



FILE NO: _____ COMPANY **LARAMIE ENERGY LLC**

API NO: _____ WELL **BRUTON 30-03W**

05077104460000 FIELD **VEGA**

Version _____ COUNTY **MESA** STATE **COLORADO**

LOCATION: SHL: LAT:39.252683N; LONG: 107.814261W
BHL: LAT:39.253624N; LONG: 107.816227W

SEC **30** TWP **9S** RGE **93W**

PERMANENT DATUM **GL** ELEVATION **7512 FT**
LOG MEASURED FROM **KB** 30 FT ABOVE P.D.
DRILL MEAS. FROM **KB**

OTHER SERVICES
RAL
ELEVATIONS:
KB 7542 FT
DF 7541 FT
GL 7512 FT

DATE	04-Nov-2017
RUN	1
TRIP	2
SERVICE ORDER	US128858
DEPTH DRILLER	7664 FT
DEPTH LOGGER	7591 FT
BOTTOM LOGGED INTERVAL	7591 FT
TOP LOGGED INTERVAL	2306 FT
TIME STARTED	9:00
TIME FINISHED	15:30
OPERATOR RIG TIME	6.5 HRS
TYPE OF FLUID IN HOLE	WATER
FLUID DENSITY	NA
FLUID SALINITY	NA
FLUID LEVEL	54 FT
LOGGED CEMENT TOP	1566 FT
WELLHEAD PRESSURE	0 PSI
MAXIMUM HOLE DEVIATION	NA
NOMINAL LOGGING SPEED	15 FMIN
MAX. RECORDED TEMP.	232 DEGF
REFERENCE LOG	NA
REFERENCE LOG DATE	NA
EQUIP. NO.	HL-6670
LOCATION	WOODWARD
RECORDED BY	C.COFFELT
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 1 TRIP 2: ***TWO OPERATIONS IN WELLBORE***

****OPERATION 2: RPM/GR/CCL RUN IN COMBINATION****

LOGGED WITH 0 PSI ON WELLHEAD

SJ: 6762' - 6784'
SJ: 5674' - 5696'

CREW: M.MENTZER, K.REED

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	2	TELEMETRY	8250 EA/ 8248 ED	12151903/12211009	FREE
1	2	GR	8262 XA	10317216	FREE
1	2	RPM ELEC	8281 EA	10309421	FREE
1	2	RPM	8283 PA/8281 FA	10414345/10401926	FREE

Plotted: Sat Nov 04 16:20:19 2017

PARAMETER AND FILTER SUMMARY REPORT

FILE: C:\dat1a\LARAMIE_BRUTON_30_03W\p353h05.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 2294.250 ft BOTTOM DEPTH: 2959.250 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	8.50	in	" "
	LARGEST CASING OD	7.00	in	" "
	MATRIX	SANDSTONE		" "
	CORRECTION BUFFER	11		" "

CURVE DESCRIPTION REPORT

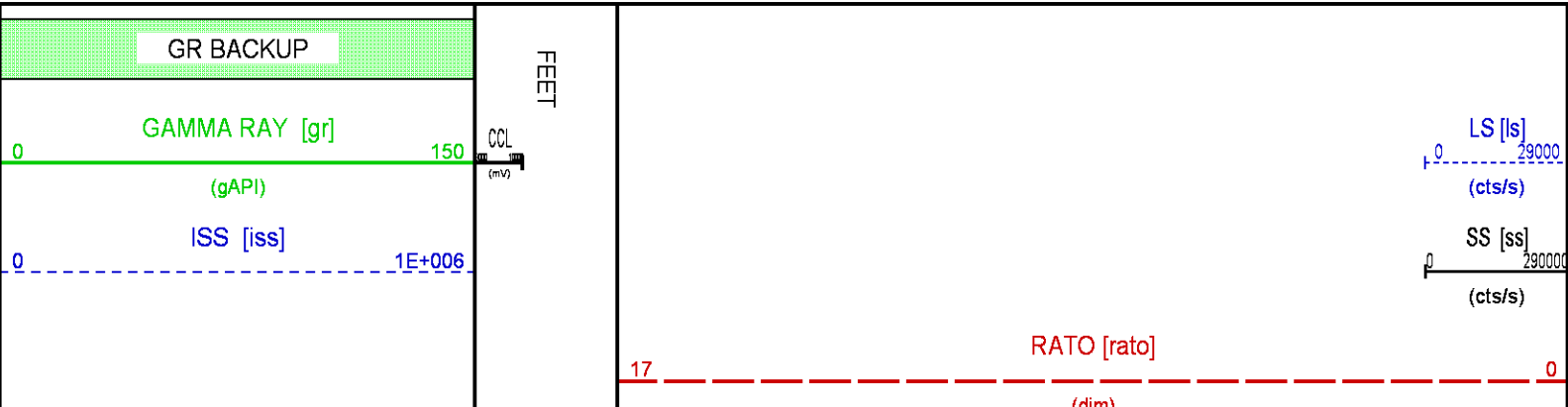
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	N/A	CASING COLLAR LOCATOR
F1:GR	N/A	GAMMA RAY
F1:ISS	N/A	INELASTIC SHORT SPACE COUNT RATE
F1:LS	N/A	LONG SPACE COUNT RATE
F1:RATO	N/A	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	N/A	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	N/A	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	-22.50	ISS	-9.50	RATO	-9.50	SGFC	-9.50
GR	-19.50	LS	-9.50	RICS	-9.50	SS	-9.50

Presentation : BHIH2LZZF2:C:\dat1a\LARAMIE_BRUTON_30_03W\LARAMIE_RPM_PNC3D+RPM_MN_03W_GS.fvpdf [5"/100' Scale]
Plot Interval : 2271.75 - 2952.5 Feet

Data File 1 : F1 : BHIH2LZZF2:C:\dat1a\LARAMIE_BRUTON_30_03W\RPM_MN_03W_GS.xtf
Created On : N/A
Company : LARAMIE ENERGY LLC
Well : BRUTON 30-03W
Field : VEGA
File Interval : 2271 - 2959.25 Feet
OCT : p353h



39

RICS [rics]

9

(dim)

Formation Sigma [sgfc]

60

0

(cu)

2300

2400

GR

ISS

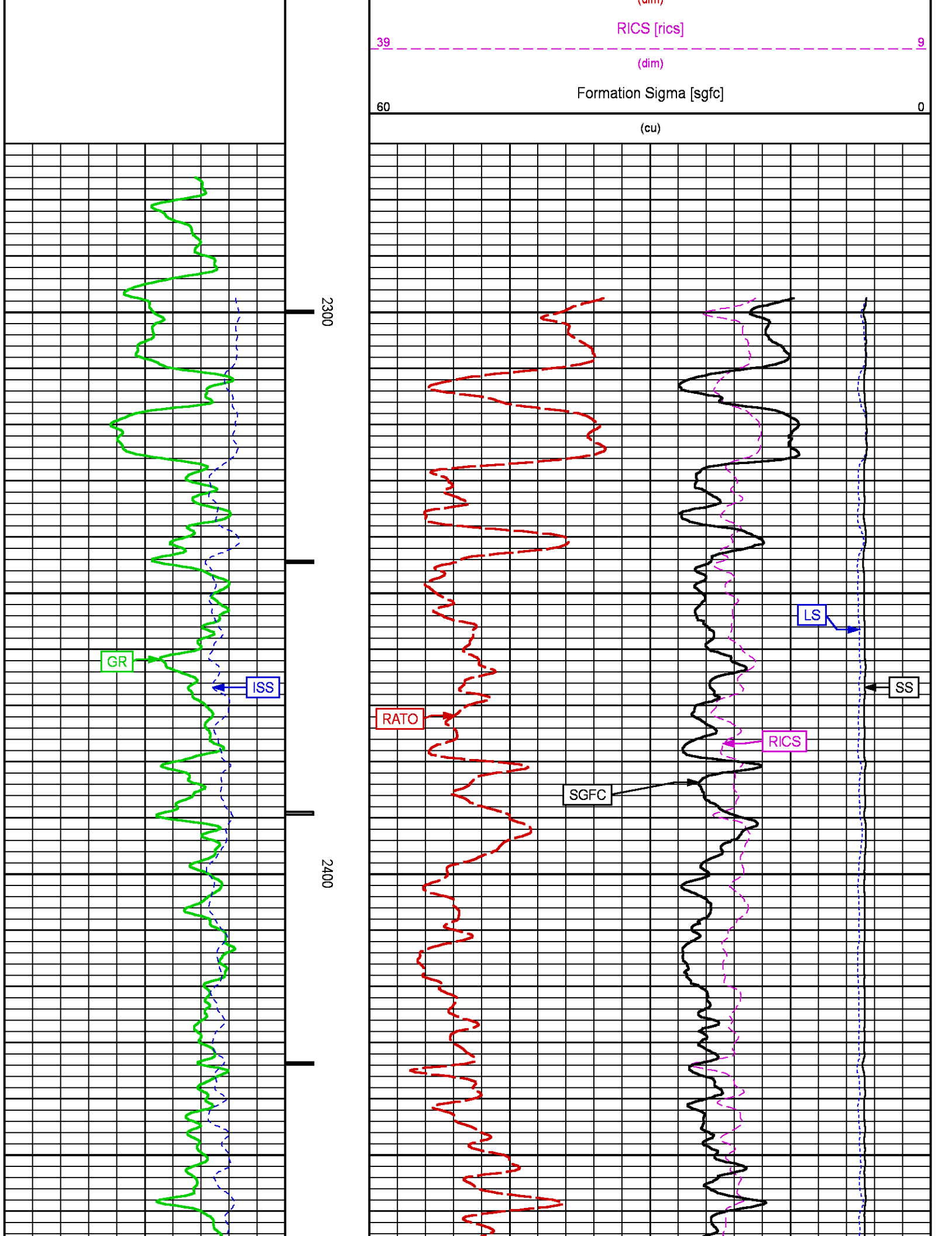
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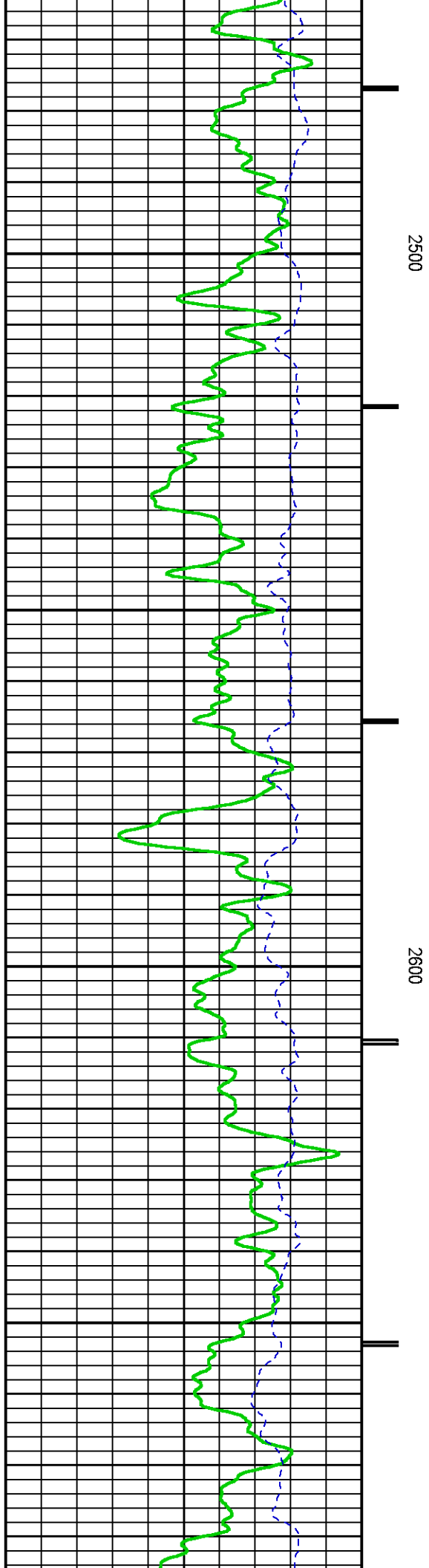
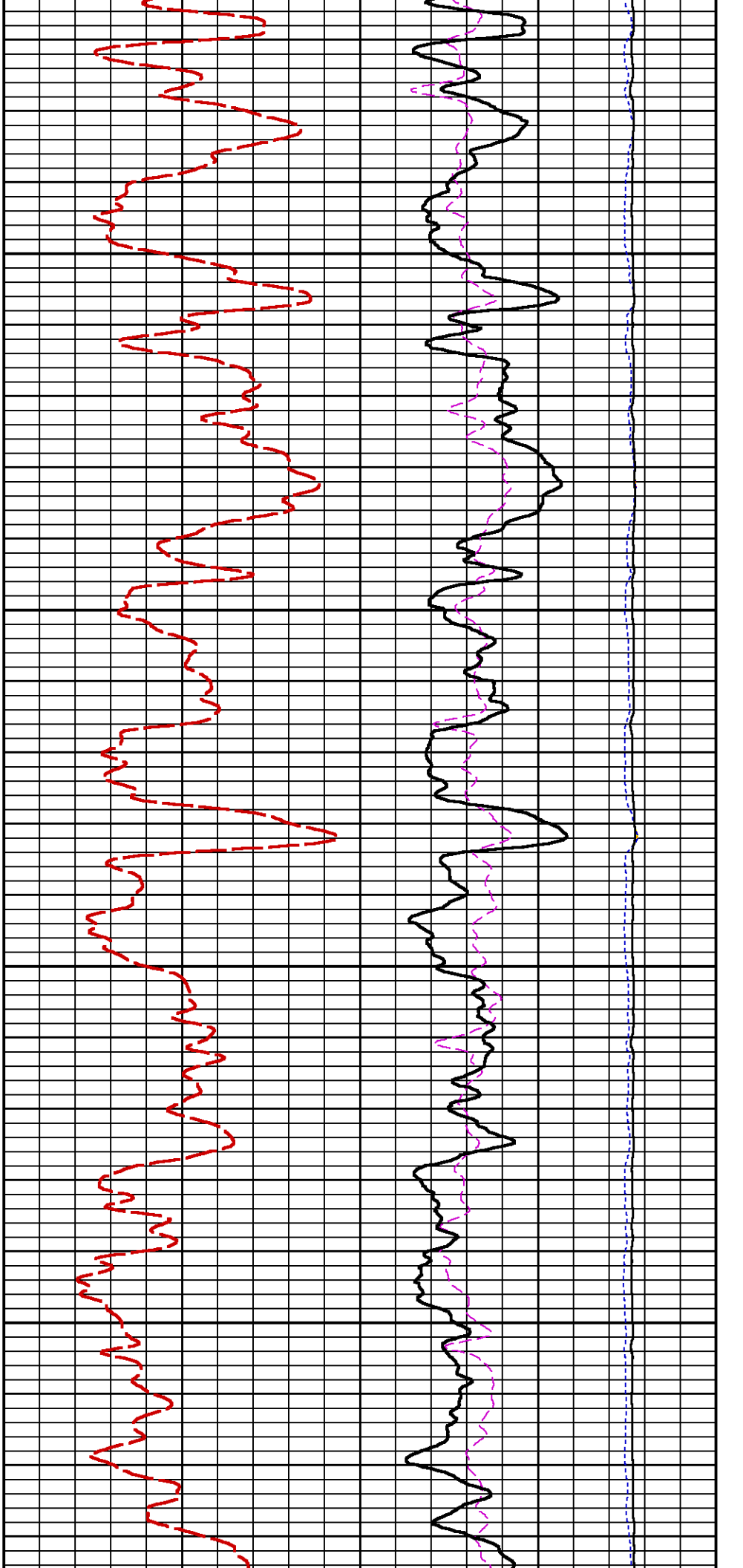
SGFC

