



FILE NO: CH100239	COMPANY WELL FIELD COUNTY	LARAMIE ENERGY PICEANCE FEDERAL 28-02M VEGA MESA STATE COLORADO
API NO: 05077102390000		

Ver. 4.01 28 9S 93W 28-05 PAD PATTERSON 306	LOCATION: SHL: LAT 39.251061 LONG -107.779508 BHL: LAT 39.254282 LONG -107.774519 SEC 28 TWP 9S RGE 93W	OTHER SERVICES BOND LOG
--	--	----------------------------

PERMANENT DATUM LOG MEASURED FROM DRILL. MEAS. FROM	GL ELEVATION 7656 FT KB 22 FT ABOVE P.D. KB	ELEVATIONS: KB 7678 FT DF GL 7656 FT
---	---	---

DATE	22-Oct-2015
RUN	1
SERVICE ORDER	US100239
DEPTH DRILLER	8173 FT
DEPTH LOGGER	8118 FT
BOTTOM LOGGED INTERVAL	8108 FT
TOP LOGGED INTERVAL	2720 FT
TIME STARTED	11:30
TIME FINISHED	17:30
OPERATOR RIG TIME	6 HOURS
TYPE OF FLUID IN HOLE	WATER
FLUID DENSITY	NA
FLUID SALINITY	NA
FLUID LEVEL	48 FT
LOGGED CEMENT TOP	NA
WELLHEAD PRESSURE	0 PSI
MAXIMUM HOLE DEVIATION	NA
NOMINAL LOGGING SPEED	10 FMIN
MAX. RECORDED TEMP.	235 DEGF
REFERENCE LOG	BAKER HUGHES BOND LOG
REFERENCE LOG DATE	22-Oct-2015
EQUIP. NO.	HL-6670
LOCATION	GRAND JCT.
RECORDED BY	T. NEWELL
WITNESSED BY	JOHN GRUBICH

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
7.875 IN	22 FT	8173 FT

CASING RECORD				
SIZE	WEIGHT	GRADE	FROM	TO
4.5 IN	11.6 LB/F		22 FT	8173 FT

REMARKS

RUN 1 TRIP 1: All data on this log is shifted at TD, using the gamma ray curve, to the Baker Hughes bond log dated 22/OCT/2015 at the client's request.

Amount of linear shift is 2 feet.

Logged in PNC-3D mode

BHT = 235 degF

SJ = 6261' - 6282'

SJ = 7361' - 7383'

Thank you for choosing Baker Hughes ... The best choice!

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	PCM	8250EA	Z166326	FREE
1	1	TEL/CCL	8248ED	10387150	FREE
1	1	GR	8262XA	10274382	FREE
1	1	RPM	8281EA	10423671	FREE
1	1	RPM	8283PA	10585555	FREE
1	1	RPM	8281FA	10401926	FREE
1	1	TEMP	8255XA	Z120516	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: 6

Plotted: Thu Oct 22 17:12:18 2015

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/CH100239/n354h05.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 2709.250 ft BOTTOM DEPTH: 3351.480 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	Oct 22 16:24:12 2015	CASING COLLAR LOCATOR
F1:GR	Oct 22 16:24:12 2015	GAMMA RAY
F1:ISS	Oct 22 16:24:12 2015	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Oct 22 16:24:12 2015	LONG SPACE COUNT RATE
F1:RATO	Oct 22 16:24:12 2015	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Oct 22 16:24:12 2015	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Oct 22 16:24:12 2015	CORRECTED FORMATION SIGMA
F1:SS	Oct 22 16:24:12 2015	SHORT SPACE COUNT RATE

CURVE MEASURE POINT OFFSET

CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	25.00	ISS	12.75	RATO	12.75	SGFC	12.75
GR	22.75	LS	12.75	RICS	12.75	SS	12.75

Presentation : HL6670:/dat1a/CH100239/2M_RPM_GSAND.fvpdf [5"/100' Scale]
 Plot Interval : 2720 - 3330 Feet

Data File 1 : F1 : HL6670:/dat1a/CH100239/02M_RPM_GSAND.xtf
 Created On : Oct 22 16:24:12 2015
 Company : LARAMIE ENERGY
 Well : DISTANCE FEDERAL 28-02M

Well : PICEANCE FEDERAL 26-02M
Field : VEGA
File Interval : 2684.75 - 3350 Feet
OCT : n354h

GR BACKUP

ISS [iss]

0 1E+06

(1)

GAMMA RAY [gr]

0 150

(gAPI)

FEET

CCL
(mV)

2800

LS [ls]

0 29000

(1)

SS [ss]

0 290000

(1)

RATO [rato]

17

0

(1)

RICS [rics]

39

9

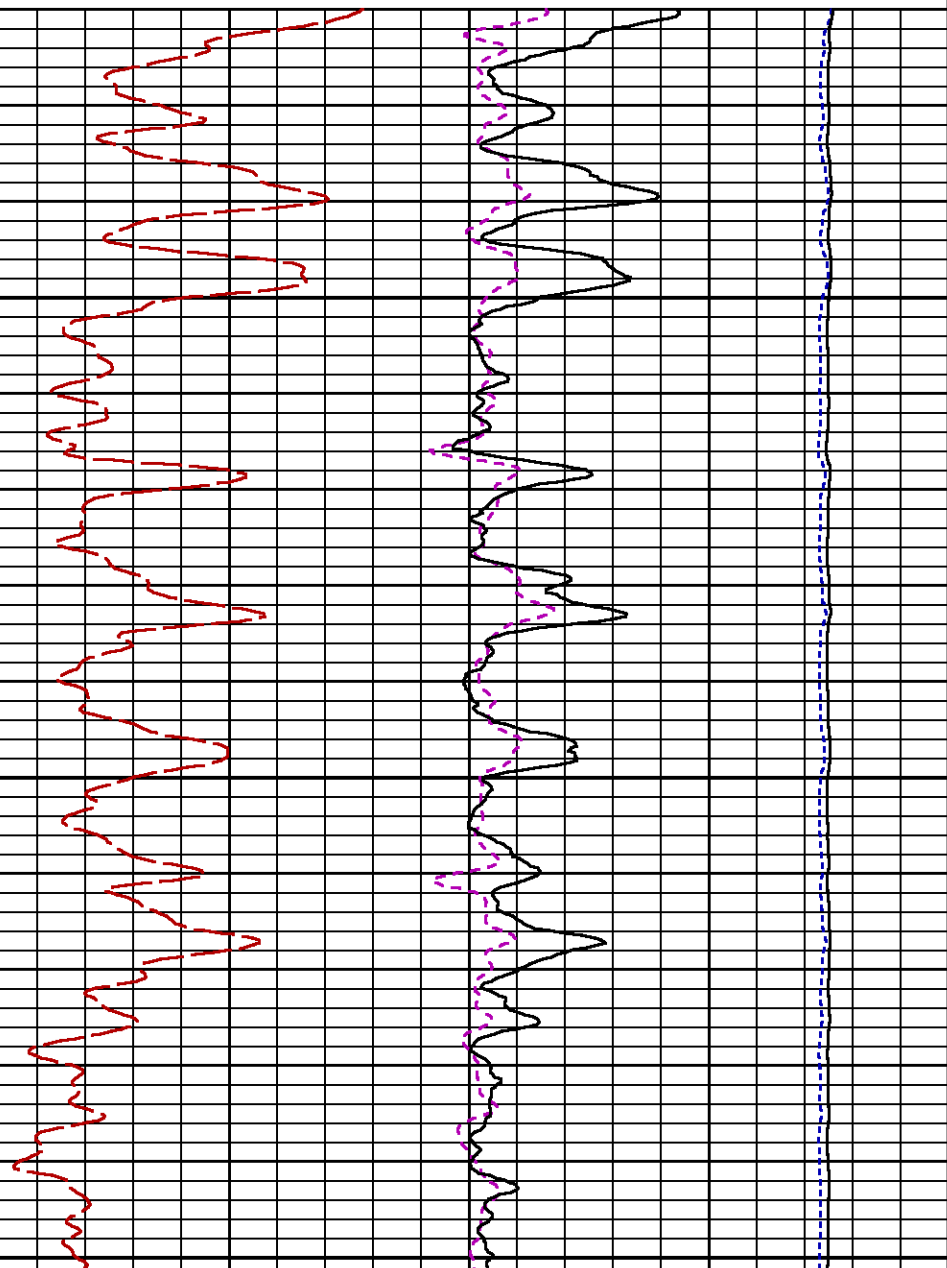
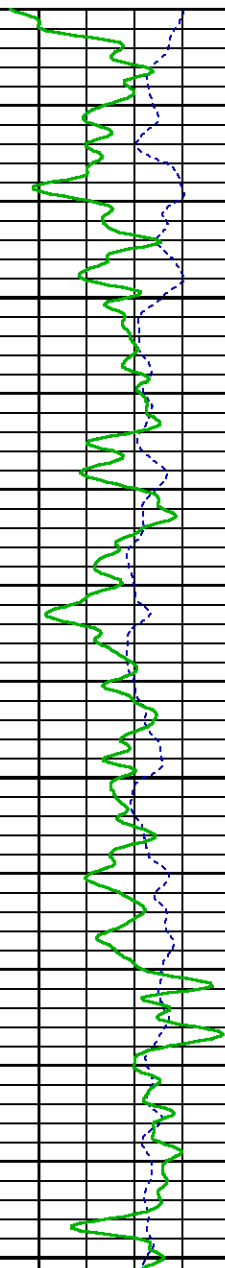
(1)

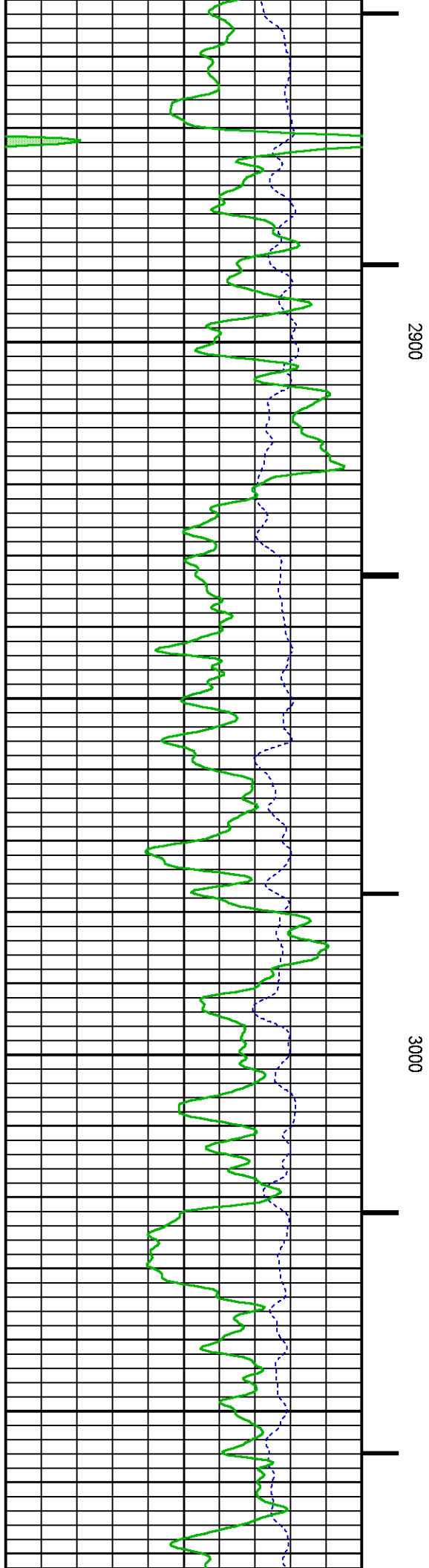
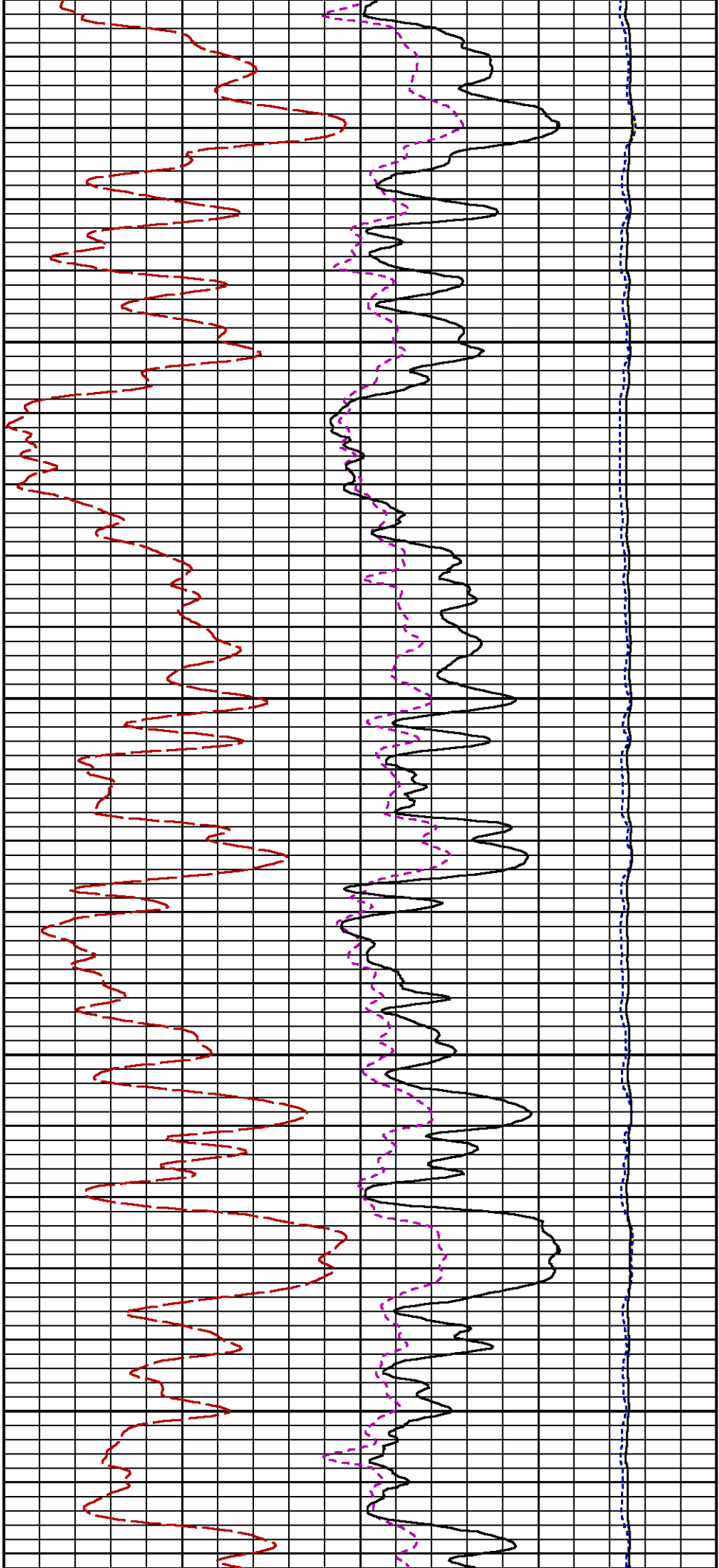
SGFC [sgfc]

