



**RESERVOIR PERFORMANCE MONITOR**

FILE NO:

COMPANY

LARAMIE ENERGY II LLC

WELL

NICHOLS 0994-24-01E

FIELD

VEGA

API NO:  
0507710406000

COUNTY

MESA

STATE COLORADO

Ver. 4.10

LOCATION:

SHL 1790 FNL 2780 FEL  
BHL 125 FNL 2780 FEL

OTHER SERVICES  
RAL

SEC 24 TWP 9S RGE 94W

PERMANENT DATUM GL ELEVATION 7137 FT  
LOG MEASURED FROM KB 24 FT ABOVE P.D.  
DRILL. MEAS. FROM KB

ELEVATIONS:  
KB 7161 FT  
DF  
GL 7137 FT

DATE 13-Mar-2018

RUN 2 TRIP 1

SERVICE ORDER US133006J

DEPTH DRILLER 7837 FT

DEPTH LOGGER 7785 FT

BOTTOM LOGGED INTERVAL 7784 FT

TOP LOGGED INTERVAL 2450 FT

TIME STARTED 15:00

TIME FINISHED 20:30

OPERATOR RIG TIME LOGGER

TYPE OF FLUID IN HOLE WATER

FLUID DENSITY NA

FLUID SALINITY NA

FLUID LEVEL 50 FT

LOGGED CEMENT TOP 4557 FT

WELLHEAD PRESSURE 0 PSI

MAXIMUM HOLE DEVIATION NA

NOMINAL LOGGING SPEED 90 FMIN

MAX. RECORDED TEMP. 236 DEGF

REFERENCE LOG NA

REFERENCE LOG DATE NA

EQUIP. NO. LOCATION 4291 GRAND JCT

RECORDED BY R. ZUNIGA

WITNESSED BY NA

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: GR/CCL/RPM/TEMP RUN IN COMBINATION

LOGGED WITH 0 PSI AT WELLHEAD

SJ: 6010-6028  
SJ: 6935-6954

TOP OF CEMENT COULD NOT BE DETERMINED USING AS PER CUSTOMER REQUEST.

CREW: R. ZUNIGA, J. PENA, A. SHAHNOOSHI

**EQUIPMENT DATA**

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
2	1	TELEMETRY	8250 EA/8248 ED	11745584/10193585	FREE
2	1	GR	8262 XA	10317216	FREE
2	1	RPM ELEC	8281 EA	10387162	FREE
2	1	RPM	8283 PA/8281 FA	10184883/10318654	FREE
2	1	TEMP	8255 XA	11774568	FREE

# G-SAND PNC 3D MODE

ECLIPS 7.0i ECLIPS General Release Rel 7.0i Thu Jun 08 20:36:10 CDT 2017  
Patches: 2

Plotted: Tue Mar 13 21:26:58 2018

## PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE\_NICHOLS\_0994-24-01E/p353h03.prm  
LOGGING MODE: DEPTH DIRECTION: UP  
TOP DEPTH: 2439.194 ft BOTTOM DEPTH: 3097.387 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		" "

## CURVE DESCRIPTION REPORT

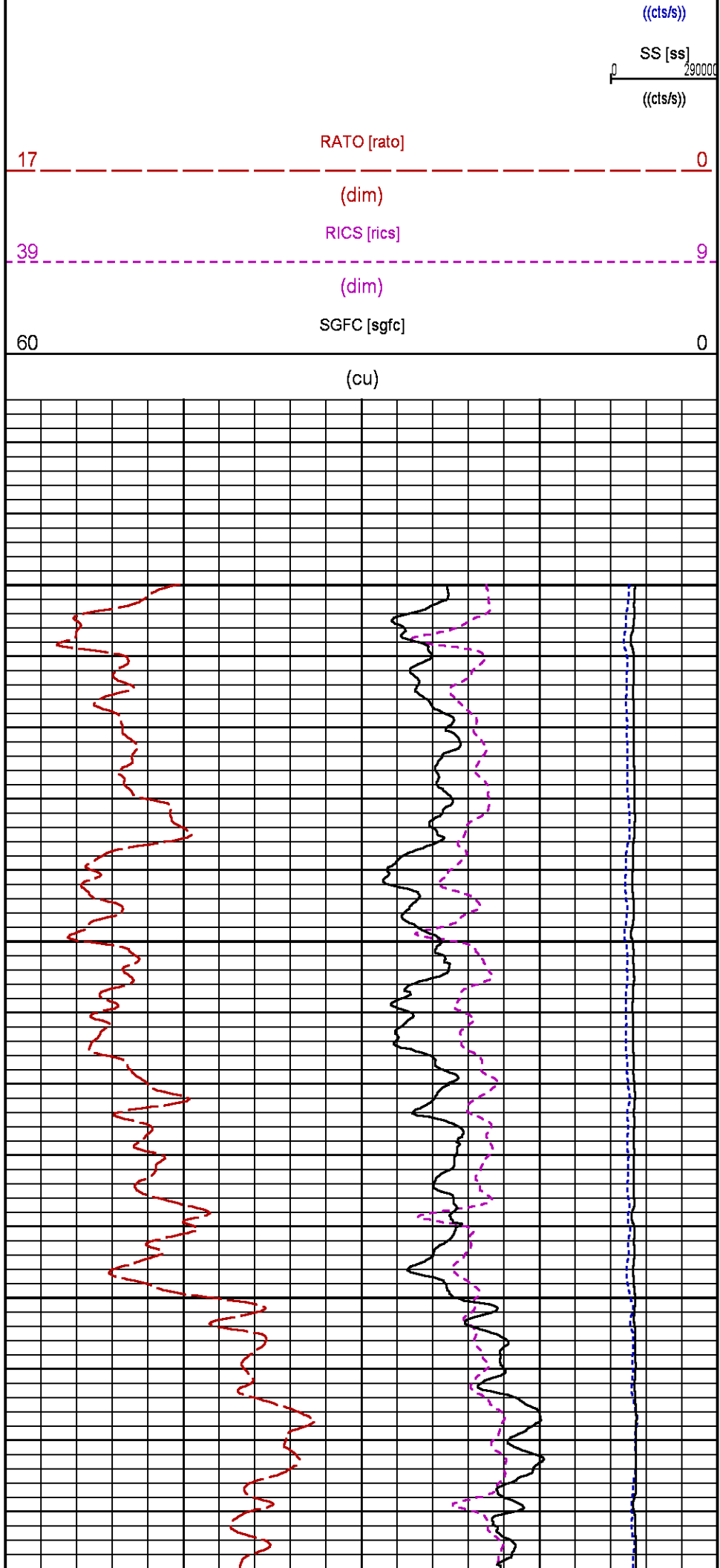
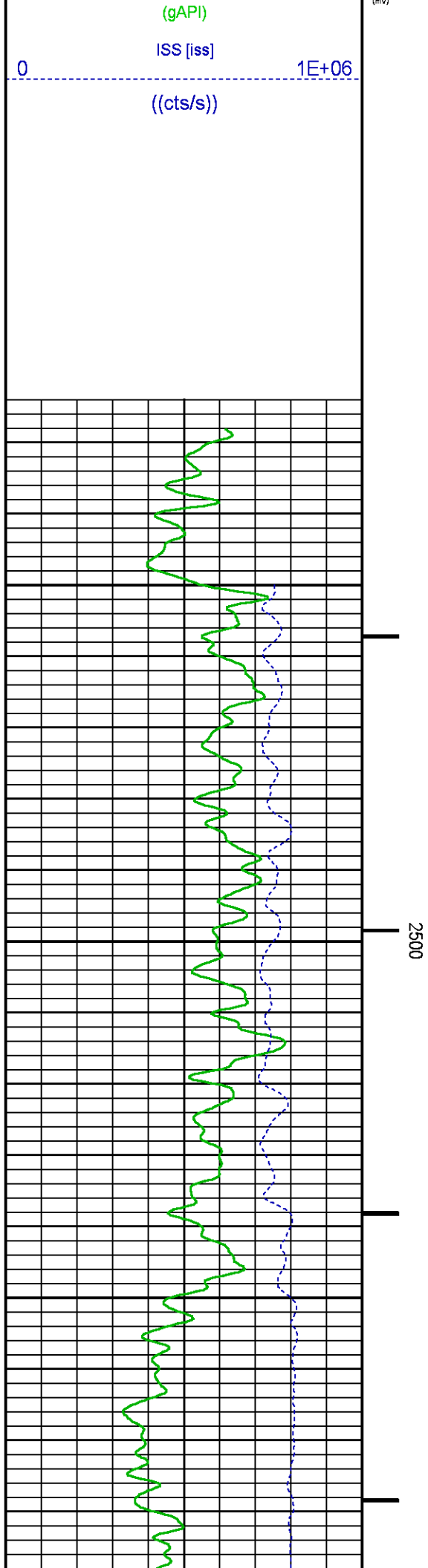
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	N/A	CASING COLLAR LOCATOR
F1:GR	N/A	GAMMA RAY
F1:ISS	N/A	INELASTIC SHORT SPACE COUNT RATE
F1:LS	N/A	LONG SPACE COUNT RATE
F1:RATO	N/A	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	N/A	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	N/A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

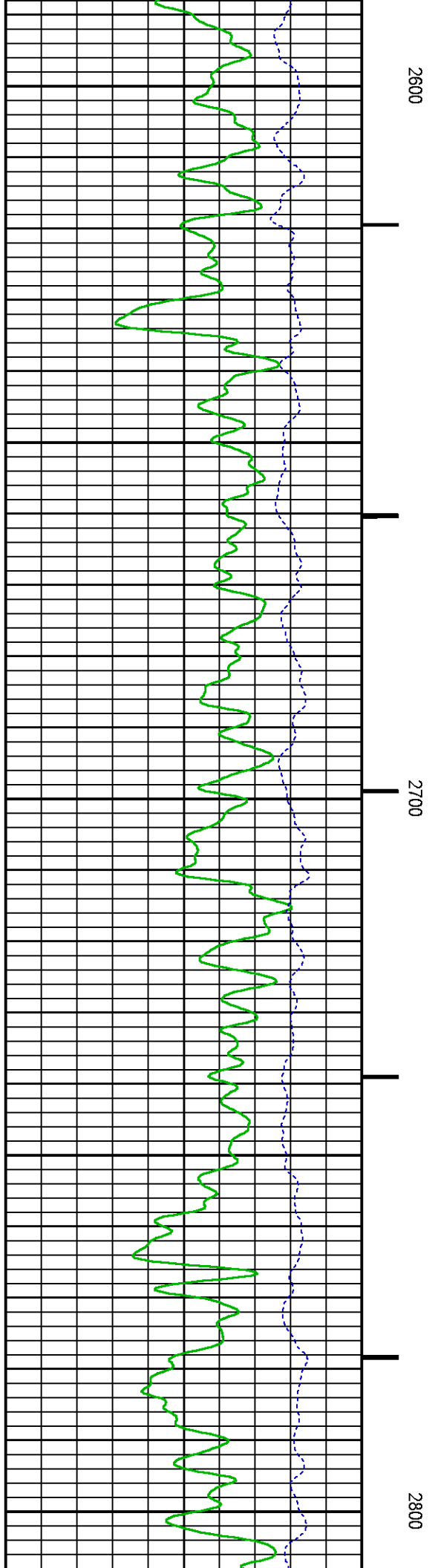
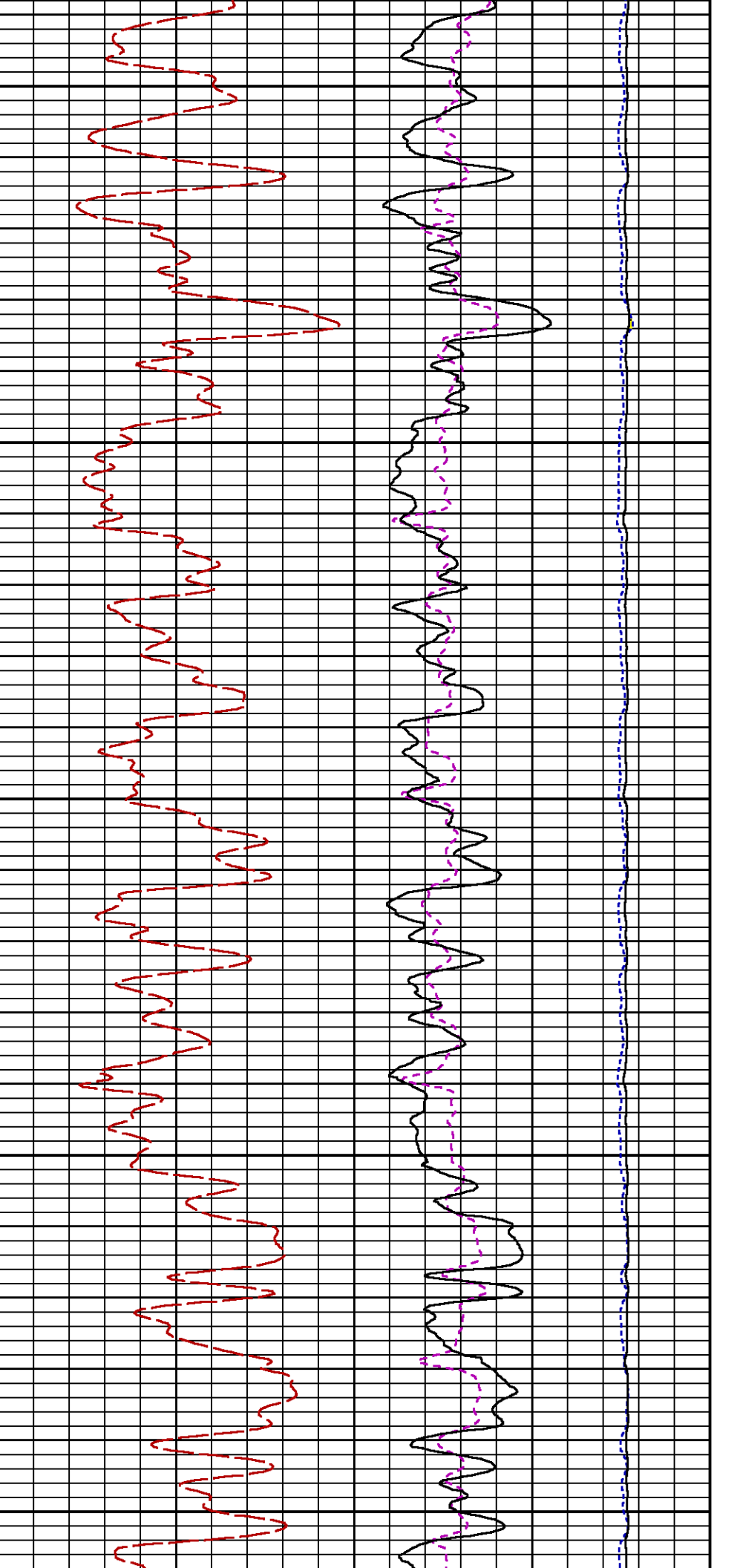
## CURVE MEASURE POINT OFFSET