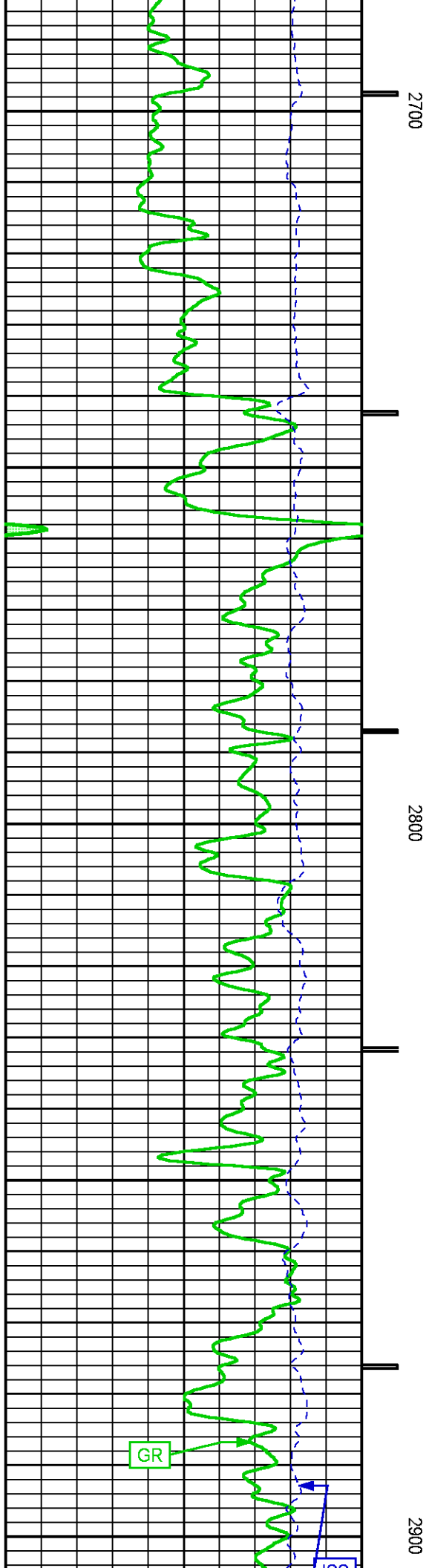
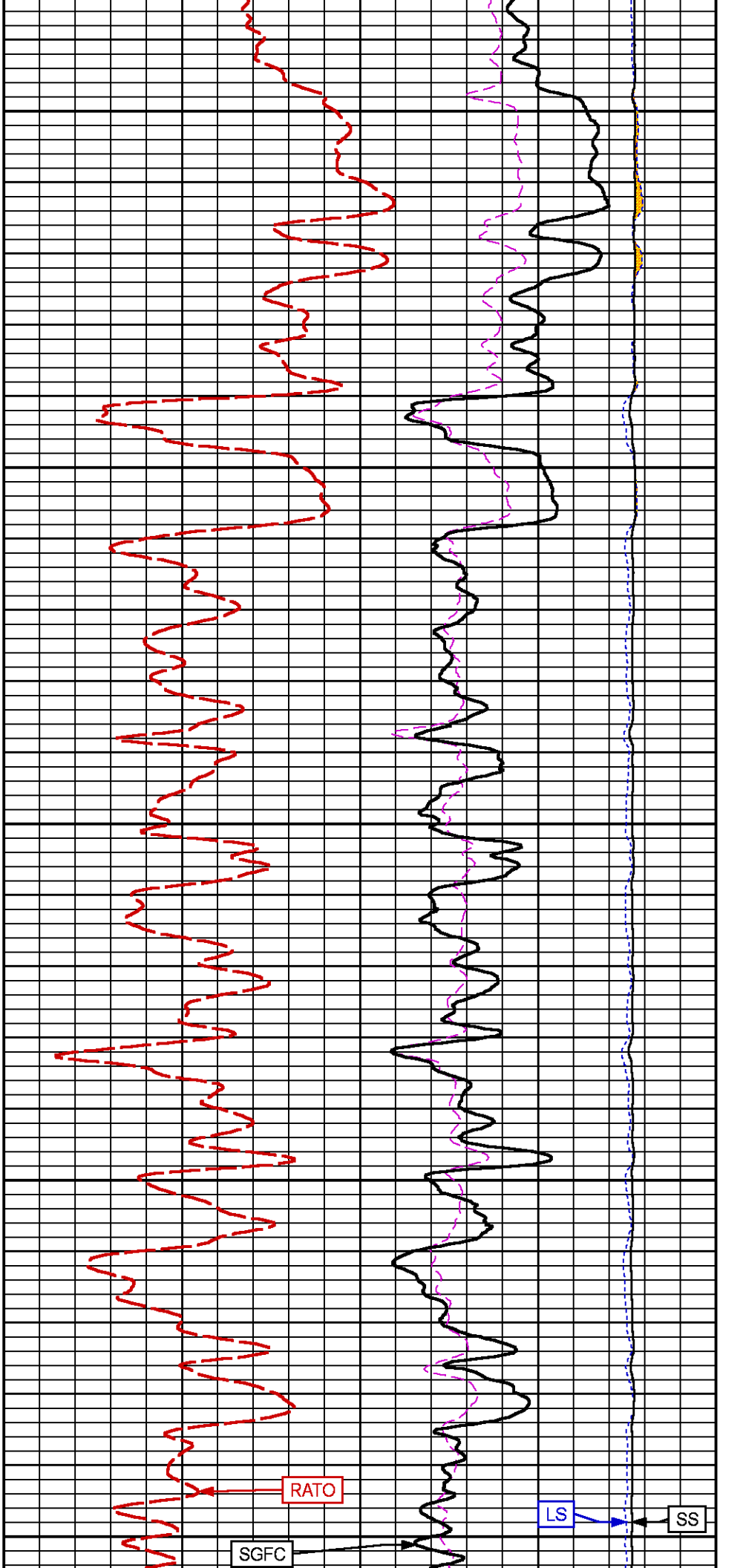
RICS

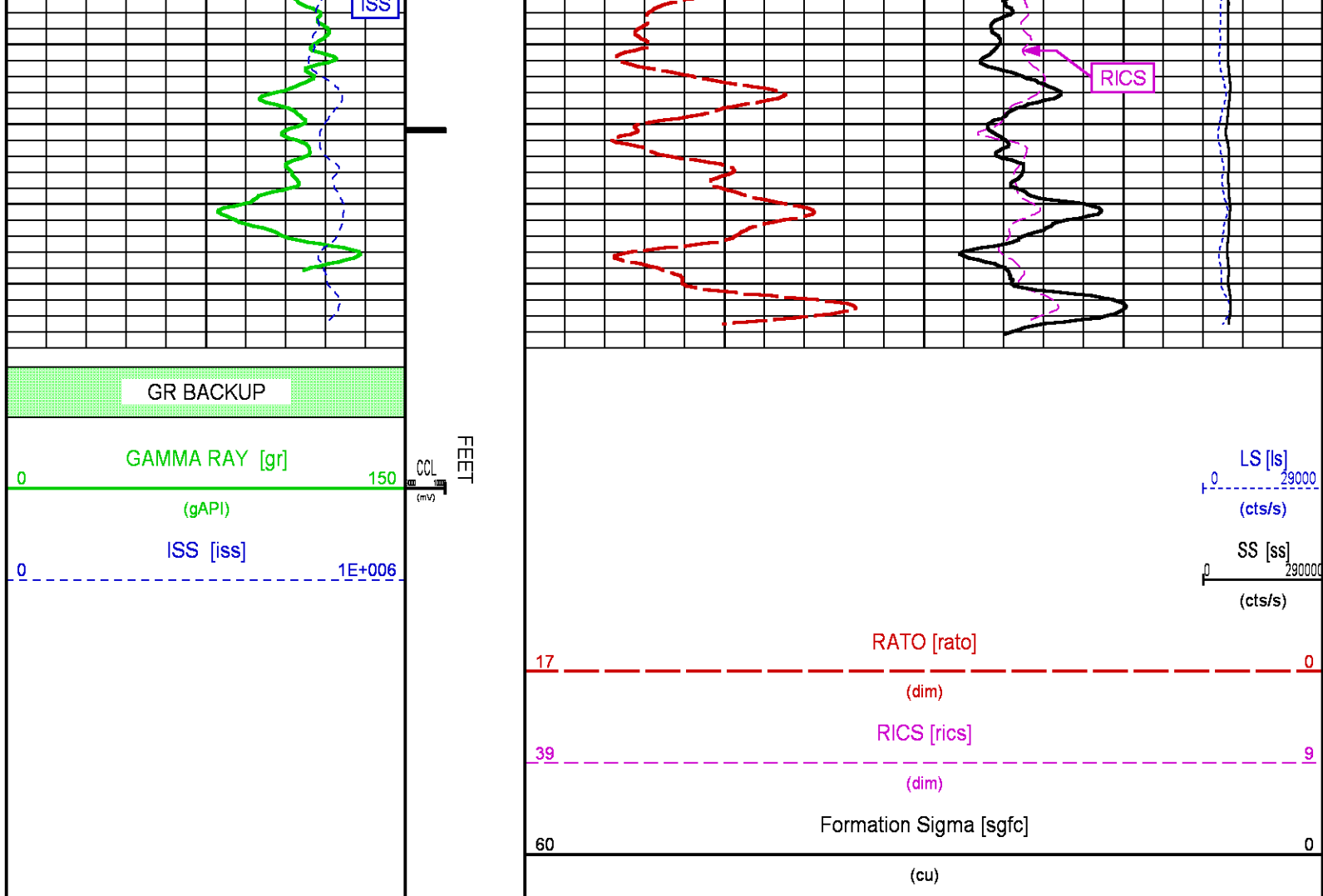
LS

SS









RPM PNC 3D MAIN PASS

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

Plotted: Sat Nov 04 15:25:08 2017

PARAMETER AND FILTER SUMMARY REPORT

FILE: C:\dat1a\LARAMIE_BRUTON_30_03Wp353h03.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 4275.250 ft BOTTOM DEPTH: 7575.500 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 "
	OPEN/CASED HOLE	CASED HOLE		" "
	BOREHOLE SIZE	8.50	in	" "
	LARGEST CASING OD	7.00	in	" "

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	-22.50	ISS	-9.50	RATO	-9.50	SGFC	-9.50
GR	-19.50	LS	-9.50	RICS	-9.50	SS	-9.50

Presentation : BHIH2LZZF2:C:\dat1a\LARAMIE_BRUTON_30_03W\LARAMIE_RPM_PNC3D+RPM_MN_03W_WF.fvpdf [5"/100' Scale]

Plot Interval : 4276.75 - 7592.75 Feet

Data File 1 : F1 : BHIH2LZZF2:C:\dat1a\LARAMIE_BRUTON_30_03WRPM_MN_03W_WF.xtf

Created On : N/A

Company : LARAMIE ENERGY LLC

Well : BRUTON 30-03W

Field : VEGA

File Interval : 4275.25 - 7598.25 Feet

OCT : p353h

GR BACKUP

GAMMA RAY [gr]

0 150

(gAPI)

ISS [iss]

0 1E+006

FEET

CCL
(mV)

4300

RATO [rato]

17 0

(dim)

RICS [rics]

39 9

(dim)

Formation Sigma [sgfc]

60 0

(cu)

LS [ls]