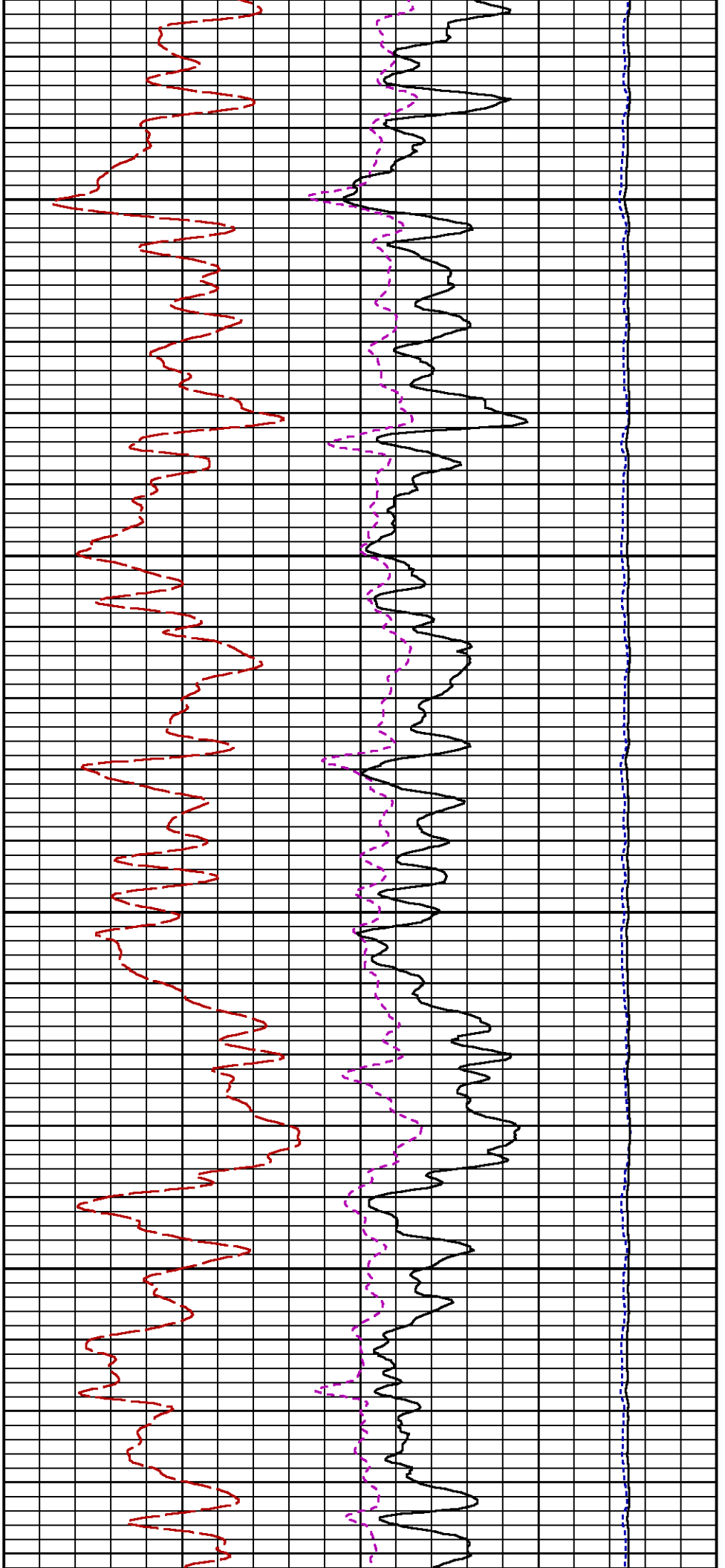
60

0

(1)

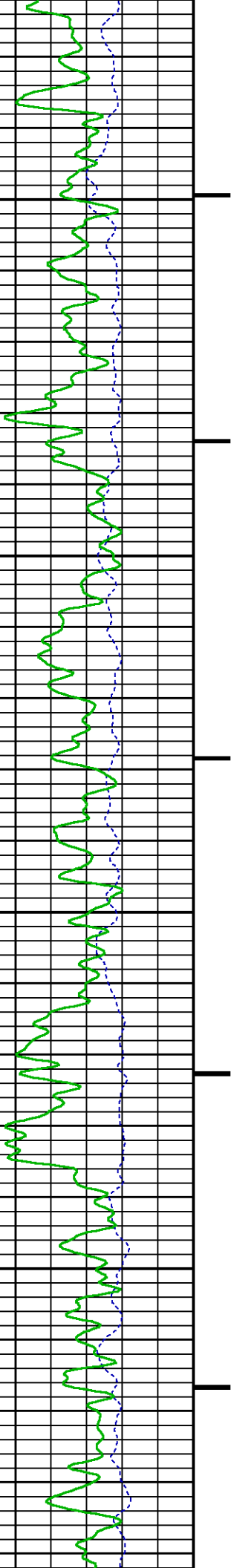






3100

3200



CURVE DESCRIPTION REPORT

CURVE NAME CREATION DATE

CURVE DESCRIPTION

F1:CCL	Oct 22 13:06:33 2015	CASING COLLAR LOCATOR
F1:GR	Oct 22 13:06:33 2015	GAMMA RAY
F1:ISS	Oct 22 13:06:33 2015	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Oct 22 13:06:33 2015	LONG SPACE COUNT RATE
F1:RATO	Oct 22 13:06:33 2015	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Oct 22 13:06:33 2015	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Oct 22 13:06:33 2015	CORRECTED FORMATION SIGMA
F1:SS	Oct 22 13:06:33 2015	SHORT SPACE COUNT RATE

CURVE MEASURE POINT OFFSET

CURVE OFFSET (ft)

CURVE OFFSET (ft)

CURVE OFFSET (ft)

CURVE OFFSET (ft)

CCL	25.00	ISS	12.75	RATO	12.75	SGFC	12.75
GR	22.75	LS	12.75	RICS	12.75	SS	12.75

Presentation : HL6670:/dat1a/CH100239/2M_RPM_MAIN.fvpdf [5"/100' Scale]
Plot Interval : 4850 - 8125 Feet

Data File 1 : F1 : HL6670:/dat1a/CH100239/02MRPMMMAIN.xtf
Created On : Oct 22 13:06:33 2015
Company : LARAMIE ENERGY
Well : PICEANCE FEDERAL 28-02M
Field : VEGA
File Interval : 4827.25 - 8143 Feet
OCT : n354h

GR BACKUP

FEET

ISS [iss]

1E+06

(1)

GAMMA RAY [gr]

150

(gAPI)

GR

LS [ls]

29000

(1)

SS [ss]

290000

(1)

RATO [rato]

17

0

(1)

RICS [rics]

39

9

(1)

SGFC [sgfc]

60

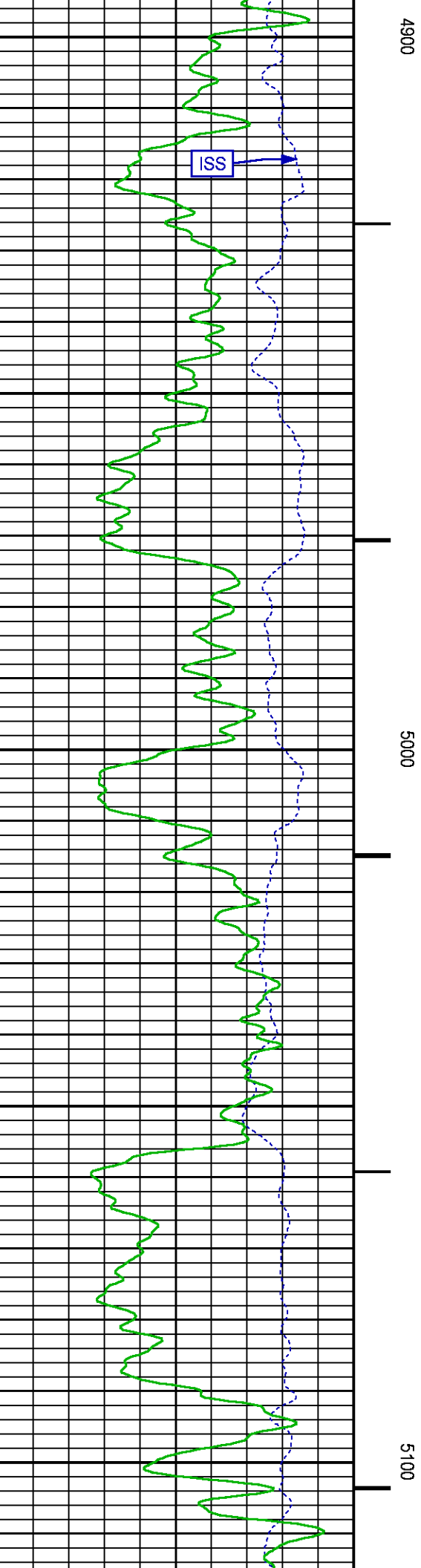
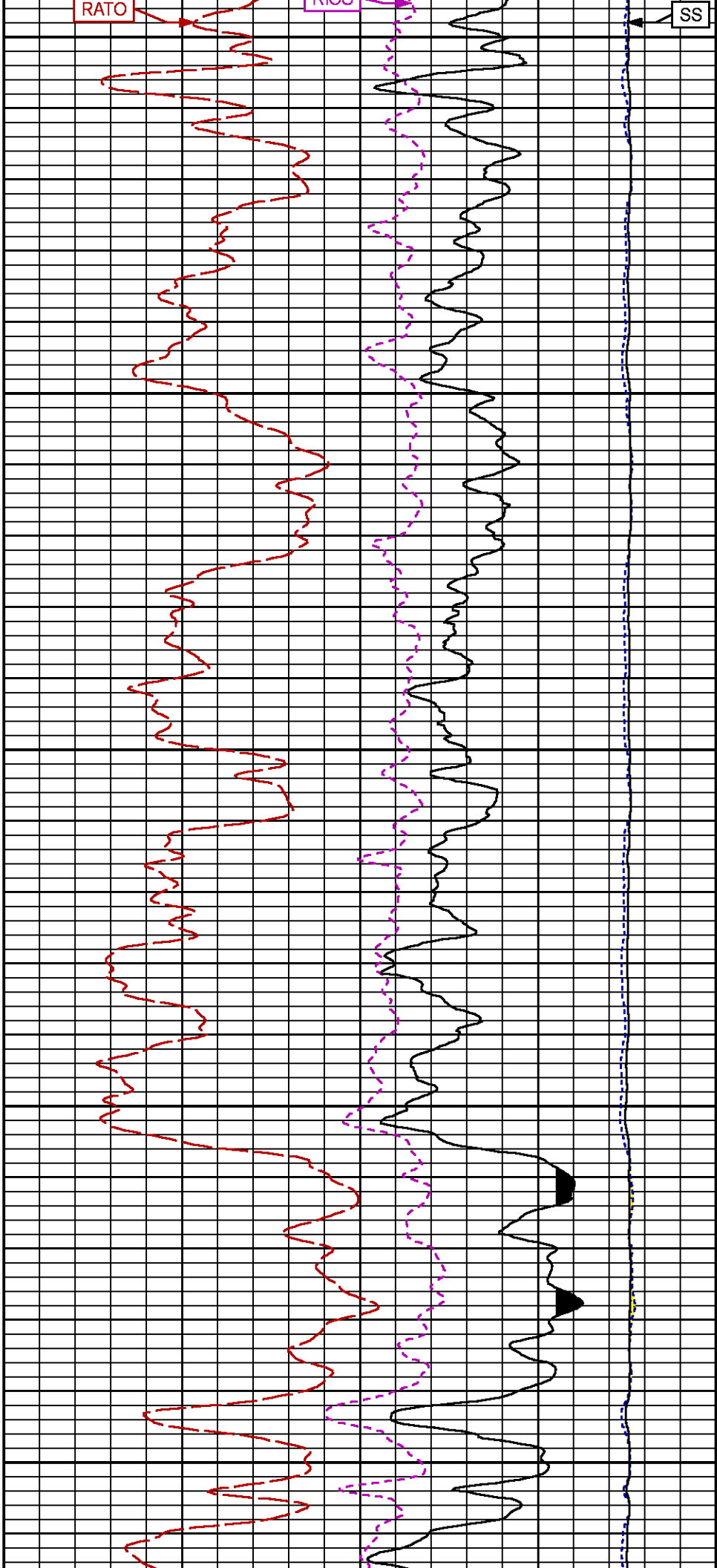
0