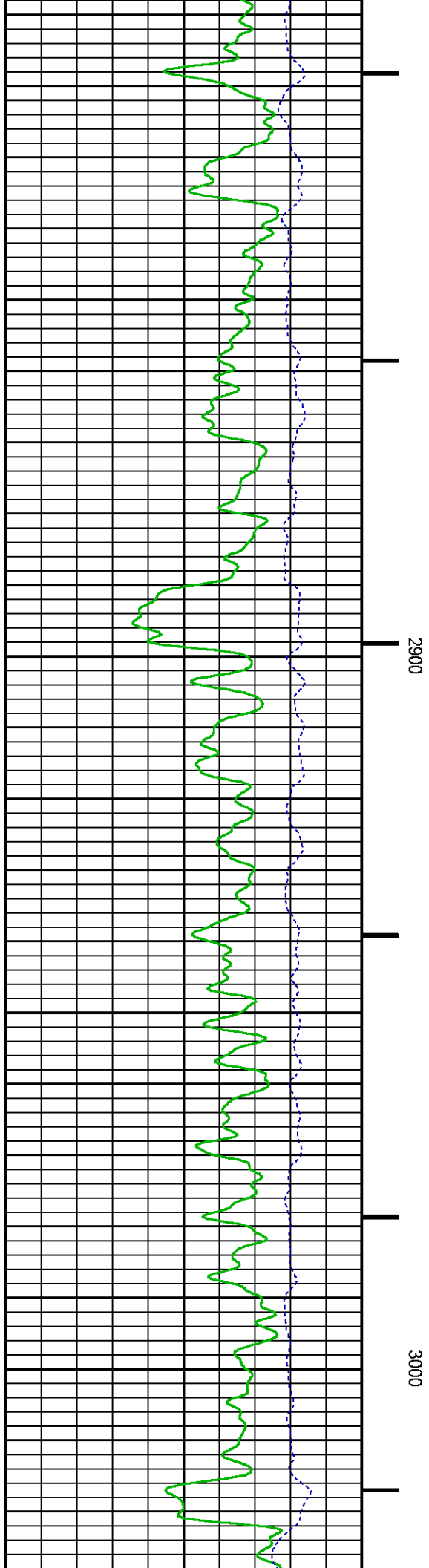
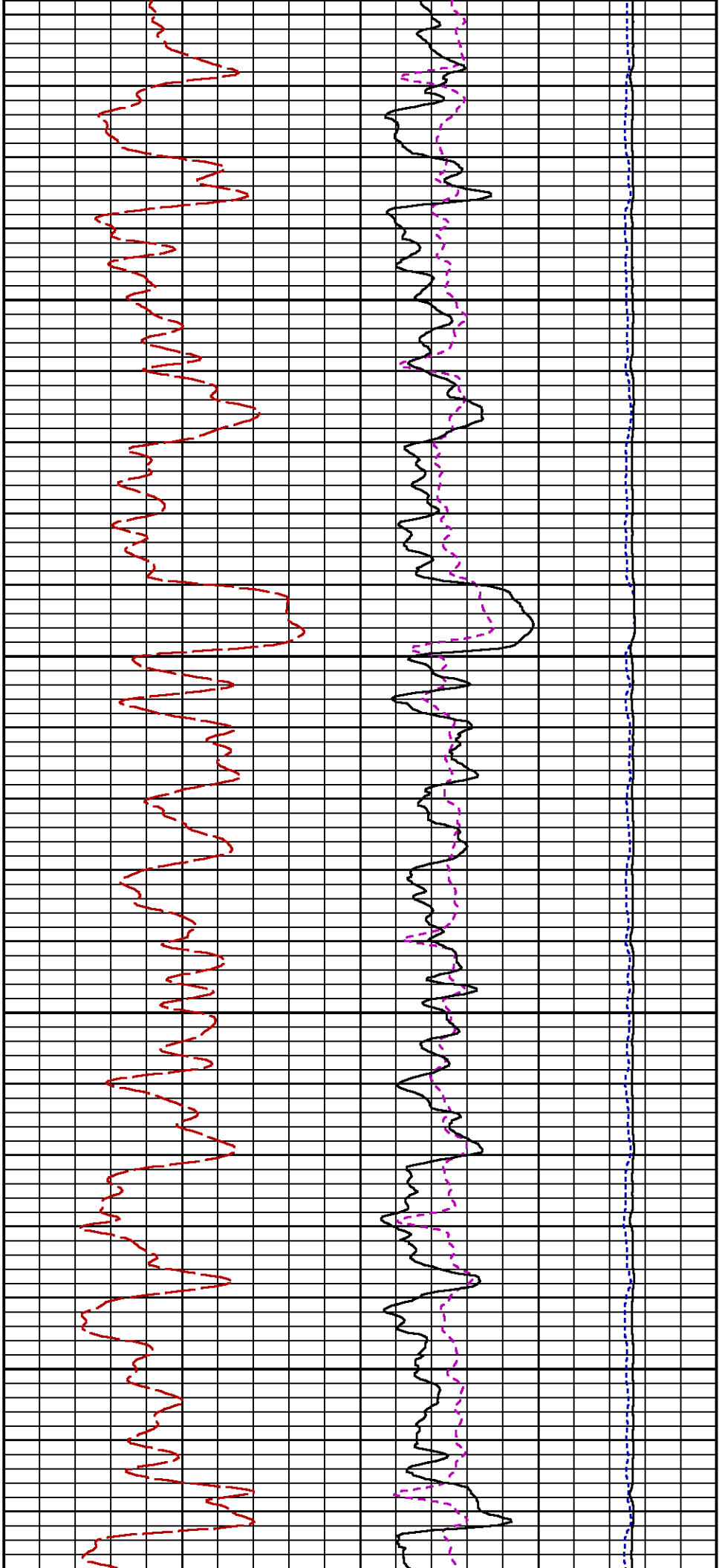
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	-26.00	ISS	-12.75	RATO	-12.75	SGFC	-12.75
GR	-23.00	LS	-12.75	RICS	-12.75	SS	-12.75

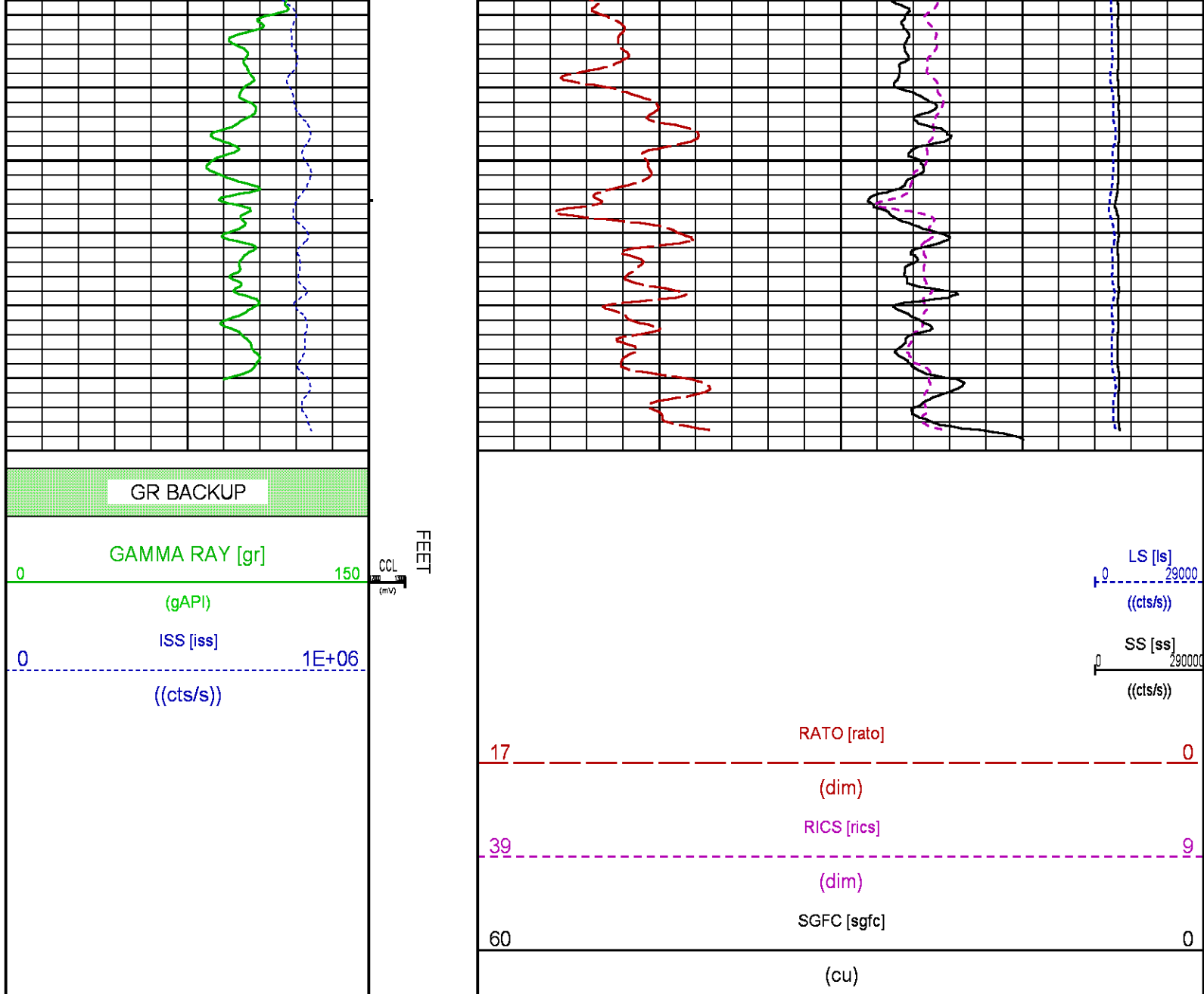
Presentation : SysA:LARAMIE\_RPM\_GS.fvpdf [5"/100' Scale]  
Plot Interval : 2424 - 3103.25 Feet  
  
Data File 1 : F1 : SysA:/dat1a/LARAMIE\_NICHOLS\_0994-24-01E/RPM\_GS.xtf  
Created On : N/A  
Company : LARAMIE ENERGY II LLC  
Well : NICHOLS 0994-24-01W  
Field : VEGA  
File Interval : 2424 - 3104.75 Feet  
OCT : p353h











## WILLIAMS FORK PNC 3D MODE

ECLIPS 7.0i ECLIPS General Release Rel 7.0i Thu Jun 08 20:36:10 CDT 2017

Patches: 2

Plotted: Tue Mar 13 20:34:11 2018

### PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE\_NICHOLS\_0994-24-01E/p353h02.prm  
LOGGING MODE: DEPTH DIRECTION: UP  
TOP DEPTH: 4398.486 ft BOTTOM DEPTH: 7786.294 ft

### SYMMETRIC FILTER

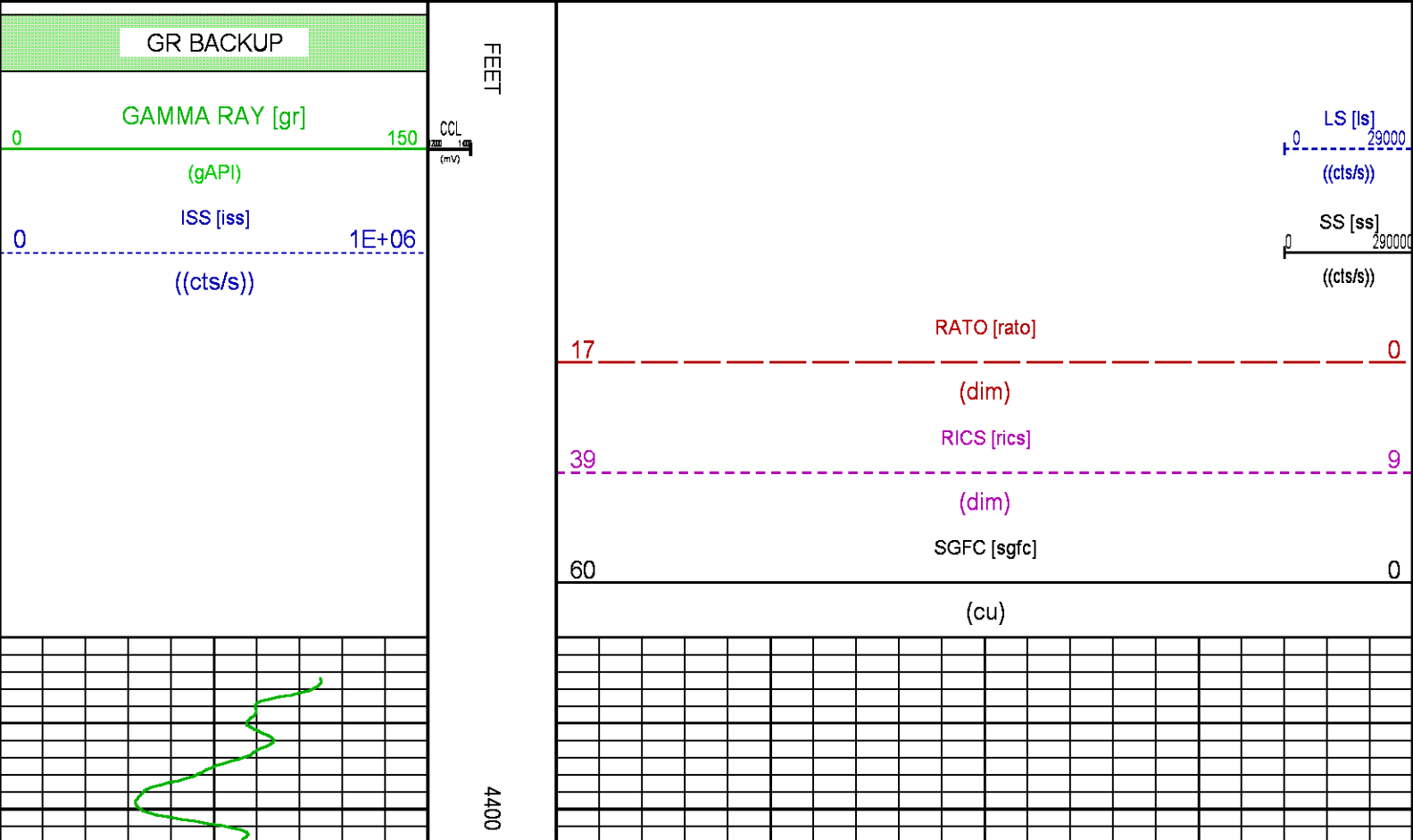
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
GR	FILTER ()	medium (1)		TOP BOTTOM

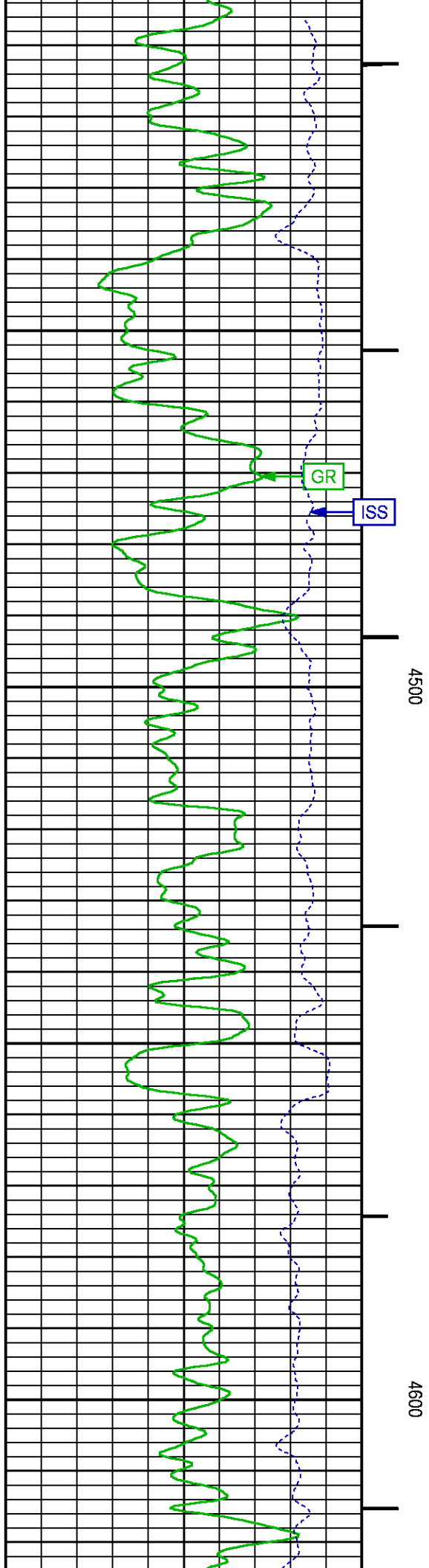
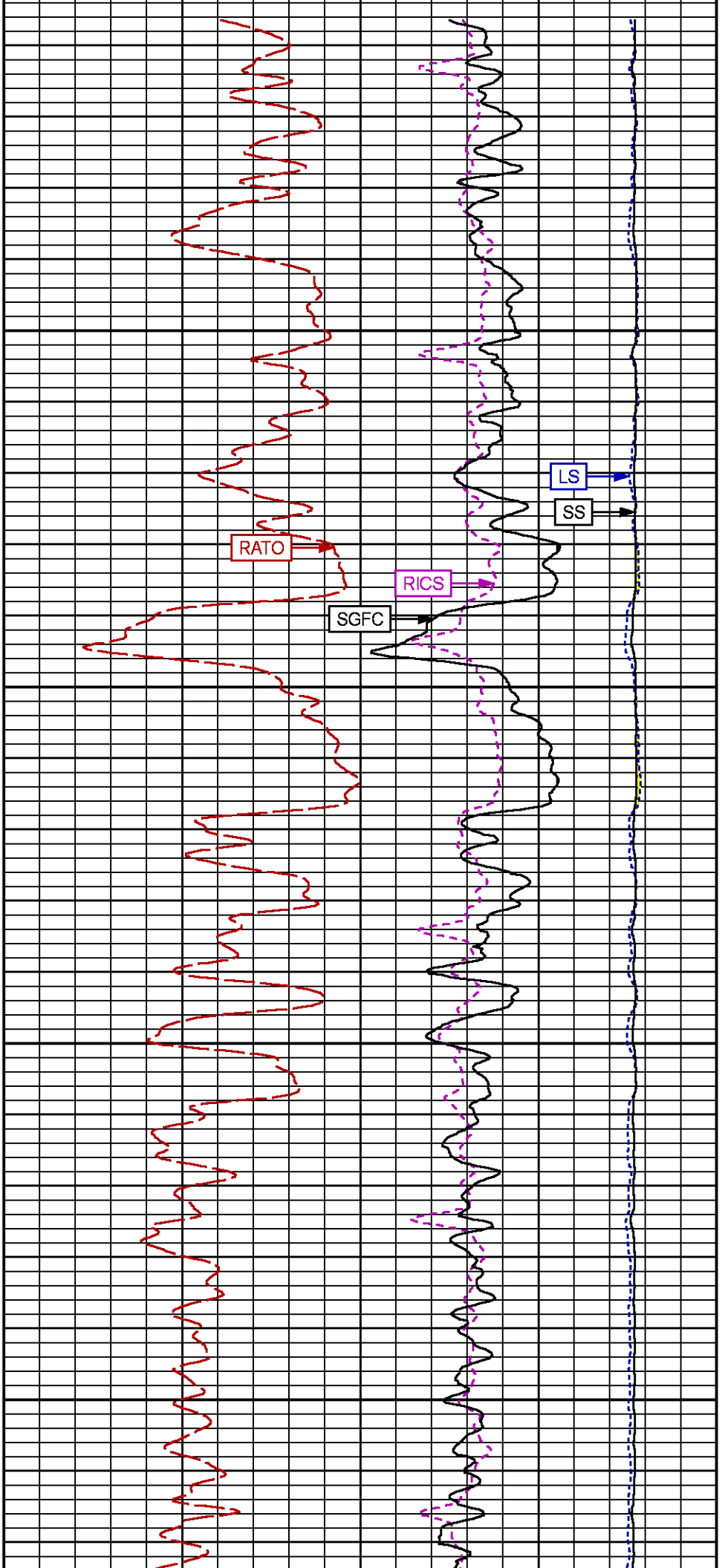
RPM PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
PNC Parameters	BOREHOLE CONTENTS	FLUID		TOP	BOTTOM
	OPEN/CASED HOLE	CASED HOLE		"	"
	BOREHOLE SIZE	7.88	in	"	"
	LARGEST CASING OD	4.50	in	"	"
	MATRIX	SANDSTONE		"	"

