



RESERVOIR PERFORMANCE MONITOR

FILE NO: CH136907	COMPANY LARAMIE ENERGY LLC
API NO: 05077105360000	WELL GUNDERSON 0994-13-16W
	FIELD VEGA
	COUNTY MESA STATE COLORADO

Ver. 4.10	LOCATION: SHL: 1397' FSL & 1623' FWL BHL: 1397' FSL & 1623' FWL SEC <u>13</u> TWP <u>9S</u> RGE <u>94W</u>	OTHER SERVICES RAL
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PERMANENT DATUM LOG MEASURED FROM DRILL. MEAS. FROM	GL ELEVATION 7272 FT KB 7302 FT DF GL 7272 FT
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DATE	21-Jun-2018
RUN	1
TRIP	1
SERVICE ORDER	US136907
DEPTH DRILLER	8069 FT
DEPTH LOGGER	8065 FT
BOTTOM LOGGED INTERVAL	8065 FT
TOP LOGGED INTERVAL	2230 FT
TIME STARTED	14:30
TIME FINISHED	20:00
OPERATOR RIG TIME	5.5 HOURS
TYPE OF FLUID IN HOLE	WATER
FLUID DENSITY	NA
FLUID SALINITY	NA
FLUID LEVEL	69 FT
LOGGED CEMENT TOP	960 FT
WELLHEAD PRESSURE	0 PSI
MAXIMUM HOLE DEVIATION	NA
NOMINAL LOGGING SPEED	10 FMIN
MAX. RECORDED TEMP.	235 DEGF
REFERENCE LOG	BAKER HUGHES RAL
REFERENCE LOG DATE	20-Jun-2018
EQUIP. NO.	ML-4268
LOCATION	GRAND JCT.
RECORDED BY	T. NEWELL
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 1 TRIP 1: 2 OPERATIONS RUN IN THE WELL

OPERATION 1: RAL/GR/CCL RUN CENTRALIZED

OPERATION 2: RPM/GR/CCL RUN IN PNC-3D MODE

SJ: 5729' - 5751'

SJ: 6909' - 6931'

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	PCM	8250EA	11902197	FREE
1	1	TEL/CCL	8248ED	10407093	FREE
1	1	GR	2812LB	11621284	FREE
1	1	RPM	8281EA	10190985	FREE
1	1	RPM	8283PA	10068031	FREE
1	1	RPM	8281FA	10076673	FREE
1	1	TEMP	8255XXA	166341	FREE

RPM MAIN PASS G-SAND

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

Patches: 4

Plotted: Thu Jun 21 21:58:55 2018

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_GUNDERSON_0994-13-16W/p012g02.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: -7.750 ft BOTTOM DEPTH: 8054.250 ft

RAL CCL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
CCL FLOOR	CCL FLOOR	0.00		TOP BOTTOM

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_GUNDERSON_0994-13-16W/p354h03.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 2212.750 ft BOTTOM DEPTH: 2858.498 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:GR2	N/A	GAMMA RAY 2
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

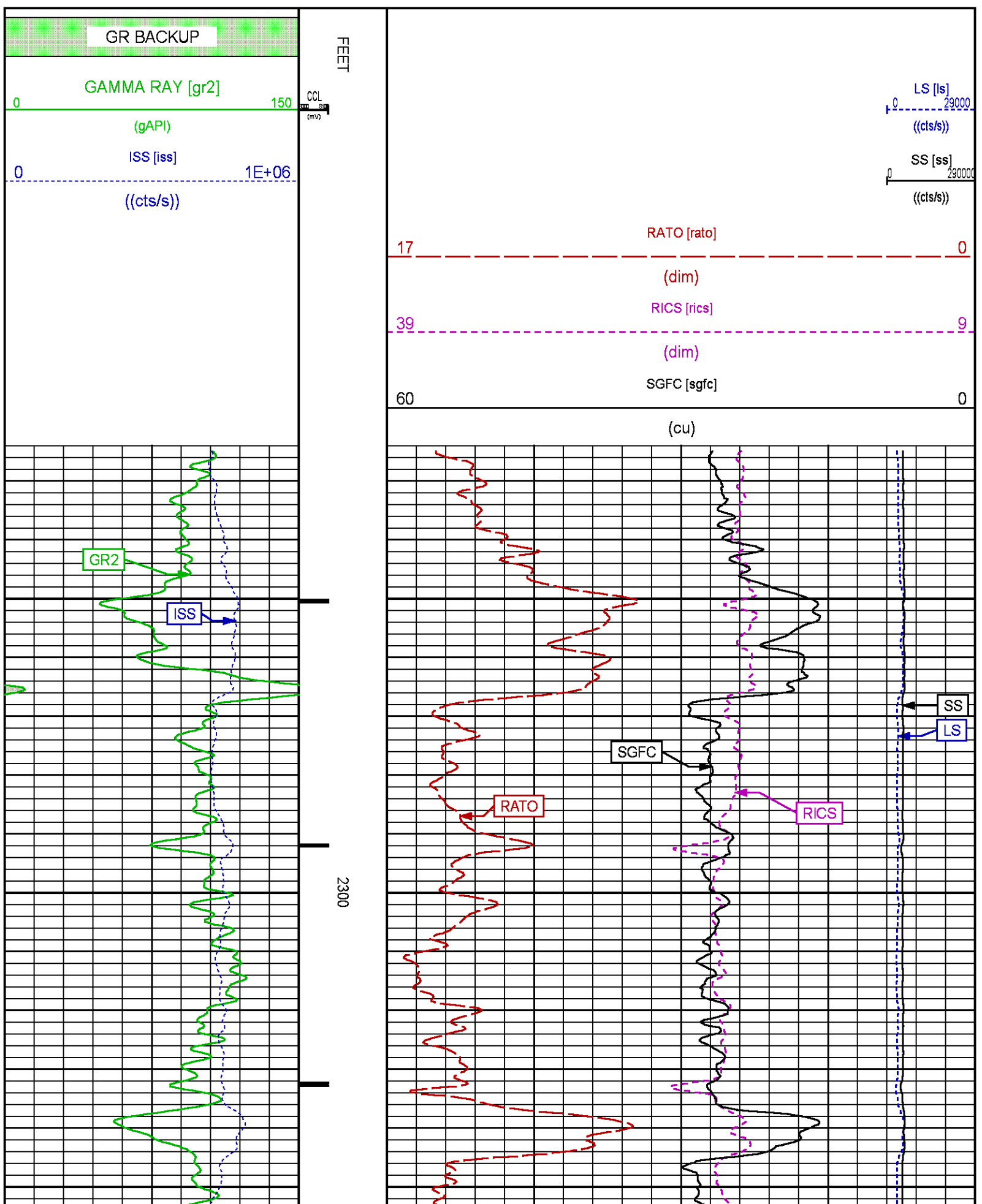
CURVE MEASURE POINT OFFSET

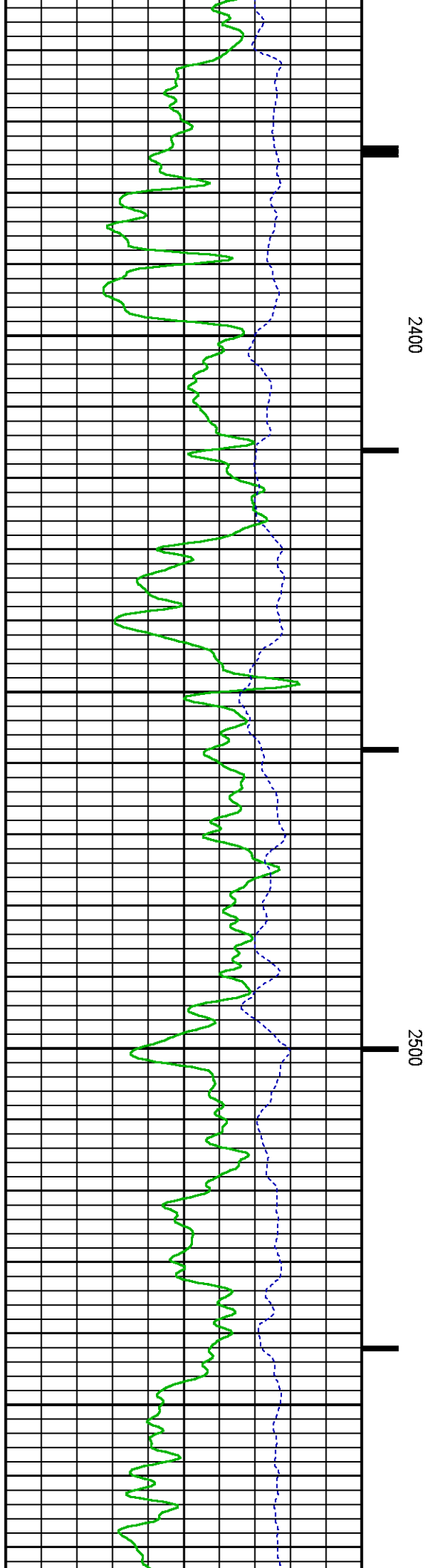
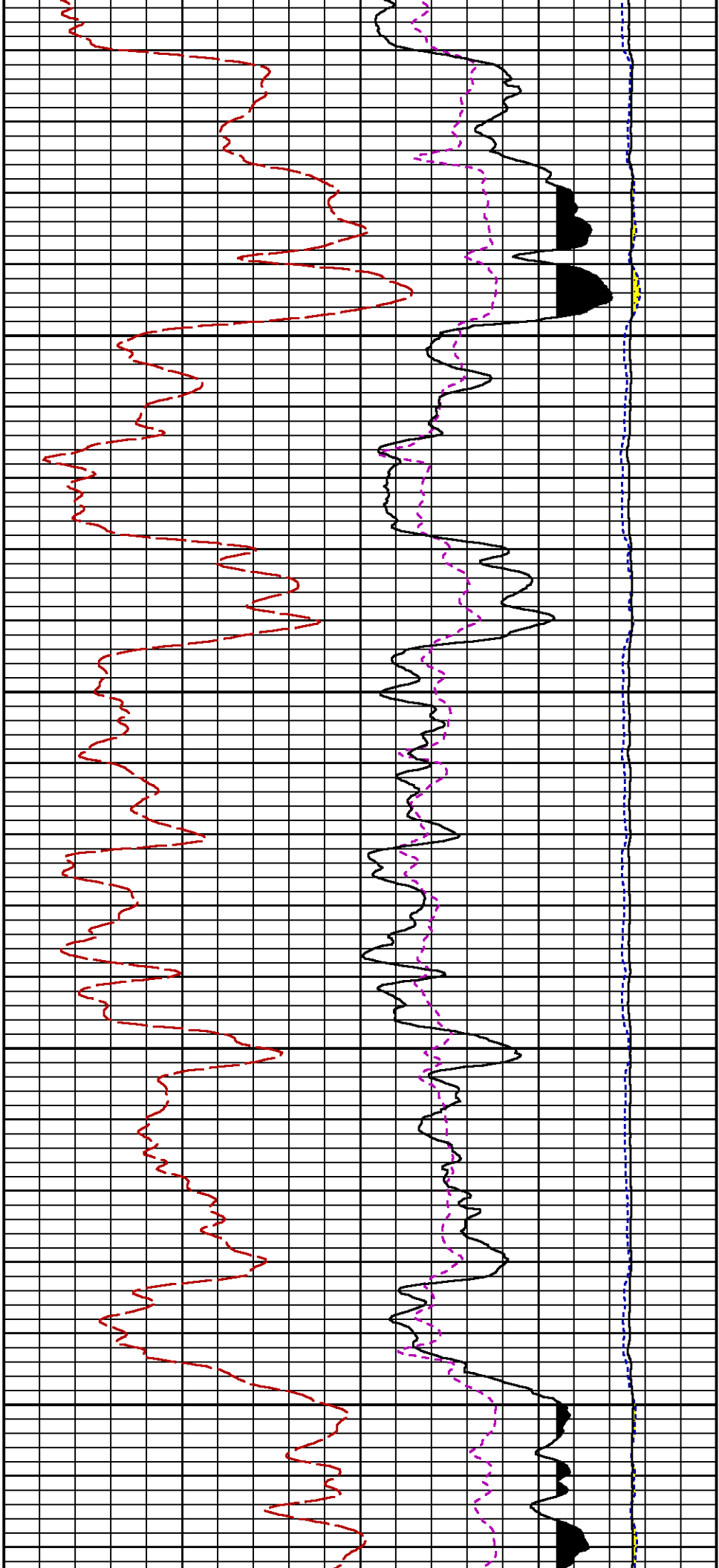
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	-21.75	ISS	-9.50	RATO	-9.50	SGFC	-9.50
GR2	-19.25	LS	-9.50	RICS	-9.50	SS	-9.50

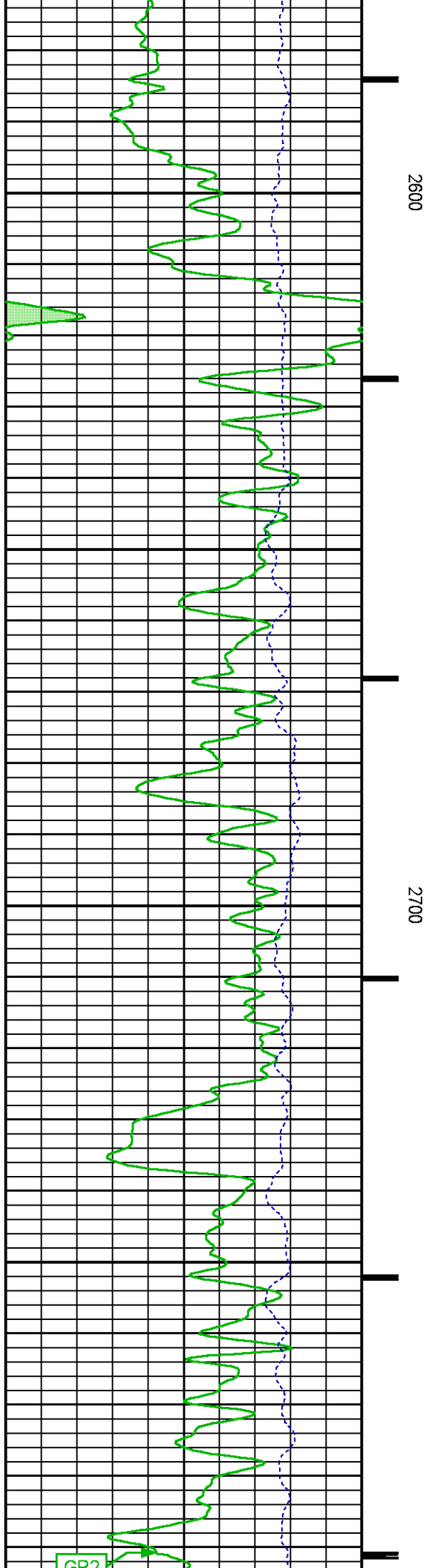
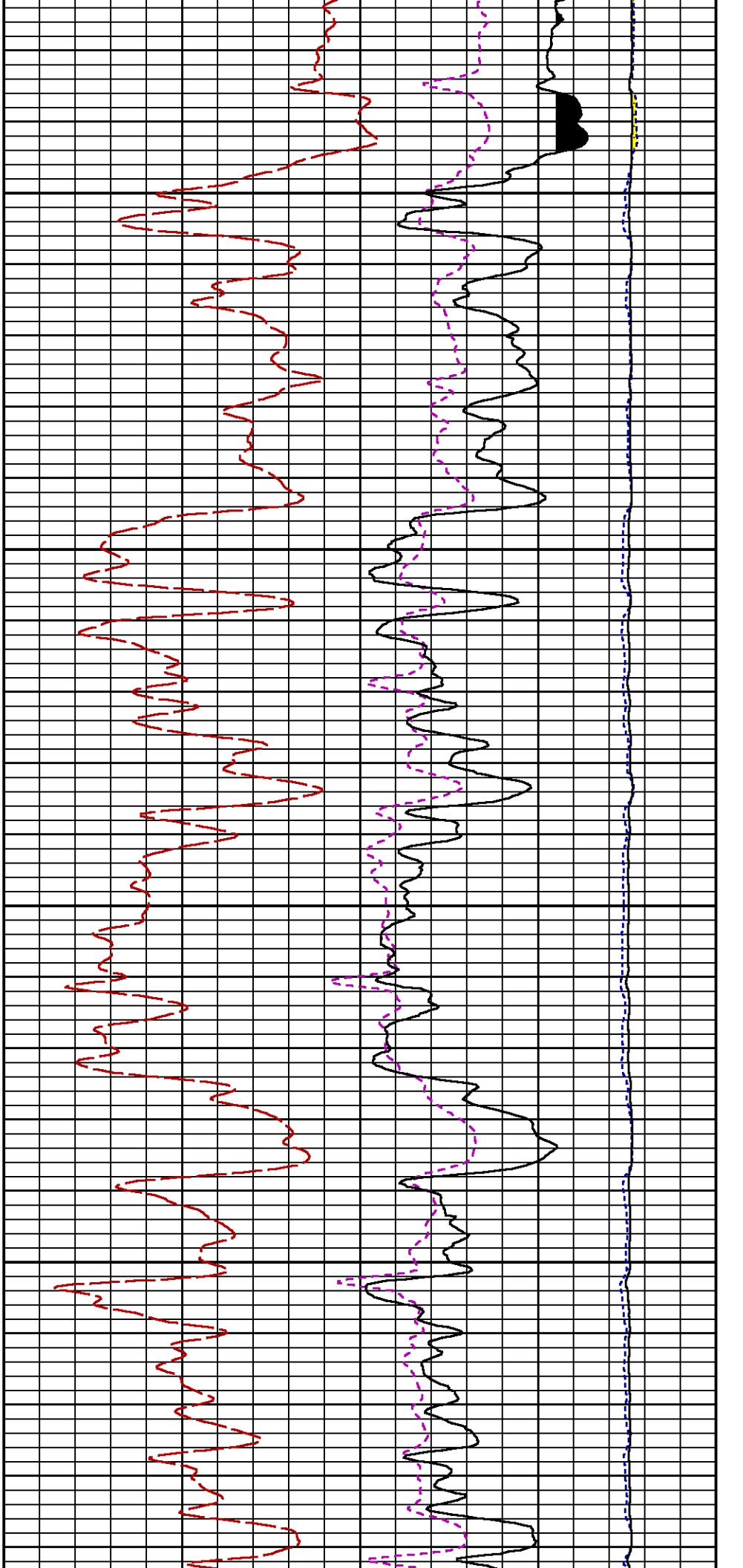
Presentation : SysA:/dat1a/LARAMIE_GUNDERSON_0994-13-16W/16W_RPM_GS.fvpdf [5"/100' Scale]
Plot Interval : 2225 - 2850 Feet