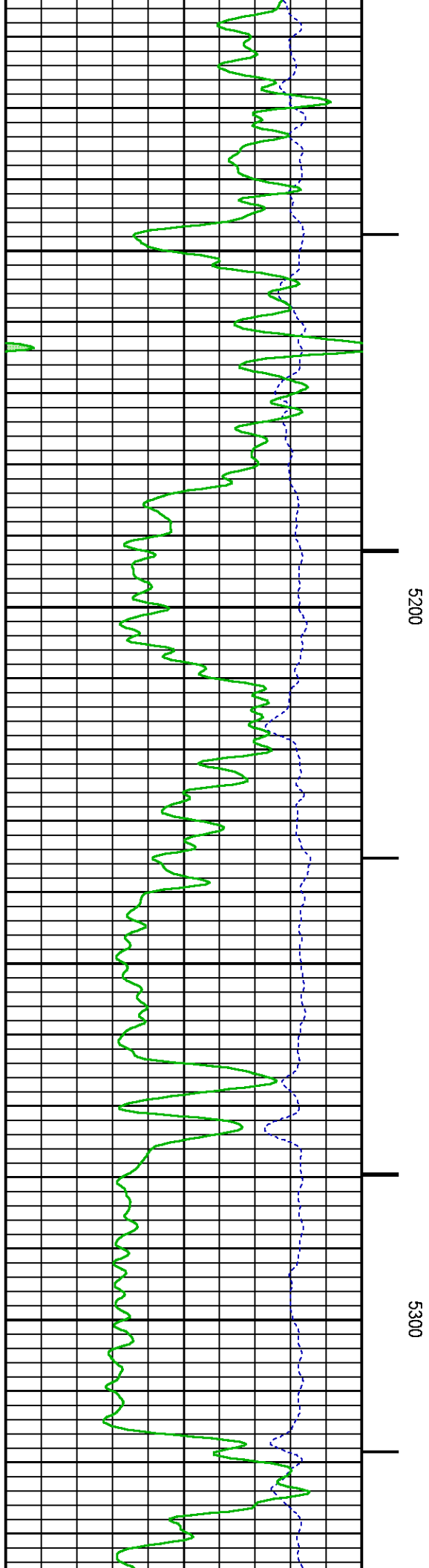
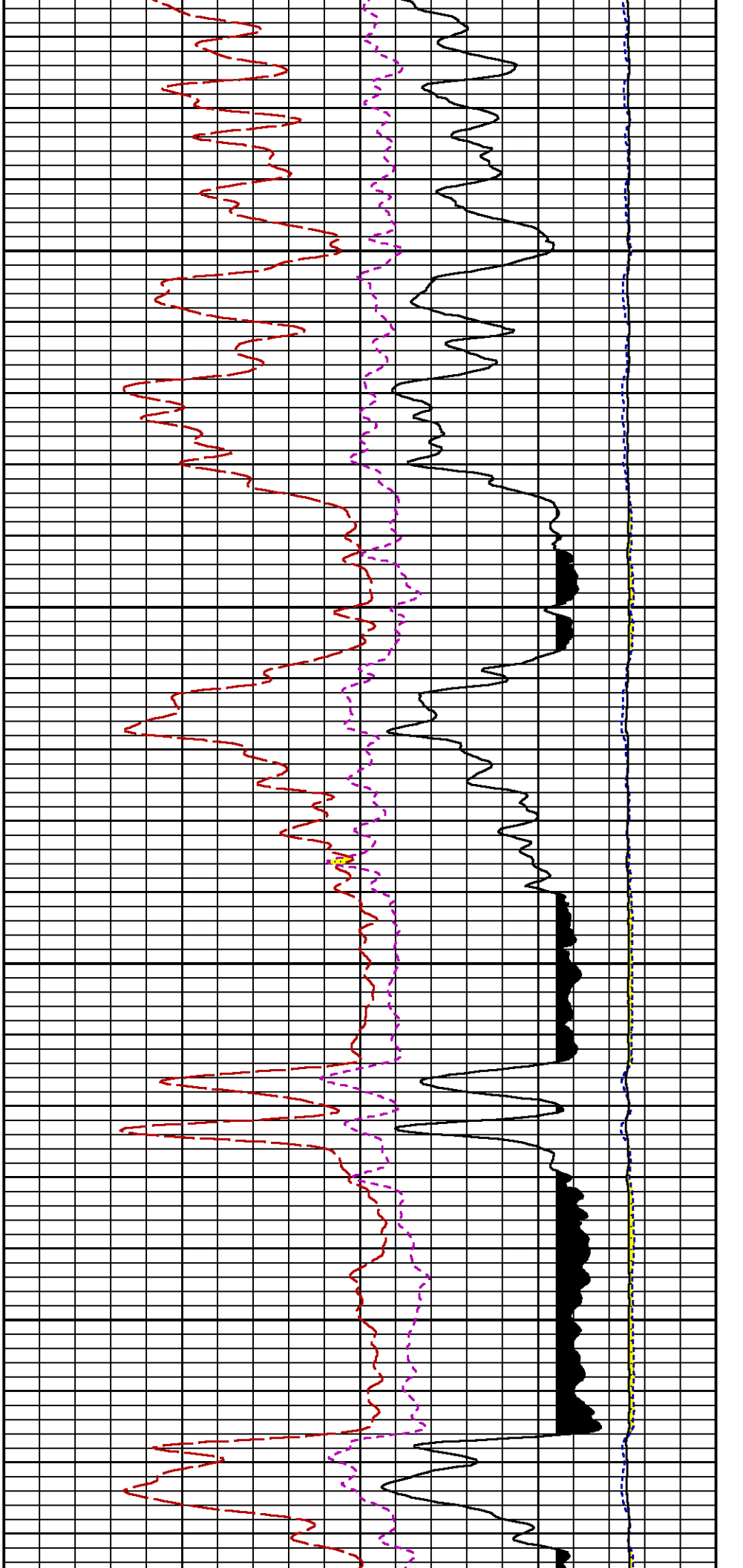
(1)

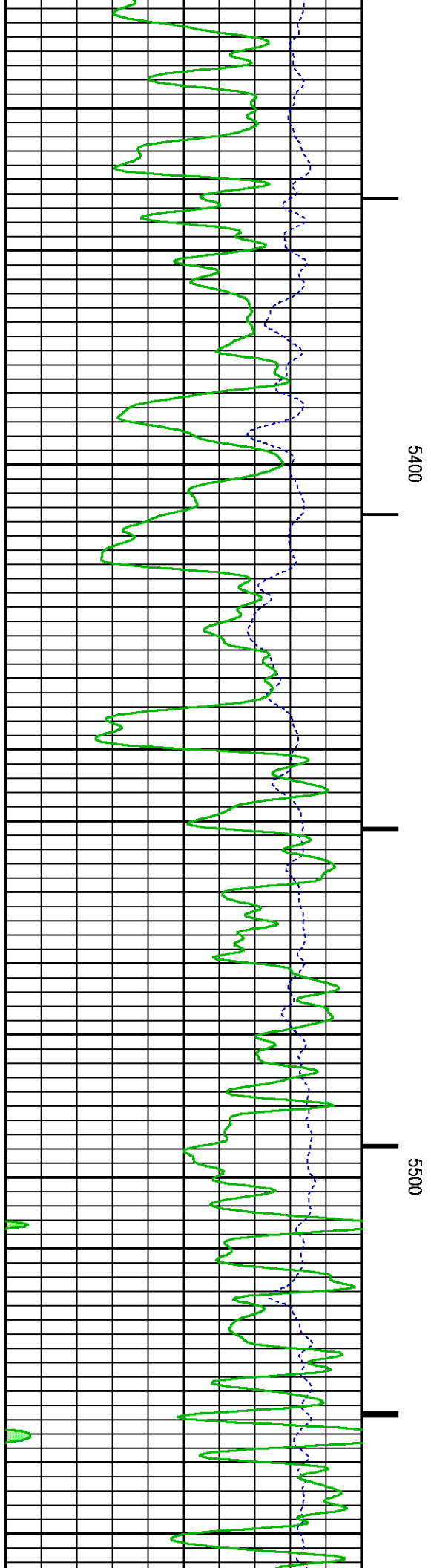
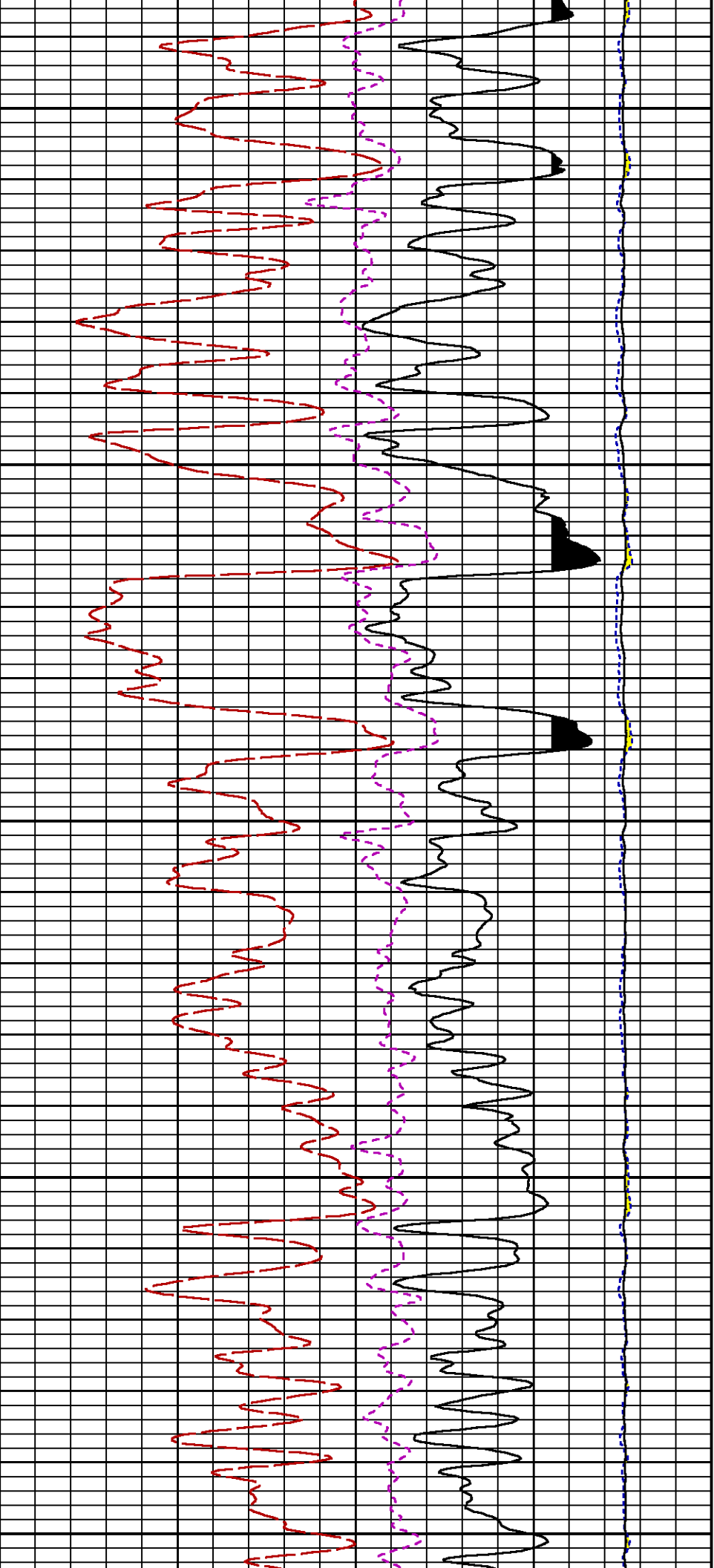
SGFC

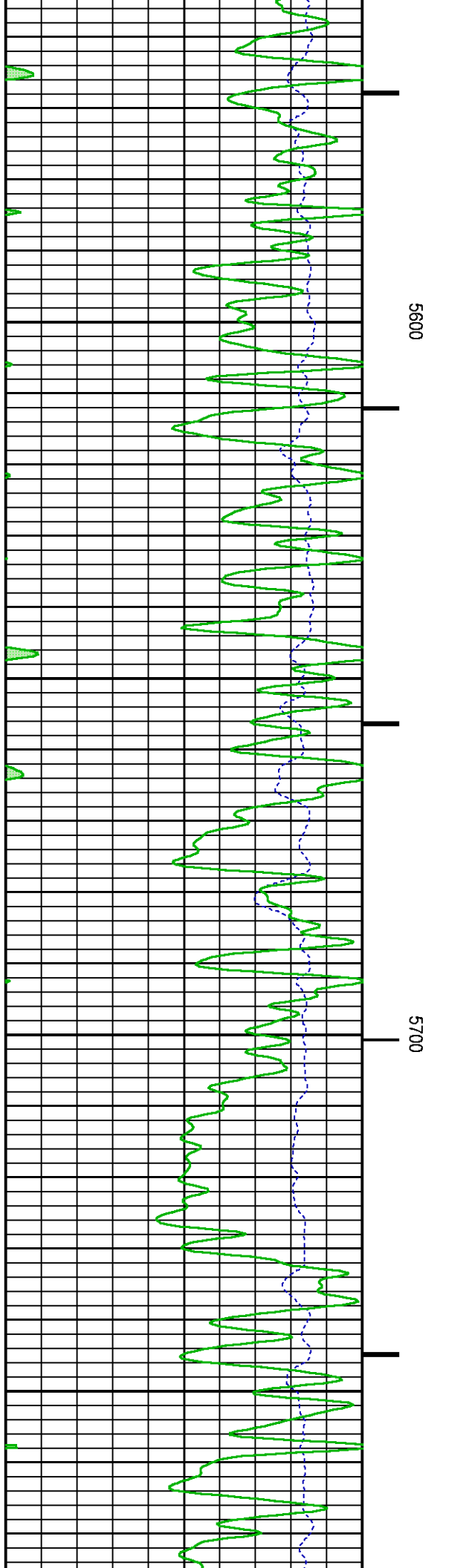
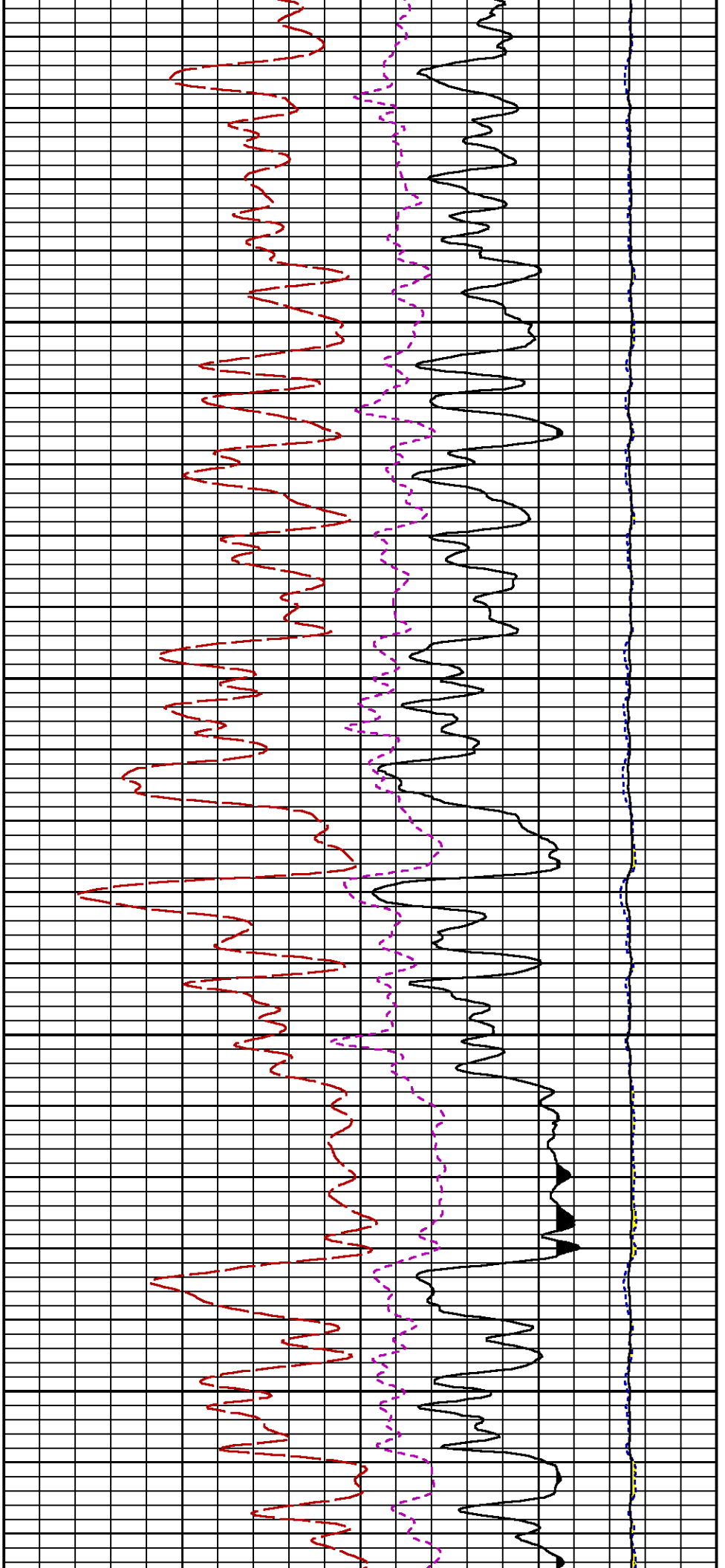
RICS

