



FILE NO:	COMPANY	LARAMIE ENERGY
API NO:	WELL	BRUTON 19-03E
05077104220000	FIELD	VEGA
	COUNTY	MESA
		STATE COLORADO
Version	LOCATION:	OTHER SERVICES
	SHL: LAT:39.262850N; LONG:107.815110W	RPM
	BHL: LAT:39.267819N; LONG:107.806885W	
	SEC 19 TWP 9S RGE 93W	
PERMANENT DATUM	GL	ELEVATION 7262 FT
LOG MEASURED FROM	KB	24 FT ABOVE P.D.
DRILL. MEAS. FROM	KB	ELEVATIONS: KB 7286 FT DF 7286 FT GL 7262 FT

DATE		28-OCT-2017			
RUN	TRIP	2	1		
SERVICE ORDER		US128842			
DEPTH DRILLER		8365 FT			
DEPTH LOGGER		8327 FT			
BOTTOM LOGGED INTERVAL		8327 FT			
TOP LOGGED INTERVAL		3147 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		1979 FT			
WELLHEAD PRESSURE		0 PSI			
MAXIMUM HOLE DEVIATION		NA			
NOMINAL LOGGING SPEED		15 FMN			
MAX. RECORDED TEMP.		238 DEGF			
REFERENCE LOG		BKER GR/RAL			
REFERENCE LOG DATE		27-OCT-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

RUN2 TRIP 1: \*2 OPERATIONS IN WELL\*

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

LOGGED WITH 0 PSI ON WELLHEAD

SJ: 7449' - 7471'

SJ: 6449' - 6471'

CREW: C.GOLOBY , J.PENA

## EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
2	1	TELEMETRY	8250EA/8248EA	12151903/12211009	FREE
2	1	GAMMA RAY	2812LA	11781299	FREE
2	1	RPM	8281EA	10273848	FREE
2	1	RPM	8283PA	10322619	FREE
2	1	RPM	8281FA	10238007	FREE

# G-SAND SECTION PNC 3D MODE

ECLIPS 7.0w PC-ECLIPS General Release Rel 7.0w Fri Jun 09 11:02:06 Central Daylight Time 2017  
Patches: 1

Plotted: Sat Oct 28 20:01:28 2017

## PARAMETER AND FILTER SUMMARY REPORT

FILE: C:\dat1a\BRUTON\_19\_03E\RPM3D103.prm  
LOGGING MODE: DEPTH DIRECTION: UP  
TOP DEPTH: 2536.000 ft BOTTOM DEPTH: 3173.802 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	"	"
	LARGEST CASING OD	4.50	in	"	"
	MATRIX	SANDSTONE		"	"
	CORRECTION BUFFER	11		"	"

## CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	N/A	CASING COLLAR LOCATOR
F1:GR	N/A	GAMMA RAY
F1:ISS	N/A	INELASTIC SHORT SPACE COUNT RATE
F1:LS	N/A	LONG SPACE COUNT RATE
F1:RATO	N/A	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	N/A	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	N/A	BOREHOLE AND DIFFUSION CORRECTED SIGMA
F1:SS	N/A	SHORT SPACE COUNT RATE

## CURVE MEASURE POINT OFFSET

CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	-21.75	ISS	-9.50	RATO	-9.50	SGFC	-9.50
GR	-19.25	LS	-9.50	RICS	-9.50	SS	-9.50

Presentation : BHI78FR4H2:C:\dat1a\BRUTON\_19\_03E\BRUTON\_19\_03E\_RPM\_GSAND.fvpdf [5"/100' Scale]  
Plot Interval : 2516.25 - 3167.75 Feet

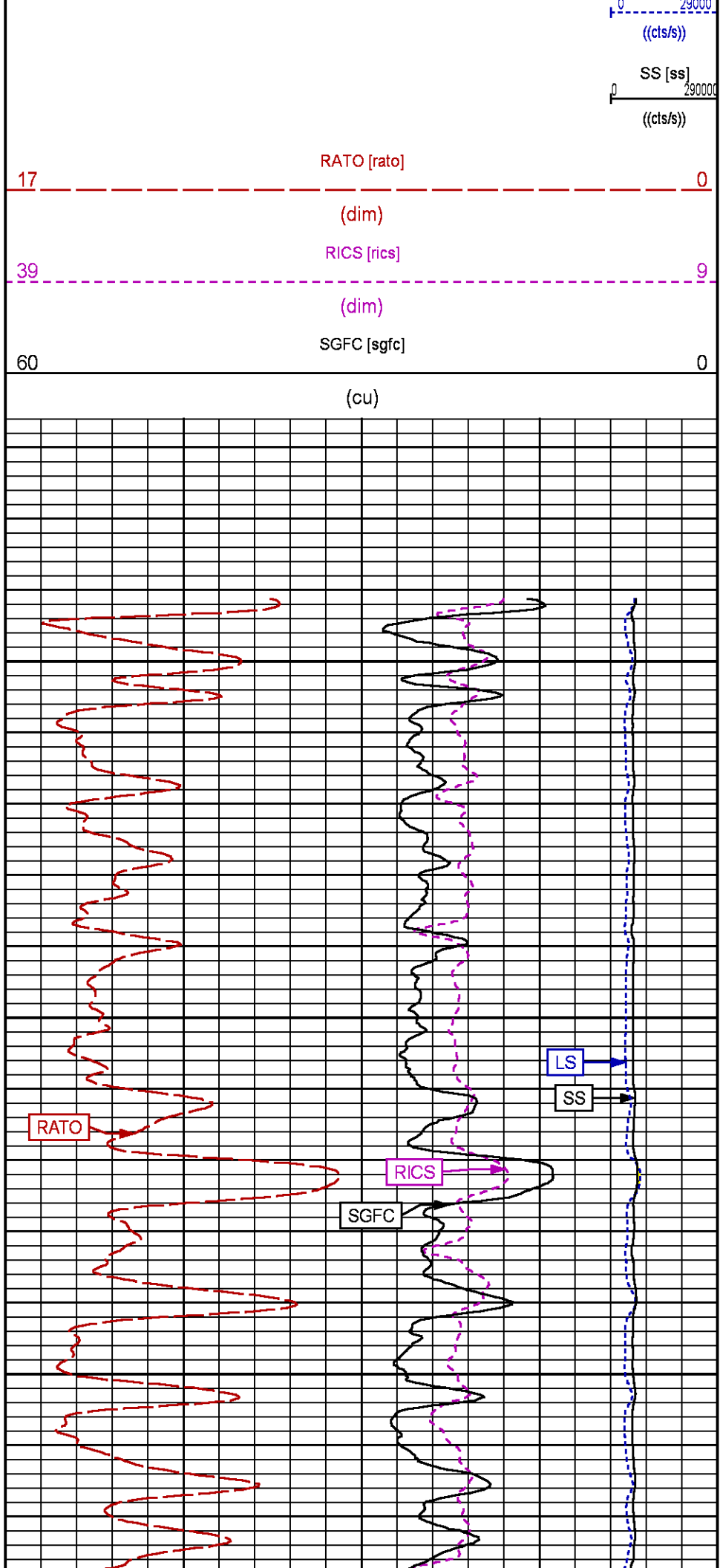
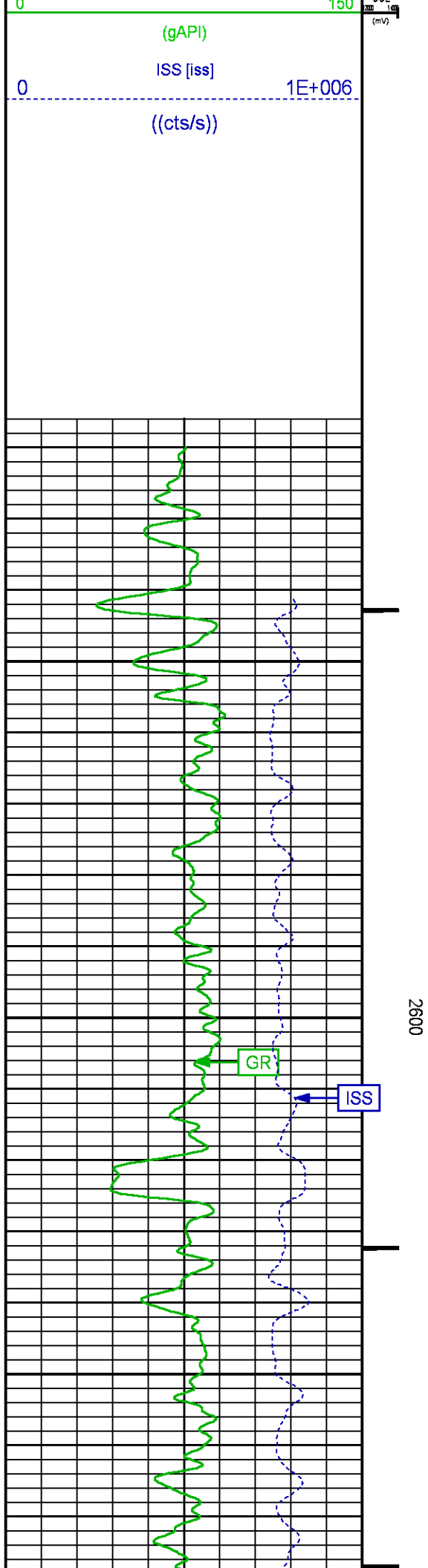
Data File 1 : F1 : BHI78FR4H2:C:\dat1a\BRUTON\_19\_03E\BRUTON\_19\_03E\_RPM\_GSAND.xtf  
Created On : N/A  
Company : LARAMIE ENERGY II LLC  
Well : BRUTON 19-03E  
Field : VEGA  
File Interval : 2515.5 - 3173.25 Feet  
OCT : RPM3D1

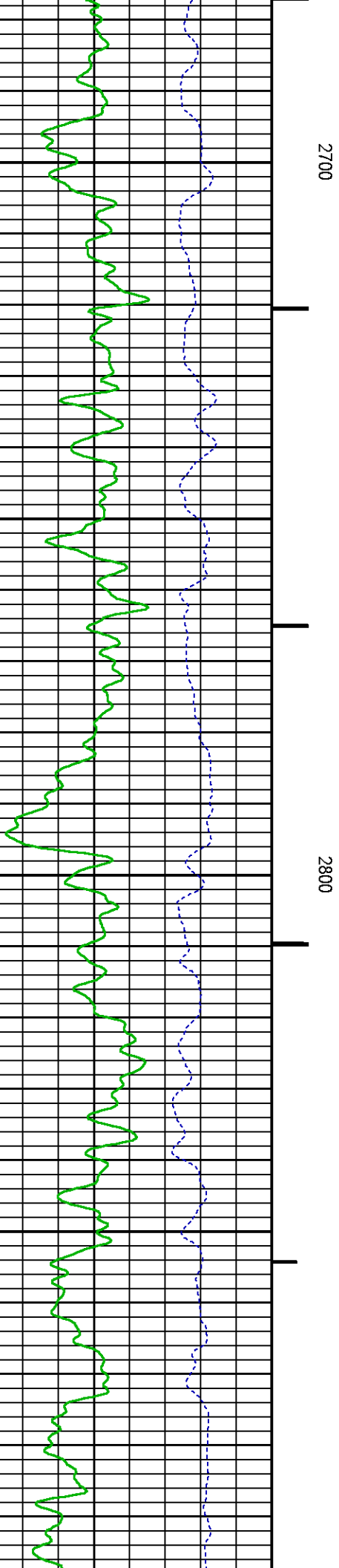
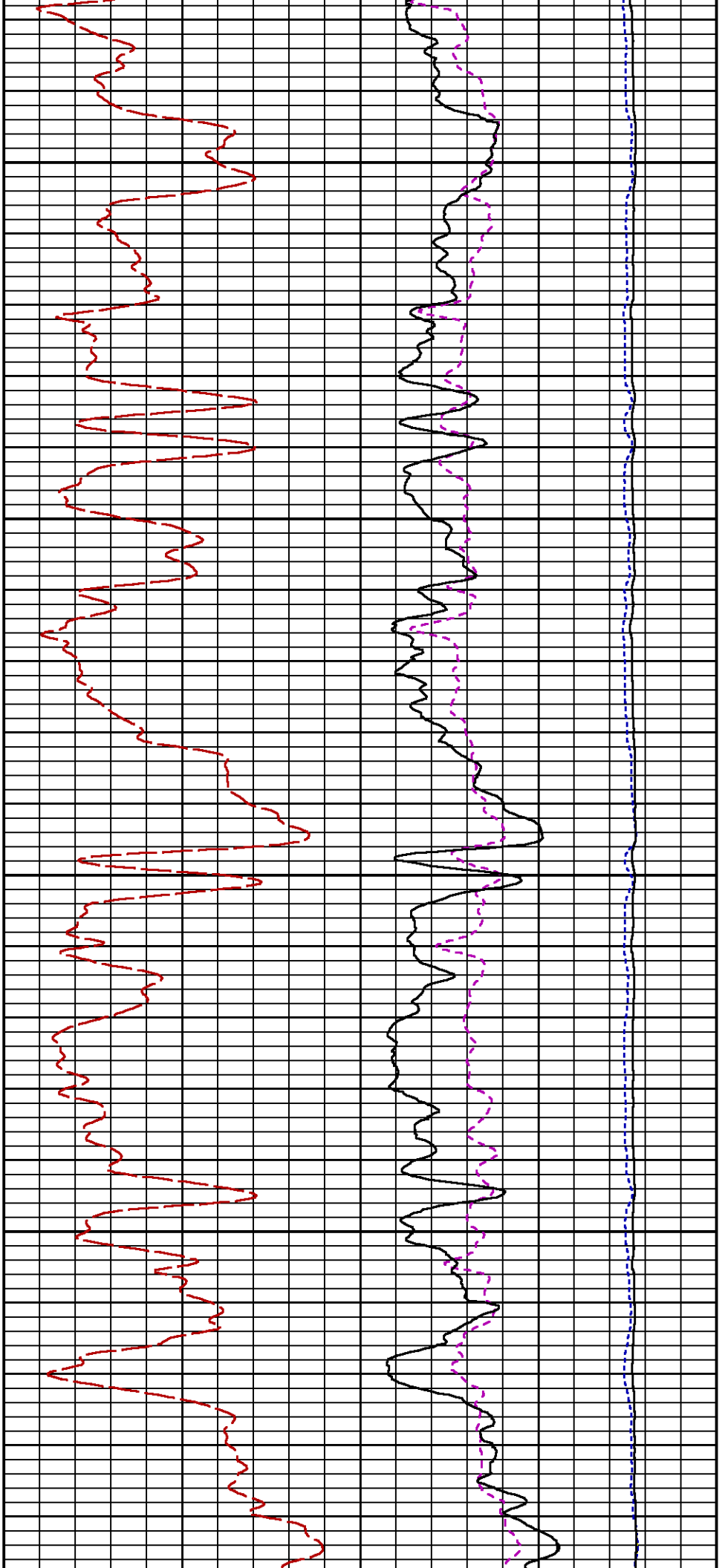
GR BACKUP

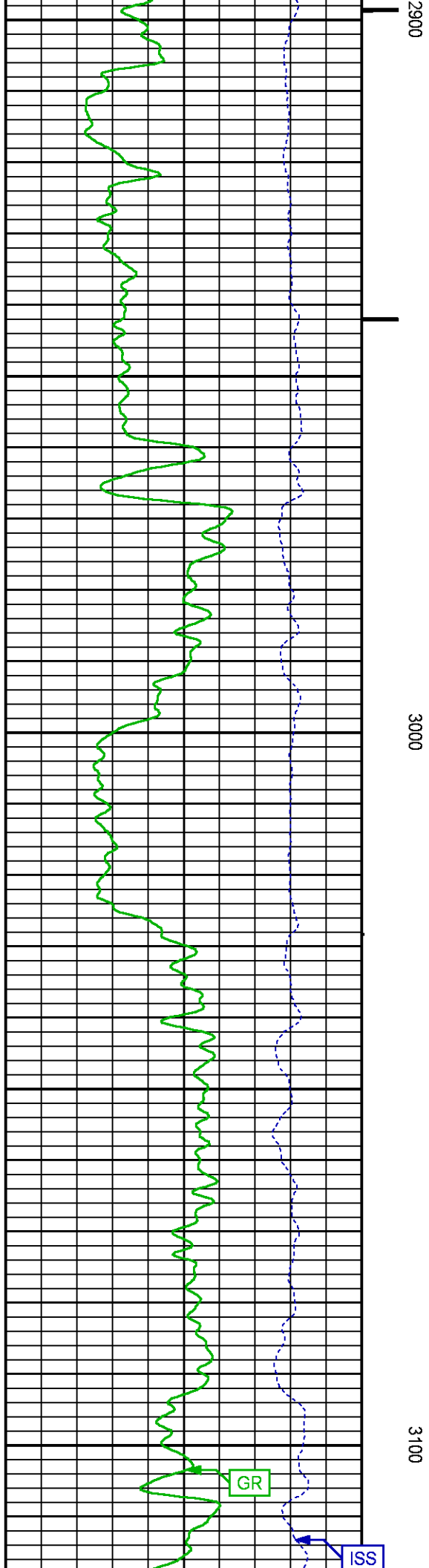
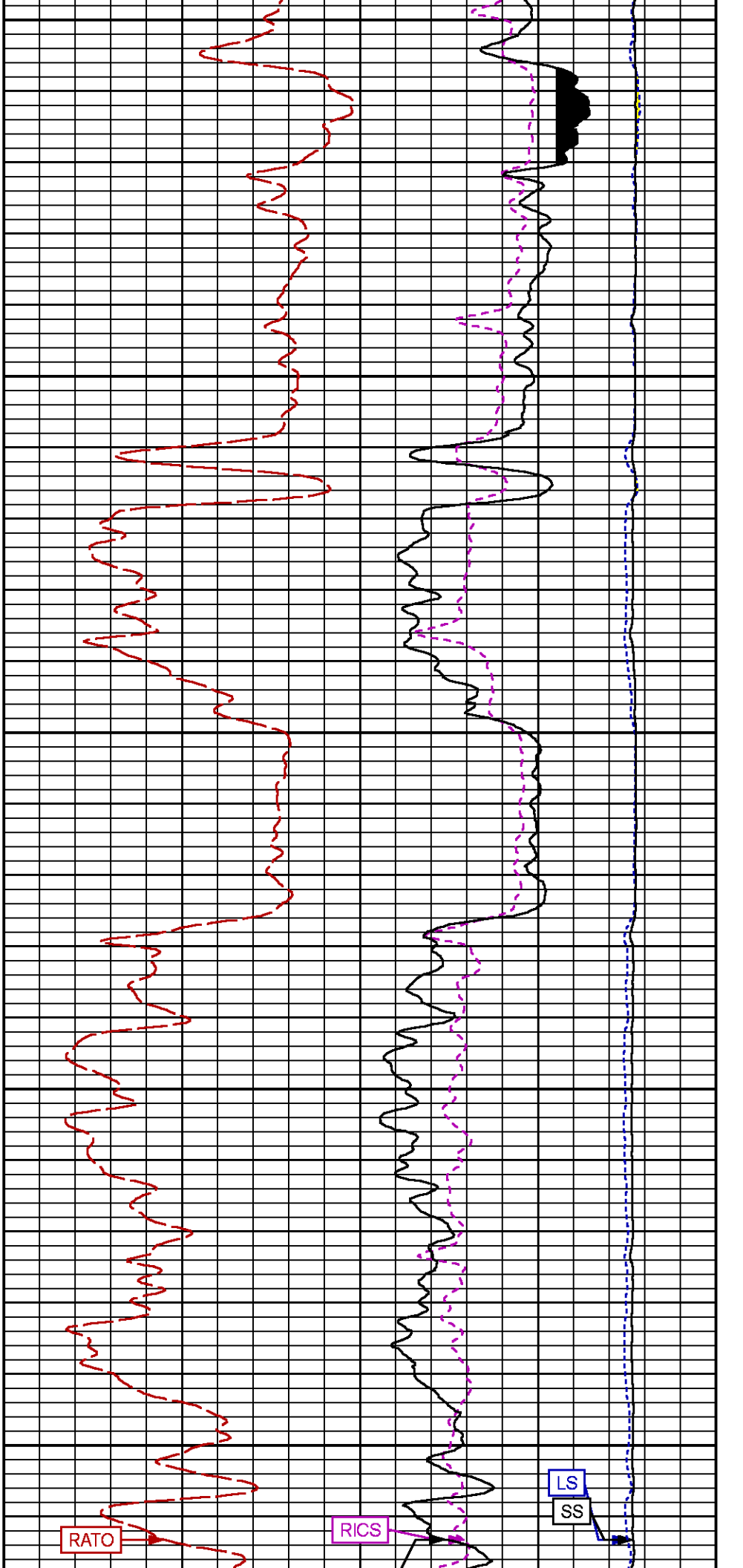
GAMMA RAY [gr]

