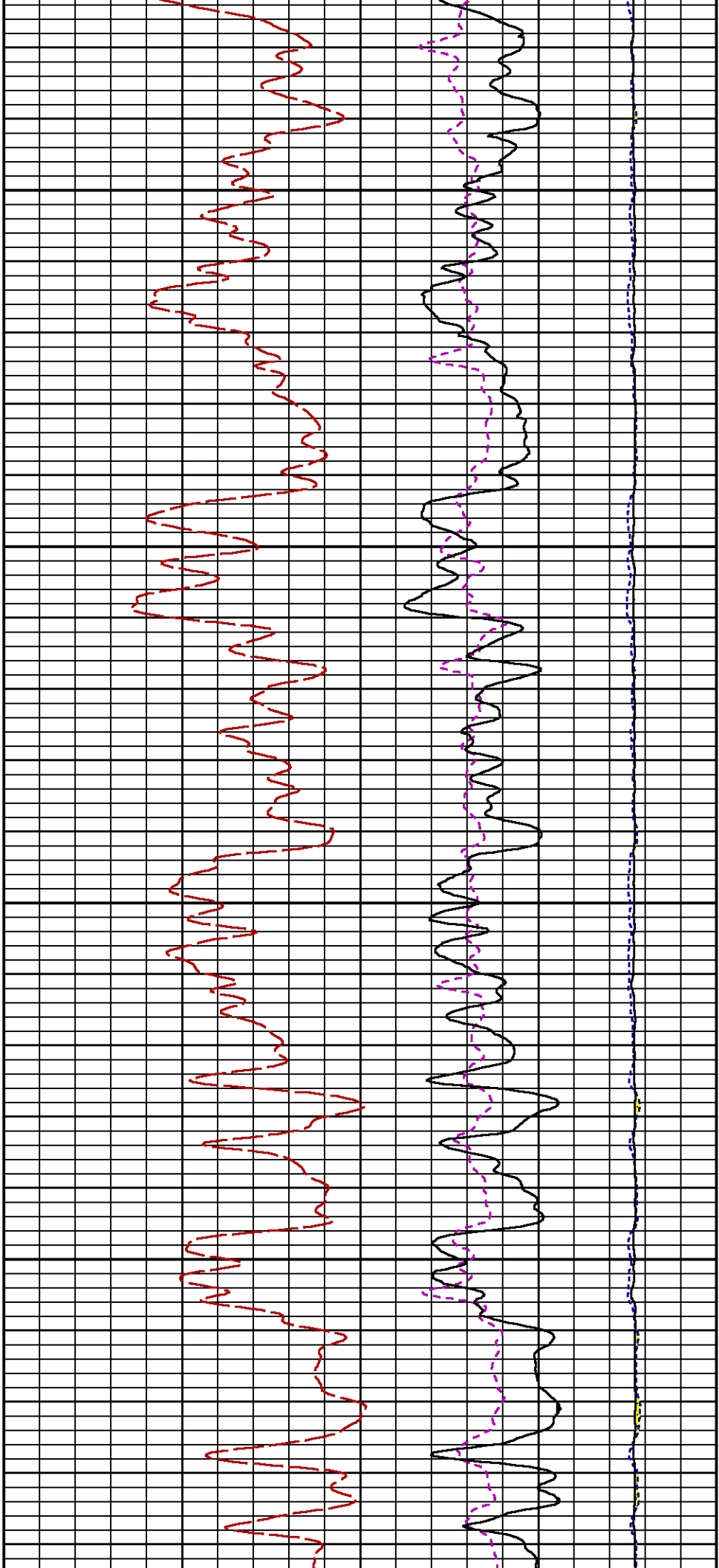


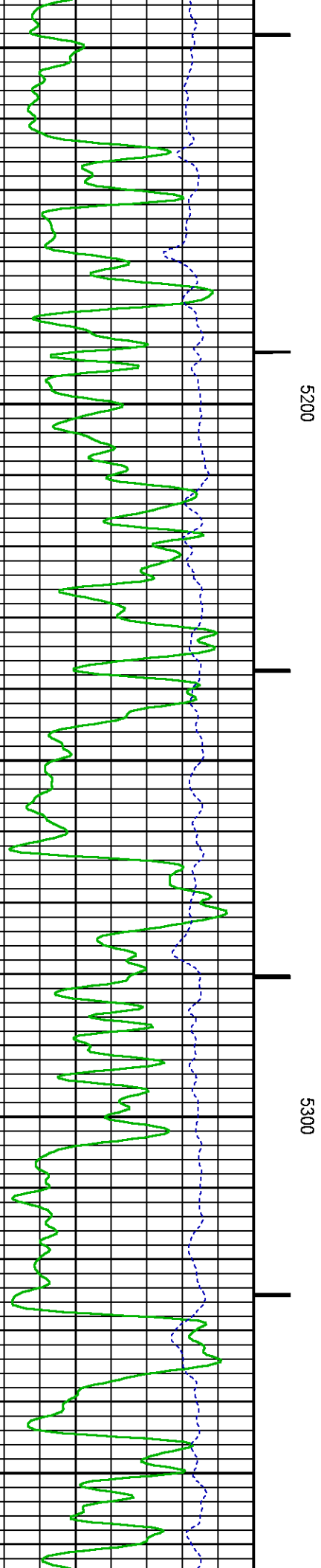
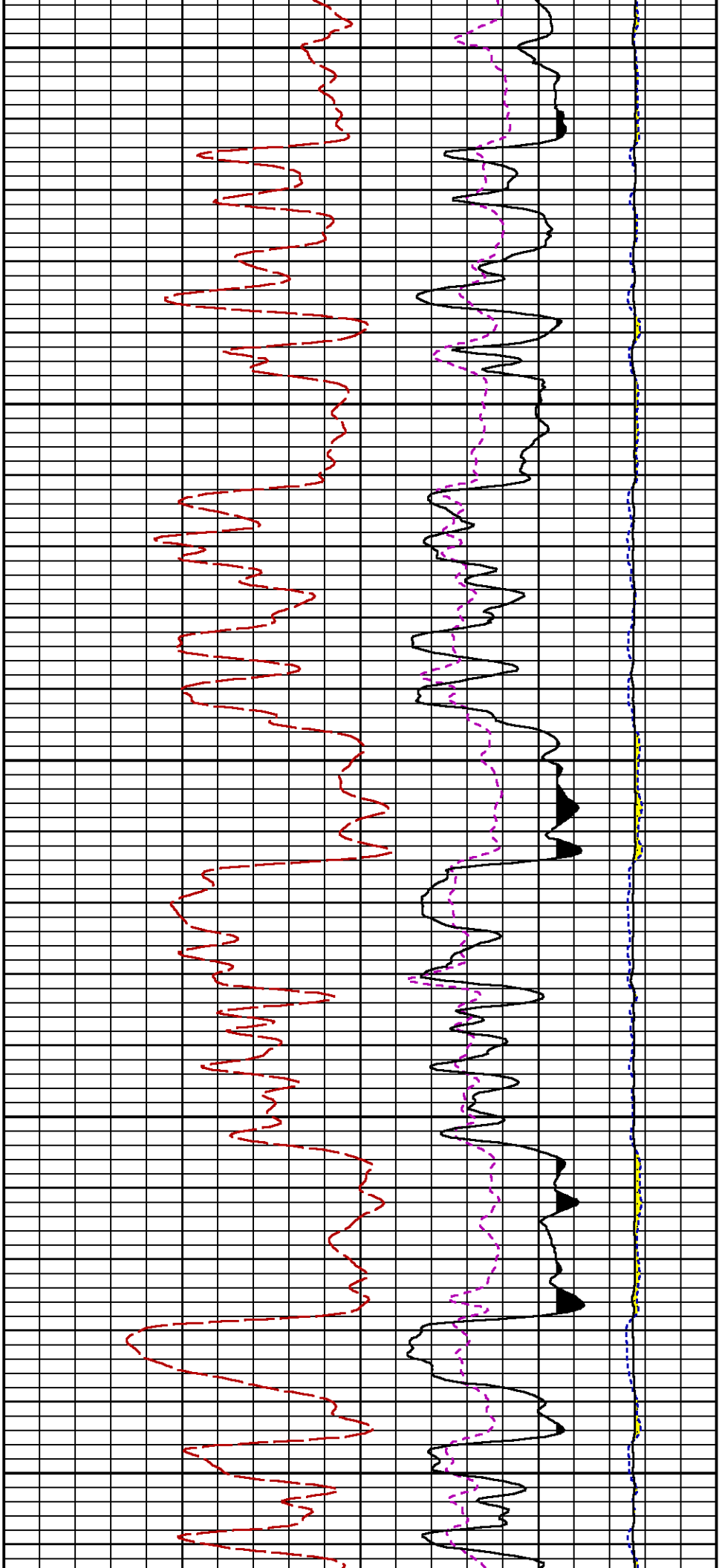