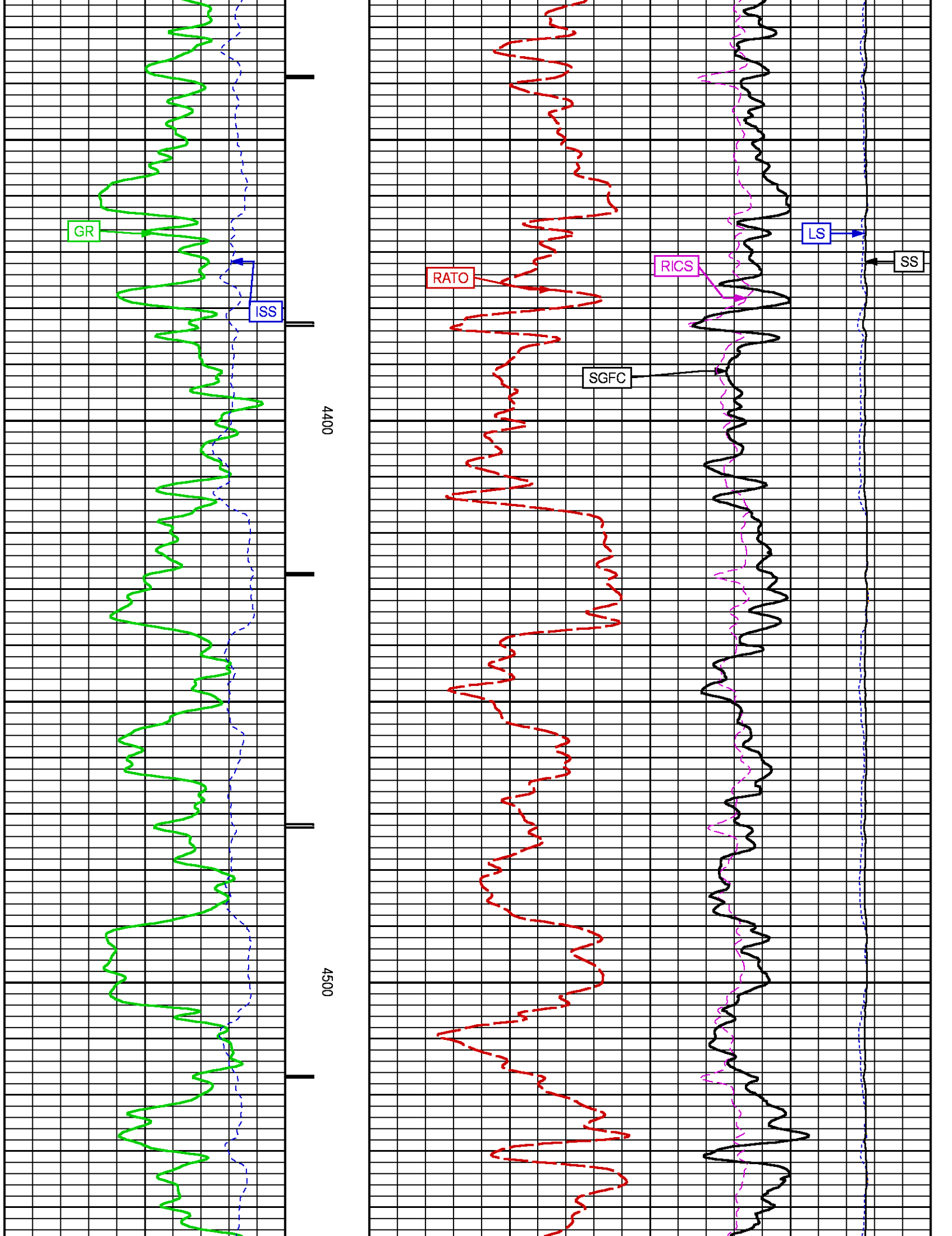
0 29000

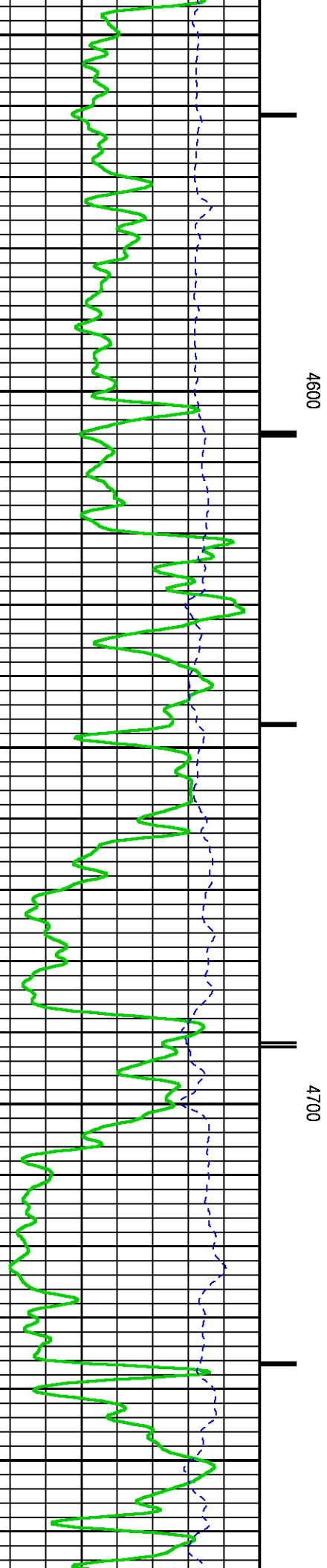
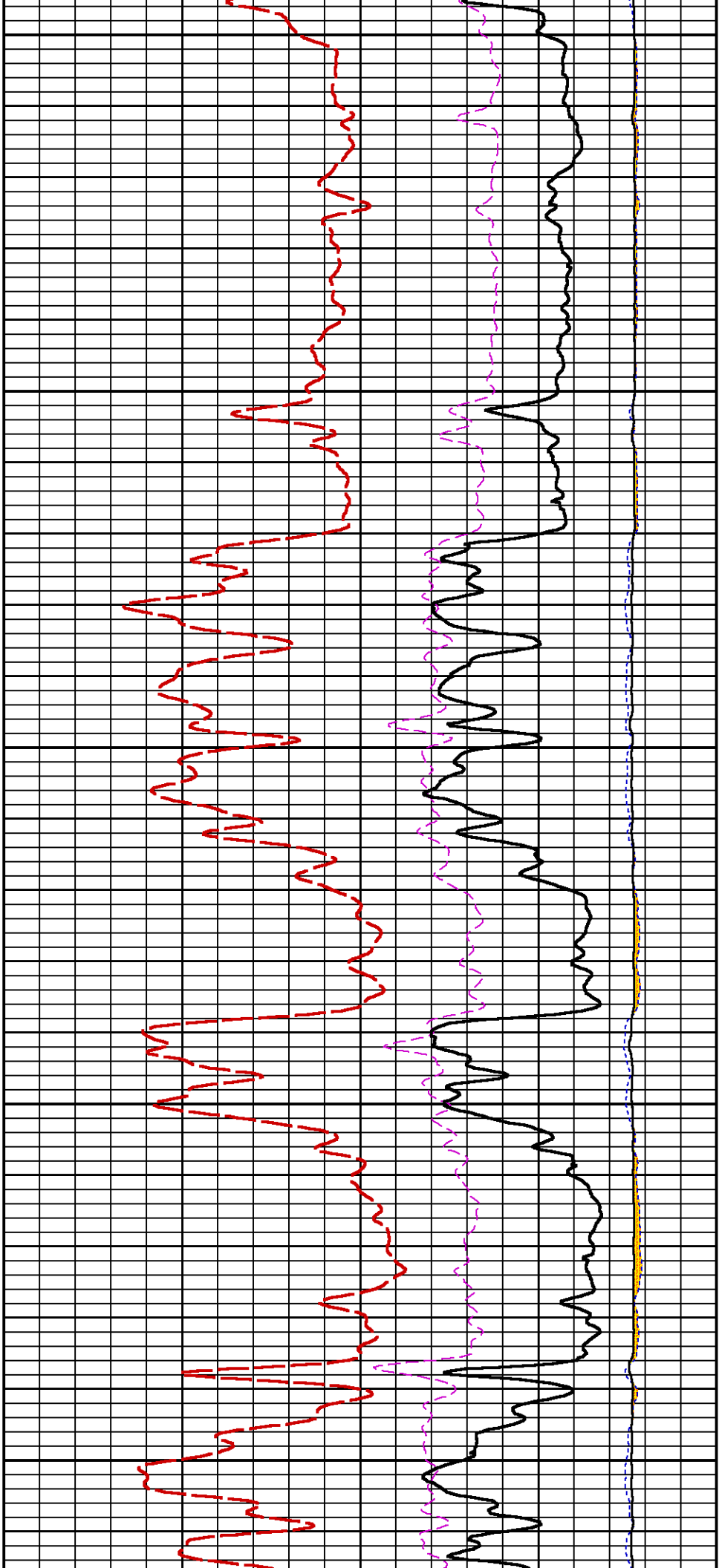
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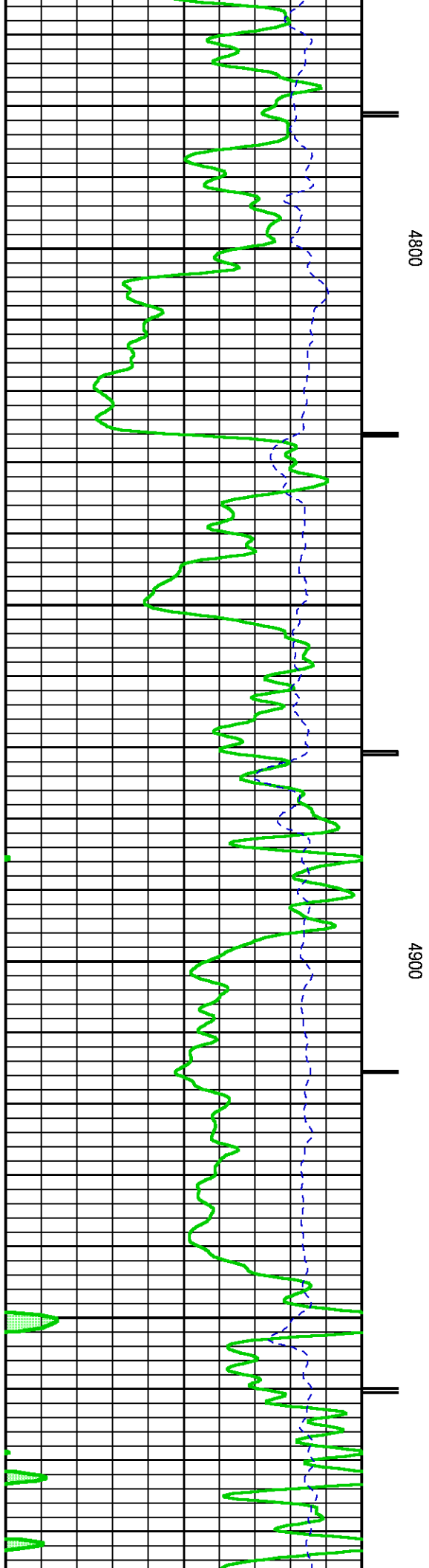
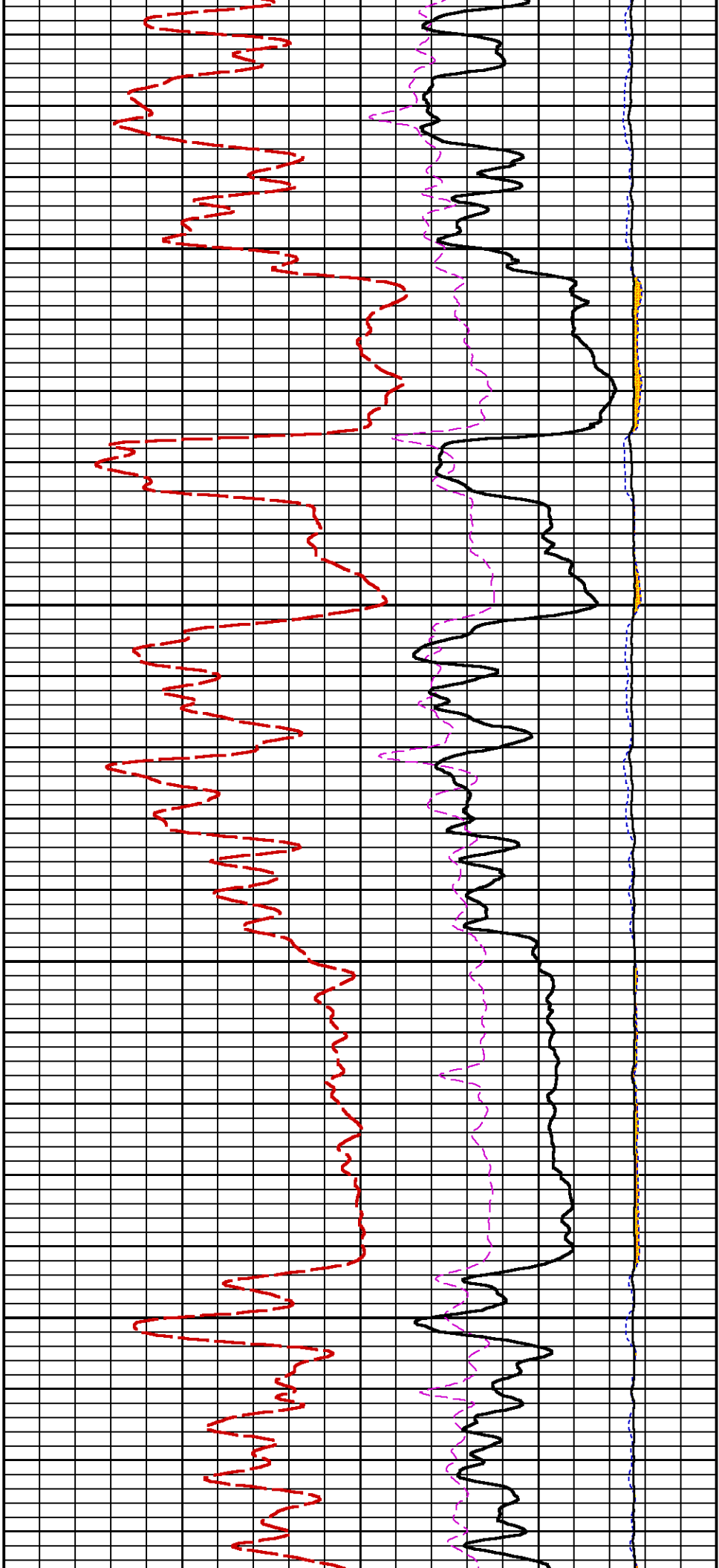