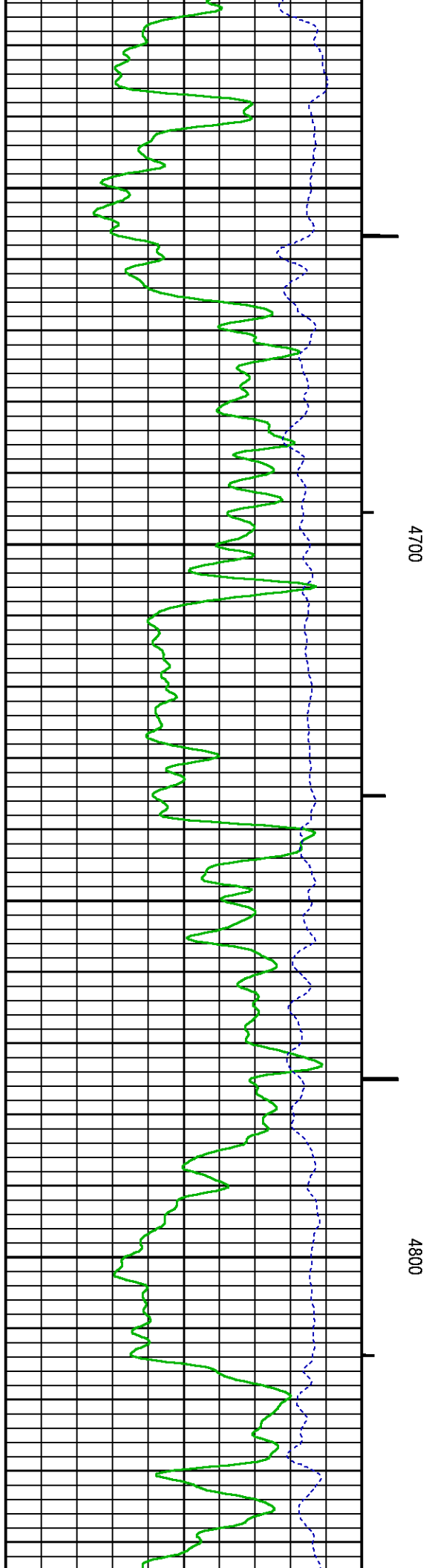
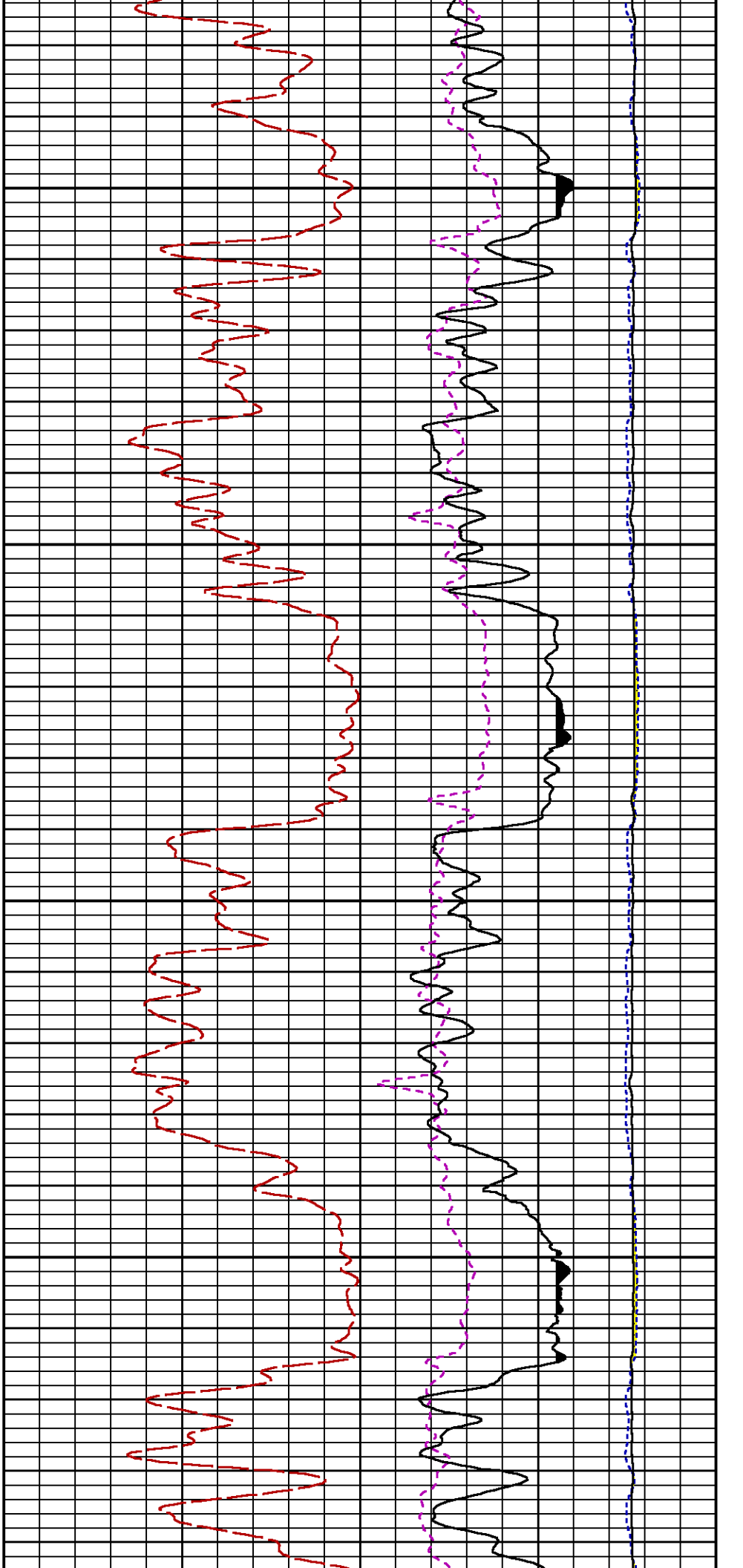
CURVE DESCRIPTION REPORT		
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	N/A	CASING COLLAR LOCATOR
F1:GR	N/A	GAMMA RAY
F1:ISS	N/A	INELASTIC SHORT SPACE COUNT RATE
F1:LS	N/A	LONG SPACE COUNT RATE
F1:RATO	N/A	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	N/A	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE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

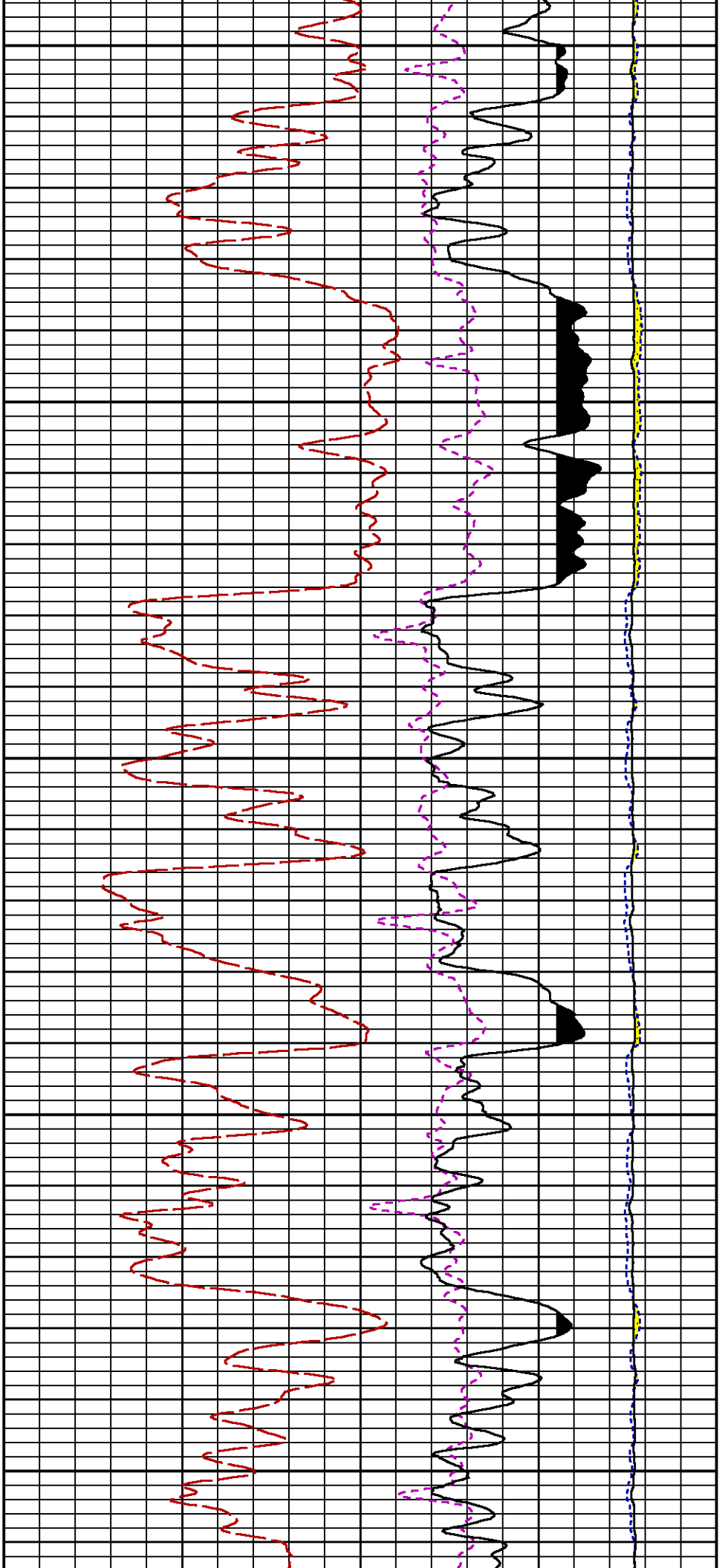
CURVE MEASURE POINT OFFSET							
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	-26.00	ISS	-12.75	RATO	-12.75	SGFC	-12.75
GR	-23.00	LS	-12.75	RICS	-12.75	SS	-12.75

Presentation	: SysA:LARAMIE_RPM_WF.fvpdf [5"/100' Scale]
Plot Interval	: 4380.5 - 7788.5 Feet
Data File 1	: F1 : SysA:/dat1a/LARAMIE_NICHOLS_0994-24-01E/RPM_MAIN_WF.xtf
Created On	: N/A
Company	: LARAMIE ENERGY II LLC
Well	: NICHOLS 0994-24-01W
Field	: VEGA
File Interval	: 4380.5 - 7790 Feet
OCT	: p353h