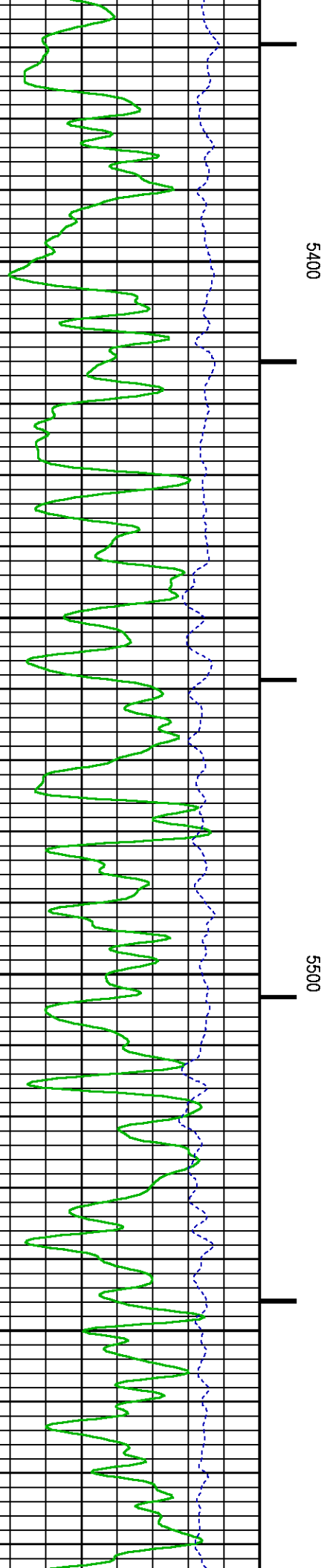
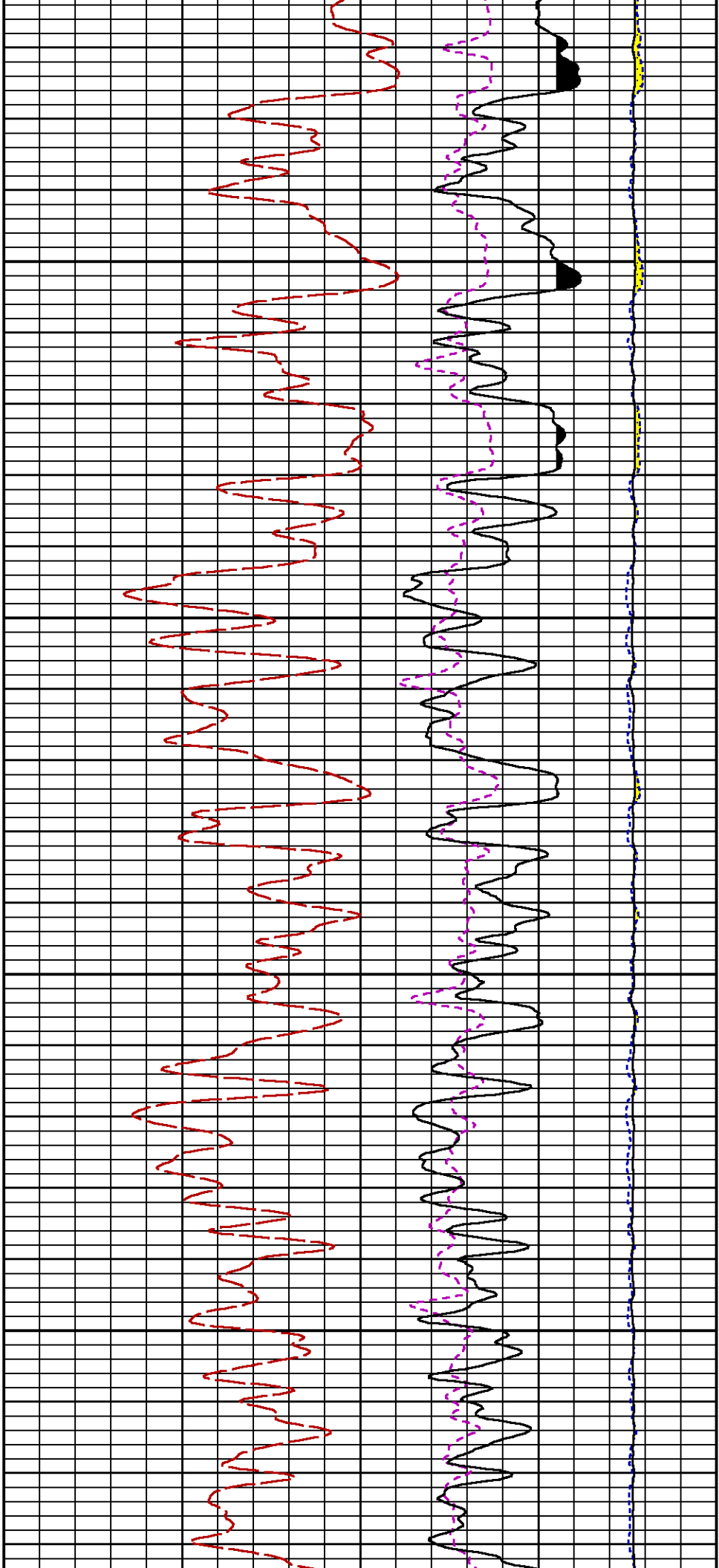






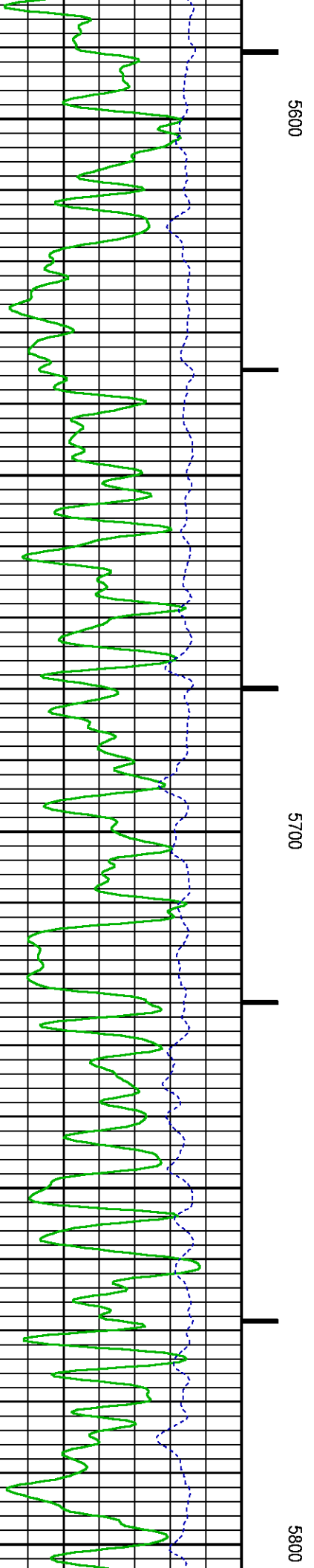
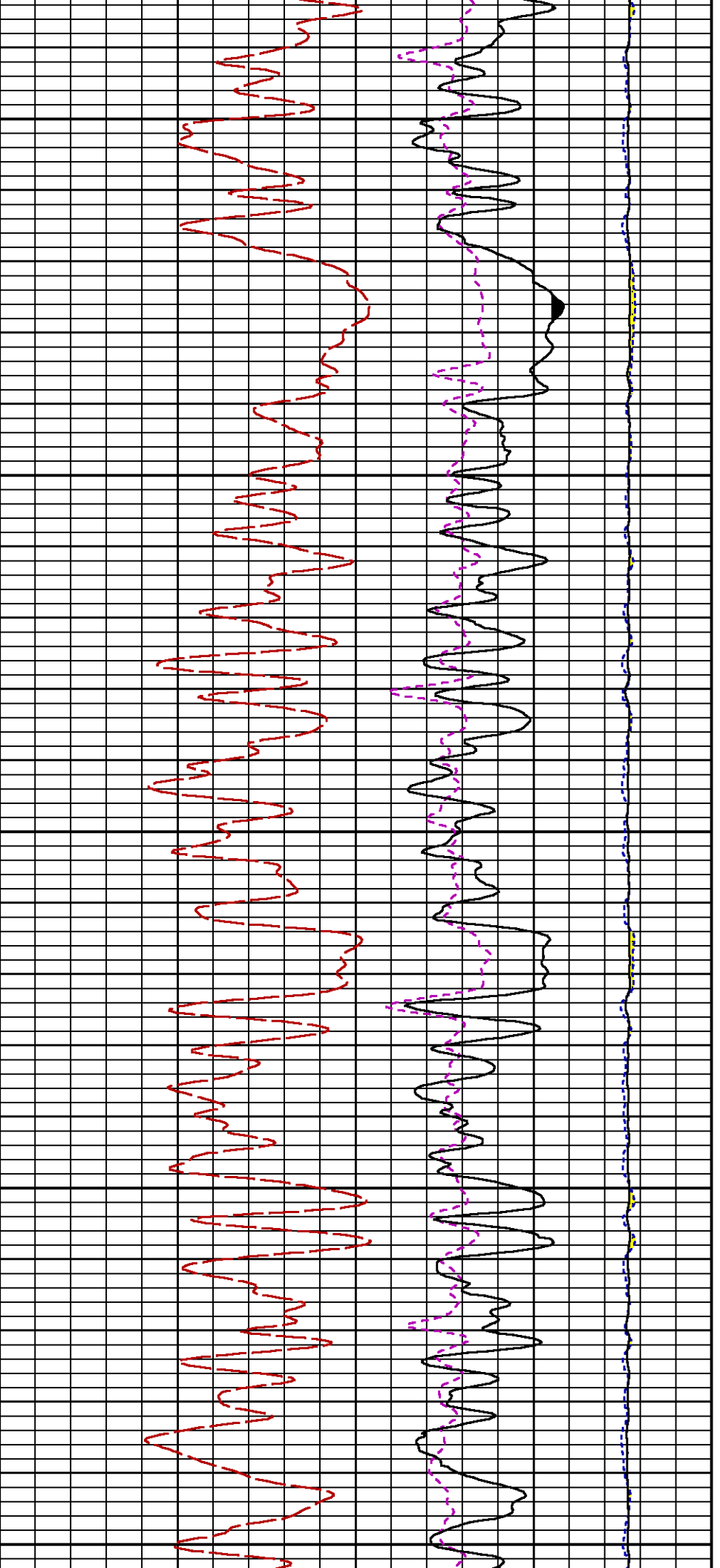


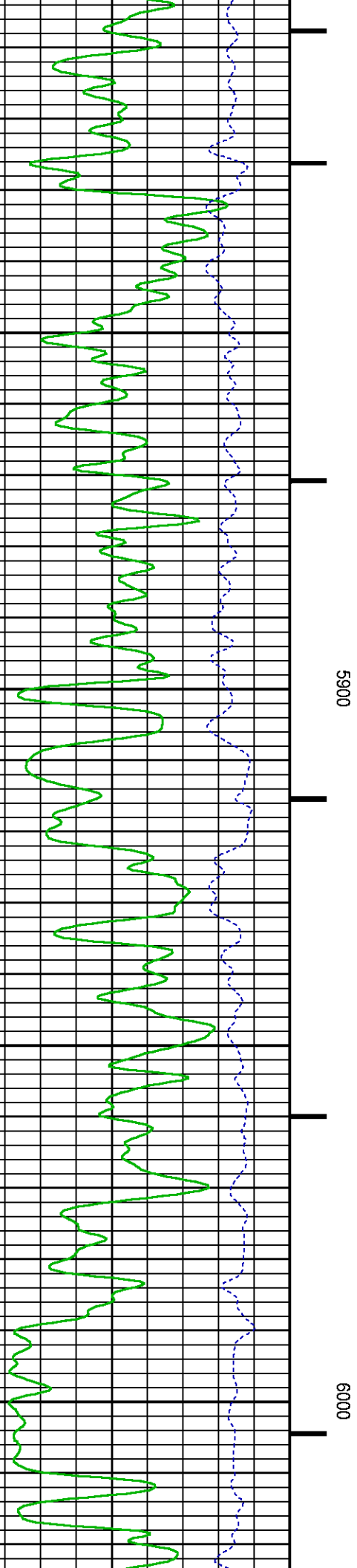
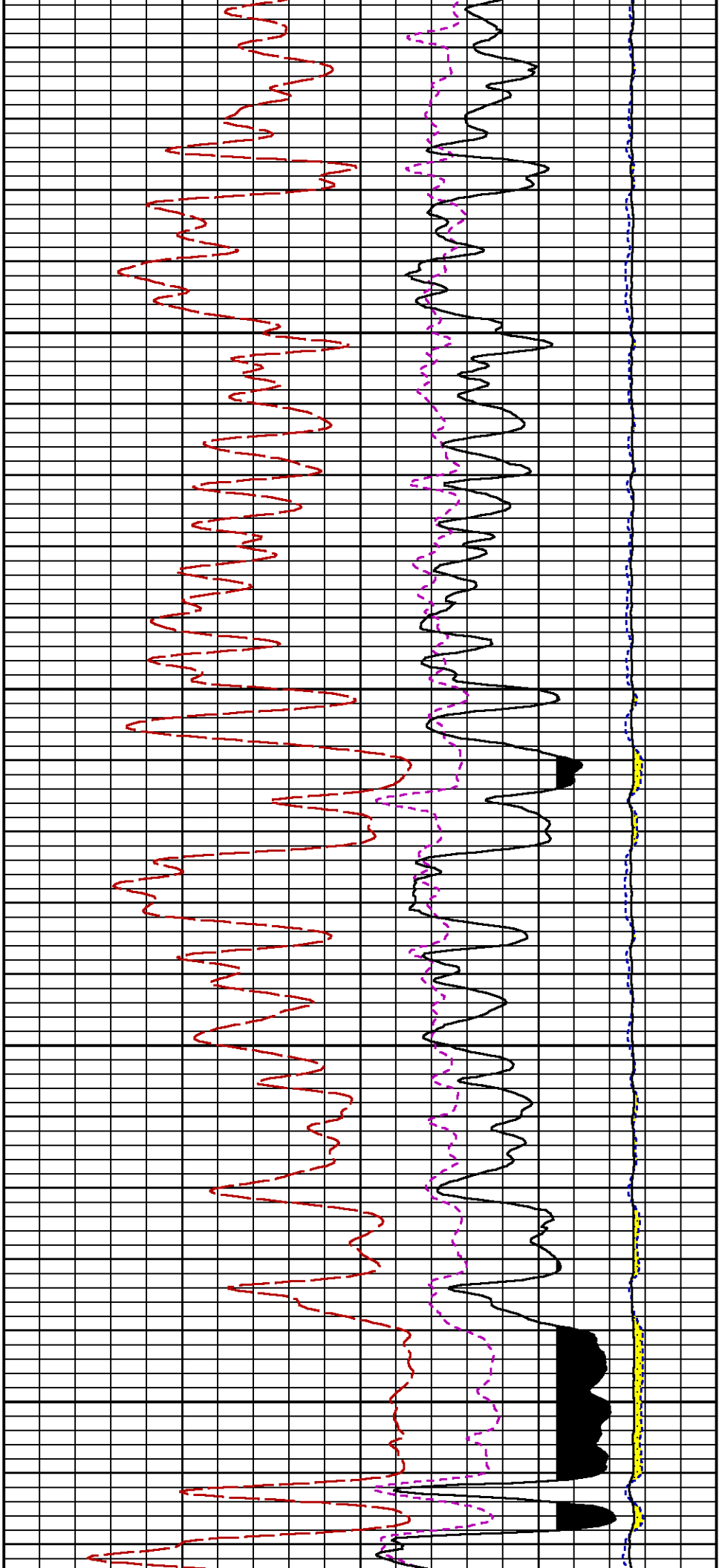