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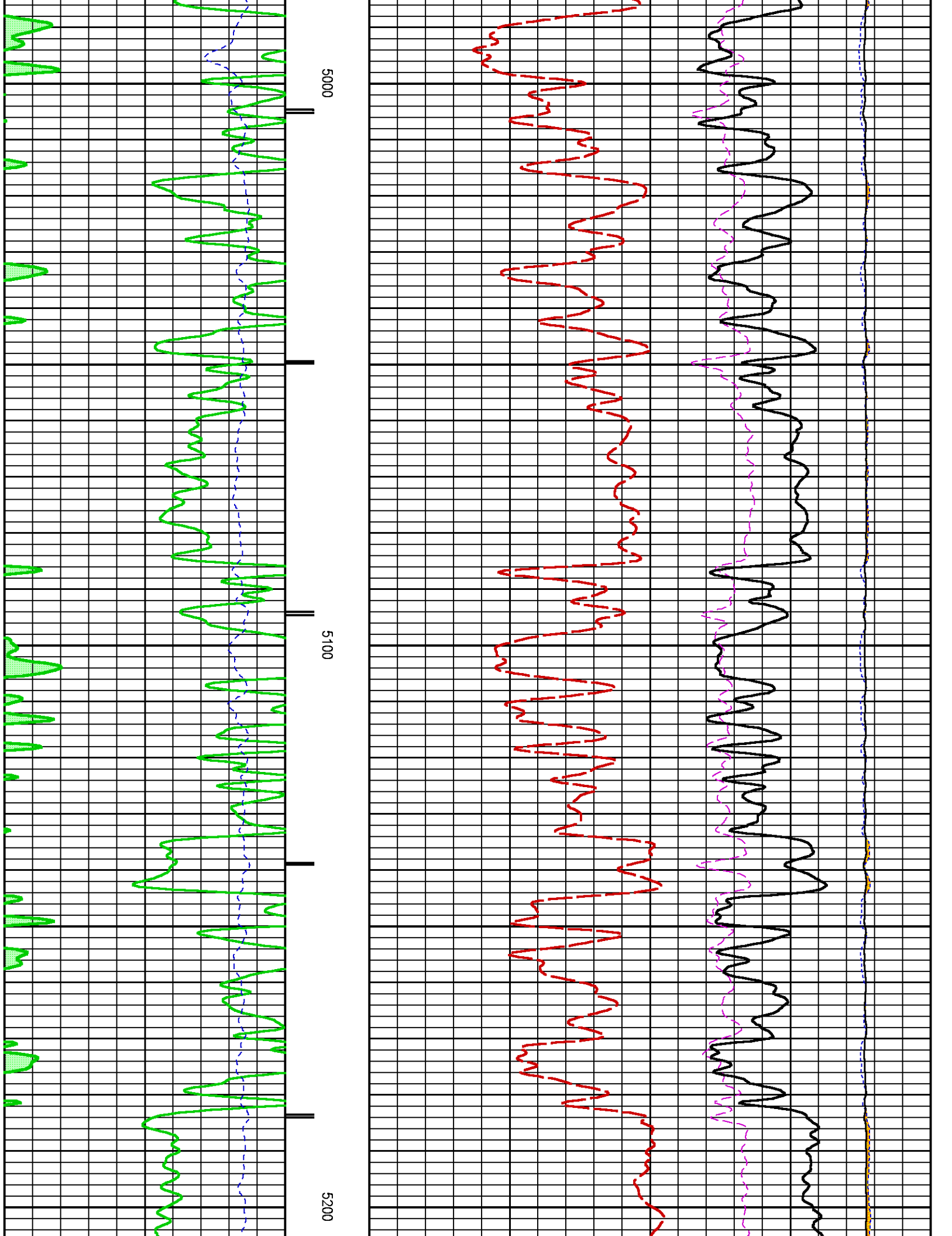
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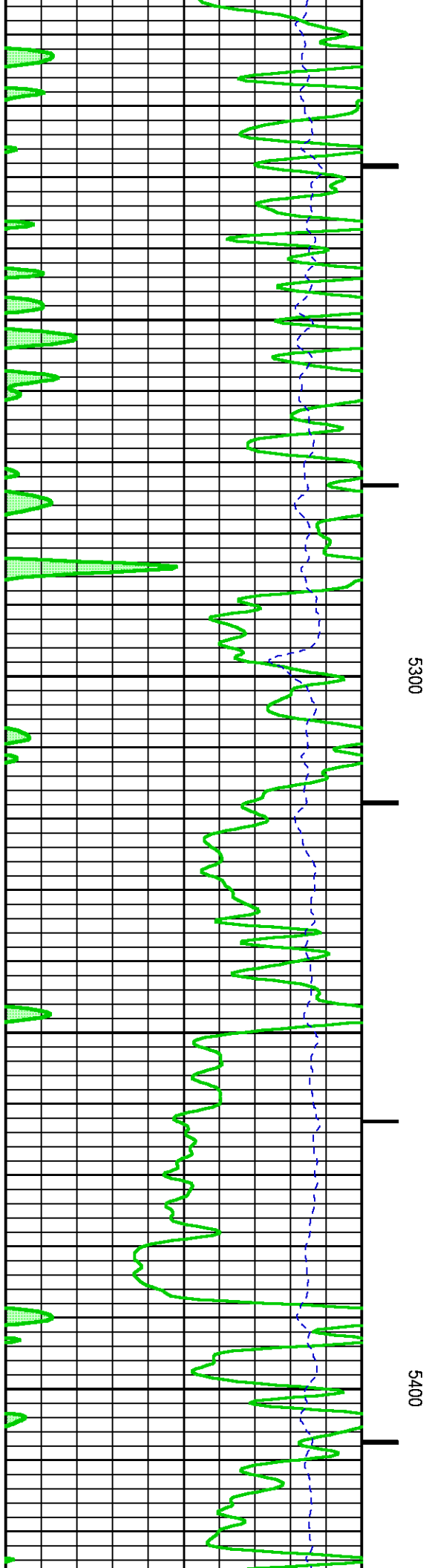
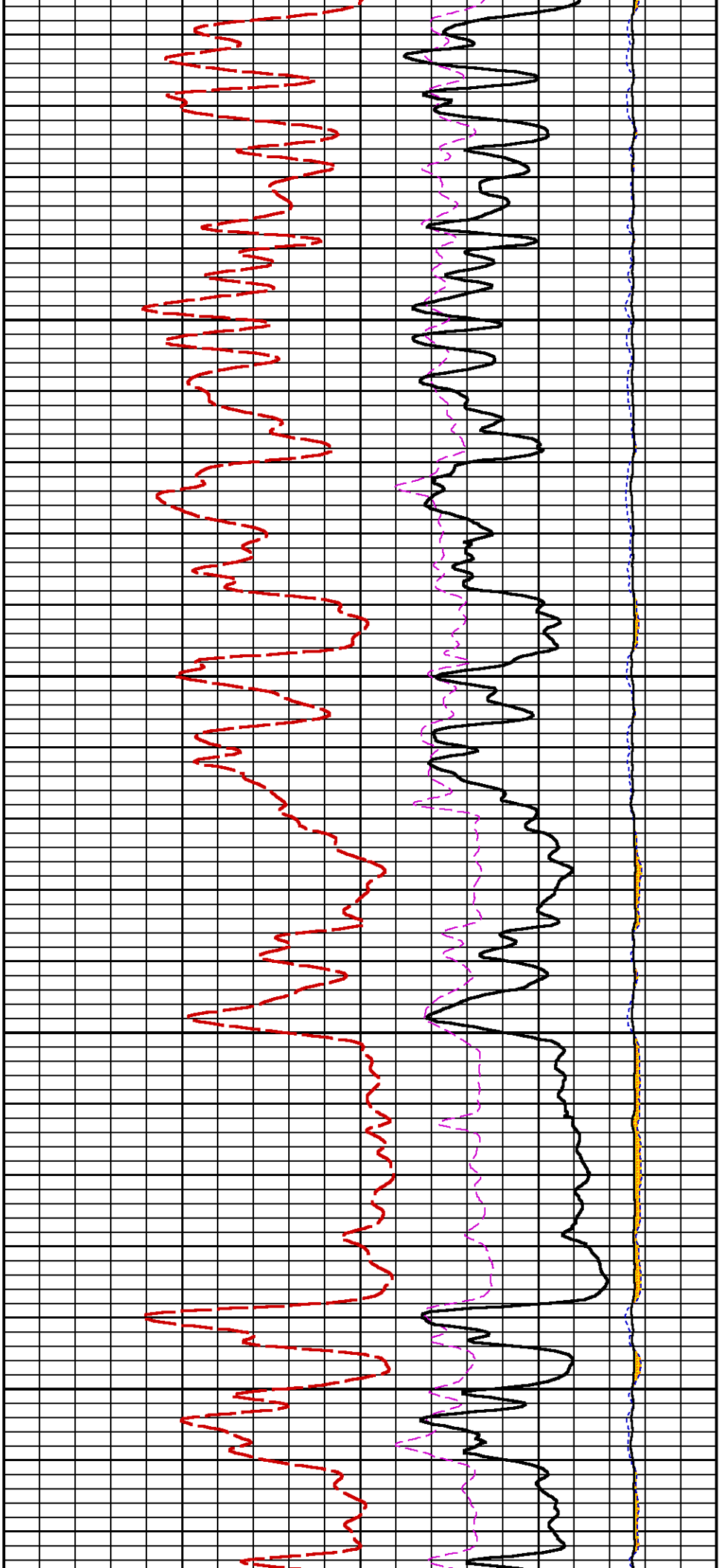
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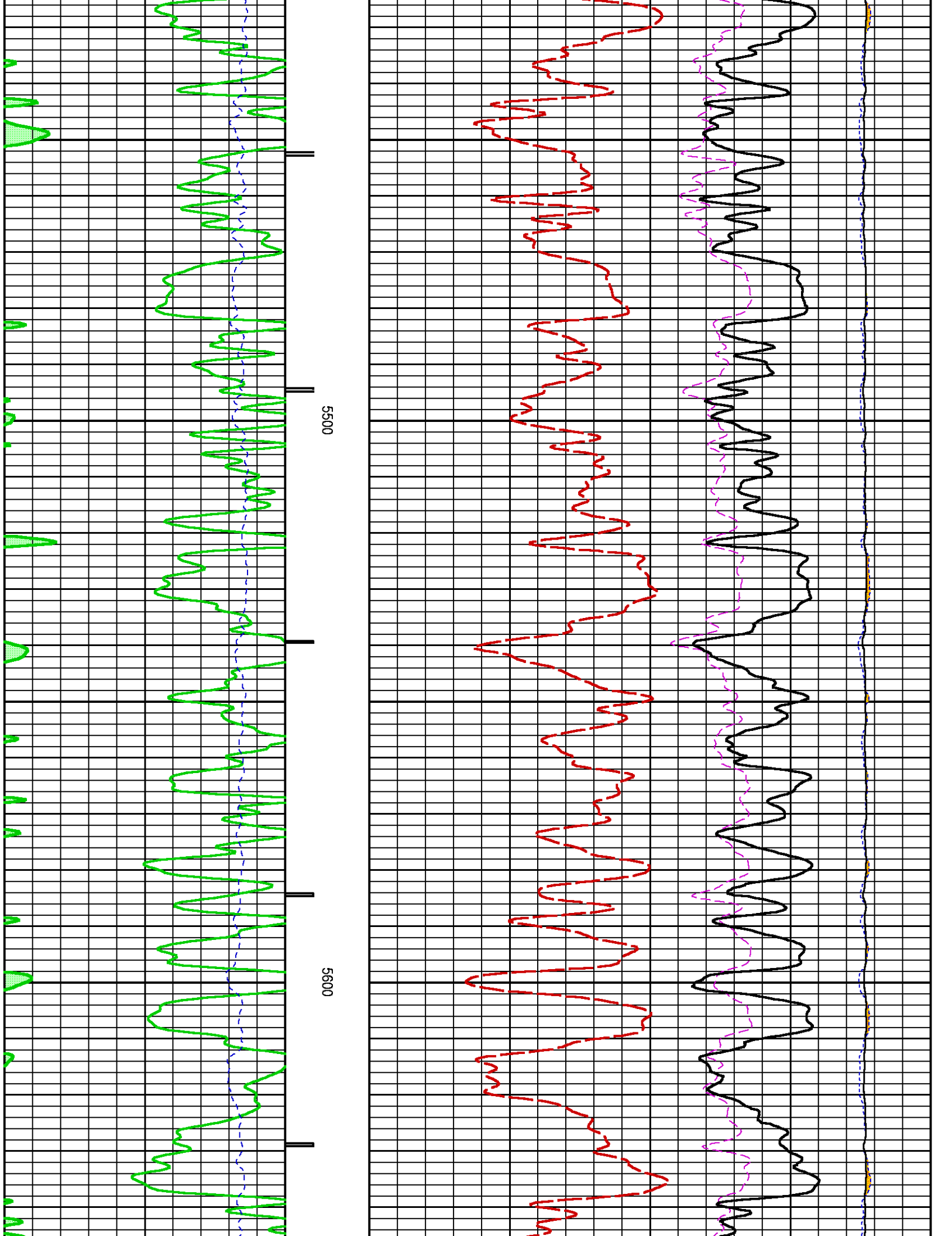


