



FILE NO: CH136897	COMPANY <b>LARAMIE ENERGY LLC</b>
API NO: 05077105330000	WELL <b>GUNDERSON 0994-14-12E</b>
	FIELD <b>VEGA</b>
	COUNTY <b>MESA</b> STATE <b>COLORADO</b>

Ver. 4.10	LOCATION: LAT: 39.273858 N LONG: 107.834945 W SEC 14 TWP 9 S RGE 94 W	OTHER SERVICES RAL
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PERMANENT DATUM LOG MEASURED FROM DRILL. MEAS. FROM	GL KB KKB	ELEVATION 30 FT ABOVE P.D.	ELEVATIONS: KB 7302 FT DF GL 7272 FT
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DATE	RUN	TRIP	
	2	2	
SERVICE ORDER	US136897		
DEPTH DRILLER	8238 FT		
DEPTH LOGGER	8200 FT		
BOTTOM LOGGED INTERVAL	8200 FT		
TOP LOGGED INTERVAL	2535 FT		
TIME STARTED	14:00		
TIME FINISHED	19:30		
OPERATOR RIG TIME	5.5 HRS		
TYPE OF FLUID IN HOLE	WATER		
FLUID DENSITY	NA		
FLUID SALINITY	NA		
FLUID LEVEL	56 FT		
LOGGED CEMENT TOP	650 FT		
WELLHEAD PRESSURE	0 PSI		
MAXIMUM HOLE DEVIATION	NA		
NOMINAL LOGGING SPEED	15 FMIN		
MAX. RECORDED TEMP.	226 DEGF		
REFERENCE LOG	BAKER HUGHES RAL		
REFERENCE LOG DATE	14-Jun-2018		
EQUIP. NO.	LOCATION	M. BAUKA	
RECORDED BY		GRAND JCT.	
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 2: \*2 OPERATIONS IN WELLBORE\*

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

LOGGED WITH 0 PSI ON WELLHEAD

SJ: 6458' - 6478'  
SJ: 7672' - 7692'

### EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
2	2	PCM	8250EA	11908682	FREE
2	2	TEL/CCL	8248ED	10460262	FREE
2	2	GR	2812LA	10384613	FREE
2	2	RPM	8281EA	10294755	FREE
2	2	RPM	8283PA	10066691	FREE
2	2	RPM	8281FA	10066992	FREE
2	2	TEMP	8255XA	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: Fri Jun 15 20:38:26 2018

## PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE\_GUNDERSON\_0994-14-12E/p354h03.prm  
LOGGING MODE: DEPTH DIRECTION: UP  
TOP DEPTH: 2506.000 ft BOTTOM DEPTH: 3207.580 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	7.87	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