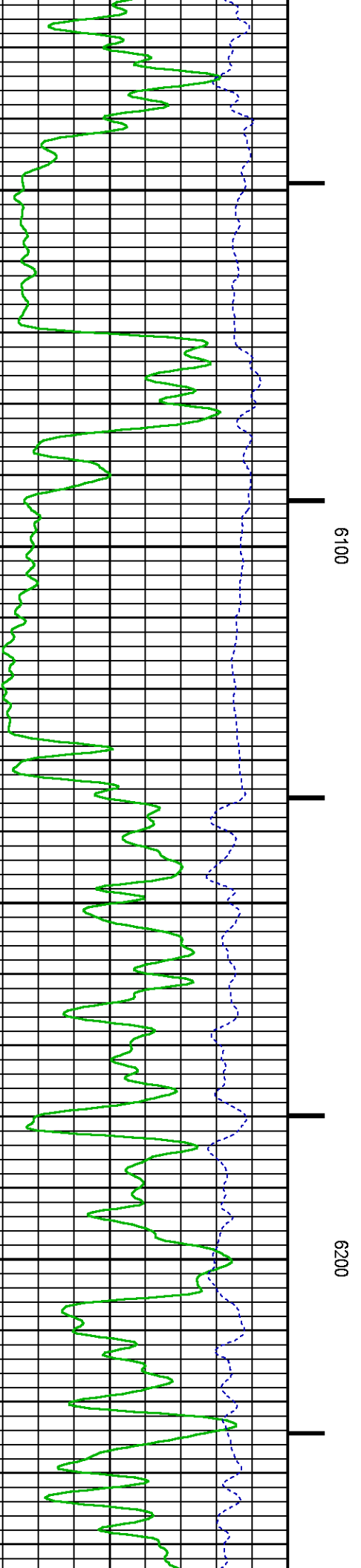
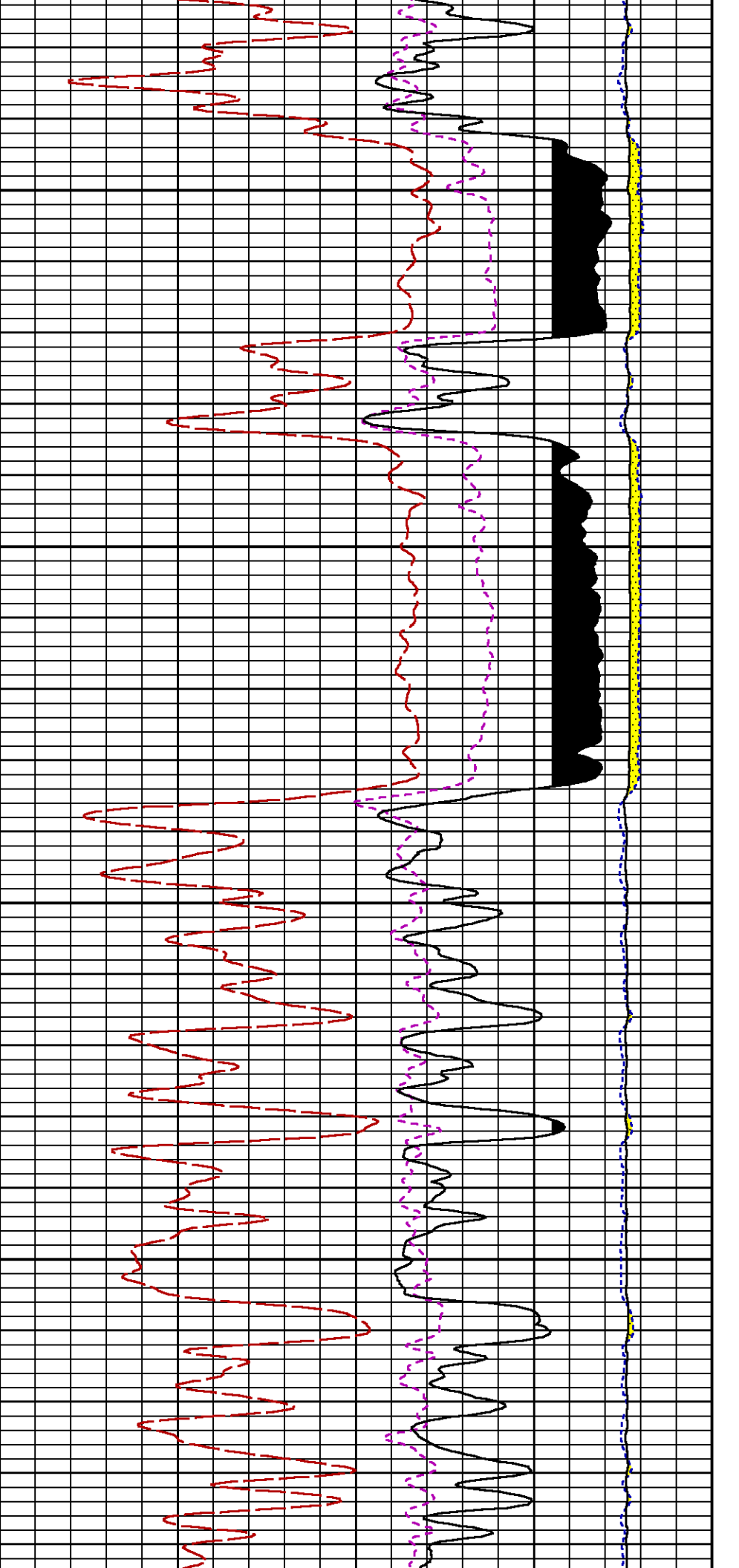


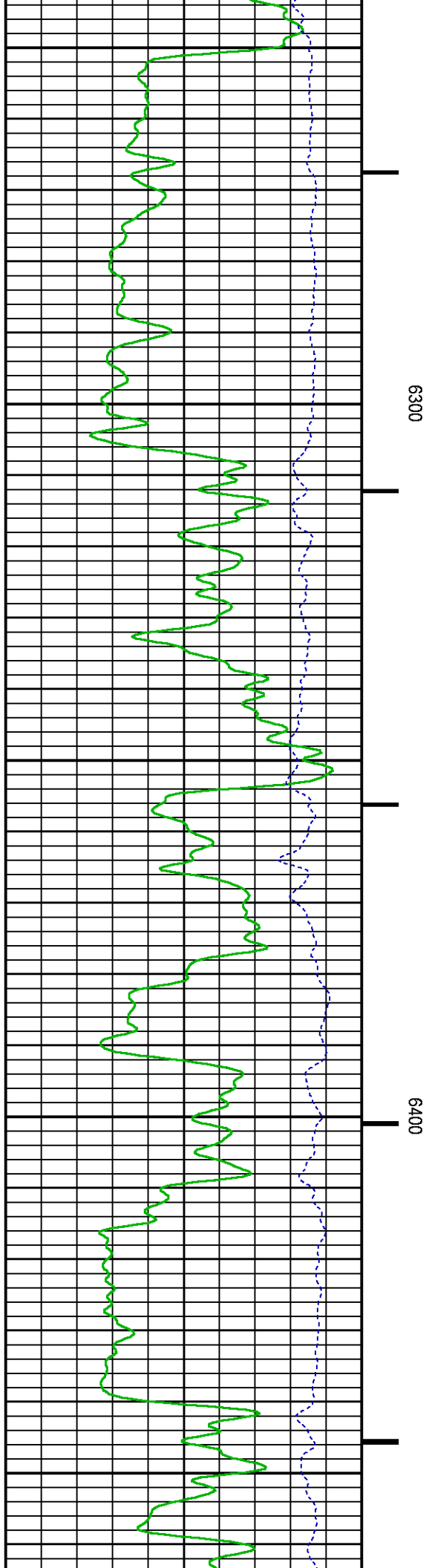
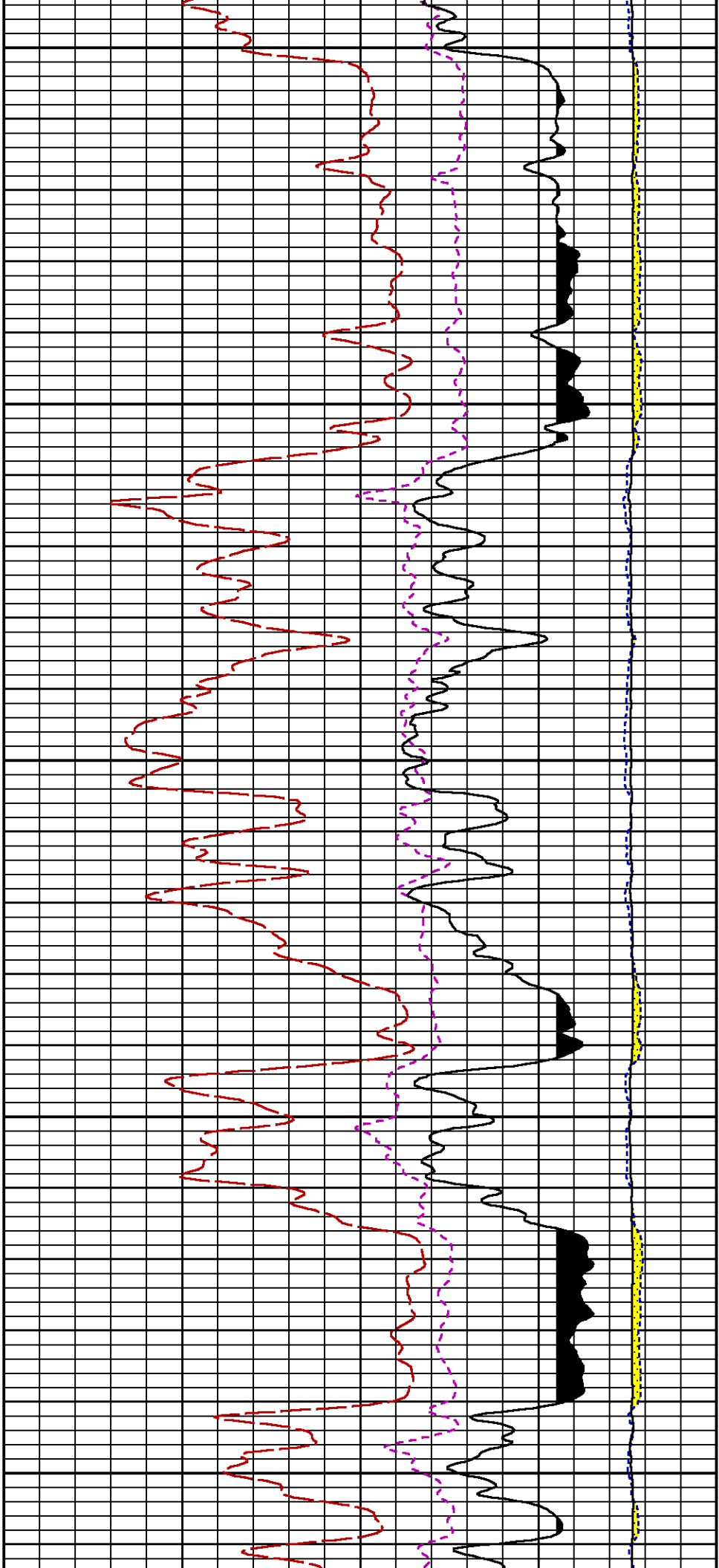
5400

