



FILE NO: CH089583		COMPANY WPX ENERGY	
API NO: 05045217920000		WELL FEDERAL NER 324-32	
Ver. 3.87 32 6S 93W RU 23-5 PAD NABORS 576		FIELD RULISON	
LOCATION: SHL: 127' FNL & 2575' FWL(5 7S 93W) BH: 1061' FSL & 2023' FWL(32 6S 93W)		COUNTY GARFIELD	
SEC 32 TWP 6S RGE 93W		STATE CO	
PERMANENT DATUM LOG MEASURED FROM DRILL. MEAS. FROM		OTHER SERVICES BOND LOG ELEVATIONS: KB 7629 FT DF GL 7603 FT	
GL ELEVATION 7603 FT KB 26 FT ABOVE P.D. KB			
DATE 01-Sep-2014			
RUN TRIP 1 1			
SERVICE ORDER US089583			
DEPTH DRILLER 10174 FT			
DEPTH LOGGER 10140 FT			
BOTTOM LOGGED INTERVAL 10130 FT			
TOP LOGGED INTERVAL 6011 FT			
TIME STARTED 15:00			
TIME FINISHED 22:00			
OPERATOR RIG TIME 7 HOURS			
TYPE OF FLUID IN HOLE WATER			
FLUID DENSITY NA			
FLUID SALINITY NA			
FLUID LEVEL 90 FT			
LOGGED CEMENT TOP NA			
WELLHEAD PRESSURE 0 PSI			
MAXIMUM HOLE DEVIATION NA			
NOMINAL LOGGING SPEED 10 FMN			
MAX. RECORDED TEMP. 242 DEGF			
REFERENCE LOG BAKER HUGHES BOND LOG			
REFERENCE LOG DATE 01-Sep-2014			
EQUIP. NO. LOCATION 6670			
RECORDED BY JEFF DUCY			
WITNESSED BY NEWELL			

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.

BOREHOLE RECORD		
BIT SIZE	FROM	TO
13.5 IN	0 FT	1114 FT
8.75 IN	1114 FT	10192 FT

CASING RECORD				
SIZE	WEIGHT	GRADE	FROM	TO
9.625 IN			0 FT	1114 FT
4.5 IN	11.6 LB/F	P-110	0 FT	10192 FT

### REMARKS

RUN 1 TRIP 1: All data on this log is shifted and depth matched using the gamma ray curve to the Baker Hughes bond log dated 01/SEP/2014 at the client's request.

The depth matching process creates potential for collar lengths to vary from those recorded on other cased hole wireline units without a gamma ray reference.

The amount of linear shift is 3 feet.

Logged in PNC-3D mode.

BHT = 242 degF  
SJ = 6902' - 6924

## EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	PCM	8250EA	10408796	FREE
1	1	TEL/CCL	8248ED	10590814	FREE
1	1	GR	8262XA	10317216	FREE
1	1	RPM	8281EA	10273848	FREE
1	1	RPM	8283PA	10160383	FREE
1	1	RPM	8281FA	10307727	FREE
1	1	TEMP	8255XA	166341	FREE

## MAIN SECTION PNC-3D MODE

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

Updates: 1 Patches: 2

Plotted: Mon Sep 1 21:05:48 2014

## PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/CH089583/n353h02.prm  
 LOGGING MODE: DEPTH DIRECTION: UP  
 TOP DEPTH: 5979.500 ft BOTTOM DEPTH: 10149.440 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	8.75	in	"	"
	CASING SIZE	4.50	in	"	"
	MATRIX	SANDSTONE		"	"
	CORRECTION BUFFER	11		"	"

## CURVE DESCRIPTION REPORT

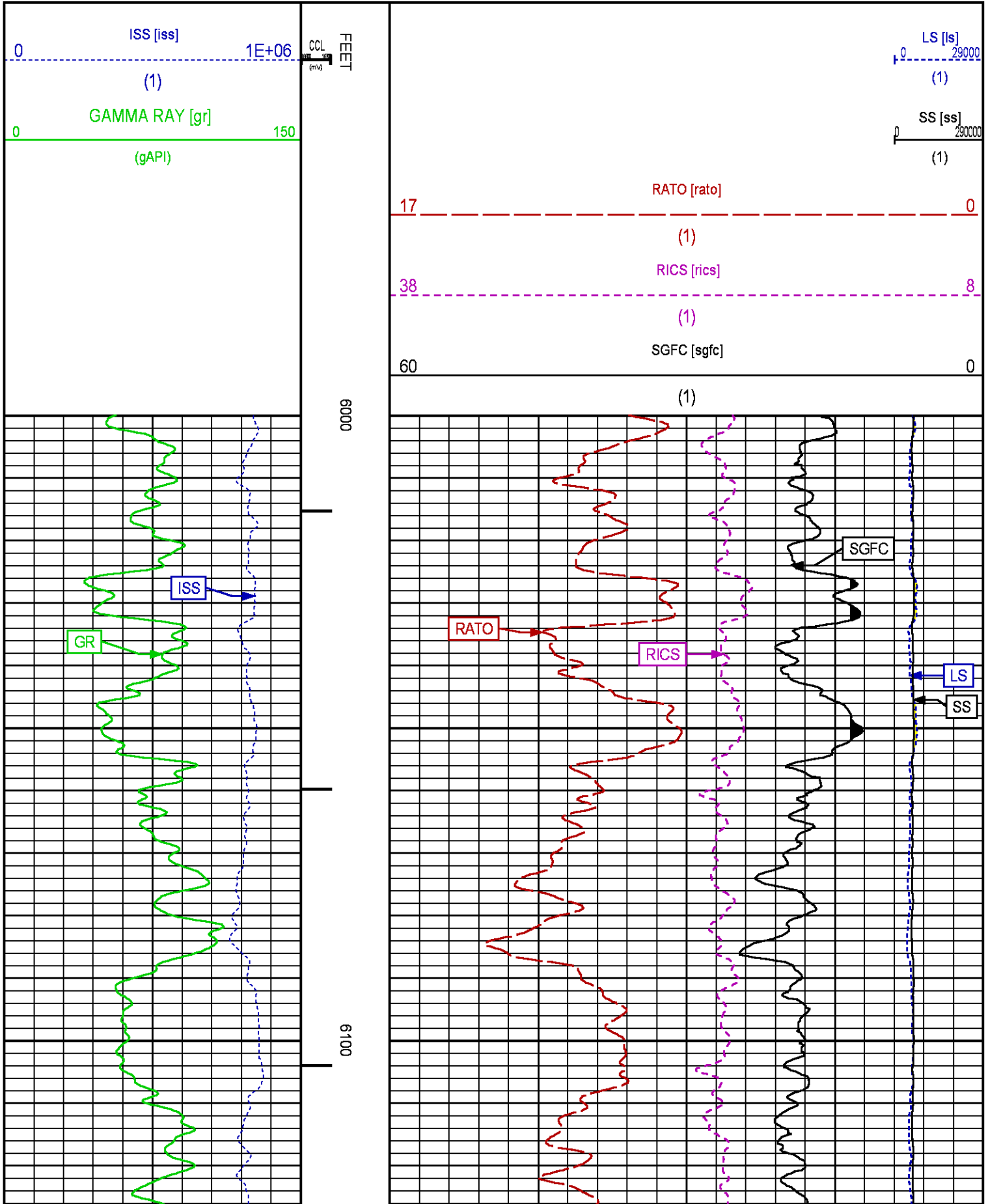
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	Sep 1 16:28:59 2014	CASING COLLAR LOCATOR
F1:GR	Sep 1 16:28:59 2014	GAMMA RAY
F1:ISS	Sep 1 16:28:59 2014	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Sep 1 16:28:59 2014	LONG SPACE COUNT RATE
F1:RATO	Sep 1 16:28:59 2014	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Sep 1 16:28:59 2014	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Sep 1 16:28:59 2014	CORRECTED FORMATION SIGMA
F1:SS	Sep 1 16:28:59 2014	SHORT SPACE COUNT RATE

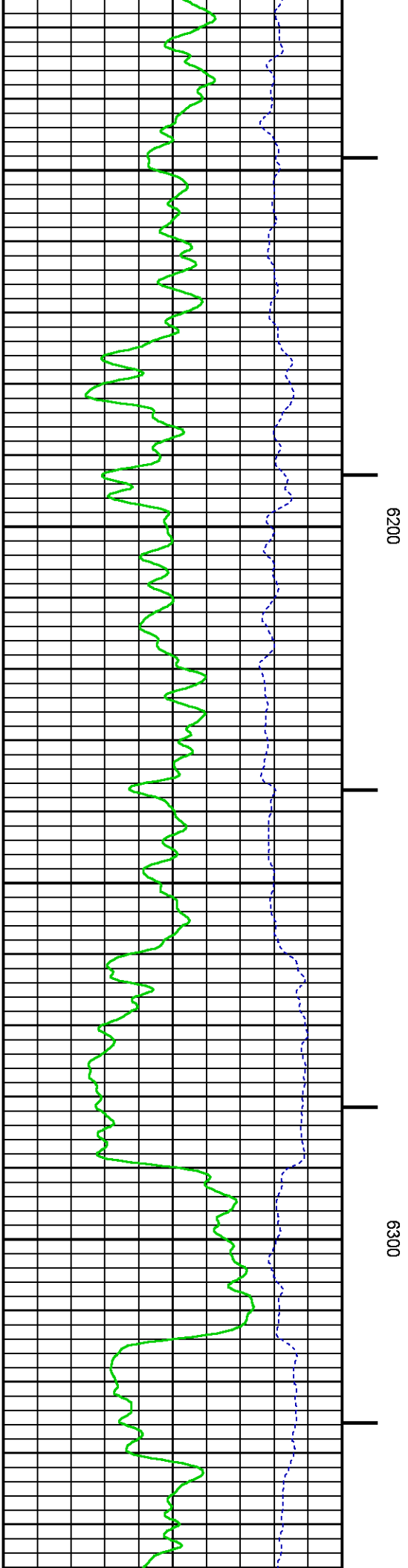
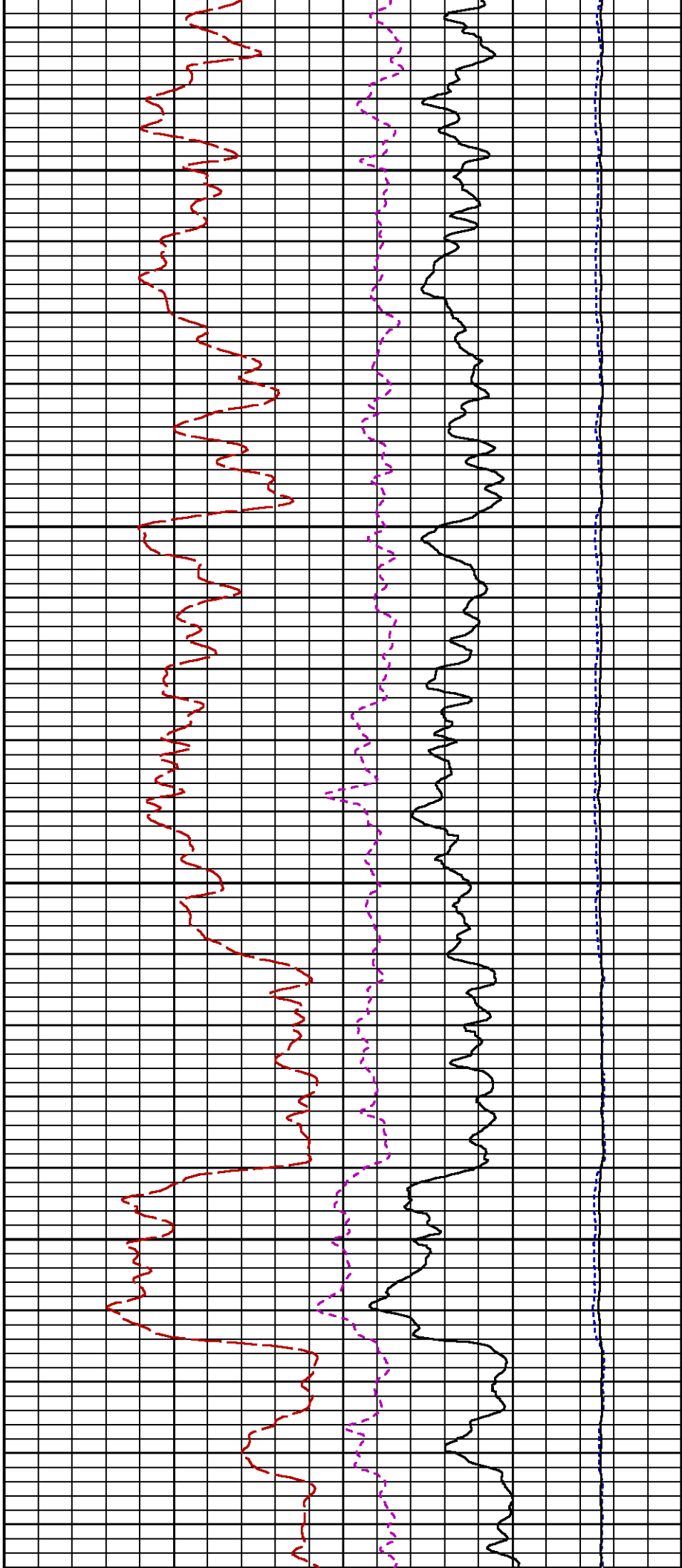
## CURVE MEASURE POINT OFFSET