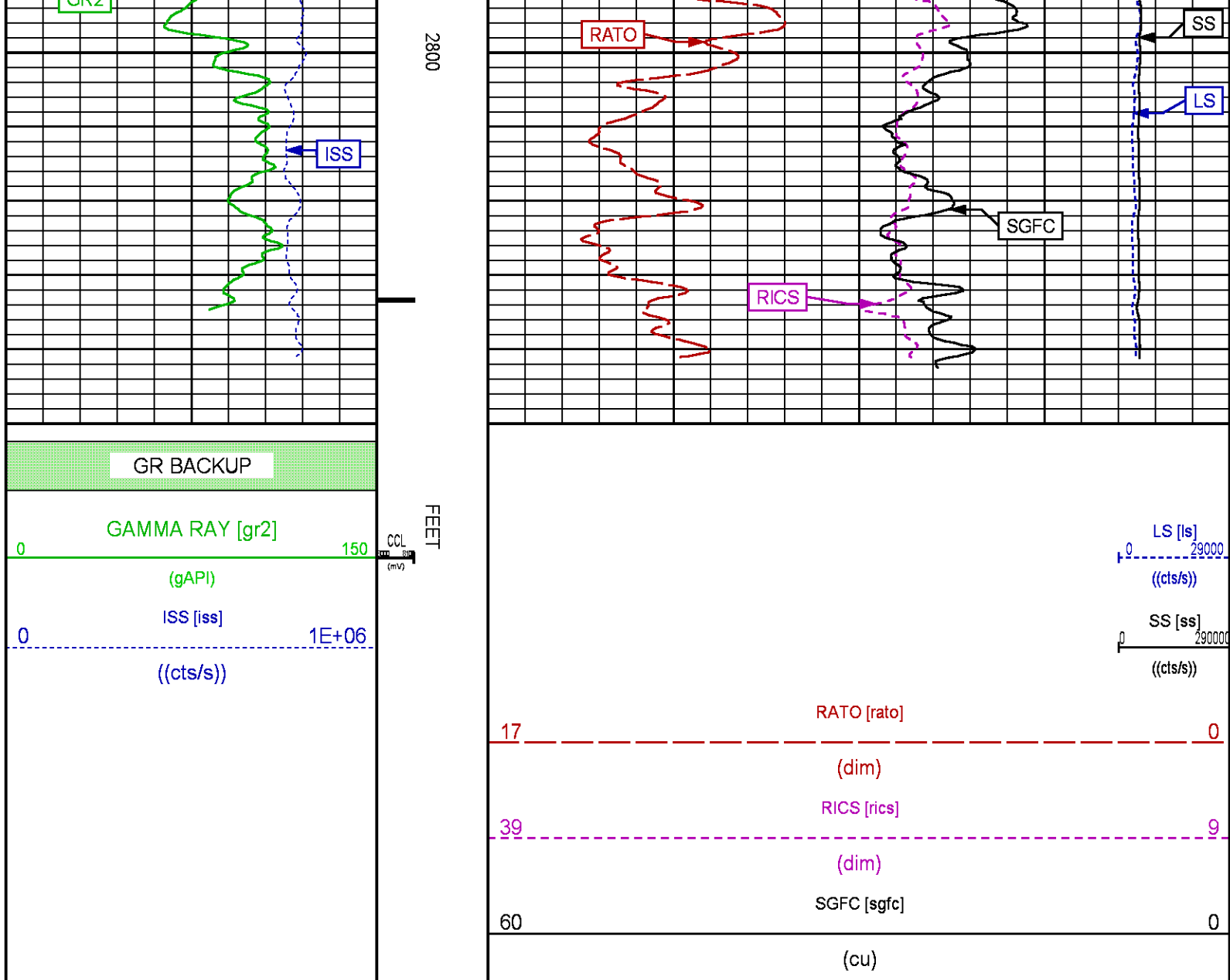
Data File 1 : F1 : SysA:/dat1a/LARAMIE_GUNDERSON_0994-13-16W/16W_RPM_GS.xtf
Created On : N/A

Company : LARAMIE ENERGY LLC
Well : GUNDERSON 0994-13-16W
Field : VEGA
File Interval : 6.75 - 8066.5 Feet
OCT : p354h









RPM MAIN PASS WILLIAMS FORK

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

Patches: 4

Plotted: Thu Jun 21 21:43:50 2018

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_GUNDERSON_0994-13-16W/p012g02.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: -7.750 ft BOTTOM DEPTH: 8054.250 ft

RAL CCL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
CCL FLOOR	CCL FLOOR	0.00		TOP BOTTOM

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_GUNDERSON_0994-13-16W/p354h02.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 4320.653 ft BOTTOM DEPTH: 8084.195 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
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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
GR2	-19.25	LS	-9.50	RICS	-9.50	SS	-9.50

Presentation : SysA:/dat1a/LARAMIE_GUNDERSON_0994-13-16W/16W_RPM_WF.fvpdf [5"/100' Scale]
 Plot Interval : 4330 - 8075 Feet

Data File 1 : F1 : SysA:/dat1a/LARAMIE_GUNDERSON_0994-13-16W/16W_RPM_WF.xtf
 Created On : N/A
 Company : LARAMIE ENERGY LLC
 Well : GUNDERSON 0994-13-16W
 Field : VEGA
 File Interval : 8.75 - 8077.5 Feet
 OCT : p354h

GR BACKUP

FEET

GAMMA RAY [gr2]

0 150

(gAPI)

ISS [iss]

1E+06

((cts/s))

LS [ls]

0 29000

((cts/s))

SS [ss]

0 290000

((cts/s))

RATO [rato]

17

0

(dim)

RICS [rics]