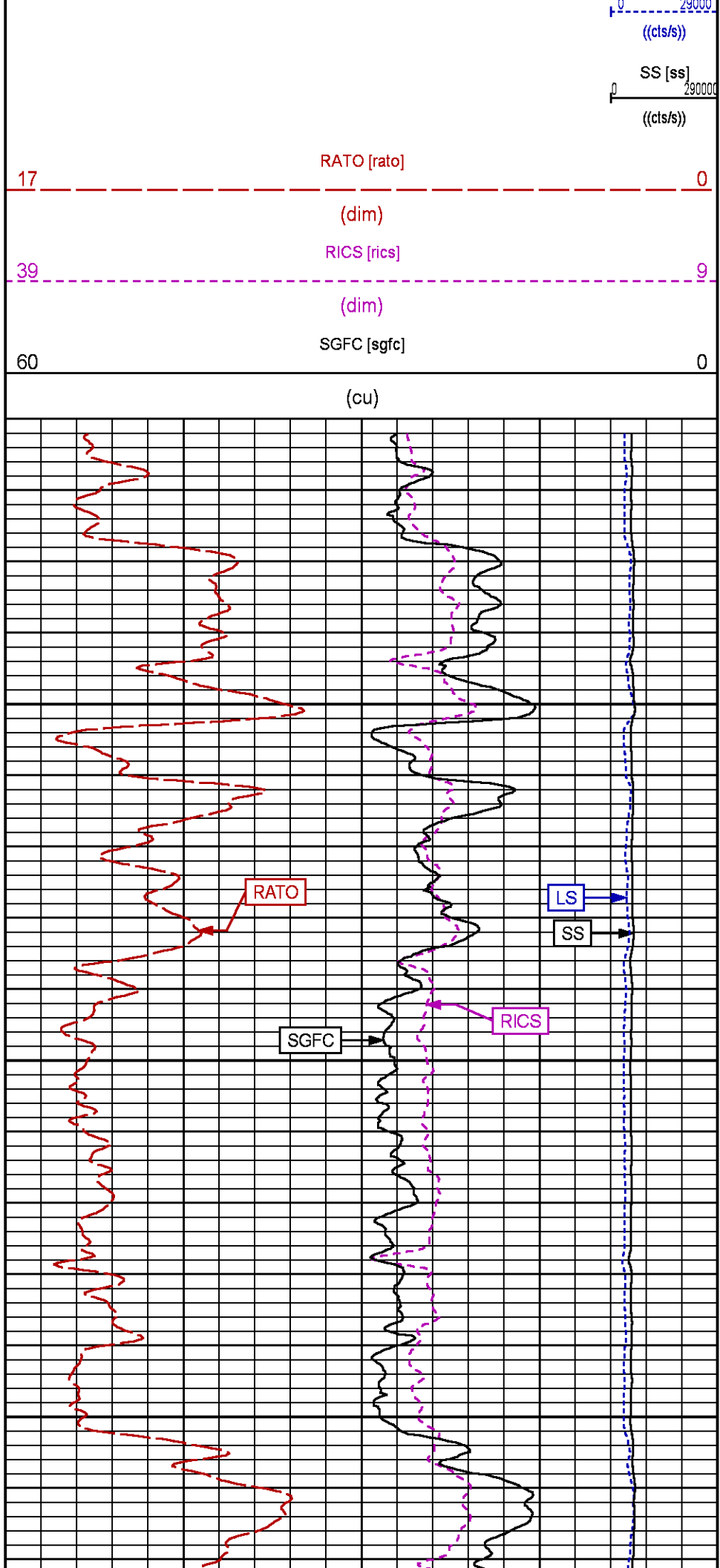
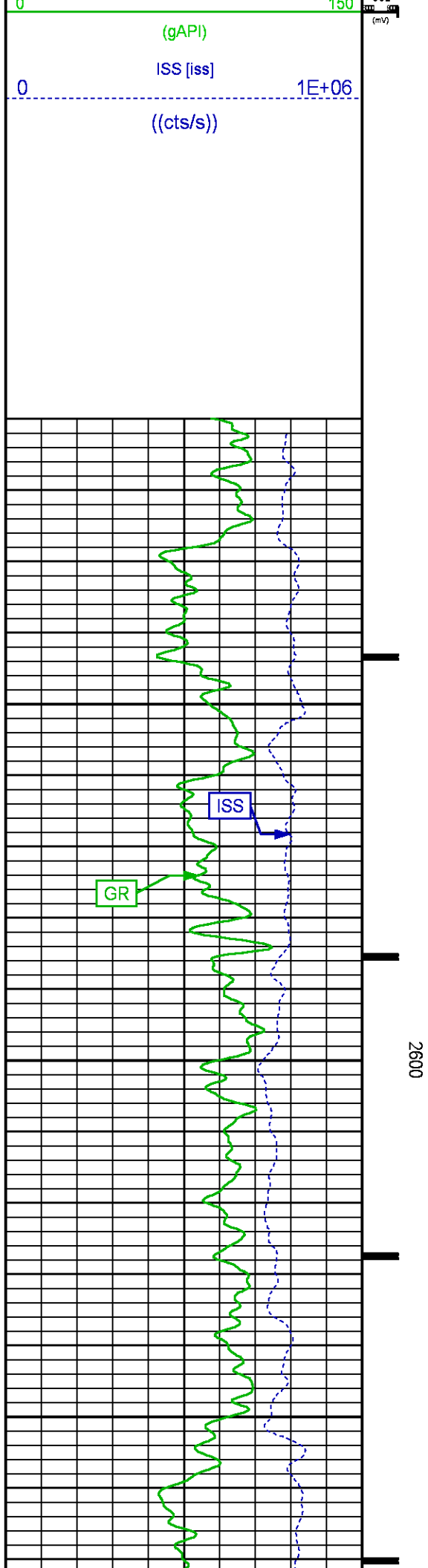
## CURVE MEASURE POINT OFFSET