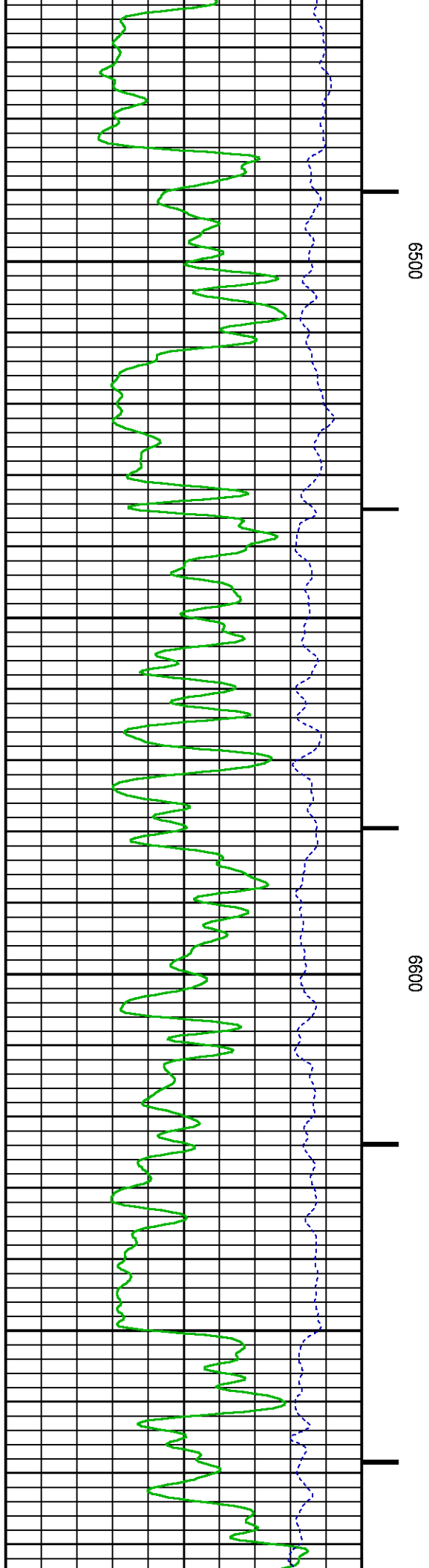
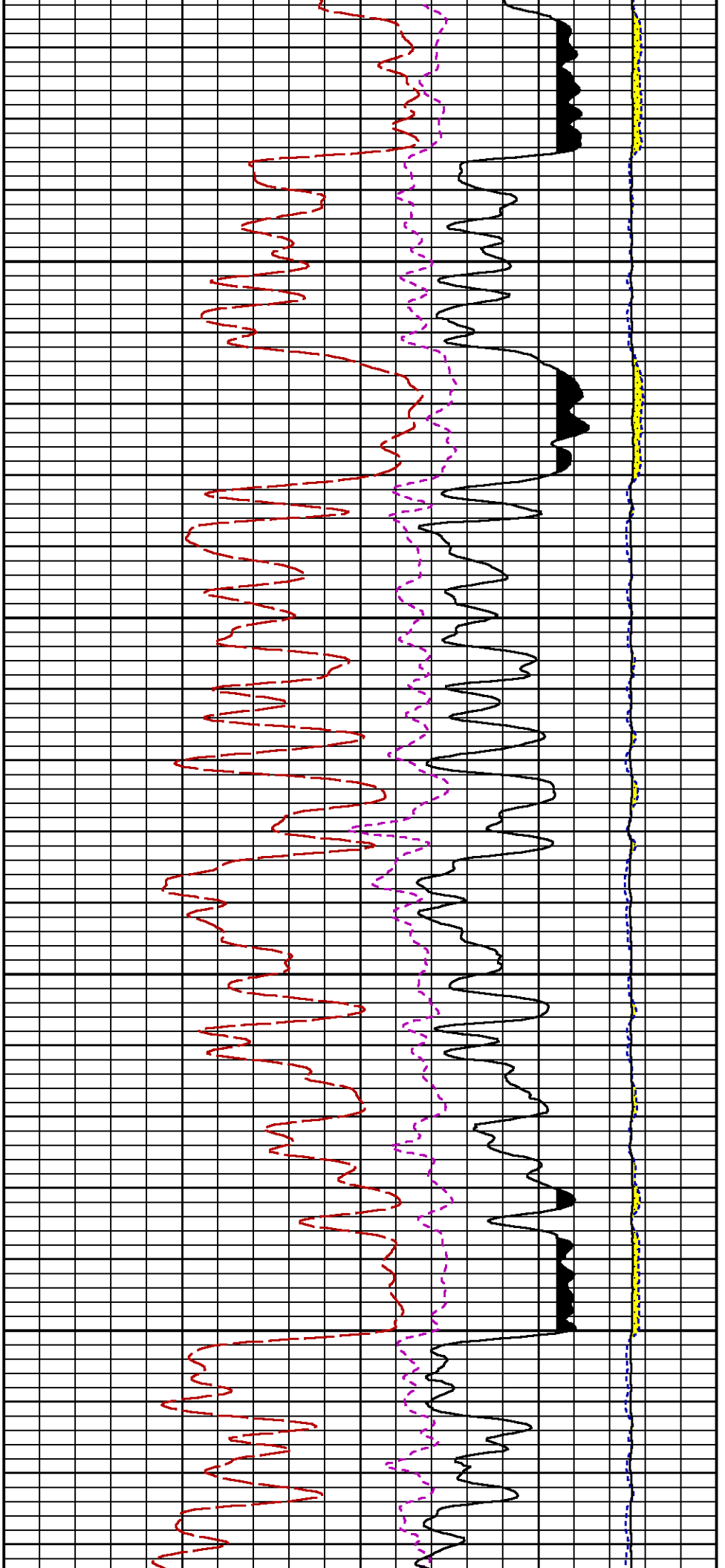
5500