39

9

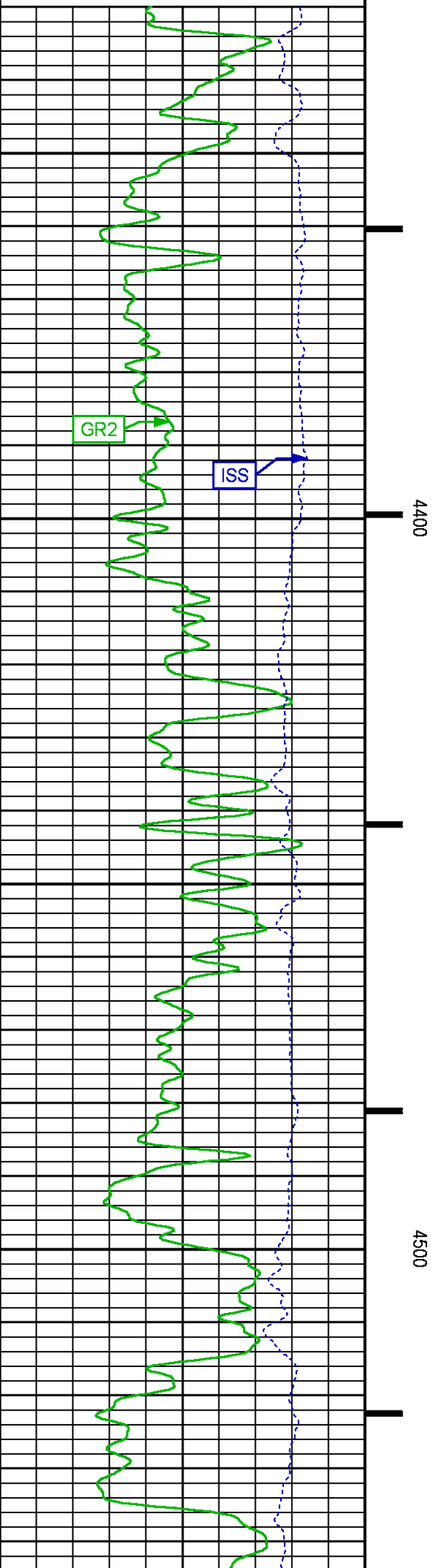
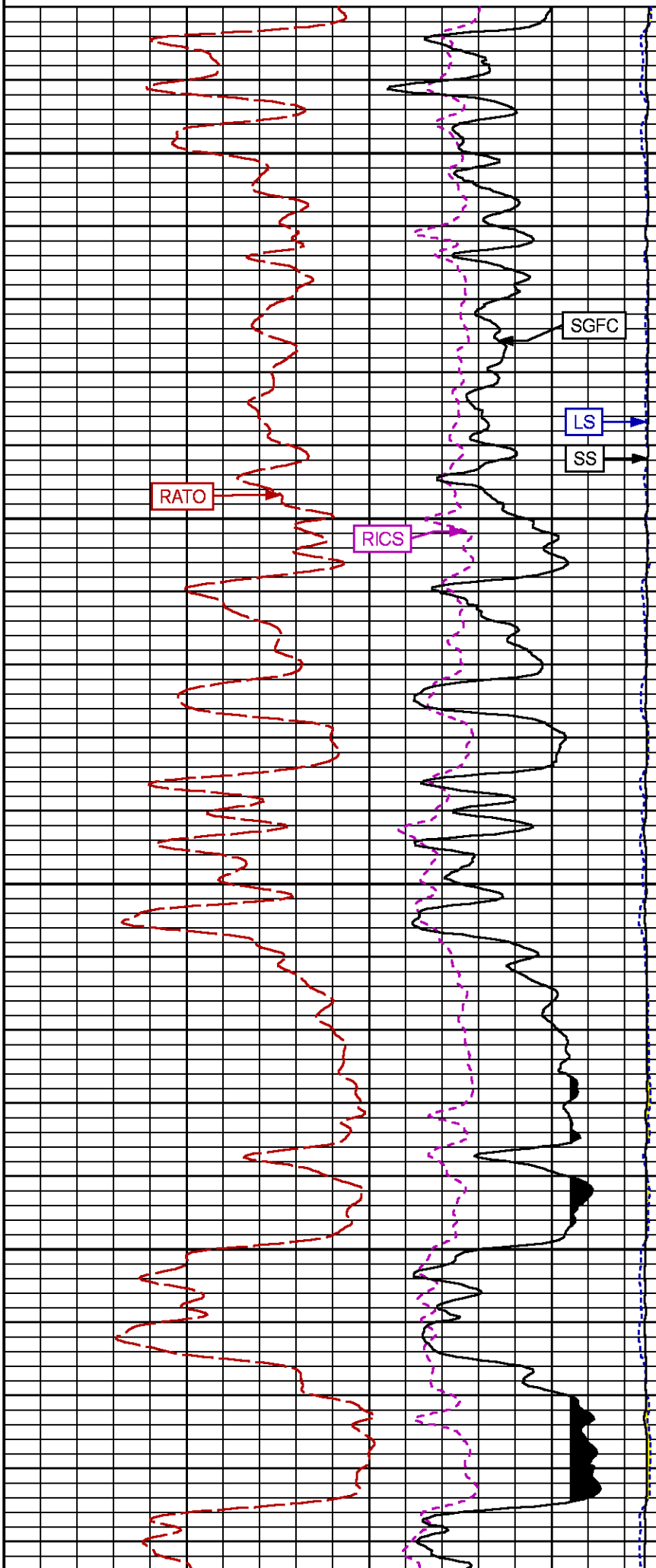
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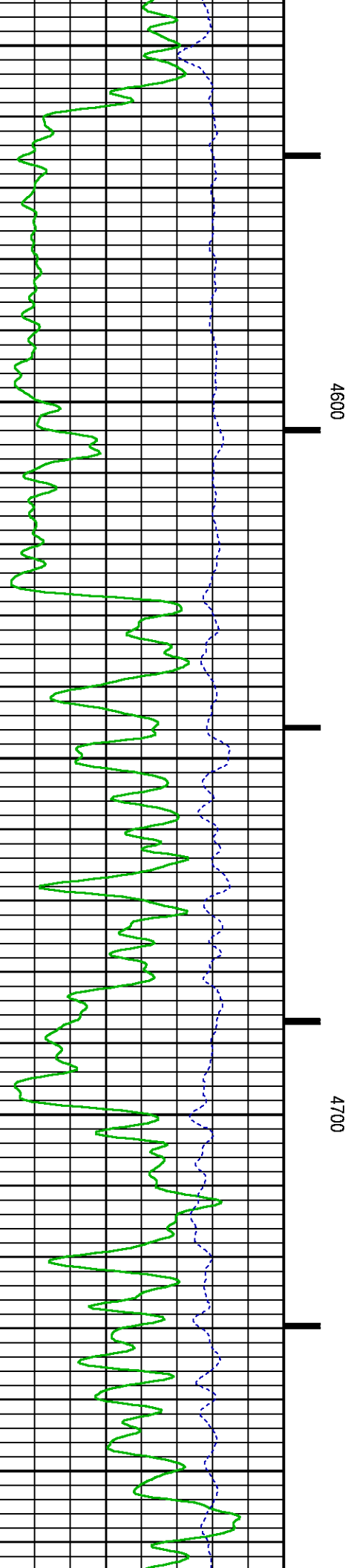
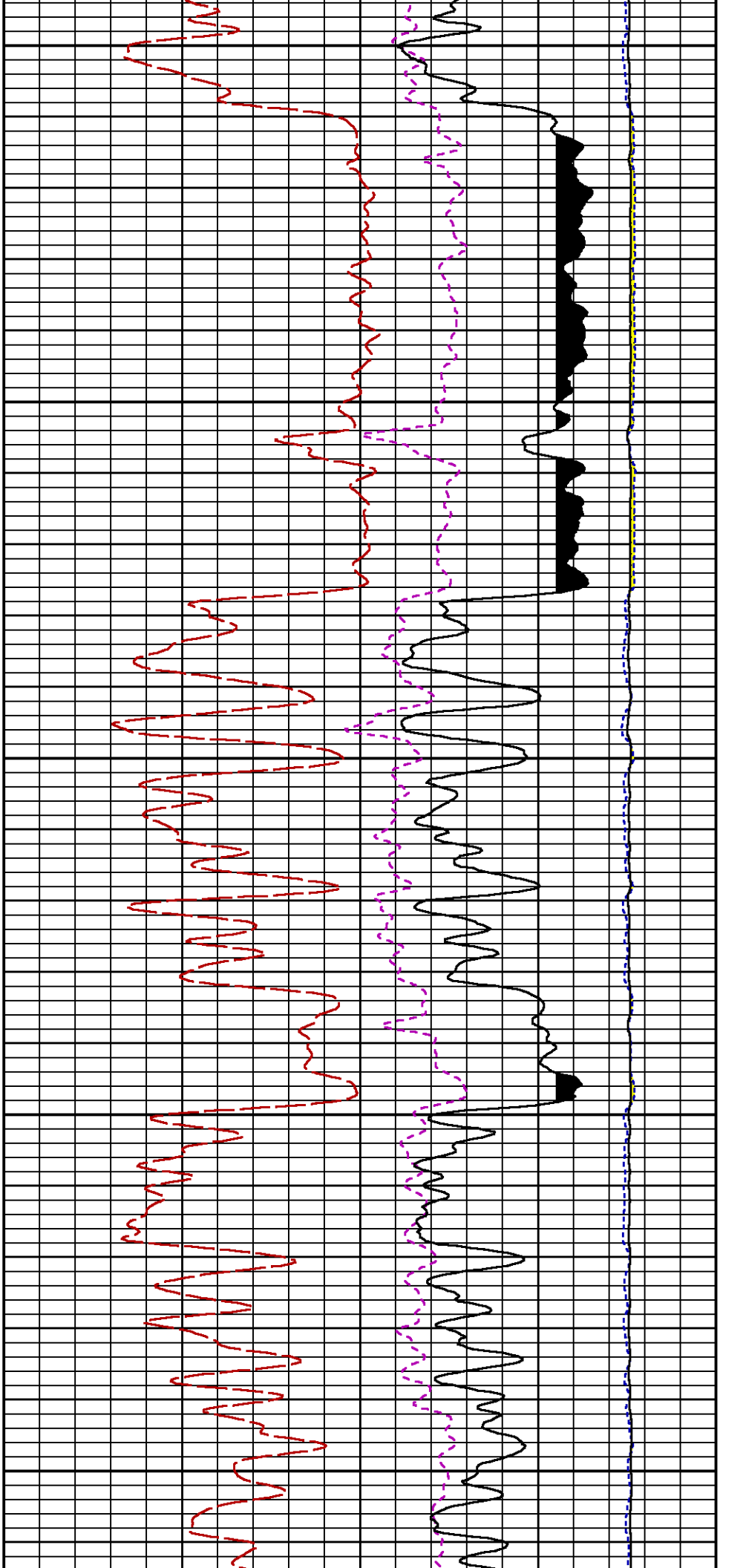
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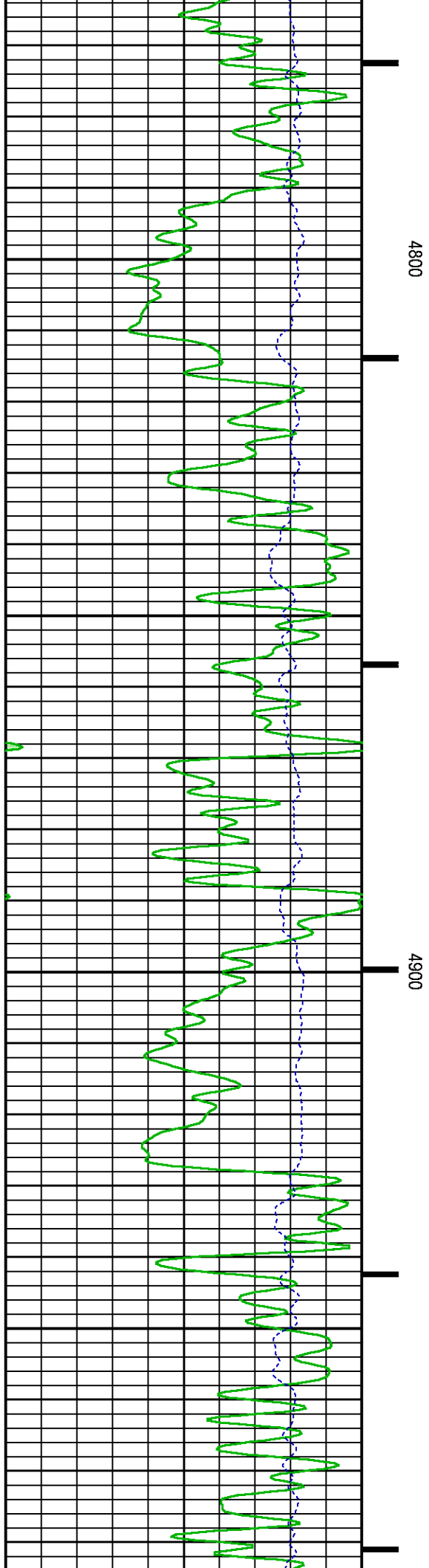
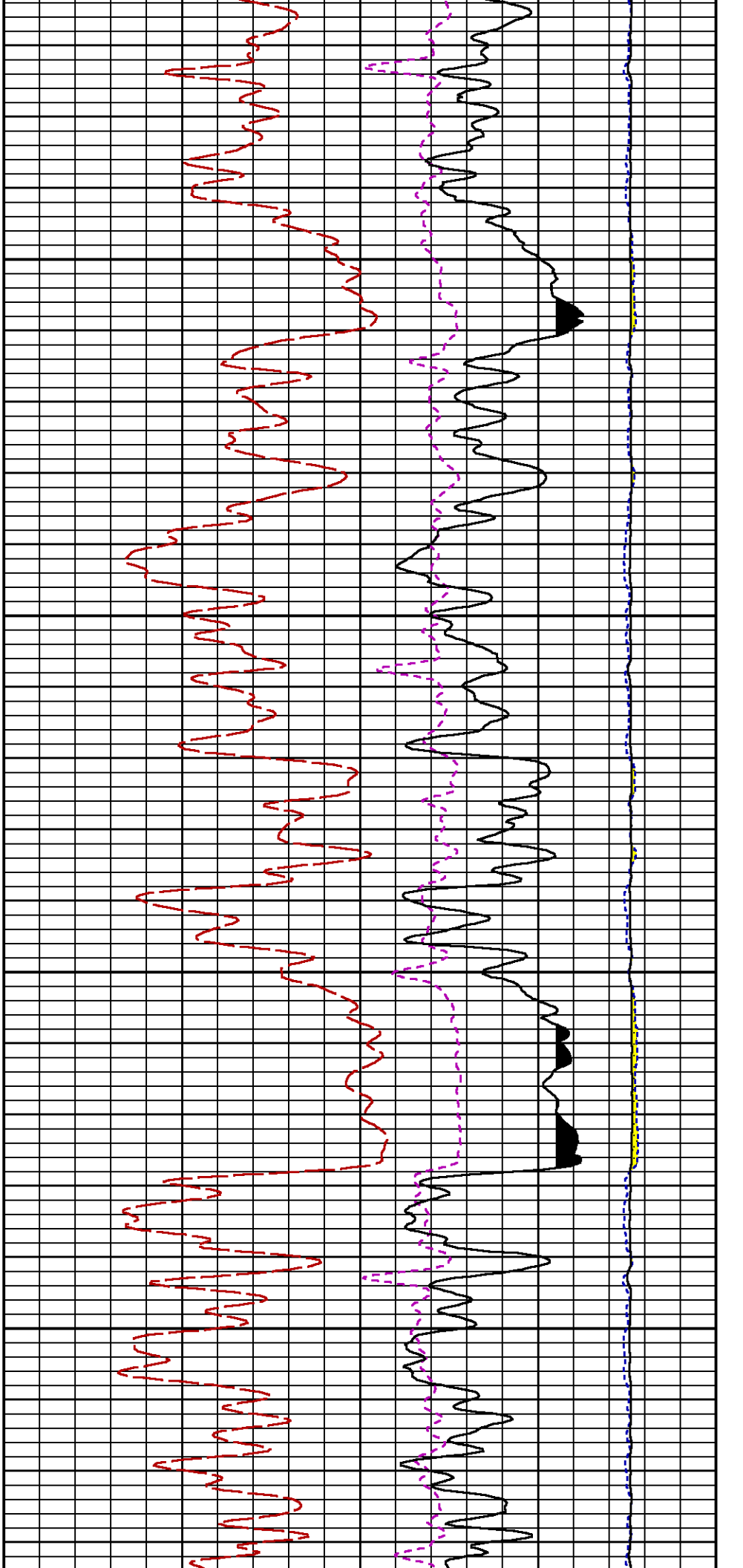
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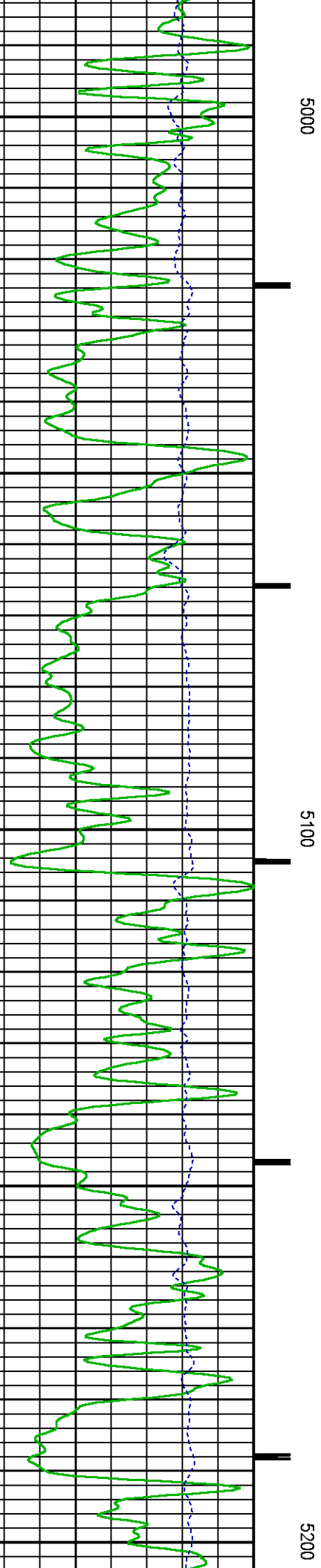
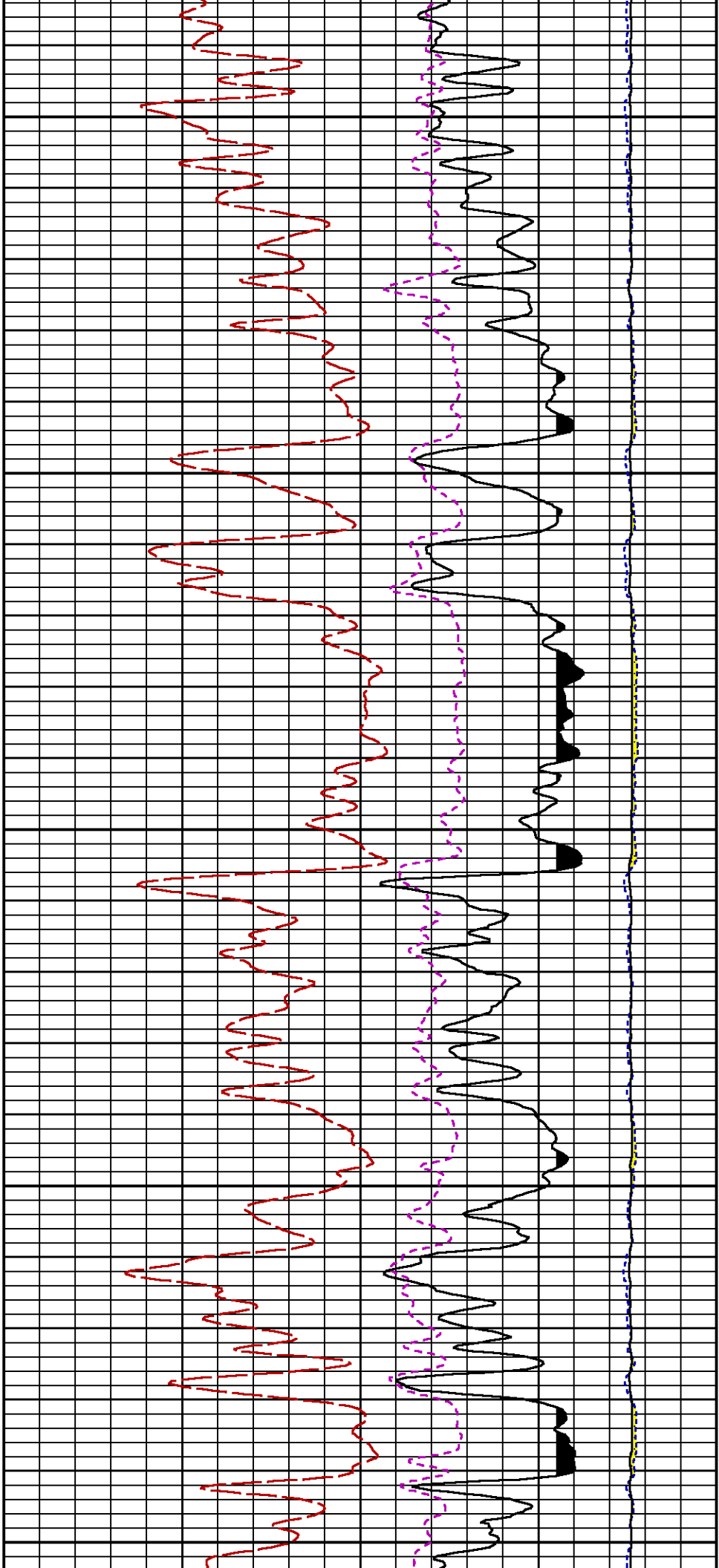
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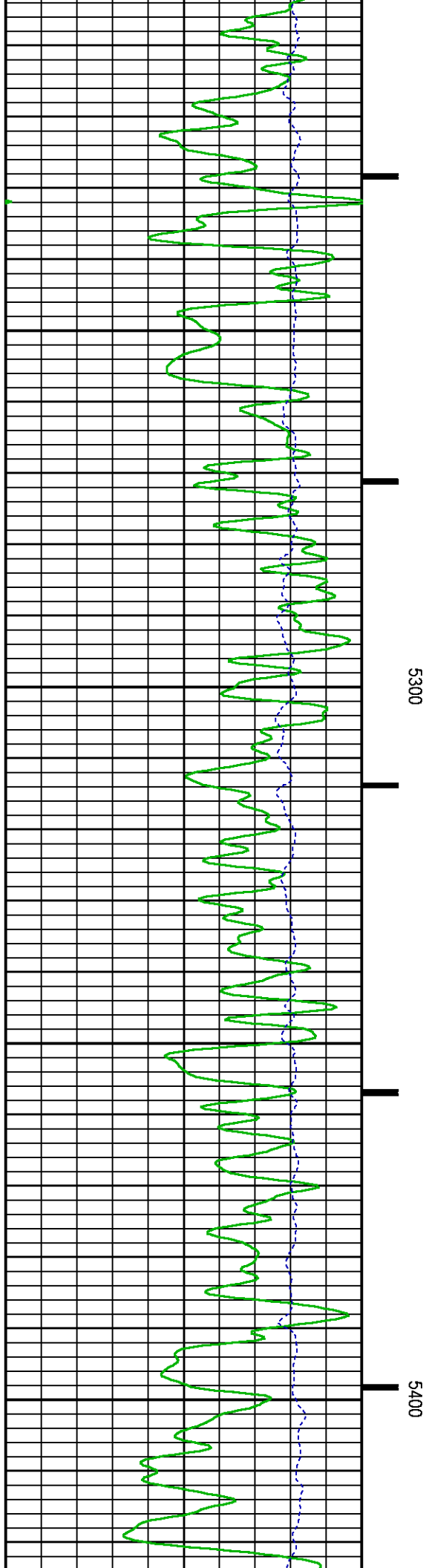
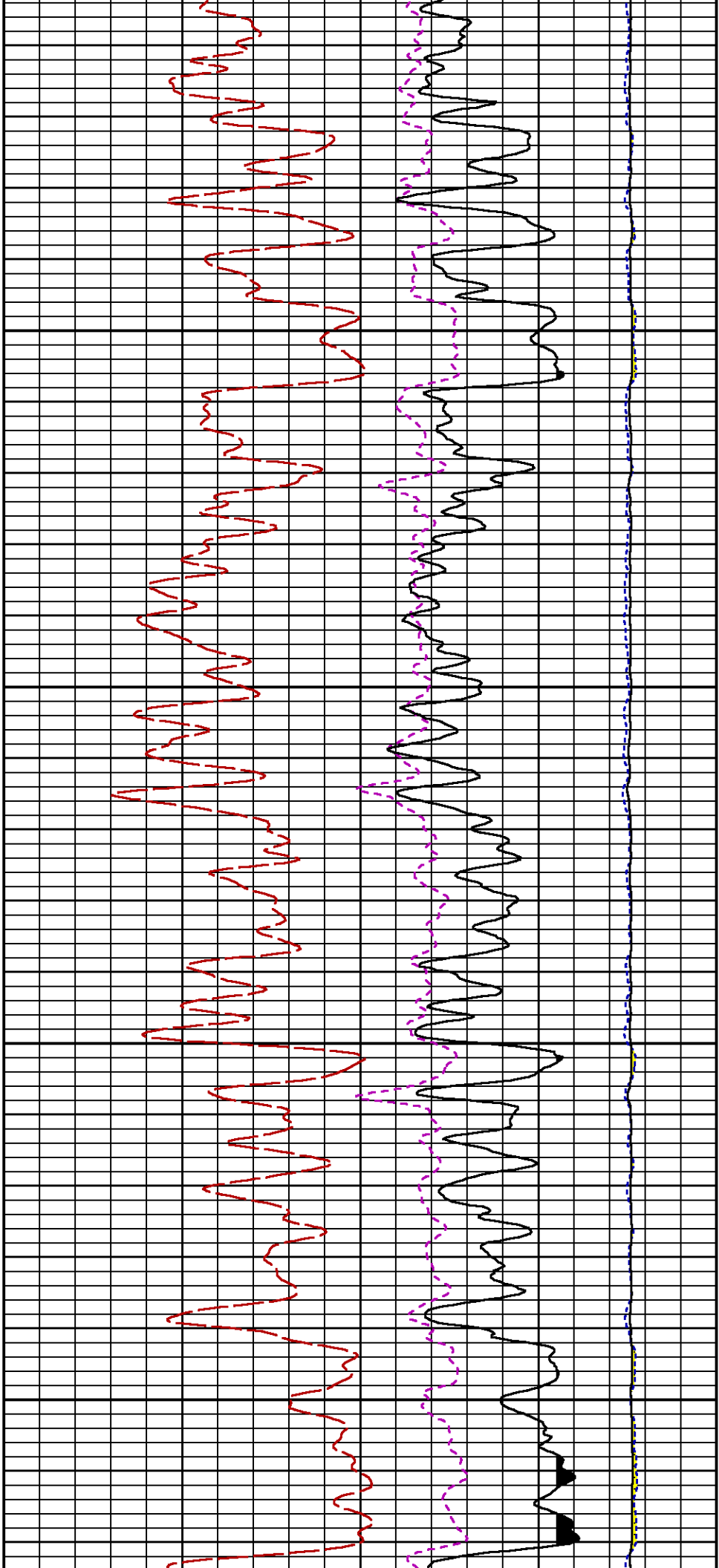
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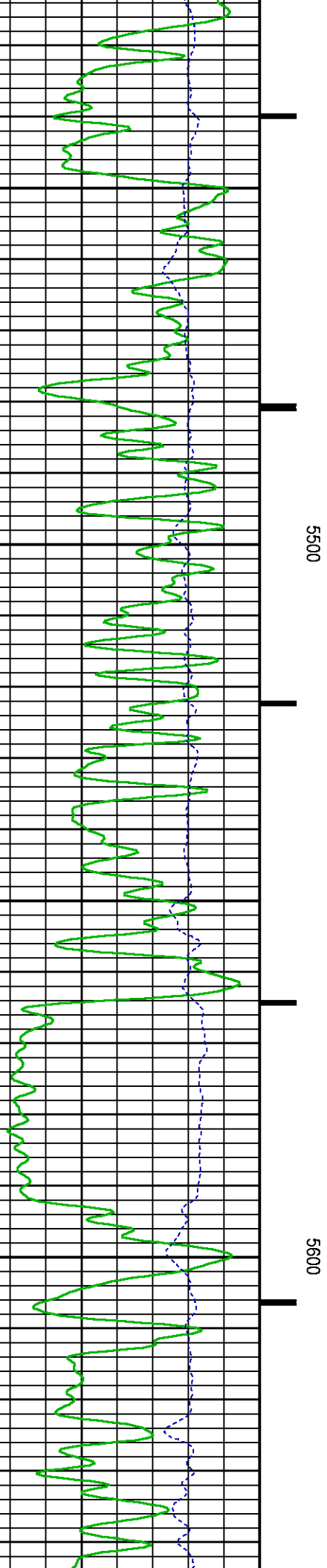
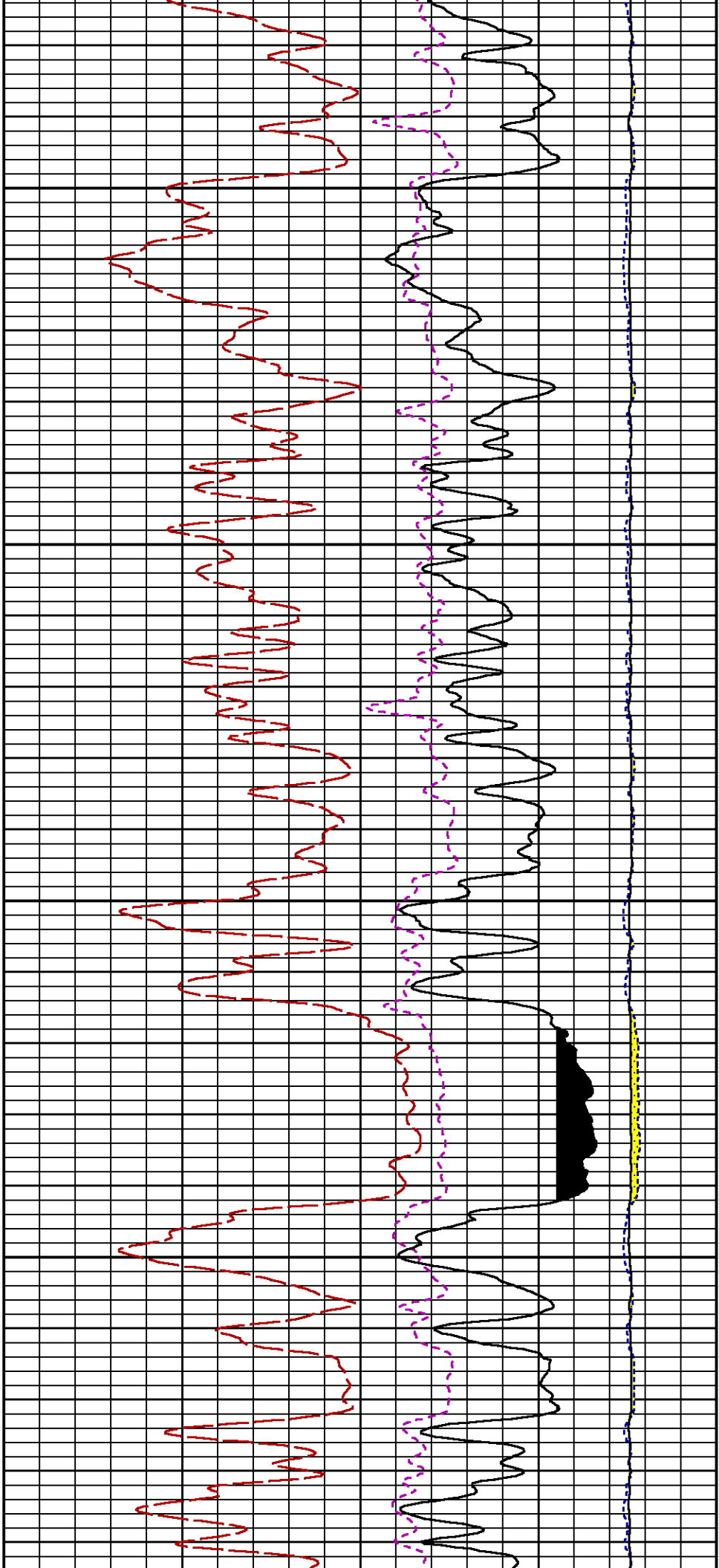