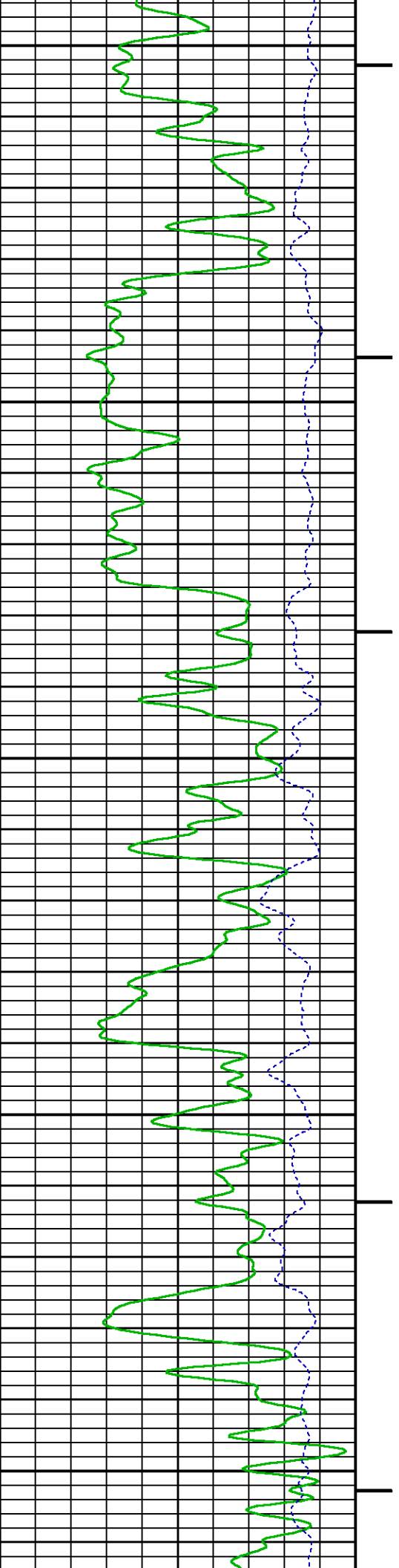


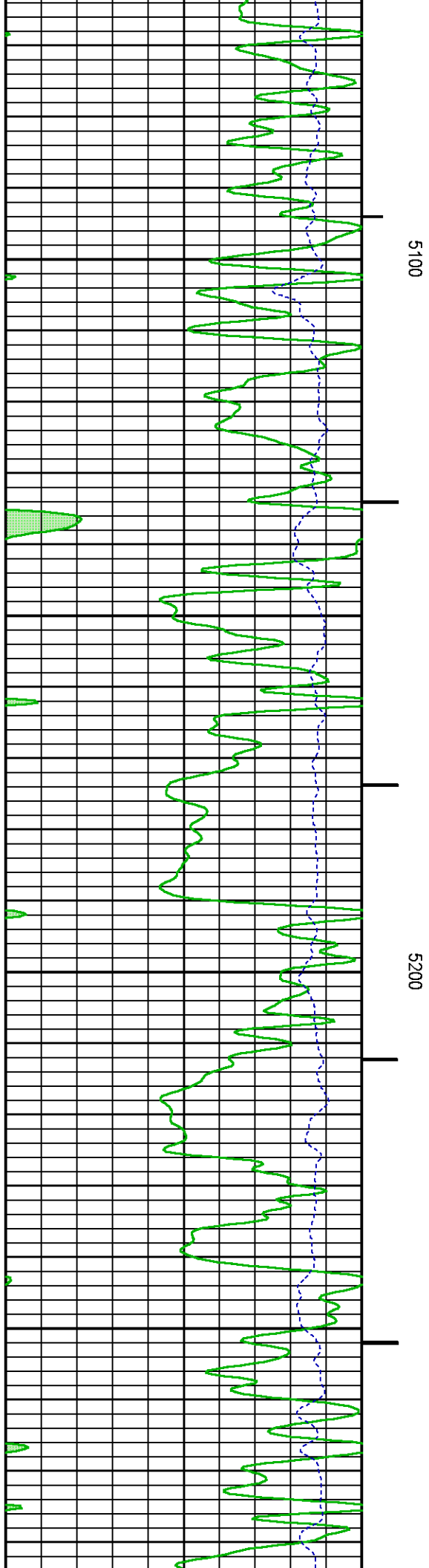
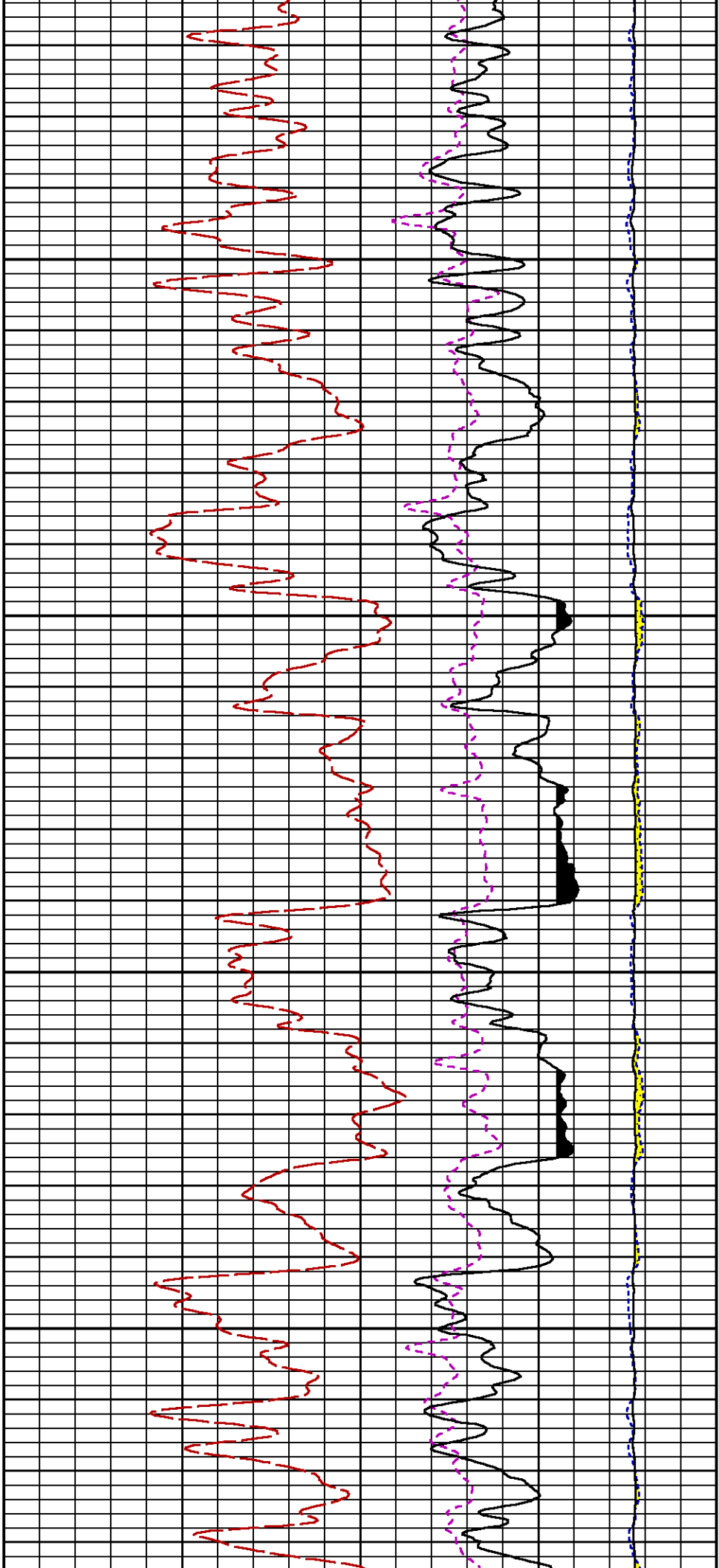


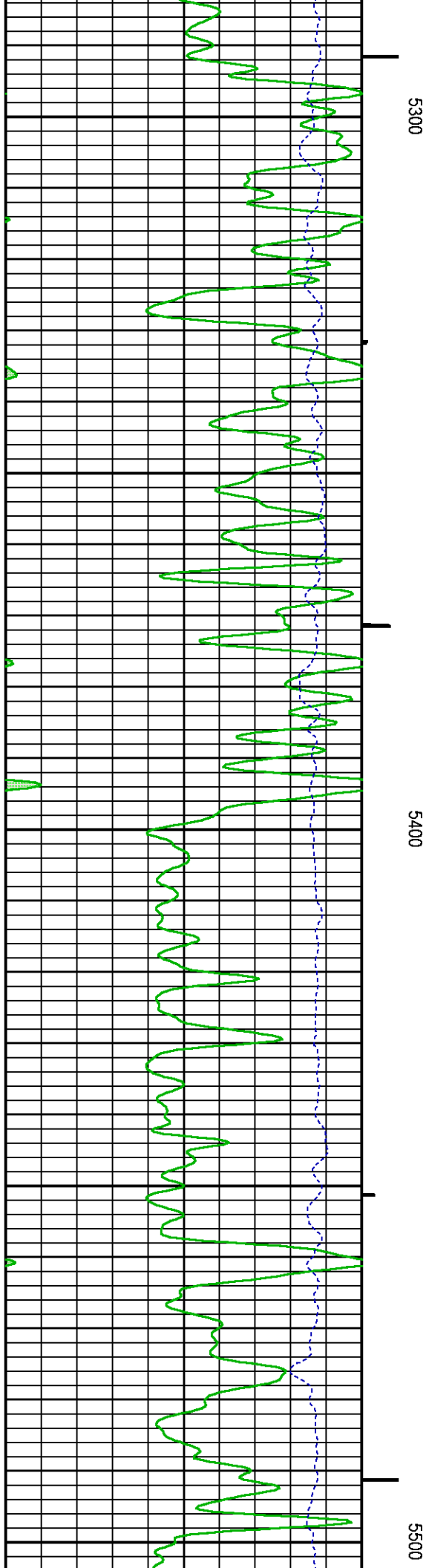
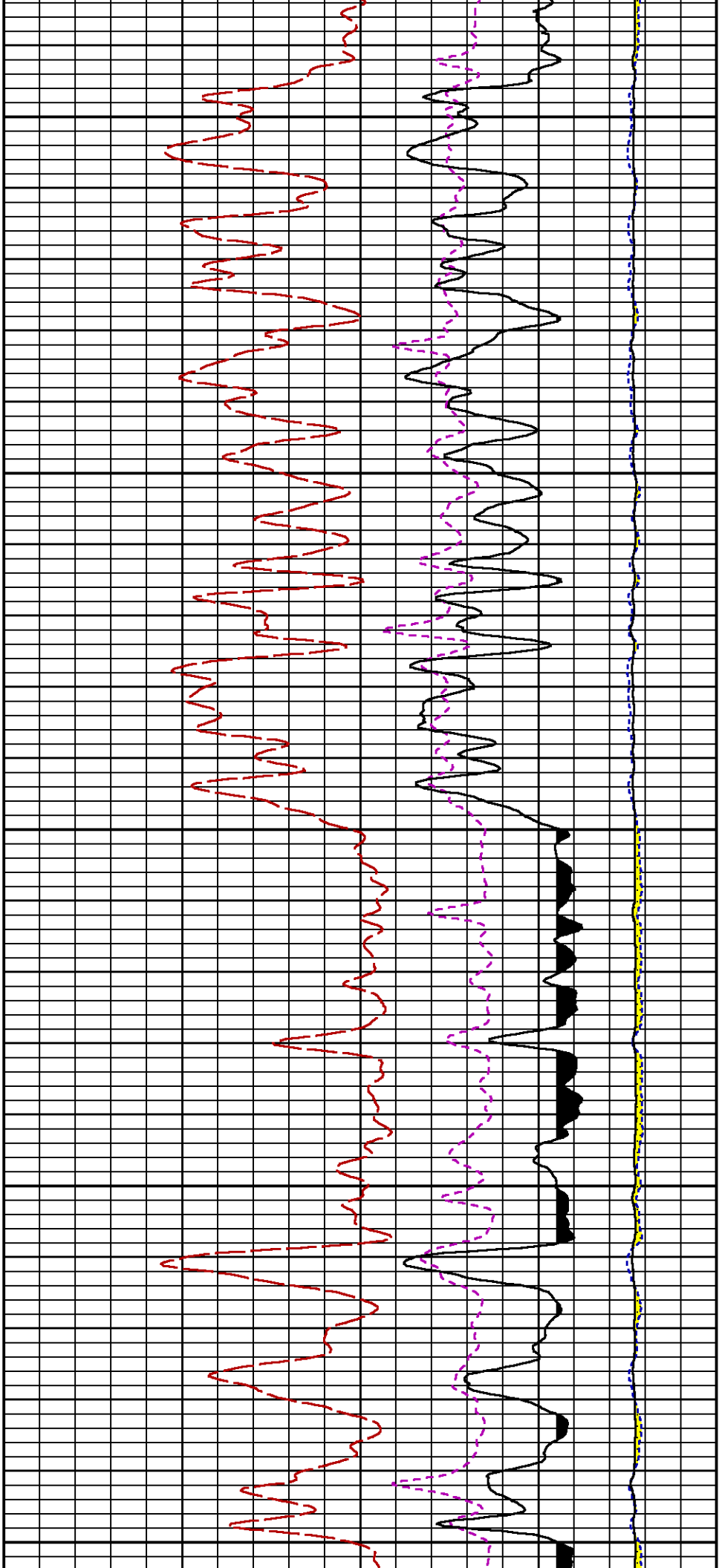