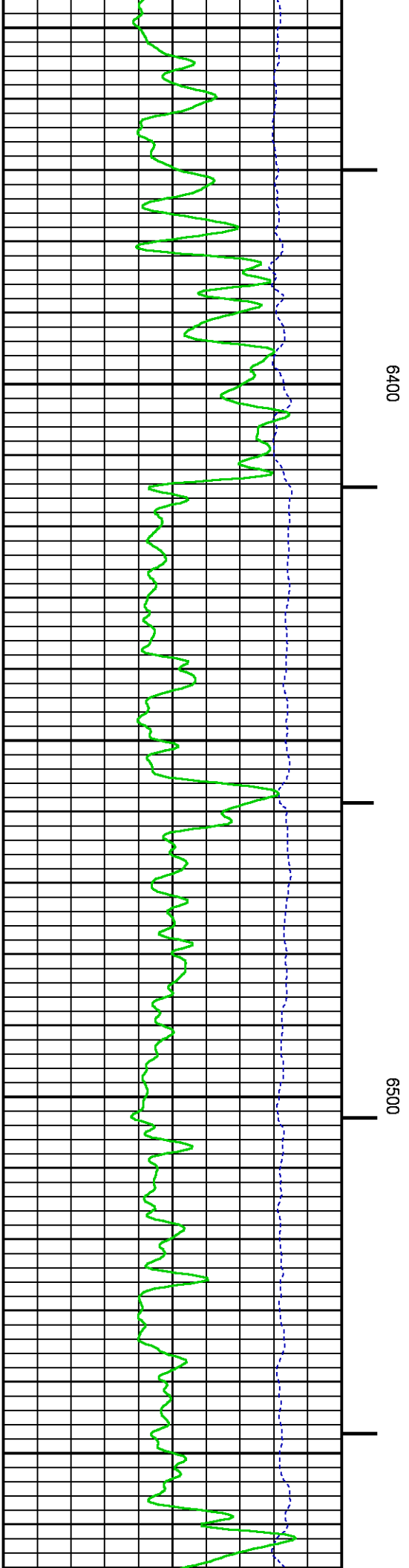
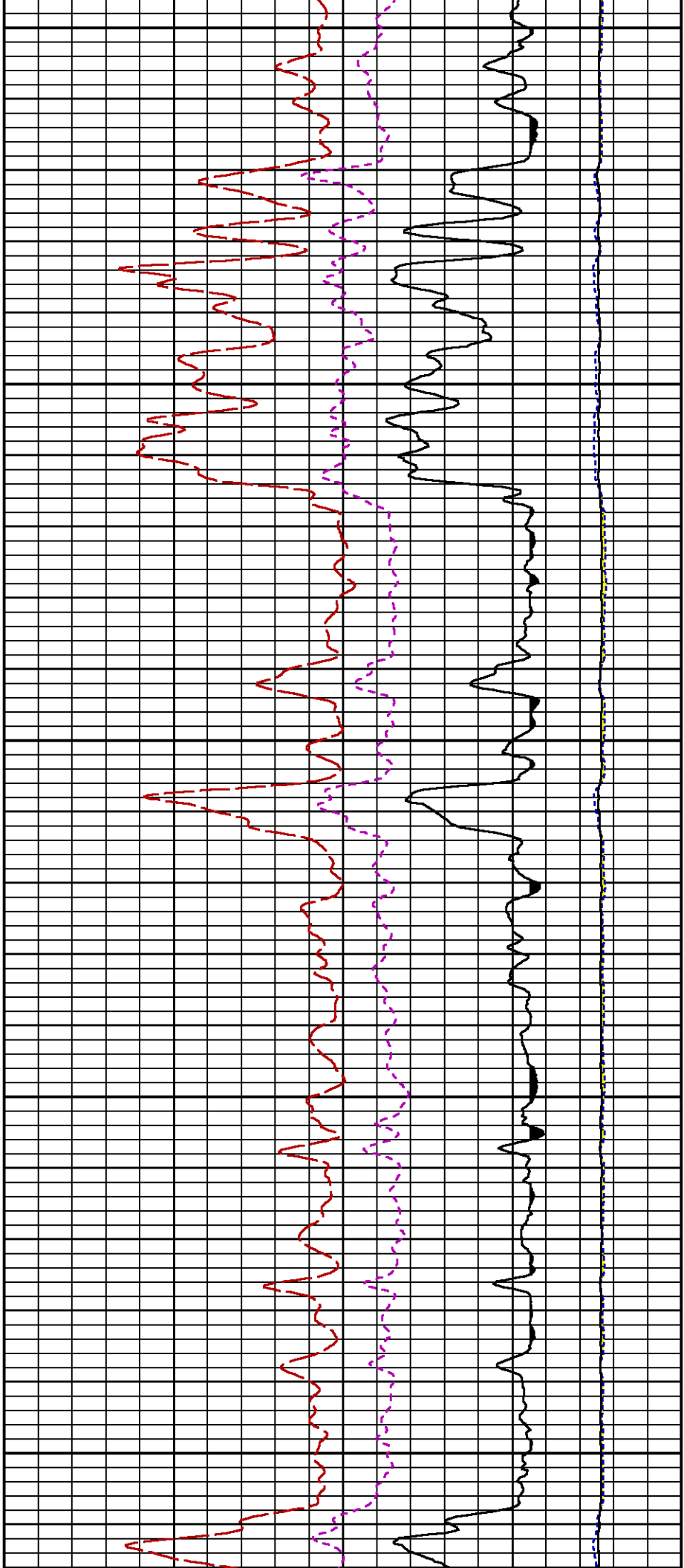
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	26.00	ISS	12.75	RATO	12.75	SGFC	12.75
GR	23.00	LS	12.75	RICS	12.75	SS	12.75

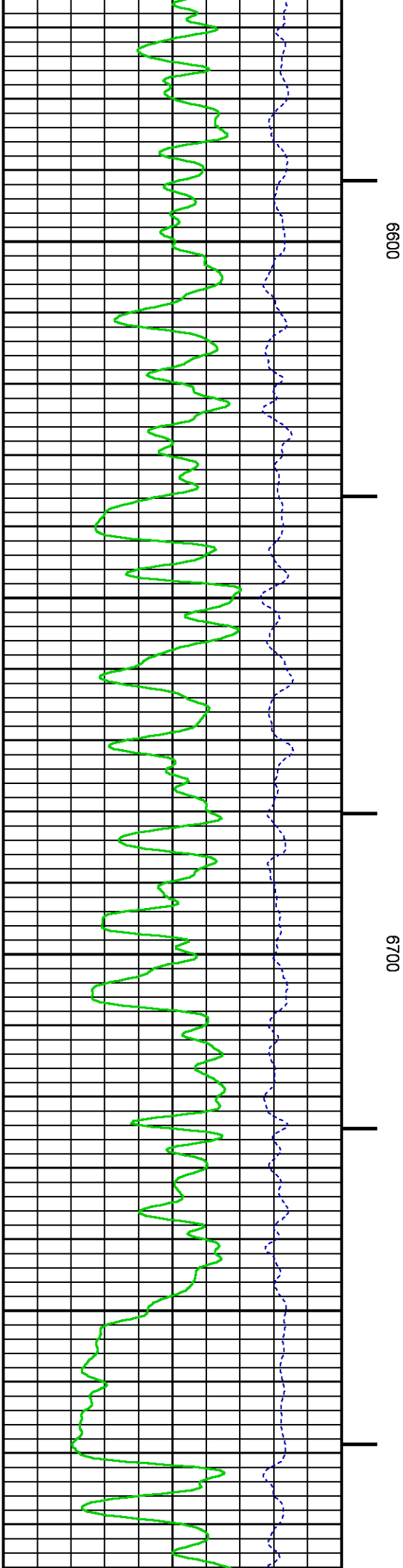
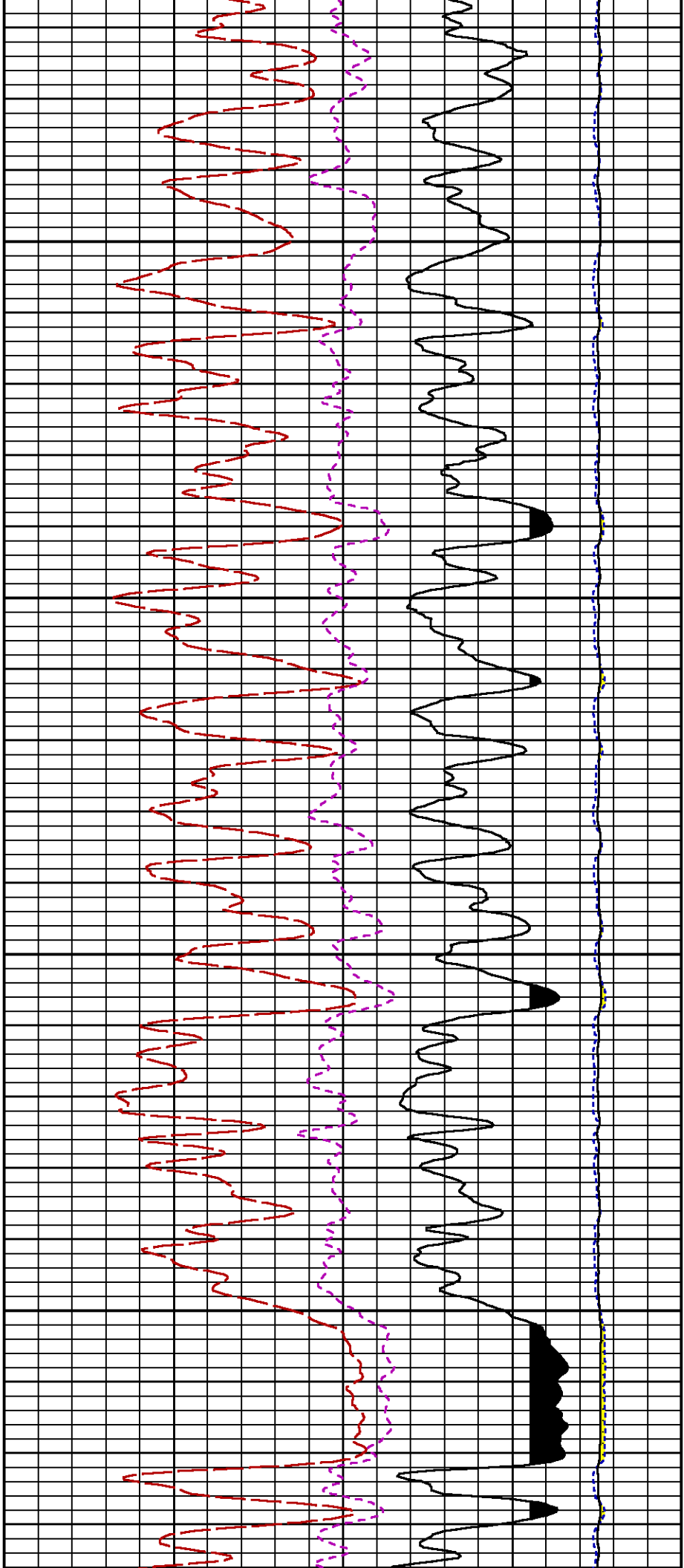
Plot Interval : 6000 - 10145 Feet

Data File 1 : F1 : HL6670:/dat1a/CH089583/324RPM\_MAIN.xtf  
Created On : Sep 1 16:28:59 2014  
Company : WPX ENERGY  
Well : FEDERAL NER 324-32  
Field : RULISON  
File Interval : 5949.75 - 10144.8 Feet  
OCT : n353h







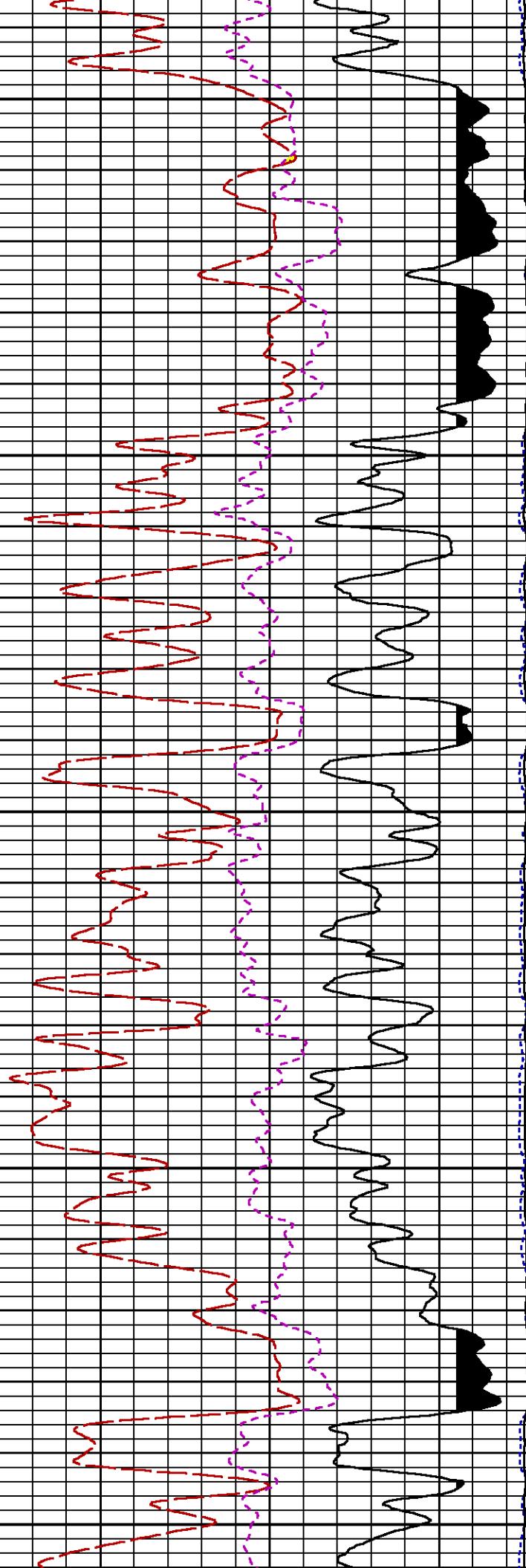
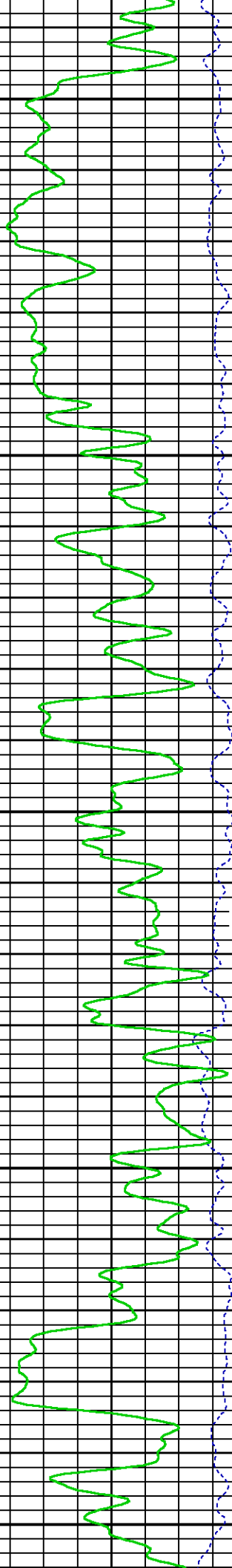