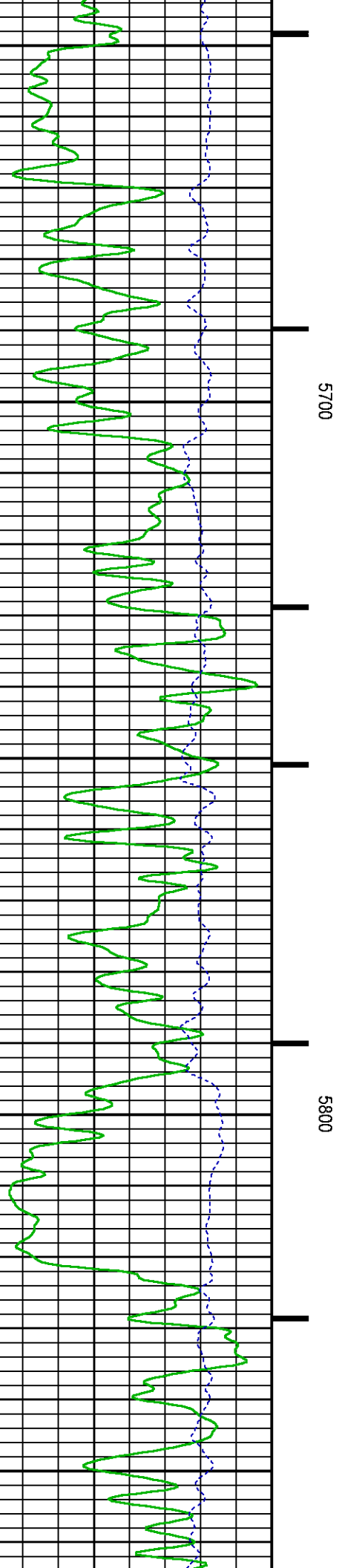
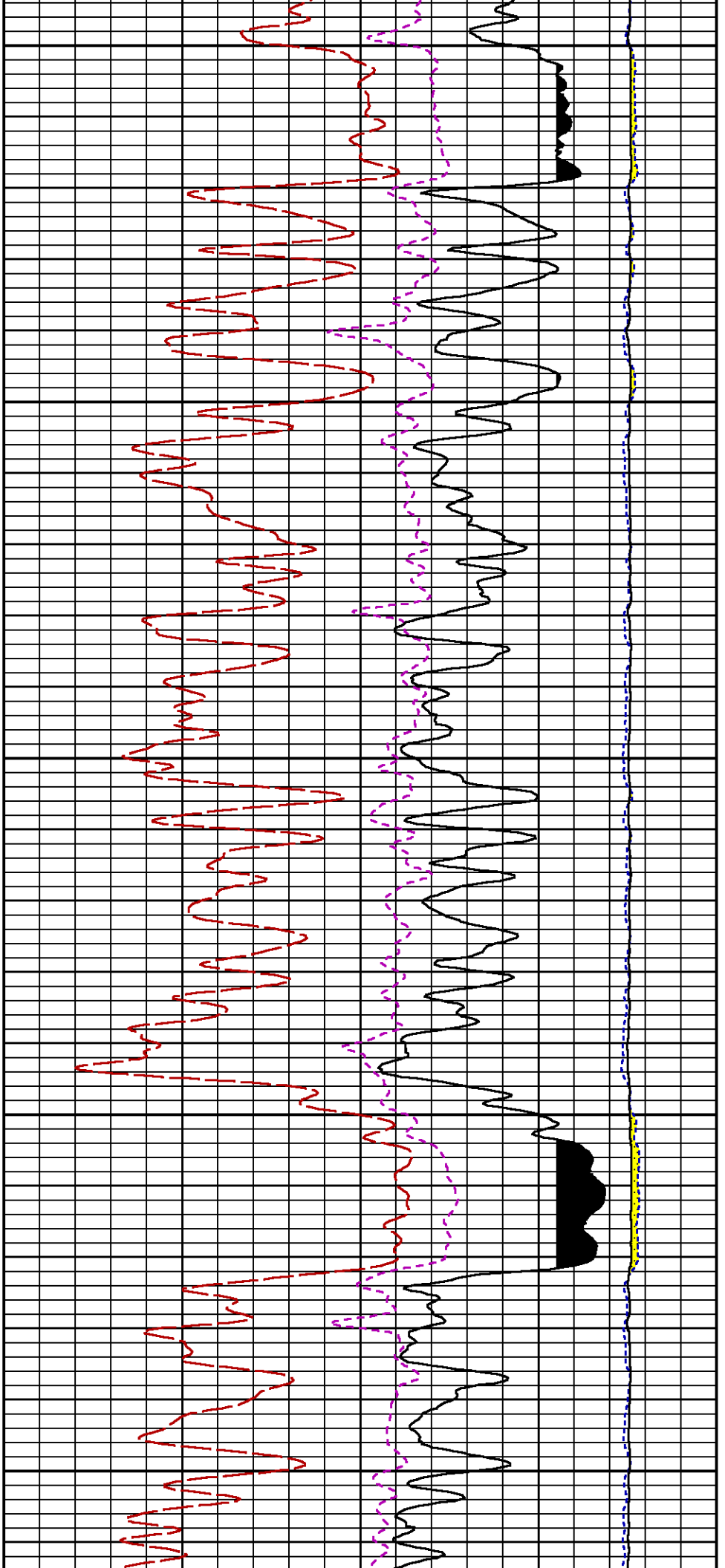


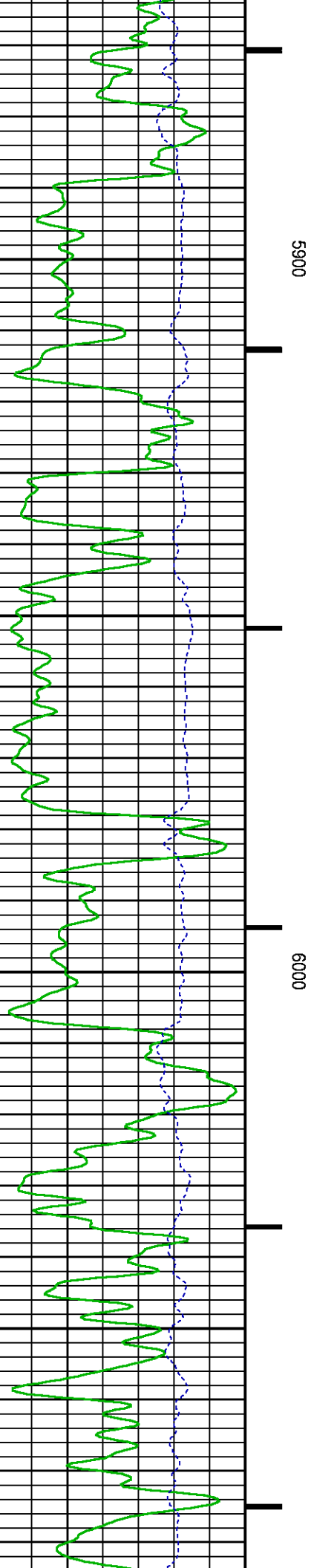
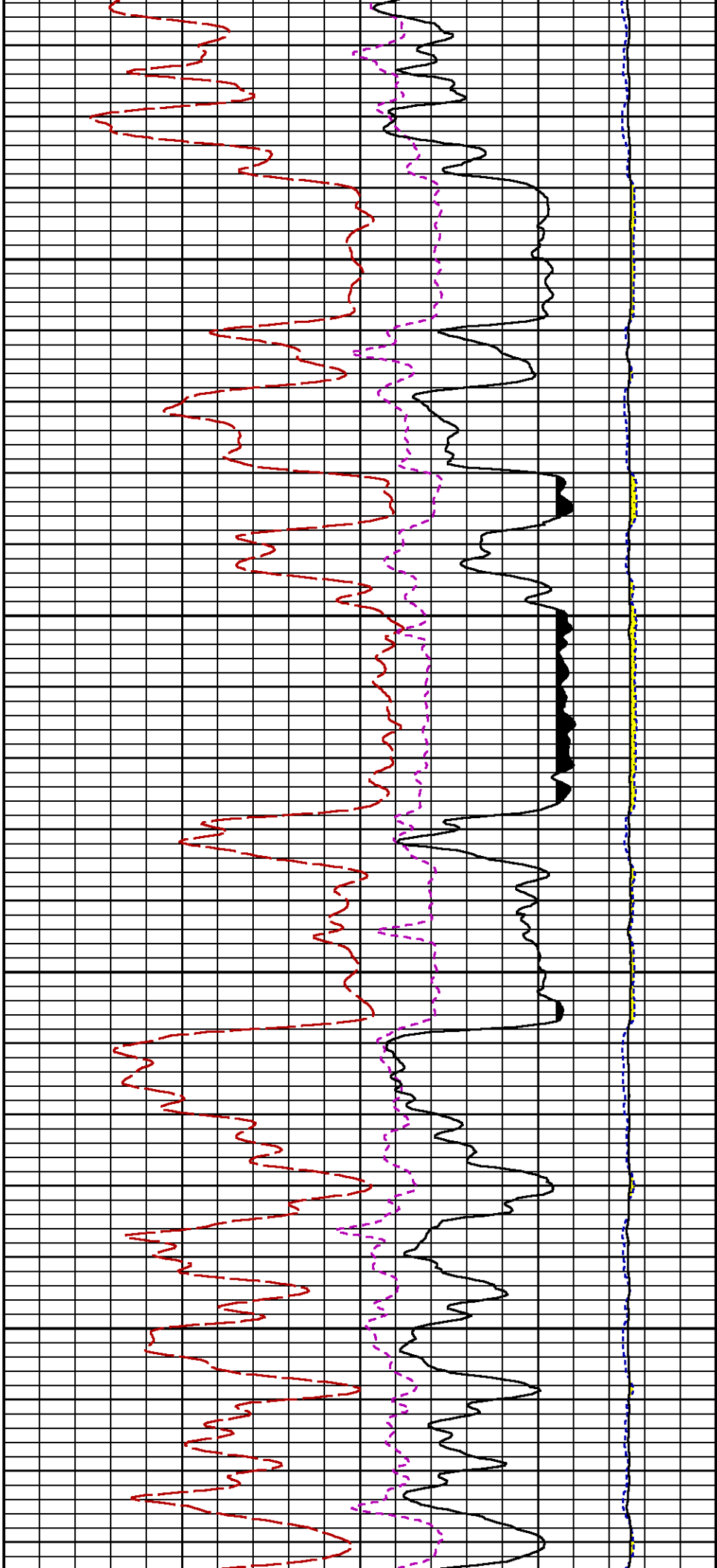