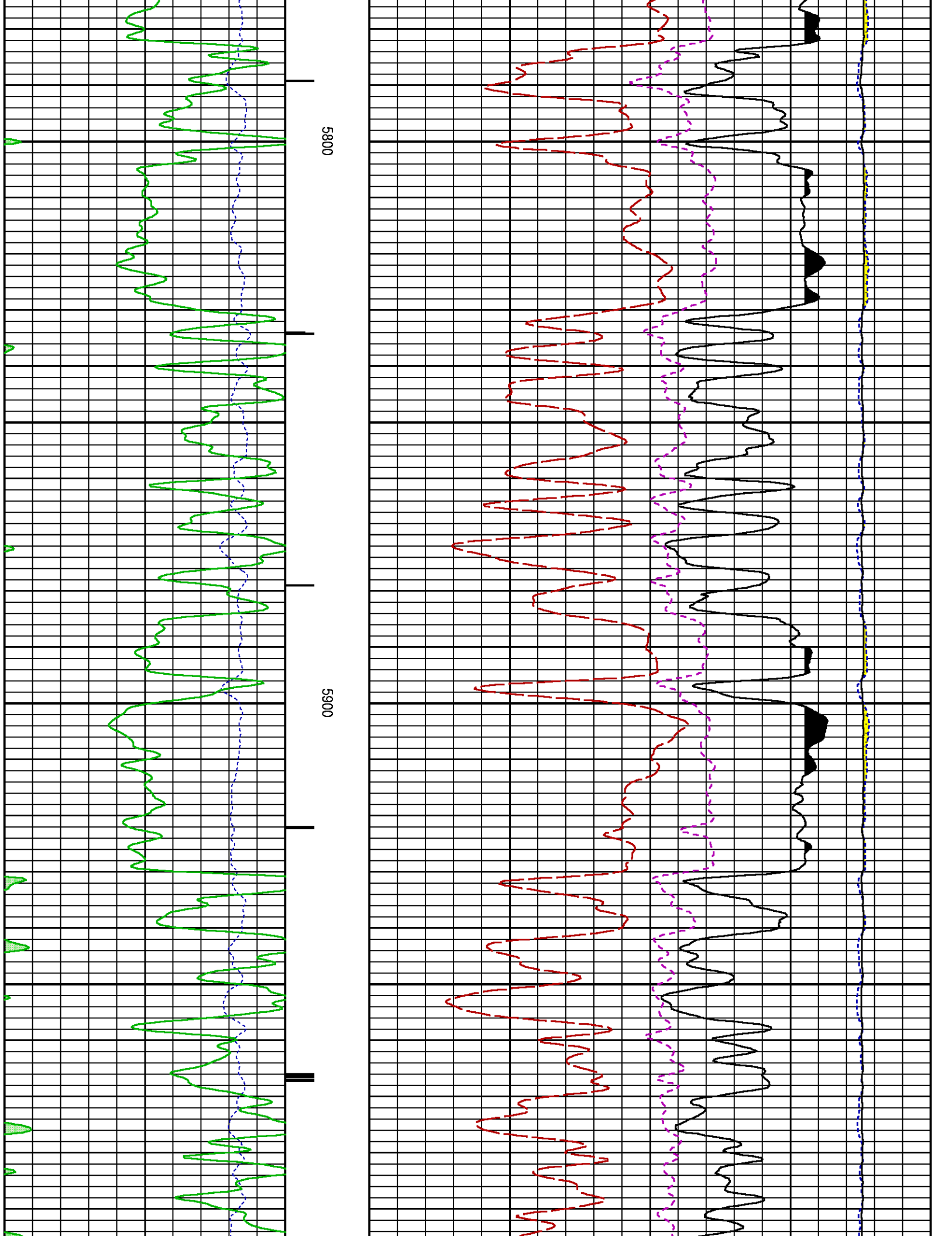
LS

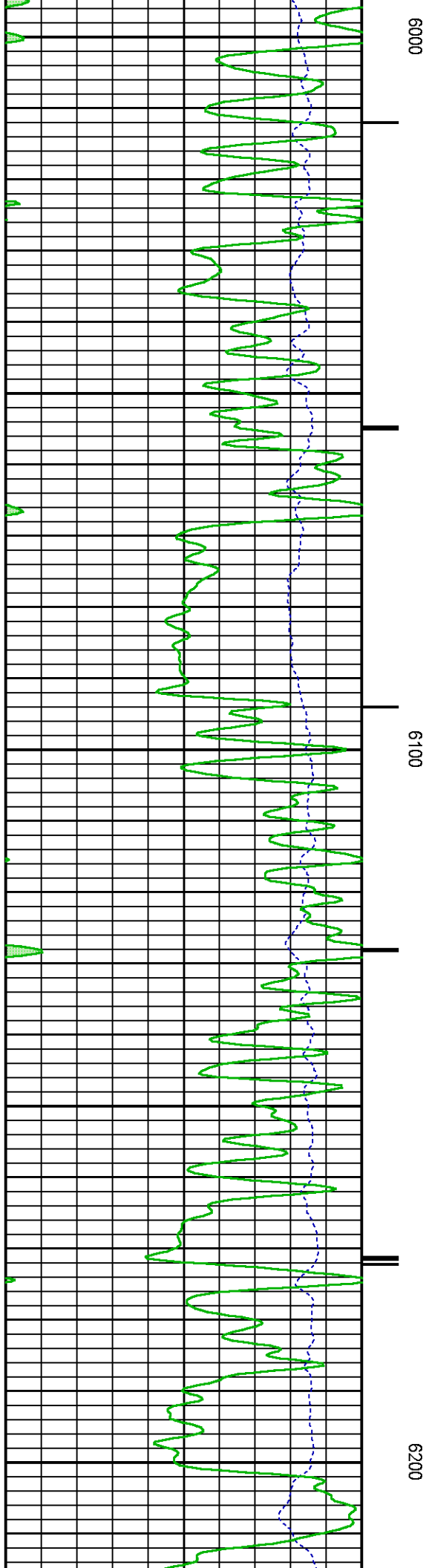
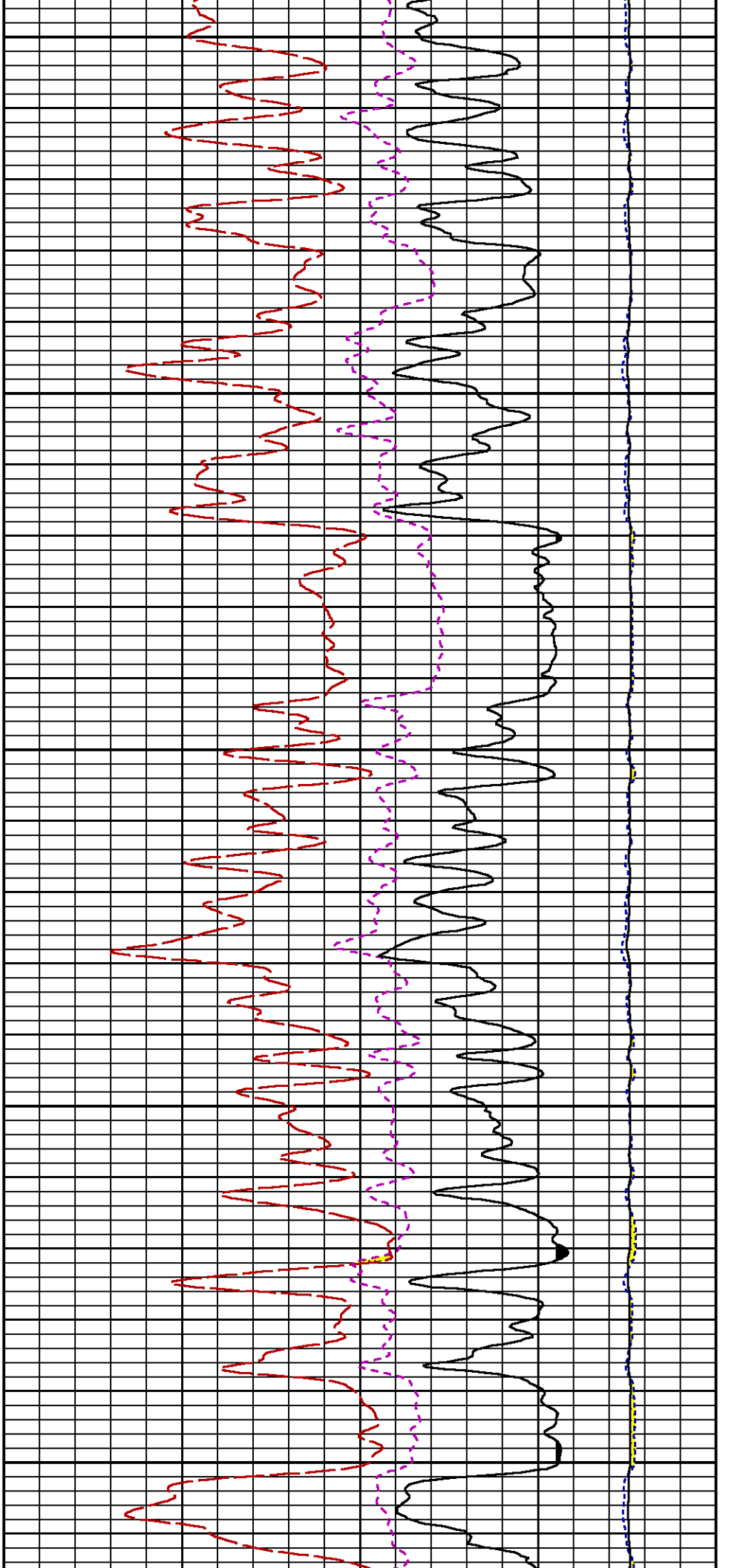