6800

6900

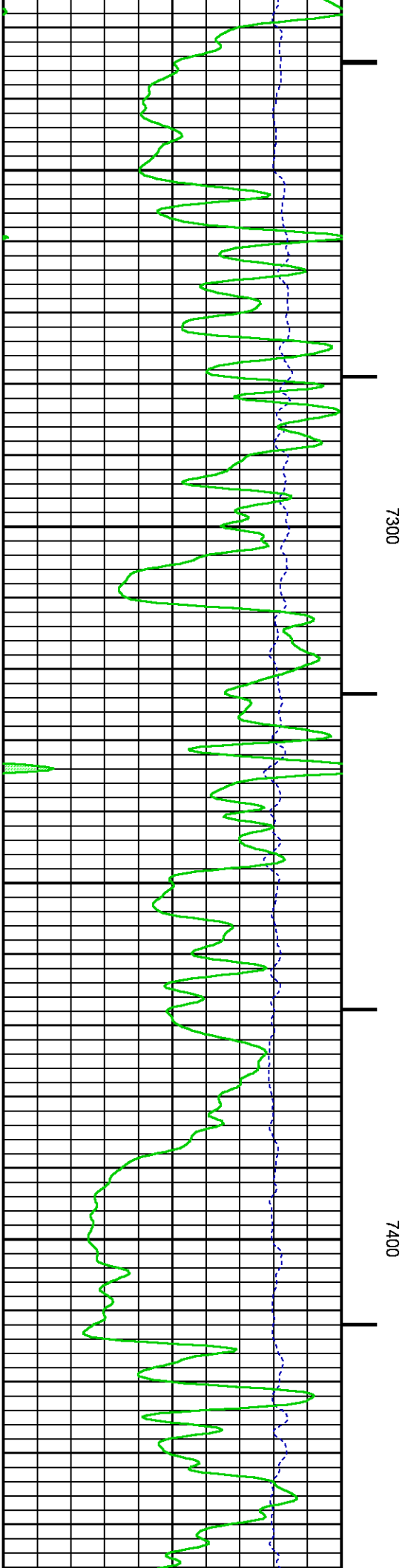
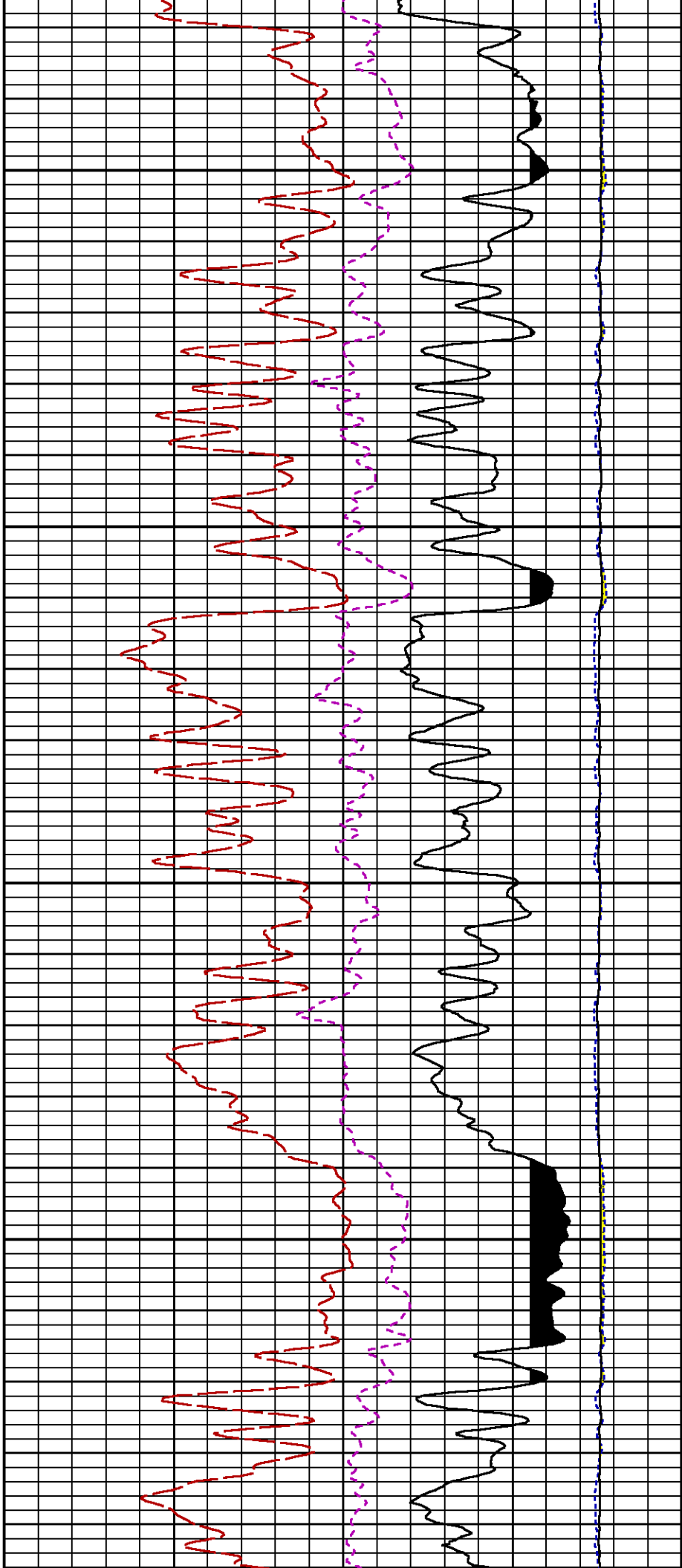
SHORT JOINT

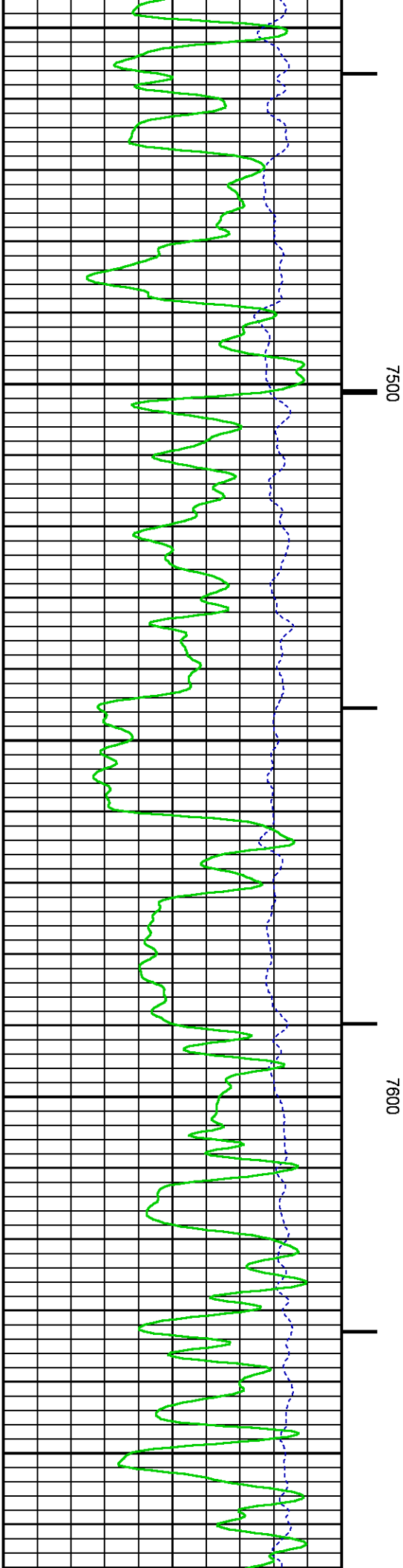
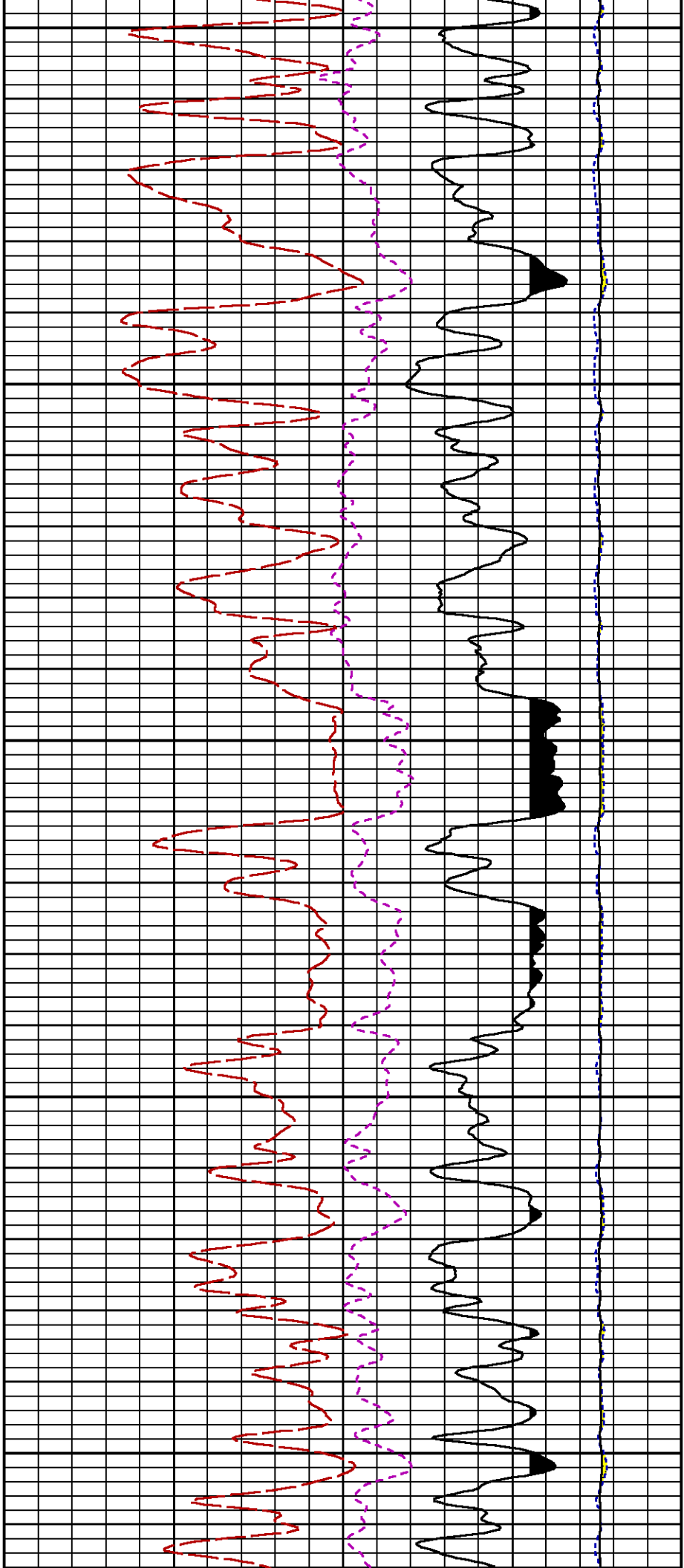
7000

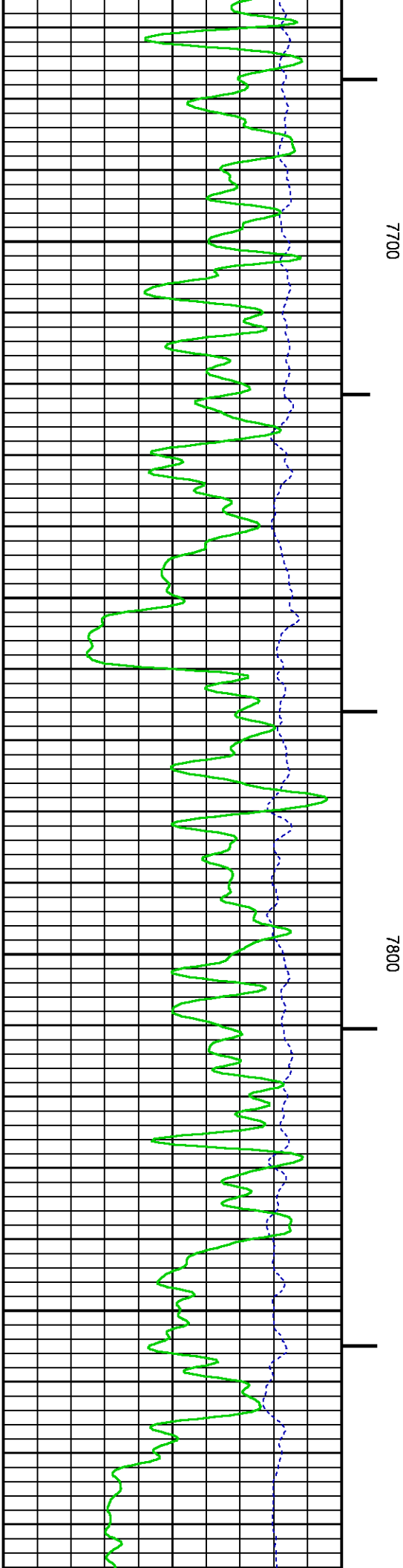
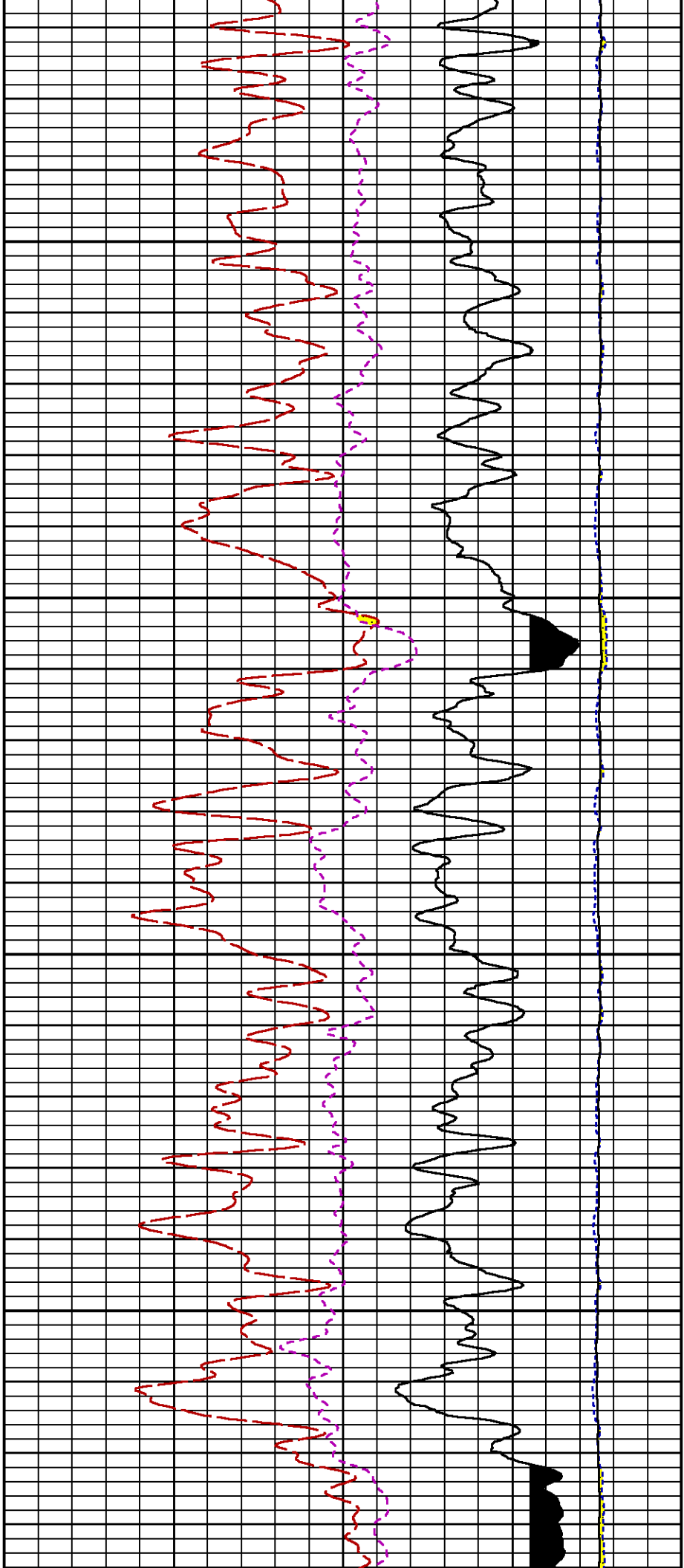