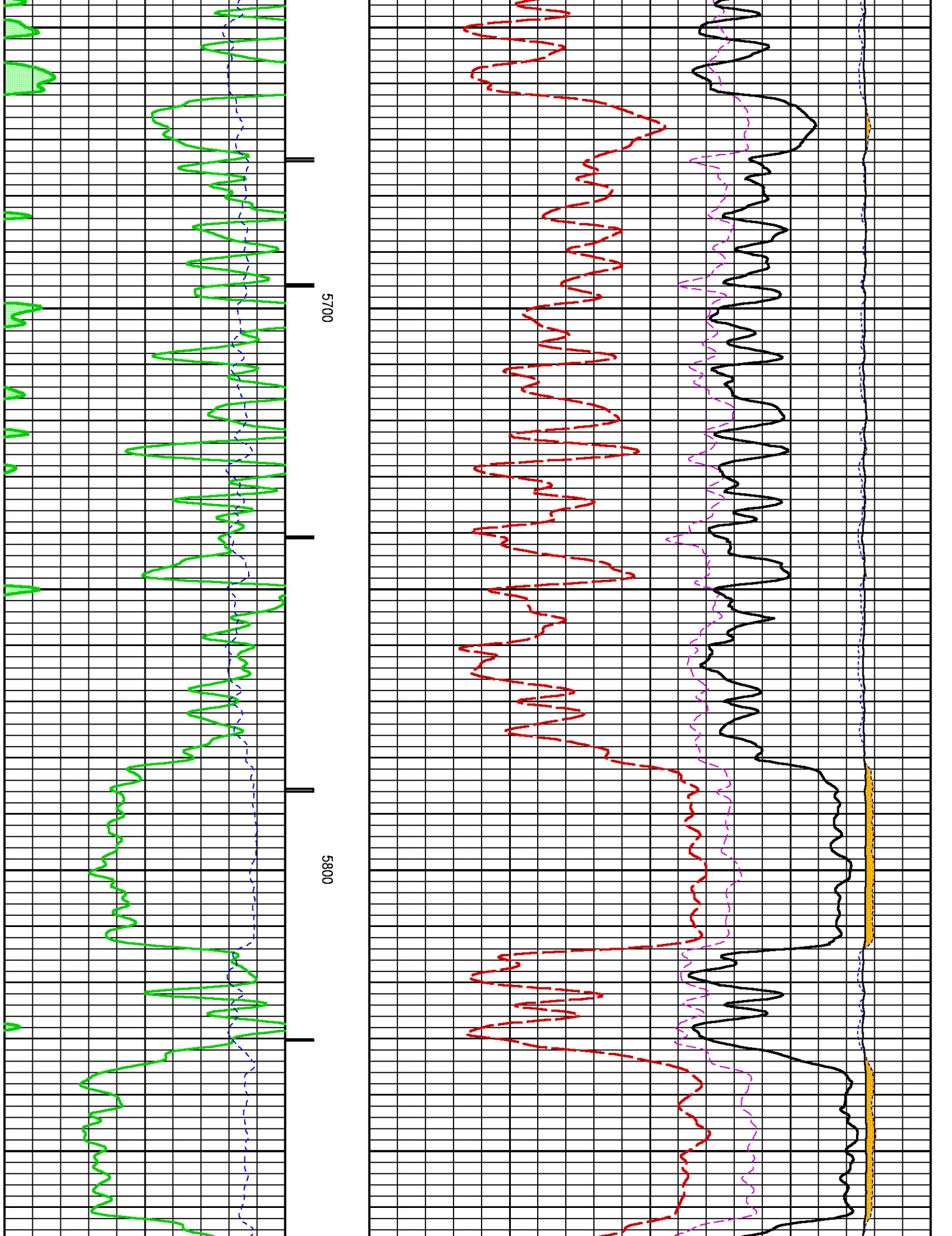


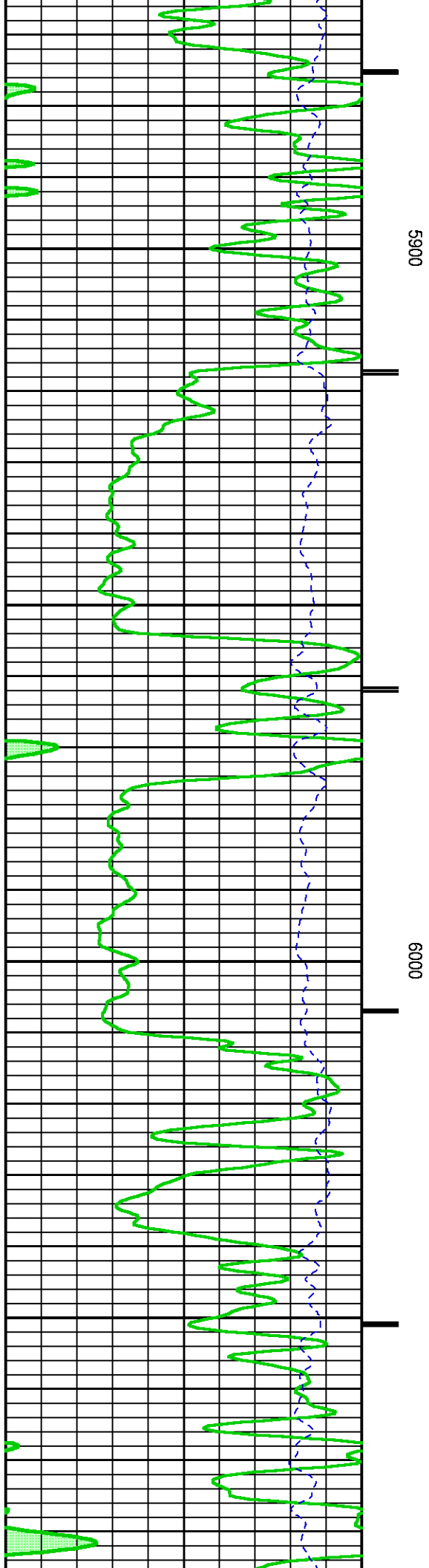
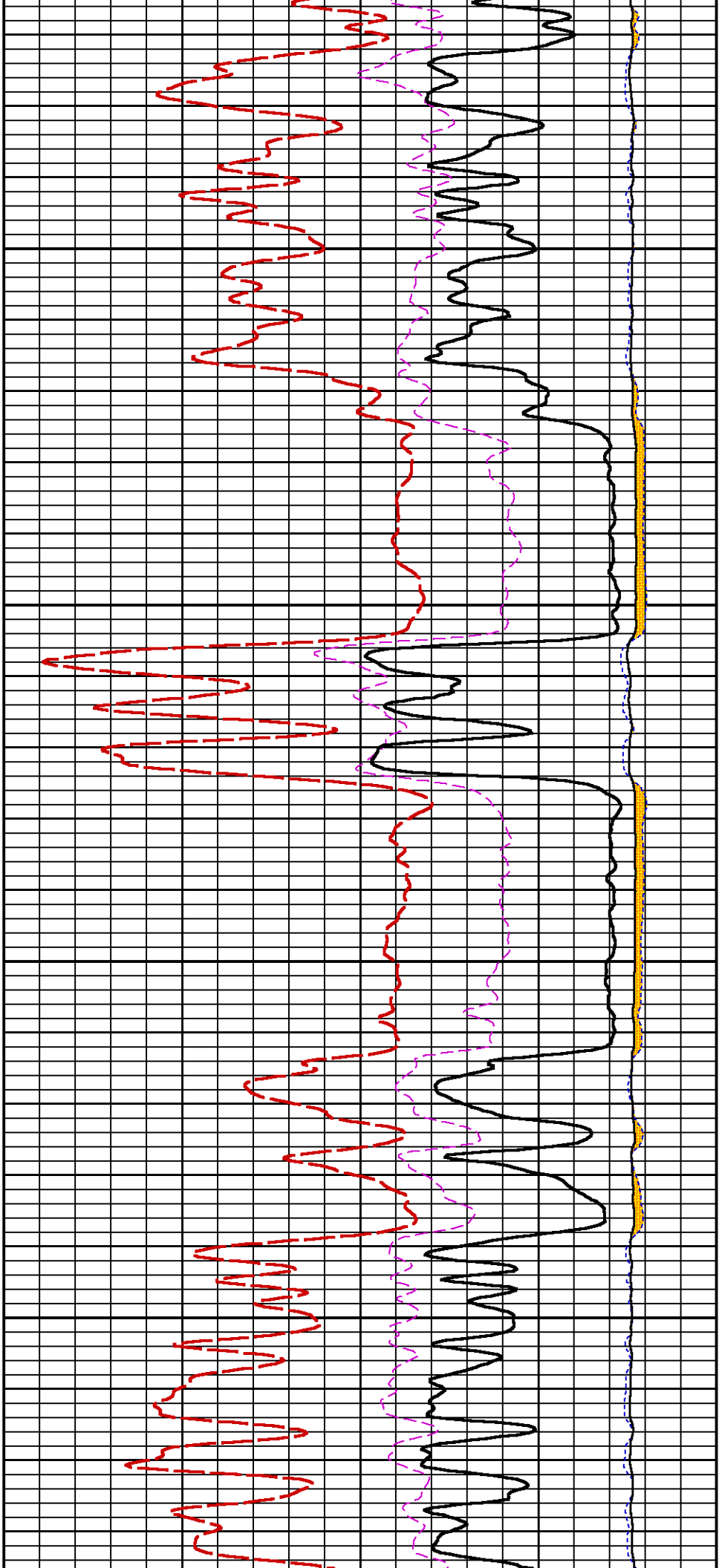


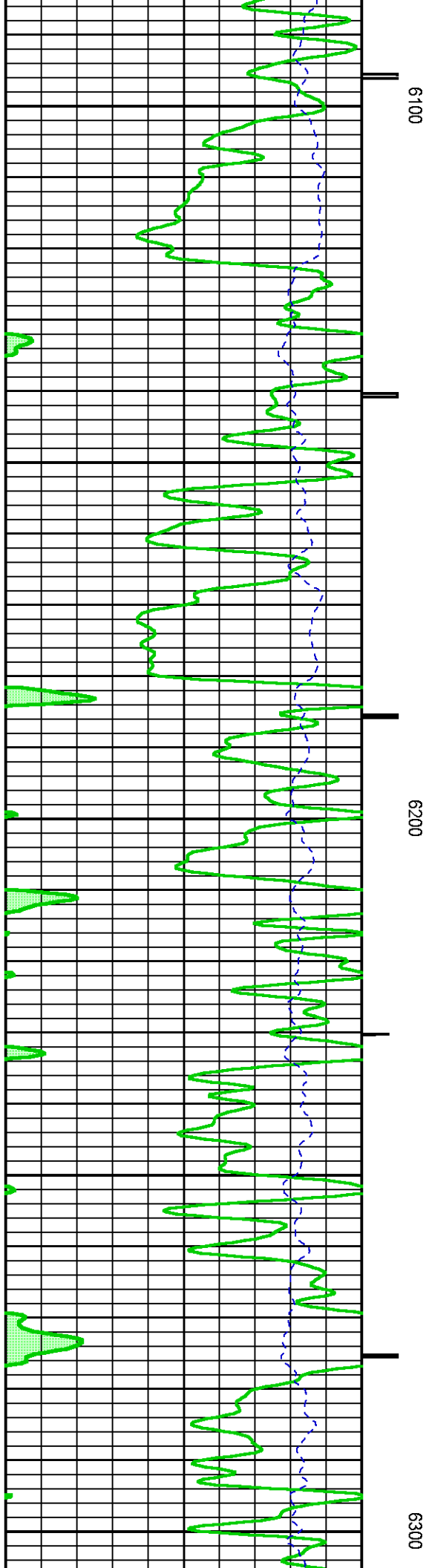
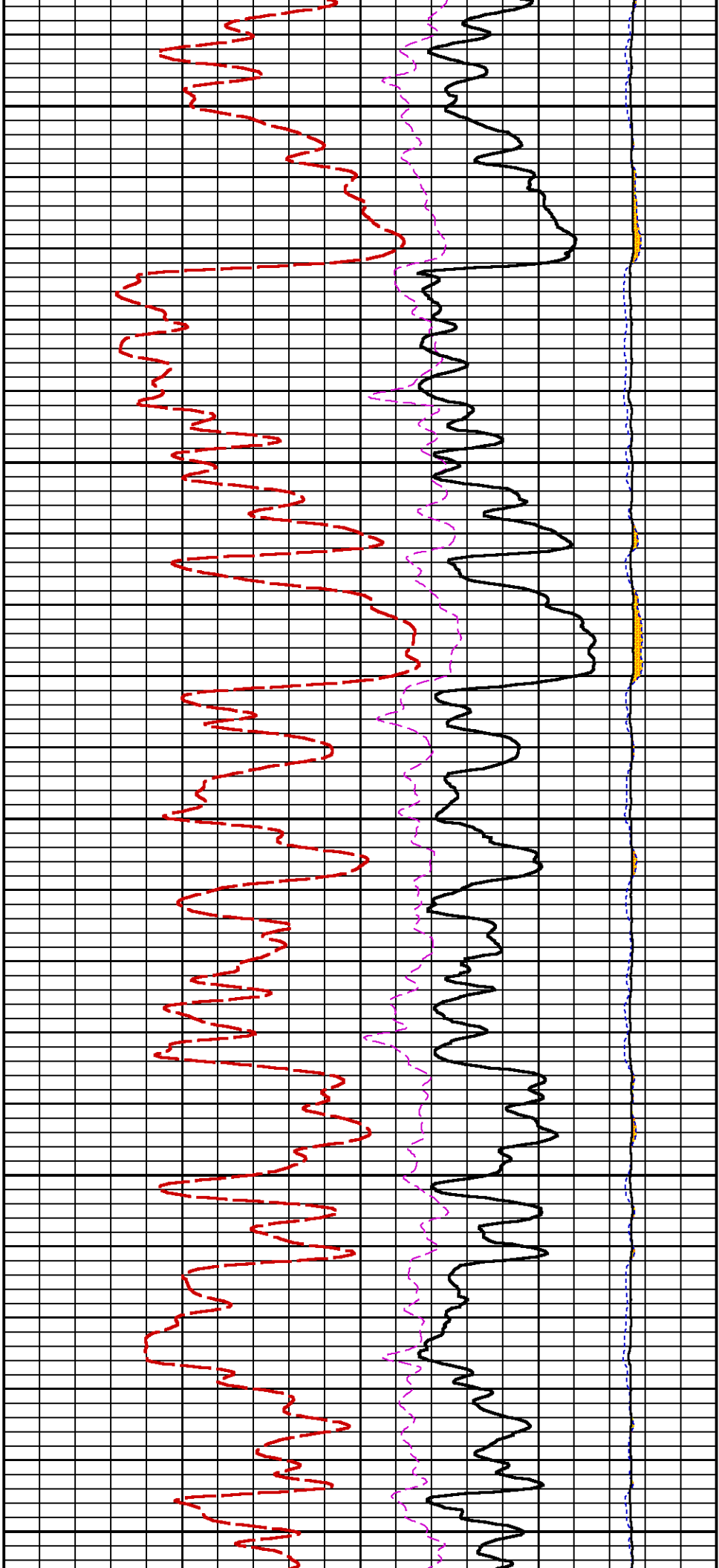