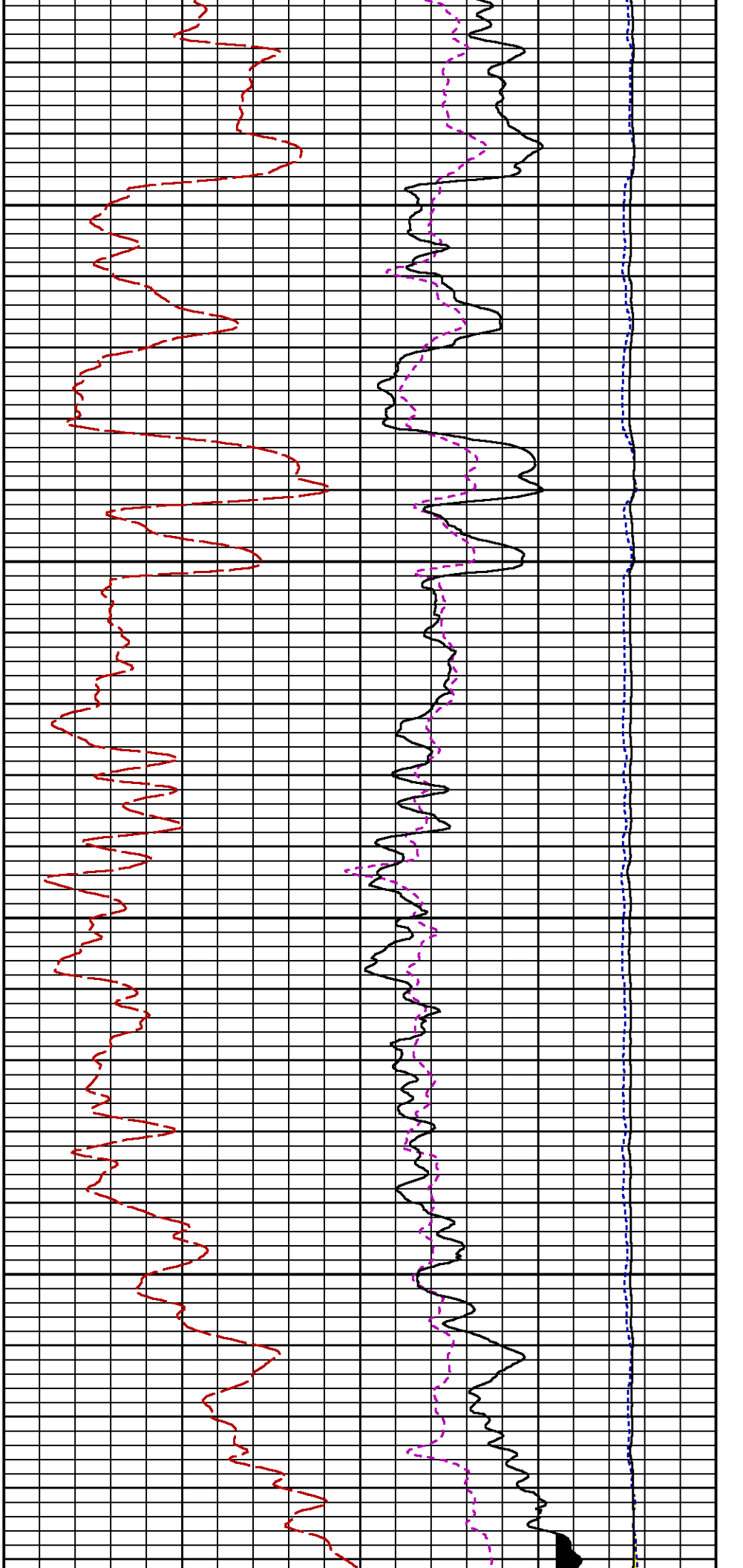
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	-25.00	ISS	-12.75	RATO	-12.75	SGFC	-12.75
GR	-22.75	LS	-12.75	RICS	-12.75	SS	-12.75

Presentation : SysA:/dat1a/LARAMIE\_GUNDERSON\_0994-14-12E/0994-14-12E\_RPM\_MAIN\_GS.fvpdf [5"/100' Scale]  
Plot Interval : 2510 - 3210 Feet

Data File 1 : F1 : SysA:/dat1a/LARAMIE\_GUNDERSON\_0994-14-12E/0994-14-12E\_RPM\_MAIN\_GS.xtf  
Created On : N/A  
Company : LARAMIE ENERGY LLC  
Well : GUNDERSON 0994-014-12E  
Field : VEGA  
File Interval : 2486.5 - 3210.25 Feet  
OCT : p354h