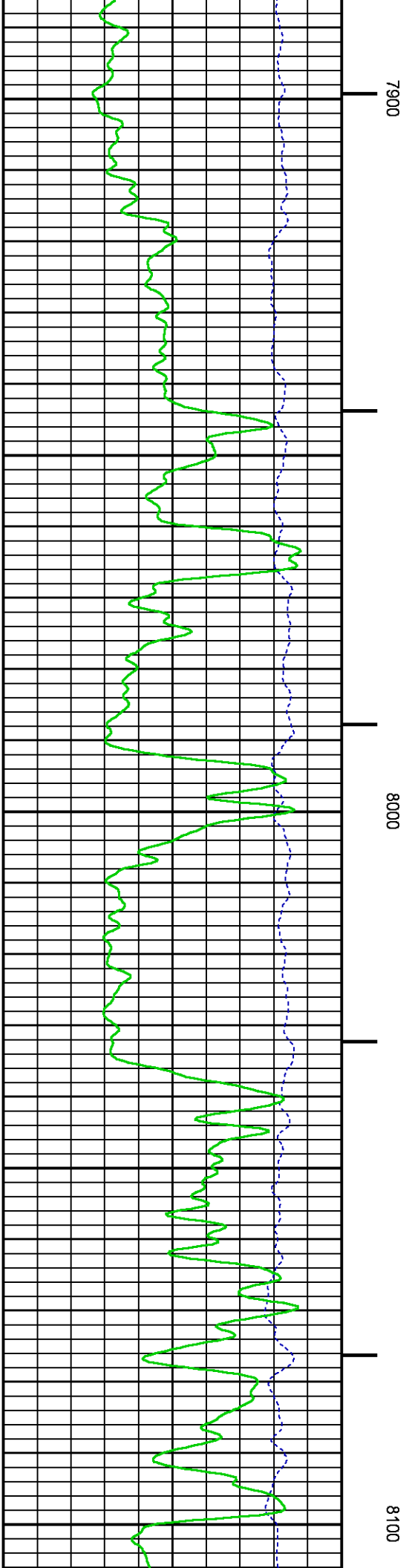
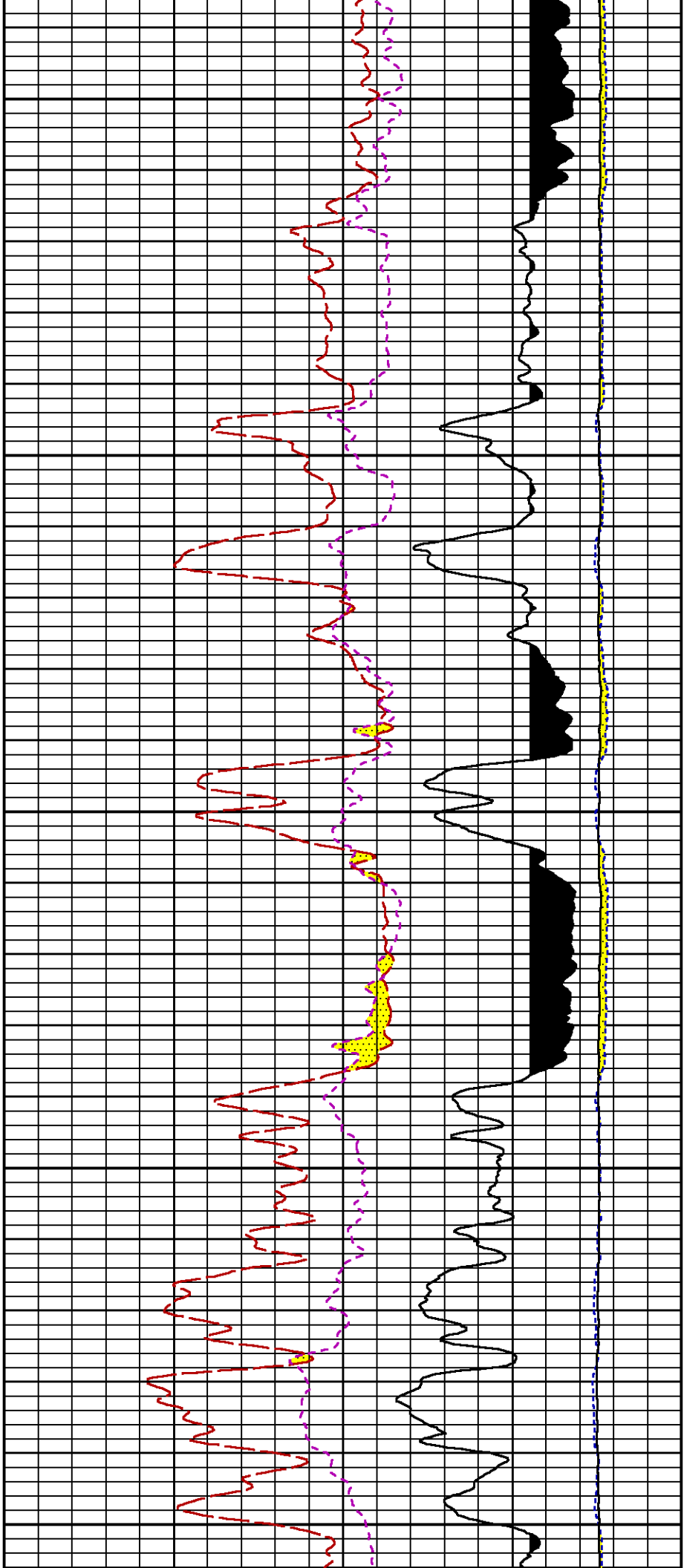


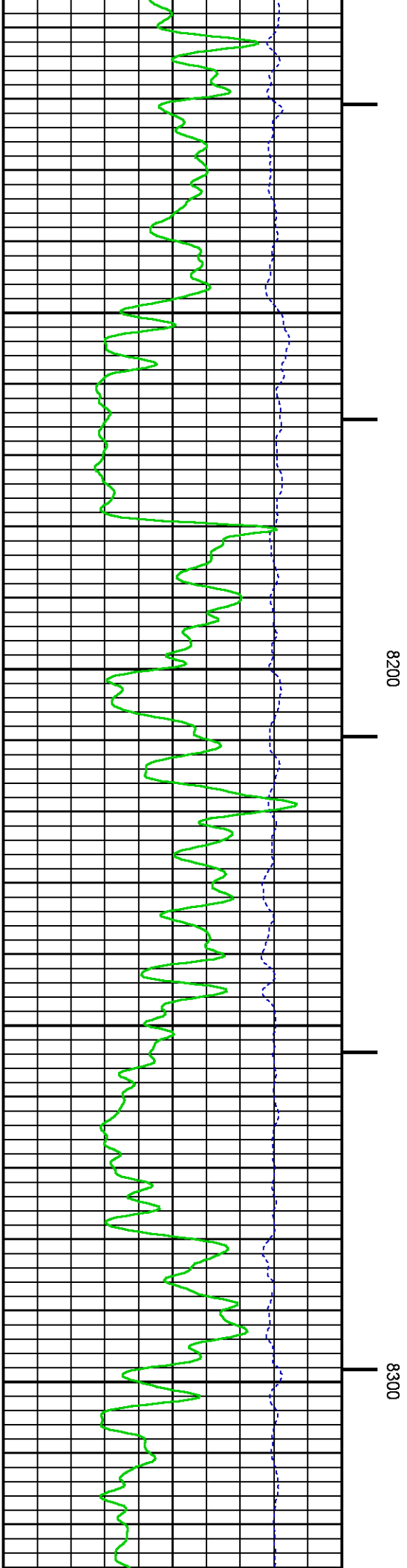
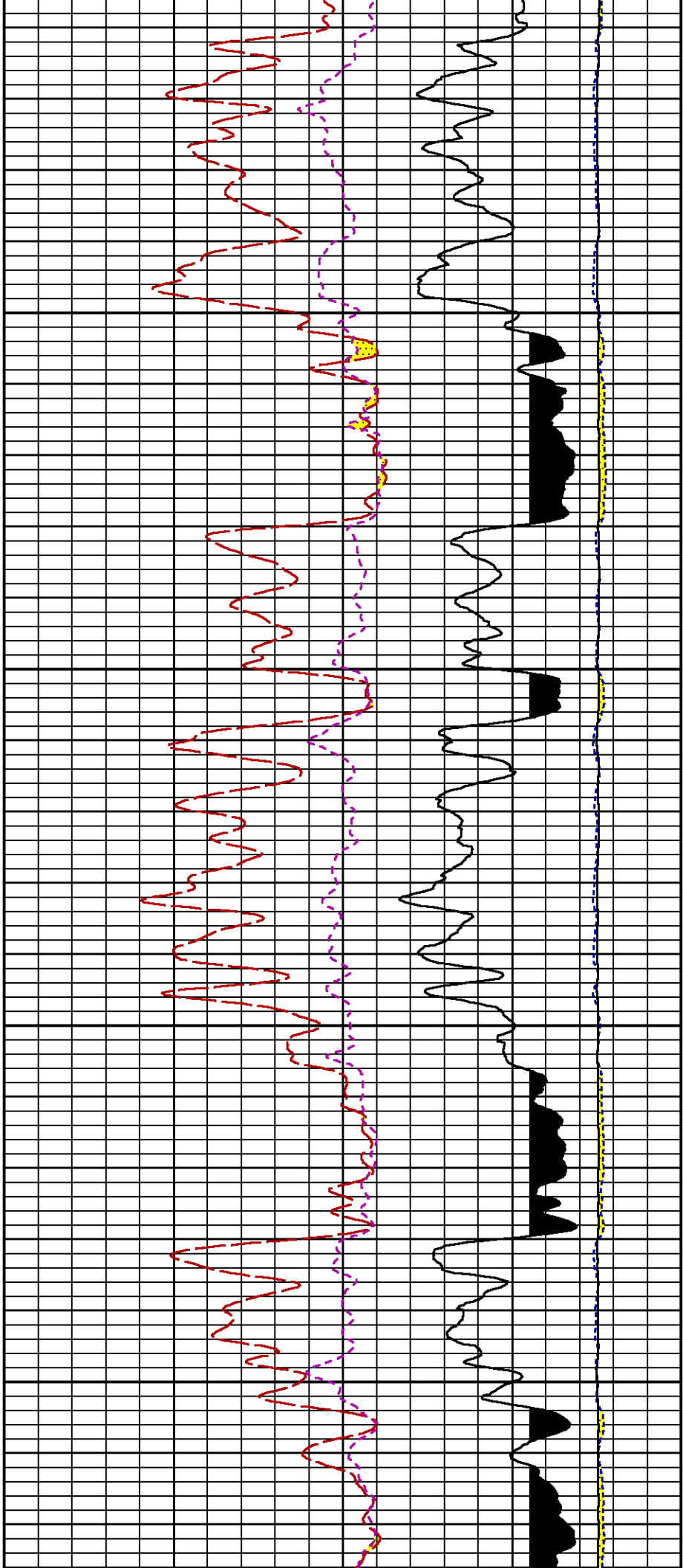


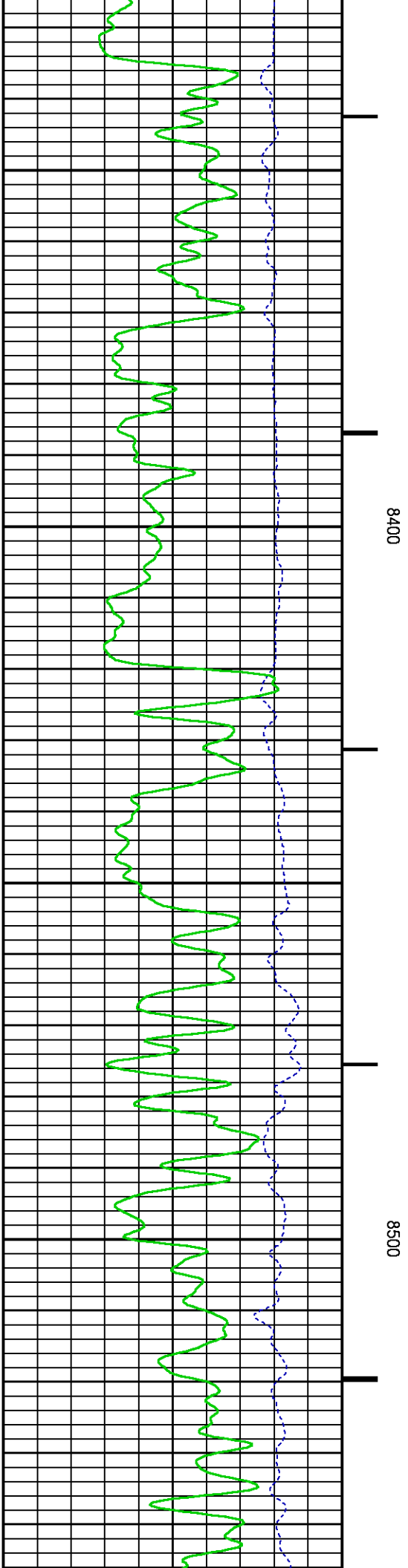
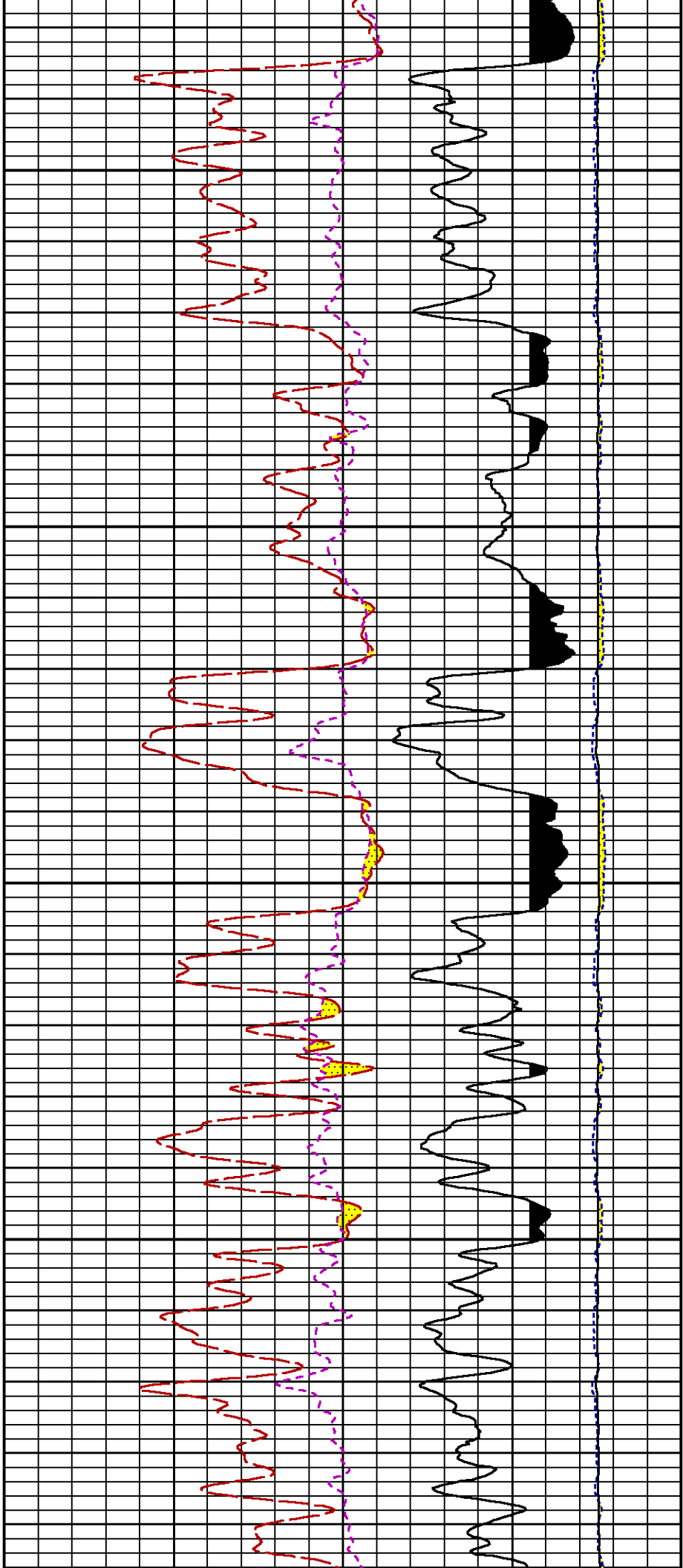