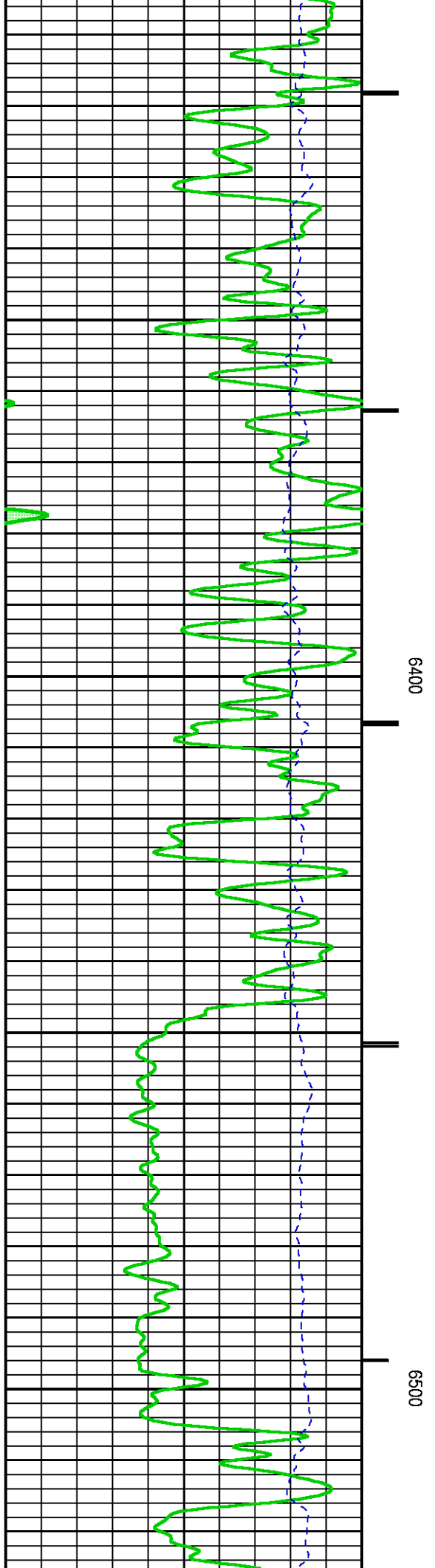
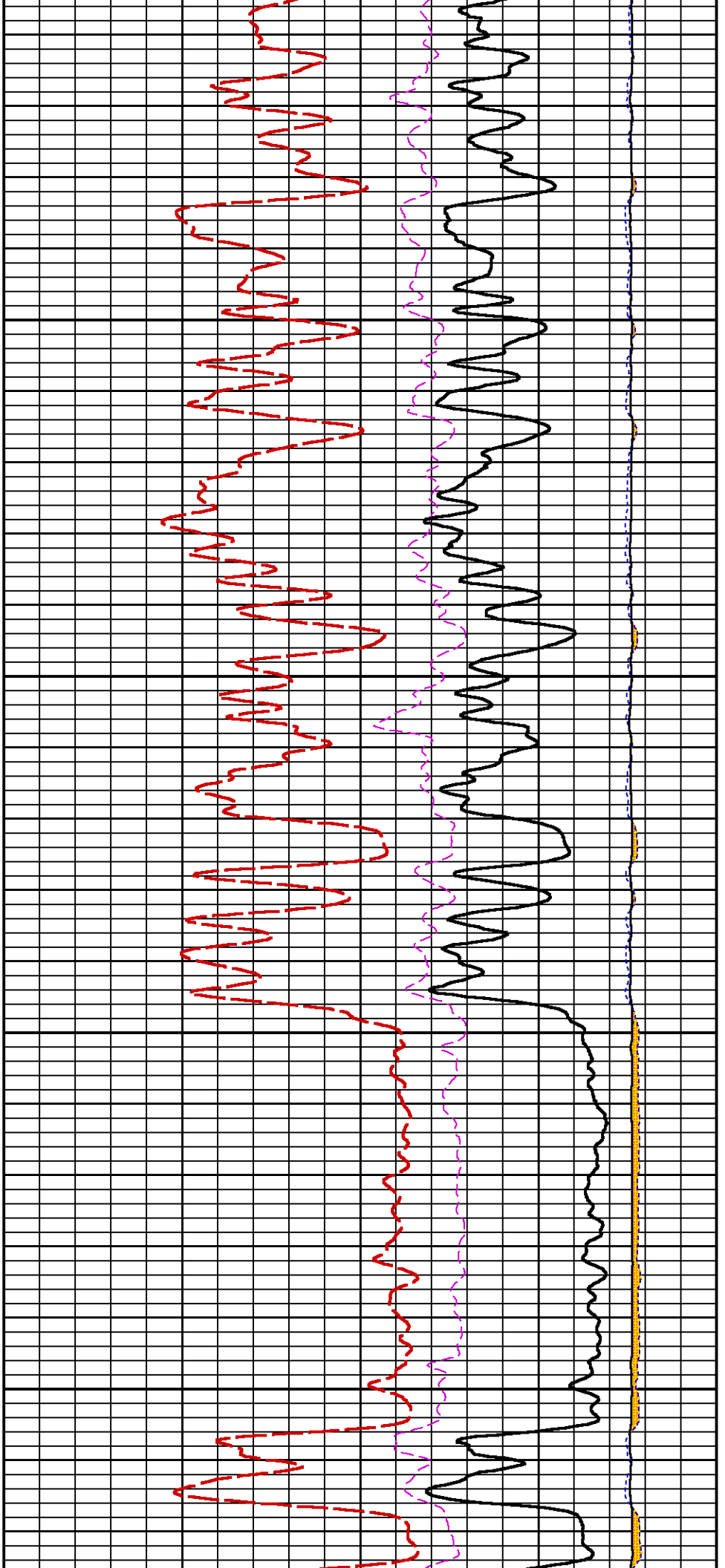


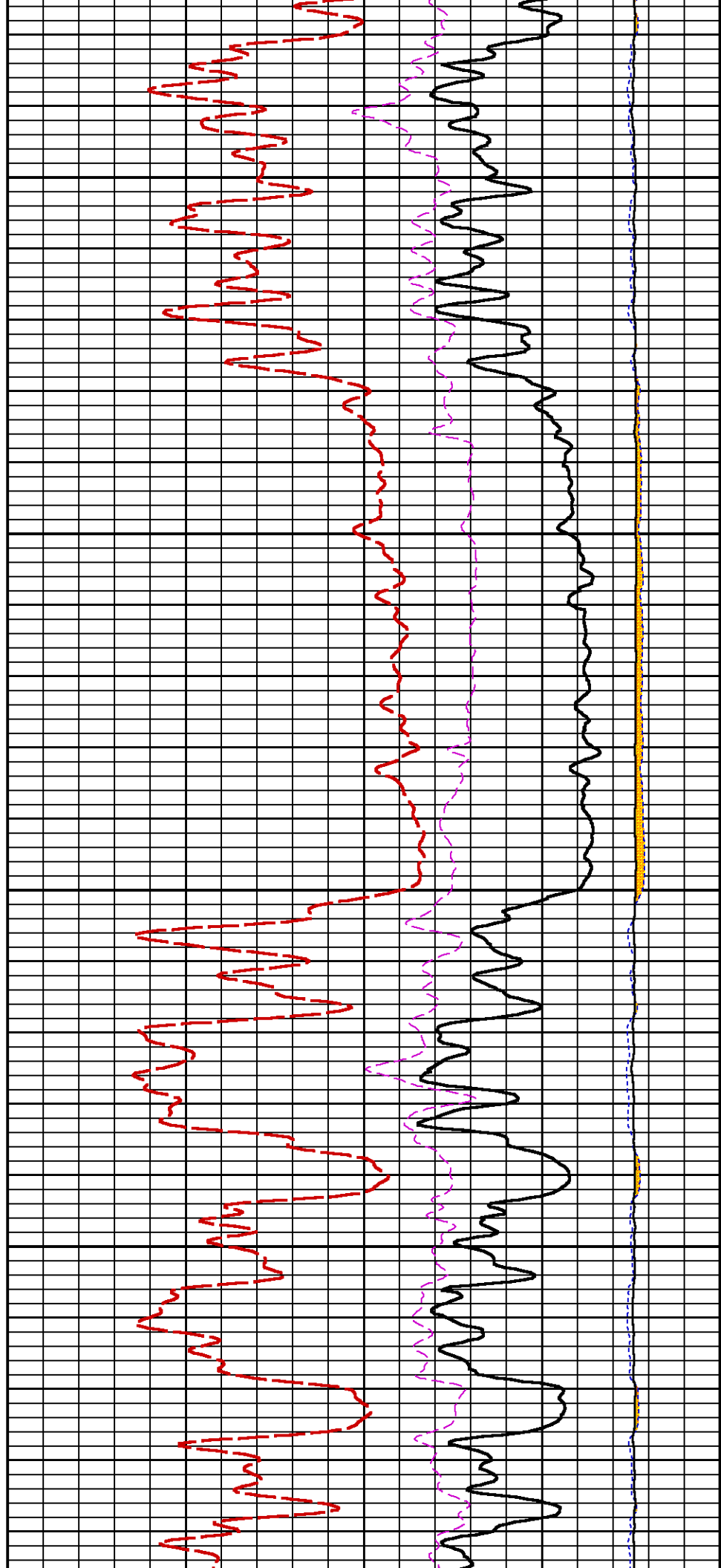
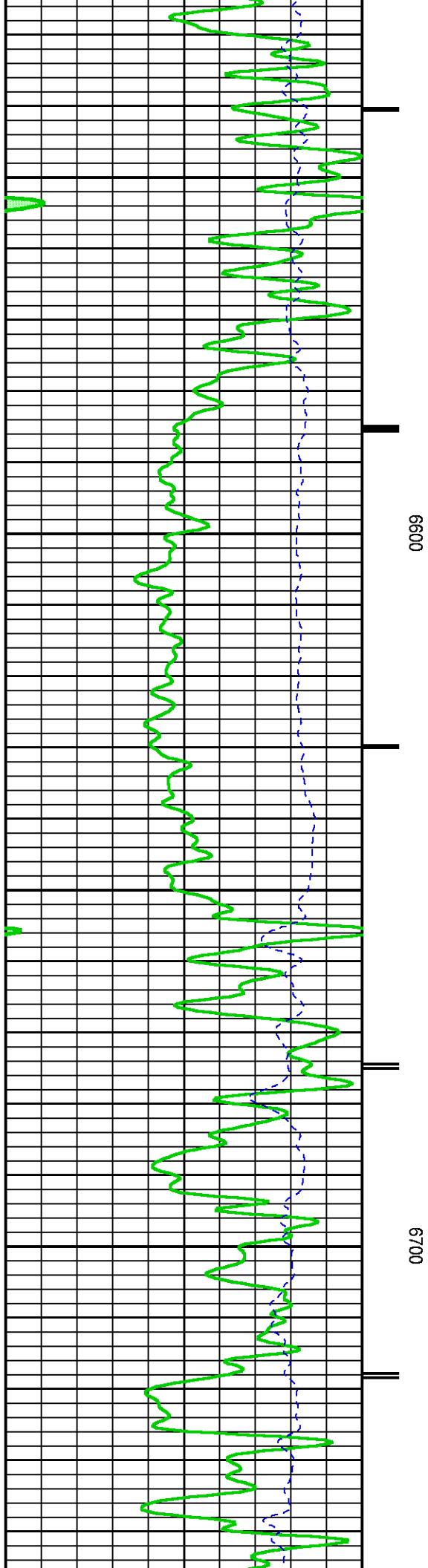


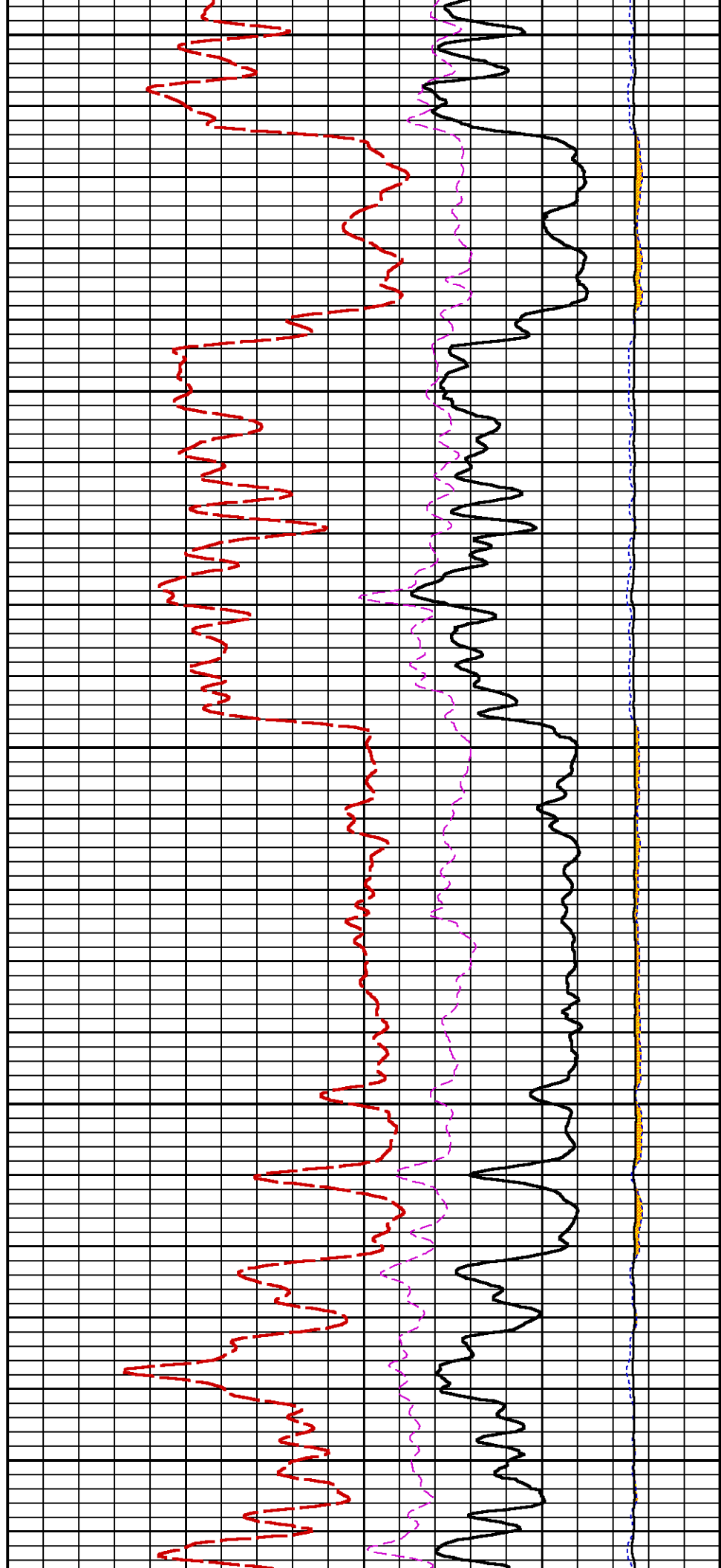
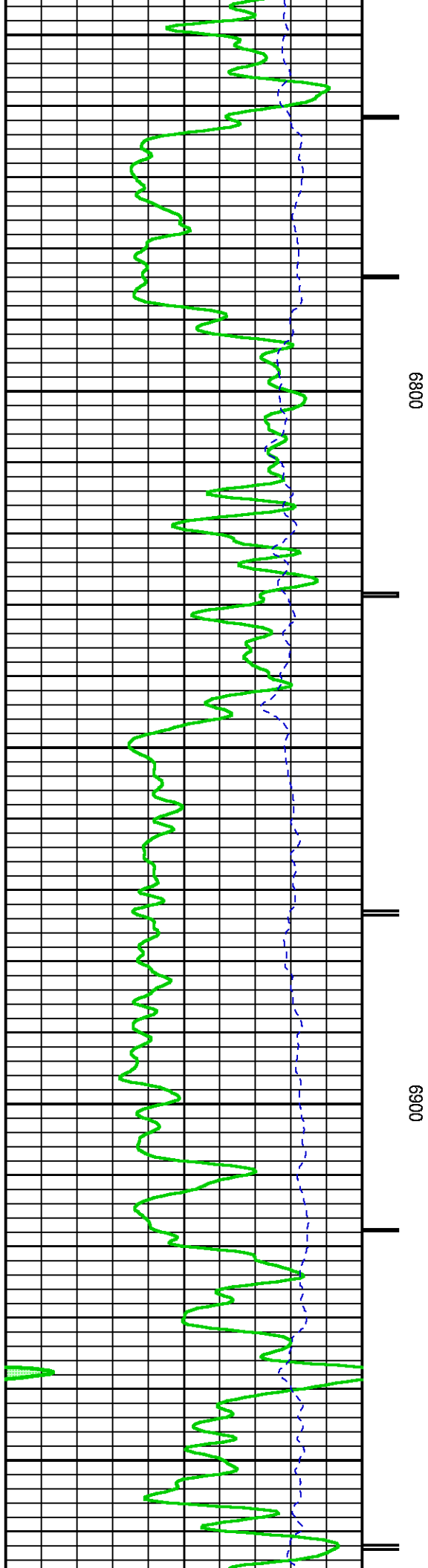