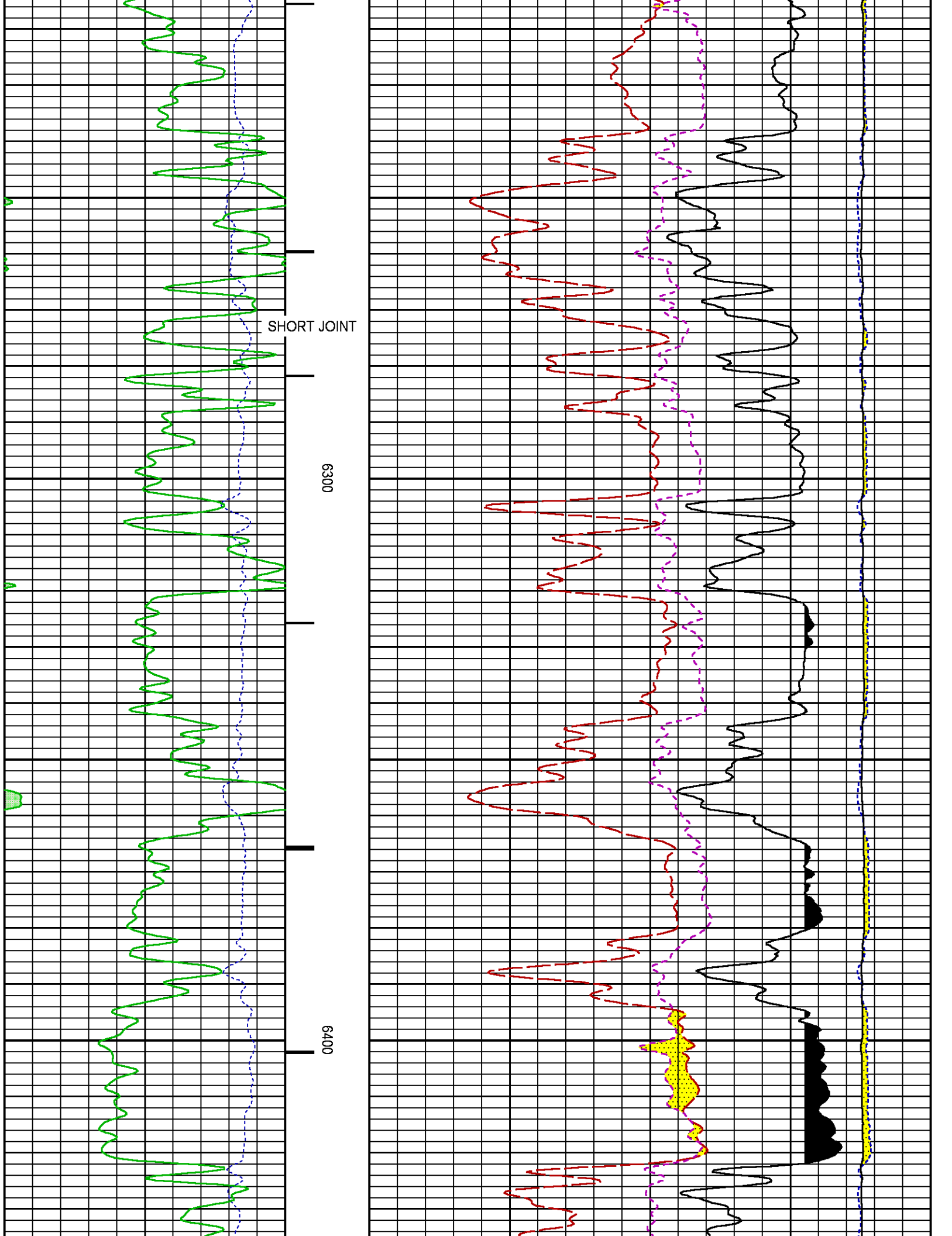


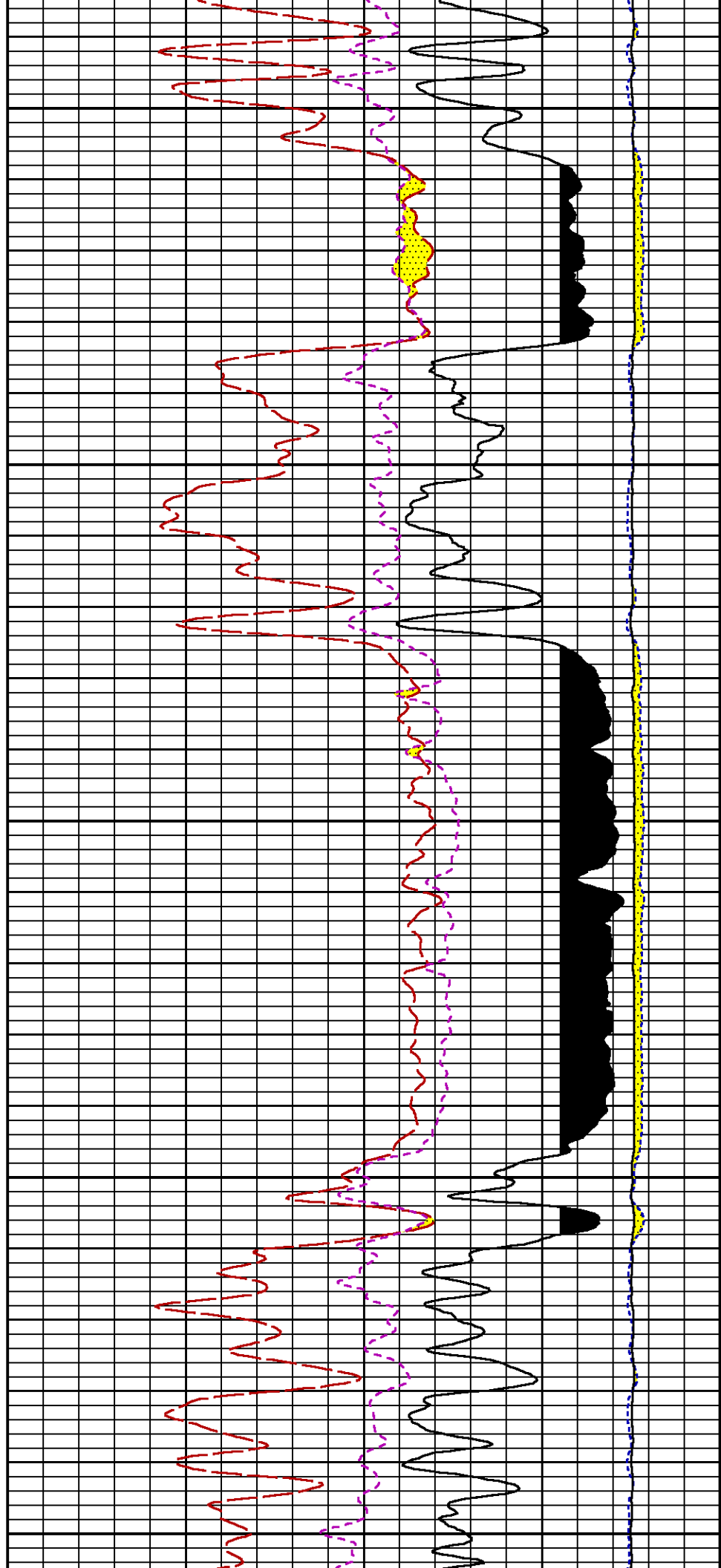
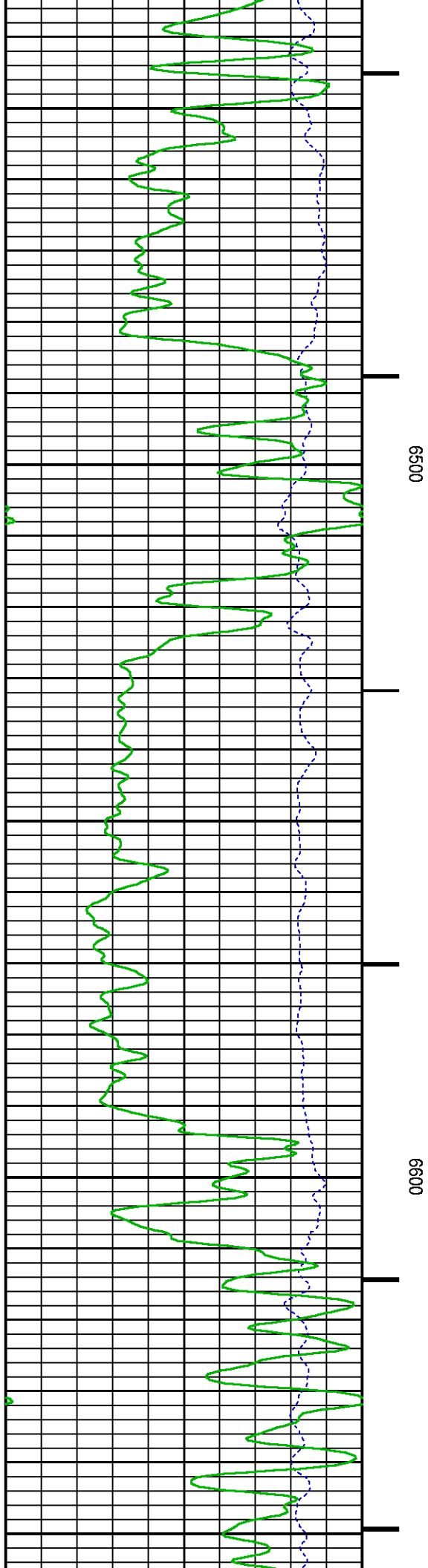


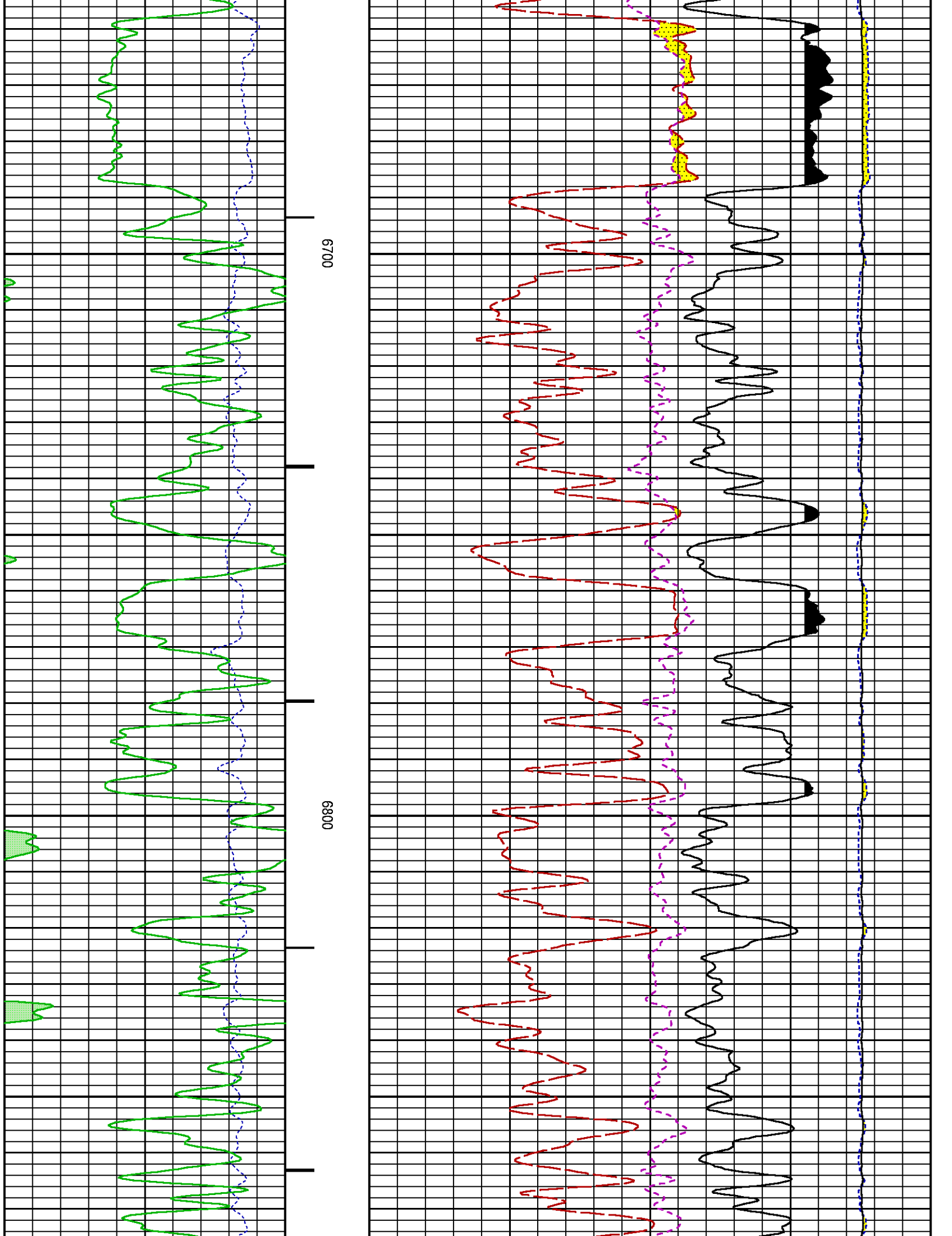


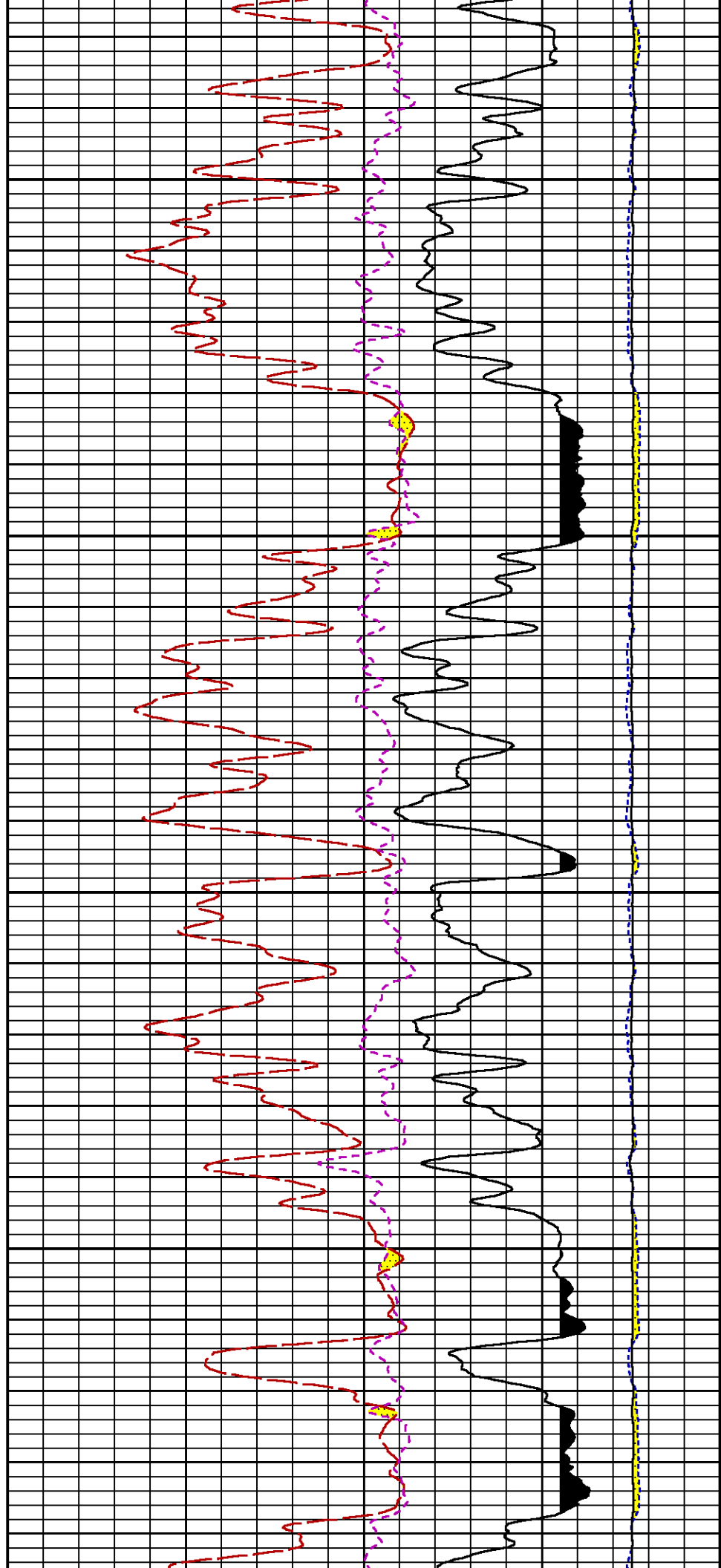
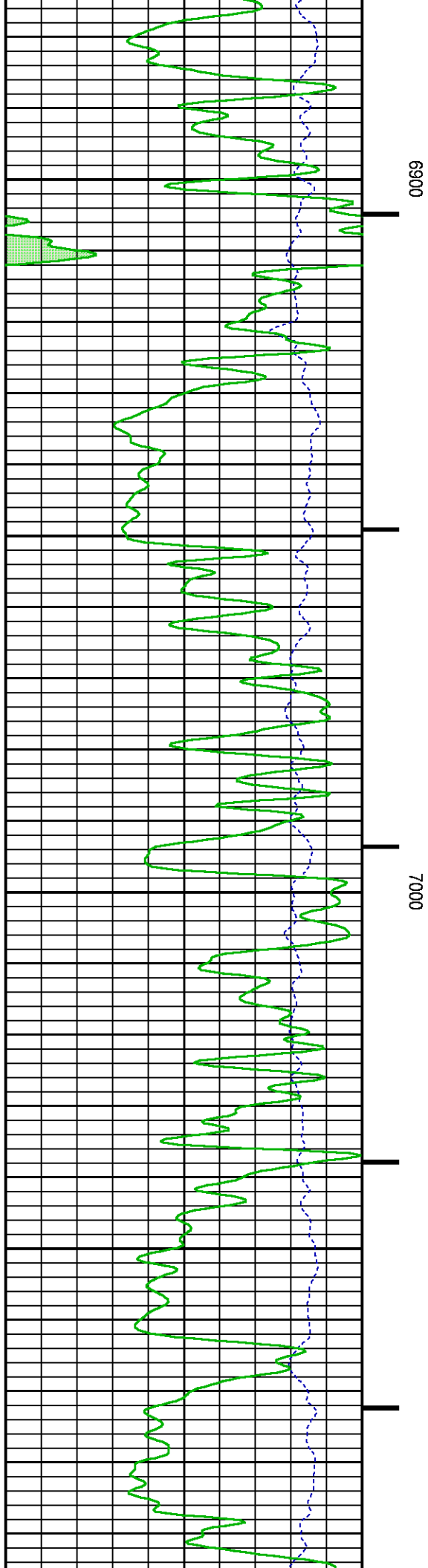