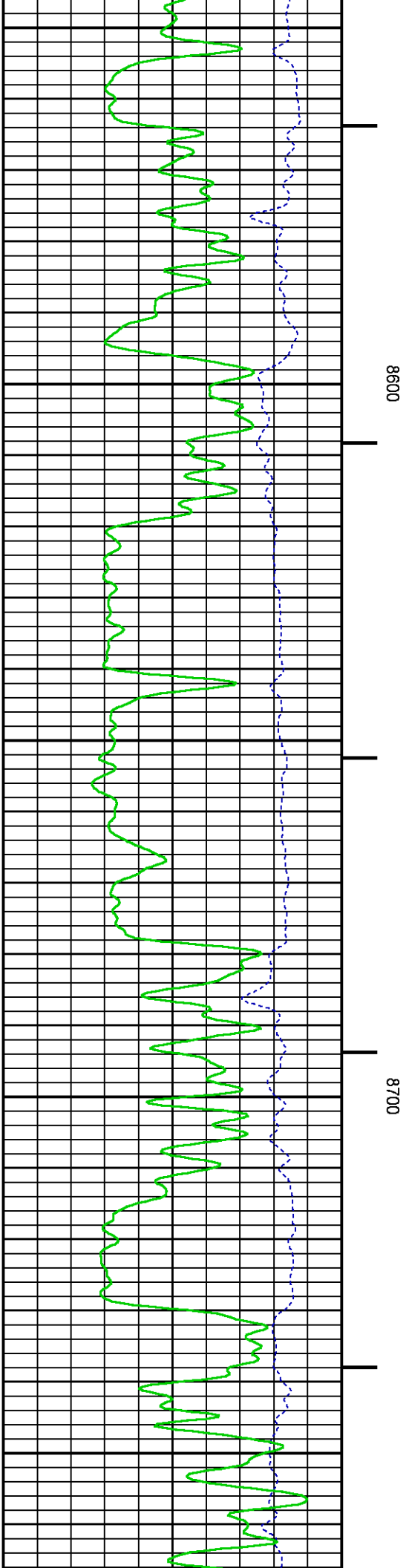
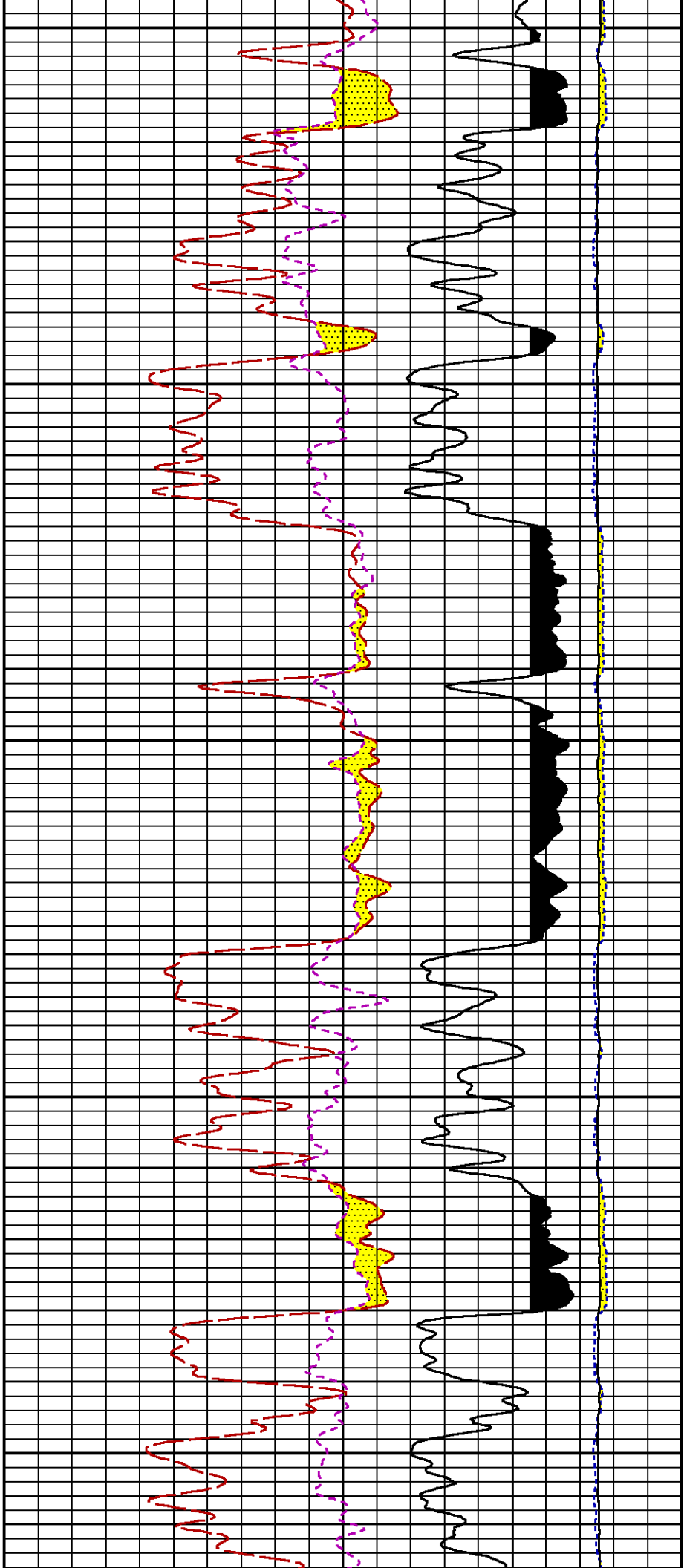


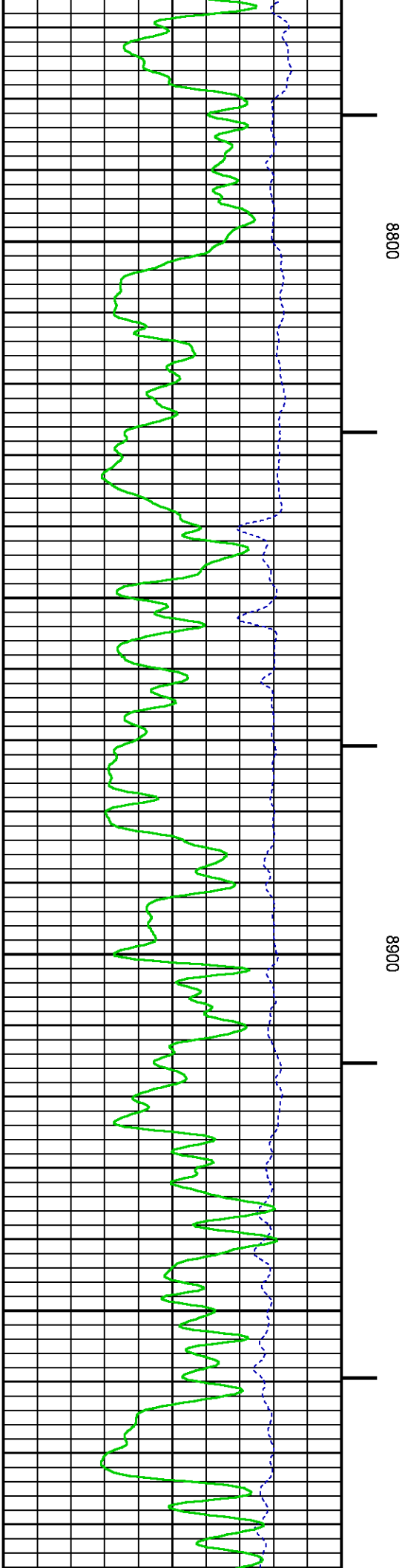
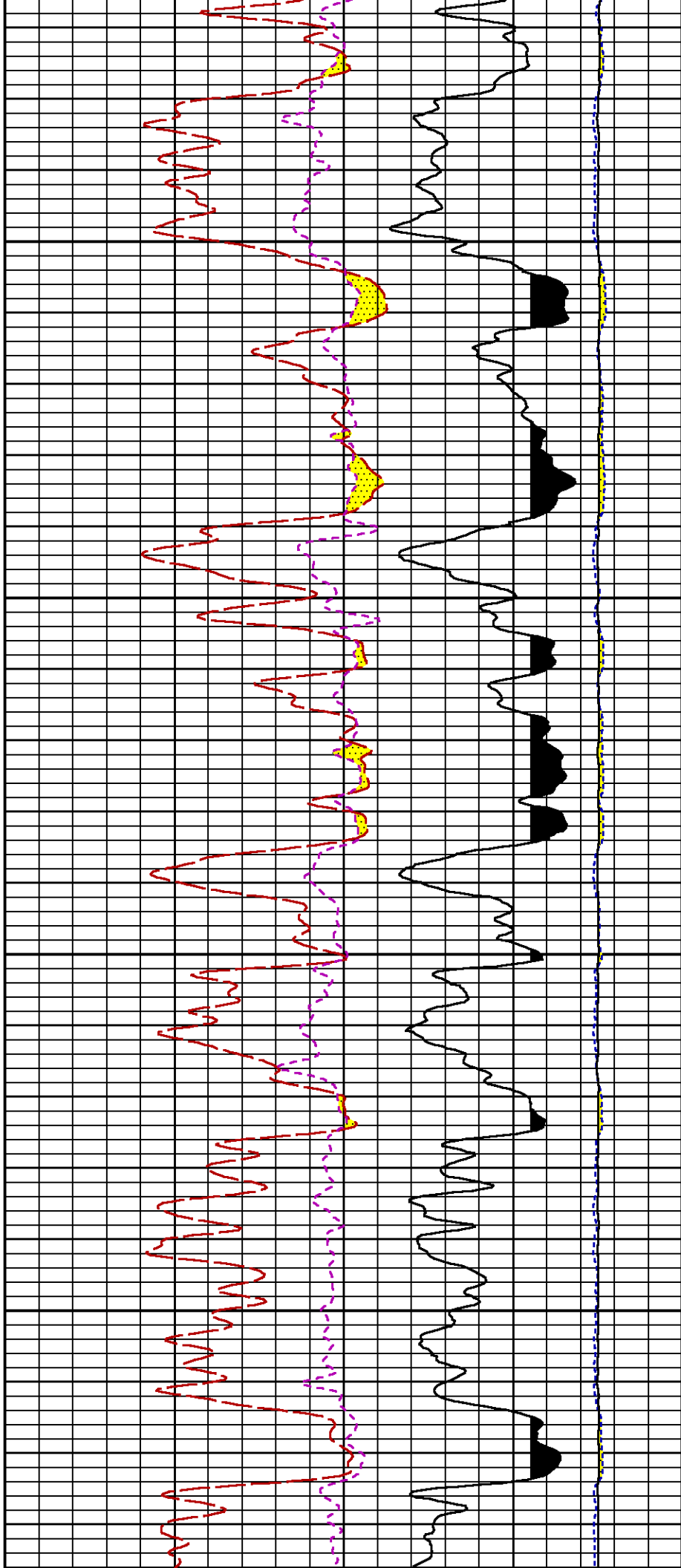




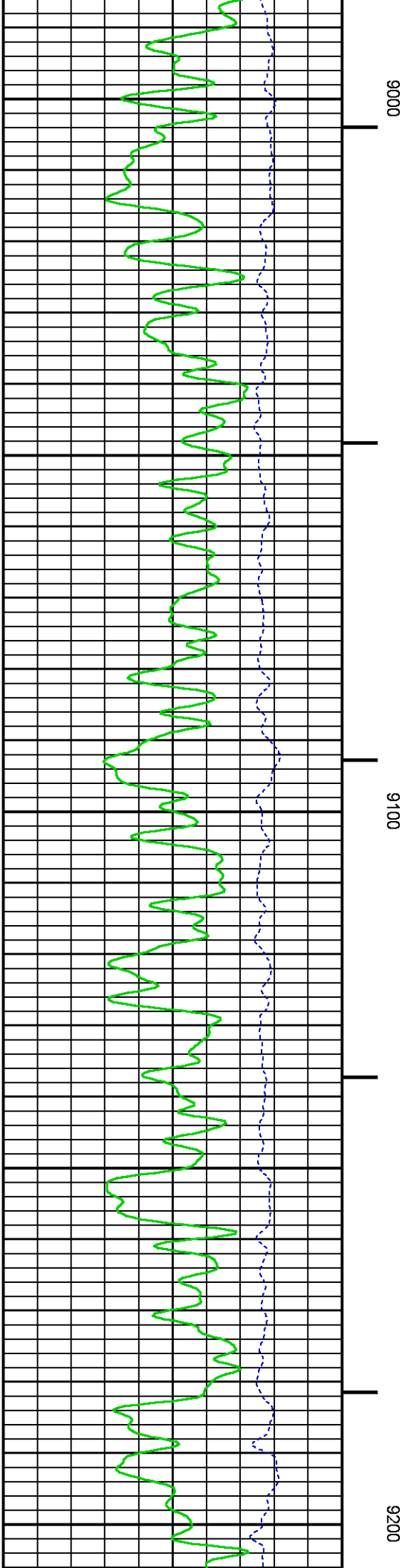
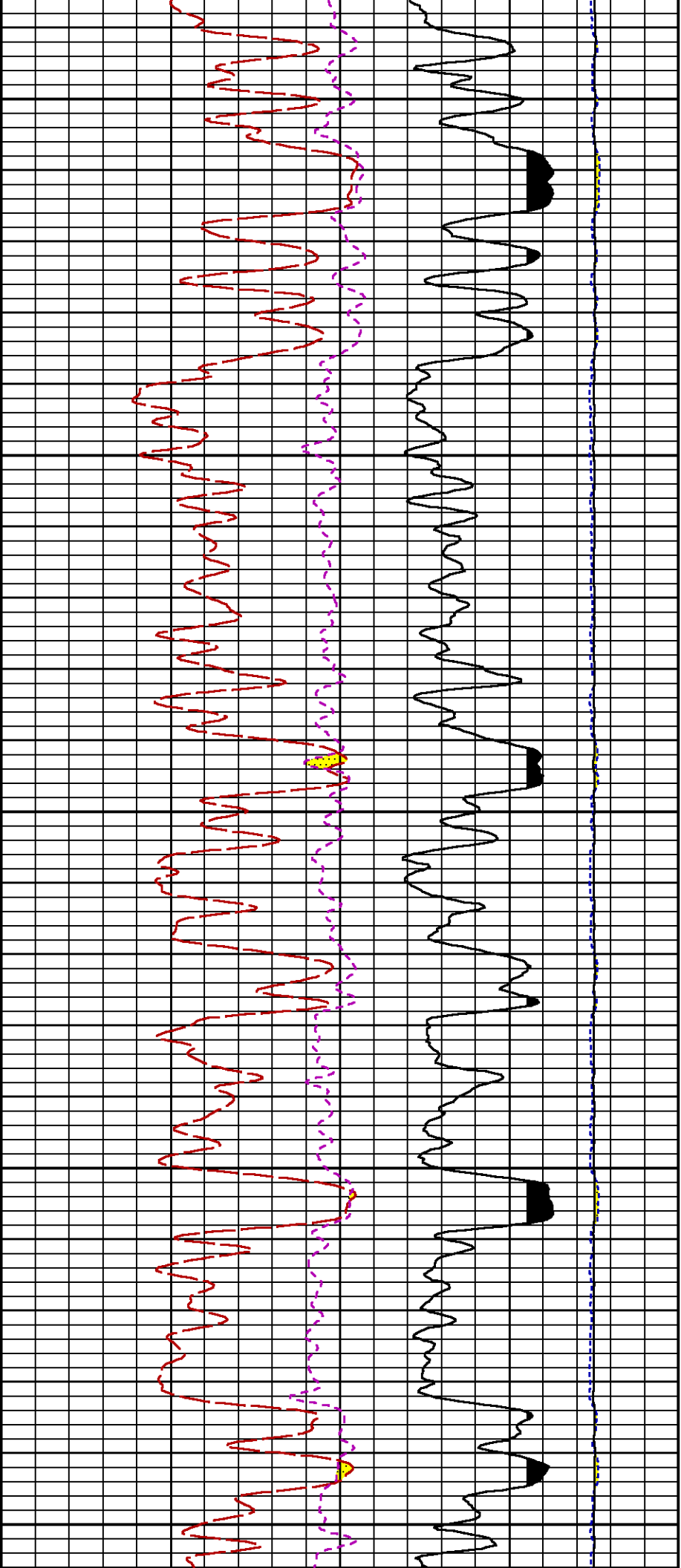