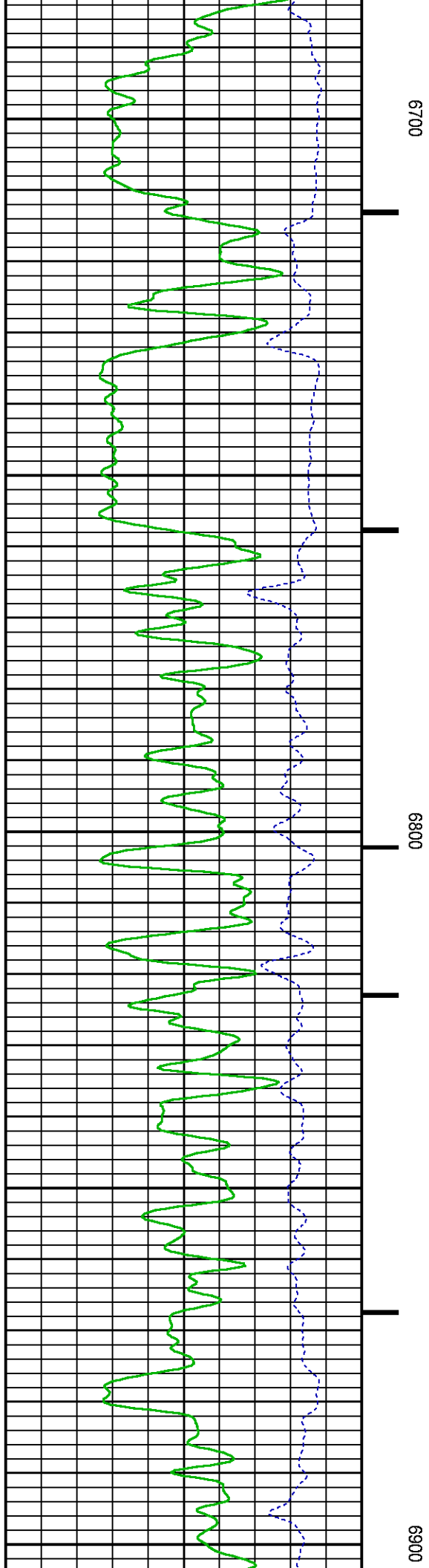
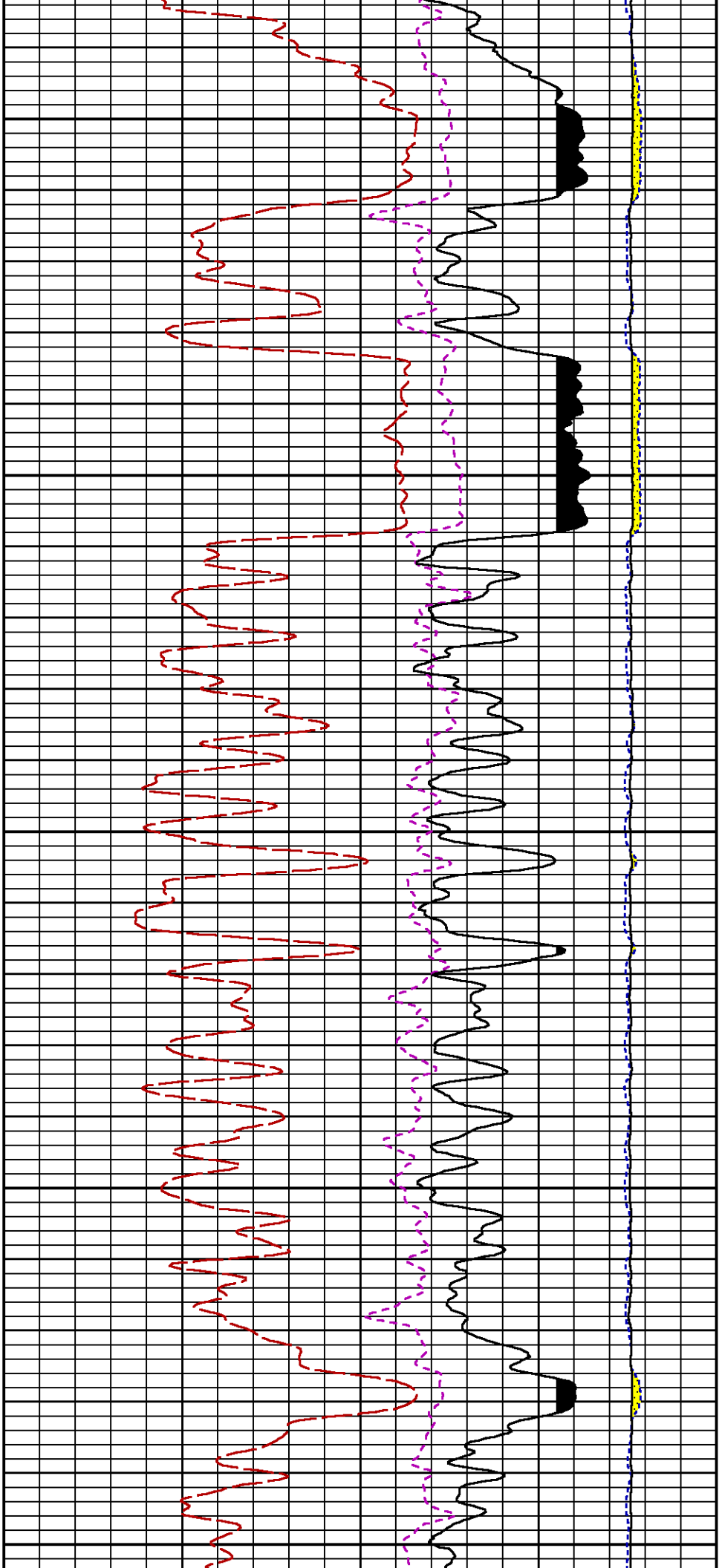


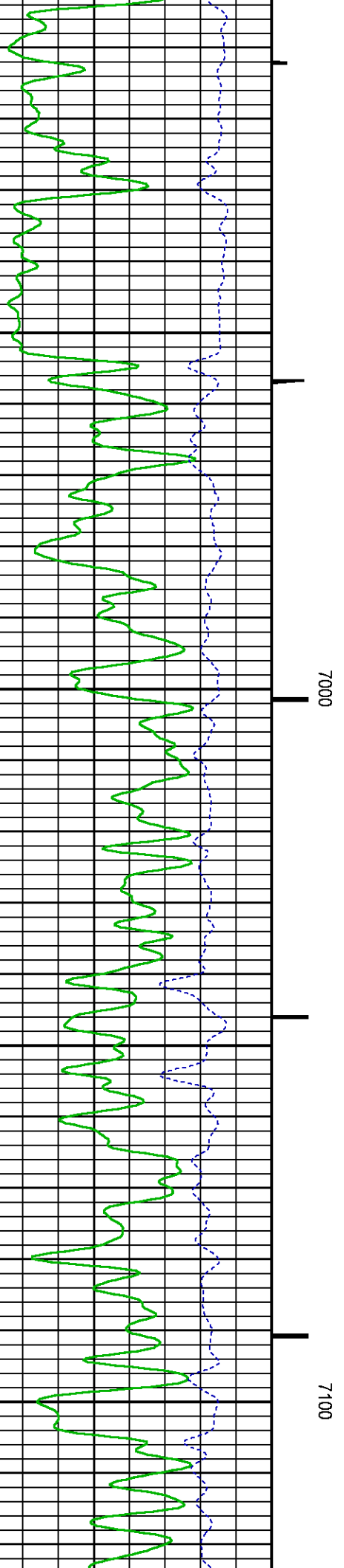
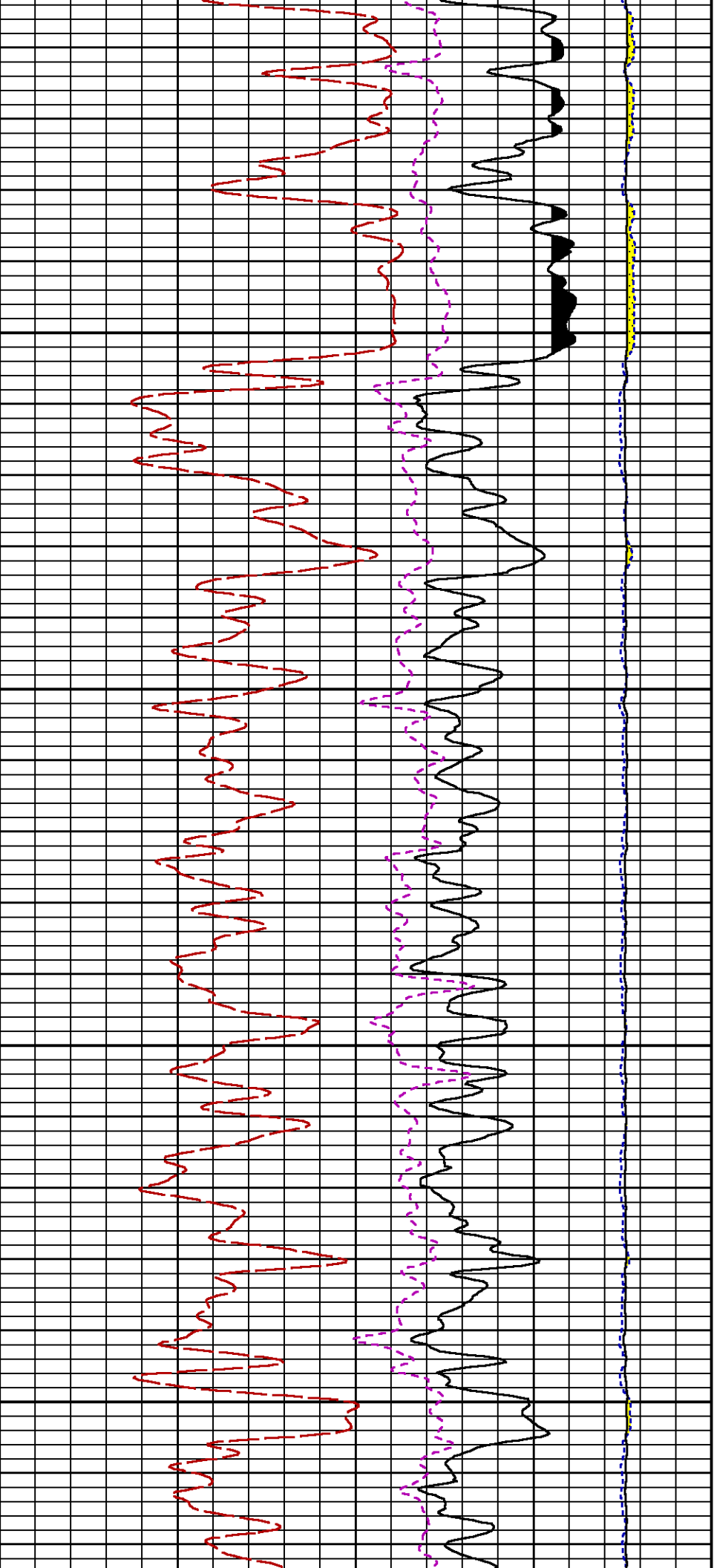