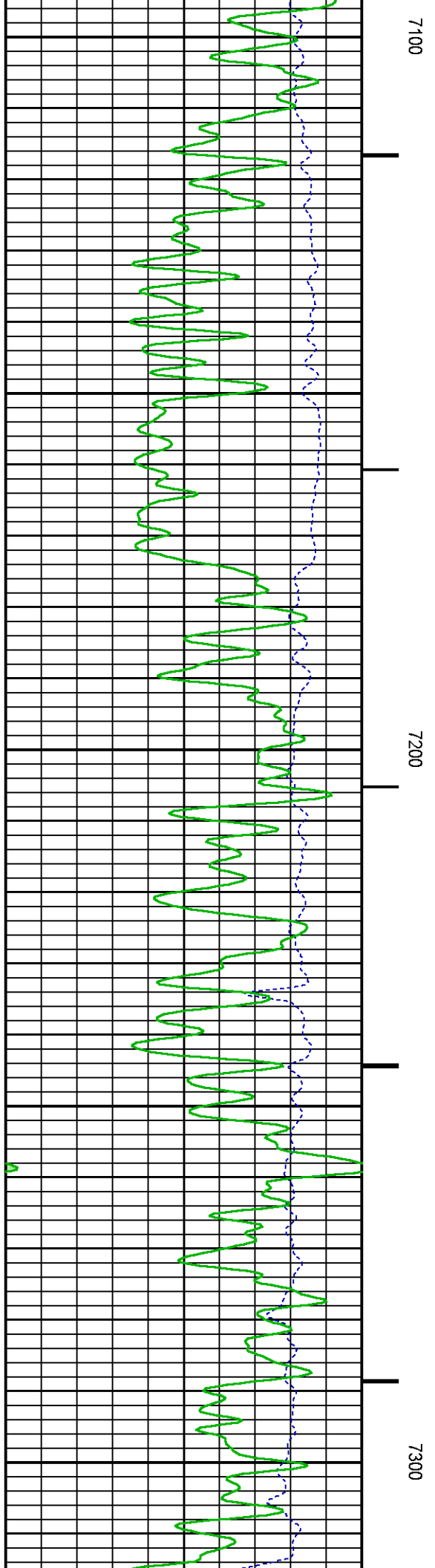
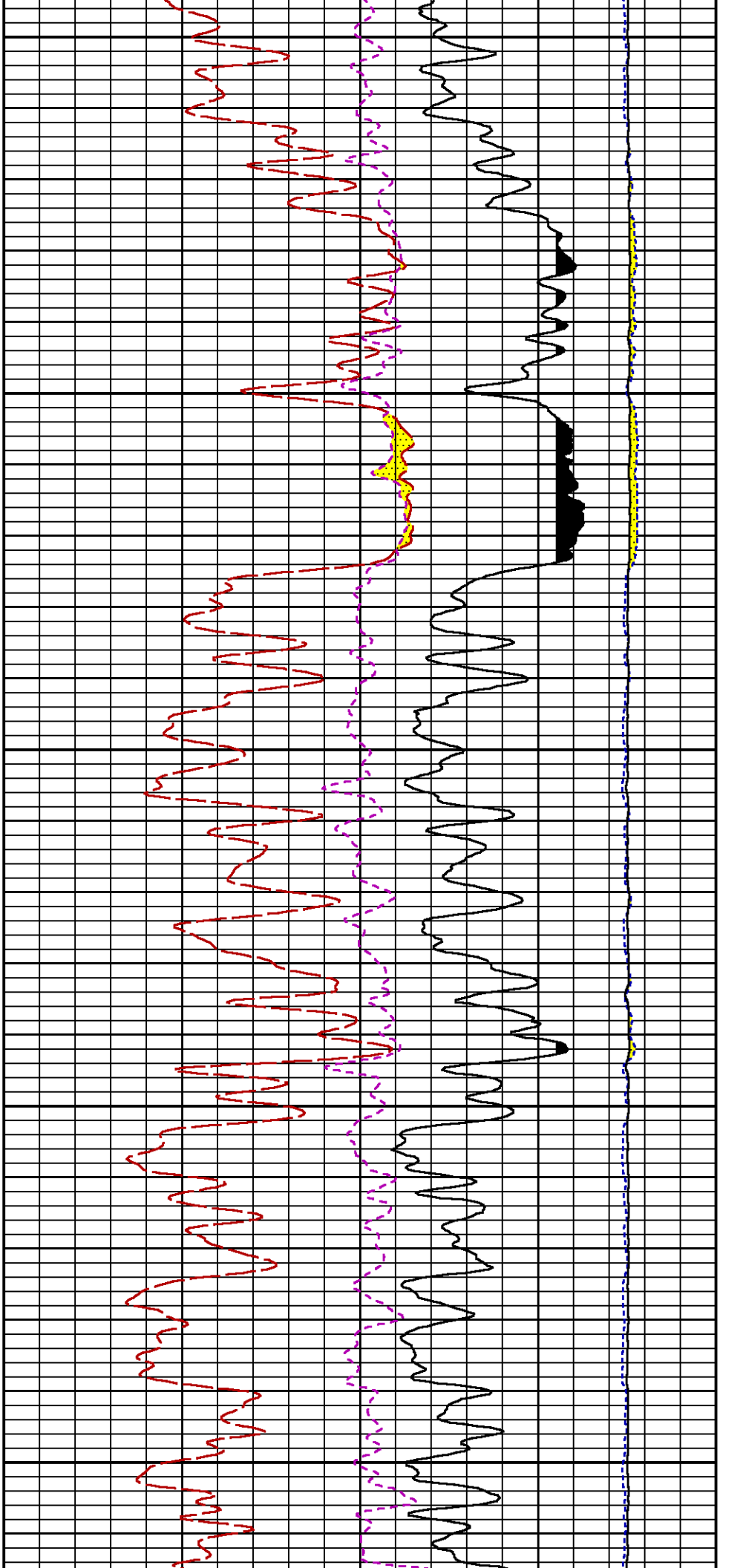


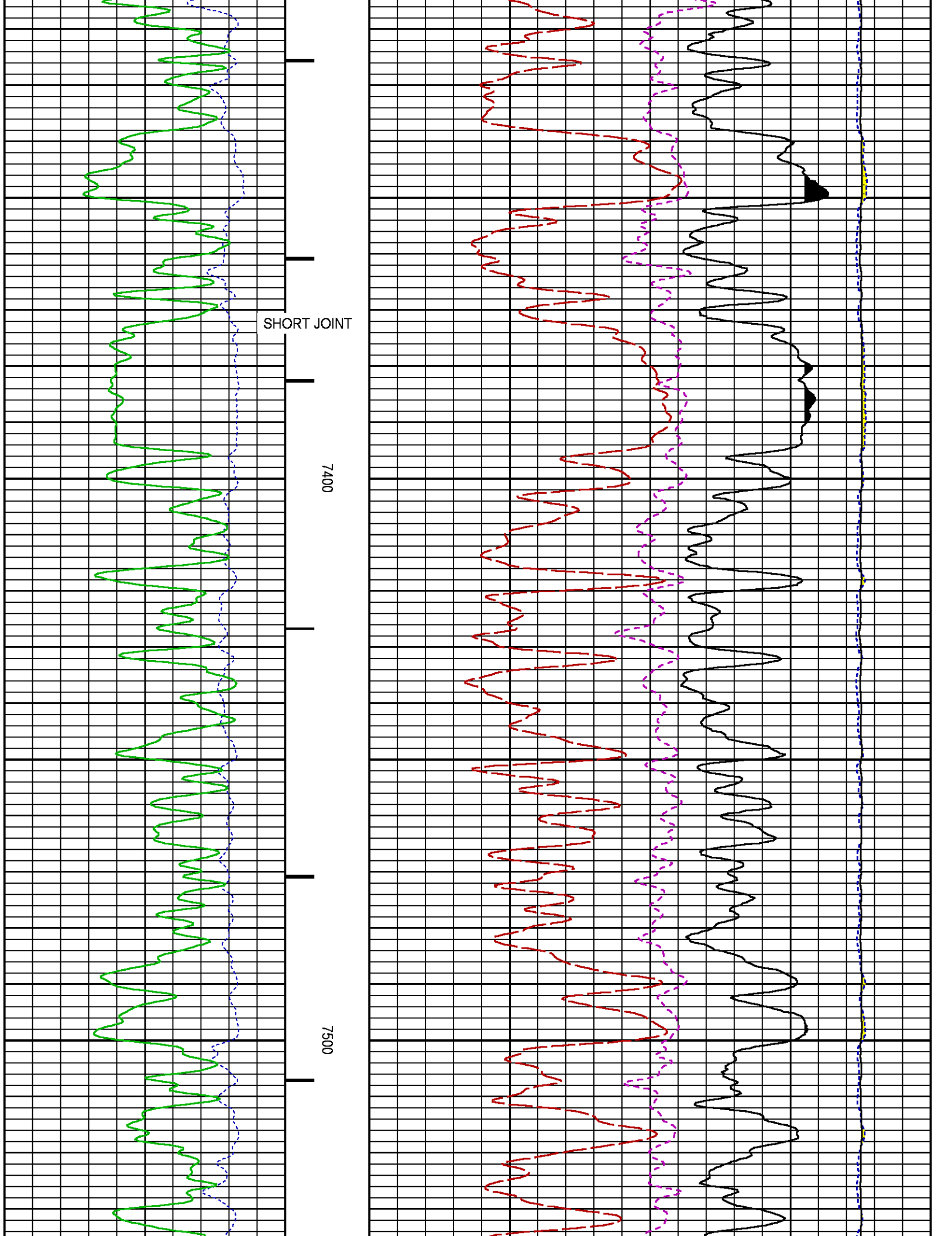


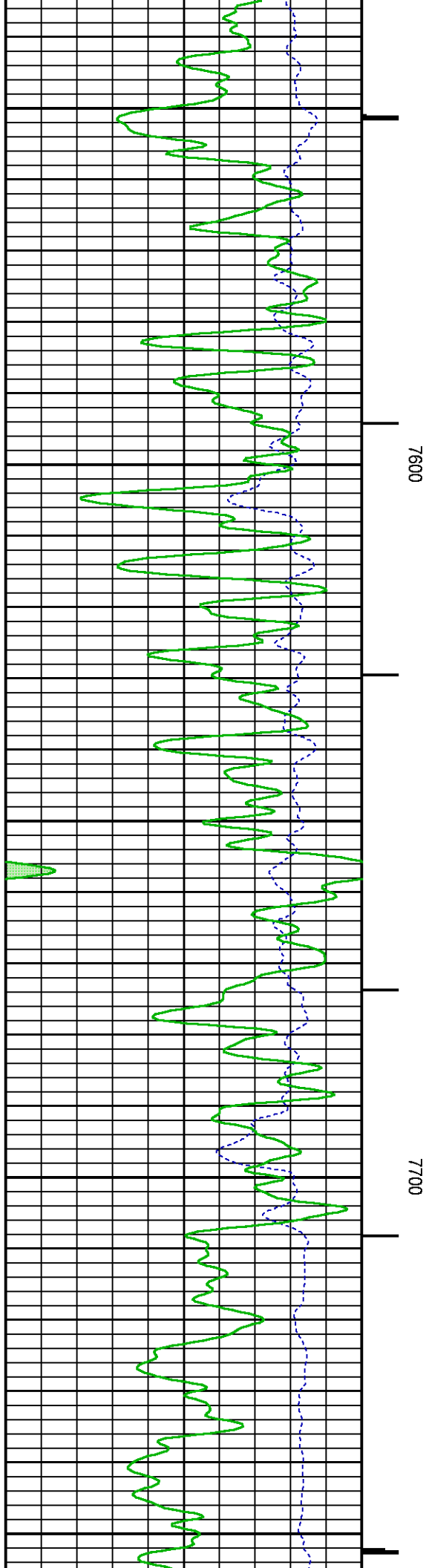
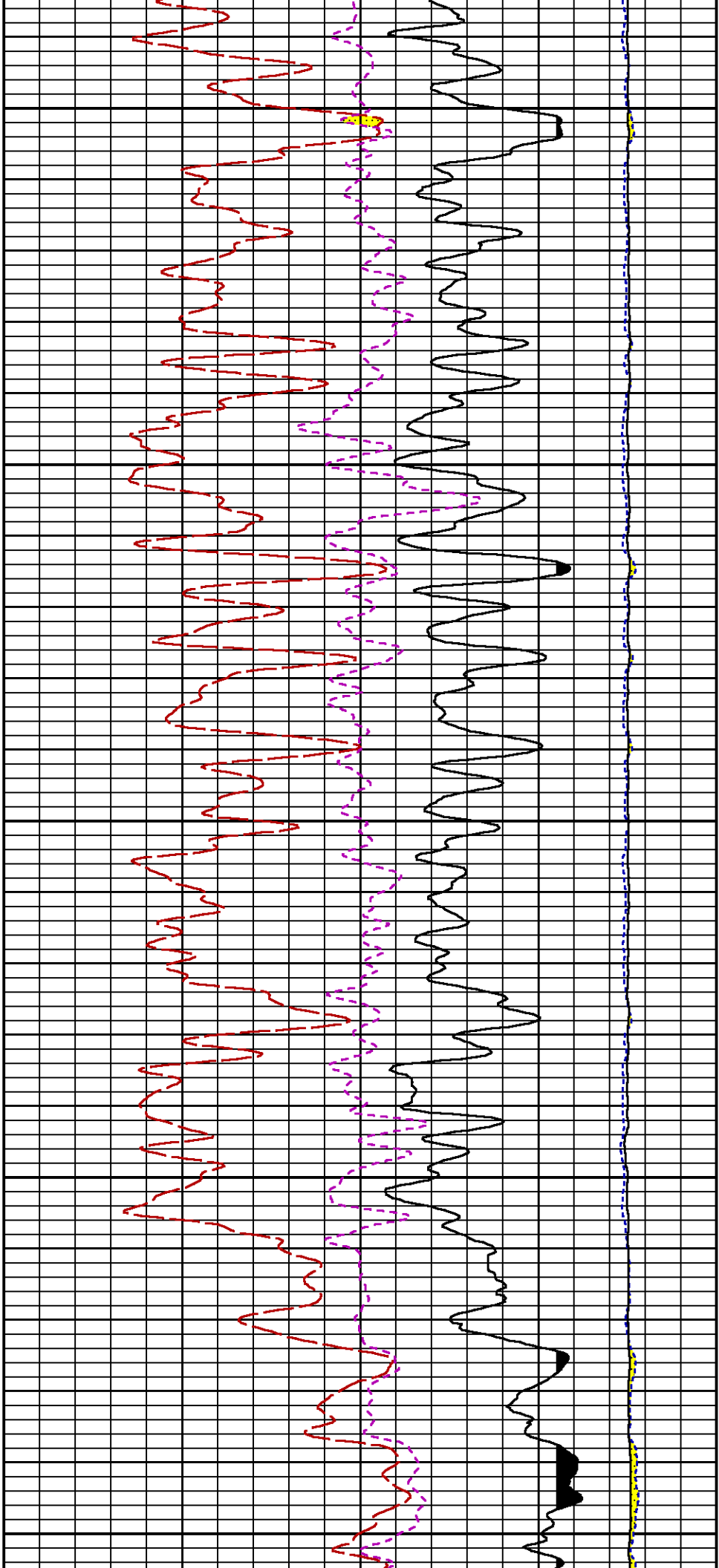