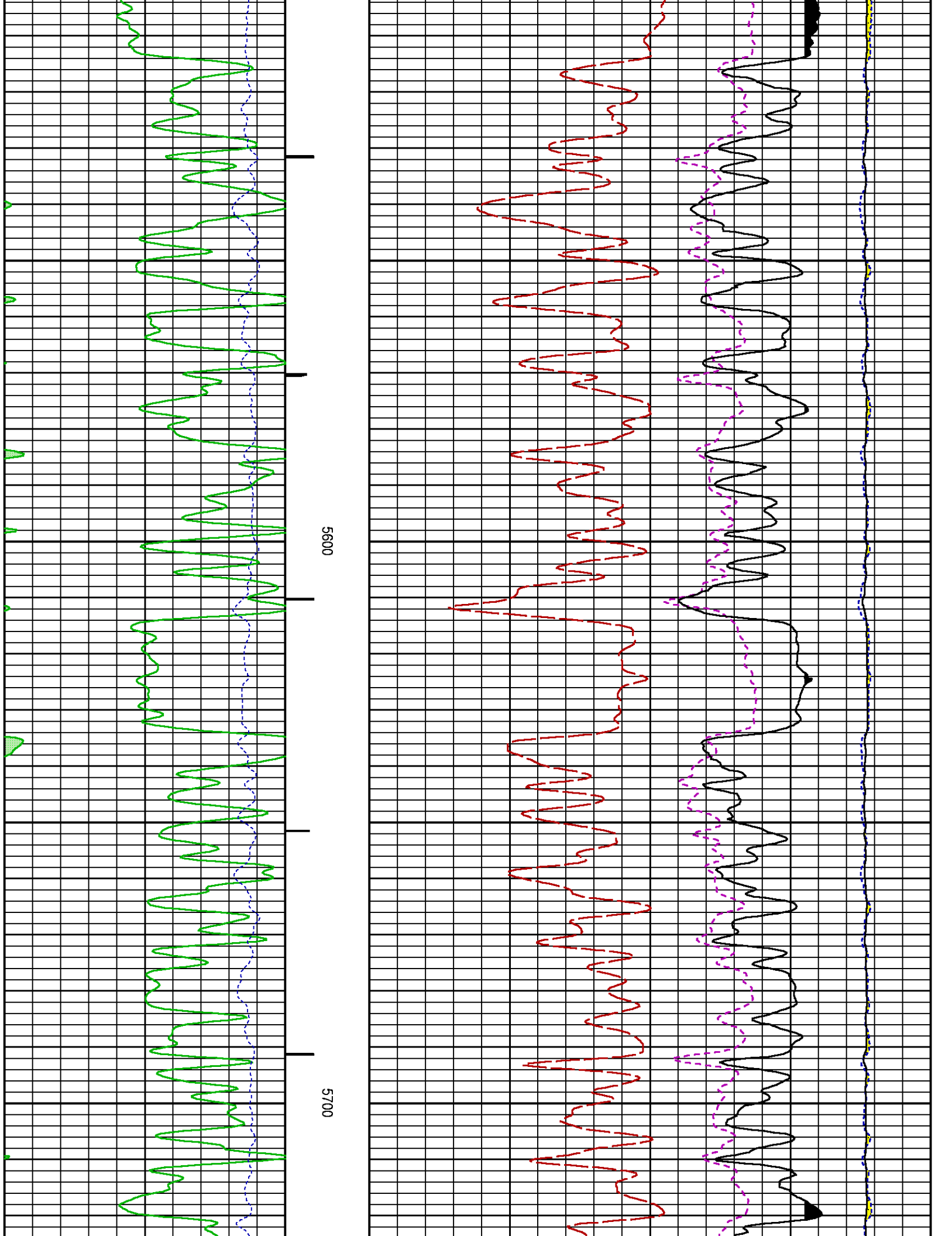
4900

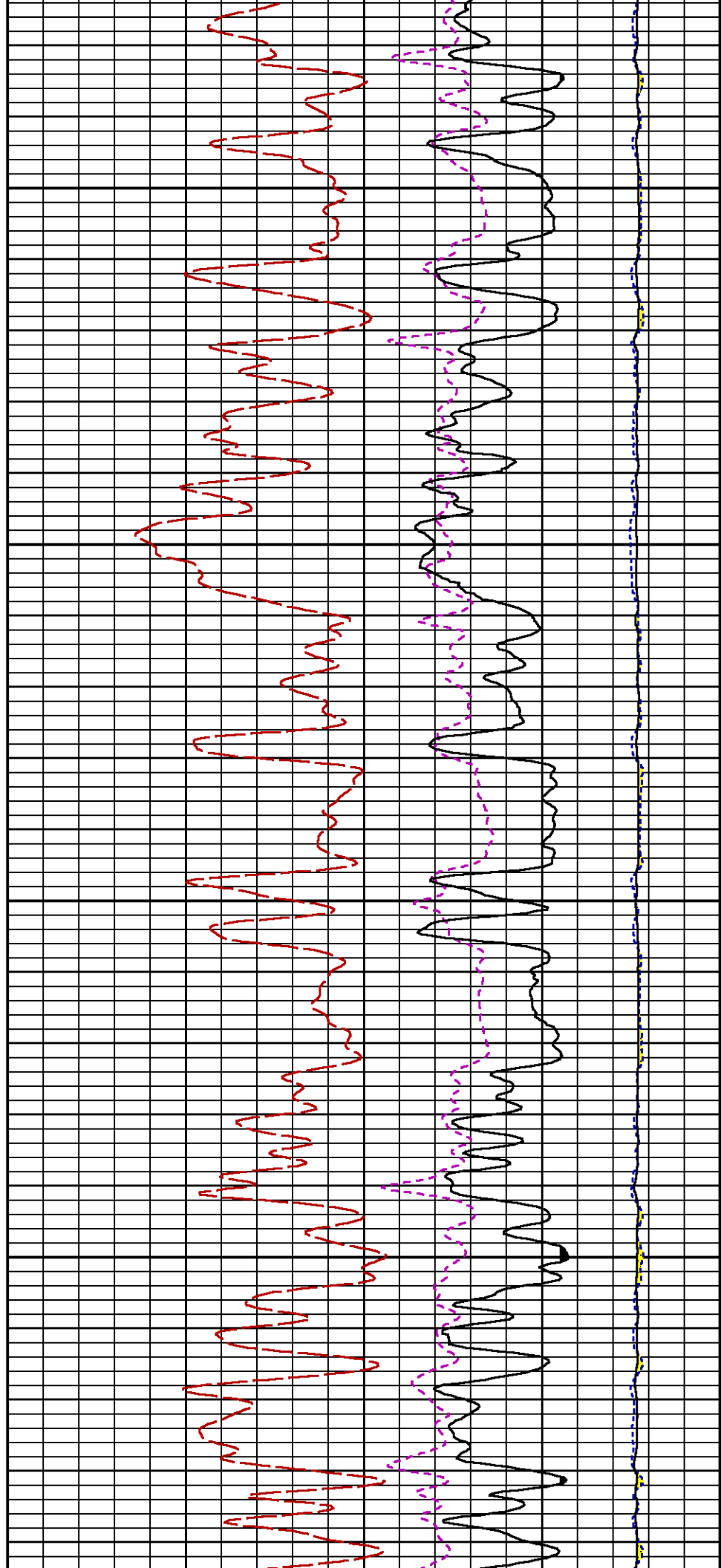
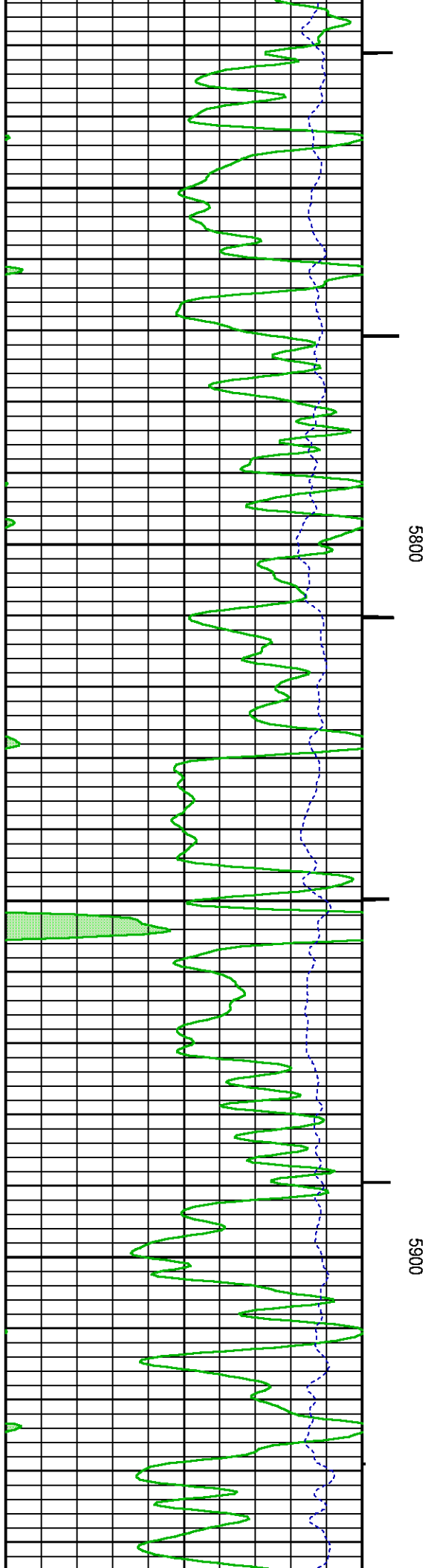
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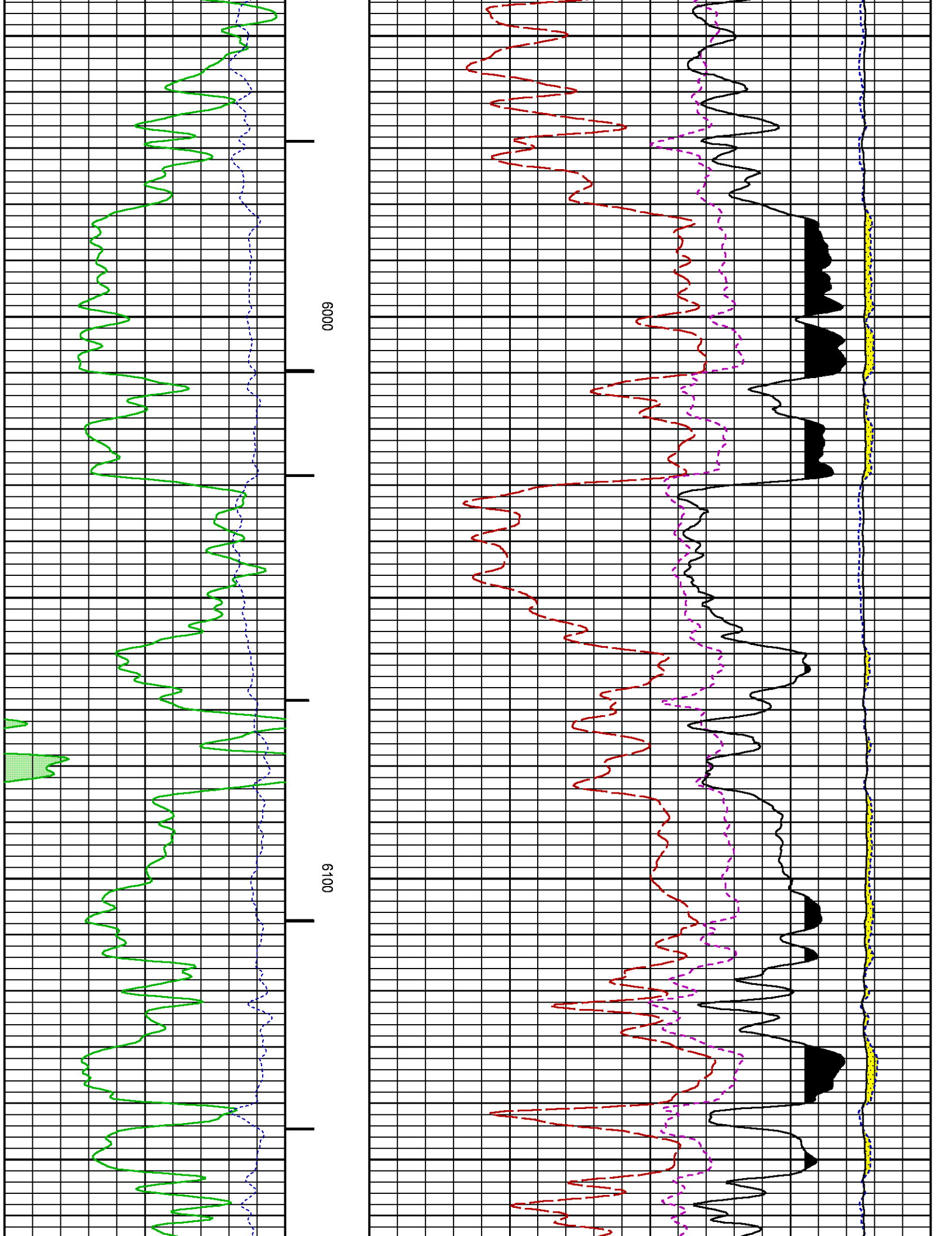


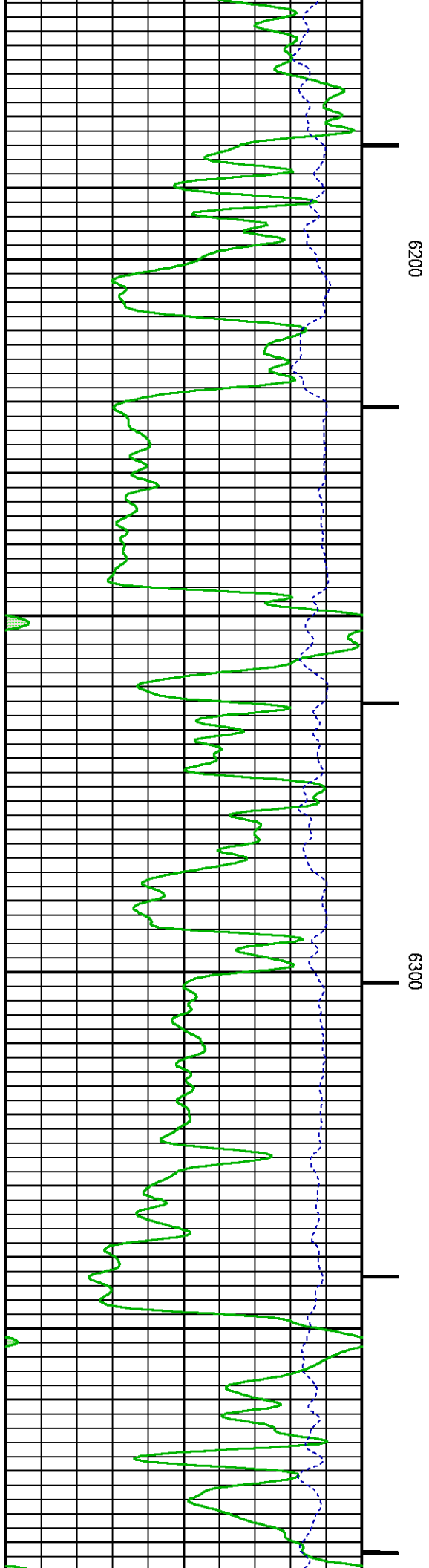
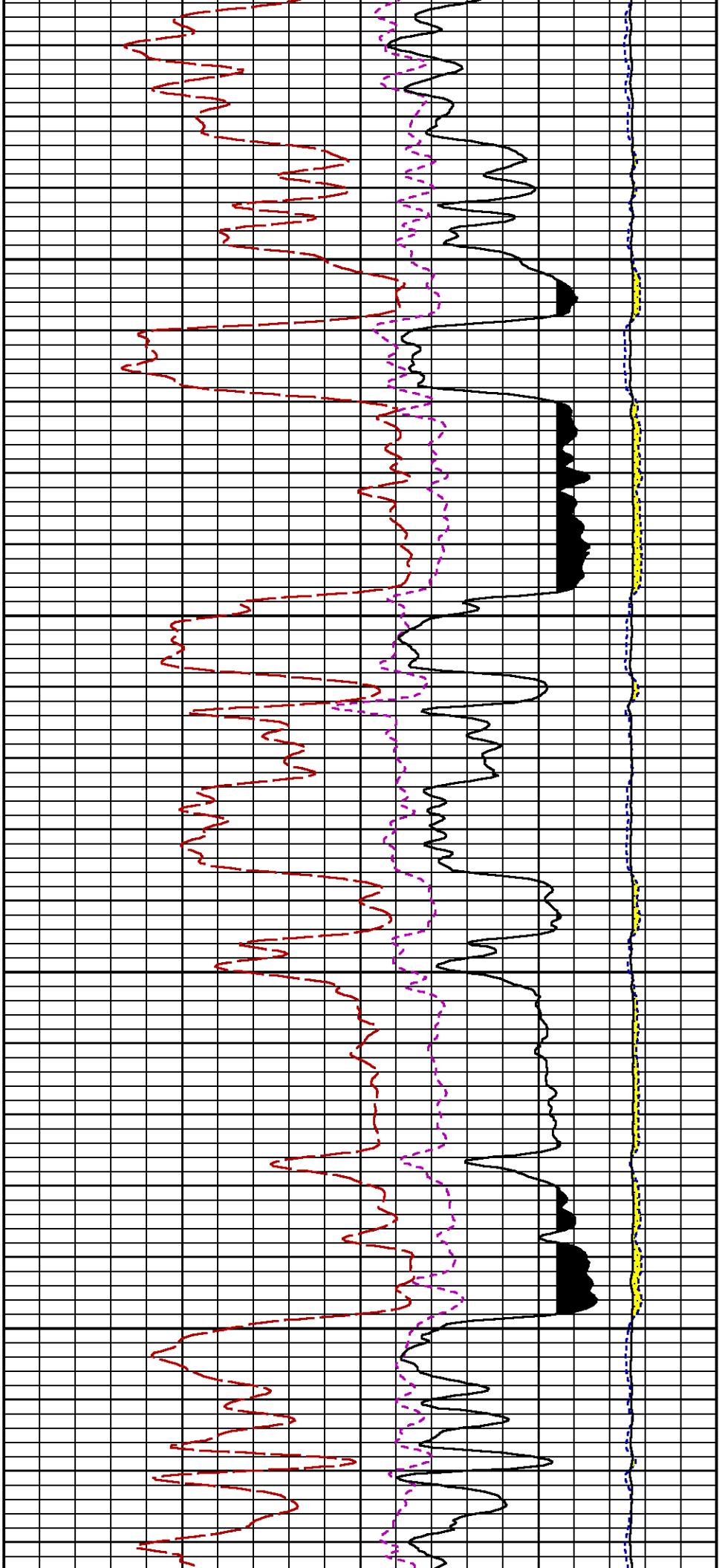


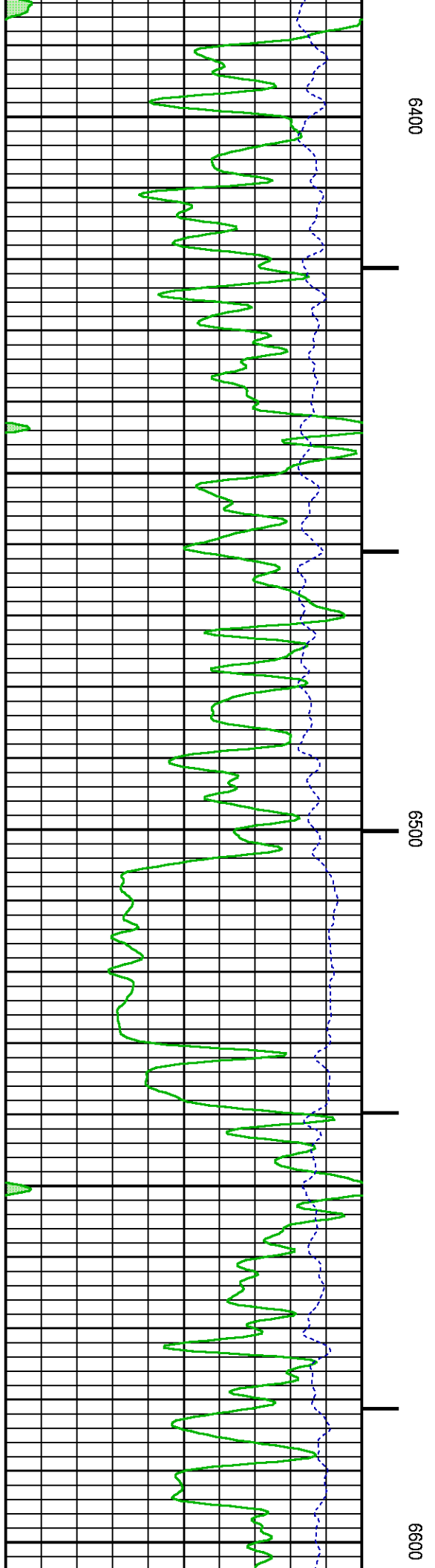
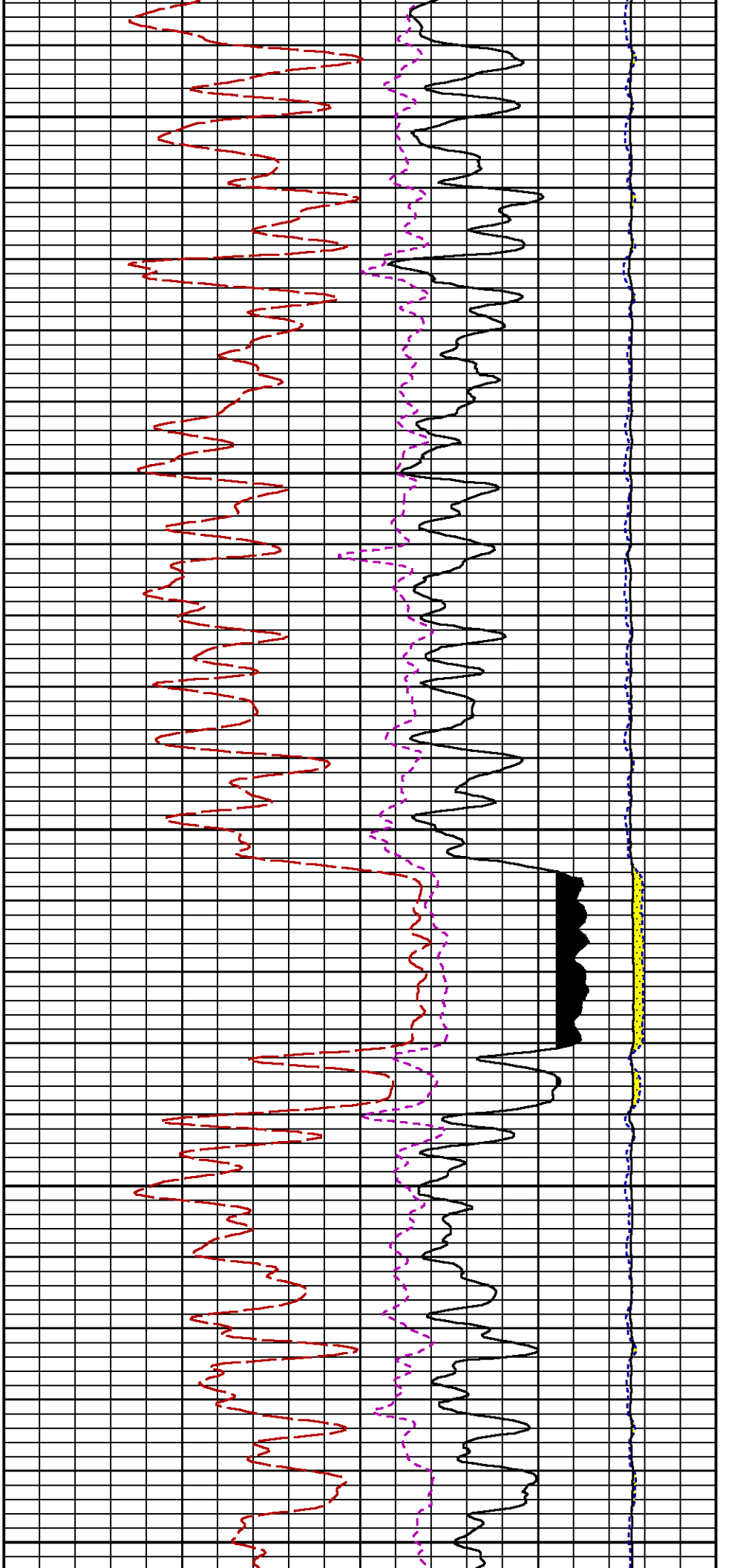