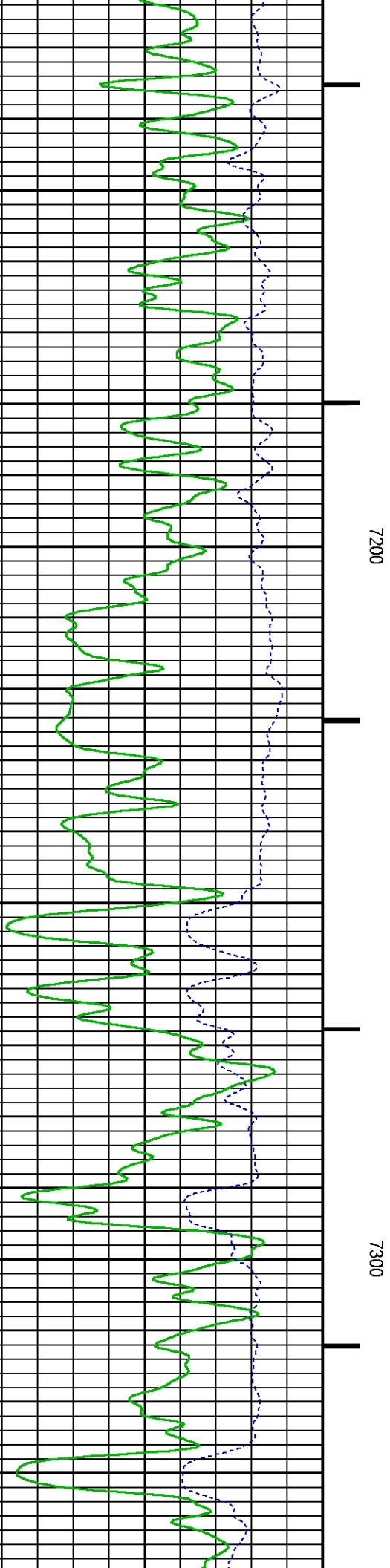
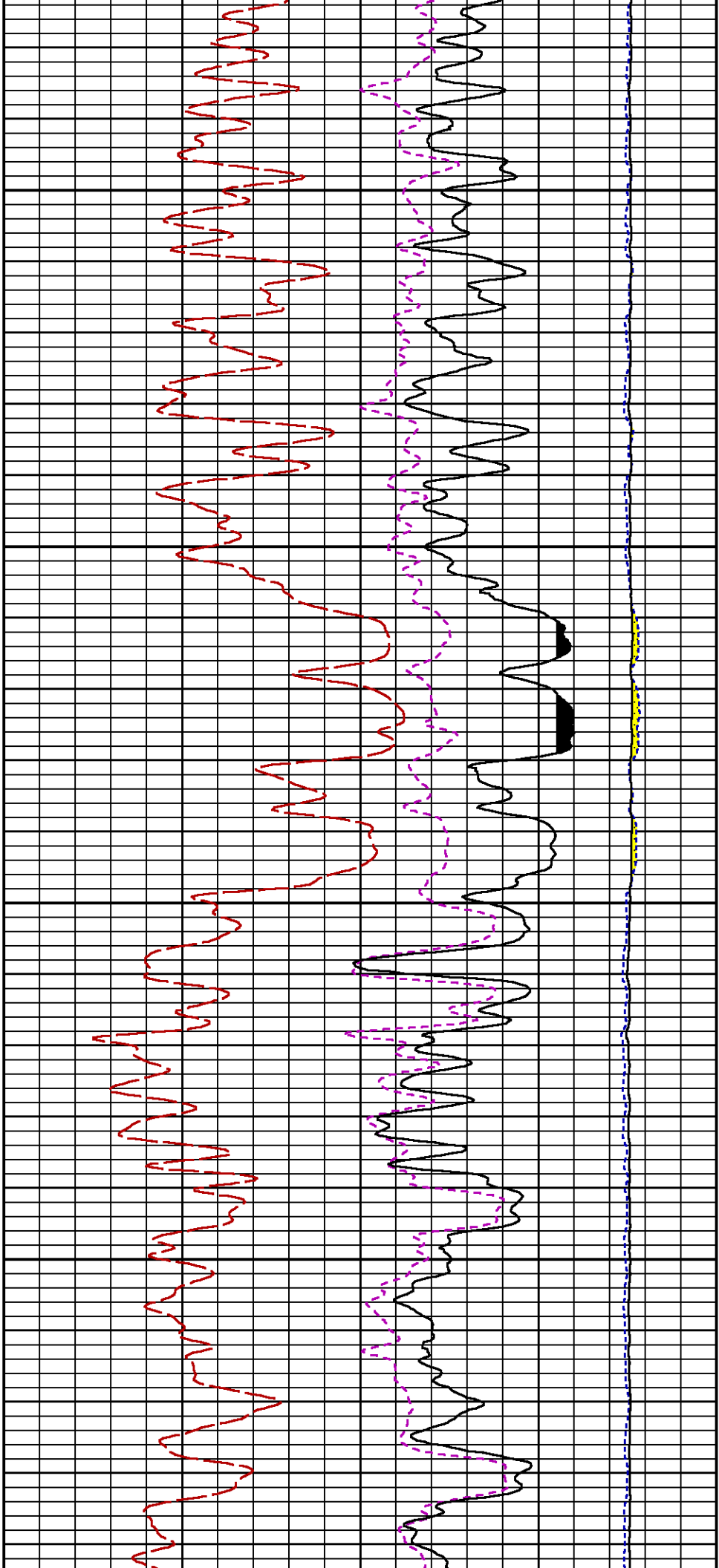


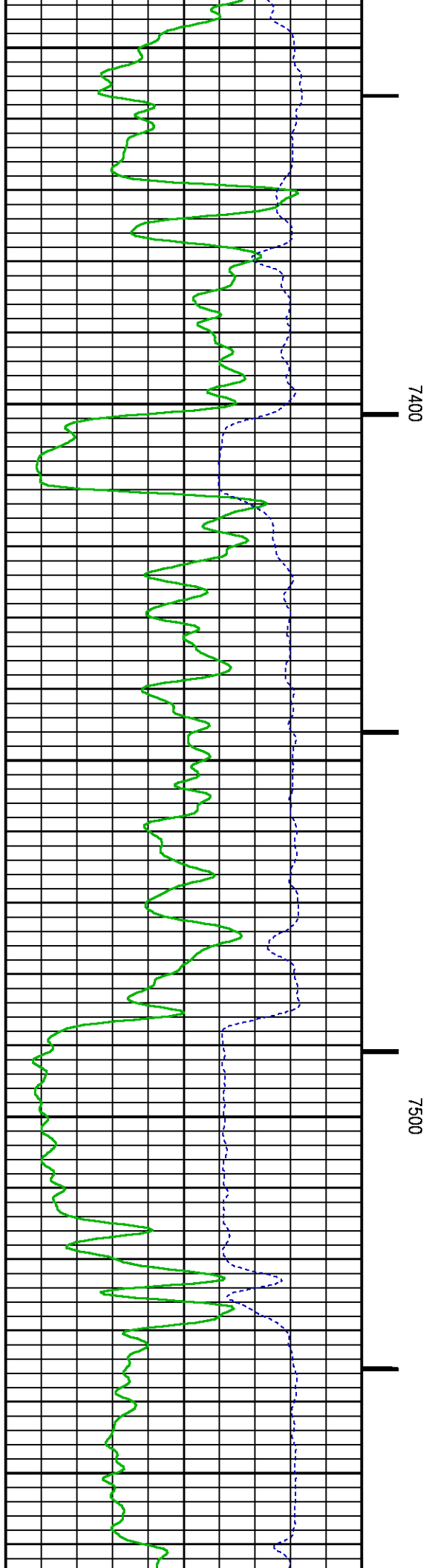
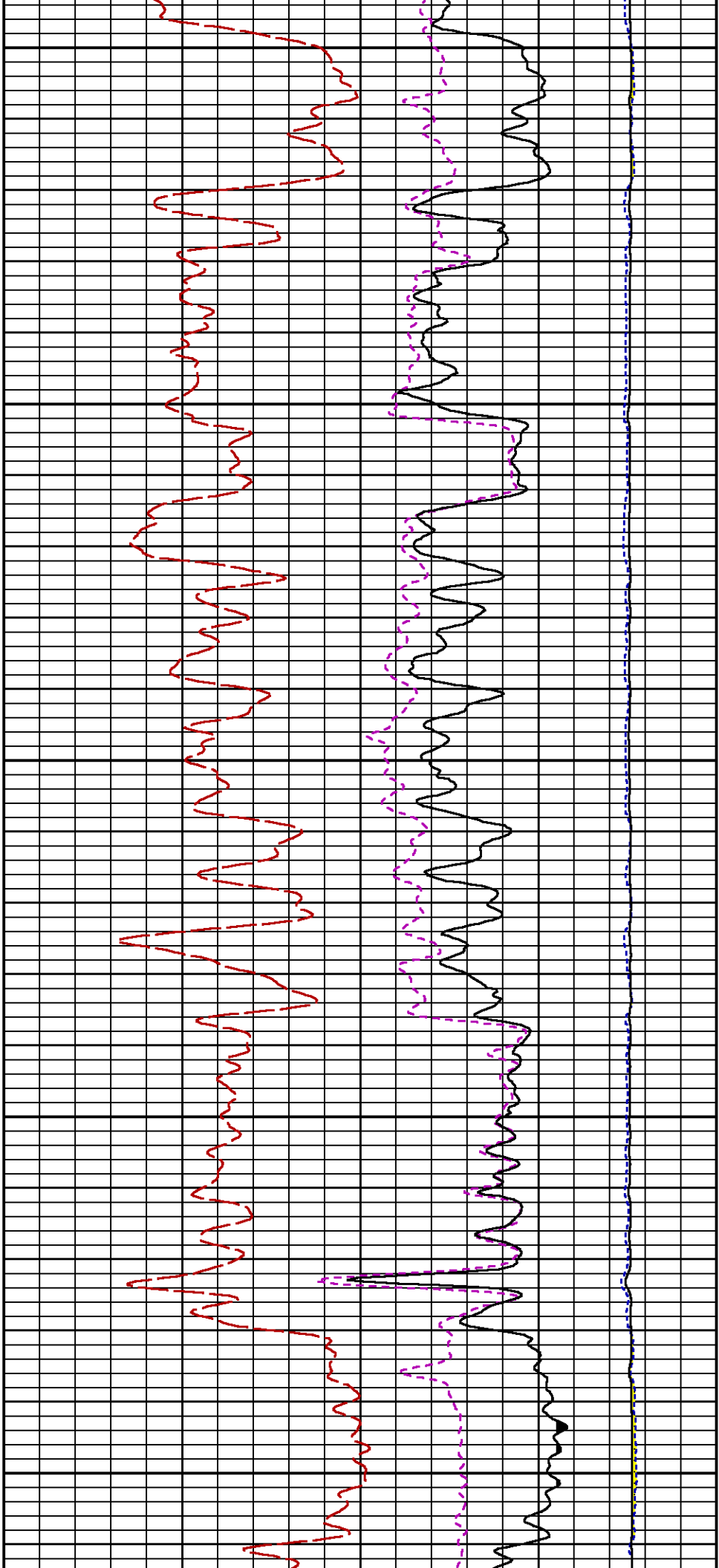