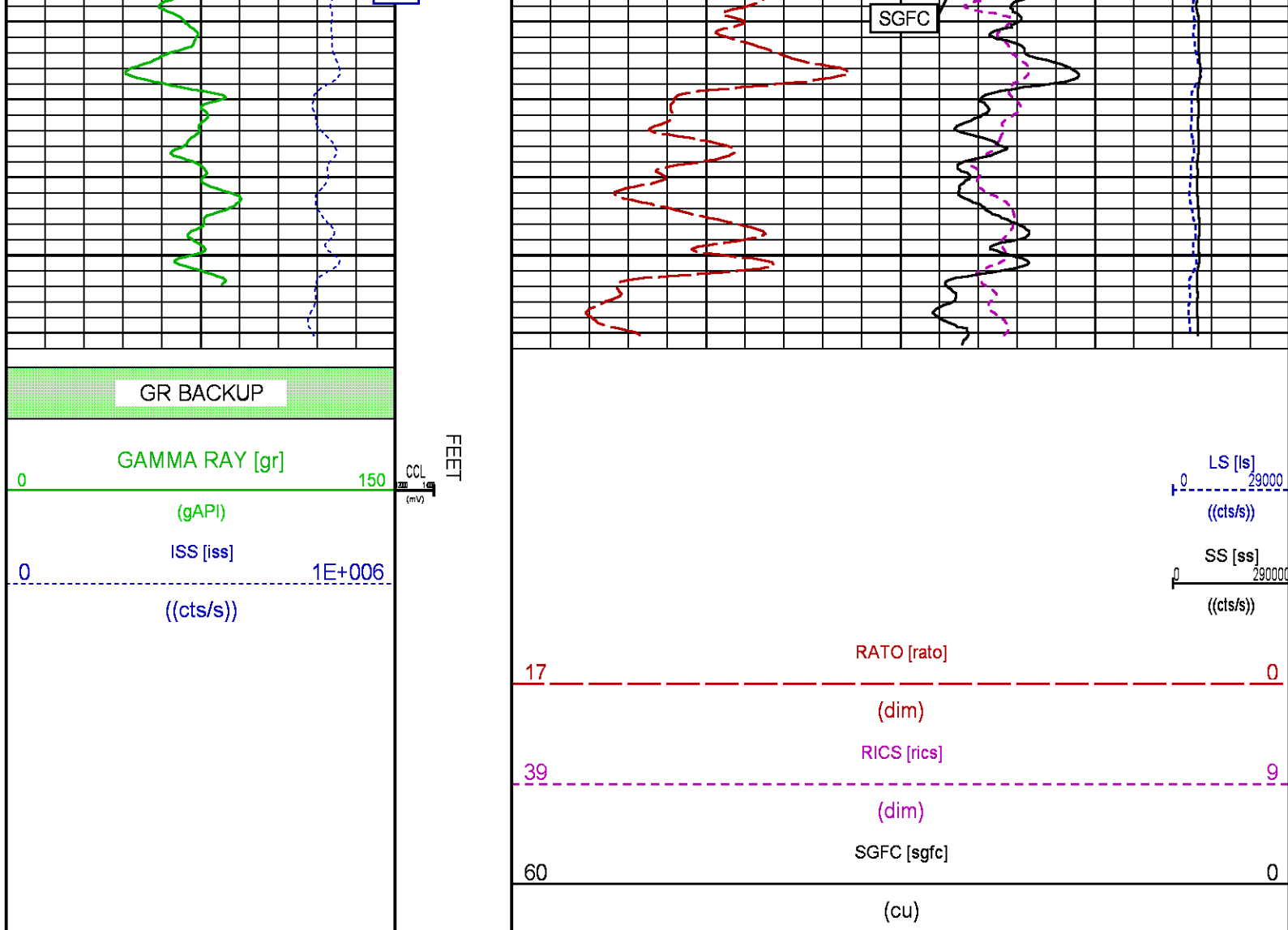
FEET

LS [ls]









## MAIN PASS PNC-3D MODE

ECLIPS 7.0w PC-ECLIPS General Release Rel 7.0w Fri Jun 09 11:02:06 Central Daylight Time 2017  
Patches: 1

Plotted: Sat Oct 28 19:17:08 2017

### PARAMETER AND FILTER SUMMARY REPORT

FILE: C:\dat1a\BRUTON\_19\_03E\ RPM3D102.prm  
LOGGING MODE: DEPTH DIRECTION: UP  
TOP DEPTH: 4593.727 ft BOTTOM DEPTH: 8334.097 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 OPEN/CASED HOLE	FLUID CASED HOLE		TOP BOTTOM

OPEN/CASED HOLE	CASED HOLE			
BOREHOLE SIZE	7.88	in	"	"
LARGEST CASING OD	4.50	in	"	"
MATRIX	SANDSTONE		"	"
CORRECTION BUFFER	11		"	"

## CURVE DESCRIPTION REPORT

CURVE NAME CREATION DATE

CURVE DESCRIPTION

F1:CCL	N/A	CASING COLLAR LOCATOR
F1:GR	N/A	GAMMA RAY
F1:ISS	N/A	INELASTIC SHORT SPACE COUNT RATE
F1:LS	N/A	LONG SPACE COUNT RATE
F1:RATO	N/A	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	N/A	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	N/A	BOREHOLE AND DIFFUSION CORRECTED SIGMA
F1:SS	N/A	SHORT SPACE COUNT RATE

## CURVE MEASURE POINT OFFSET

CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	-21.75	ISS	-9.50	RATO	-9.50	SGFC	-9.50
GR	-19.25	LS	-9.50	RICS	-9.50	SS	-9.50

Presentation : BHI78FR4H2:C:\dat1a\BRUTON\_19\_03E\BRUTON\_19\_03E\_RPM\_MAIN.fvpdf [5"/100' Scale]  
Plot Interval : 4572.75 - 8335 Feet

Data File 1 : F1 : BHI78FR4H2:C:\dat1a\BRUTON\_19\_03E\BRUTON\_19\_03E\_RPM\_MAIN.xtf  
Created On : N/A  
Company : LARAMIE ENERGY II LLC  
Well : BRUTON 19-03E  
Field : VEGA  
File Interval : 4572 - 8330 Feet  
OCT : RPM3D1

GR BACKUP

GAMMA RAY [gr]

(gAPI)

ISS [iss]

((cts/s))

FEET

CCL  
(mV)

4600

LS [ls]

((cts/s))

SS [ss]

((cts/s))

RATO [rato]

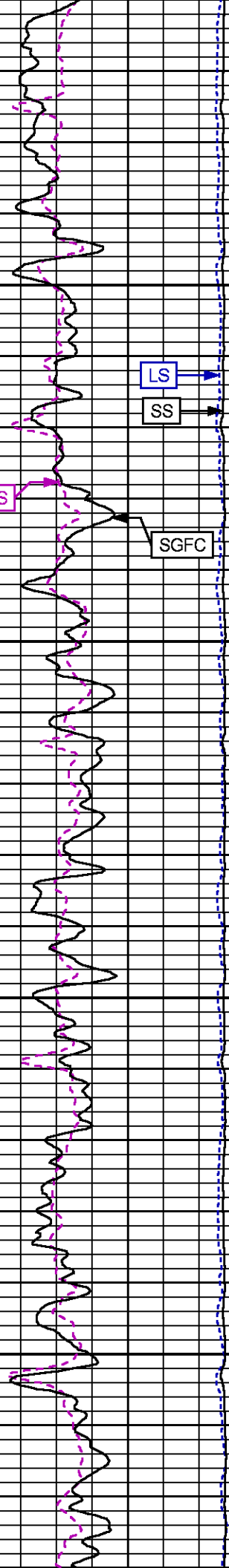
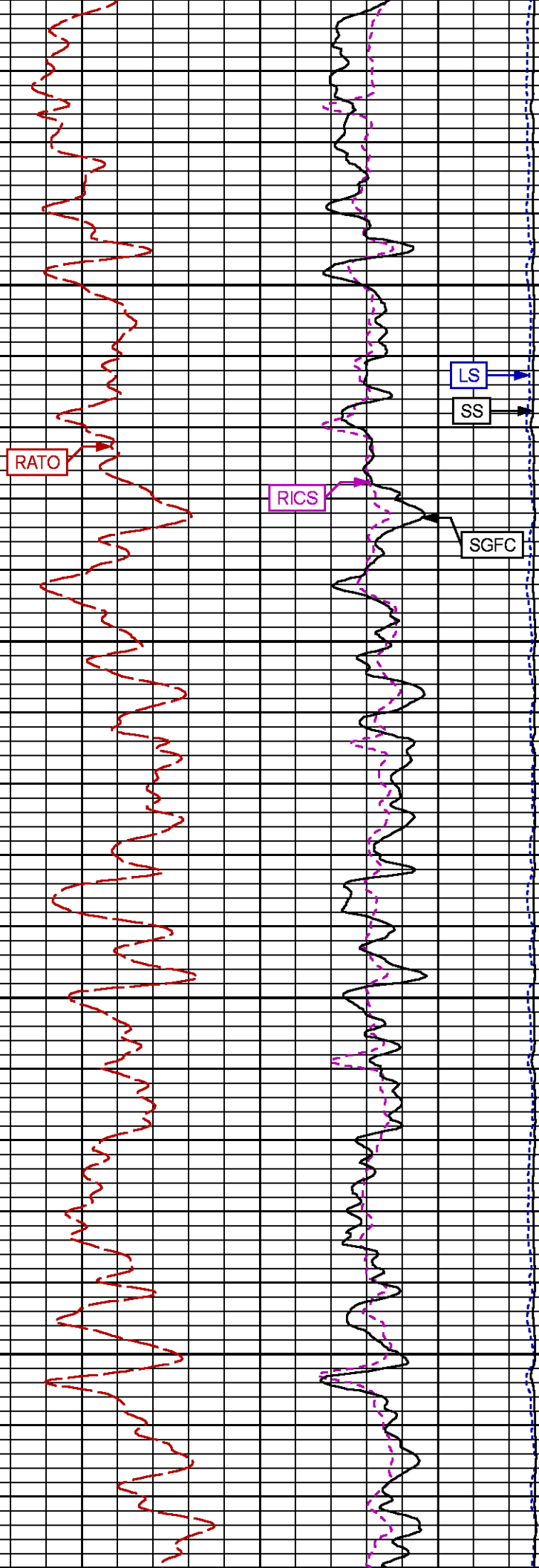
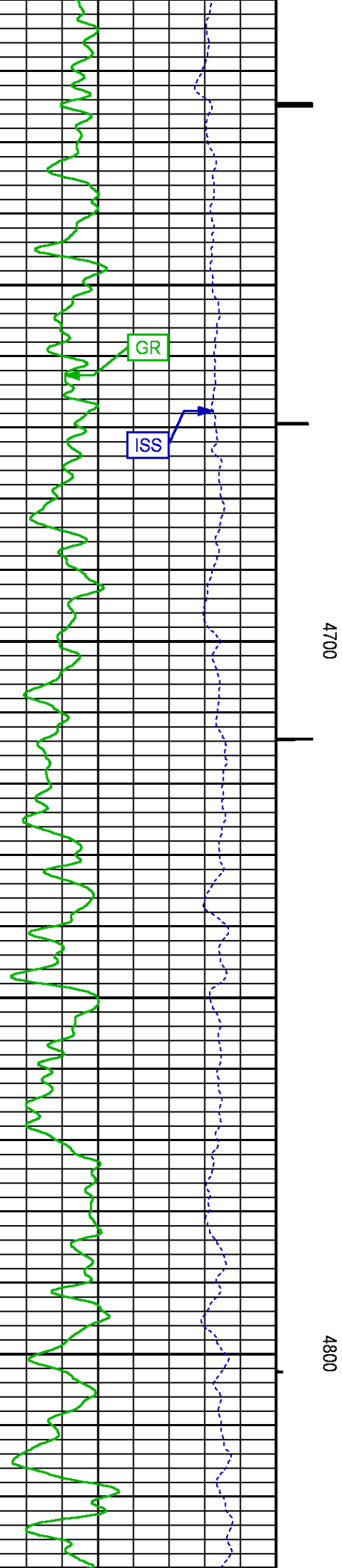
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RICS [rics]