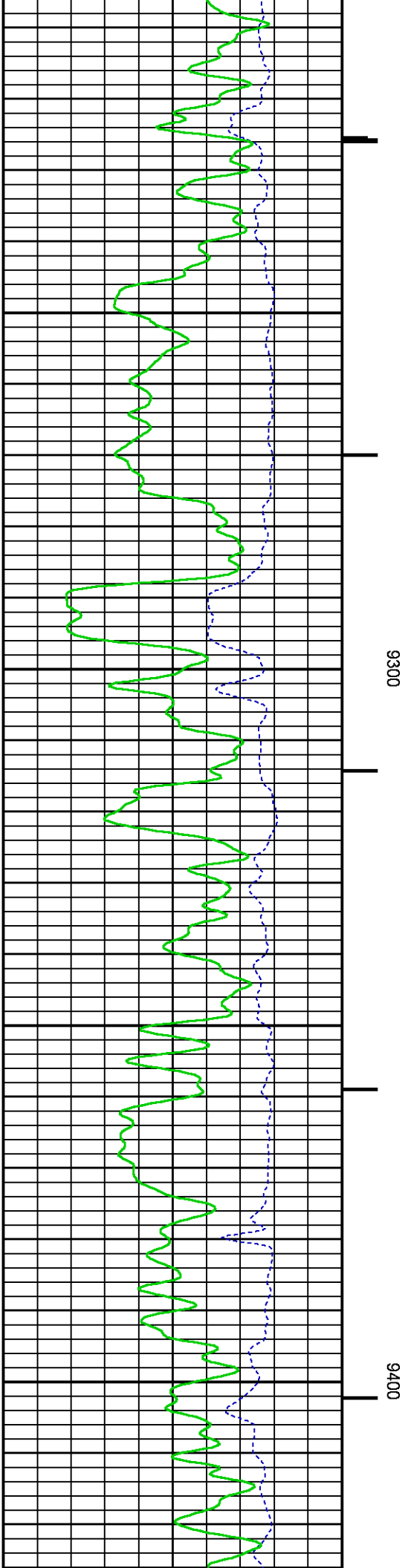
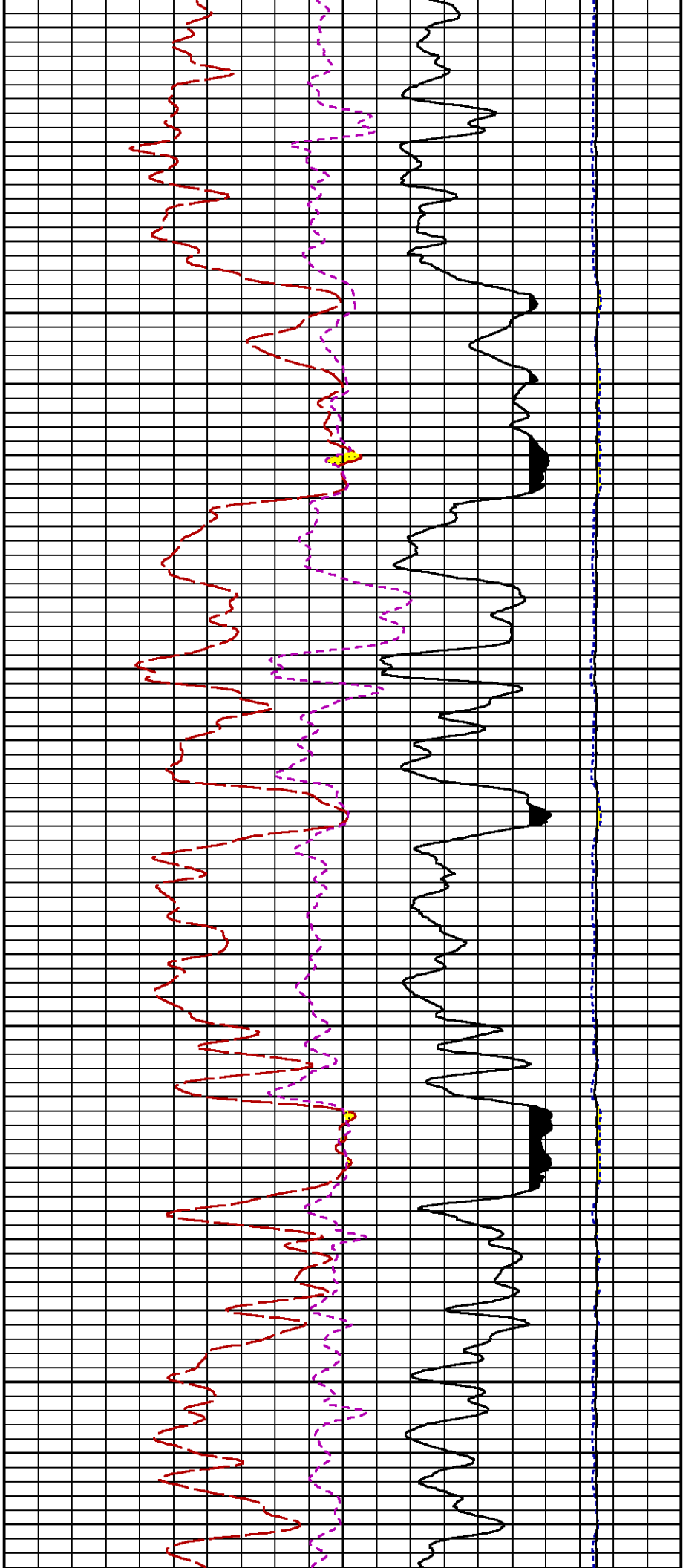






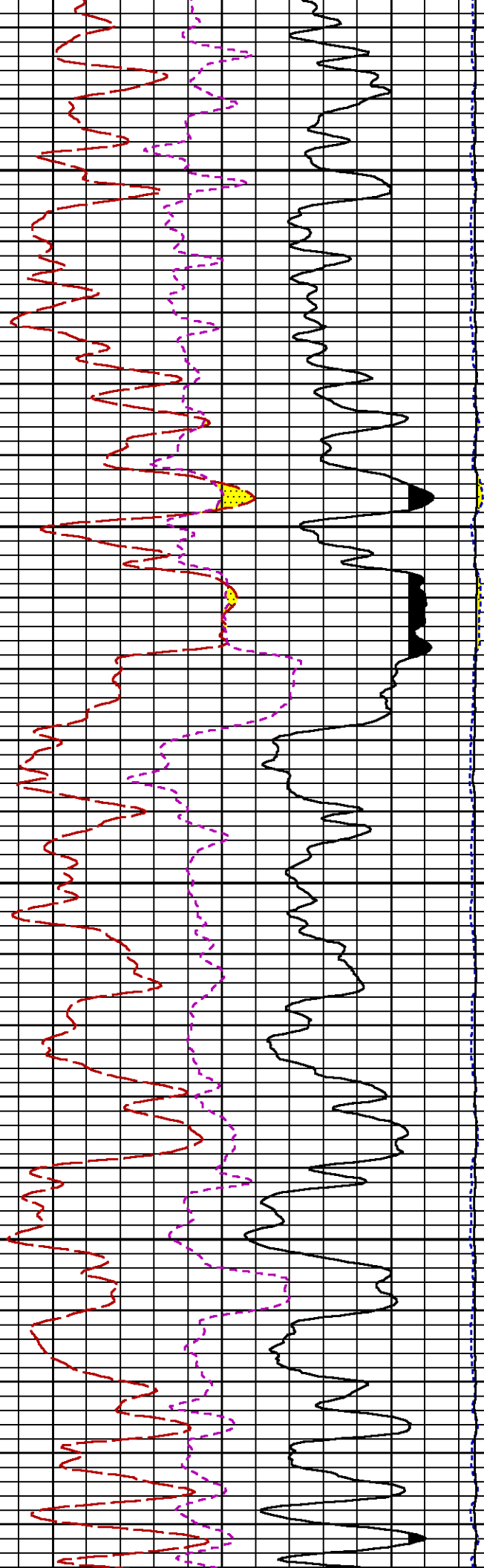
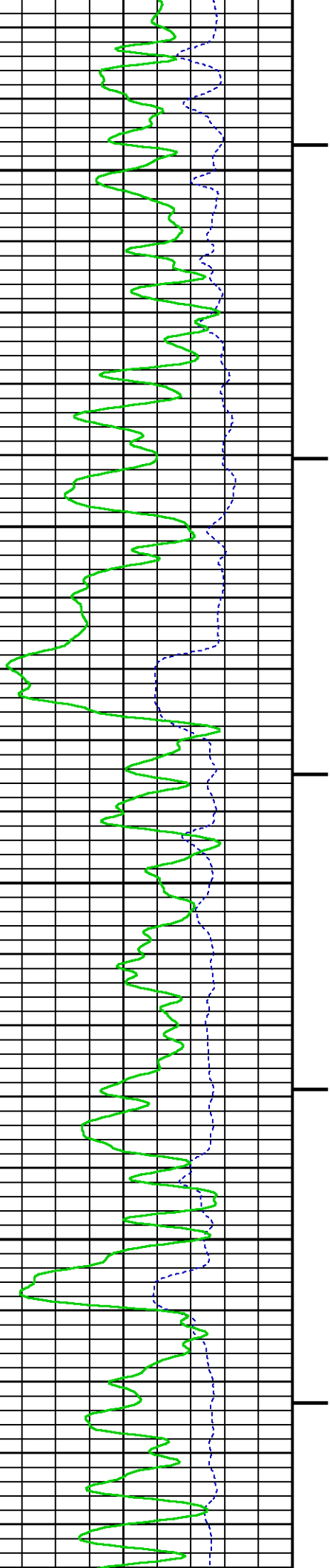


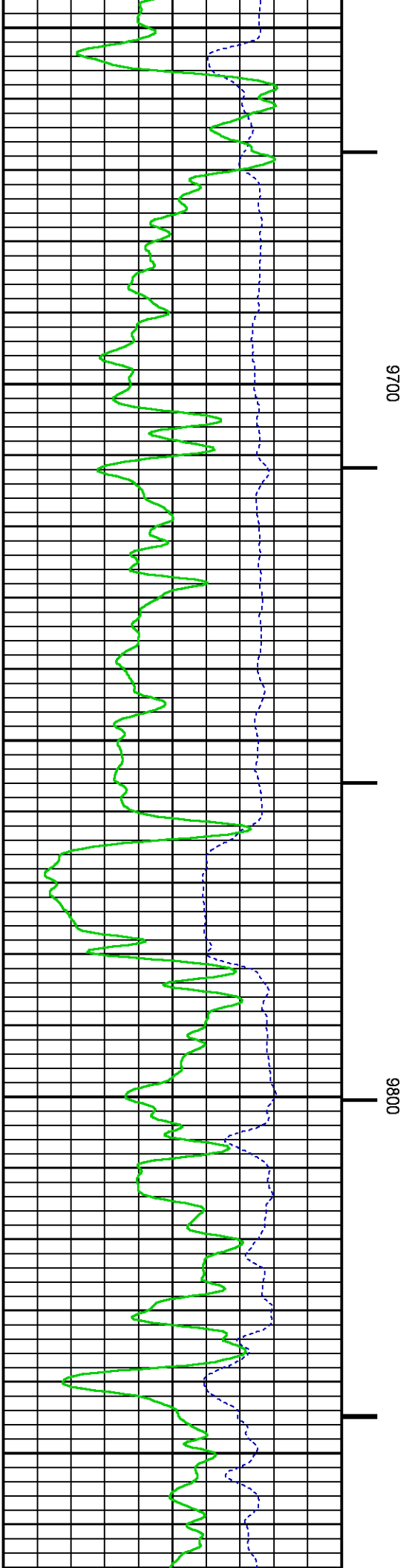
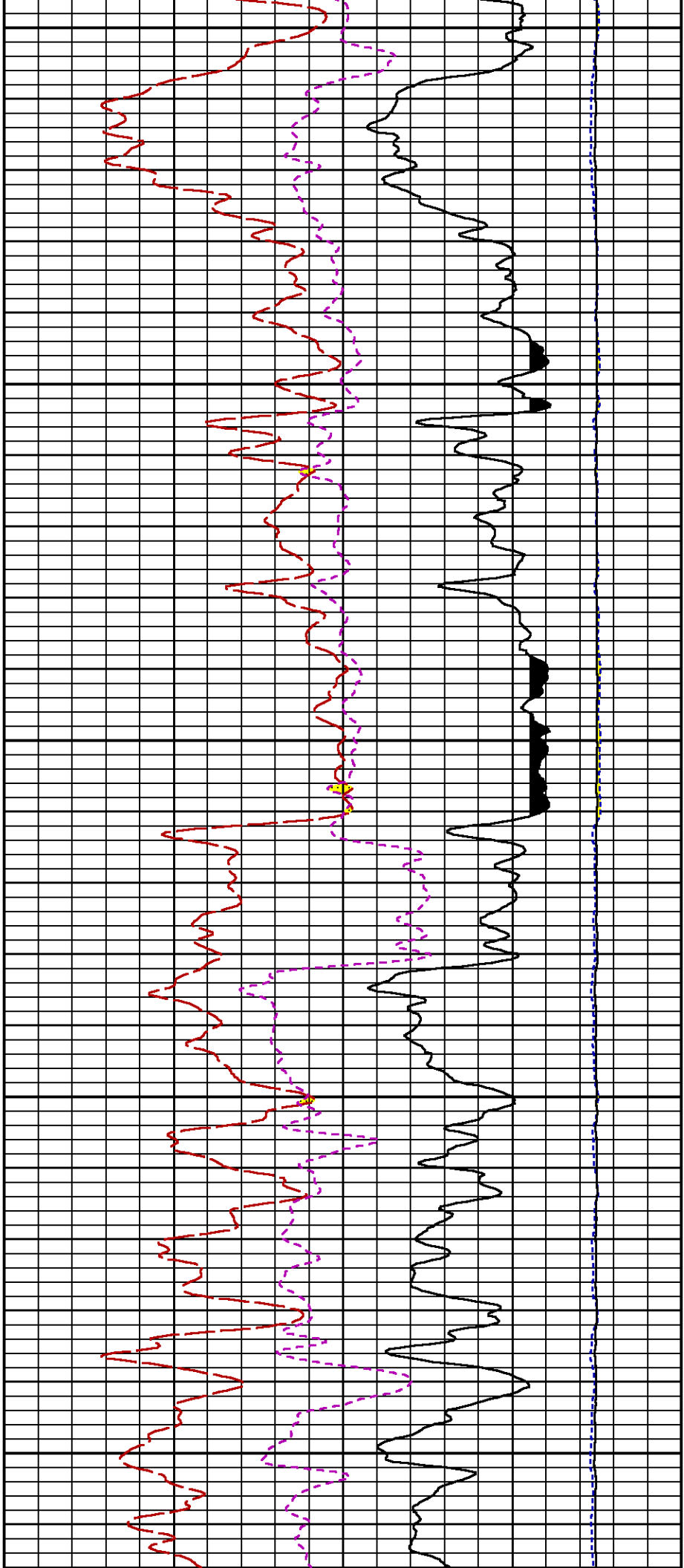