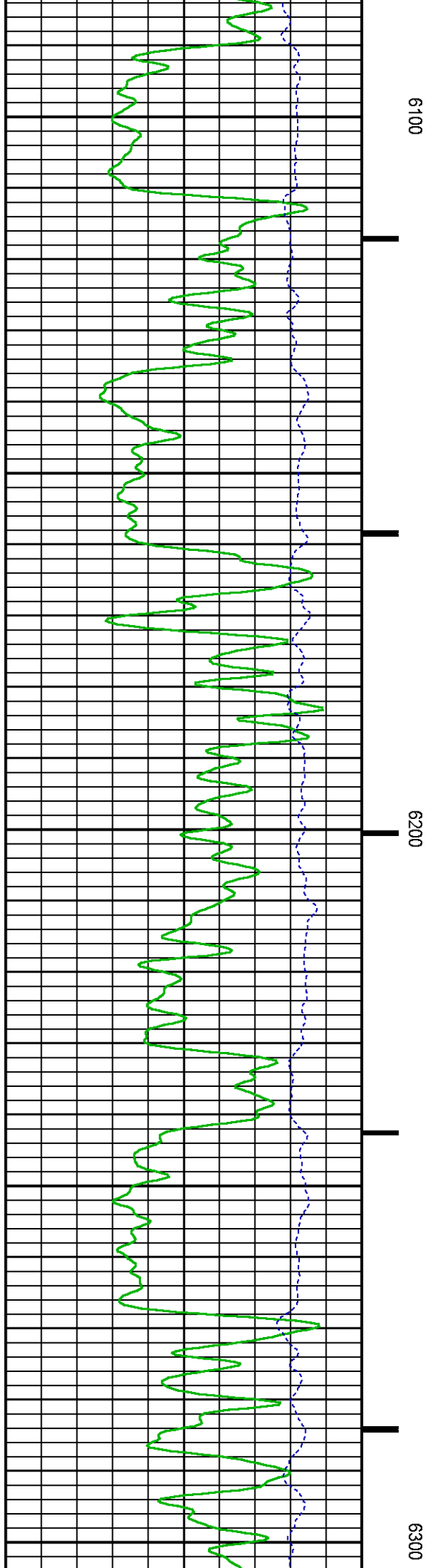
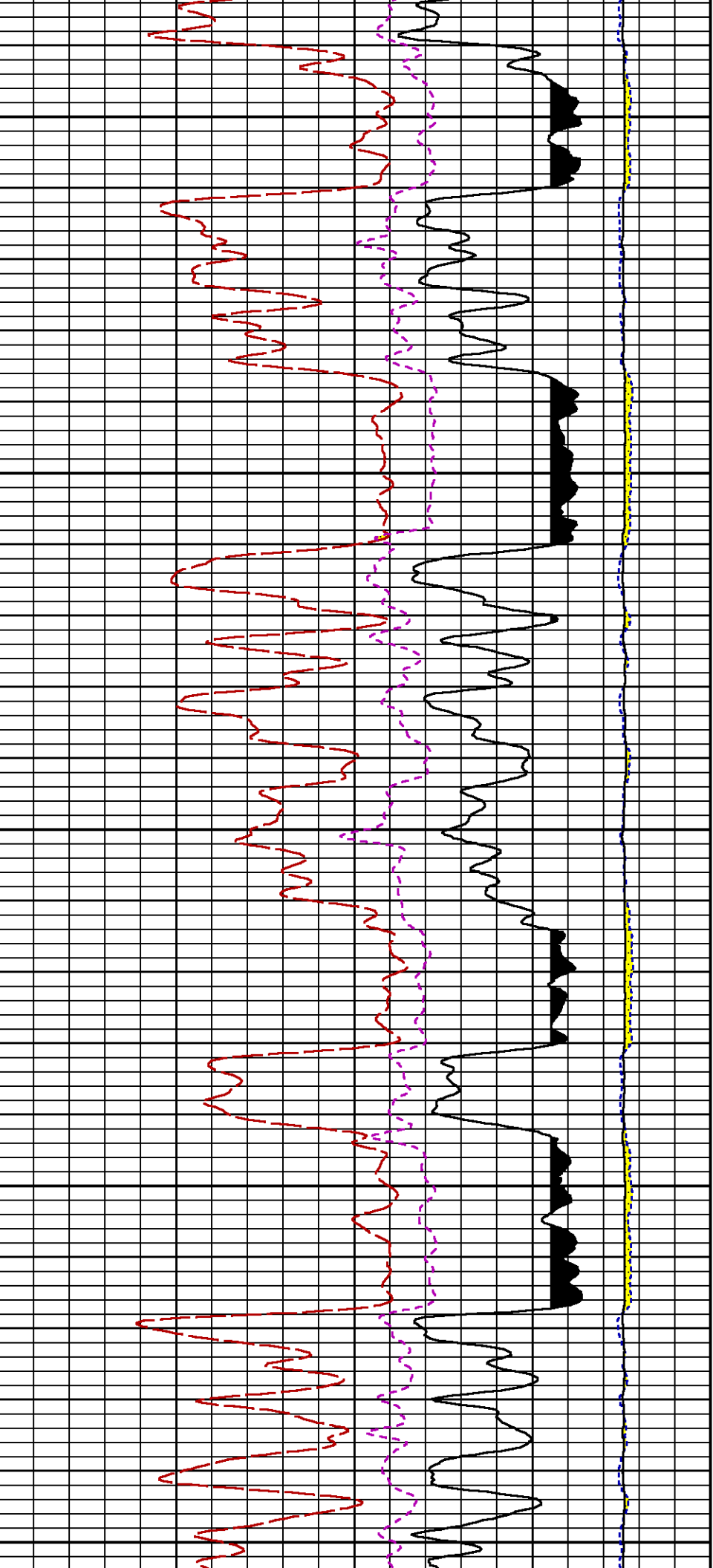


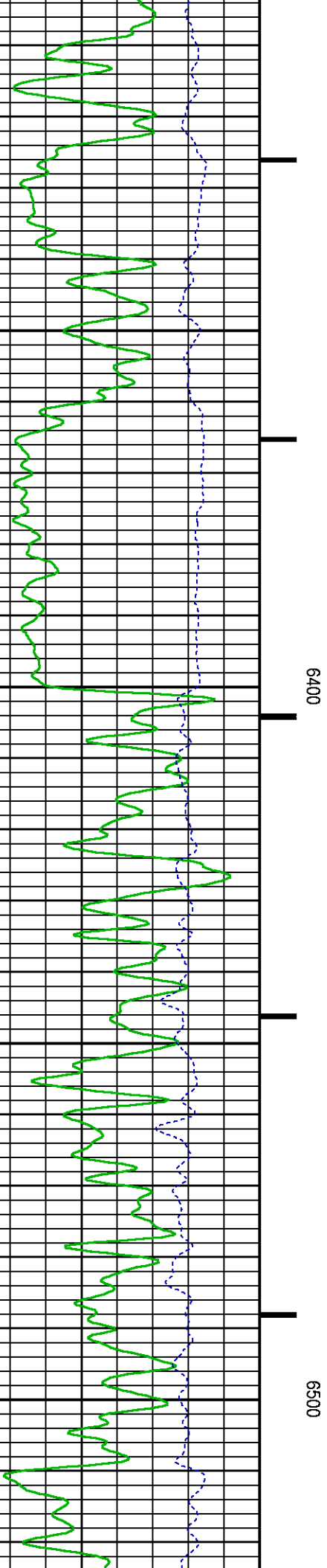
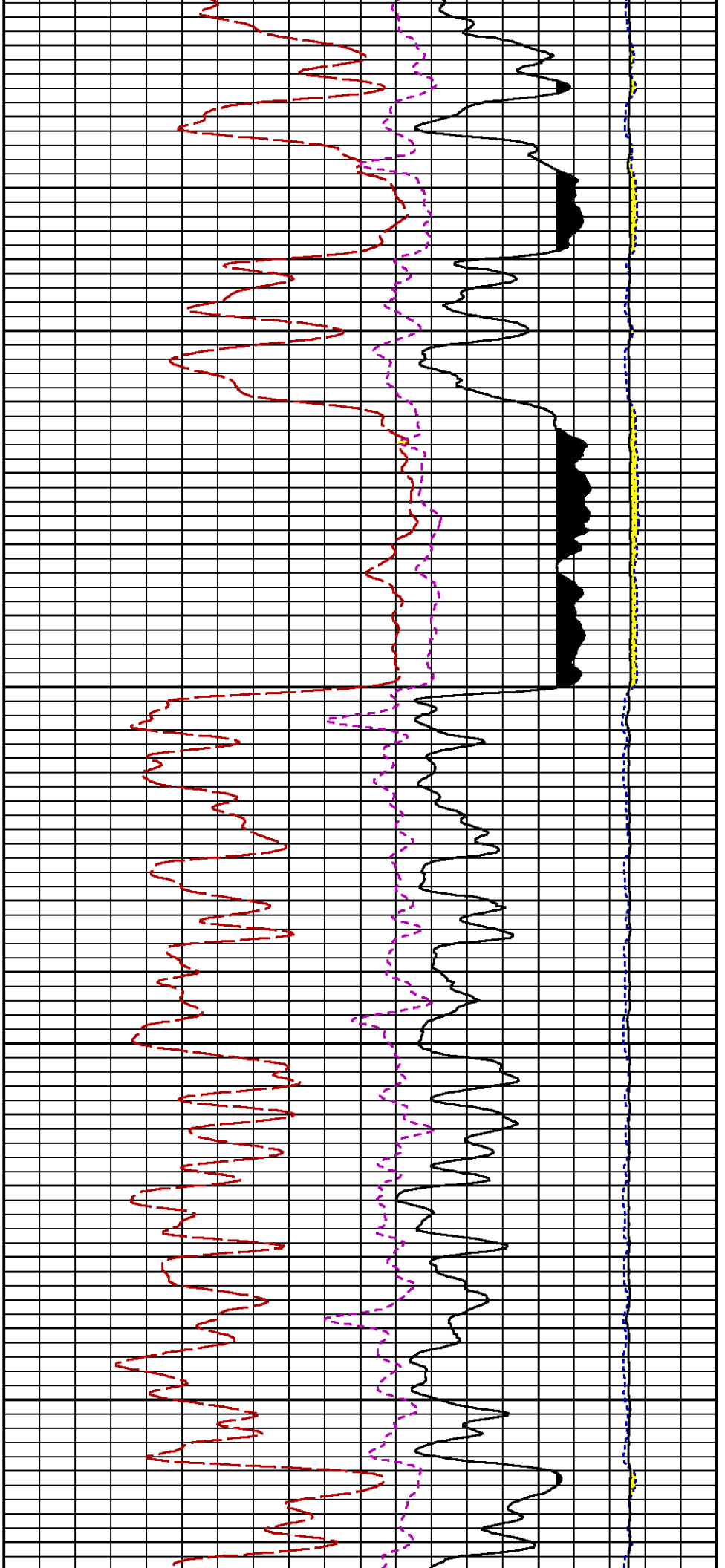


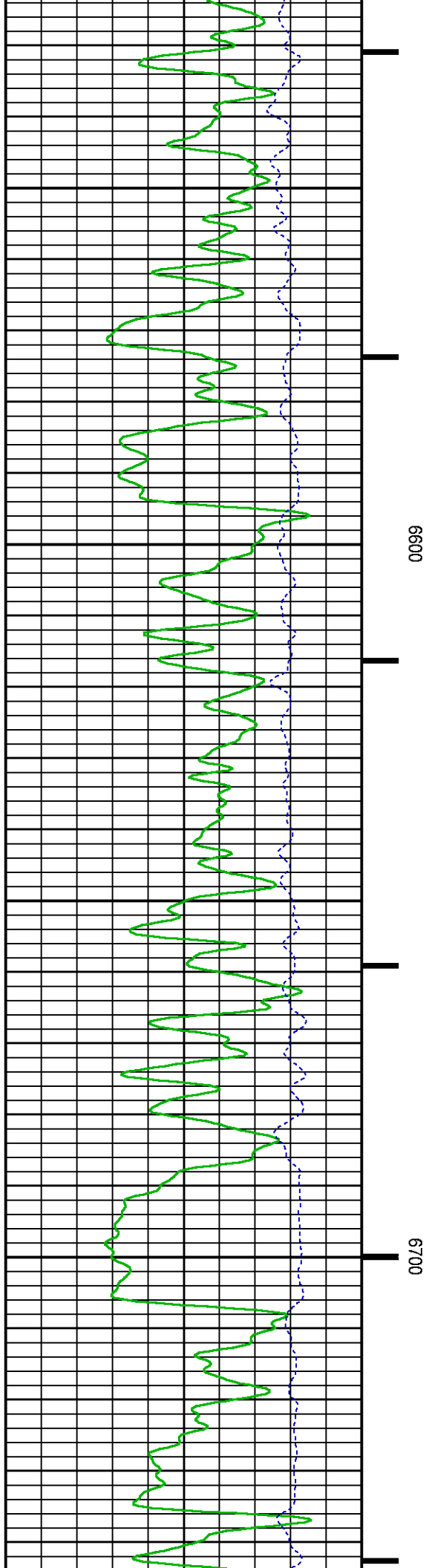
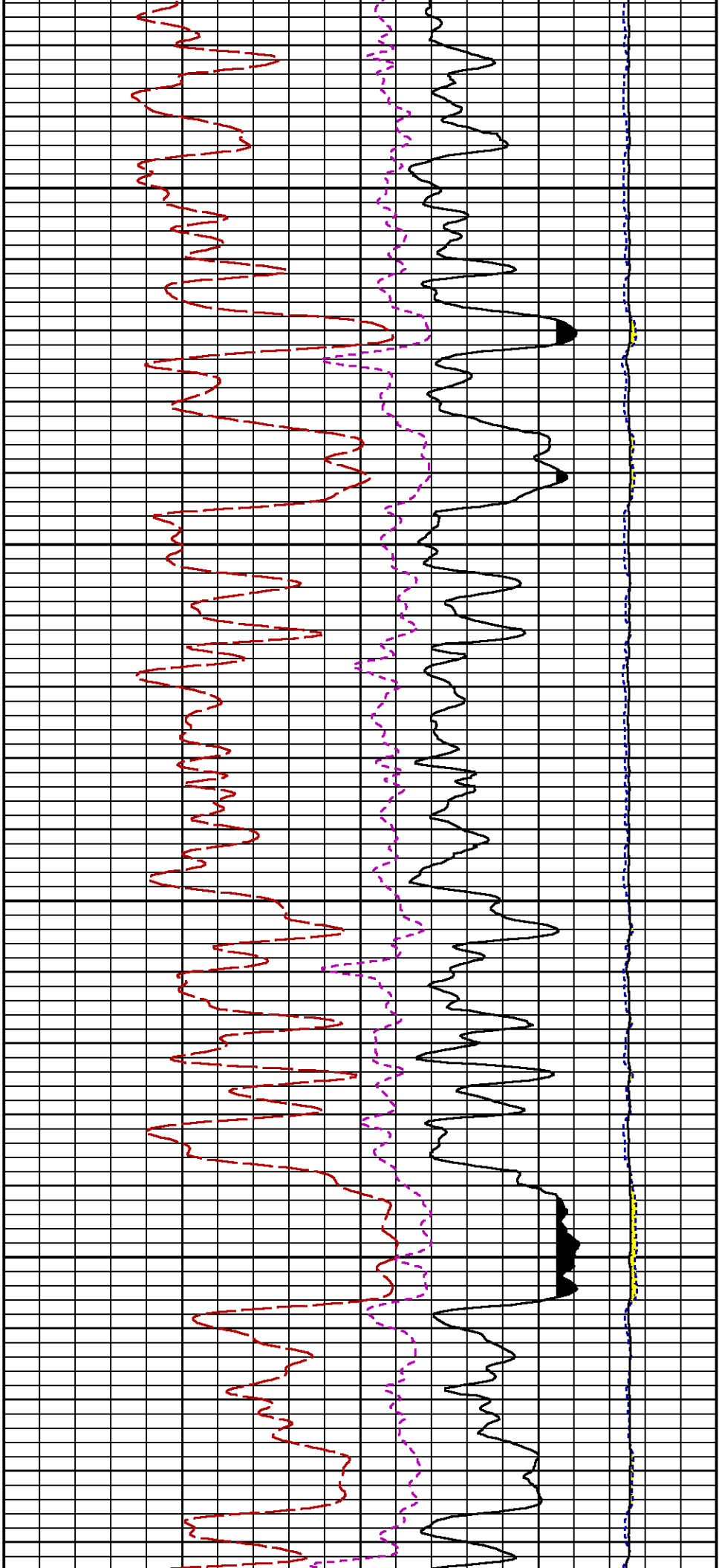