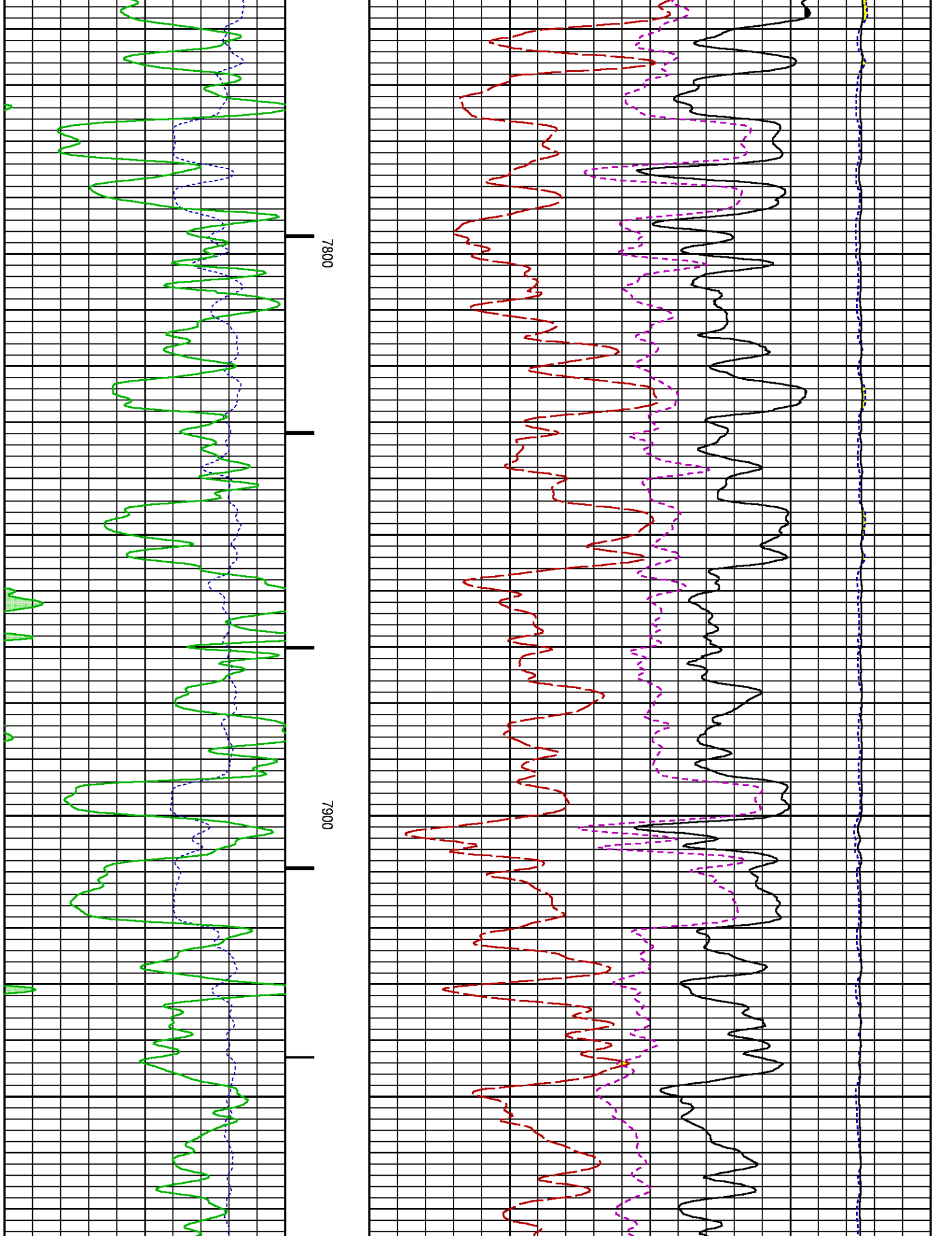


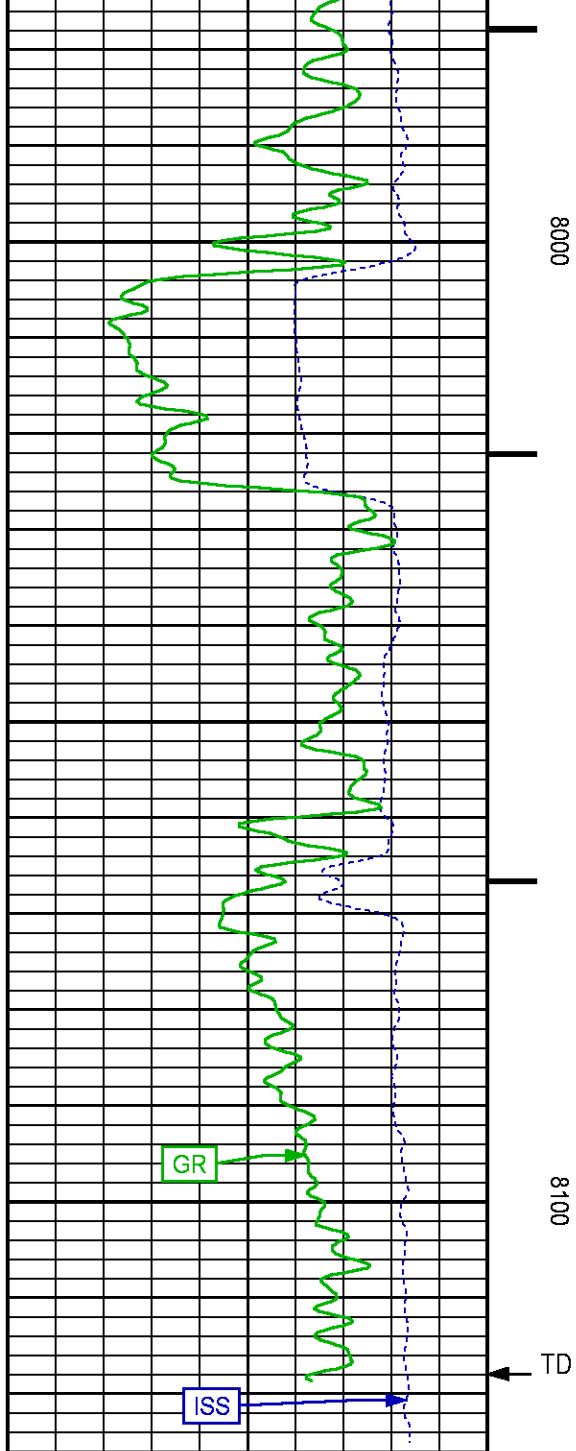




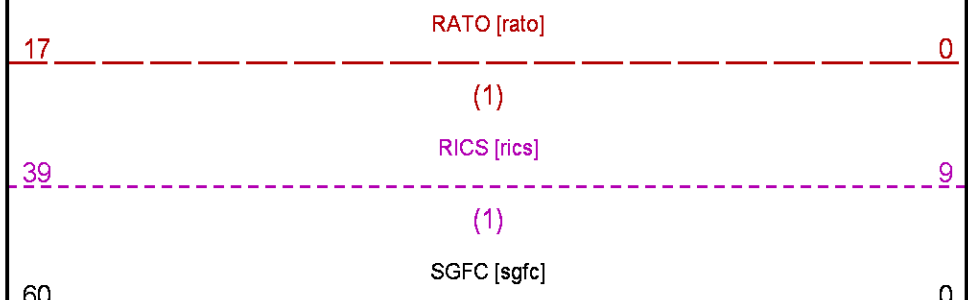
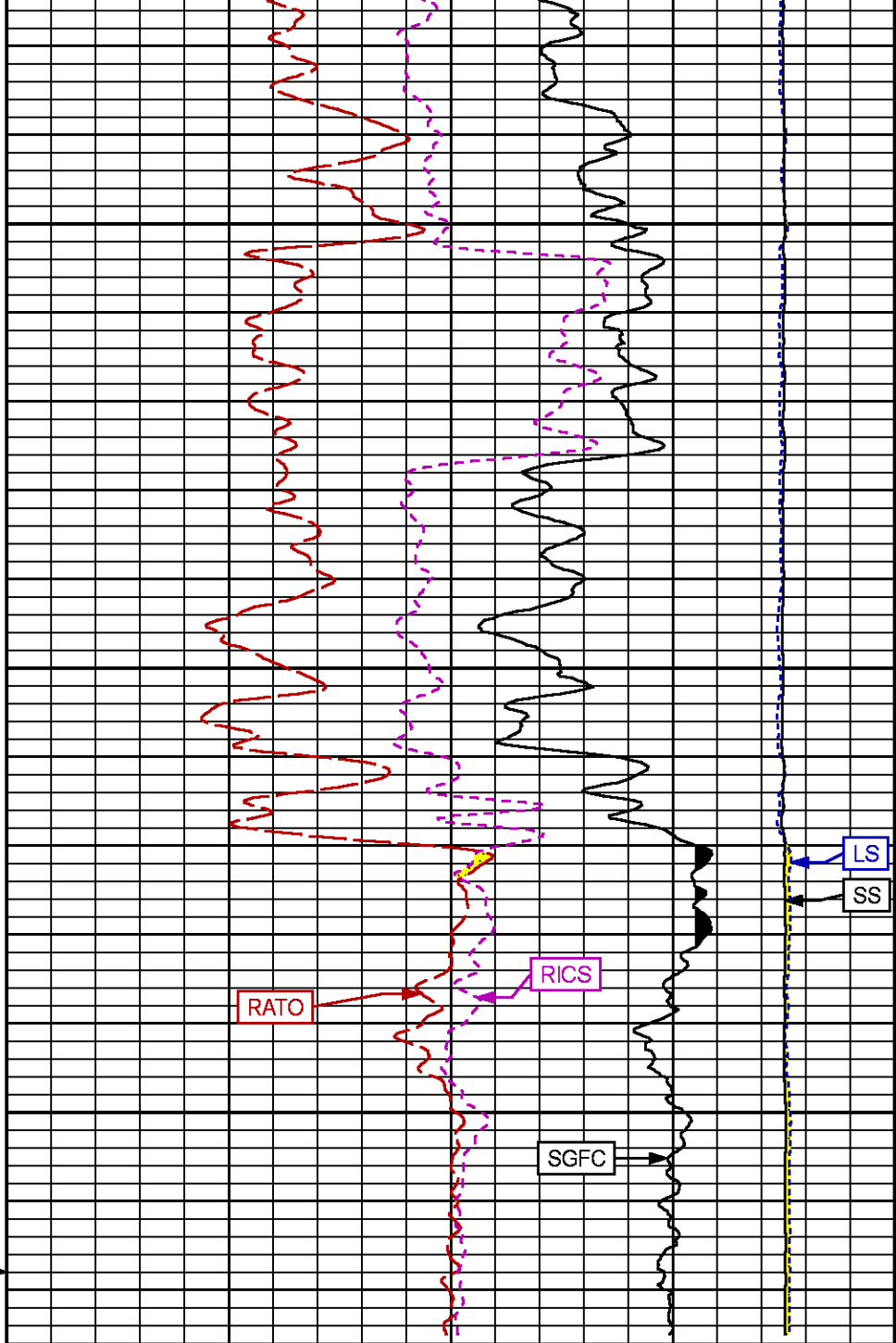
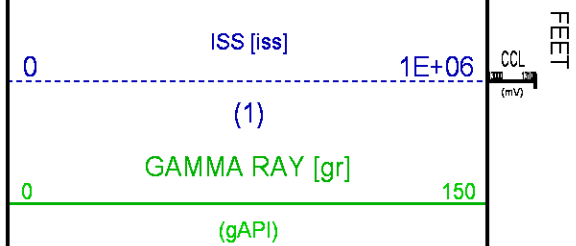








GR BACKUP



REPEAT SECTION PNC-3D MODE

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

Updates: 1 Patches: 6

Plotted: Thu Oct 22 12:22:31 2015

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/CH100239/n354h02.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 7875.250 ft BOTTOM DEPTH: 8154.499 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