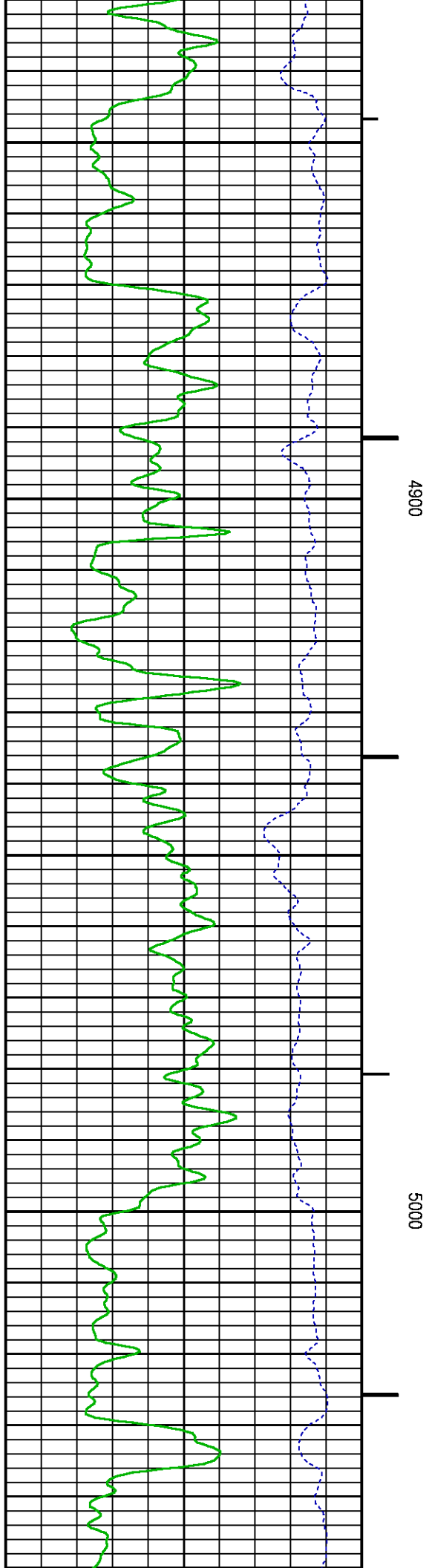
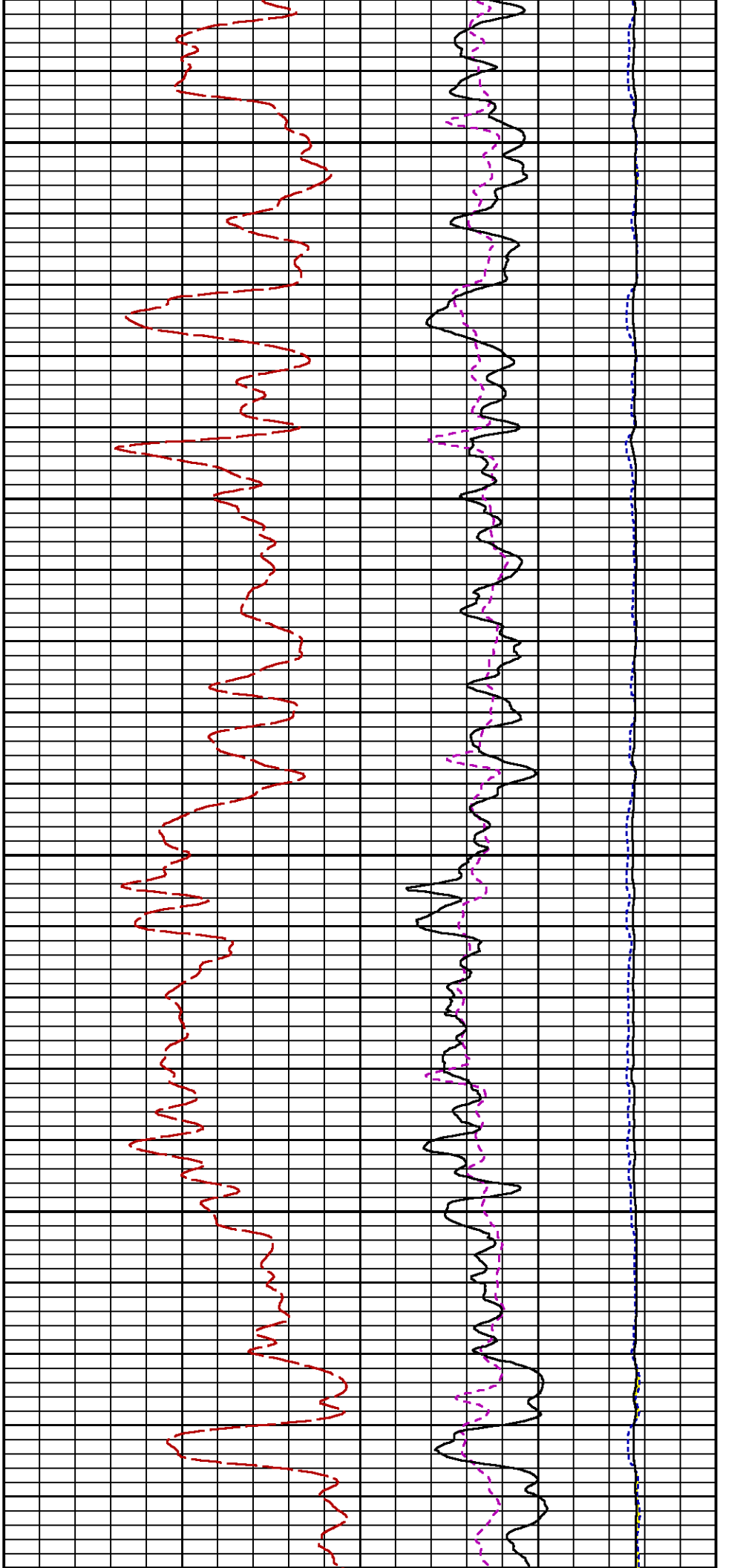
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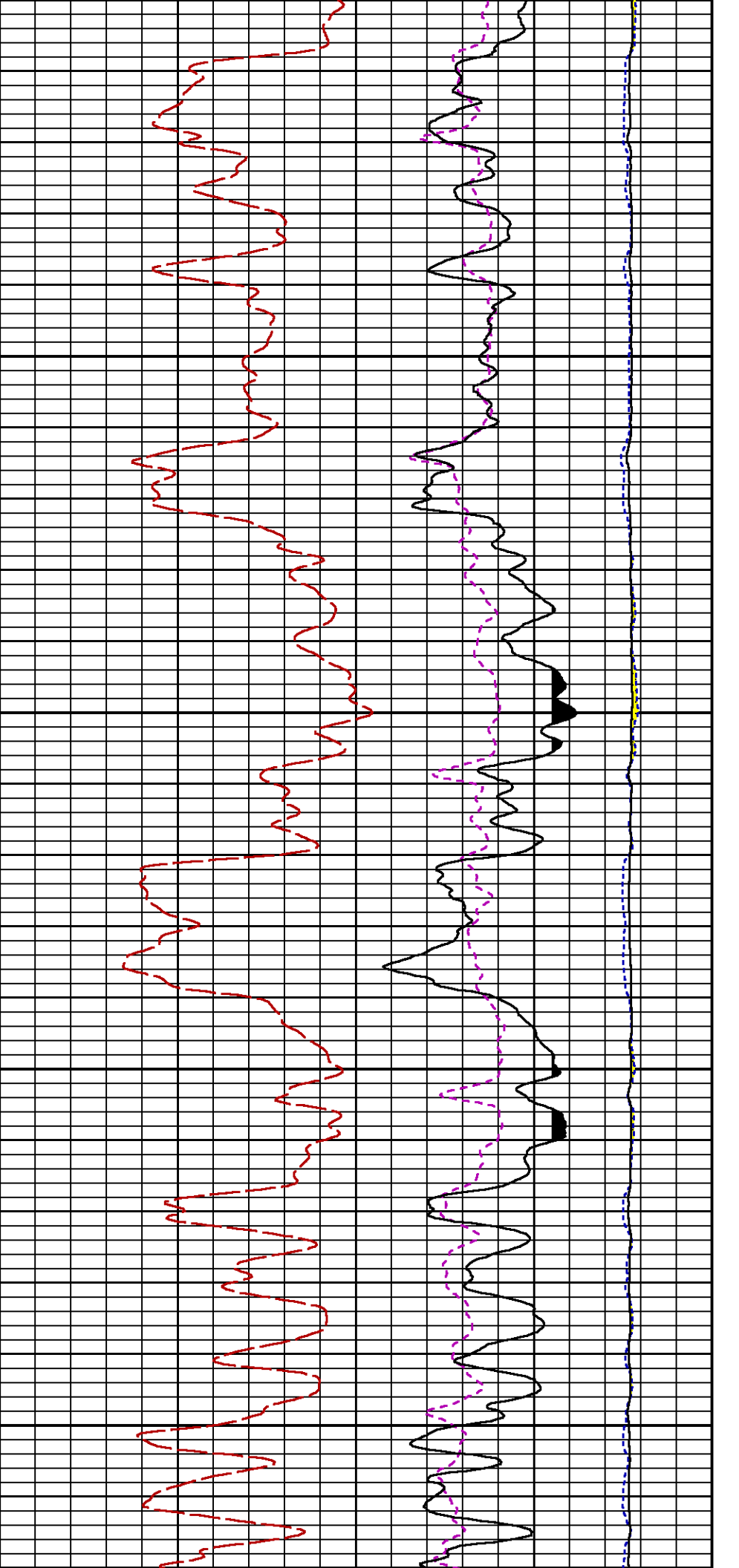
SGFC [sgfc]

(cu)



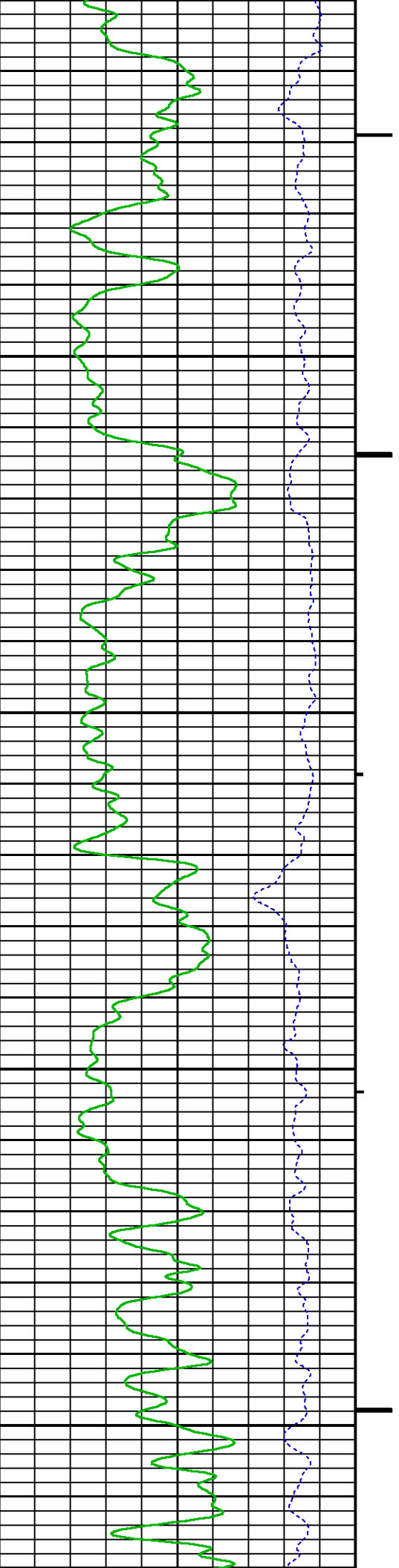


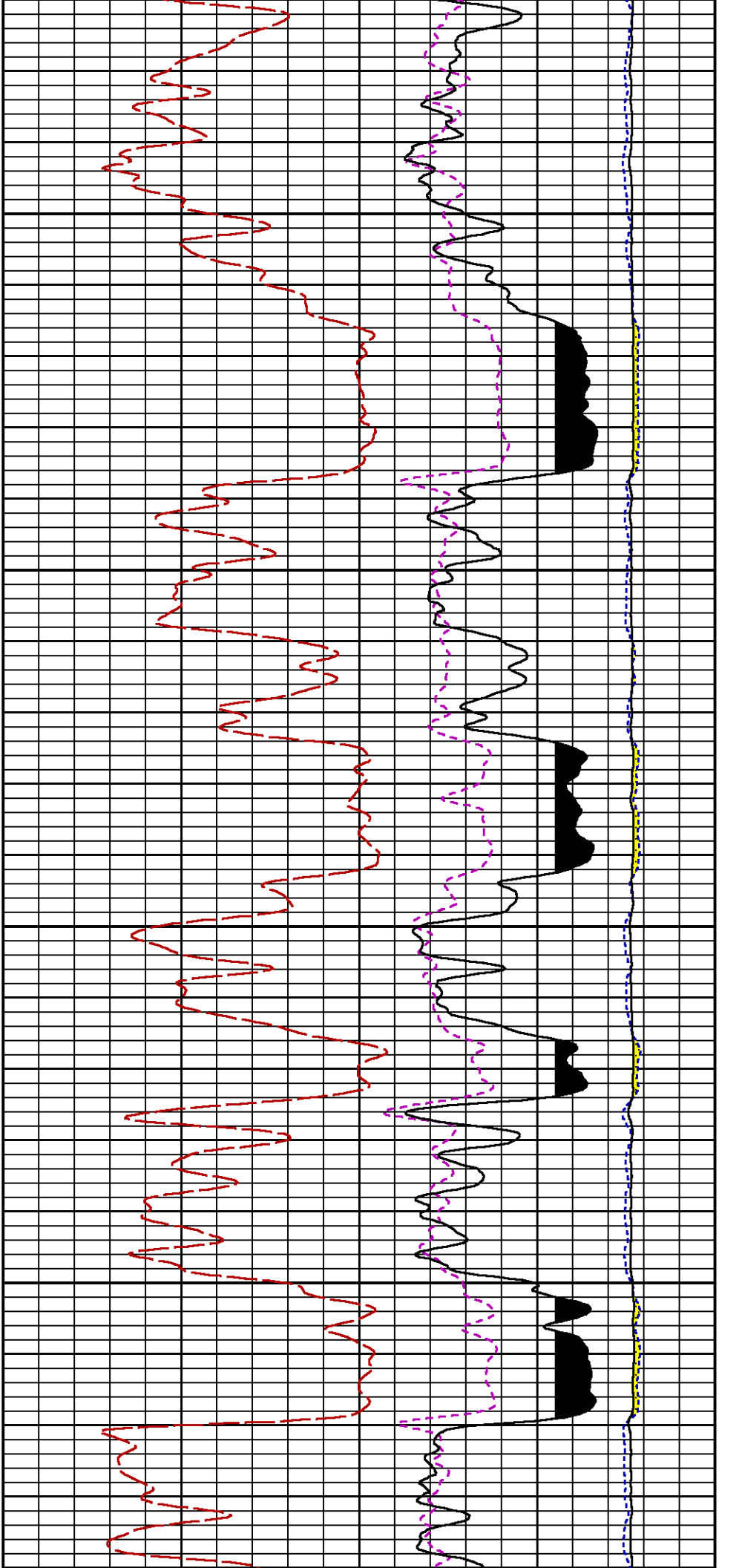




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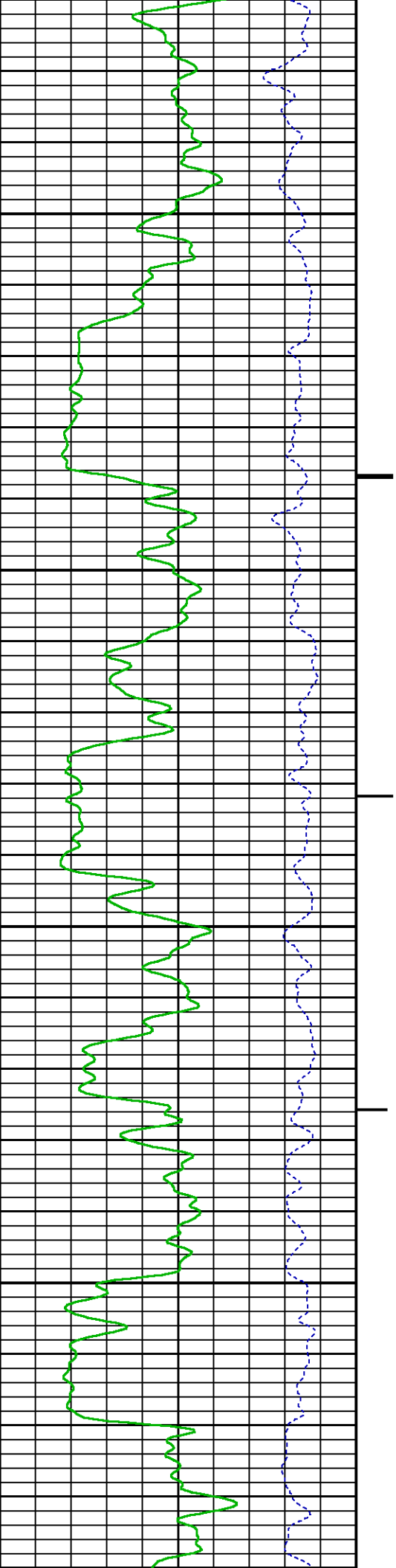
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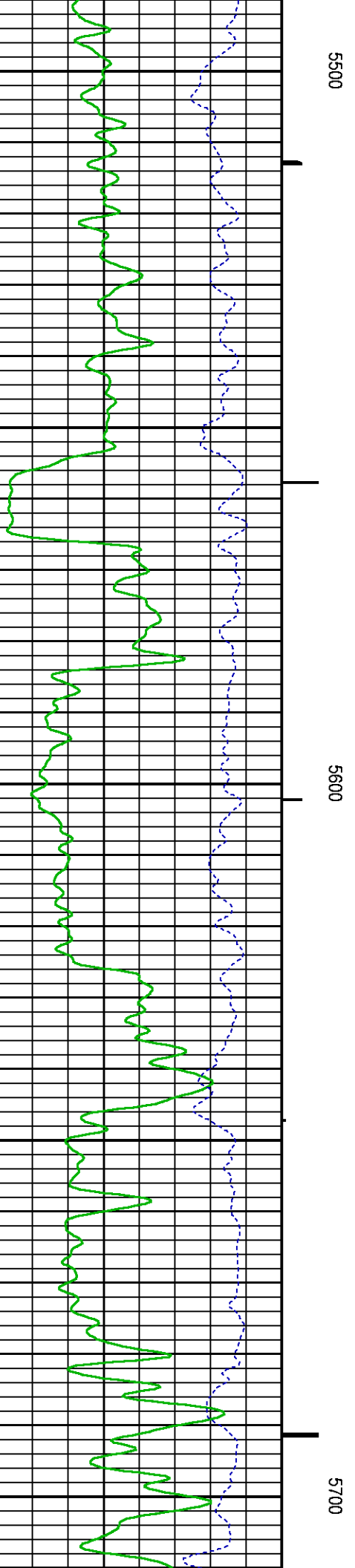
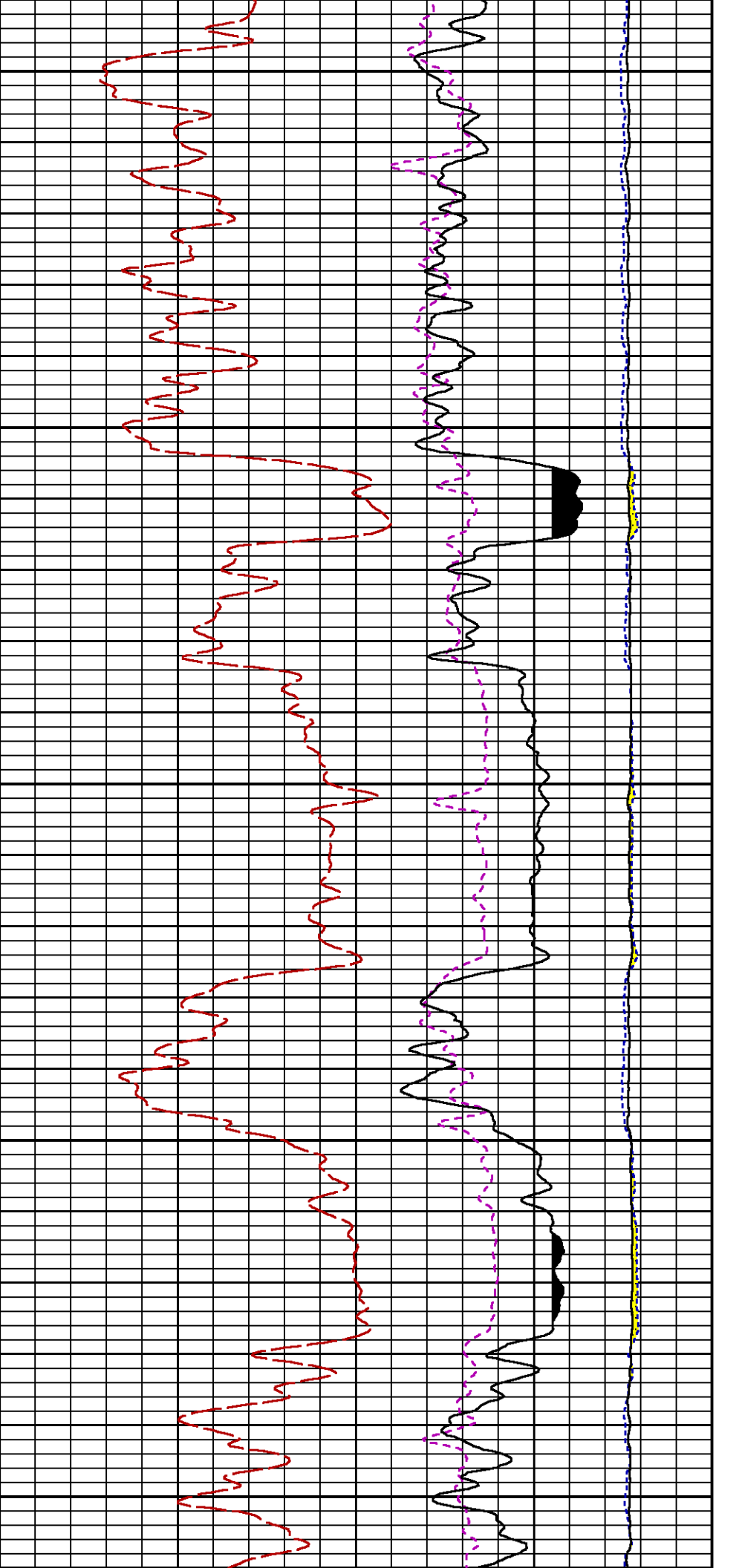