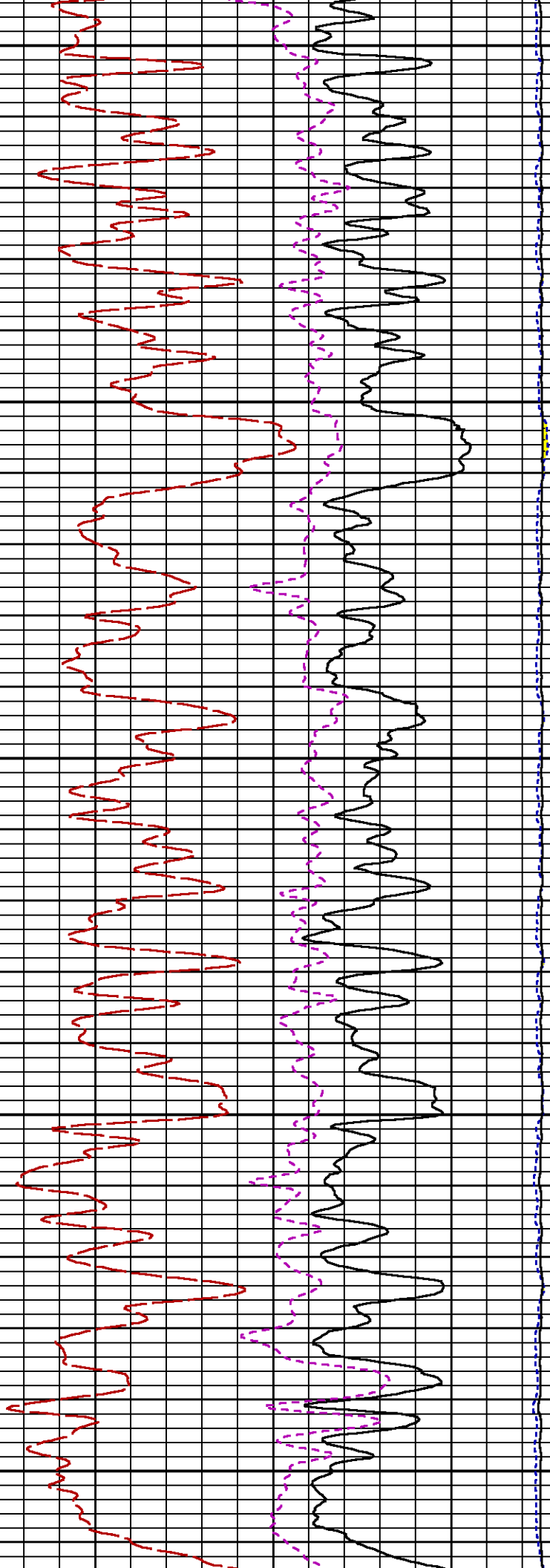
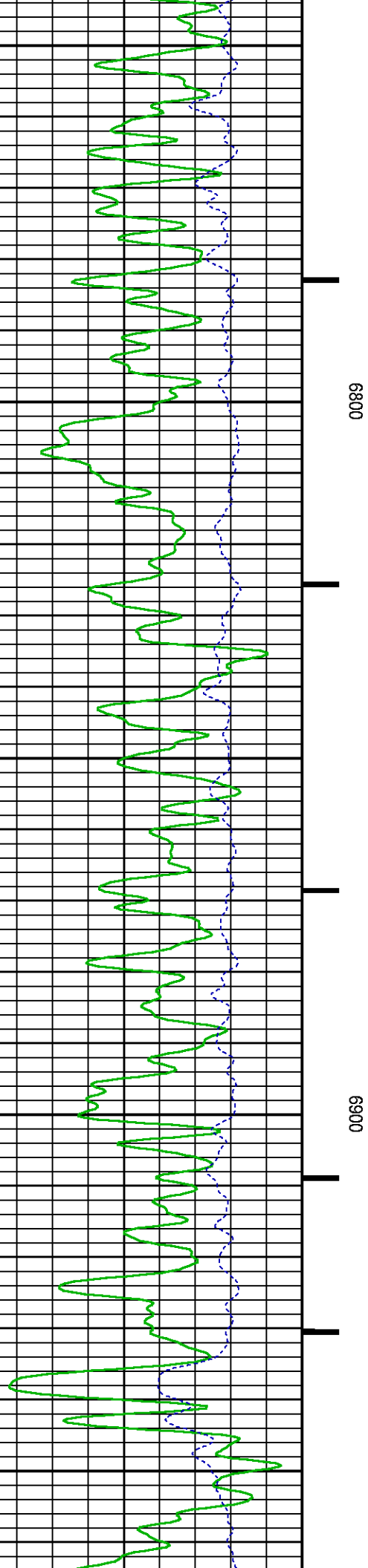


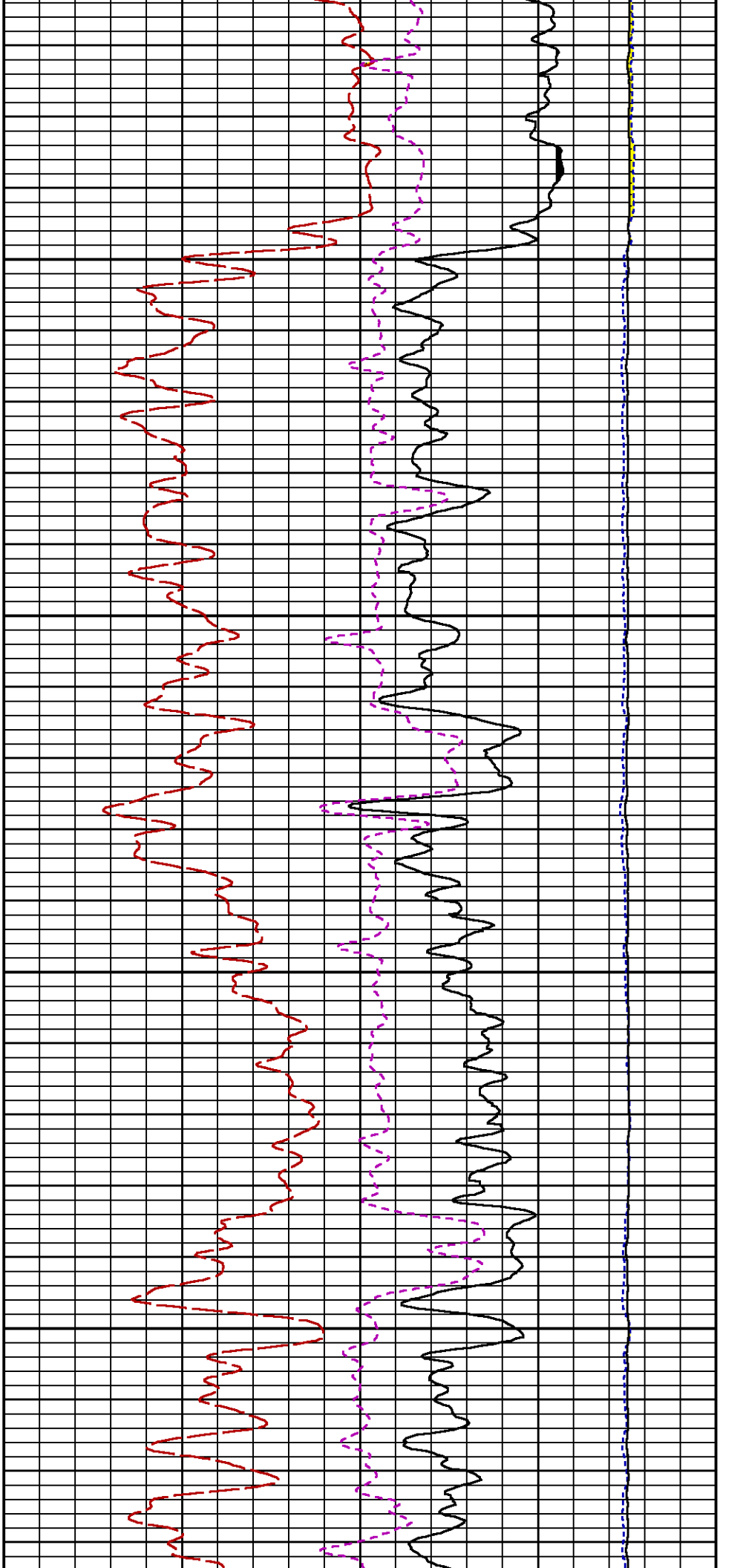






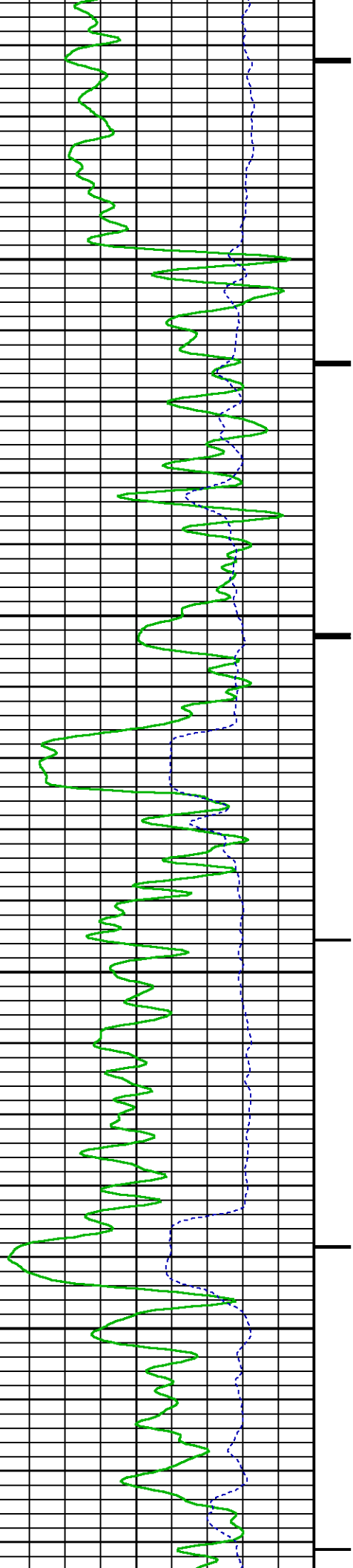


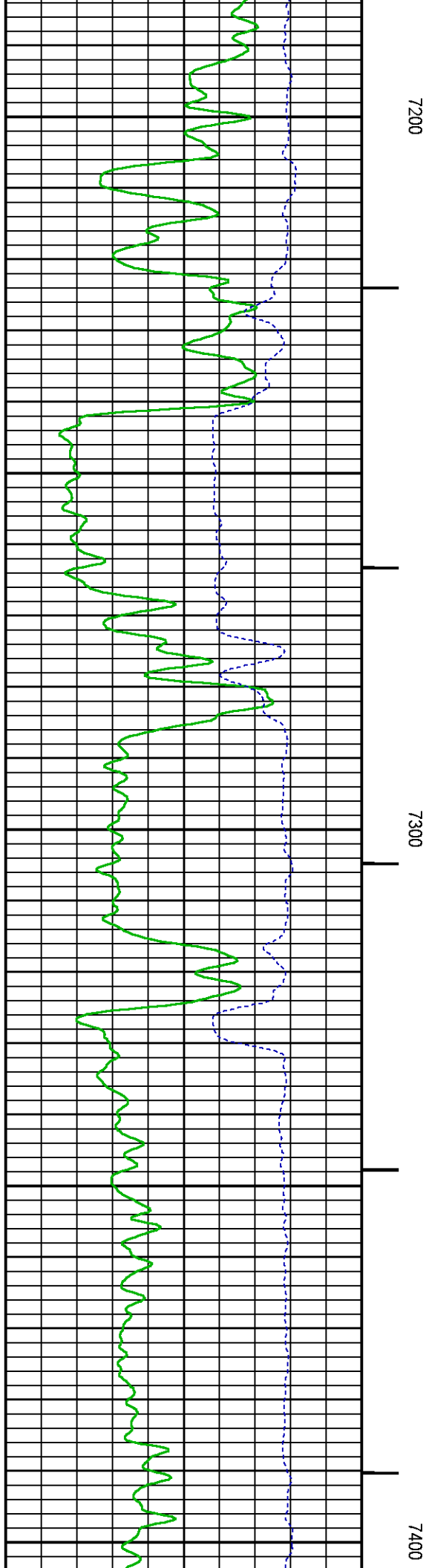
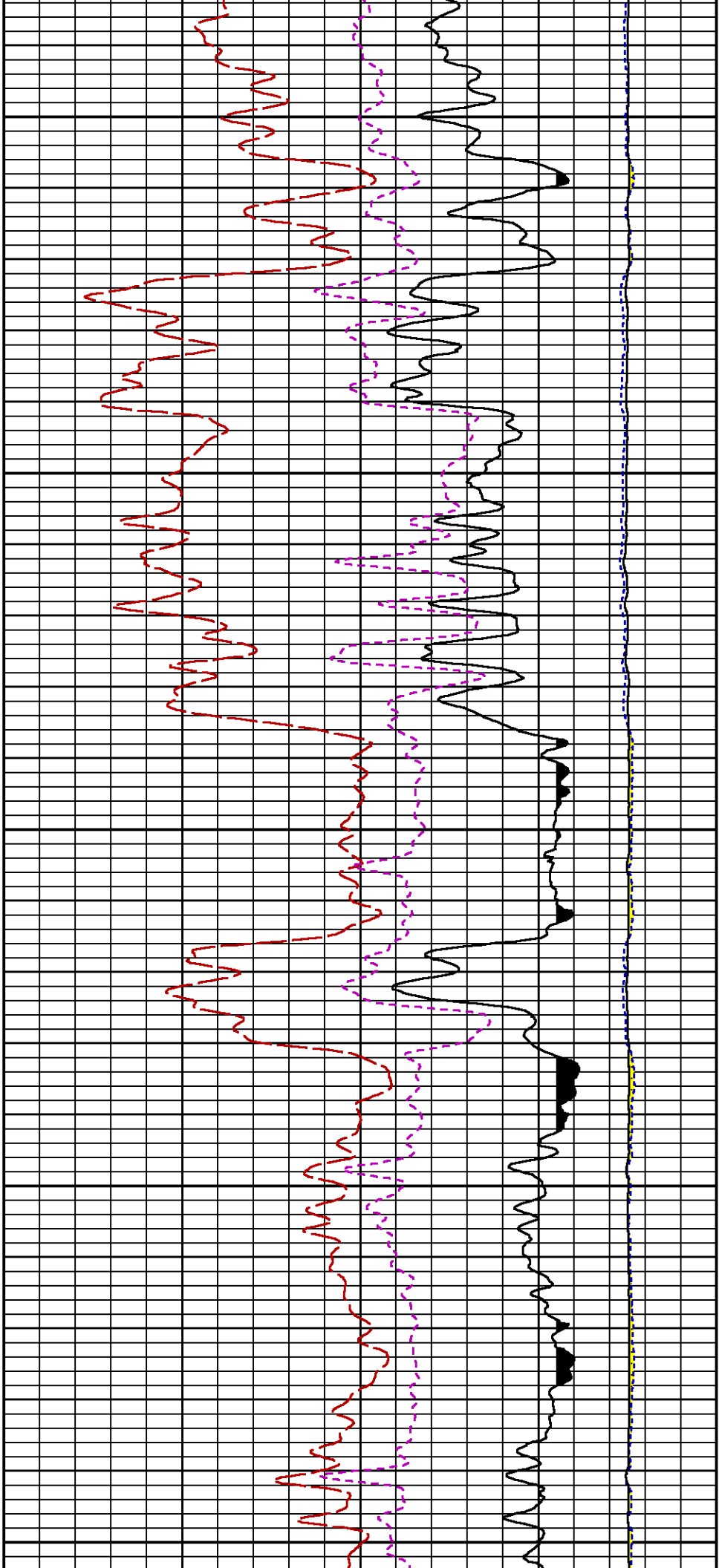