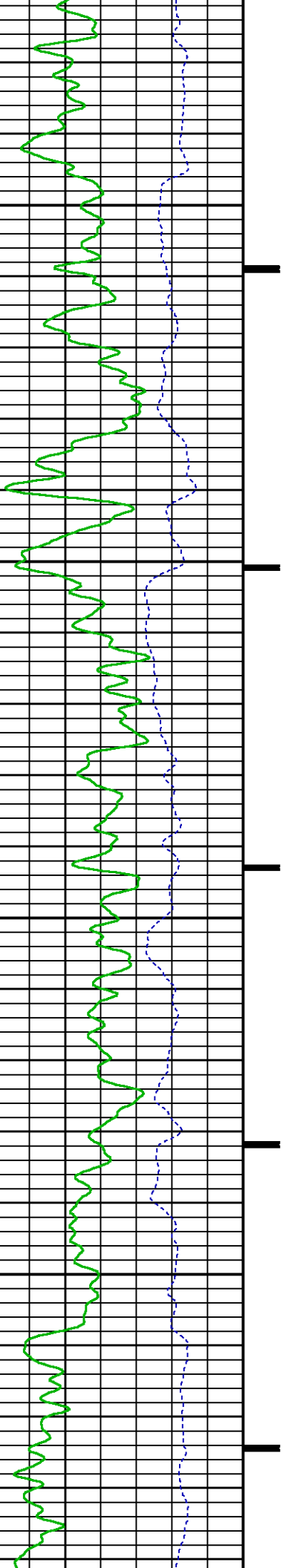
GR BACKUP	FEET	
GAMMA RAY [gr]		LS [ls]