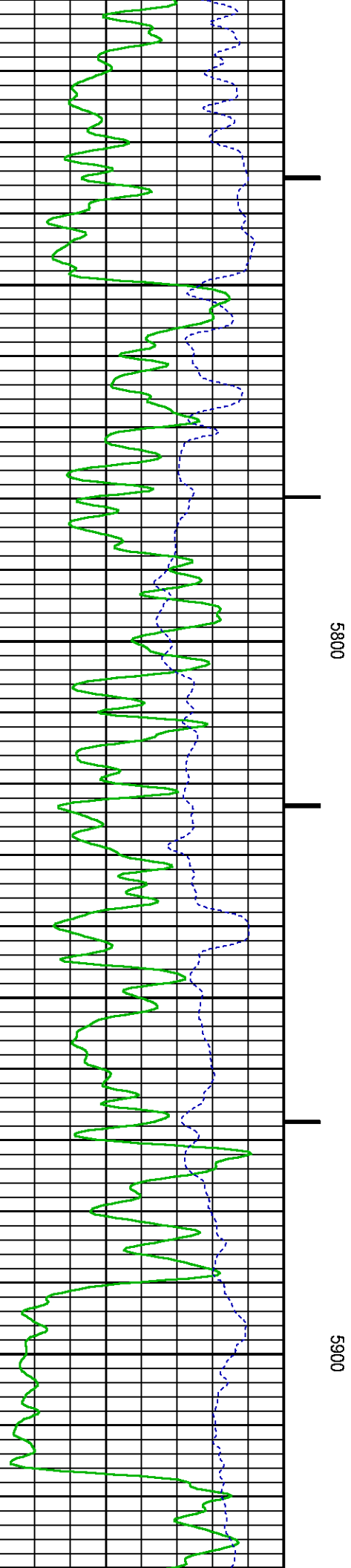
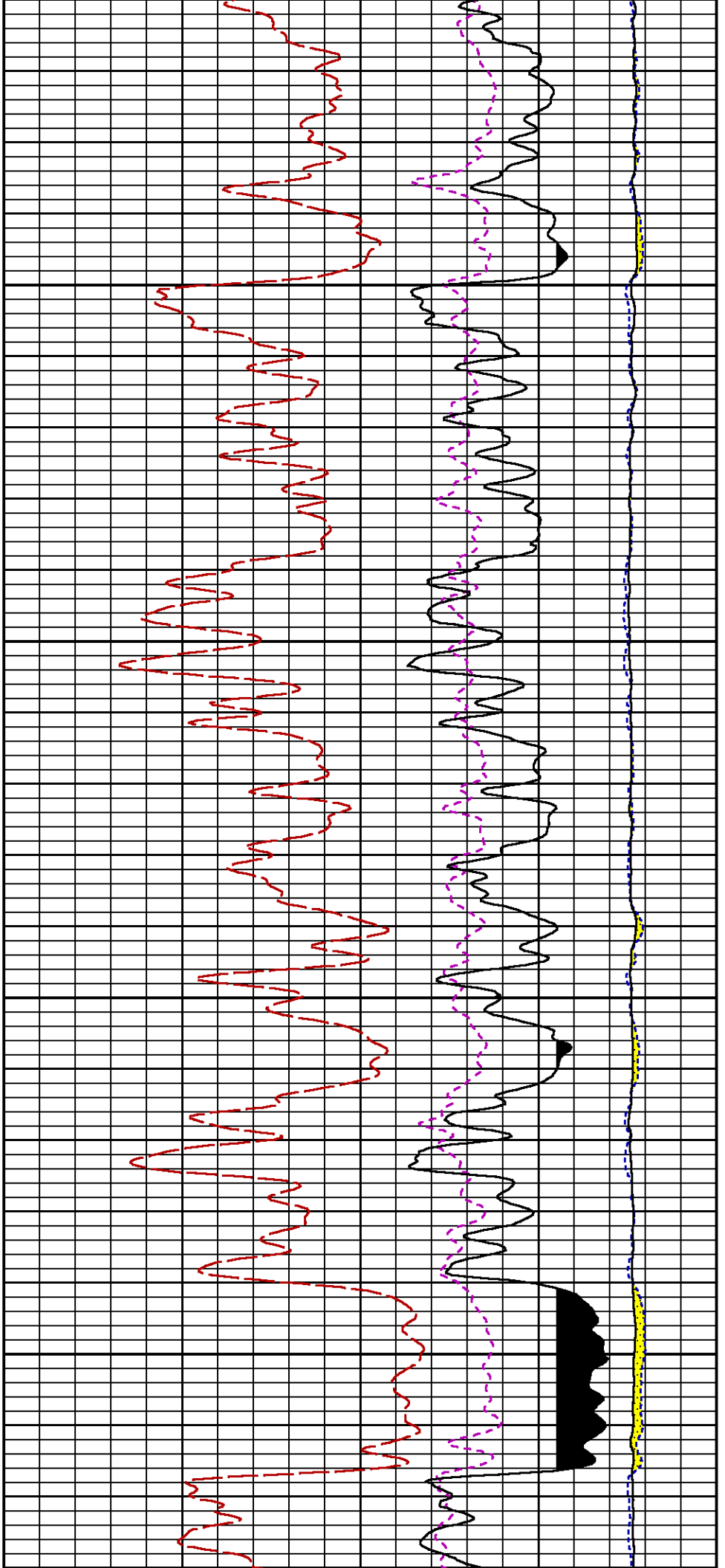


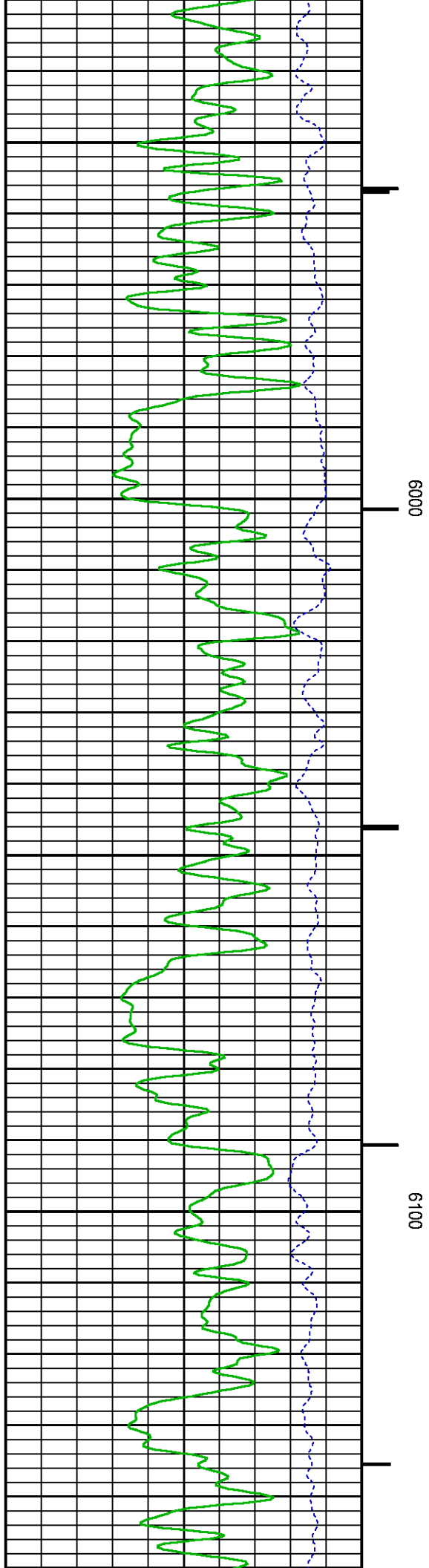
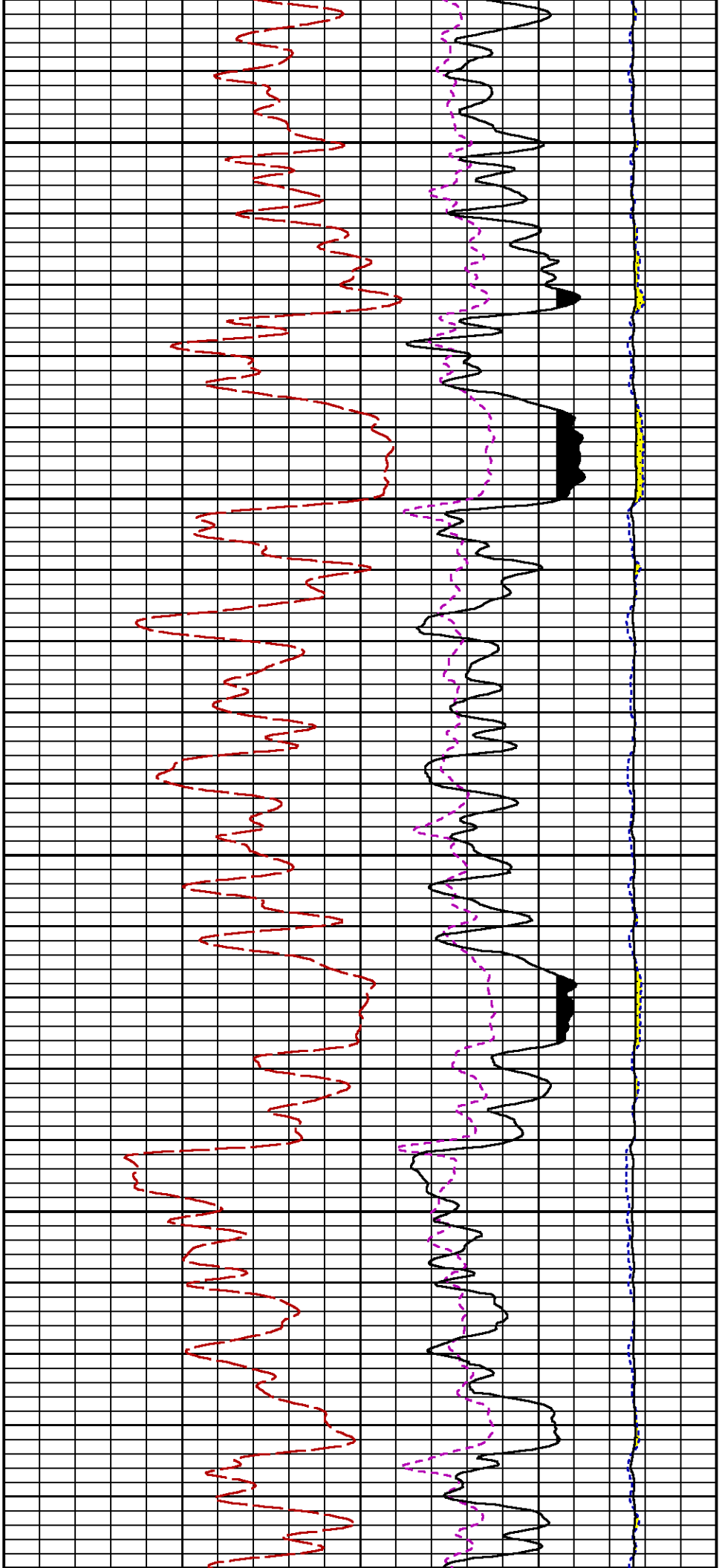
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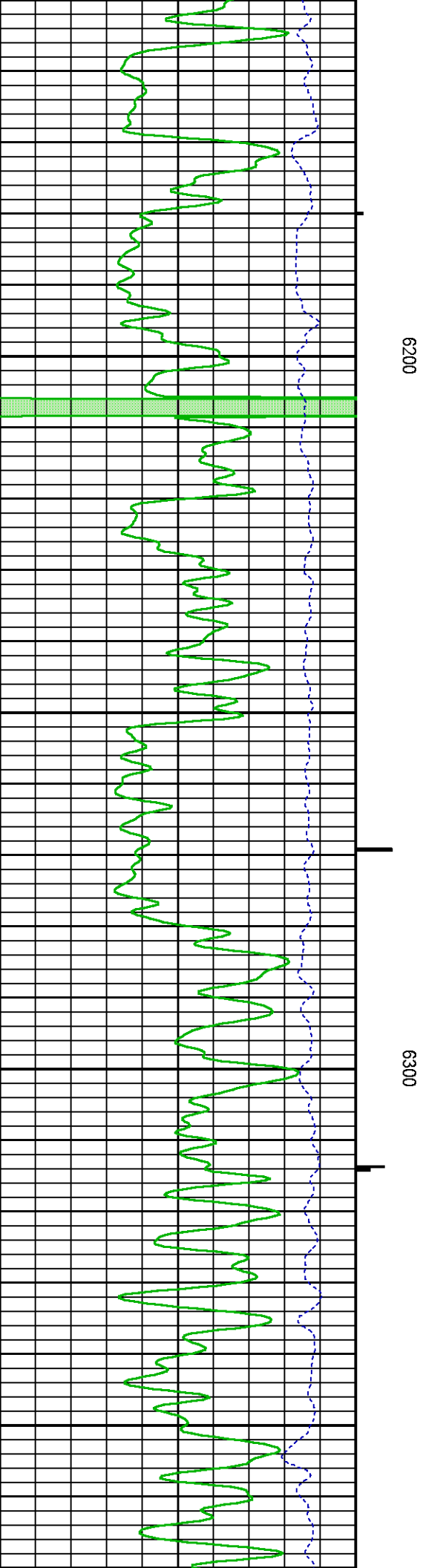
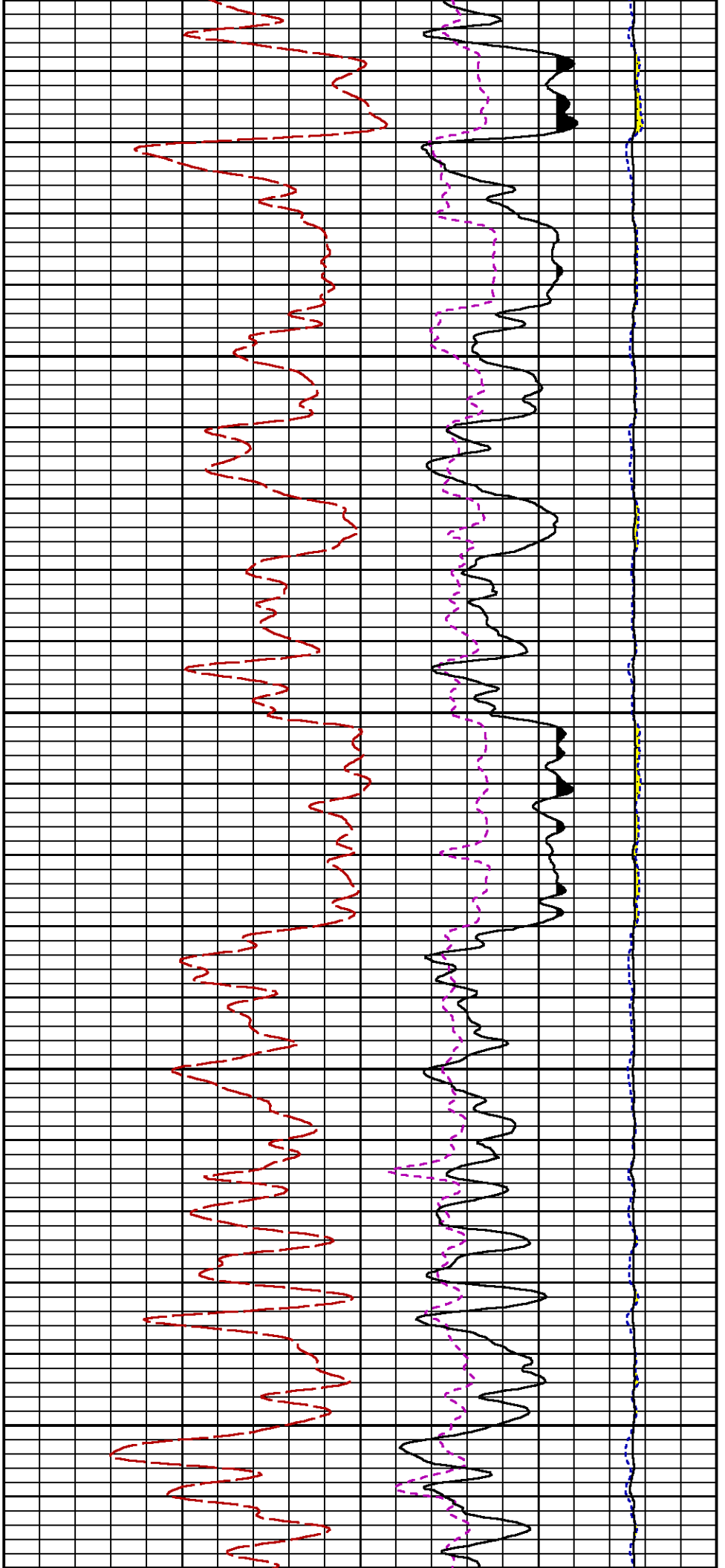
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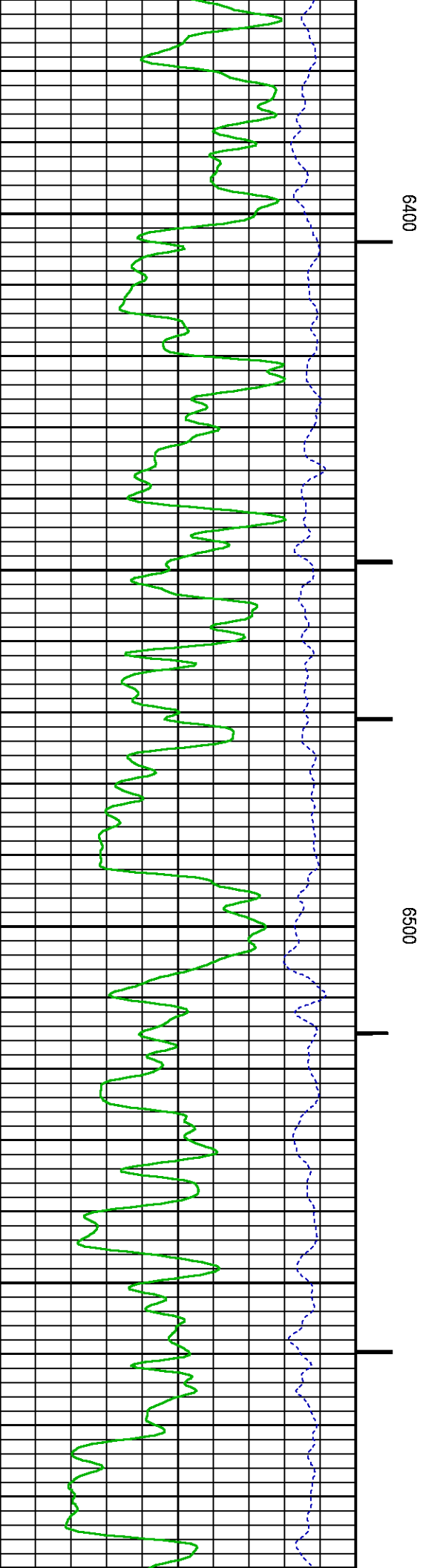
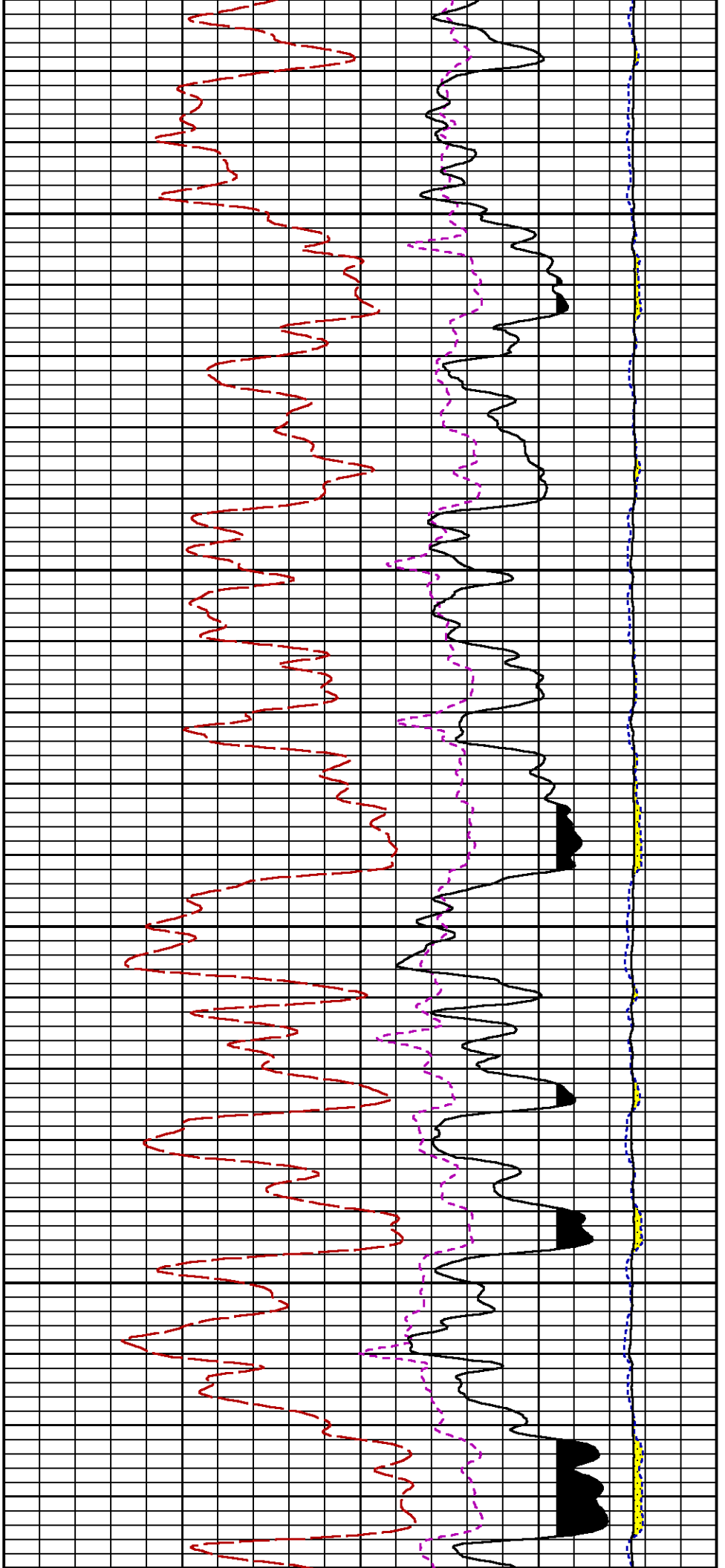