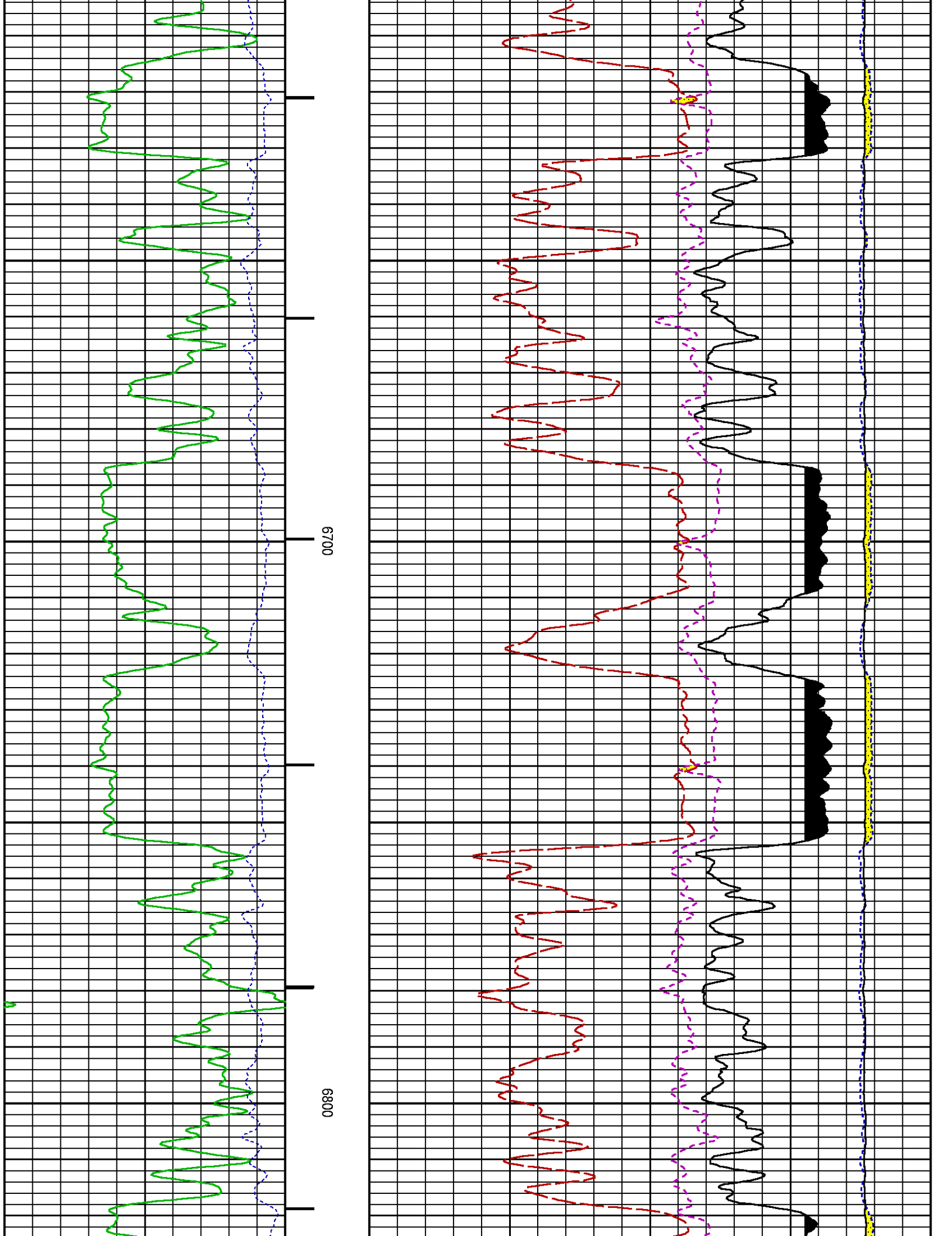


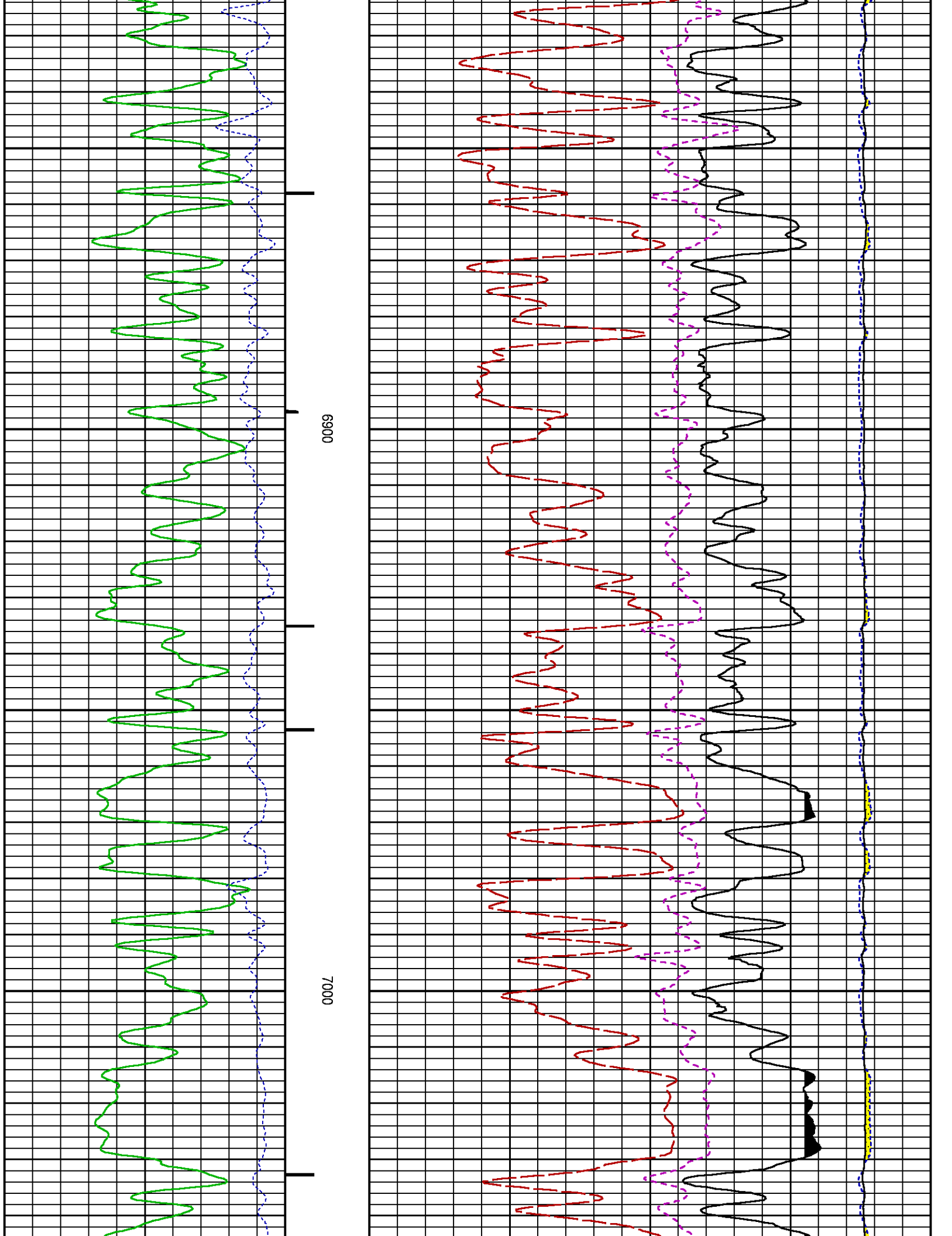


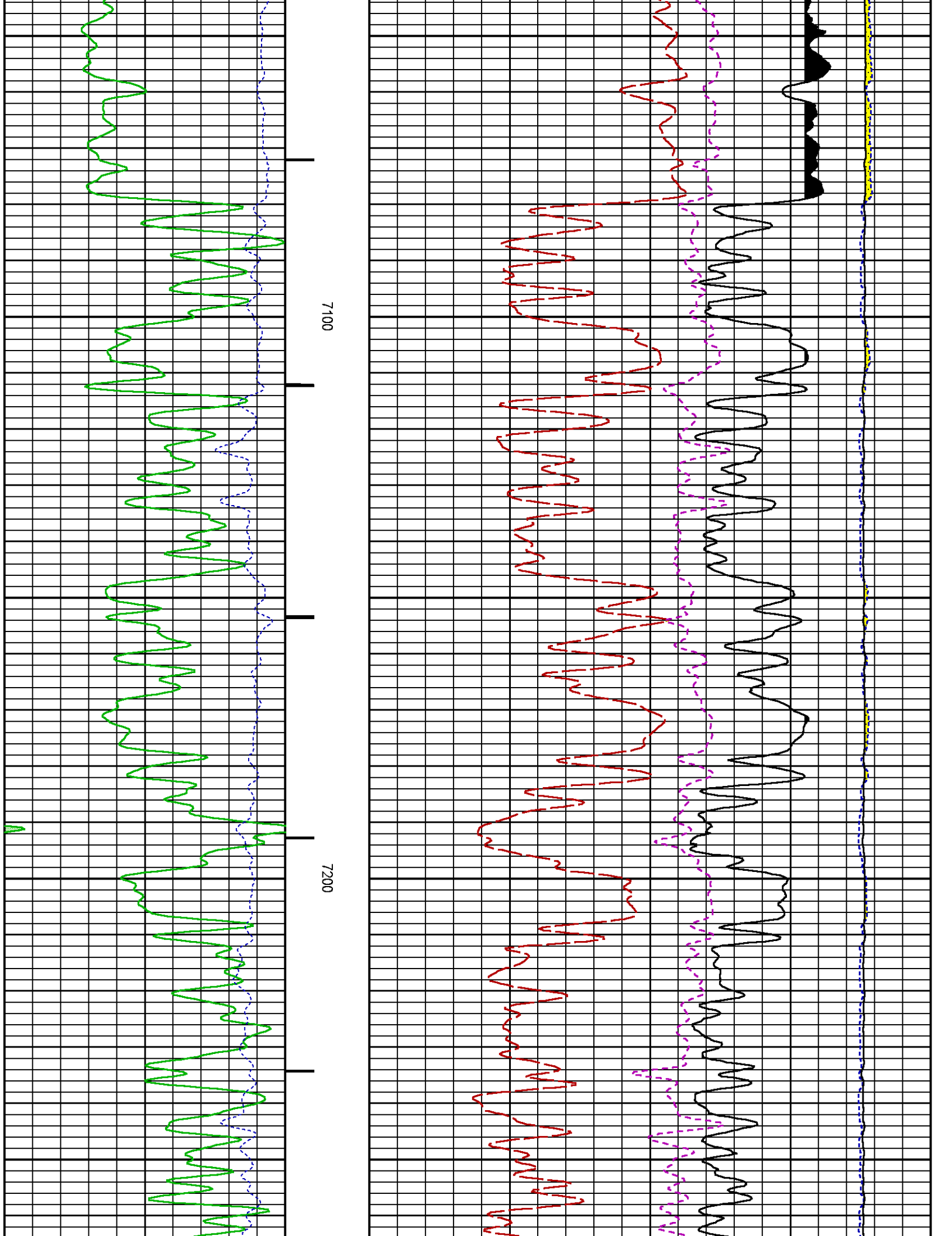


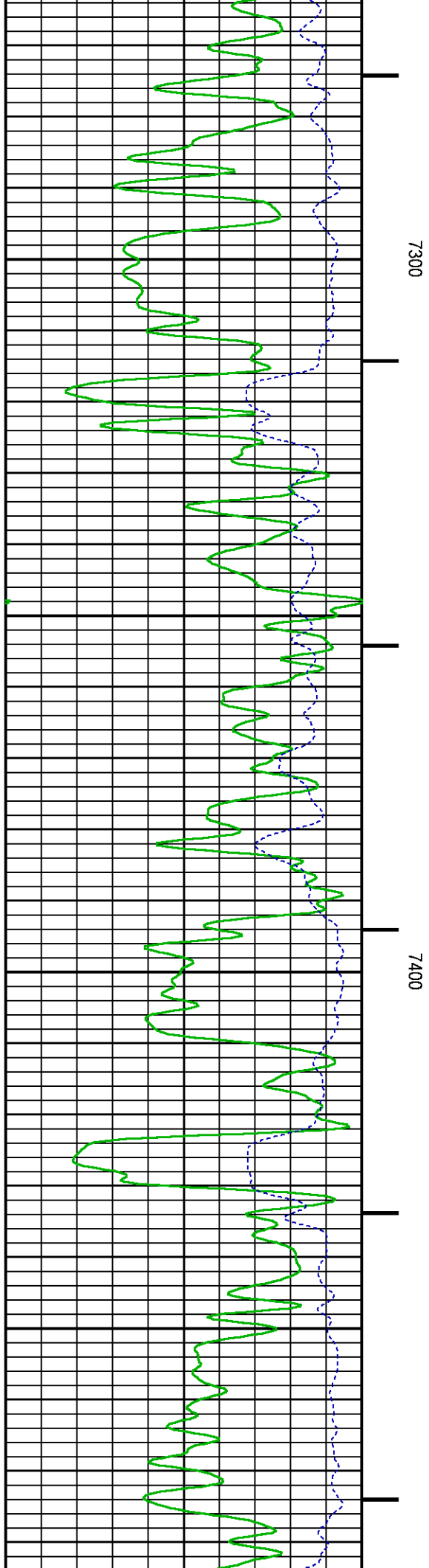
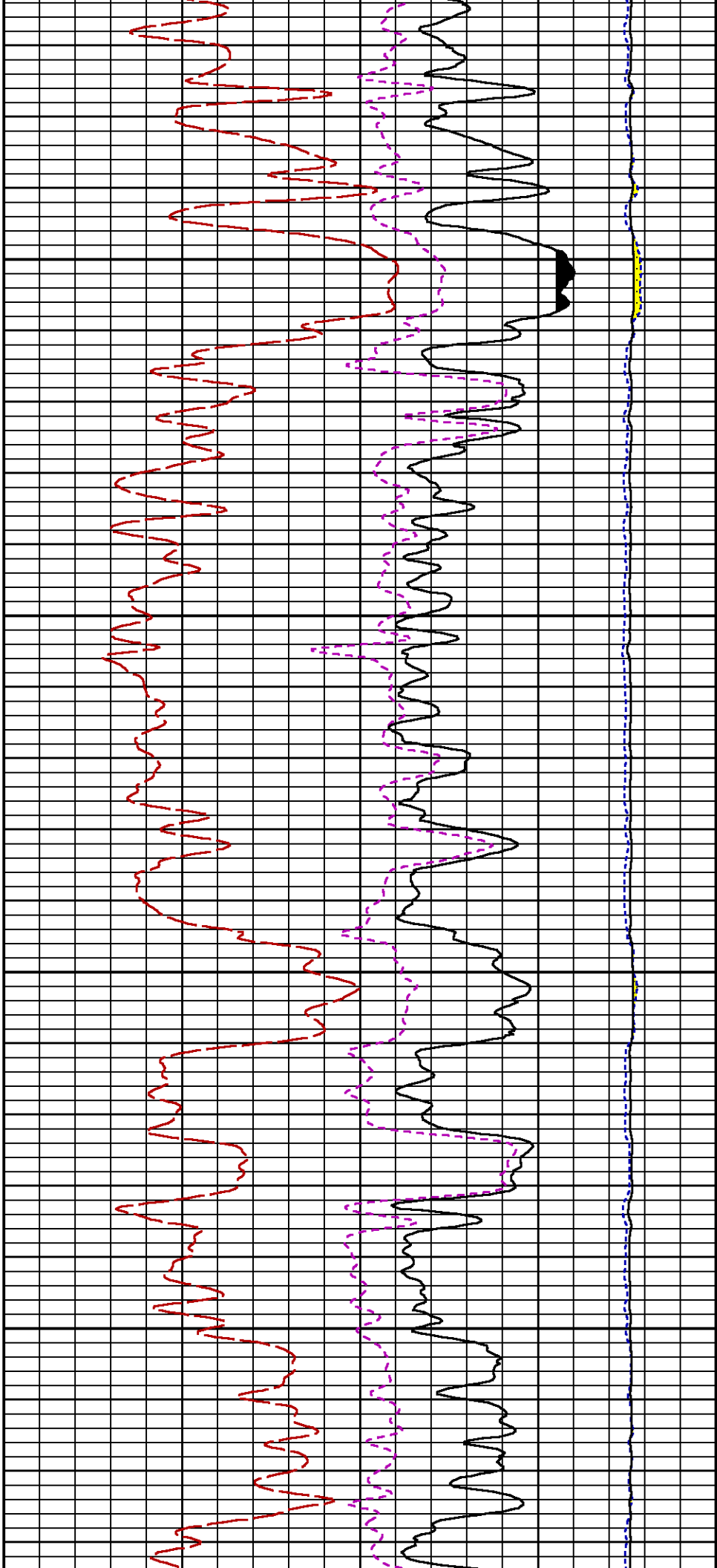