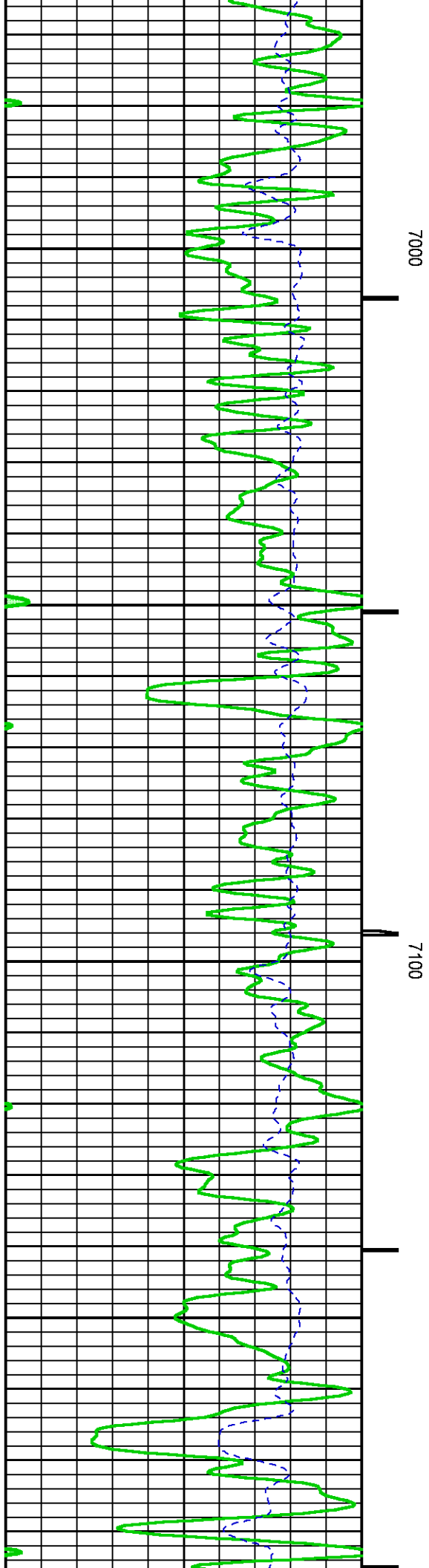
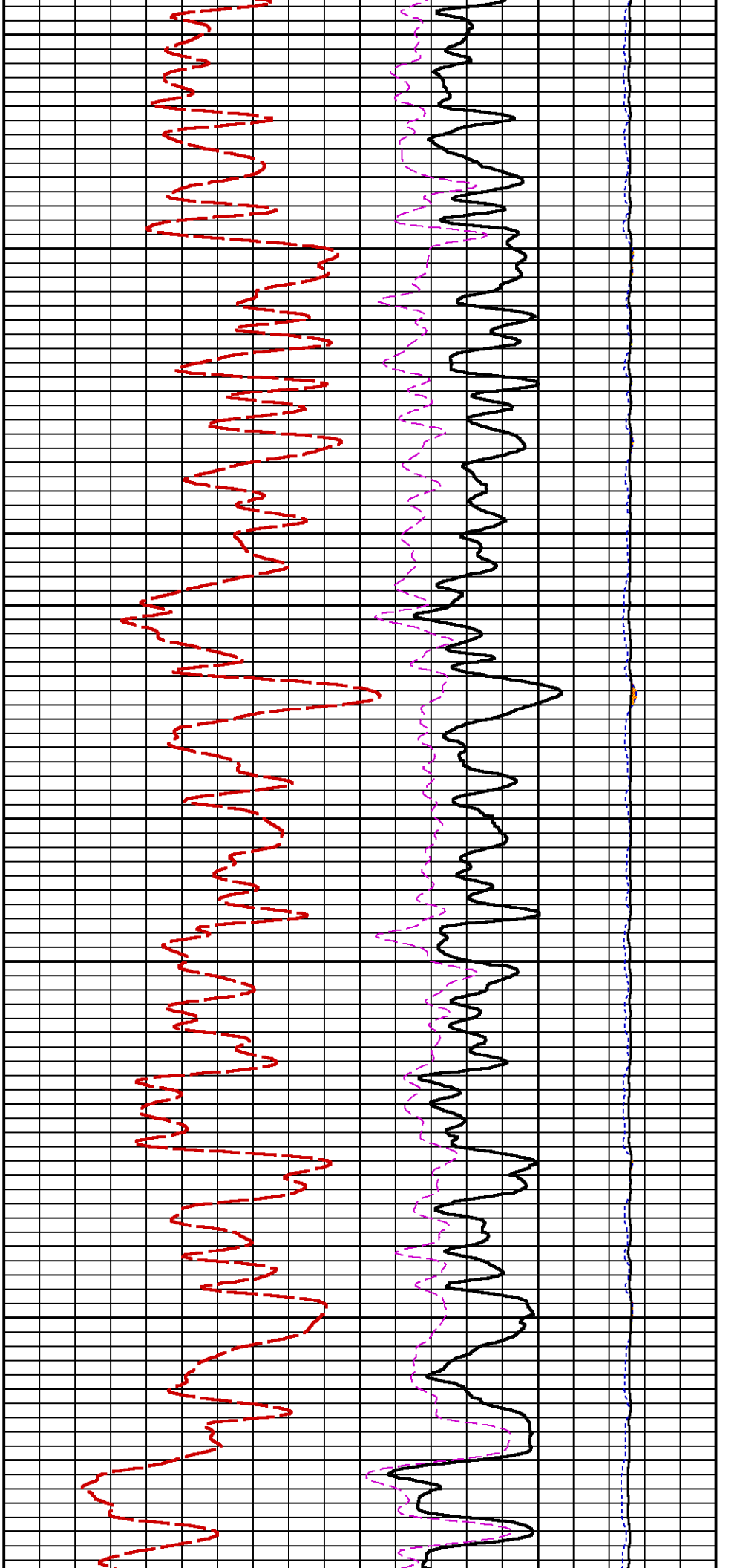


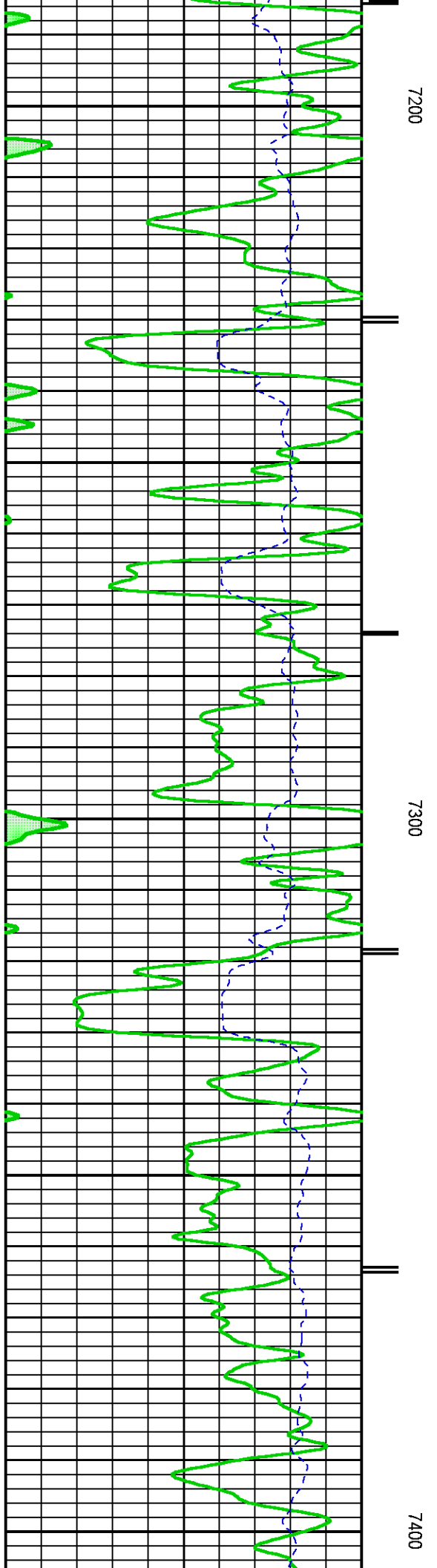
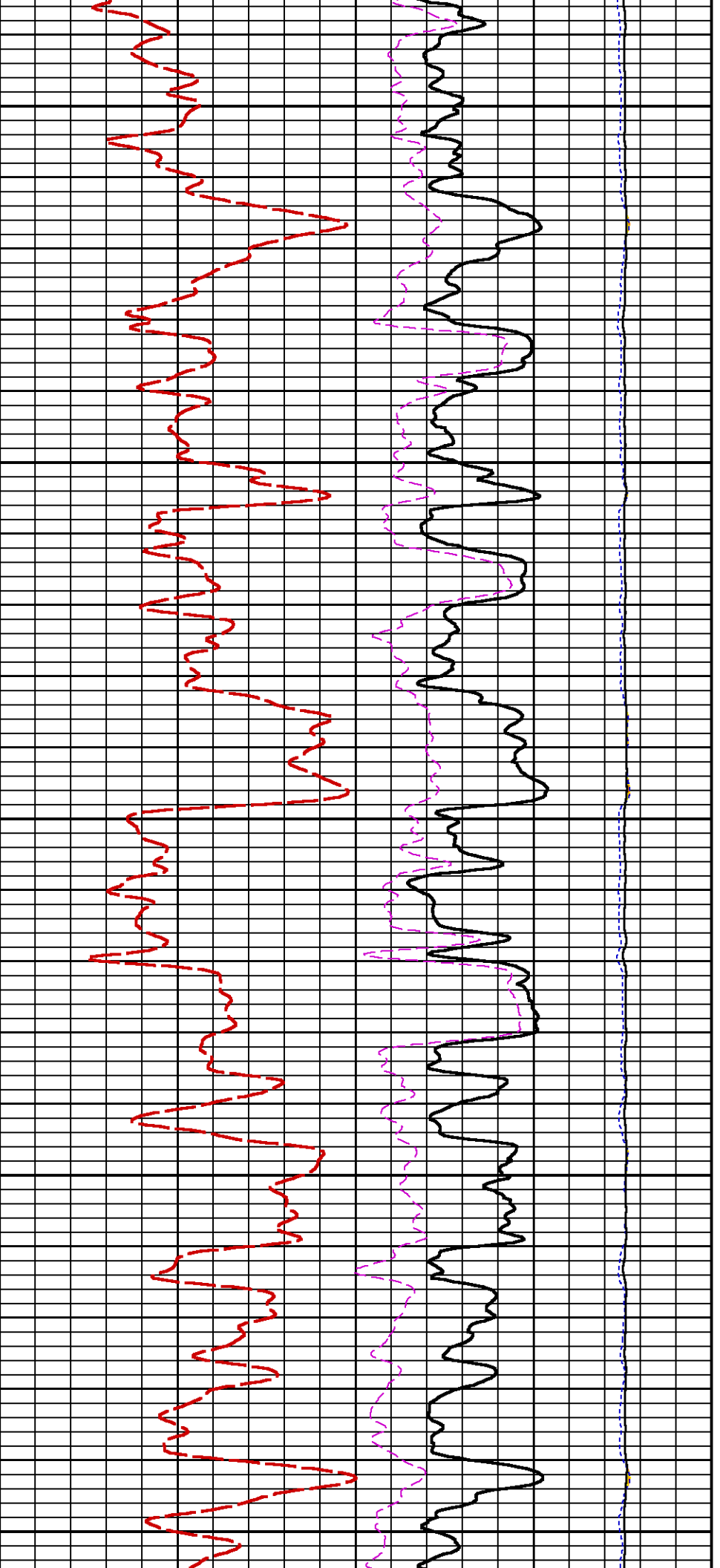


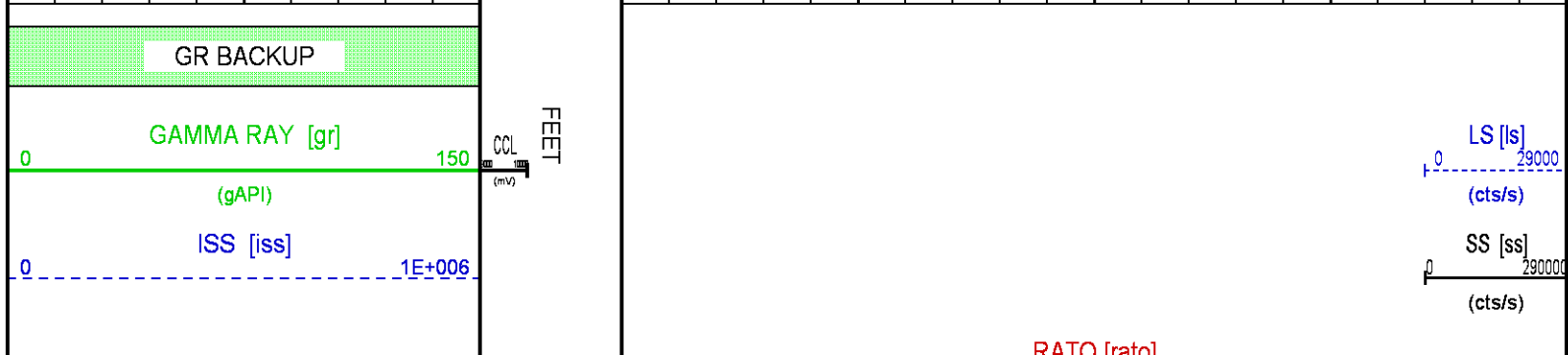
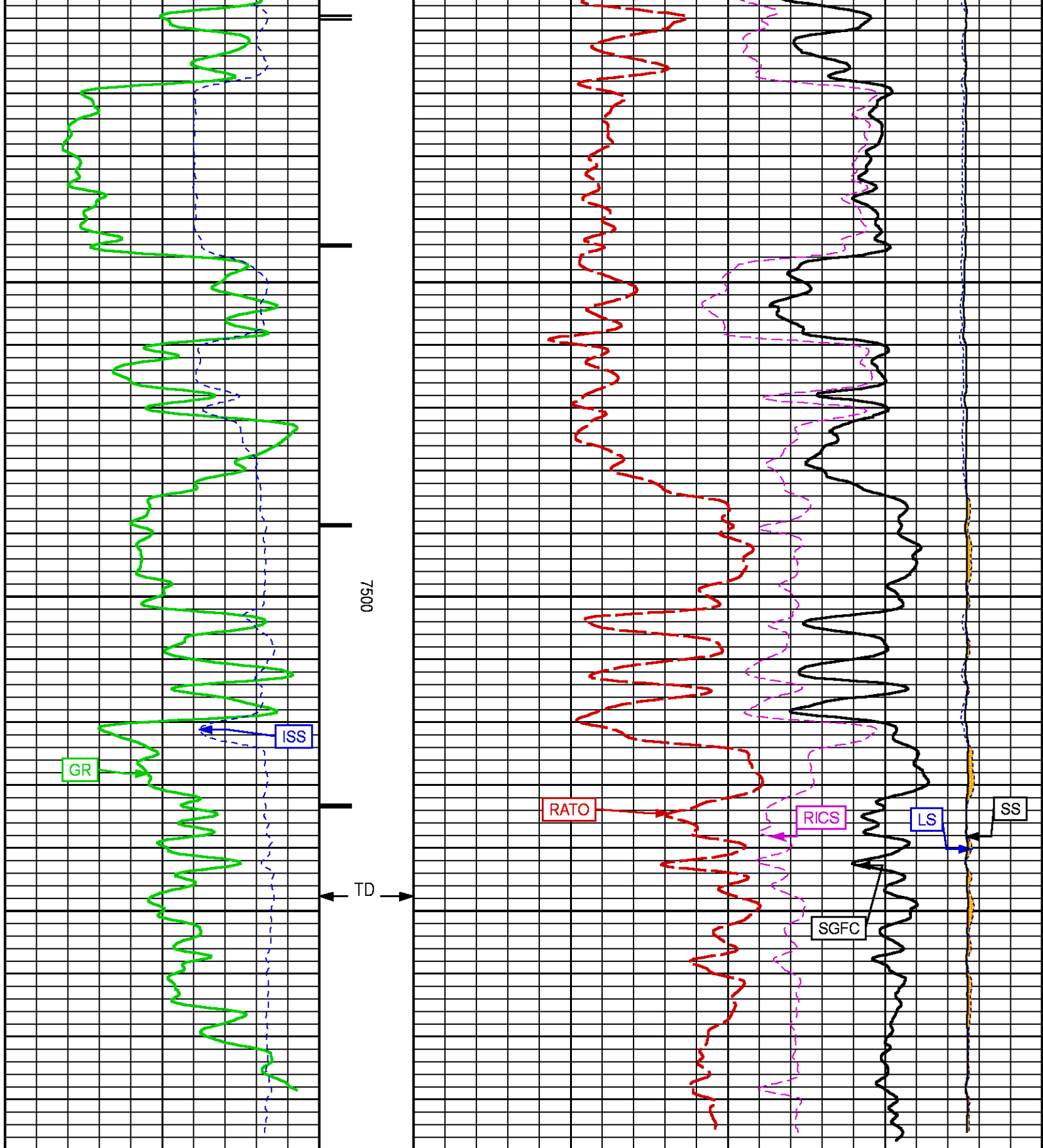