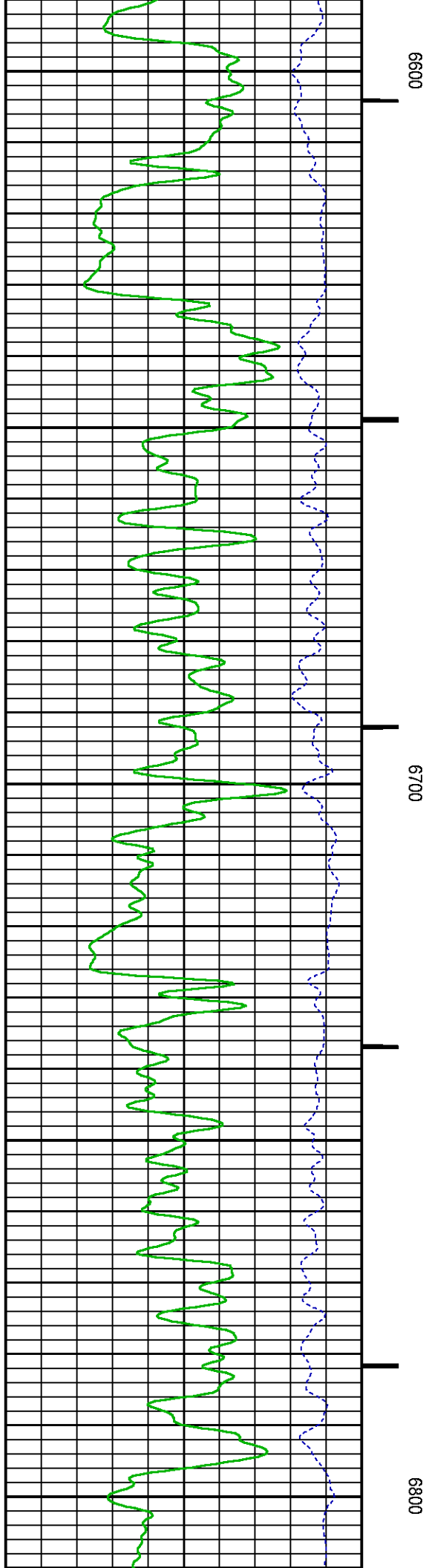
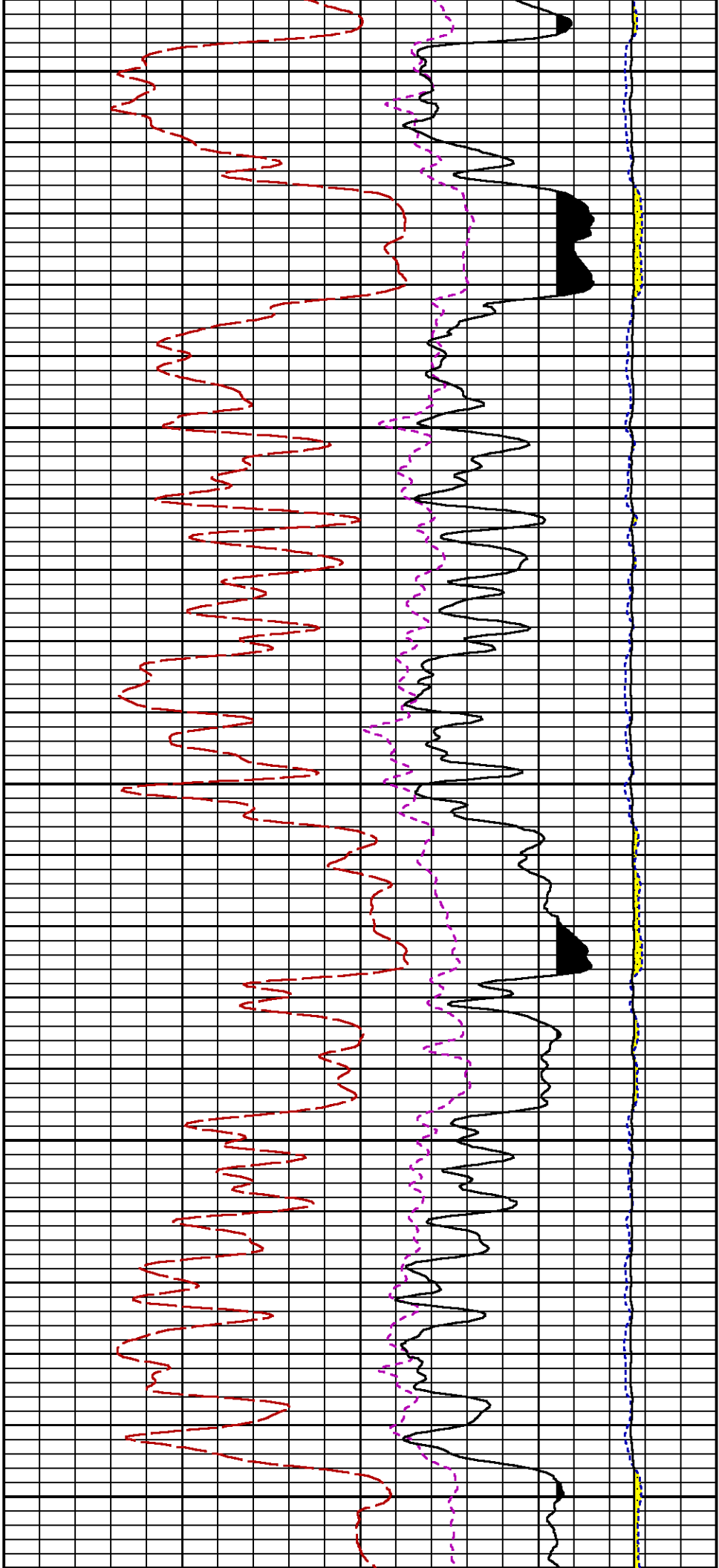


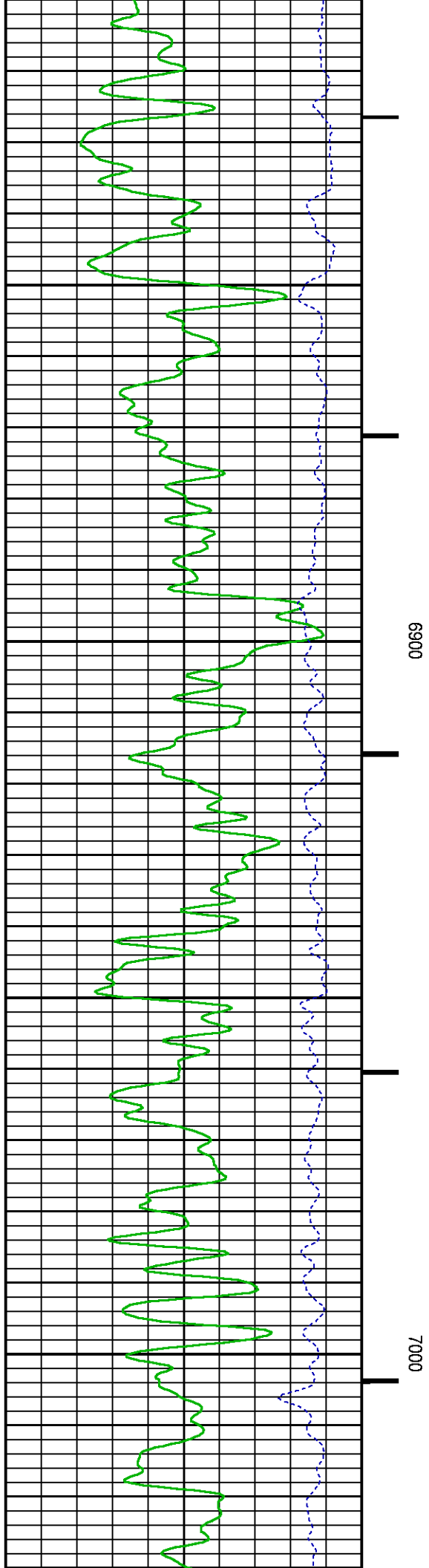
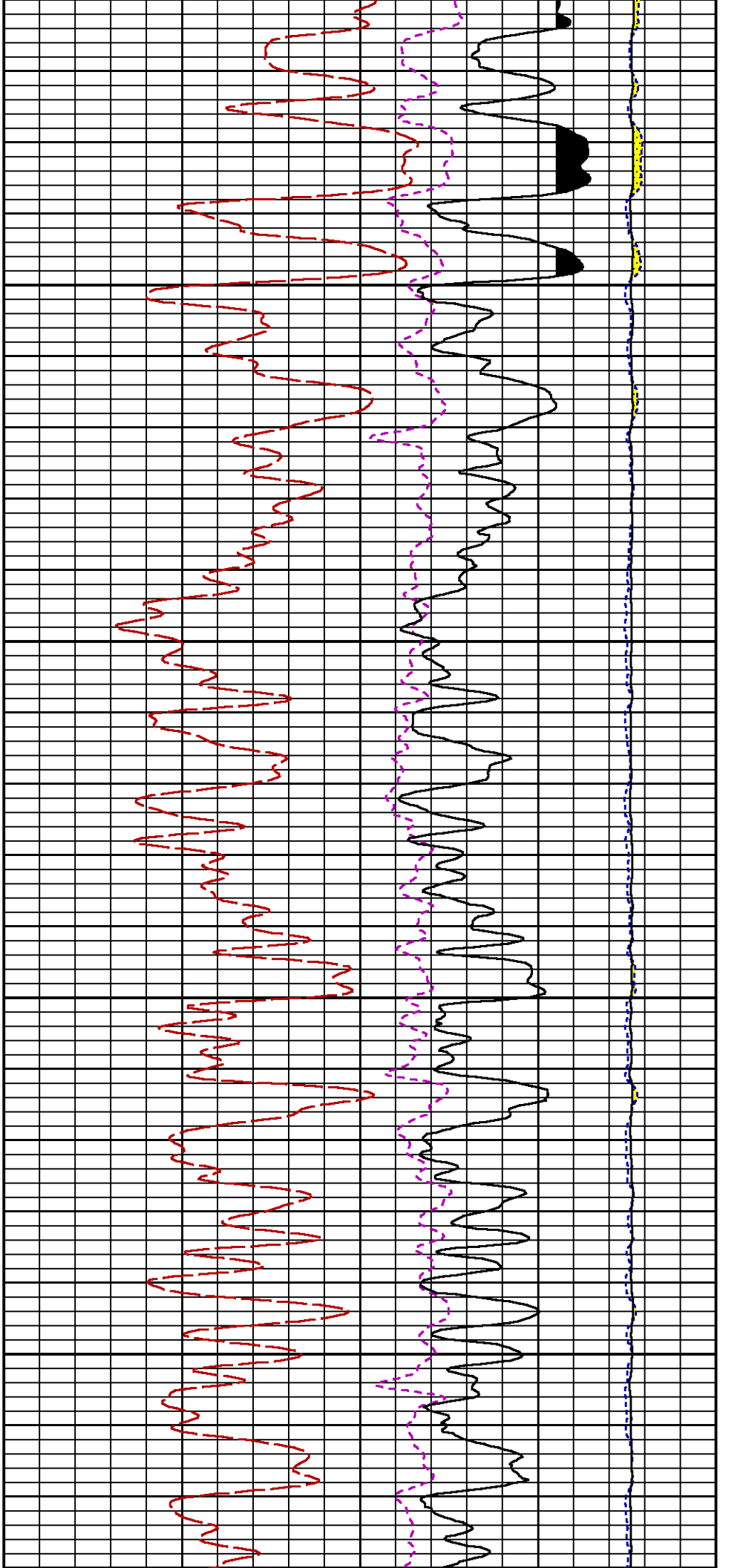