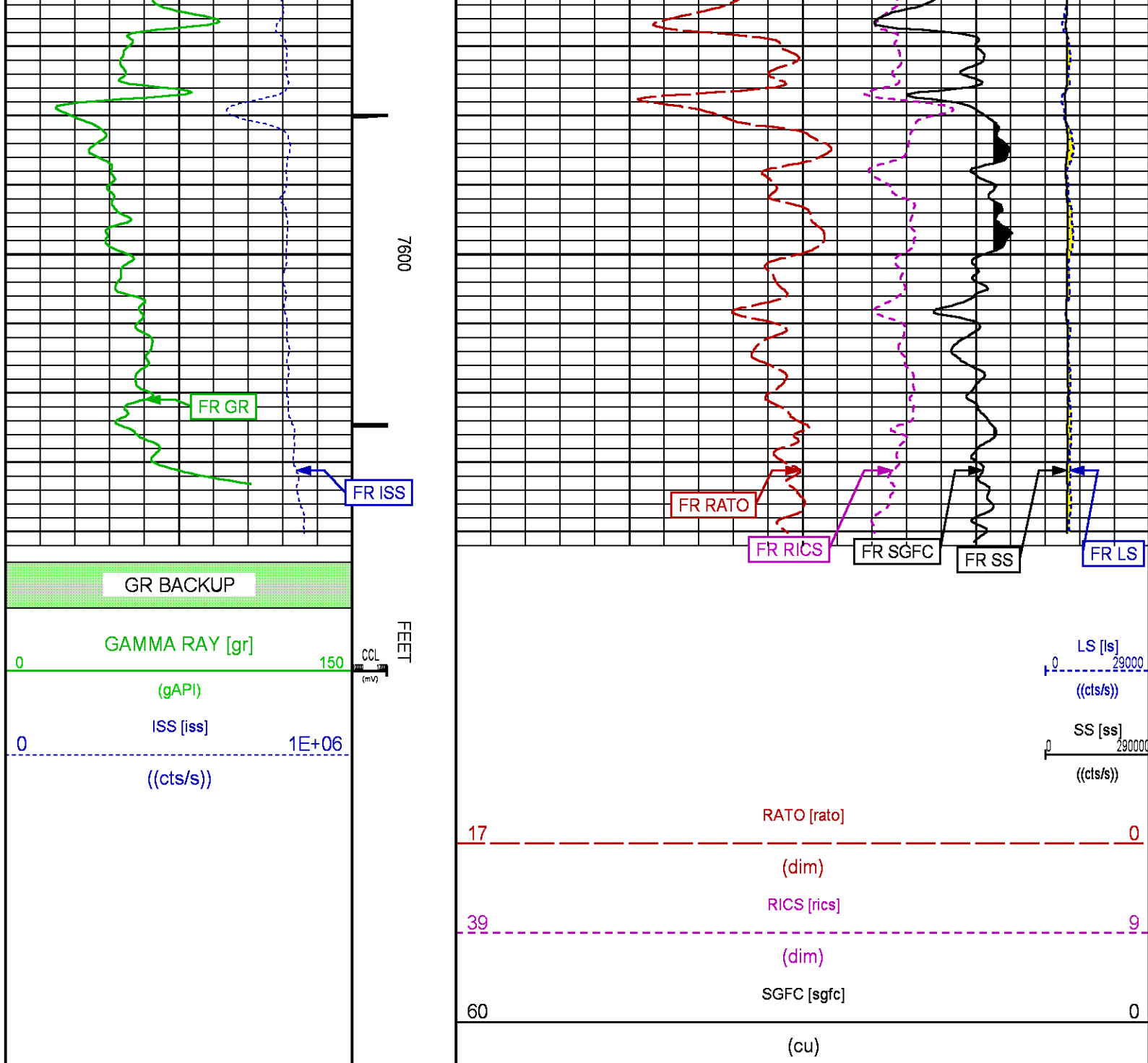












REPEAT PASS PNC-3D MODE

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

Updates: 1 Patches: 9

Plotted: Sun Aug 20 13:07:16 2017

PARAMETER AND FILTER SUMMARY REPORT

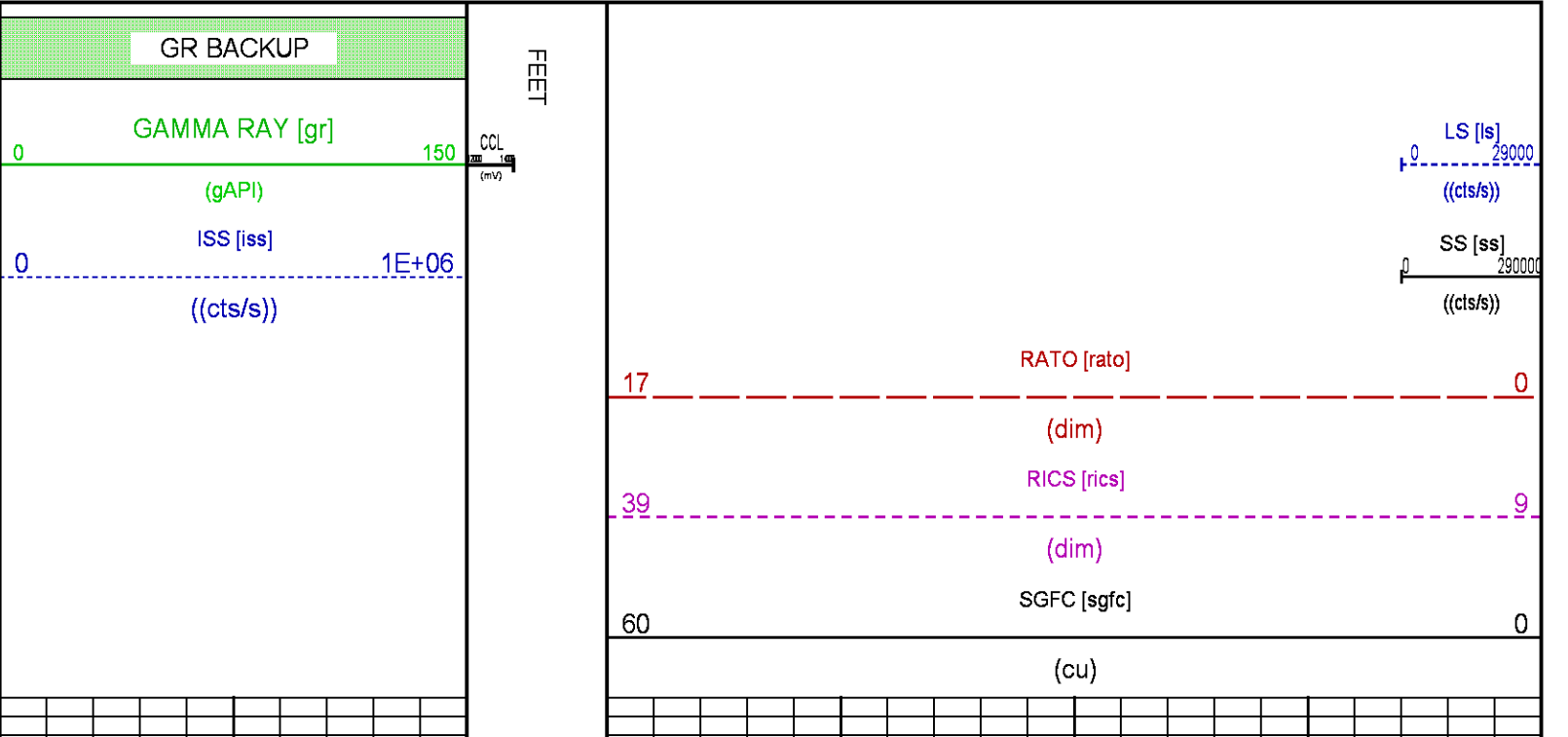
FILE: /dat1a/LARAMIE_BRUTON_19_18E/RPM3D01.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 6878.000 ft BOTTOM DEPTH: 7203.576 ft

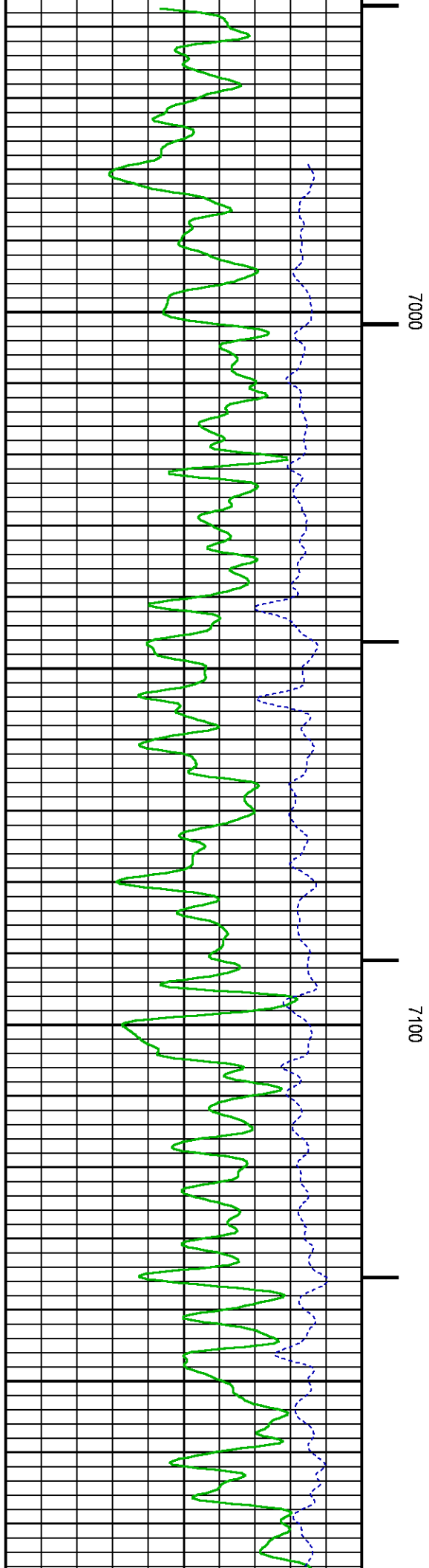
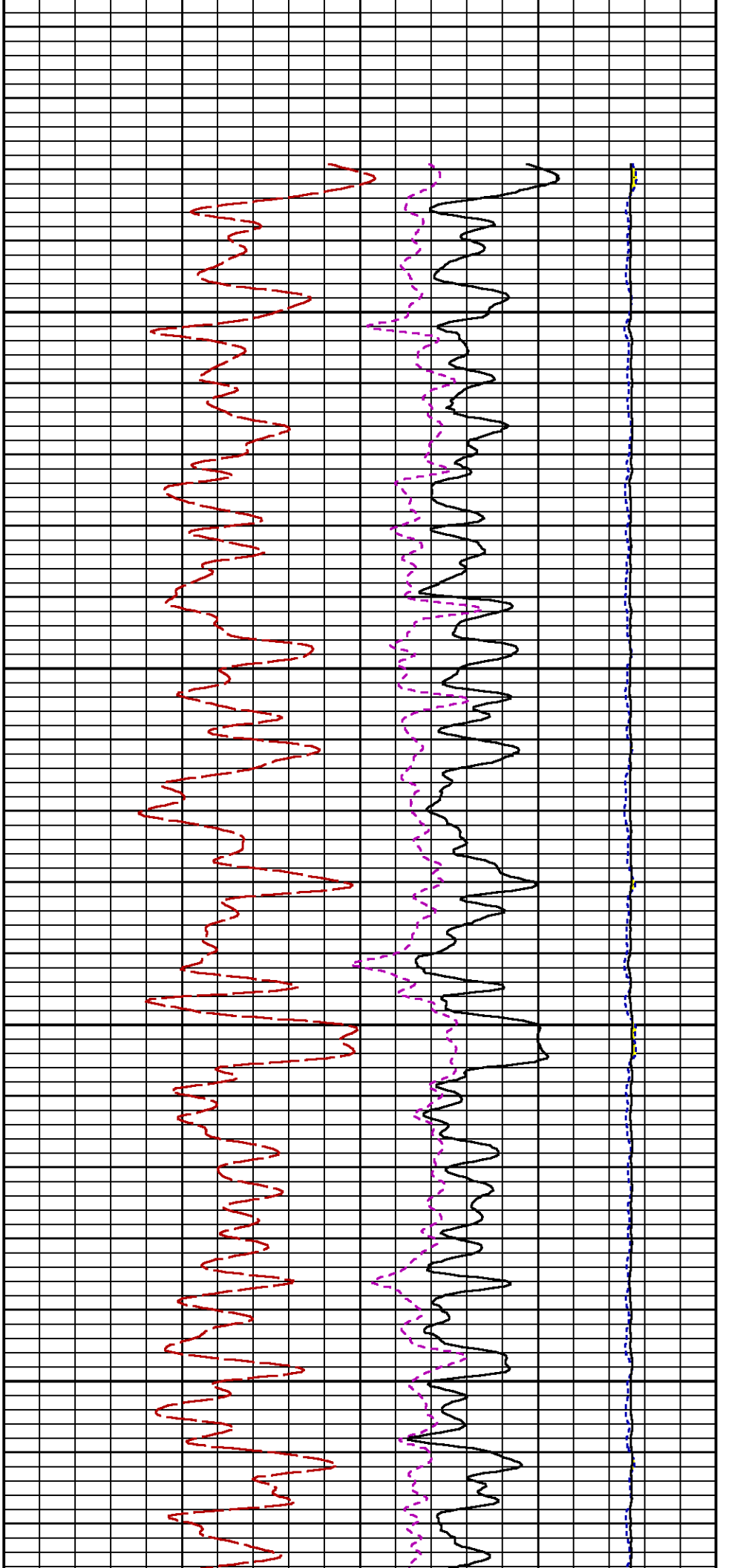
SYMMETRIC FILTER				
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
GR	FILTER ()	medium (1)		TOP BOTTOM
RPM PROCESSING				
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
PNC Parameters	BOREHOLE CONTENTS	FLUID		TOP BOTTOM
	OPEN/CASED HOLE	CASED HOLE		" "
	BOREHOLE SIZE	7.88	in	" "
	CASING SIZE	4.50	in	" "
	MATRIX	SANDSTONE		" "
	CORRECTION BUFFER	11		" "