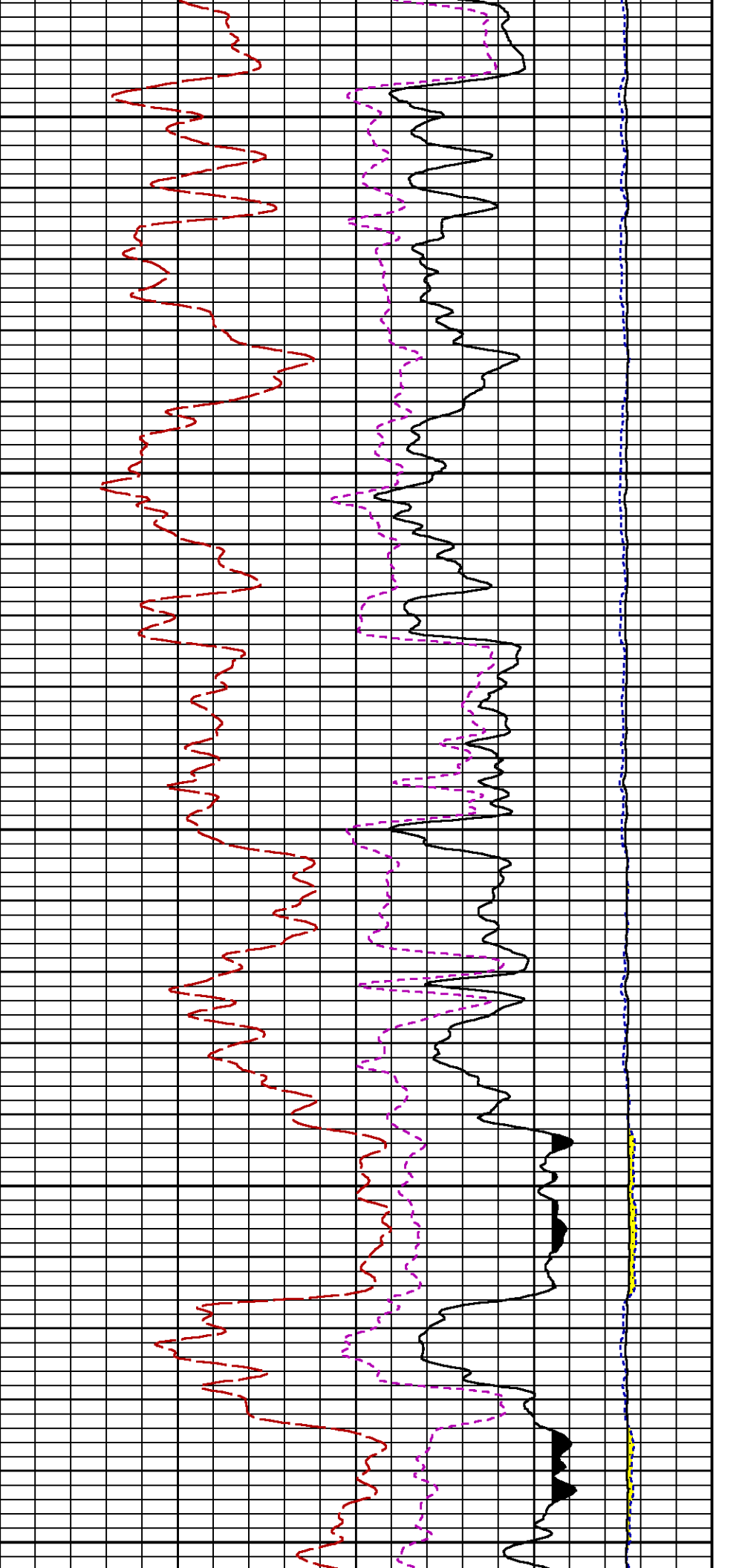








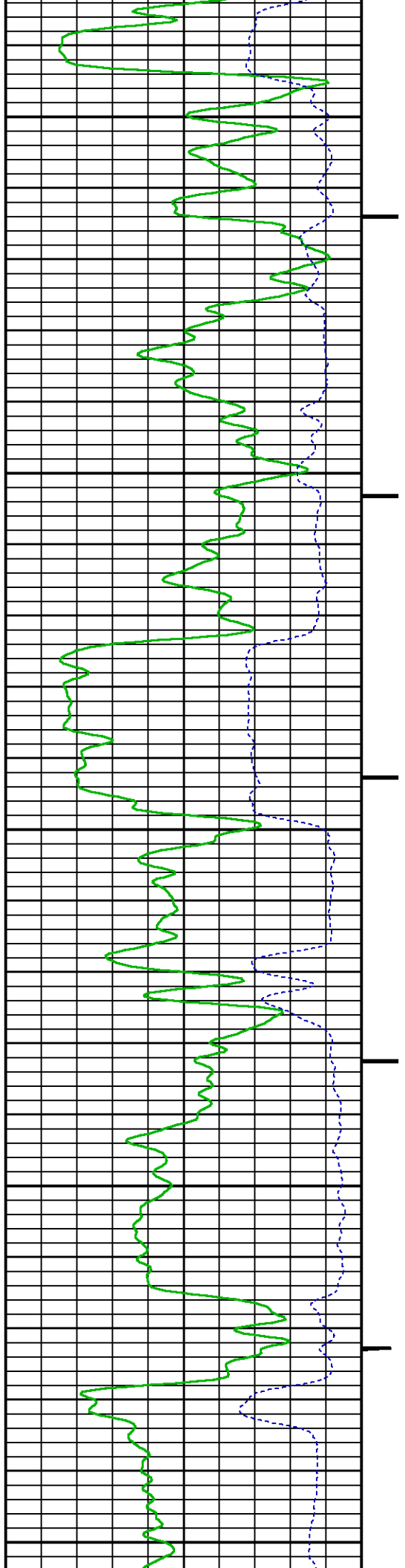


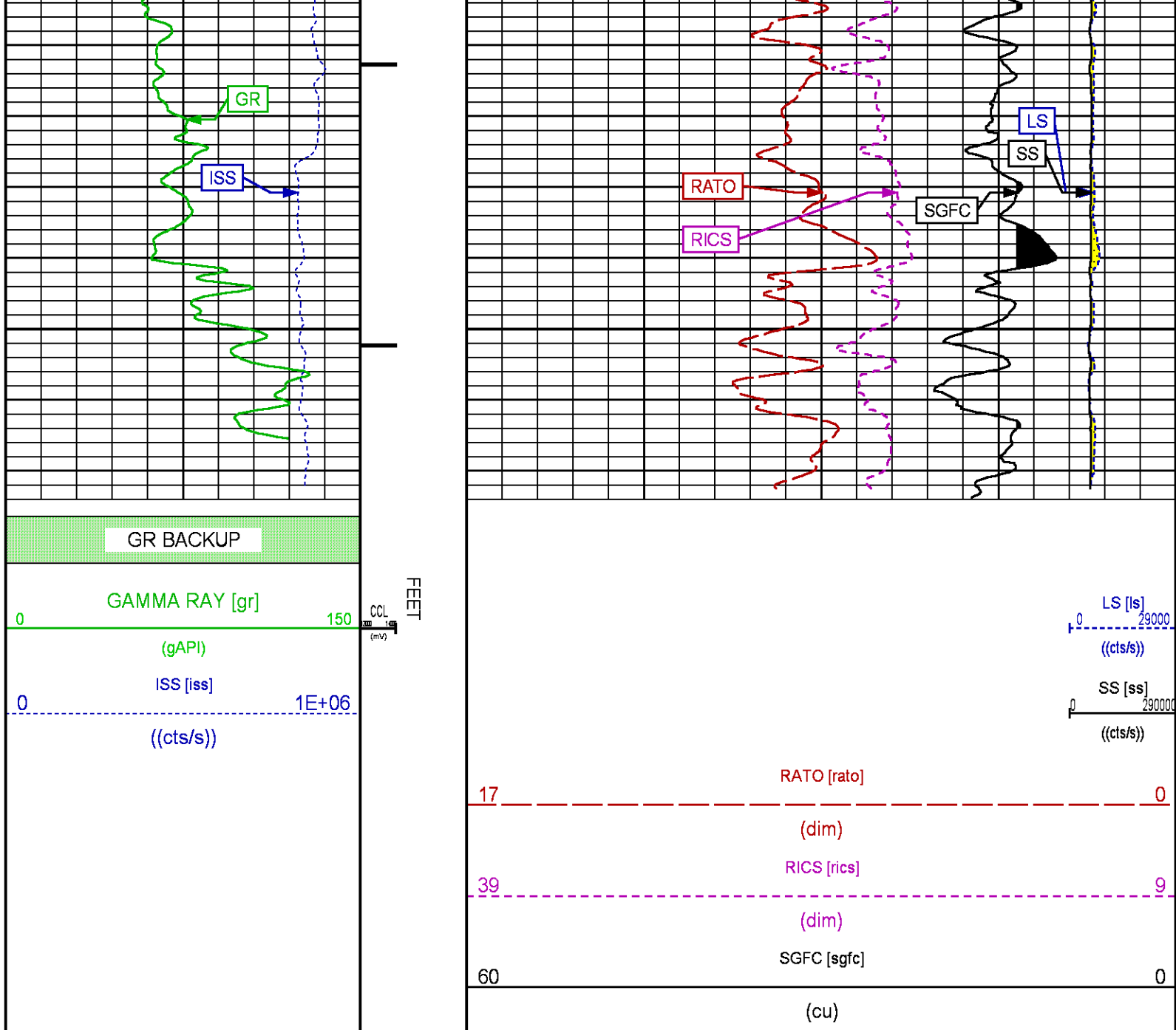


7500

7600

7700





REPEAT PASS PNC 3D MODE

ECLIPS 7.0i ECLIPS General Release Rel 7.0i Thu Jun 08 20:36:10 CDT 2017  
Patches: 2

Plotted: Tue Mar 13 18:09:05 2018

## PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE\_NICHOLS\_0994-24-01E/p353h01.prm  
LOGGING MODE: DEPTH DIRECTION: UP  
TOP DEPTH: 4768.919 ft BOTTOM DEPTH: 5070.118 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		"	"