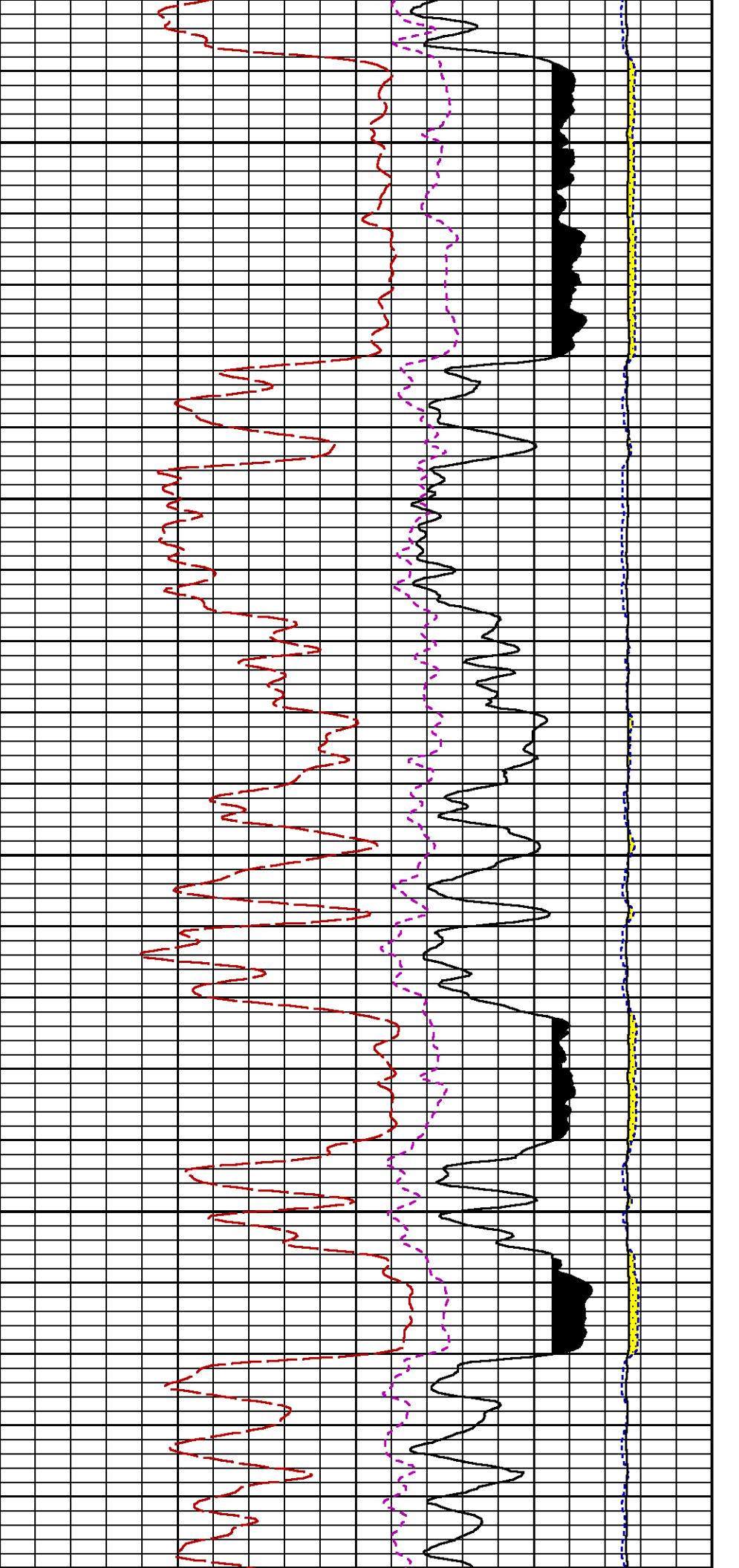






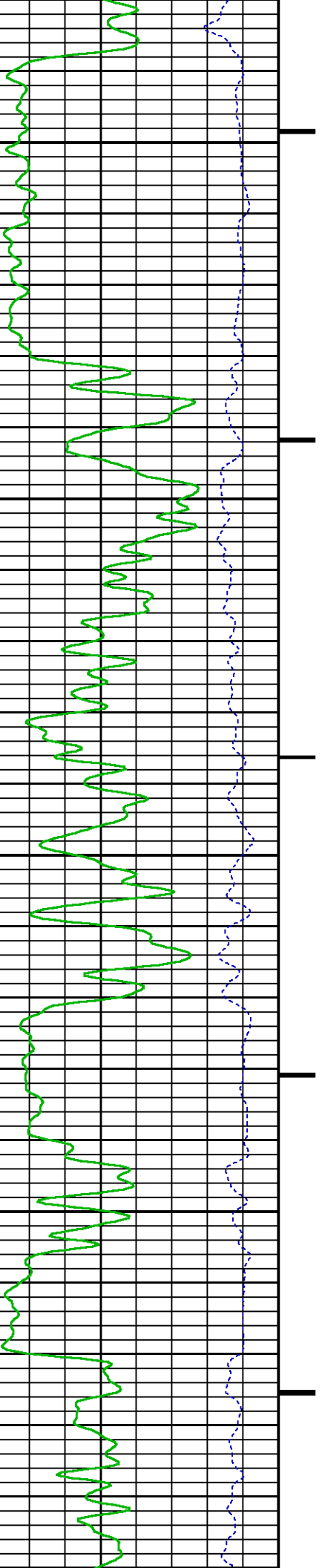


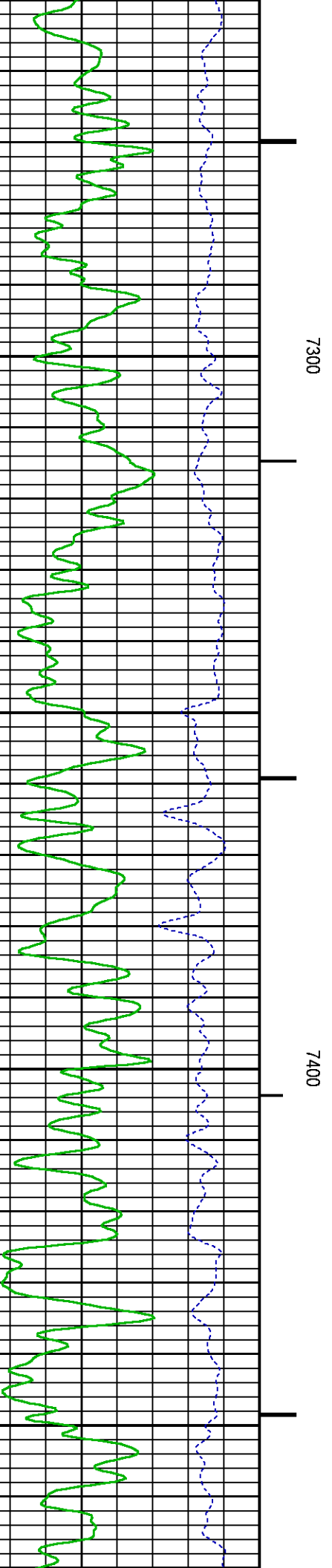
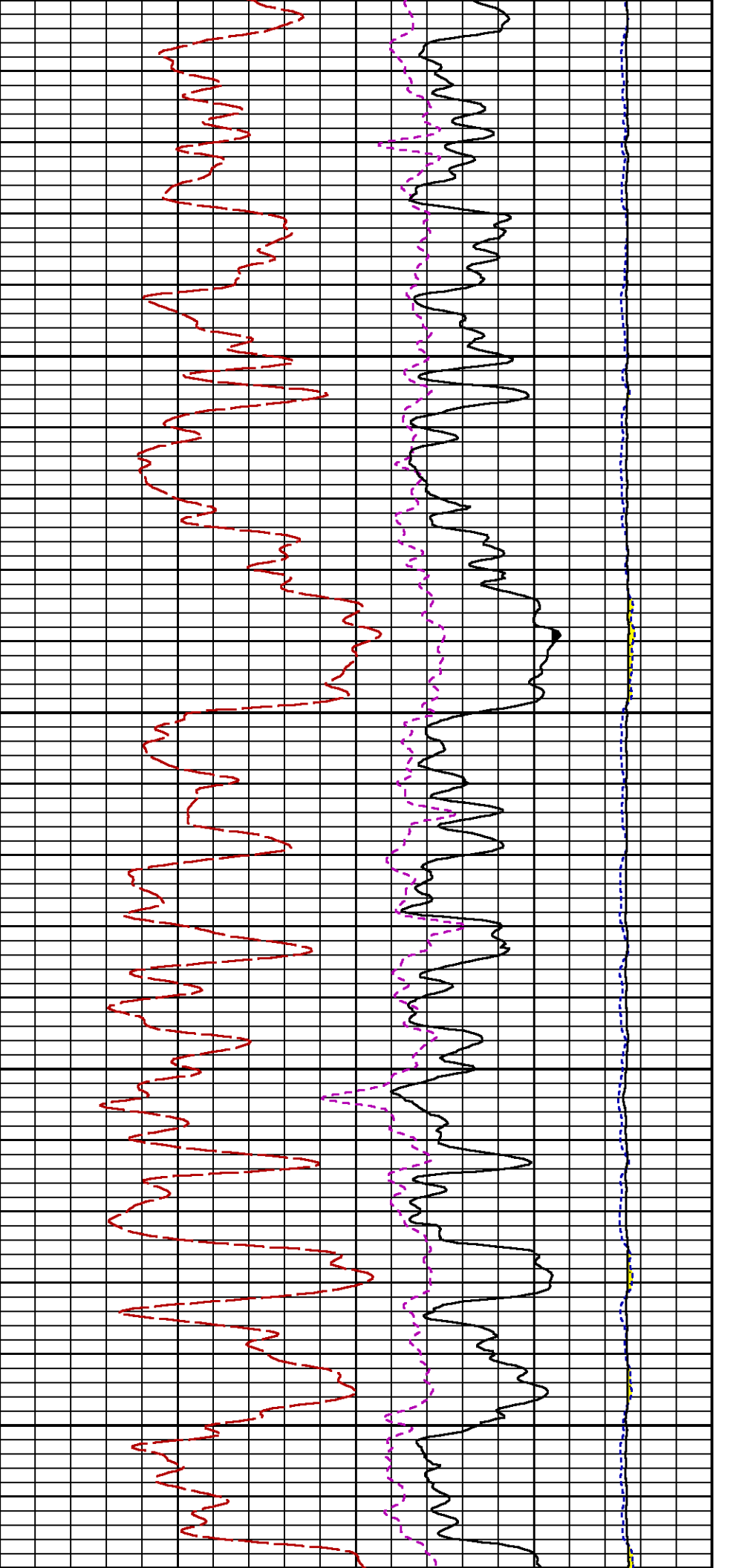


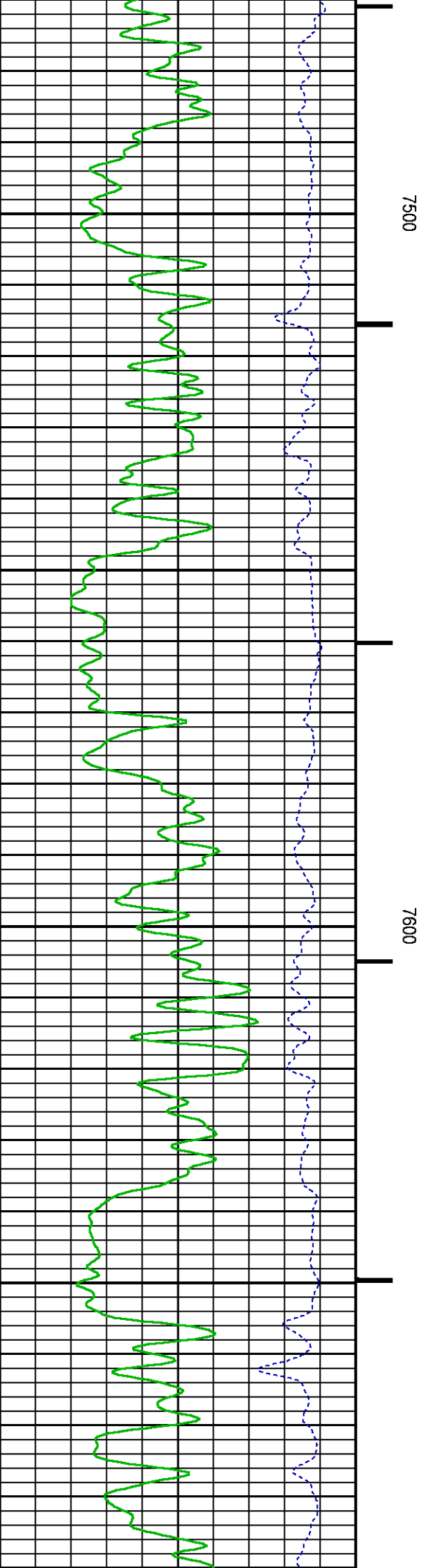
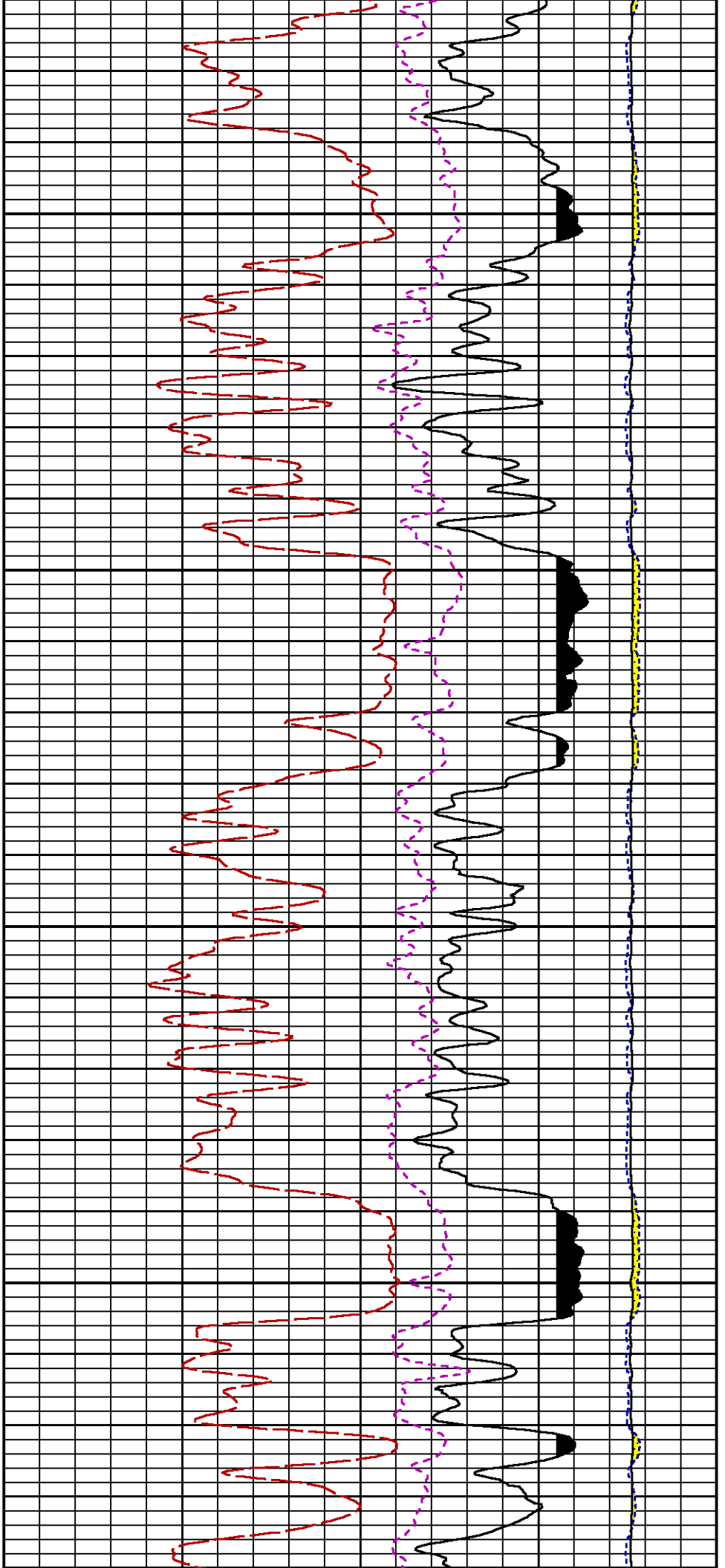