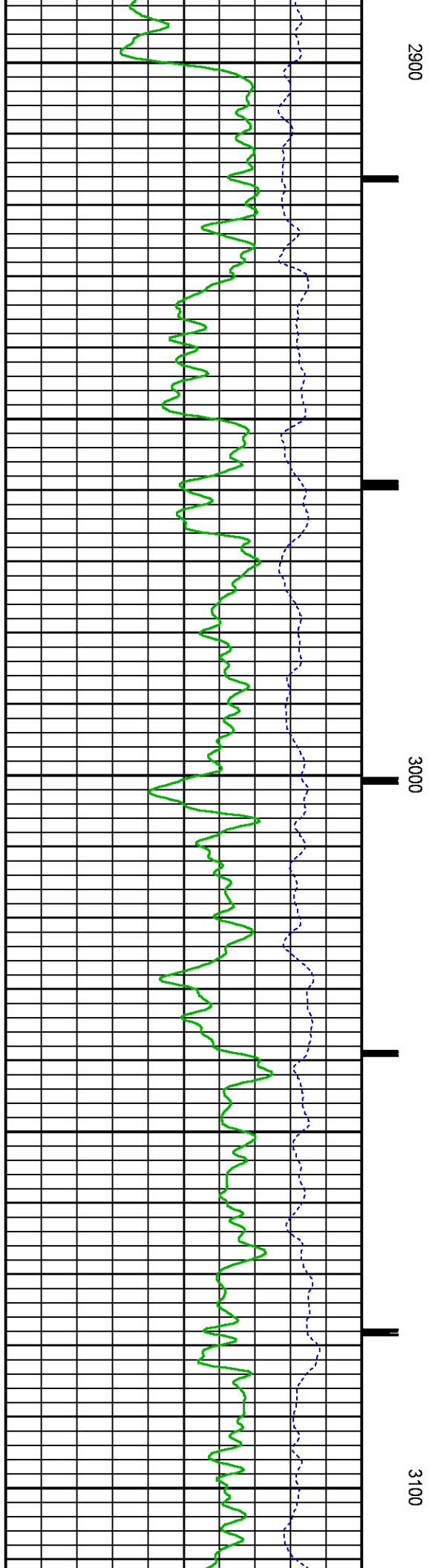
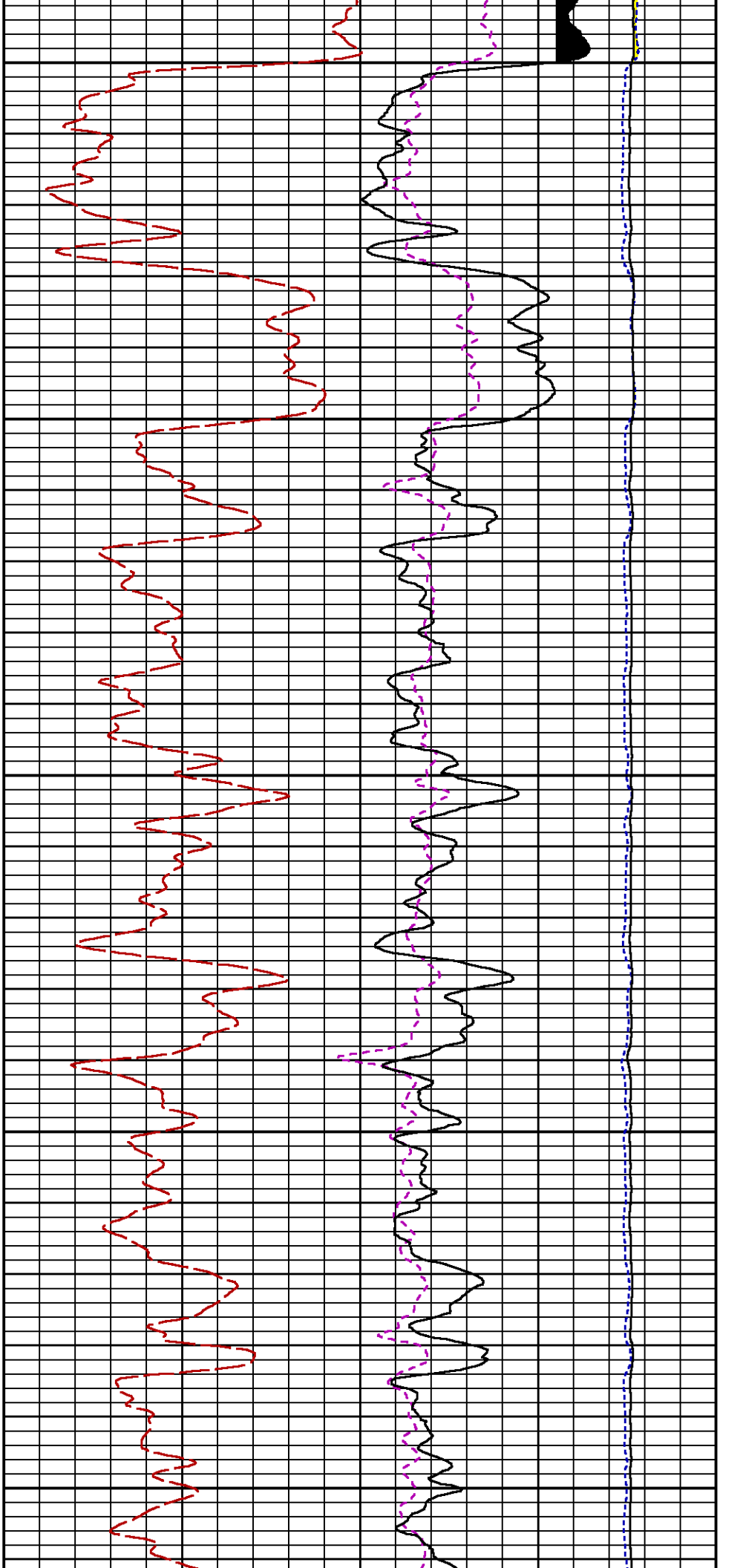