		17	RATC [rate]	0
			(dim)	
		39	RICS [rics]	9
			(dim)	
		60	Formation Sigma [sgfc]	0
			(cu)	

RPM PNC3D REPEAT PASS

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

Plotted: Mon Nov 06 11:46:47 2017

PARAMETER AND FILTER SUMMARY REPORT

FILE: C:\dat1a\LARAMIE_BRUTON_30_03W\p353h01.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 4894.250 ft BOTTOM DEPTH: 5114.750 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	8.50	in	" "
	LARGEST CASING OD	7.00	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

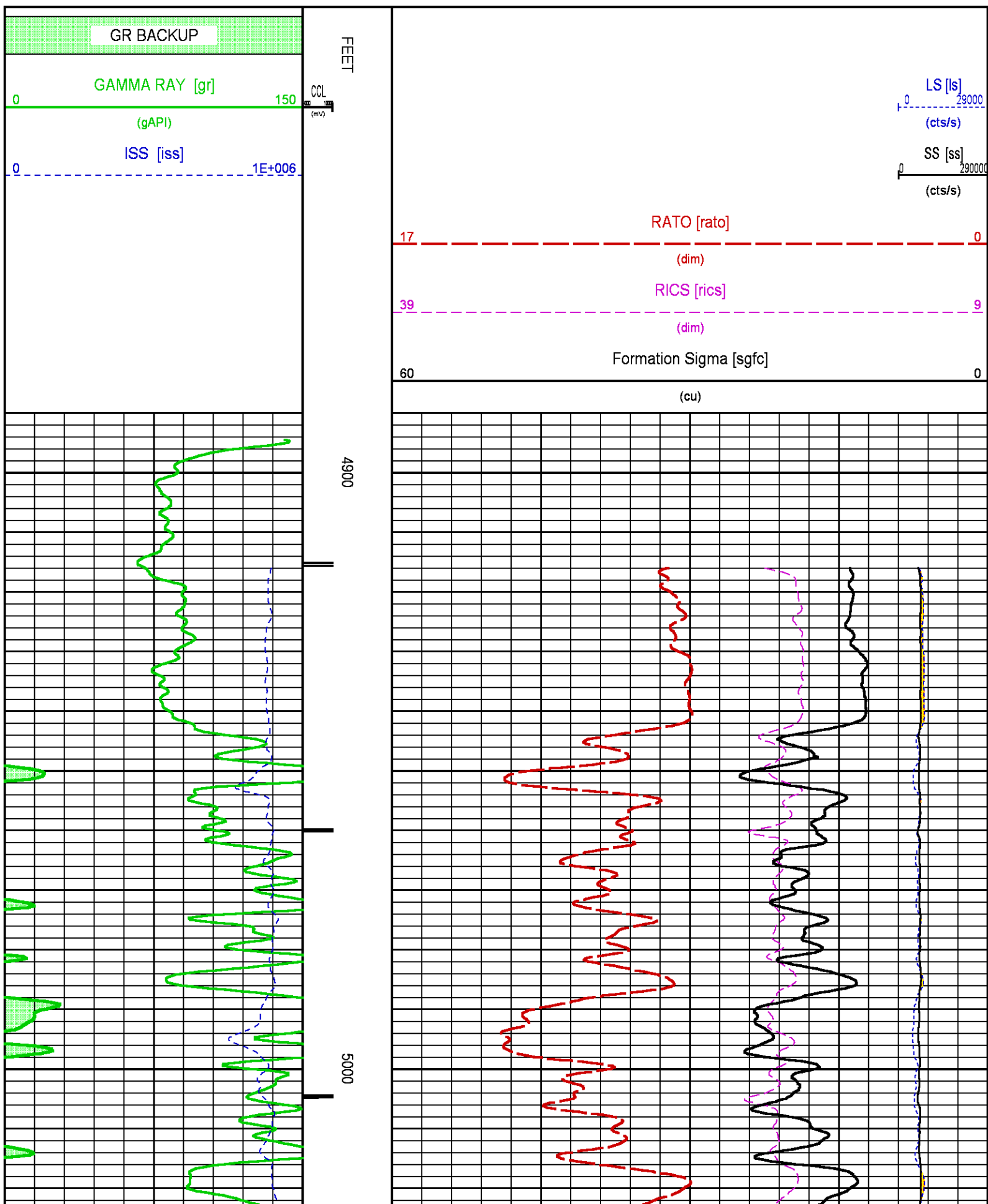
CURVE MEASURE POINT OFFSET

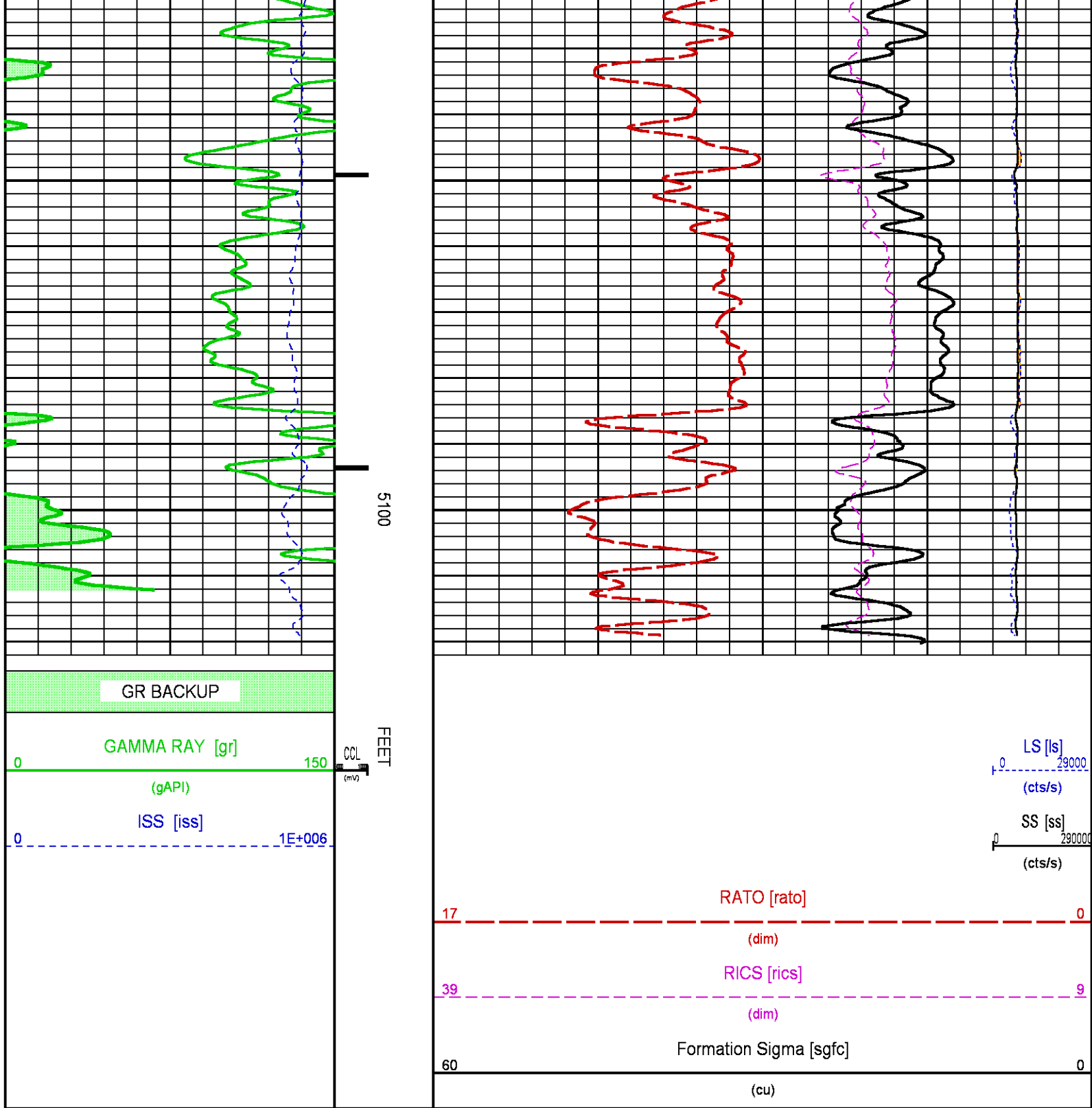
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	-22.50	ISS	-9.50	RATO	-9.50	SGFC	-9.50
GR	-19.50	LS	-9.50	RICS	-9.50	SS	-9.50

Presentation : BHIH2LZZF2:C:\dat1a\LARAMIE_BRUTON_30_03W\LARAMIE_RPM_PNC3D+RPM_RPT_03W.fvpdf [5"/100' Scale]
Plot Interval : 4890.25 - 5126.5 Feet

Data File 1 : F1 : BHIH2LZZF2:C:\dat1a\LARAMIE_BRUTON_30_03W\RPM_RPT_03W.xtf
Created On : N/A

Created On : N/A
Company : LARAMIE ENERGY LLC
Well : BRUTON 30-03W
Field : VEGA
File Interval : 4889.5 - 5132 Feet
OCT : p353h





CALIBRATION / VERIFICATION SUMMARY

Source File: C:\dat1a\LARAMIE_BRUTON_30_05Wp353h.tp1

GR PRIMARY CALIBRATION SUMMARY

TOOL #: 8262XA 10317216

DATE/TIME PERFORMED: Fri Sep 15 15:24:07 2017

UNIT #: 3882TD HL6728

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	87.33	336.09	248.8	0.744	64.95	249.95	185

GR PRIMARY VERIFICATION SUMMARY

TOOL #: 8262XA 10317216

DATE/TIME PERFORMED: Fri Sep 15 15:26:03 2017

UNIT #: 3882TD HL6728

VERI JIG #: 4702NK DA_228

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	88.13	330.78	0.744	65.54	246.00	180.46
						175.00 195.00

RPM_PNC_3D PRIMARY CALIBRATION SUMMARY

TOOL: 8283PA 10414345

DATE/TIME PERFORMED: Thu Jul 13 12:34:15 2017

UNIT: 3882TD HL6728

CALIBRATOR: 2437XB 120057

SOURCE: 8281AA 10160601

HOURS: 8281AA 704

	ISS	Mtr Vlt (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	790765	126	2358	2261	2241	134	10.0	0.9777
Interpolated	1300000	148	2343	2251	2237			

	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	790765	6044	978	134	26.03	0.15	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	790765	160255	24559	87267	31045	8098	53011	12993
Fit Quality %		0.611	0.587	0.523	0.528	0.538	0.527	0.577

	ISS	RBOR	RIN ISS/ILS	RIN13 ISS/IXS	RICS ISS/CSS	RATO SS/LS	RTWO SS2/LS	RONE CSS/CLS
Raw Data	790765	1.44	4.93	32.21	14.92	10.78	3.84	4.08
		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 %		0.047	0.027	0.046	0.063	0.079	0.082	0.072

Reduced

1372844

1.44

4.93

32.15

14.90

10.77

3.83

4.08

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

INSTRUMENT CONFIGURATION

Source File: C:\dat1a\LARAMIE_BRUTON_30_05WRPM_PNC3D-tdg.meta

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

30.78'

CCL MP 22.73'

GR MP 19.59'

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 10.27'
 LS DETECTOR 9.86'
 SS DETECTOR 9.61'

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: 30.78'
 TOTAL WEIGHT: 131 lbs
 MAX DIAMETER: 0'1.70"

**BAKER
HUGHES**
a GE company



ECLIPS

COMPANY**LARAMIE ENERGY LLC****WELL****BRUTON 30-03W****FIELD****VEGA****COUNTY****MESA****STATE COLORADO****FILE NO:****API NO:**

05077104460000

LOCATION:

SHL: LAT:39.252683N;LONG: 107.814261W

BHL: LAT:39.253624N;LONG:107.816227W

ELEVATIONS:

KB 7542 FT

DF 7541 FT

GL 7512 FT

SEC 30 TWP 9S RGE 93W**DATE**

04-Nov-2017