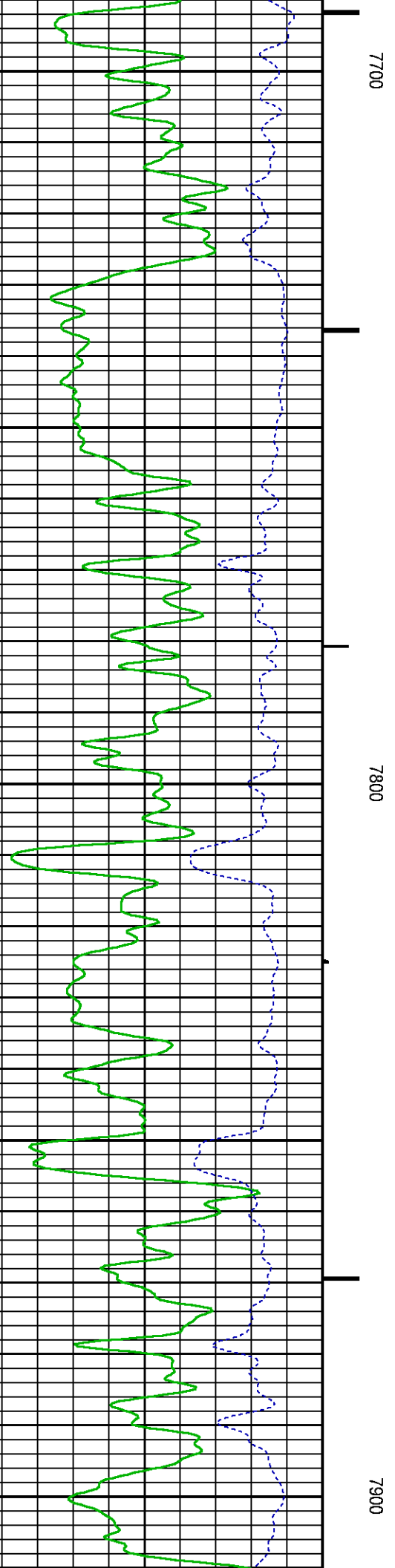
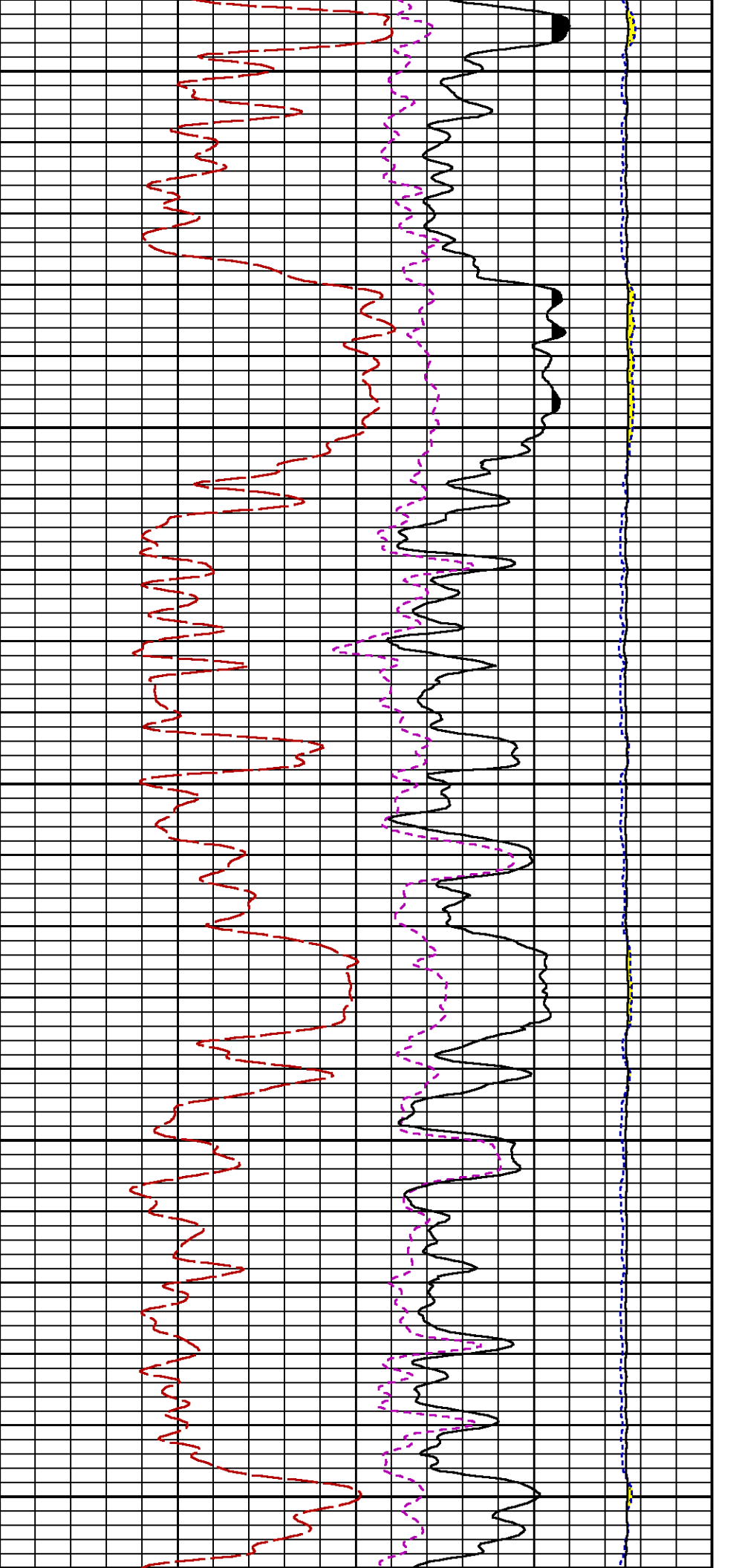
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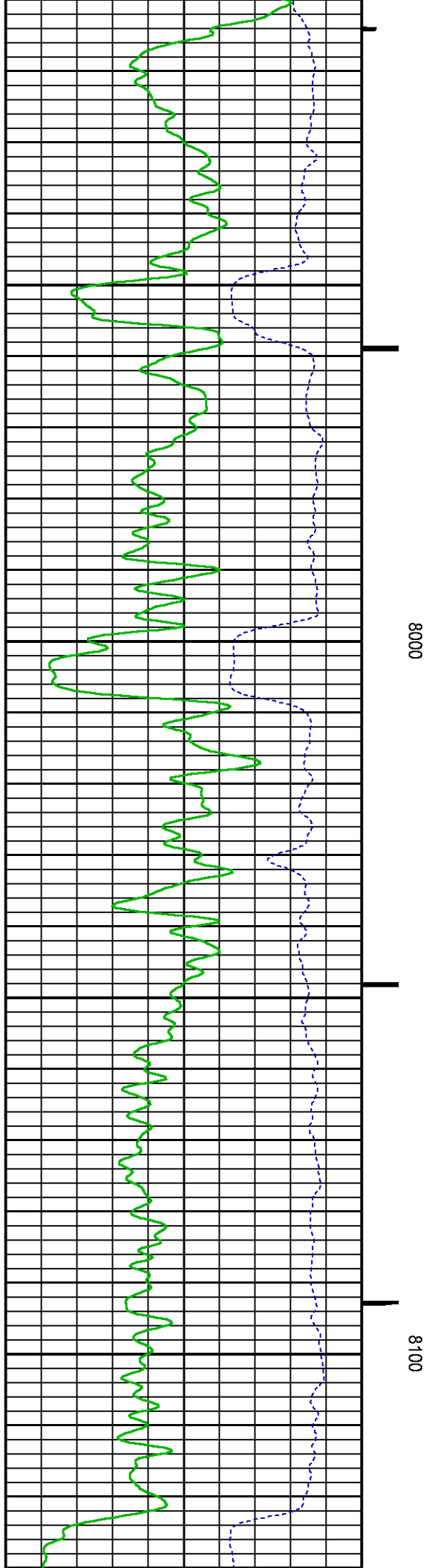
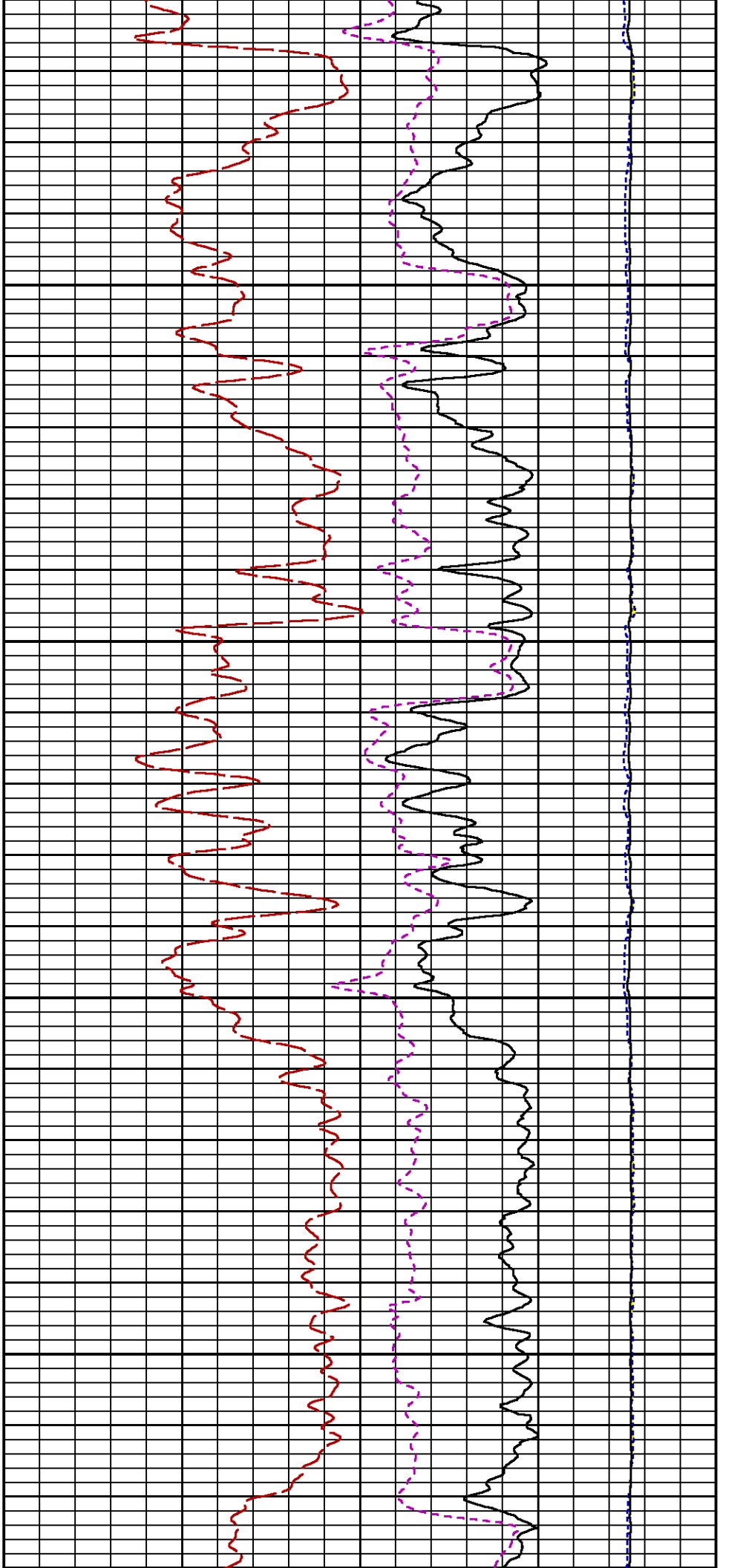
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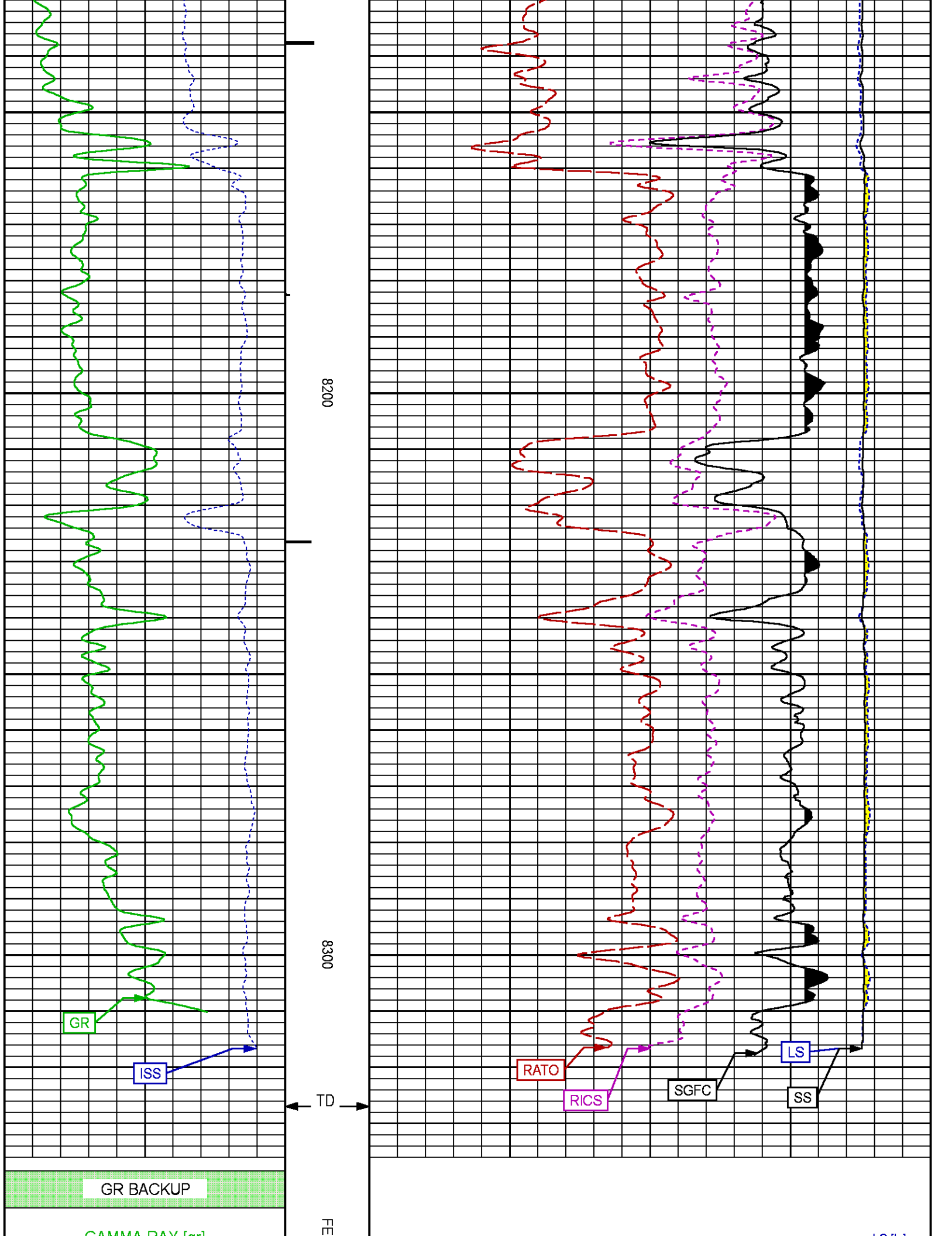




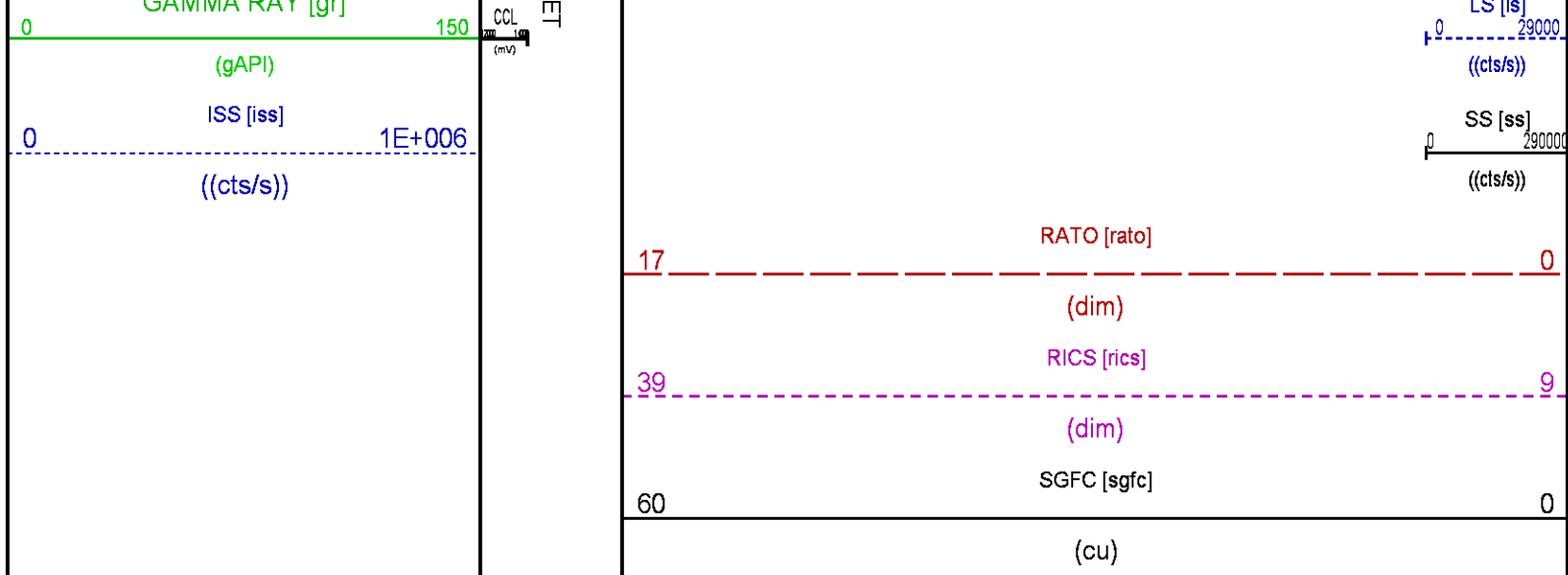












REPEAT PASS PNC-3D MODE

ECLIPS 7.0w PC-ECLIPS General Release Rel 7.0w Fri Jun 09 11:02:06 Central Daylight Time 2017  
Patches: 1

Plotted: Sat Oct 28 15:33:33 2017

## PARAMETER AND FILTER SUMMARY REPORT

FILE: C:\dat1a\BRUTON\_19\_03EVRPM3D101.prm  
LOGGING MODE: DEPTH DIRECTION: UP  
TOP DEPTH: 7886.632 ft BOTTOM DEPTH: 8103.154 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	"	"
	LARGEST CASING OD	4.50	in	"	"
	MATRIX	SANDSTONE		"	"
	CORRECTION BUFFER	11		"	"