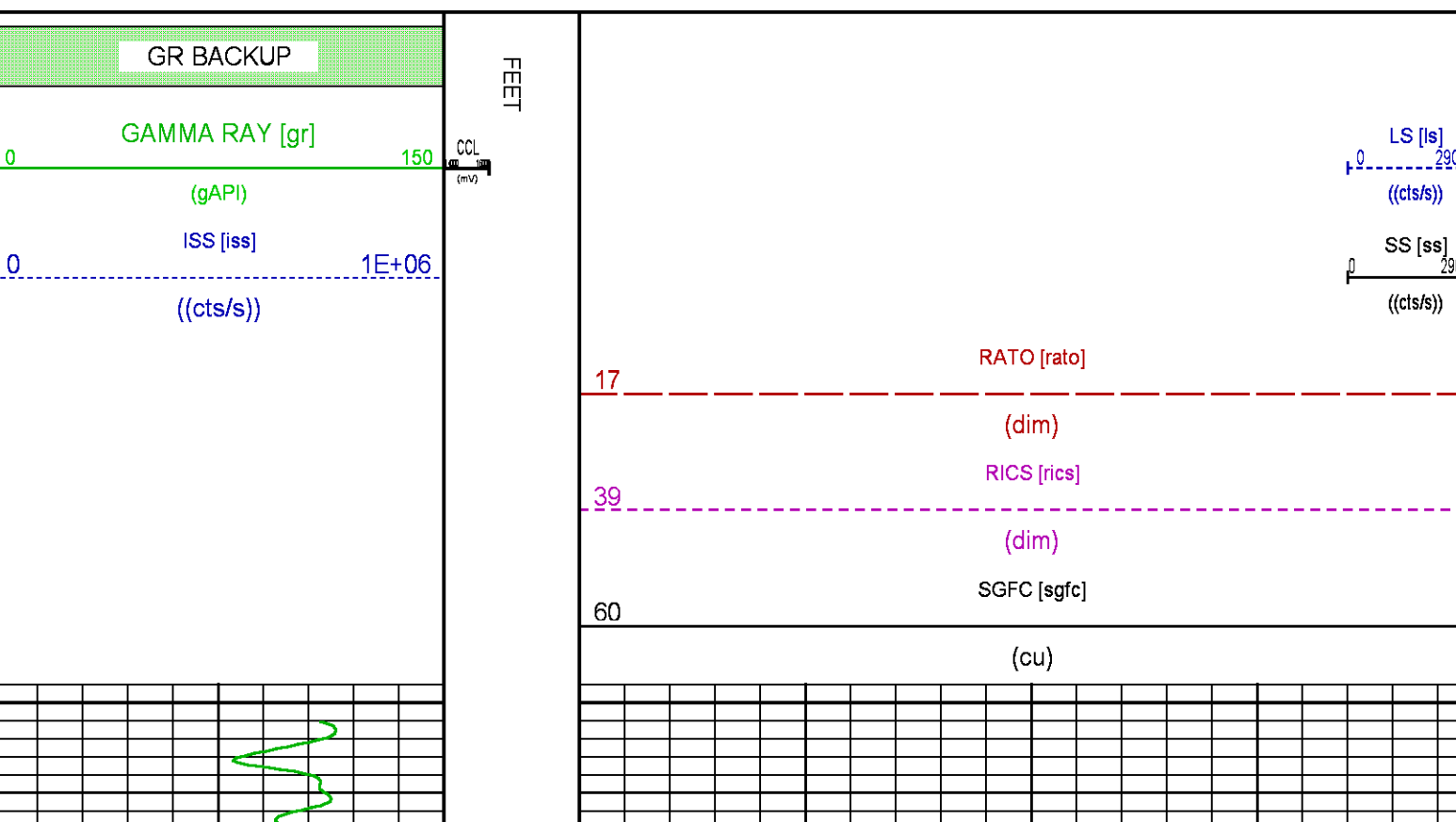
## CURVE DESCRIPTION REPORT

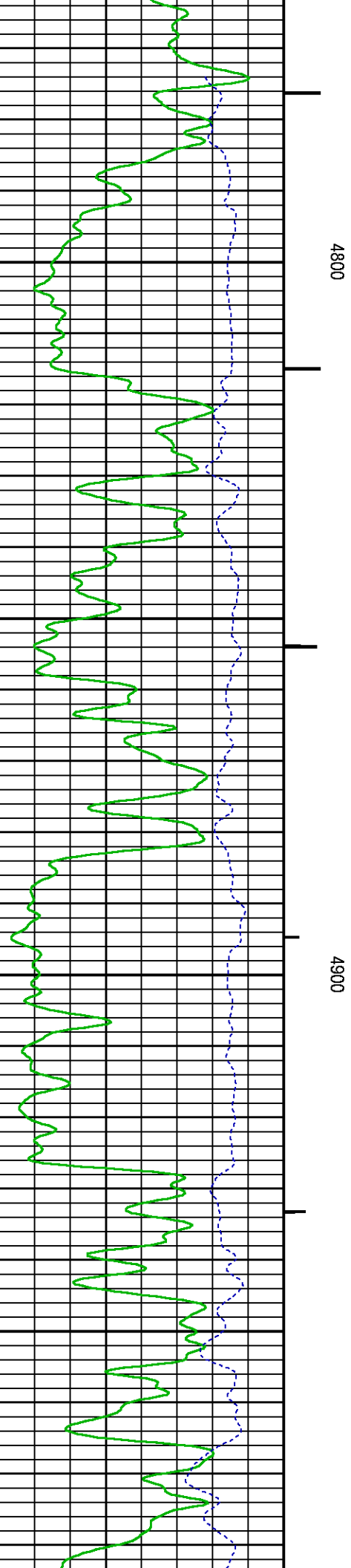
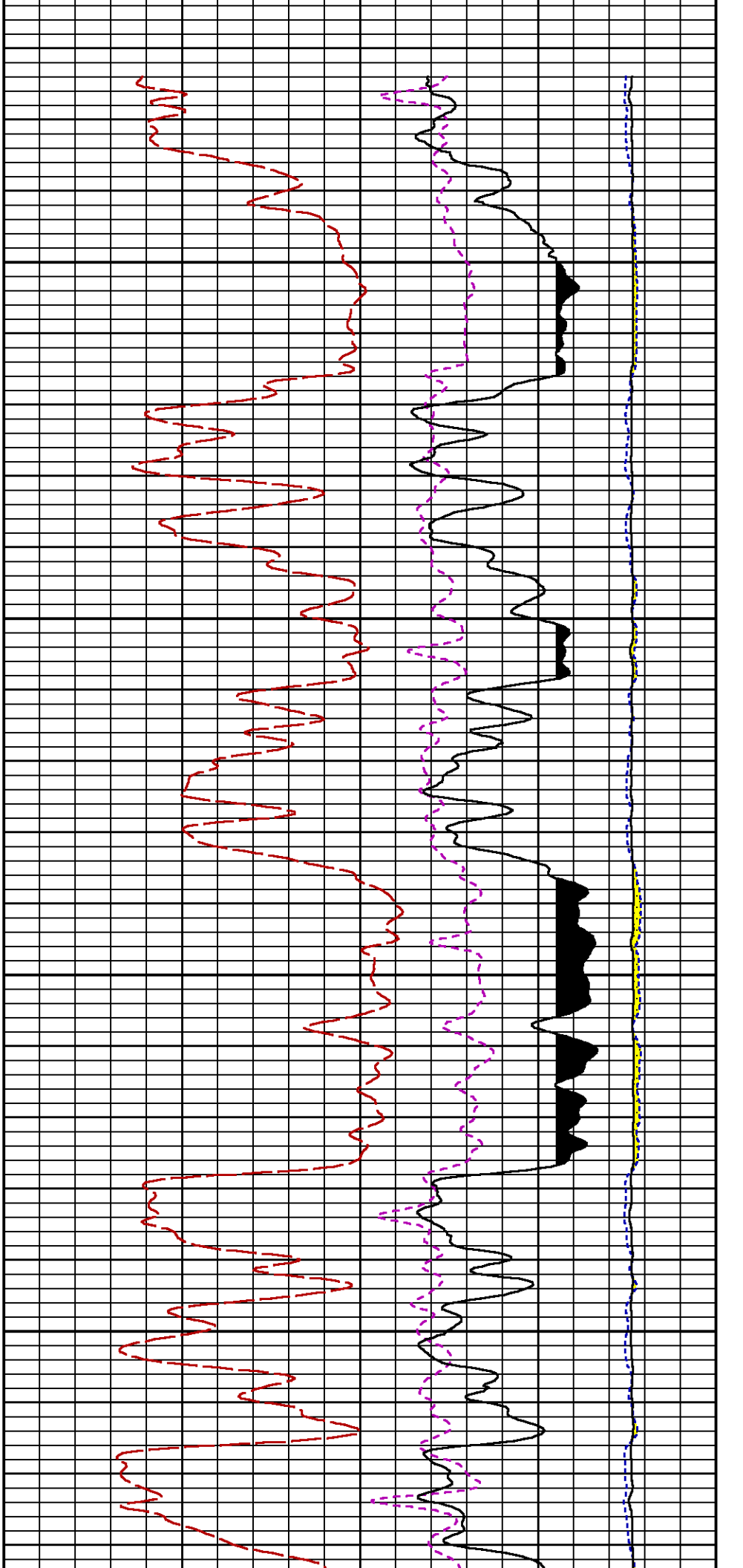
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	N/A	CASING COLLAR LOCATOR
F1:GR	N/A	GAMMA RAY
F1:ISS	N/A	INELASTIC SHORT SPACE COUNT RATE
F1:LS	N/A	LONG SPACE COUNT RATE
F1:RATO	N/A	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	N/A	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	N/A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

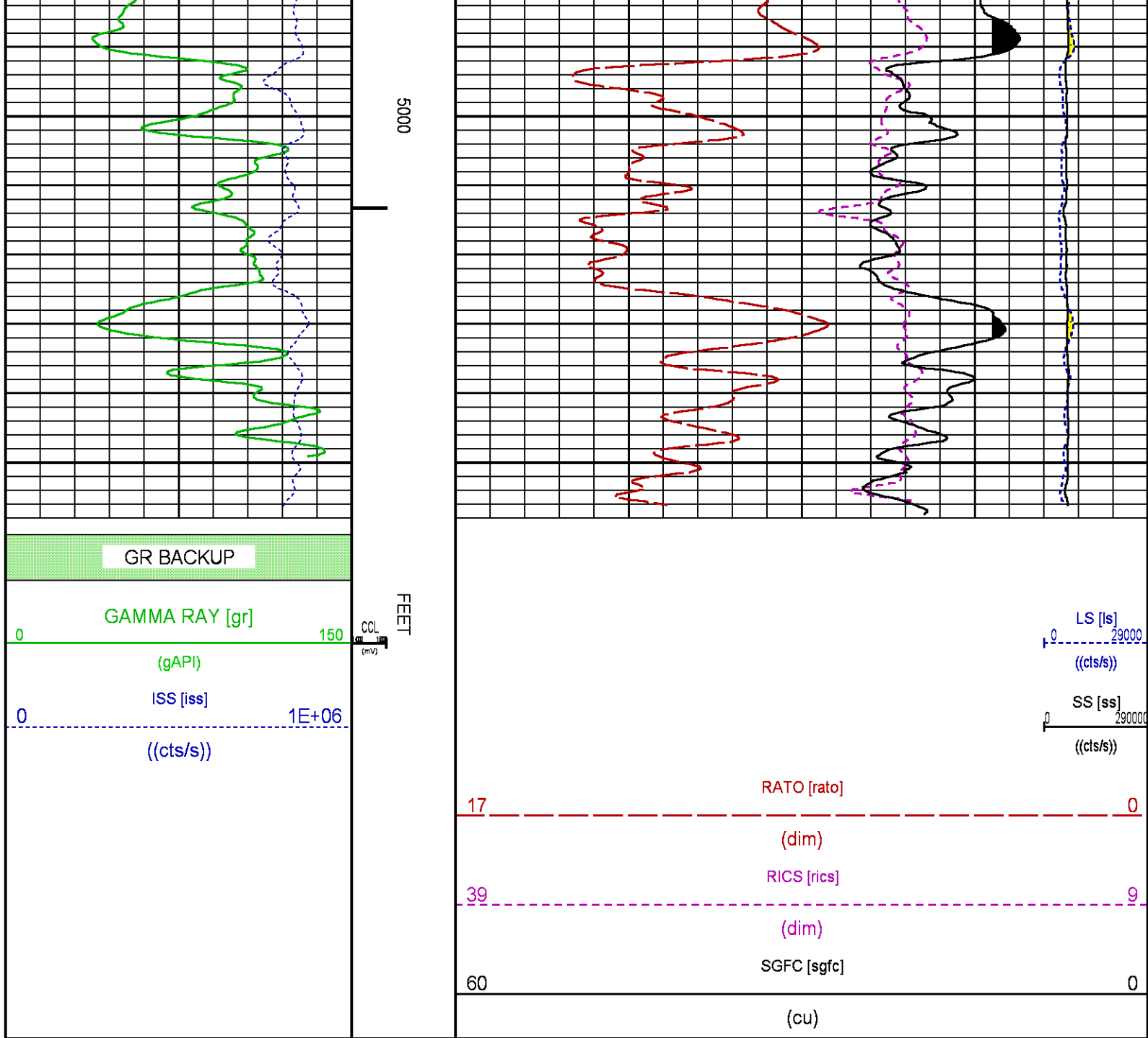
## CURVE MEASURE POINT OFFSET

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

Presentation	: SysA:LARAMIE_RPM_REPEAT.fvpdf [5"/100' Scale]
Plot Interval	: 4748 - 5072.25 Feet
Data File 1	: F1 : SysA:/dat1a/LARAMIE_NICHOLS_0994-24-01E/RPM_REPEAT.xtf
Created On	: N/A
Company	: LARAMIE ENERGY II LLC
Well	: NICHOLS 0994-24-01W
Field	: VEGA
File Interval	: 4748 - 5073.75 Feet
OCT	: p353h







## CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/LARAMIE\_NICHOLS\_0994-24-01E/p353h.tp1

### GR PRIMARY CALIBRATION SUMMARY

TOOL #: 8262XA 10317216

DATE/TIME PERFORMED: Sat Jan 20 08:55:31 2018

UNIT #: 4352 ML4352

CALB JIG #: 4702NK DA\_228

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	CR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	CALBRTR (gAPI)
GR	58.42	336.96	278.5	0.664	38.80	223.80	185

### GR PRIMARY VERIFICATION SUMMARY

TOOL #: 8262XA 10317216

DATE/TIME PERFORMED: Sat Jan 20 08:58:00 2018

UNIT #:

4352 ML4352

VERI JIG #:

4702NK DA\_228

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	59.02	336.93	0.664	39.20	223.79	184.59
						176.00 195.00

## RPM\_PNC\_3D PRIMARY CALIBRATION SUMMARY

TOOL: 8283PA 10184883

DATE/TIME PERFORMED: Thu Dec 28 16:06:32 2017

UNIT: 5753XD 111111

CALIBRATOR: 2437XB 112674

SOURCE: 8281AA 10160595

HOURS: 8281AA 495

	ISS	Mtr Vits (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	801542	129	2259	2283	2296	101	7.5	0.9861
Interpolated	1300000	153	2239	2269	2287			

	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	801542	7010	1133	147	26.10	0.15	24.22	0.32
					26.36 26.40	0.00 0.20	23.60 24.80	0.00 0.40

	ISS	ILS	IXS	SS	SS2	LS	CSS	CLS
Raw Data	801542	173203	26774	88480	31440	8243	53586	13246
Fit Quality %		0.758	0.949	0.821	0.831	0.824	0.790	0.824

	ISS	RBOR	RIN ISS/ILS	RIN13 ISS/IXS	RICS ISS/CSS	RATO SS/LS	RTWO SS2/LS	RONE CSS/CLS
Raw Data	801542	1.43	4.63	29.95	14.96	10.74	3.82	4.05
		1.42 1.46	3.55 5.52	22.20 32.70	10.99 16.34	10.06 11.10	3.57 3.95	3.76 4.22
Fit Quality %		0.055	0.140	0.158	0.082	0.013	0.026	0.049
Reduced	1392301	1.43	4.62	30.03	14.96	10.74	3.81	4.04
		1.42 1.46	4.33 5.52	27.60 32.70	13.70 16.34	10.06 11.10	3.57 3.95	3.76 4.22

## TPSETEMP PRIMARY CALIBRATION SUMMARY

TOOL #: 8255XA 11774568

DATE/TIME PERFORMED: Sat Feb 24 08:44:02 2018

UNIT #: 5753XD 111111

	T(0)	T(1)	T(2)	T(3)
Corr Coeff for Temp	-1.089847E+01	1.064572E-01	3.162229E-07	5.808012E-11

## TPSITEEMP PRIMARY CALIBRATION SUMMARY

TOOL #: 8255XA 11774568

DATE/TIME PERFORMED: Thu May 7 07:52:05 2015

UNIT #: 3880TA HL6670

	T(0)	T(1)	T(2)	T(3)
Corr Coeff for Ptfis	-1.089847E+01	1.064572E-01	3.162229E-07	5.808012E-11

## TPSPRES PRIMARY CALIBRATION SUMMARY

GAUGE #: 8255XA 11774568

DATE/TIME PERFORMED: Thu May 7 08:08:15 2015

UNIT #: 3880TA HL6670

	Temp	G	H	I	J
0		5.757116E+05	2.756916E+02	2.333345E-04	-6.169285E-09
1		-8.476257E+01	3.280890E-02	-2.151323E-06	8.959875E-11
2		6.895835E-01	-2.638656E-04	9.921076E-09	-4.102106E-13
3		-1.434187E-03	5.654808E-07	-1.414922E-11	5.870839E-16
4		1.408894E-16	7.548284E-20	2.001050E-24	-7.758373E-29

Coef Test

350.0

5.690279E+05

2.790962E+02

8.905545E-05

1.107021E-10

## INSTRUMENT CONFIGURATION

Source File: /dat1a/LARAMIE\_NICHOLS\_0994-24-01E/p353h~~tdg

### A3 CABLEHEAD

Diameter : 1.37"

### 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

### GAMMA RAY

Diameter : 1.70"  
Length : 3.02'  
Weight : 15 lbs  
Series : 8262XA  
Mnemonic : GR  
Measure Point: 0.89': GR MP

### RPM ELECTRONICS

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

34.08'

CCL MP 26.03'

GR MP 22.90'

# RPM C DETECTOR SECTION

Diameter : 1.70"  
 Length : 9.40'  
 Weight : 41 lbs  
 Series : 8283PA  
 Mnemonic : RPM  
 Measure Point: 5.45': XLS MP  
 Measure Point: 5.04': LS MP  
 Measure Point: 4.79': SS MP

XLS MP 13.58'  
 LS MP 13.16'  
 SS MP 12.91'

# RPM SOURCE SECTION

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

# TEMPERATURE / PRESSURE

Diameter : 1.70"  
 Length : 3.30'  
 Weight : 13 lbs  
 Series : 8255XA  
 Mnemonic : SRPL  
 Measure Point: 1.52': TEMP MP

TEMP MP 1.65'  
 PRES MP

# BULL PLUG 1 11/16

TOTAL LENGTH: 34.08'  
 TOTAL WEIGHT: 144 lbs  
 MAX DIAMETER: 0'1.70"

0.00'



**COMPANY**

LARAMIE ENERGY II LLC

**WELL**

NICHOLS 0994-24-01E

**FIELD**

VEGA

**COUNTY**

MESA

**STATE** COLORADO

**FILE NO:**

**API NO:**

0507710406000

**LOCATION:**

SHL 1790 FNL 2780 FEL

BHL 125 FNL 2780 FEL

**ELEVATIONS:**

KB 7161 FT

DF

GL 7137 FT

**SEC** 24

**TWP** 9S

**RGE** 94W

**DATE**

13-Mar-2018