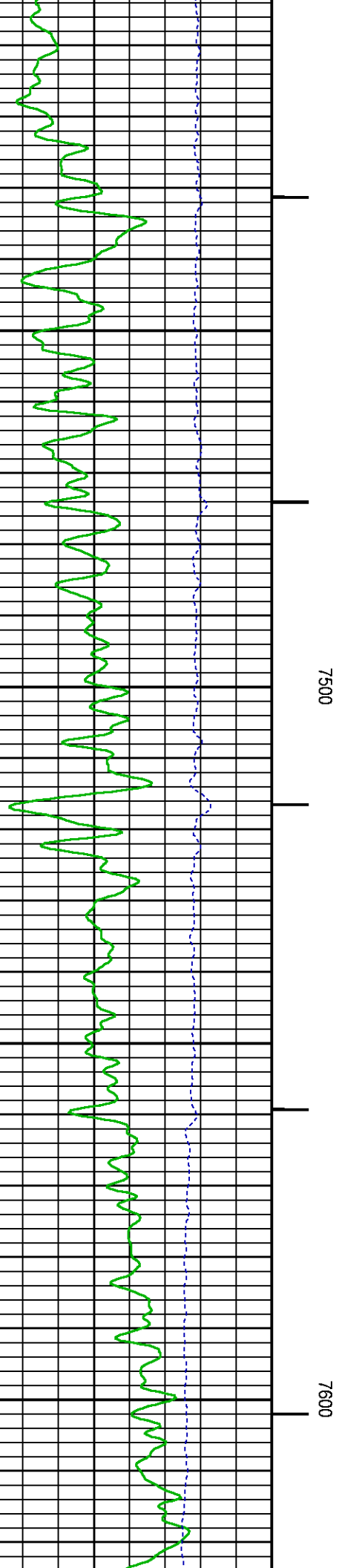
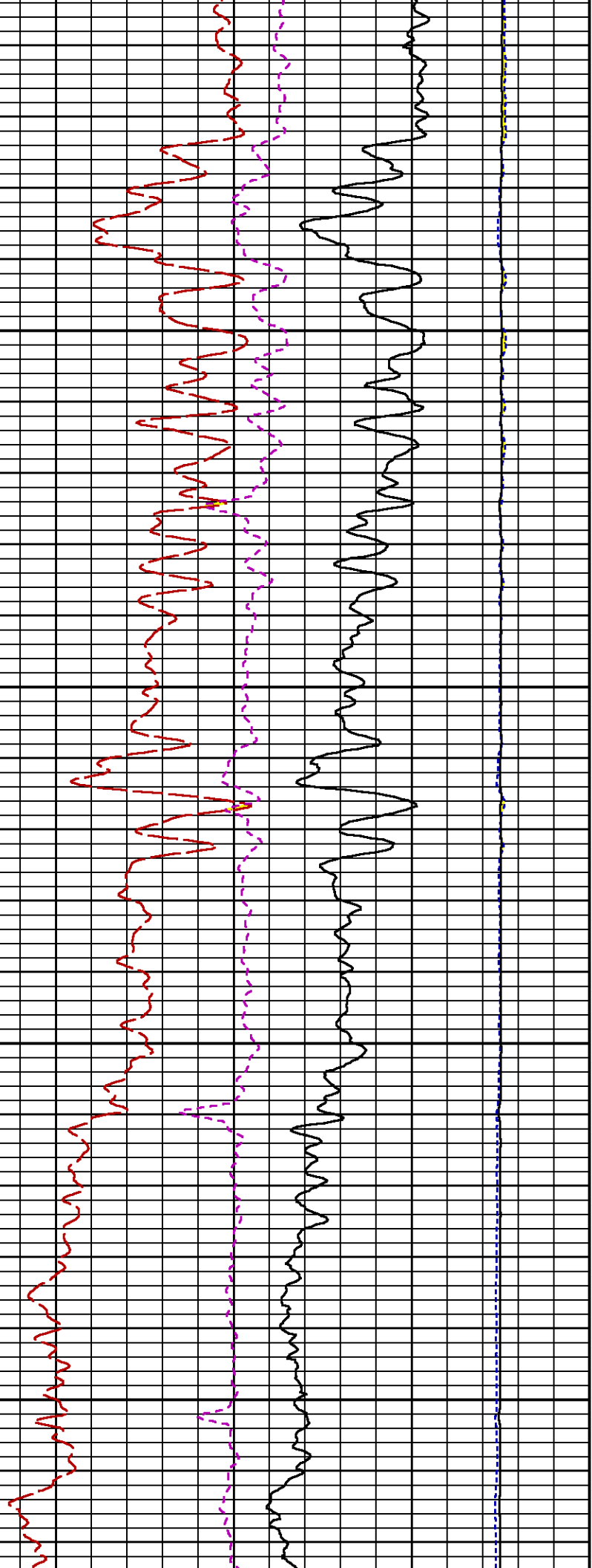


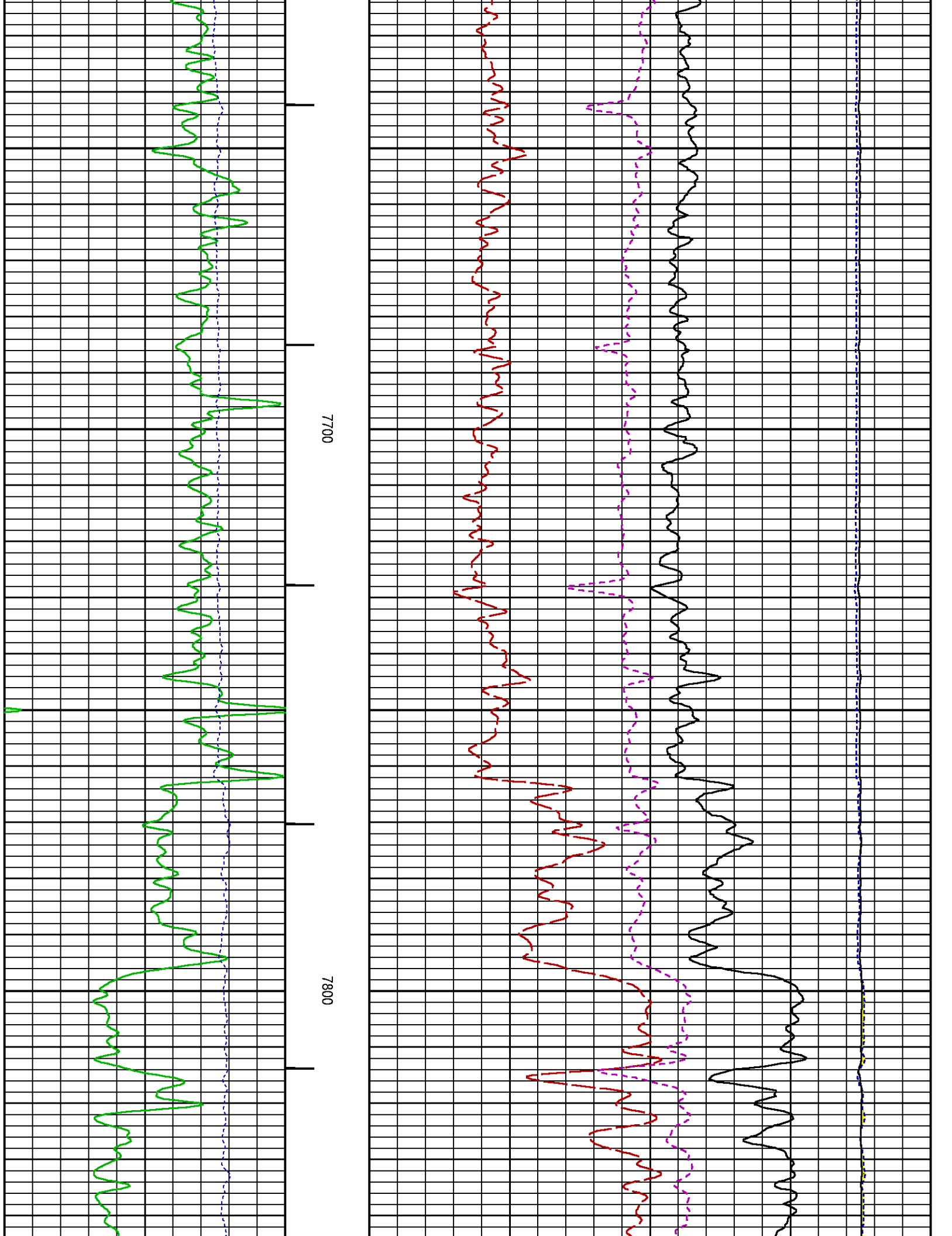
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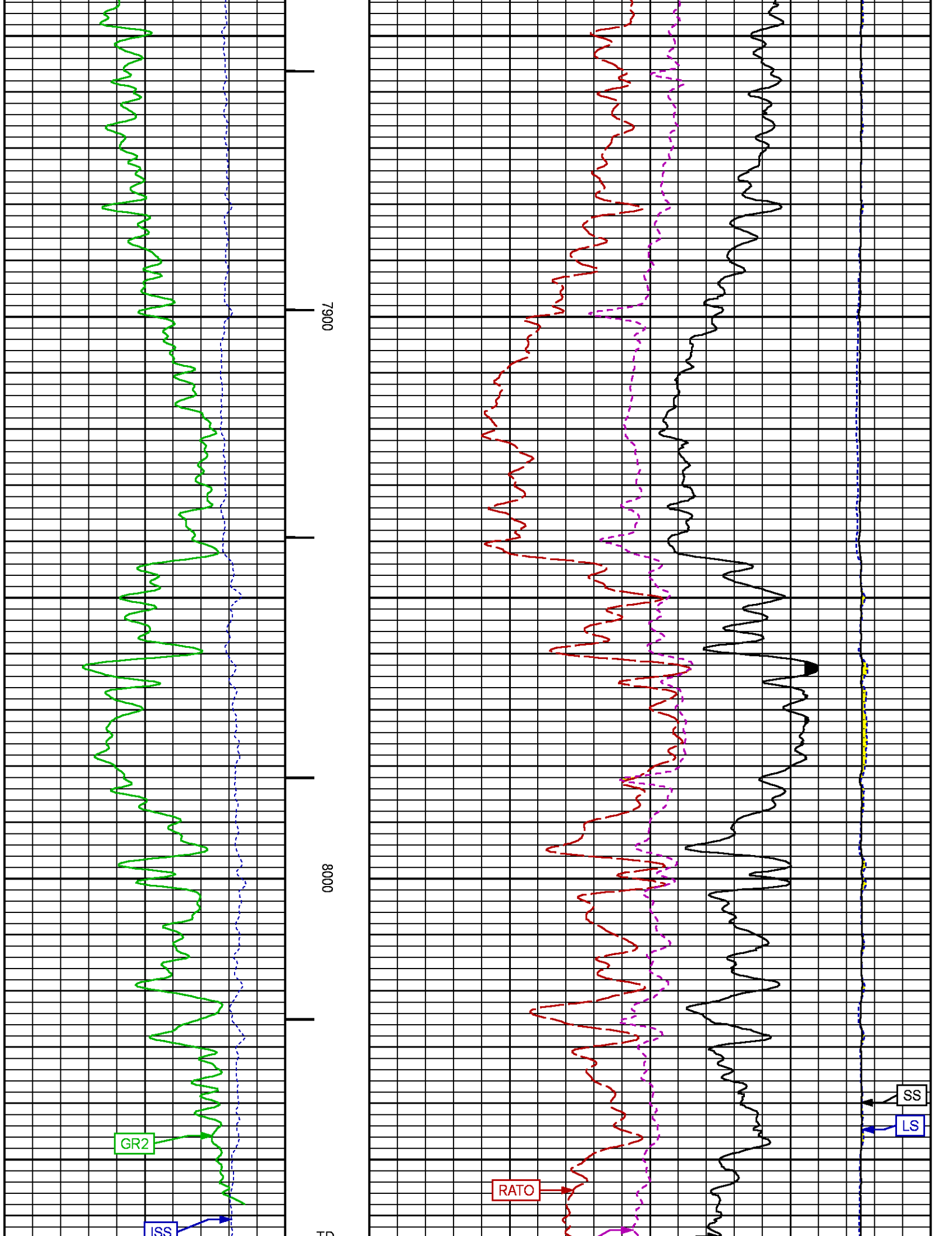
7100











FLUID	CASED HOLE	7.88	in	"	"
BOREHOLE CONTENTS	OPEN/CASED HOLE	7.88	in	"	"
BOREHOLE SIZE		4.50	in	"	"
LARGEST CASING OD				"	"
MATRIX	SANDSTONE			"	"