## CURVE DESCRIPTION REPORT

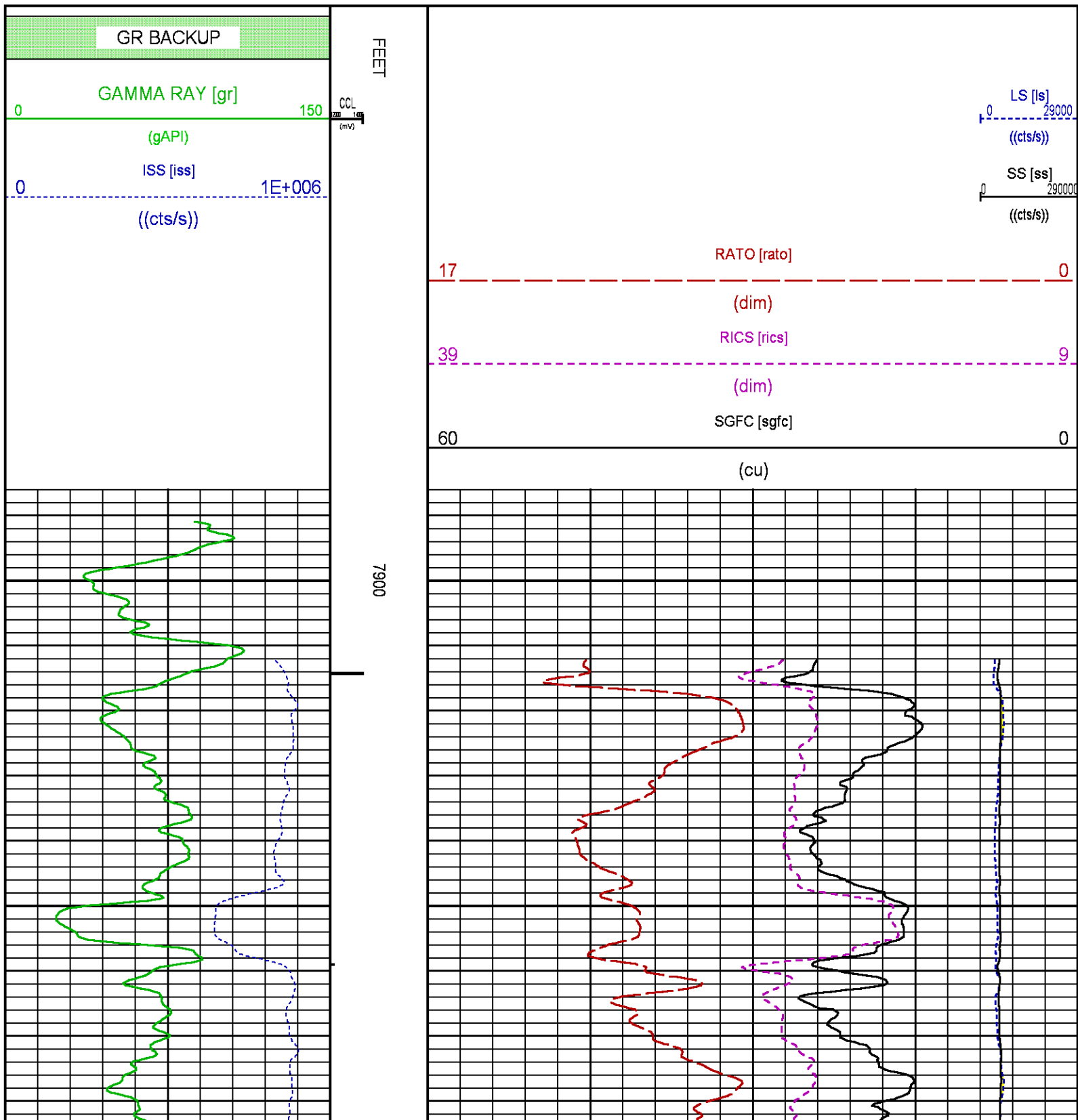
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	N/A	CASING COLLAR LOCATOR
F1:GR	N/A	GAMMA RAY
F1:ISS	N/A	INELASTIC SHORT SPACE COUNT RATE
F1:LS	N/A	LONG SPACE COUNT RATE
F1:RATO	N/A	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	N/A	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	N/A	BOREHOLE AND DIFFUSION CORRECTED SIGMA
F1:SS	N/A	SHORT SPACE COUNT RATE

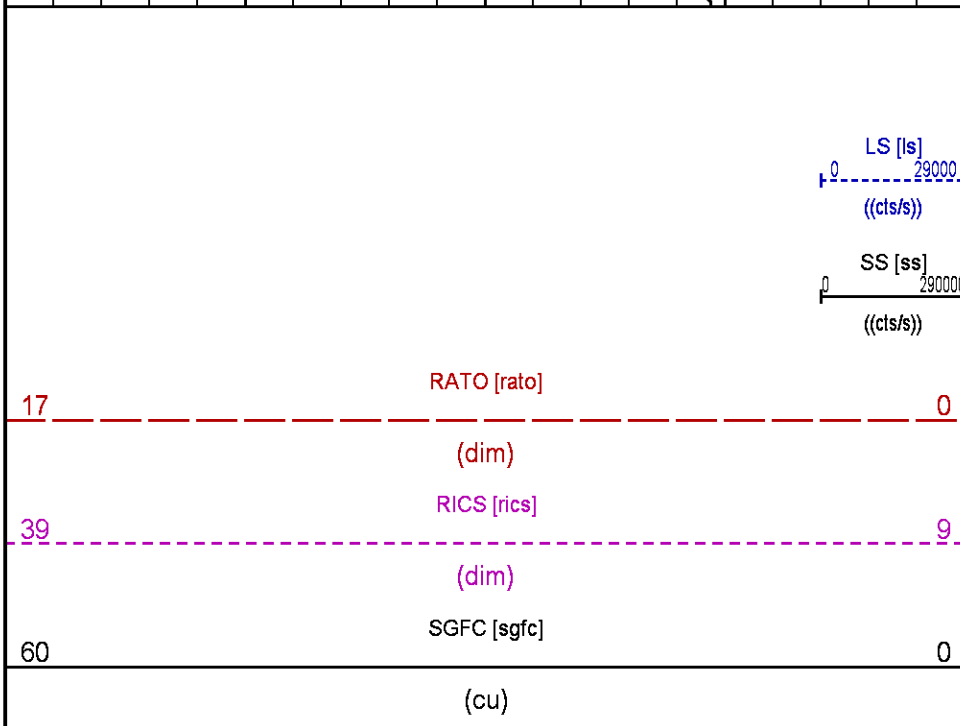
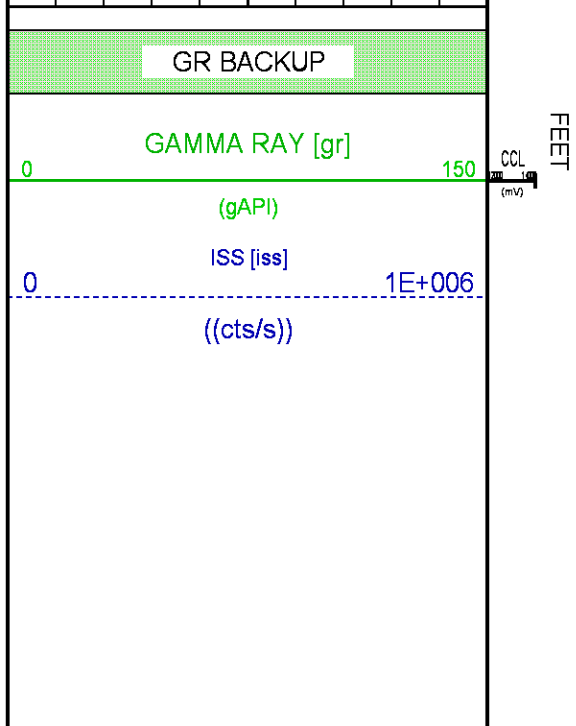
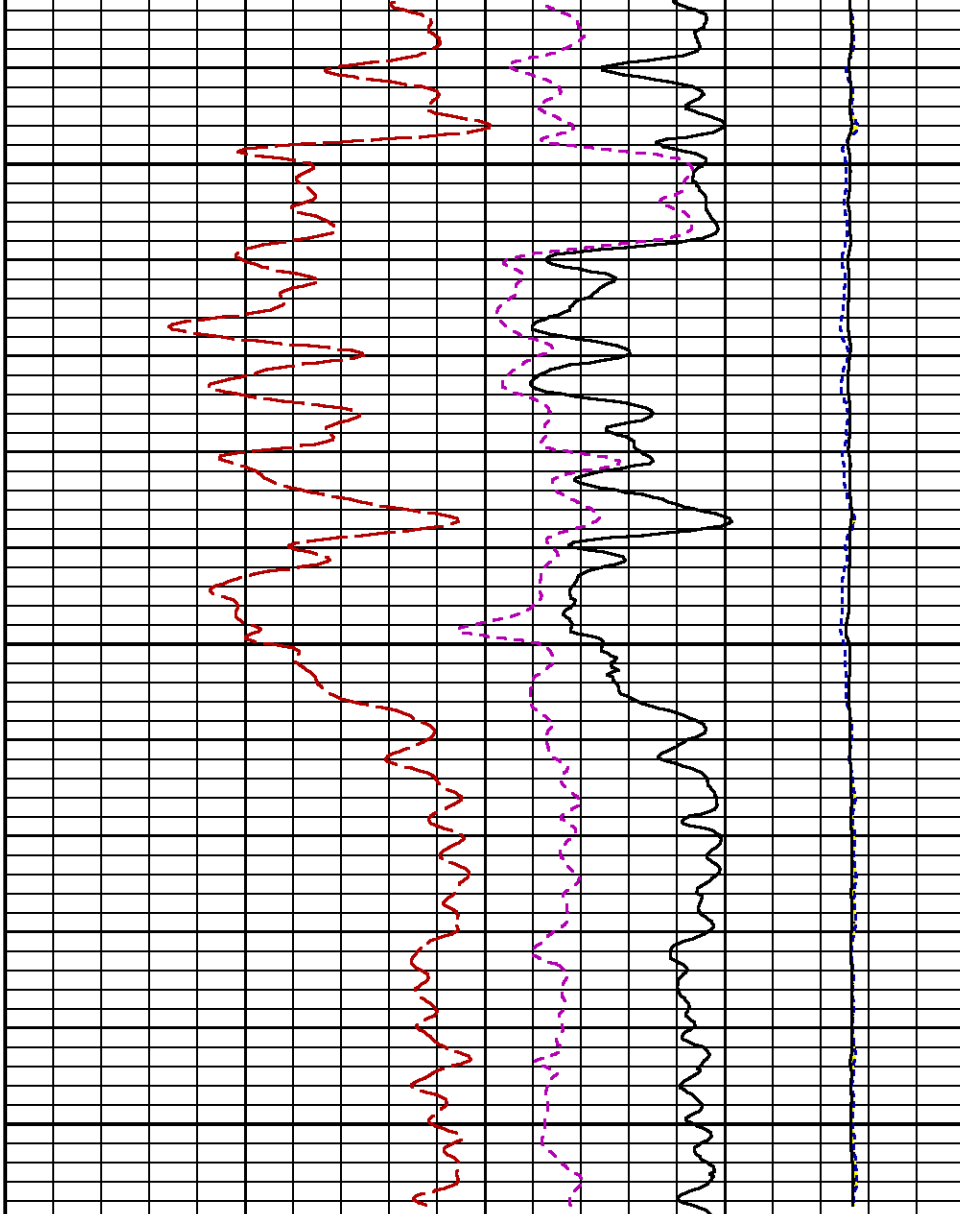
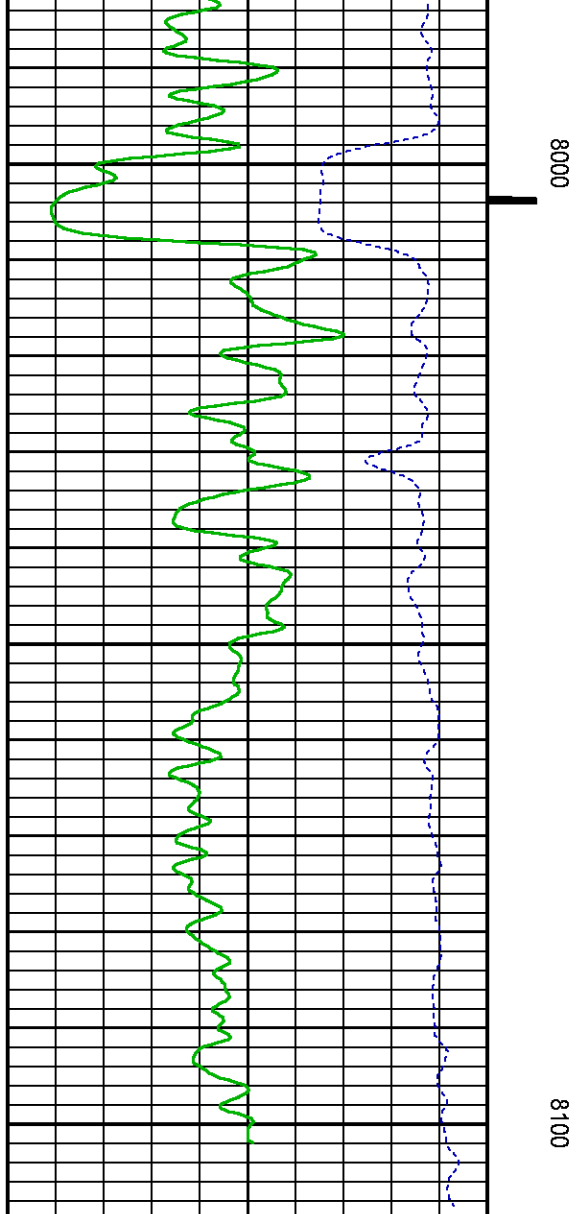
## CURVE MEASURE POINT OFFSET

# CURVE MEASURE POINT OFFSET

CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	-21.75	ISS	-9.50	RATO	-9.50	SGFC	-9.50
GR	-19.25	LS	-9.50	RICS	-9.50	SS	-9.50

Presentation	: BHI78FR4H2:C:\dat1a\BRUTON_19_03E\BRUTON_19_03E_RPM_RPT.fvpdf [5"/100' Scale]
Plot Interval	: 7887.25 - 8116 Feet
Data File 1	: F1 : BHI78FR4H2:C:\dat1a\BRUTON_19_03E\BRUTON_19_03E_RPM_RPT.xtf
Created On	: N/A
Company	: LARAMIE ENERGY II LLC
Well	: BRUTON 19-03E
Field	: VEGA
File Interval	: 7886.5 - 8121.5 Feet
OCT	: RPM3D1





# CALIBRATION / VERIFICATION SUMMARY

Source File: C:\dat1a\BRUTON\_19\_03\VRPM3D1.tp1

## GR PRIMARY CALIBRATION SUMMARY

TOOL #: 2812LA 11781299

DATE/TIME PERFORMED: Sat Oct 18 17:17:39 2014

UNIT #: 3882TD HL6756

CALB JIG #: 4702NK BA\_491

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	CR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	CALBRTR (gAPI)
GR	17.82	198.84	181.0	0.829	14.77	164.77	150

## GR PRIMARY VERIFICATION SUMMARY

TOOL #: 2812LA 11781299

DATE/TIME PERFORMED: Sat Oct 18 17:20:28 2014

UNIT #: 3882TD HL6756

VERI JIG #: 4702NK BA\_491

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	18.44	196.51	0.829	15.28	162.83	147.55
						140.00 160.00

## RPM\_PNC\_3D PRIMARY CALIBRATION SUMMARY

TOOL: 8283PA 10322619

DATE/TIME PERFORMED: Thu Jul 13 11:23:55 2017

UNIT: 3882TD HL6728

CALIBRATOR: 2437XB 120057

SOURCE: 8281AA 10220684

HOURS: 8281AA 8

	ISS	Mtr Vlt (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	813723	126	2224	2172	2143	131	9.0	0.9718

Interpolated	1300000	146	2209	2166	2140
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	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	813723	5787	918	134	25.92	0.15	23.93	0.32
					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	813723	165485	25318	89785	31988	8302	54497	13275

Fit Quality %

0.438

0.183

0.362

0.406

0.457

0.395

0.481

ISS

RBOR

RIN

RIN13

RICS

RATO

RTWO

RONE

ISS/ILS

ISS/IXS

ISS/CSS

SS/LS

SS2/LS

CSS/CLS

Raw Data

813723

1.44

4.92

32.16

14.93

10.82

3.85

4.11

Fit Quality %

0.025

0.019

0.383

0.030

0.090

0.055

0.066

Reduced

1296078

1.44

4.93

32.11

14.98

10.82

3.86

4.11

## INSTRUMENT CONFIGURATION

Source File: C:\dat1a\BRUTON\_19\_03\VRPM3D1~tdg.meta

### A3 CABLEHEAD

#### PCM POWER SUPPLY

Diameter : 1.70"  
Length : 3.86'  
Weight : 18 lbs  
Series : 8250EA  
Mnemonic : PCM

#### TELEMETRY / CCL

Diameter : 1.70"  
Length : 4.46'  
Weight : 20 lbs  
Series : 8248ED  
Mnemonic : PCM  
Measure Point: 1.00': CCL MP

#### SONDEX GAMMA RAY

Diameter : 1.69"  
Length : 2.17'  
Weight : 11 lbs  
Series : 2812LA

#### RPM ELECTRONICS

Diameter : 1.70"  
Length : 4.48'  
Weight : 16 lbs  
Series : 8281EA  
Mnemonic : RPM

#### RPM C DETECTOR SECTION

Diameter : 1.70"  
Length : 9.40'  
Weight : 41 lbs  
Series : 8283PA  
Mnemonic : RPM  
Measure Point: 5.45': XLS DETECTOR

29.93'

CCL MP 21.88'

GR MP 19.33'

XLS DETECTOR 10.27'

LS DETECTOR 9.86'

SS DETECTOR 9.61'

Measure Point: 5.04': LS DETECTOR  
Measure Point: 4.79': SS DETECTOR

RPM SOURCE SECTION

Diameter : 1.70"  
Length : 4.70'  
Weight : 18 lbs  
Series : 8281FA  
Mnemonic : RPM

BULL PLUG 1 11/16

0.00'

TOTAL LENGTH: 29.93'  
TOTAL WEIGHT: 127 lbs  
MAX DIAMETER: 0'1.70"



COMPANY LARAMIE ENERGY  
WELL BRUTON 19-03E  
FIELD VEGA  
COUNTY MESA STATE COLORADO

FILE NO: \_\_\_\_\_  
API NO: 05077104220000

LOCATION: \_\_\_\_\_ ELEVATIONS: \_\_\_\_\_



**LOCATION:**

SHL: LAT:39.262850N;LONG:107.815110W

BHL: LAT:39.267819N;LONG:107.806885W

SEC 19 TWP 9S RGE 93W

**ELEVATIONS:**

KB 7286 FT

DF 7286 FT

GL 7262 FT

DATE 28-OCT-2017