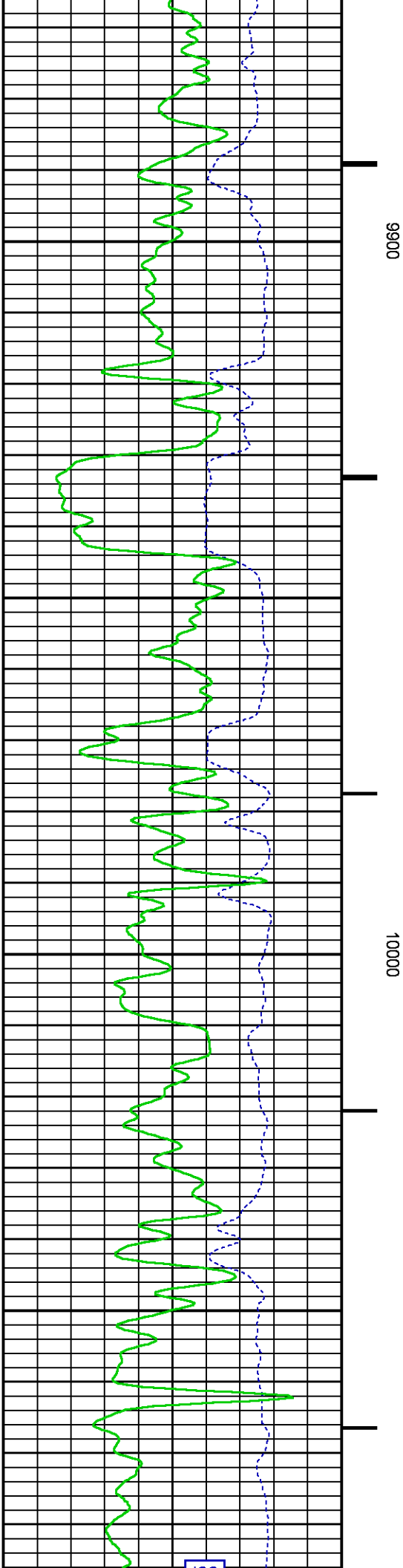
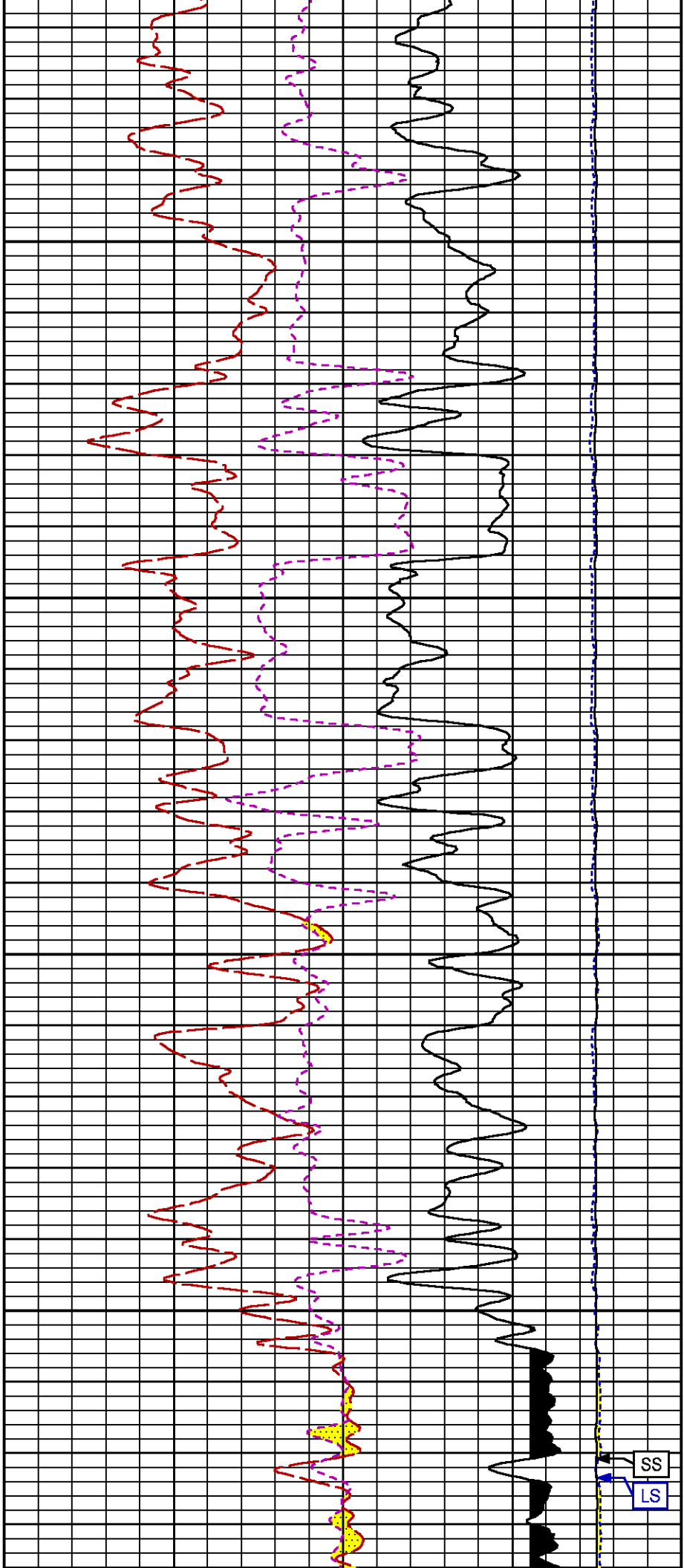


9500

9600









PNC Parameters	BOREHOLE CONTENTS	FLUID	TOP	BOTTOM
	OPEN/CASED HOLE	CASED HOLE	"	"
	BOREHOLE SIZE	8.75	"	"
	CASING SIZE	4.50	"	"
	MATRIX	SANDSTONE	"	"
	CORRECTION BUFFER	11	"	"

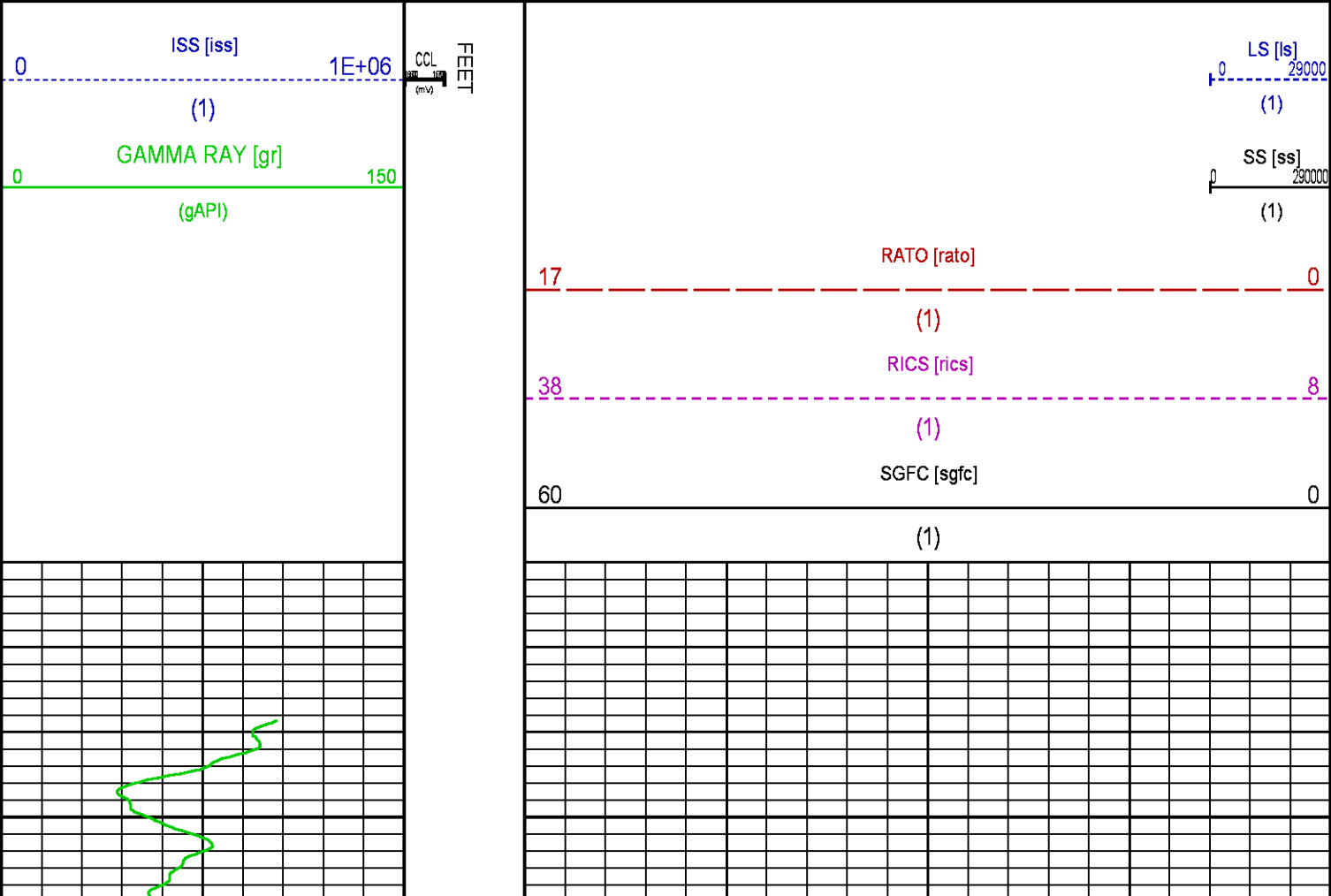
CURVE DESCRIPTION REPORT

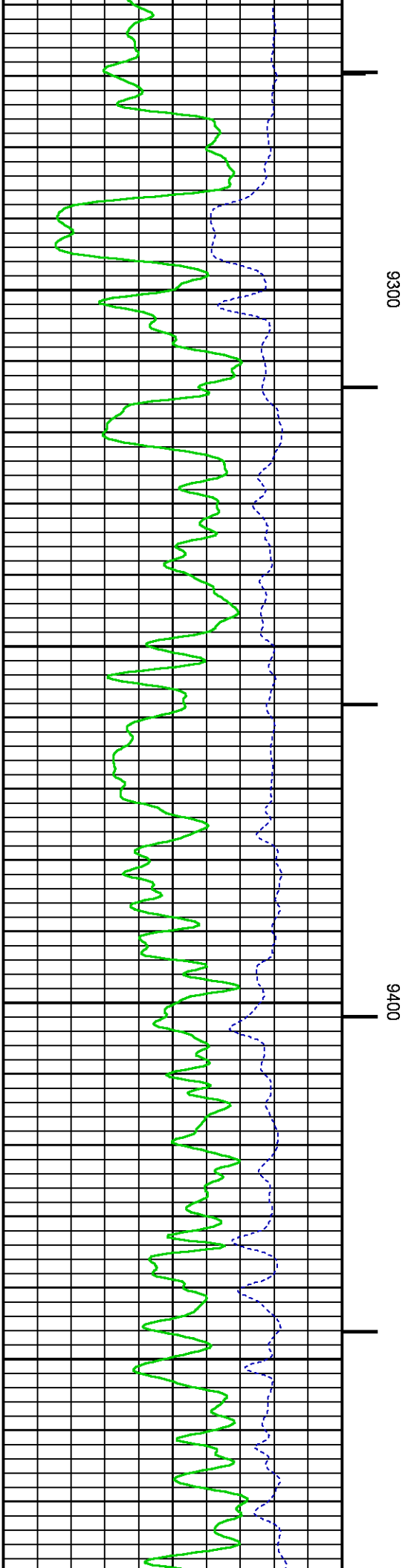
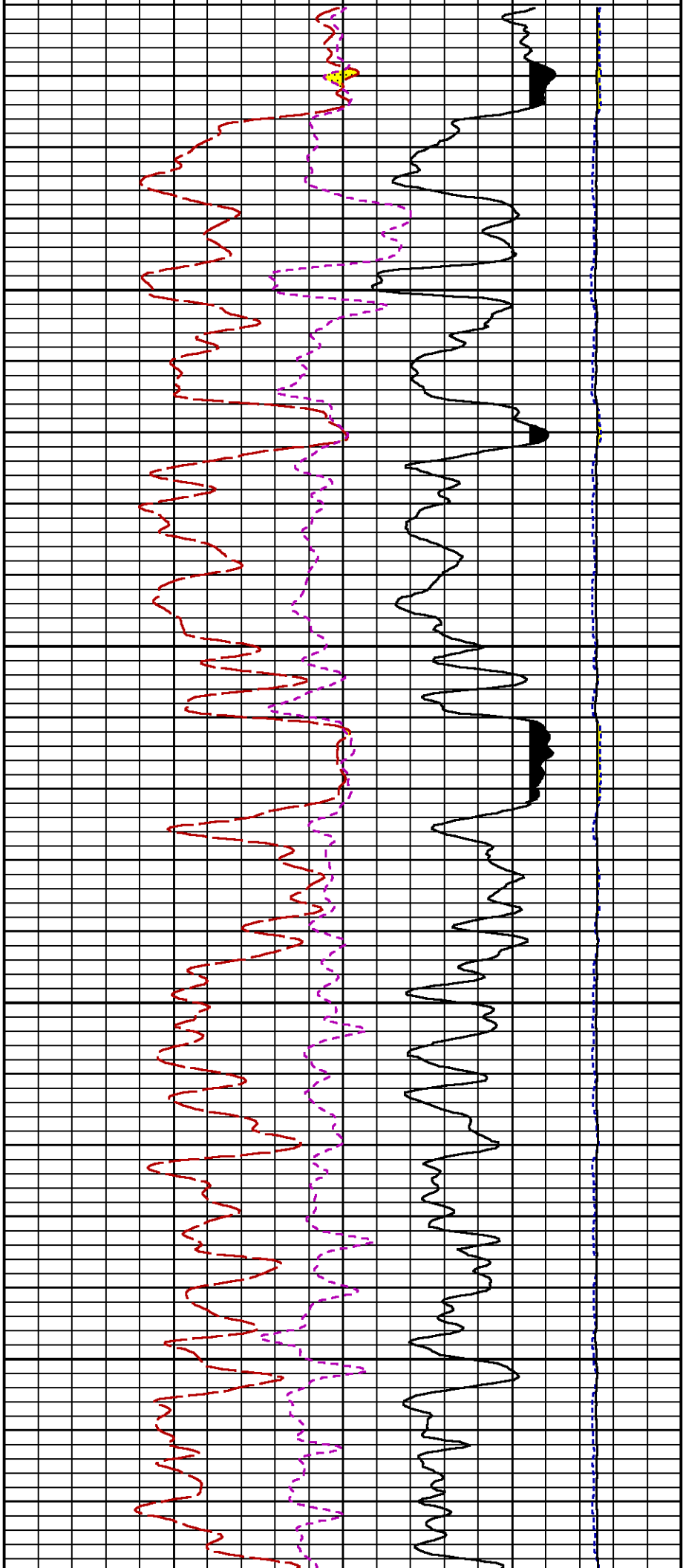
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	Sep 1 15:56:29 2014	CASING COLLAR LOCATOR
F1:GR	Sep 1 15:56:29 2014	GAMMA RAY
F1:ISS	Sep 1 15:56:29 2014	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Sep 1 15:56:29 2014	LONG SPACE COUNT RATE
F1:RATO	Sep 1 15:56:29 2014	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Sep 1 15:56:29 2014	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Sep 1 15:56:29 2014	CORRECTED FORMATION SIGMA
F1:SS	Sep 1 15:56:29 2014	SHORT SPACE COUNT RATE