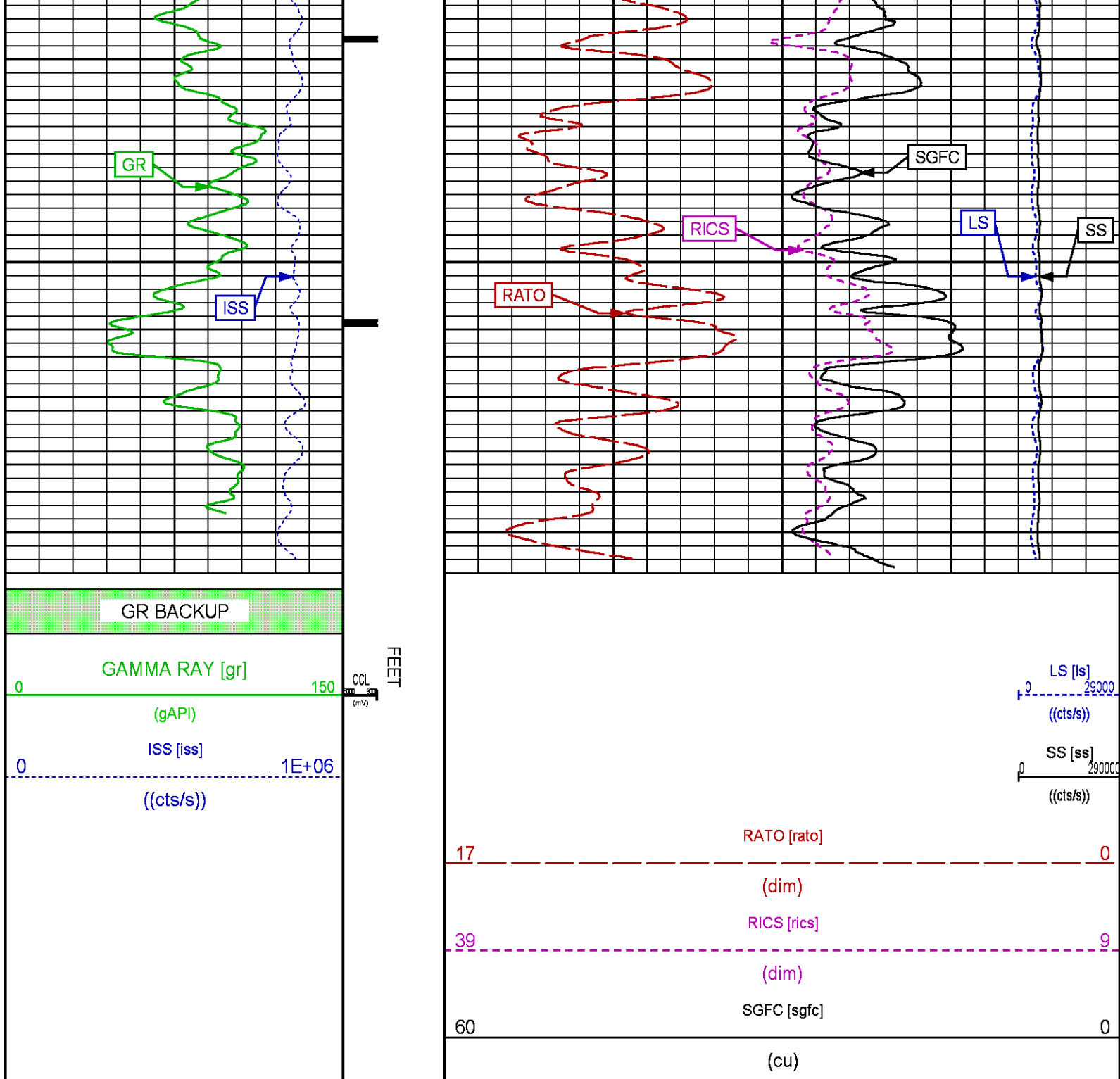


2700

2800







## 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: Fri Jun 15 19:43:21 2018

## PARAMETER AND FILTER SUMMARY REPORT