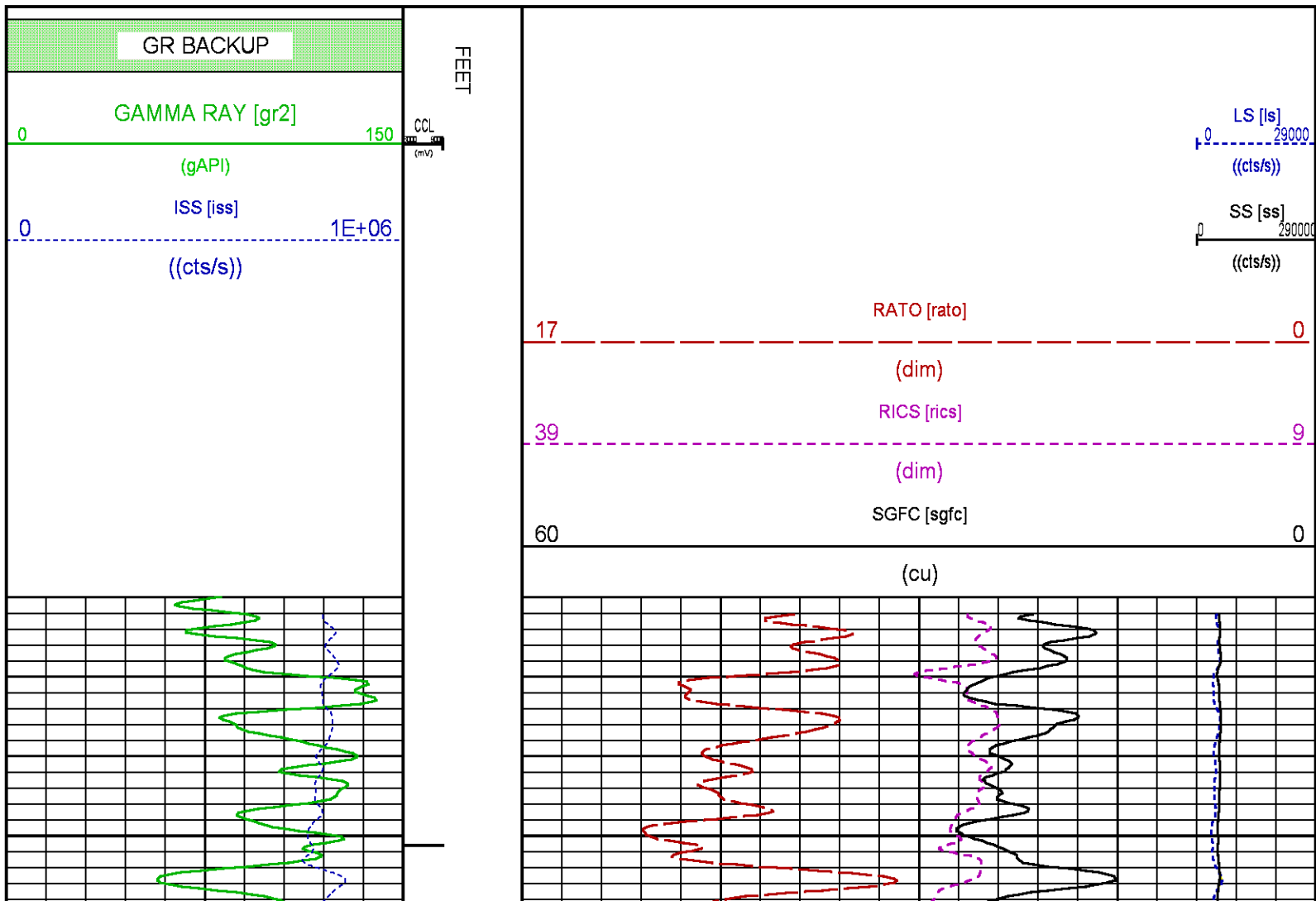
CURVE DESCRIPTION REPORT

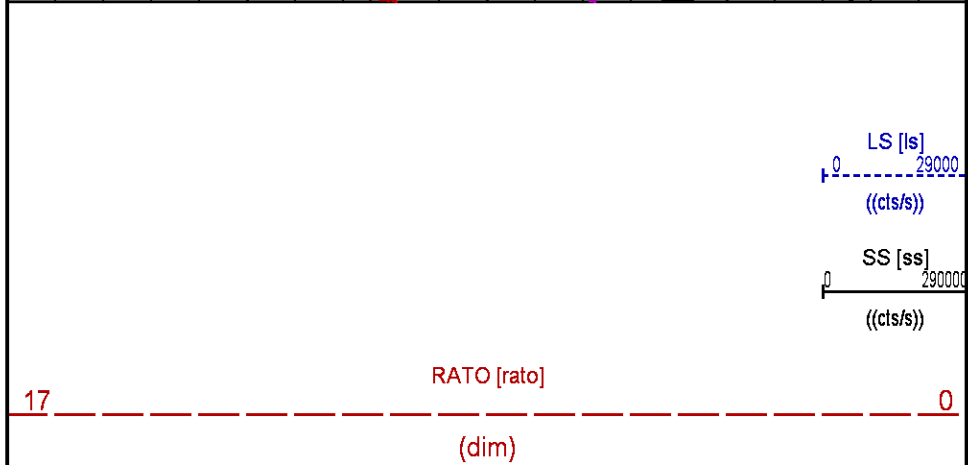
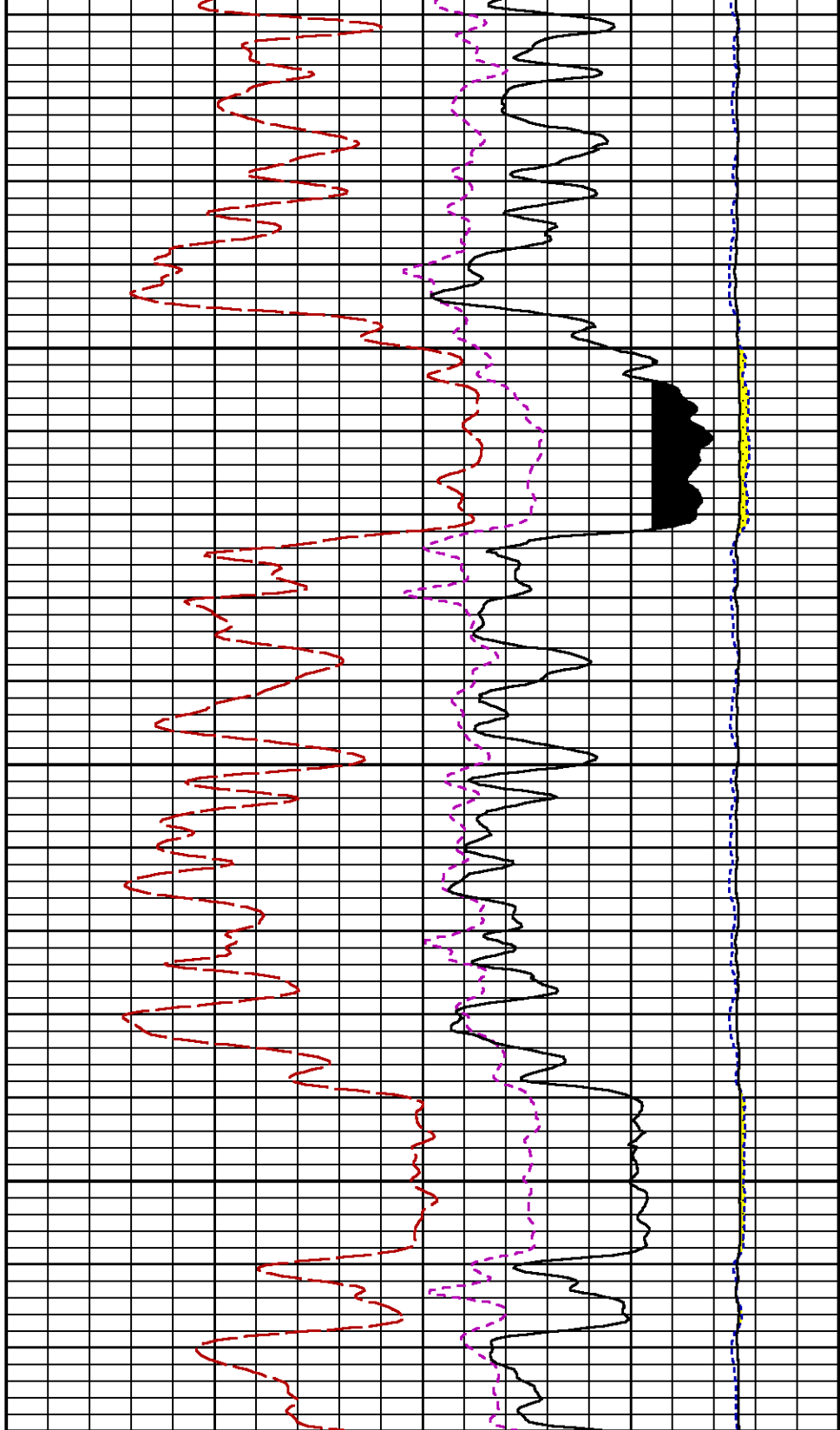
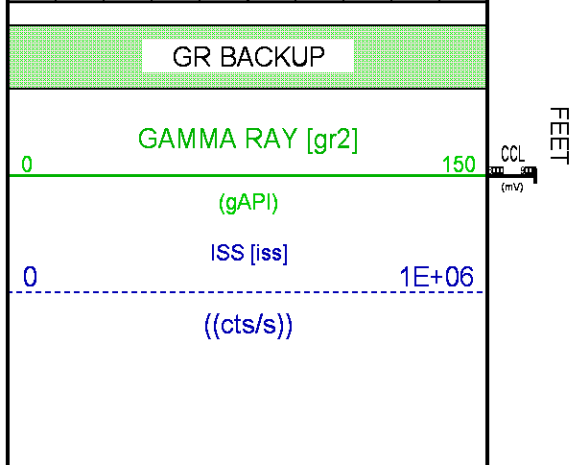
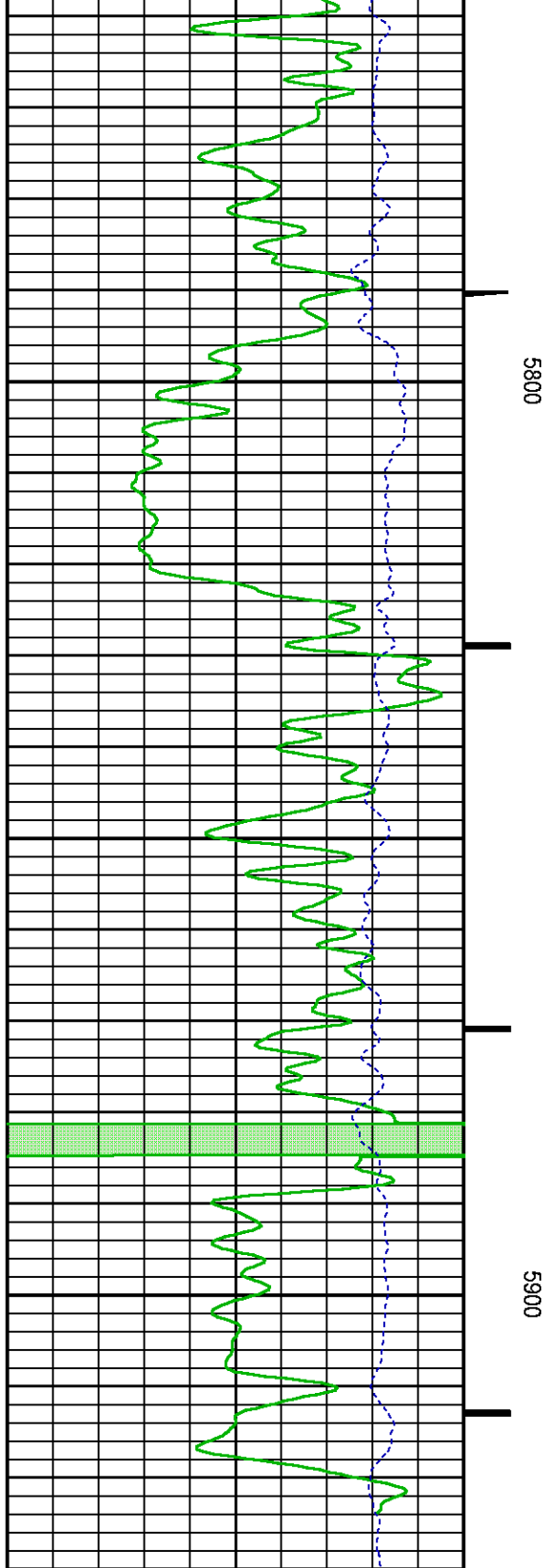
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	N/A	CASING COLLAR LOCATOR
F1:GR2	N/A	GAMMA RAY 2
F1:ISS	N/A	INELASTIC SHORT SPACE COUNT RATE
F1:LS	N/A	LONG SPACE COUNT RATE
F1:RATO	N/A	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	N/A	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	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
GR2	-19.25	LS	-9.50	RICS	-9.50	SS	-9.50

Presentation	: SysA:/dat1a/LARAMIE_GUNDERSON_0994-13-16W/16W_RPM_REPEAT.fvpdf [5"/100' Scale]
Plot Interval	: 5720 - 5930 Feet
Data File 1	: F1 : SysA:/dat1a/LARAMIE_GUNDERSON_0994-13-16W/16W_RPM_REPEAT.xtf
Created On	: N/A
Company	: LARAMIE ENERGY LLC
Well	: GUNDERSON 0994-13-16W
Field	: VEGA
File Interval	: 8.75 - 8068.5 Feet
OCT	: p354h





		RICS [rics]	9
		(dim)	
60		SGFC [sgfc]	0
		(cu)	

CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/LARAMIE_GUNDERSON_0994-13-16W/p354h.tp1

GR PRIMARY CALIBRATION SUMMARY

TOOL #:	2812LB 11621284	DATE/TIME PERFORMED:	Fri May 11 07:38:13 2018				
UNIT #:	3885TD SHAFT1	CALB JIG #:	4702NK BA-930				
	BACKGROUND	CALBRTR ON	CR DIFF	MULT	BACKGROUND	CALBRTR ON	CALBRTR
	(cts/s)	(cts/s)	(cts/s)		(gAPI)	(gAPI)	(gAPI)
GR	63.62	275.42	211.8	0.992	63.08	273.08	210

GR PRIMARY VERIFICATION SUMMARY

TOOL #:	2812LB 11621284		DATE/TIME PERFORMED:	Fri May 11 07:40:26 2018		
UNIT #:	3885TD SHAFT1		VERI JIG #:	4702NK BA-930		
	BACKGROUND	CALBRTR ON	MULT	BACKGROUND	CALBRTR ON	DIFF.
	(cts/s)	(cts/s)		(gAPI)	(gAPI)	(gAPI)
GR	58.89	276.18	0.992	58.39	273.83	215.44
						200.00 220.00

RPM_PNC_3D PRIMARY CALIBRATION SUMMARY

TOOL:

8283PA 10068031

DATE/TIME PERFORMED:

Mon May 7 23:51:27 2018

UNIT:

5753XD 111111

CALIBRATOR:

2437XB 112674

SOURCE:

8281AA 10047980

HOURS:

8281AA 63

ISS

Mtr VIts (V)

SS Gain

LS Gain

XLS Gain

EA Temp (degF)

Sync Delay (usec)

RCAL

Raw Data

802814

119

2217

2481

2198

114

8.0

1.0138

Interpolated

1300000

139

2201

2485

2184

ISS

BKS

BKL

BKX

SGA1

SDA1

SGA2

SDA2

Raw Data

802814

7129

1185

158

25.96

0.15

24.13

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

802814

174125

28683

86762

30909

8359

52608

13370

Fit Quality %

0.791

0.627

0.866

0.857

0.798

0.841

0.839

ISS

RBOR

RIN

RIN13

RICS

RATO

RTWO

RONE

Raw Data

802814

1.44

4.61

28.00

15.26

10.38

3.70

3.94

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 %

0.030

0.272

1.006

0.137

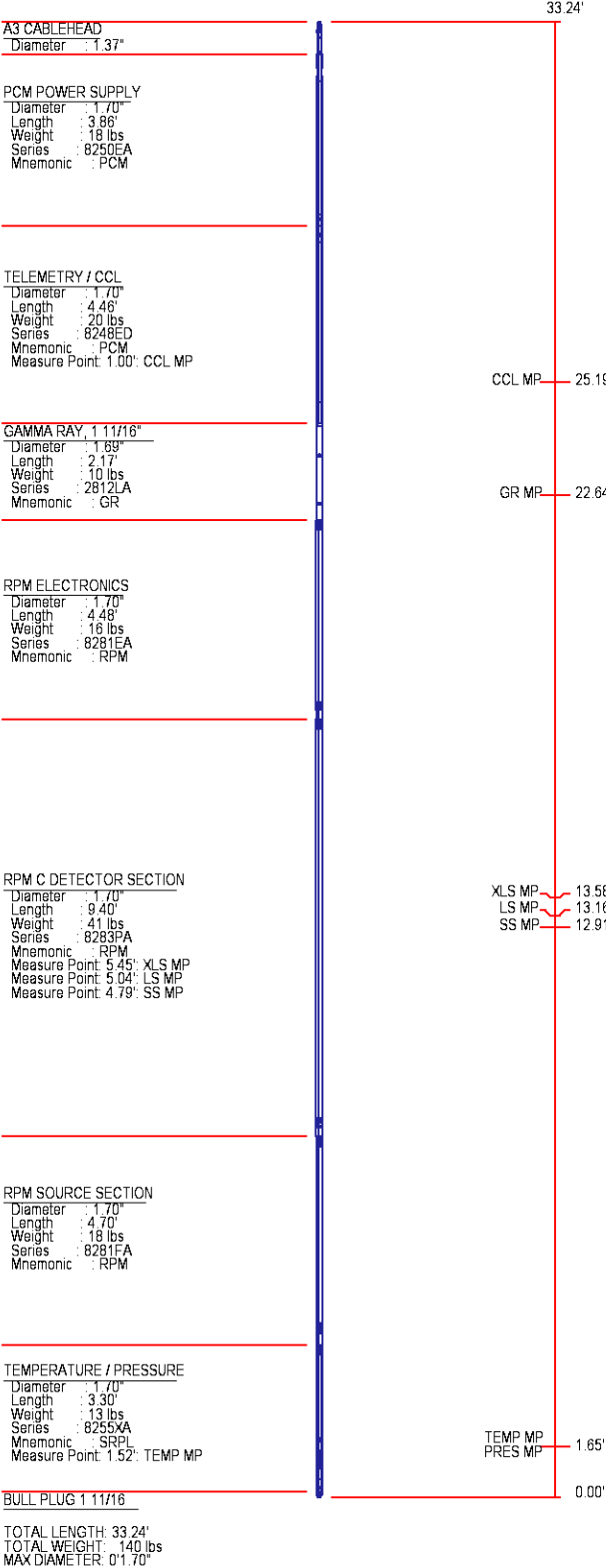
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INSTRUMENT CONFIGURATION

Source File: /dat1a/LARAMIE_GUNDERSON_0994-13-16W/RPM-tdg





COMPANY	LARAMIE ENERGY LLC		FILE NO:	CH136907			
WELL	GUNDERSON 0994-13-16W		API NO:	05077105360000			
FIELD	VEGA						
COUNTY	MESA	STATE	COLORADO				
LOCATION:		ELEVATIONS:					
SHL: 1397' FSL & 1623' FWL		KB 7302 FT					
BHL: 1397' FSL & 1623; FWL		DF					
		GL 7272 FT					
SEC	13	TWP	9S	RGE	94W	DATE	21-Jun-2018