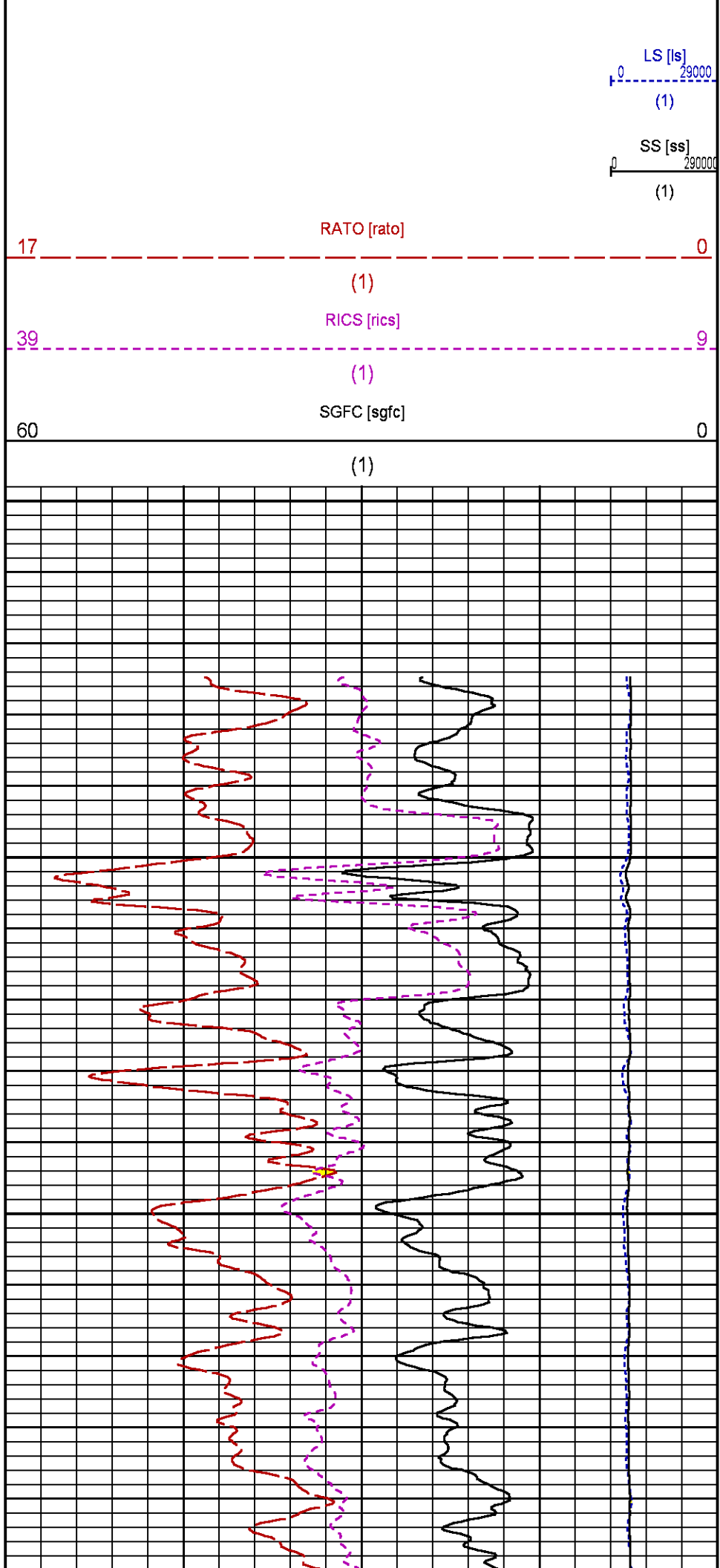
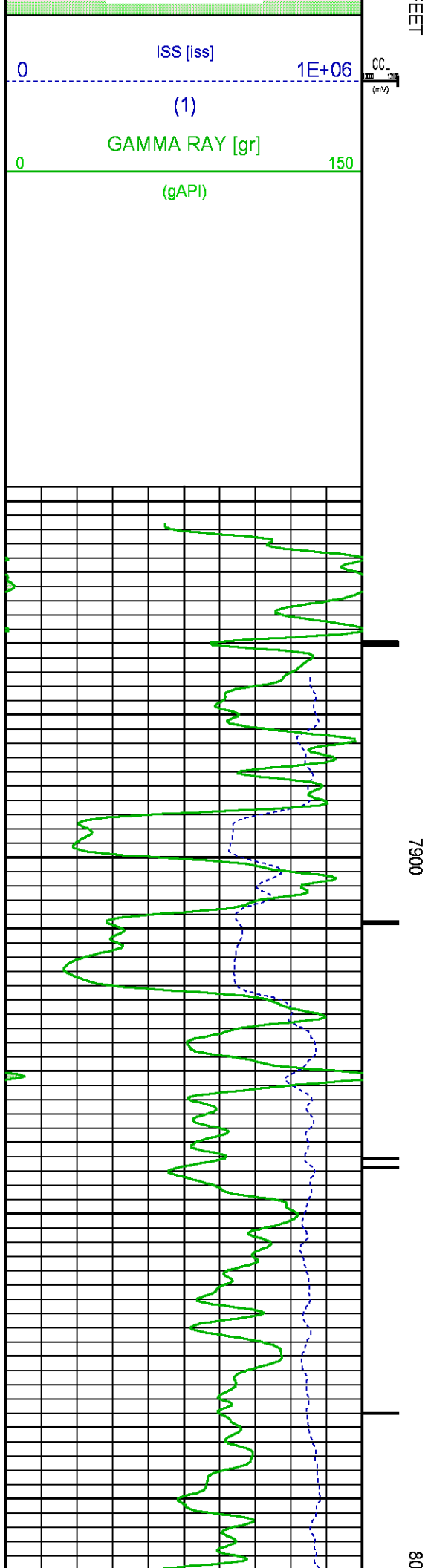
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	Oct 22 12:03:30 2015	CASING COLLAR LOCATOR
F1:GR	Oct 22 12:03:30 2015	GAMMA RAY
F1:ISS	Oct 22 12:03:30 2015	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Oct 22 12:03:30 2015	LONG SPACE COUNT RATE
F1:RATO	Oct 22 12:03:30 2015	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Oct 22 12:03:30 2015	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Oct 22 12:03:30 2015	CORRECTED FORMATION SIGMA
F1:SS	Oct 22 12:03:30 2015	SHORT SPACE COUNT RATE

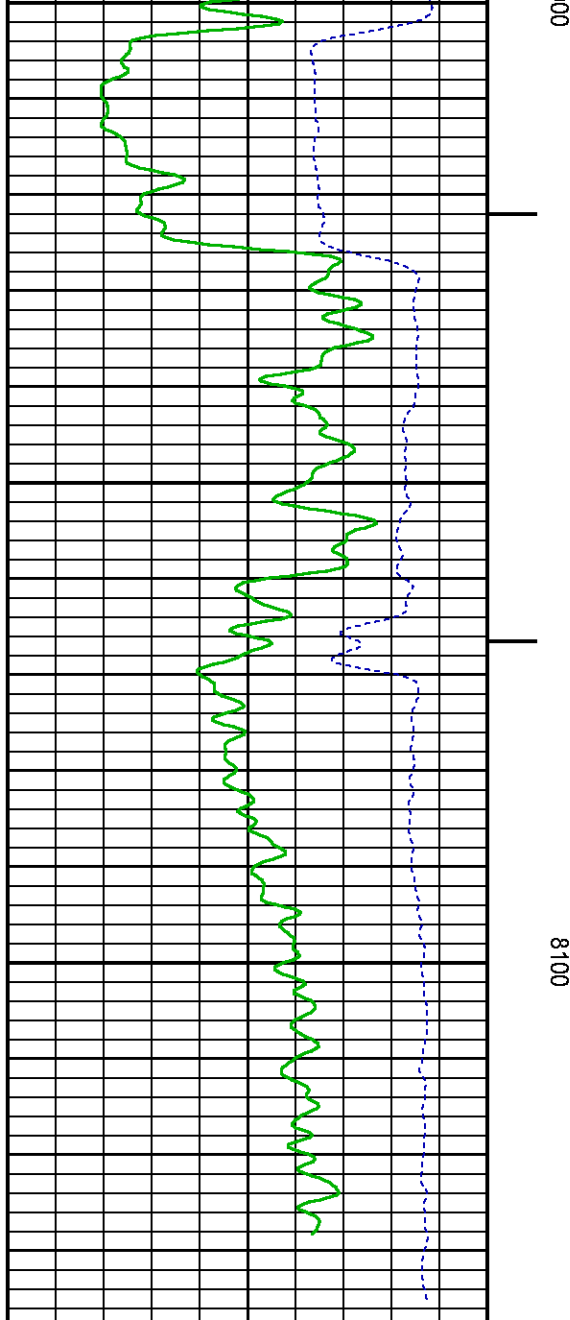
CURVE MEASURE POINT OFFSET

CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	25.00	ISS	12.75	RATO	12.75	SGFC	12.75
GR	22.75	LS	12.75	RICS	12.75	SS	12.75

Presentation : HL6670:/dat1a/CH100239/2M_RPM_REPEAT.fvpdf [5"/100' Scale]
Plot Interval : 7849.75 - 8136.25 Feet

Data File 1 : F1 : HL6670:/dat1a/CH100239/02M_RPM_REPEAT.xtf
Created On : Oct 22 12:03:30 2015
Company : LARAMIE ENERGY
Well : PICEANCE FEDERAL 28-02M
Field : VEGA
File Interval : 7849 - 8151.25 Feet
OCT : n354h





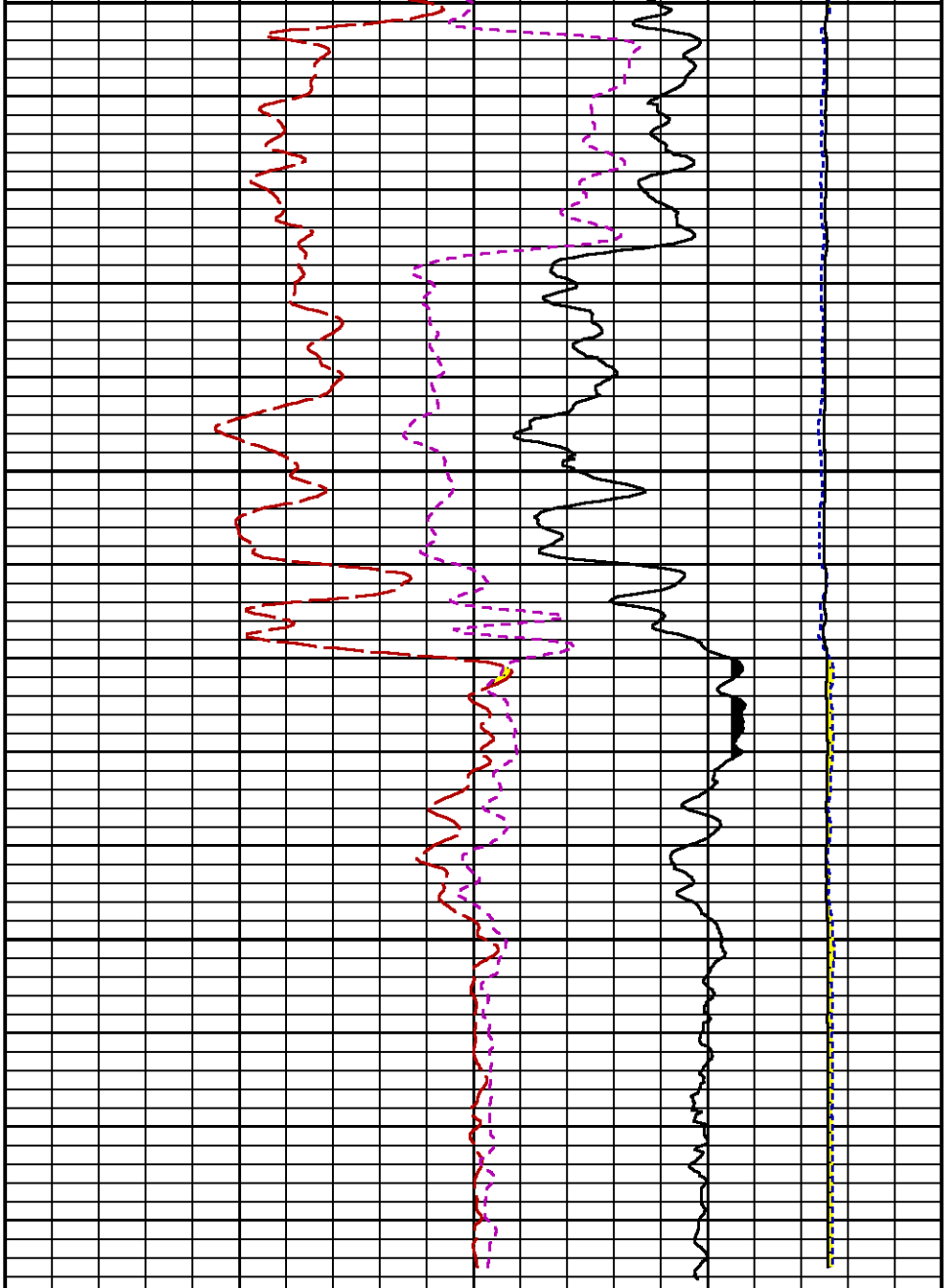
100

8100

FEET

GR BACKUP	
ISS [iss]	1E+06
(1)	
GAMMA RAY [gr]	150
(gAPI)	

CCL [mV]



LS [ls]	29000
(1)	
SS [ss]	290000
(1)	
RATO [rato]	0
(1)	
RICS [rics]	9
(1)	
SGFC [sgfc]	0
(1)	

17

39

60

CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/CH100239/n354h.tp1

GR PRIMARY CALIBRATION SUMMARY

TOOL #: 2812LA 10274382

DATE/TIME PERFORMED: Fri Oct 9 13:18:59 2015

UNIT #: 3880TA HL6670

CALB JIG #: 4702NK WA-612

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	CR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	CALBRTR (gAPI)
GR	47.82	238.76	190.9	1.100	52.60	262.60	210

GR PRIMARY VERIFICATION SUMMARY

TOOL #: 2812LA 10274382

DATE/TIME PERFORMED: Fri Oct 9 13:21:02 2015

UNIT #: 3880TA HL6670

VERI JIG #: 4702NK WA-612

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	48.98	234.73	1.100	53.87	258.17	204.31
						200.00 220.00

RPM_PNC_3D PRIMARY CALIBRATION SUMMARY

TOOL: 8283PA 10585555

DATE/TIME PERFORMED: Thu Oct 8 12:43:39 2015

UNIT: 3885TC 6685

CALIBRATOR: 2437XB 112674

SOURCE: 8281AA 11724361

HOURS: 8281AA 35

	ISS	Mtr Vits (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	809301	124	2220	2193	2229	105	7	0.9667
Interpolated	1300000	146	2198	2181	2231			

	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	809301	6304	996	140	26.05	0.14	24.25	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	809301	168671	26227	89635	31915	8230	54295	13158
Fit Quality %		1.095	1.068	0.866	0.857	1.073	0.801	1.020

	ISS	RBOR	RIN ISS/ILS	RIN13 ISS/IXS	RICS ISS/CSS	RATO SS/LS	RTWO SS2/LS	RONE CSS/CLS
Raw Data	809301	1.43	4.80	30.87	14.91	10.90	3.88	4.13
		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 %		0.094	0.108	0.094	0.166	0.138	0.145	0.131
Reduced	1392448	1.43	4.81	30.94	14.94	10.88	3.87	4.12
		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 120516

DATE/TIME PERFORMED: Fri Oct 9 14:47:11 2015

UNIT #: 3880TA HL6670

T(0)

T(1)

T(2)

T(3)

Corr Coeff for Temp

-2.032071E+01

1.041576E-01

1.407105E-06

-1.763022E-10

INSTRUMENT CONFIGURATION

Source File: /dat1a/CH100239/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 : 8248ED
Mnemonic : PCM
Measure Point: 1.00': CCL MP

SONDEX GAMMA RAY

Diameter : 1.69"
Length : 2.17'
Weight : 10 lbs
Series : 2812LA
Mnemonic : GR
Measure Point: 0.62': GR MP

RPM ELECTRONICS

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

33.24'

CCL MP 25.19'

GR MP 22.64'

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: 33.24'
TOTAL WEIGHT: 140 lbs
MAX DIAMETER: 0'1.70"

0.00'



COMPANY LARAMIE ENERGY
WELL PICEANCE FEDERAL 28-02M
FIELD VEGA
COUNTY MESA **STATE** COLORADO

FILE NO: CH100239
API NO: 05077102390000

LOCATION:
SHL: LAT 39.251061 LONG -107.779508
BHL: LAT 39.254282 LONG -107.774519

ELEVATIONS:
KB 7578 FT
DF
GL 7556 FT

28 9S 93W
28-05 PAD
PATTERSON 306

SEC 28 **TWP** 9S **RGE** 93W

DATE 22-Oct-2015