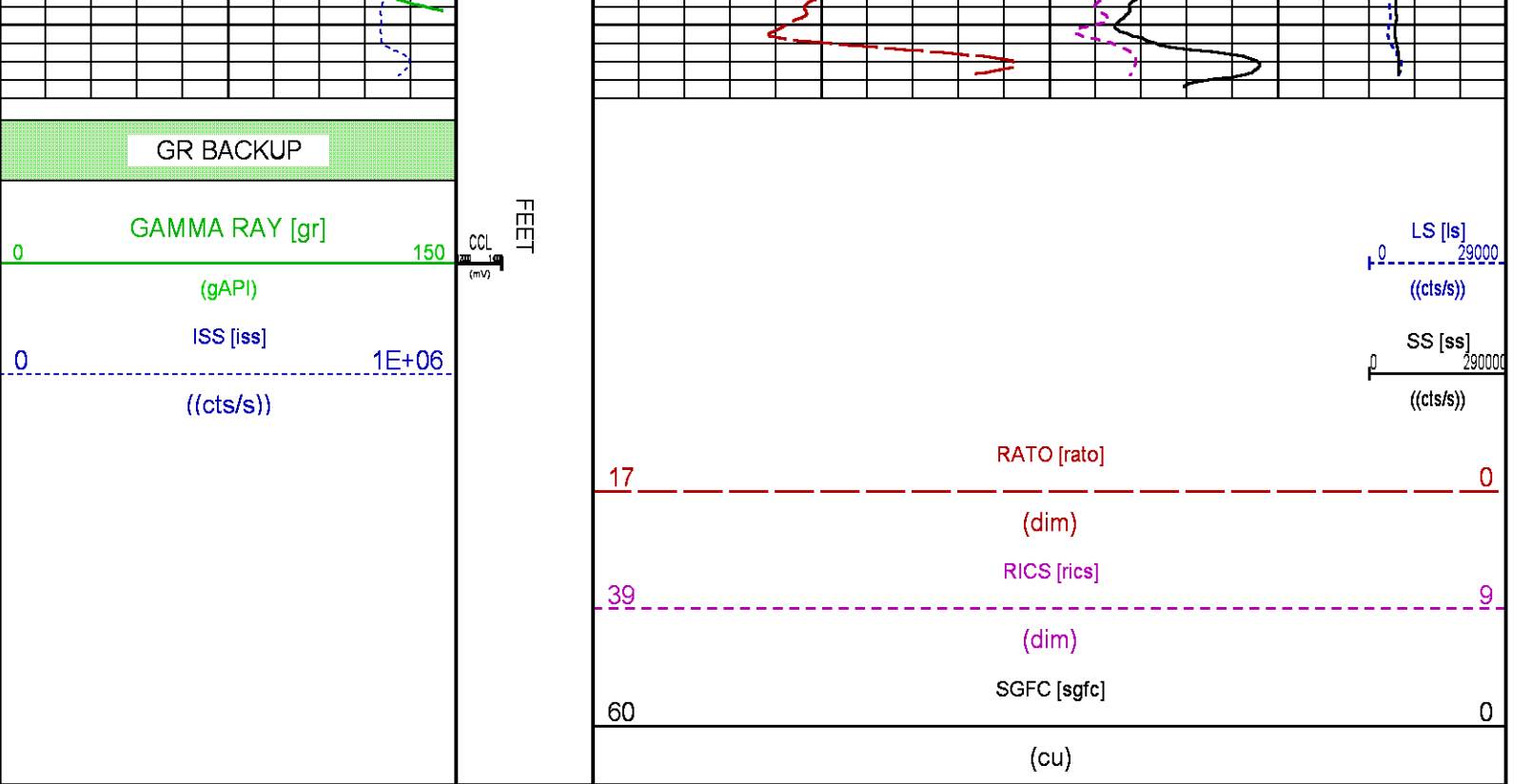
CURVE DESCRIPTION REPORT		
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	Aug 20 12:47:17 2017	CASING COLLAR LOCATOR
F1:GR	Aug 20 12:47:17 2017	GAMMA RAY
F1:ISS	Aug 20 12:47:17 2017	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Aug 20 12:47:17 2017	LONG SPACE COUNT RATE
F1:RATO	Aug 20 12:47:17 2017	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Aug 20 12:47:17 2017	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Aug 20 12:47:17 2017	CORRECTED FORMATION SIGMA
F1:SS	Aug 20 12:47:17 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_18E_RPM_REPEAT.fvpdf [5"/100' Scale]
Plot Interval	: 6953.25 - 7193 Feet
Data File 1	: F1 : cpu100:/dat1a/LARAMIE_BRUTON_19_18E/BRUTON_19_18E_RPM_RPT.xtf
Created On	: Aug 20 12:47:17 2017
Company	: LARAMIE ENERGY
Well	: BRUTON 19-18E
Field	: MESA
File Interval	: 6952.5 - 7201.75 Feet
OCT	: RPM3D







CALIBRATION / VERIFICATION SUMMARY

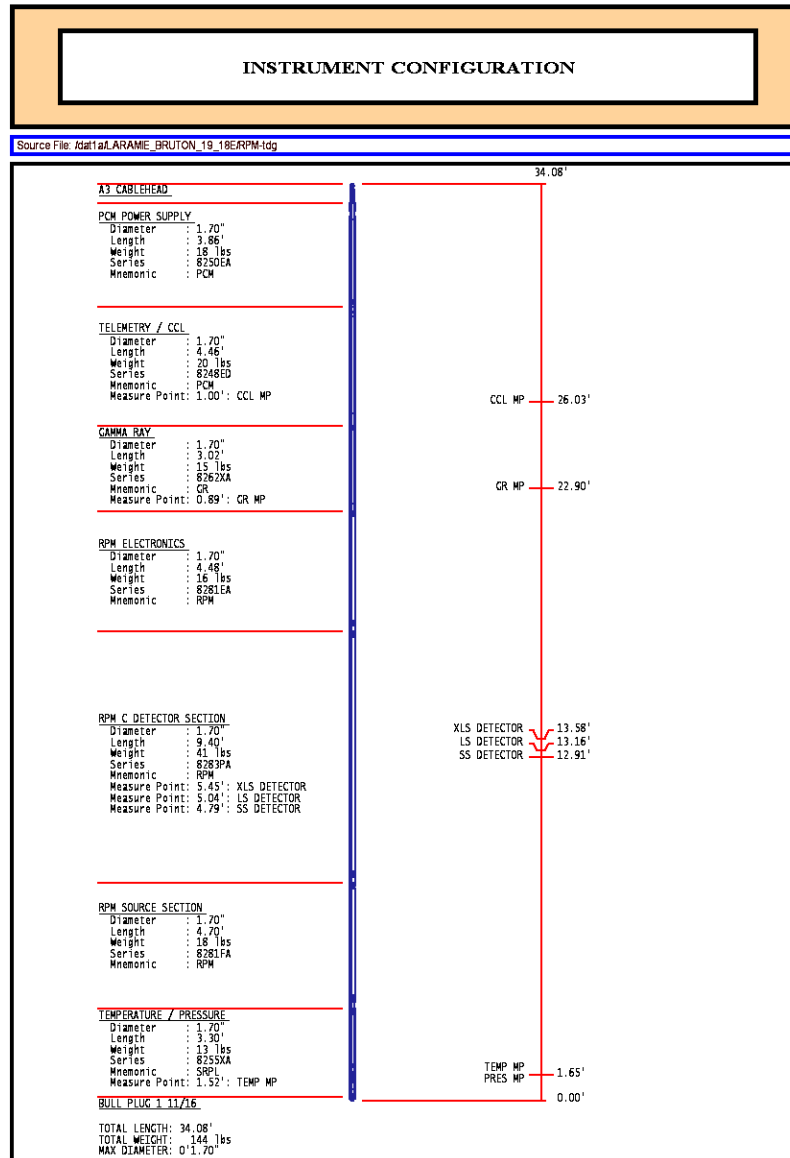
Source File: kdat1ad.ARAMIE_BRUTON_19_18E/RPM3D tp1


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)	CALBRTR ON (cts/s)	CR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)
GR	63.76	399.13	335.4	0.552	35.17	220.17
						185

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)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	63.44	394.18	0.552	35.00	217.44	182.44
						115.00 190.00

RPM_PNC_3D PRIMARY CALIBRATION SUMMARY								
TOOL: 8263PA 10184883		DATE/TIME PERFORMED: Thu Jul 13 15:06:49 2017						
UNIT: 3882TD HL6728		CALIBRATOR: 2437XB 120057	SOURCE: 8281AA 10160595	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	1300000	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
					26.76 26.40	0.00 0.00	23.90 24.90	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

		ISSALS		ISSAXS		ISSICSS		SSALS		SSZALS		CSSZALS		
Raw Data	807240	1.44	4.90	31.88		15.44		10.65		3.80		4.04		
		1.42	1.45	3.95	0.02	22.00	30.70	10.56	16.34	10.06	11.03	3.59	3.96	3.76
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	1.45	1.35	0.02	27.00	30.70	10.56	16.34	10.06	11.03	3.59	3.96	3.76



	COMPANY <u>LARAMIE ENERGY</u> WELL <u>BRUTON 19-18E</u> FIELD <u>VEGA</u> COUNTY <u>MESA</u> STATE <u>COLORADO</u>	FILE NO: _____ API NO: <u>05077103690000</u>	
	LOCATION: SHL: LAT:39.255232N;LONG:107.806537W BHL: LAT:39.257858N;LONG:107.807052W SEC <u>19</u> TWP <u>9S</u> RGE <u>93W</u>	ELEVATIONS: KB <u>7449 FT</u> DF <u>7448 FT</u> GL <u>7425 FT</u>	
	DATE <u>20-AUG-2017</u>		