CURVE MEASURE POINT OFFSET

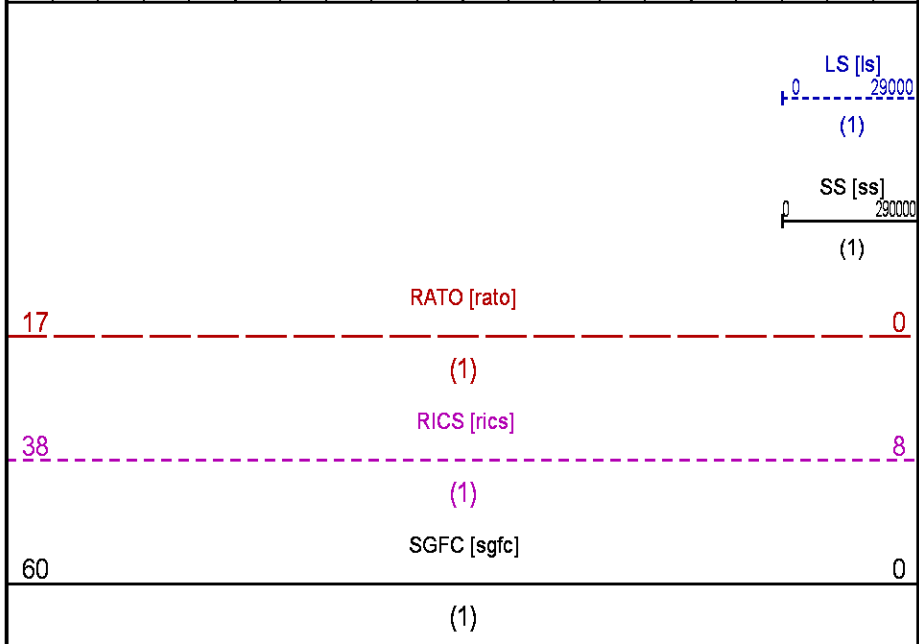
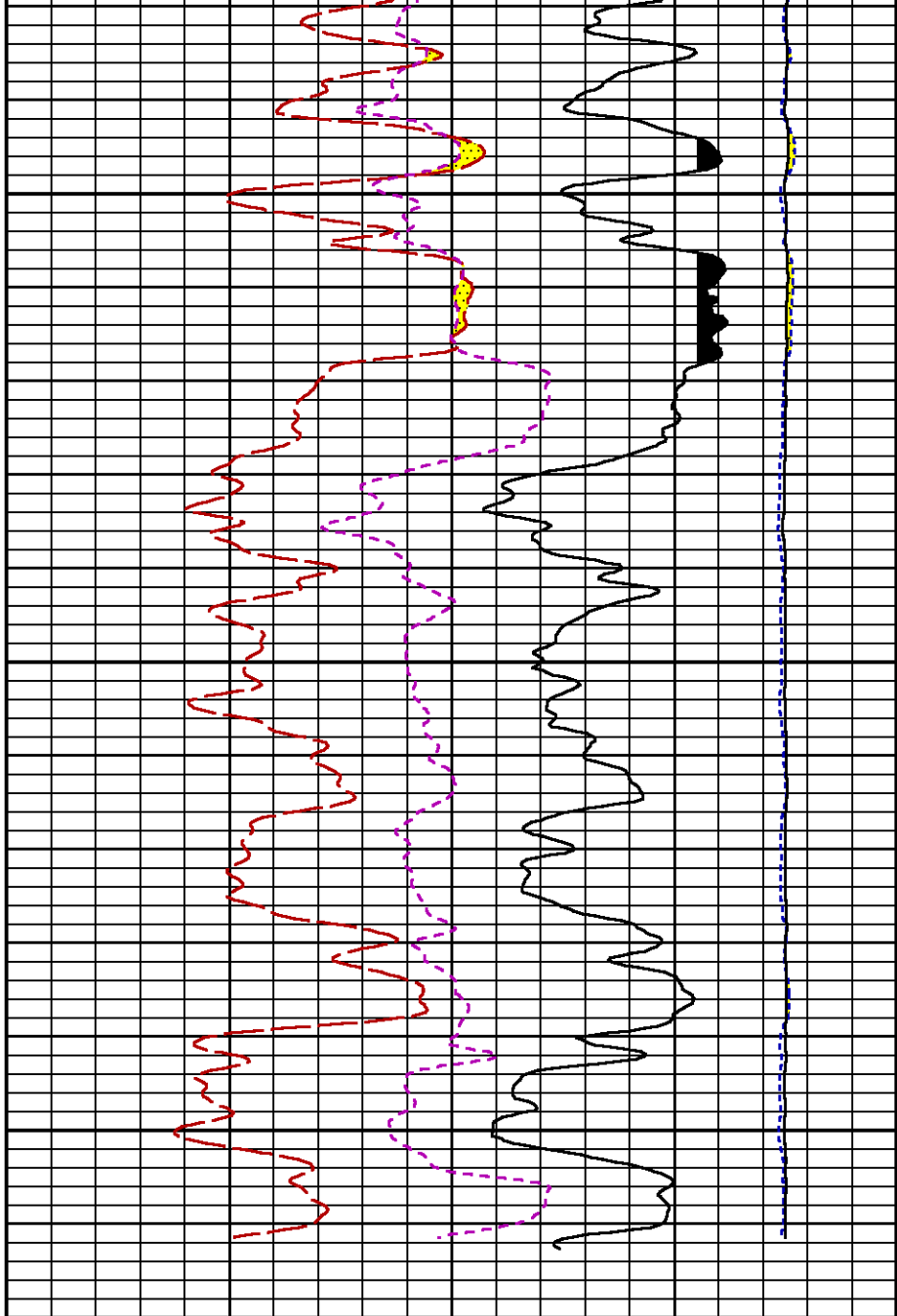
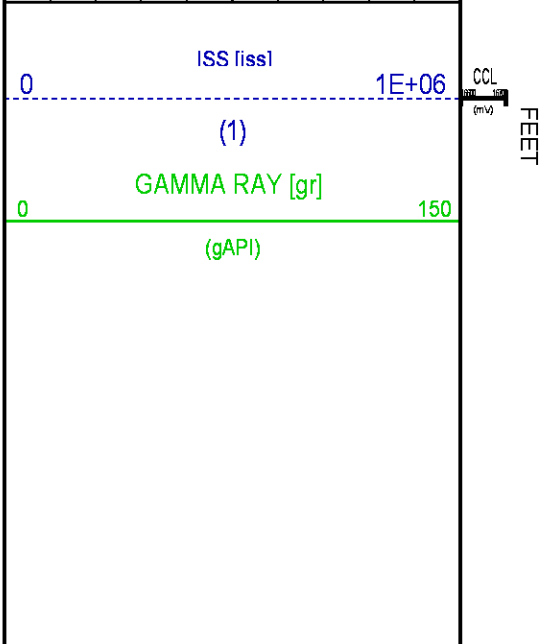
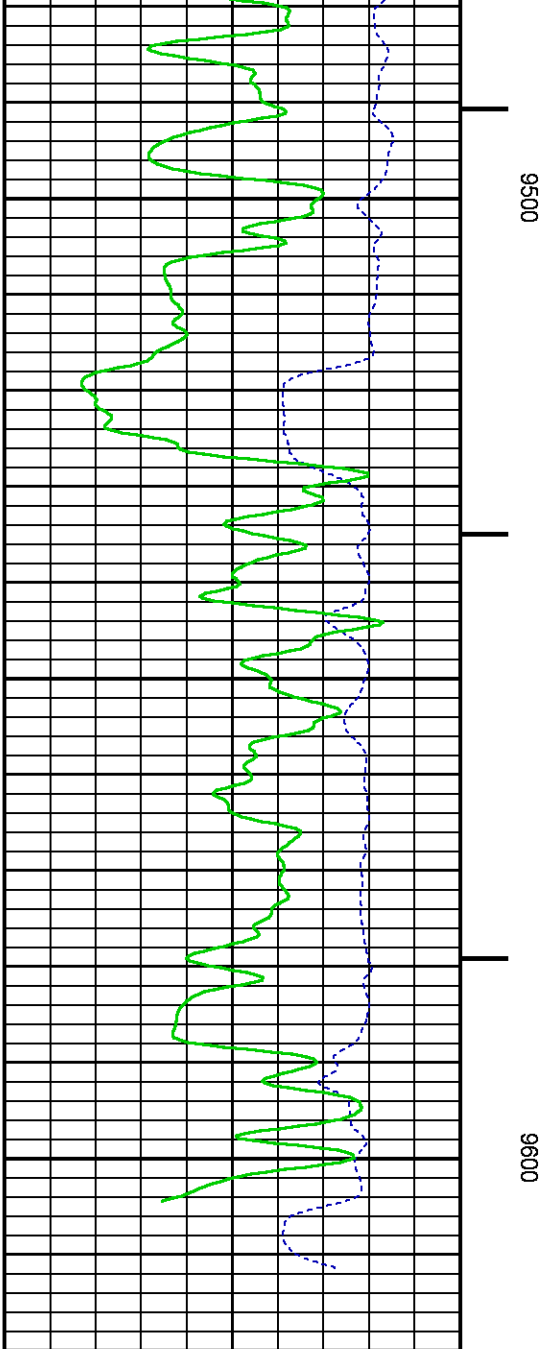
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	26.00	ISS	12.75	RATO	12.75	SGFC	12.75
GR	23.00	LS	12.75	RICS	12.75	SS	12.75

Presentation	: HL6670:/dat1a/CH089583/324RPM_REPEAT.fvpdf [5"/100' Scale]
Plot Interval	: 9220 - 9620 Feet
Data File 1	: F1 : HL6670:/dat1a/CH089583/324RPM_REPEAT.xtf
Created On	: Sep 1 15:56:29 2014
Company	: WPX ENERGY
Well	: FEDERAL NER 324-32
Field	: RULISON
File Interval	: 9230.75 - 9626 Feet
OCT	: n353h









# CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/CH089583/n353h.tp1

## GR PRIMARY CALIBRATION SUMMARY

TOOL #: 8262XA 10317216

DATE/TIME PERFORMED: Fri Aug 8 15:11:55 2014

UNIT #: 3880TA HL6670

CALB JIG #: 4702NK DA-041

	BACKGROUND CALBRTR ON (cts/s)	CR DIFF (cts/s)	MULT	BACKGROUND CALBRTR ON (gAPI)	CALBRTR (gAPI)
GR	110.38	444.62	0.539	59.44	239.44
		334.2			180

## GR PRIMARY VERIFICATION SUMMARY

TOOL #: 8262XA 10317216

DATE/TIME PERFORMED: Sun Aug 31 16:46:21 2014

UNIT #: 3880TA HL6670

VERI JIG #: 4702NK DA-041

	BACKGROUND CALBRTR ON (cts/s)	MULT	BACKGROUND CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	167.36	0.539	90.13	174.99
	492.29		265.11	170.00 190.00

## RPM\_PNC\_3D PRIMARY CALIBRATION SUMMARY

TOOL: 8283PA 10160383

DATE/TIME PERFORMED: Thu Aug 28 16:50:55 2014

UNIT: 3880TA HL6670

CALIBRATOR: 2437XB 112674

SOURCE: 8281AA 11765055

HOURS: 8281AA 14

	ISS	Mtr Vlt (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	805905	124	2273	2254	2210	110	7	0.9822
Interpolated	1300000	144	2259	2249	2208			

	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	805905	6606	1039	141	25.94	0.15	24.24	0.33
					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	805905	167542	25750	86922	30995	8110	52660	12966
Fit Quality %		0.823	0.868	0.772	0.839	0.787	0.762	0.788

	ISS	RBOR	RIN ISS/LS	RIN13 ISS/IXS	RICS ISS/CSS	RATO SS/LS	RTWO SS2/LS	RONE CSS/CLS
Raw Data	805905	1.43	4.81	31.31	15.30	10.72	3.82	4.06
		1.42 1.45	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 %		0.123	0.084	0.140	0.078	0.026	0.041	0.009
Reduced	1388430	1.43	4.82	31.41	15.34	10.72	3.82	4.06
		1.42 1.45	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 166341

DATE/TIME PERFORMED: Sat Jun 28 11:12:23 2014

UNIT #: 3880TA HL6670

T(0) T(1) T(2) T(3)

## INSTRUMENT CONFIGURATION

Source File: /dat1a/CH089277/RPM-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 : 8248EA  
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 DETECTOR  
Measure Point: 5.04': LS DETECTOR  
Measure Point: 4.79': SS DETECTOR

XLS DETECTOR 13.58'  
LS DETECTOR 13.16'  
SS DETECTOR 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 WPX ENERGY  
WELL FEDERAL NER 324-32  
FIELD RULISON  
COUNTY GARFIELD STATE CO

FILE NO:  
CH089583  
API NO:  
05045217920000

LOCATION:  
SHL: 127' FNL & 2575' FWL(5 7S 93W)  
BH: 1061' FSL & 2023' FWL(32 6S 93W)  
SEC 32 TWP 6S RGE 93W

ELEVATIONS:  
KB 7629 FT  
DF  
GL 7603 FT  
DATE 01-Sep-2014

32 6S 93W  
RU 23-5 PAD  
NABORS 576