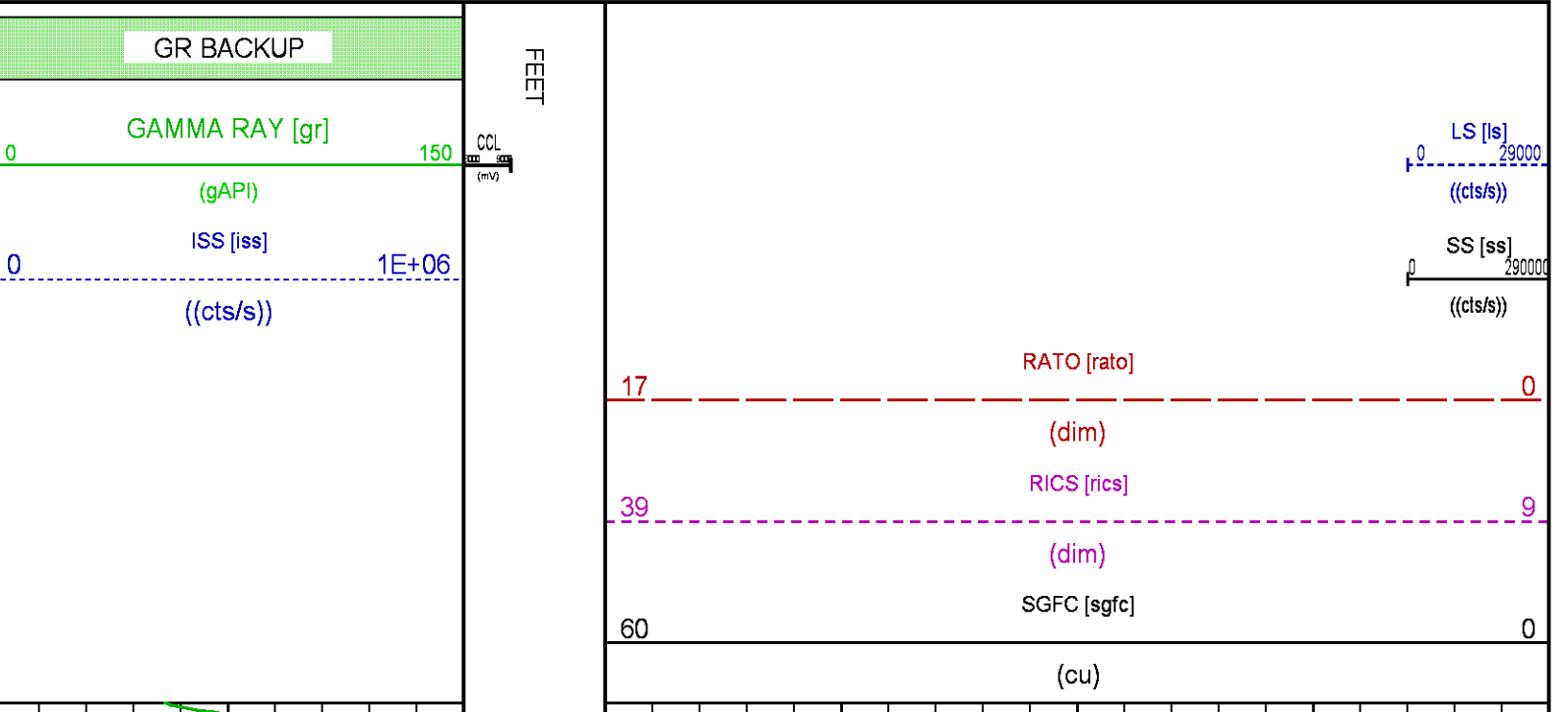
SYMMETRIC FILTER				
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
GR	FILTER ( )	medium (1)		TOP BOTTOM

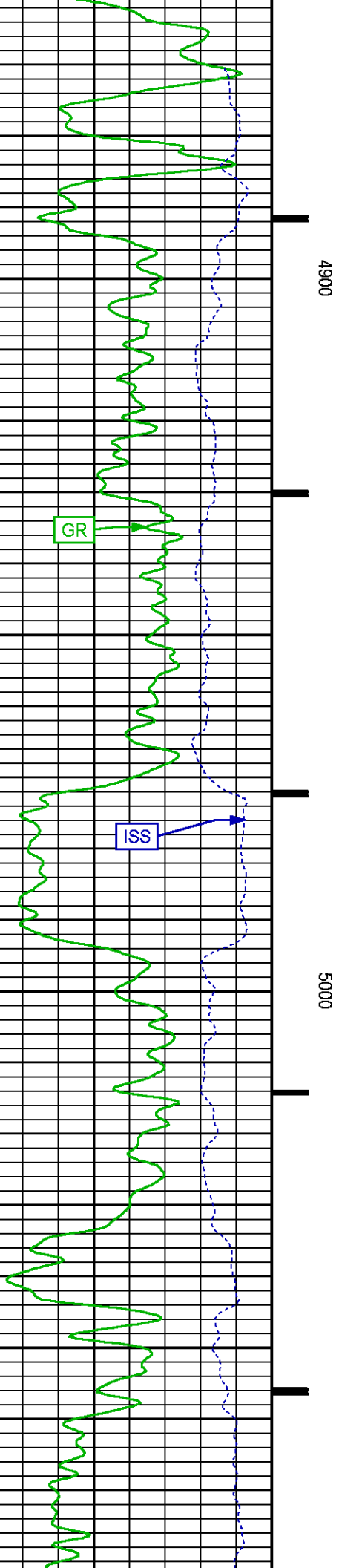
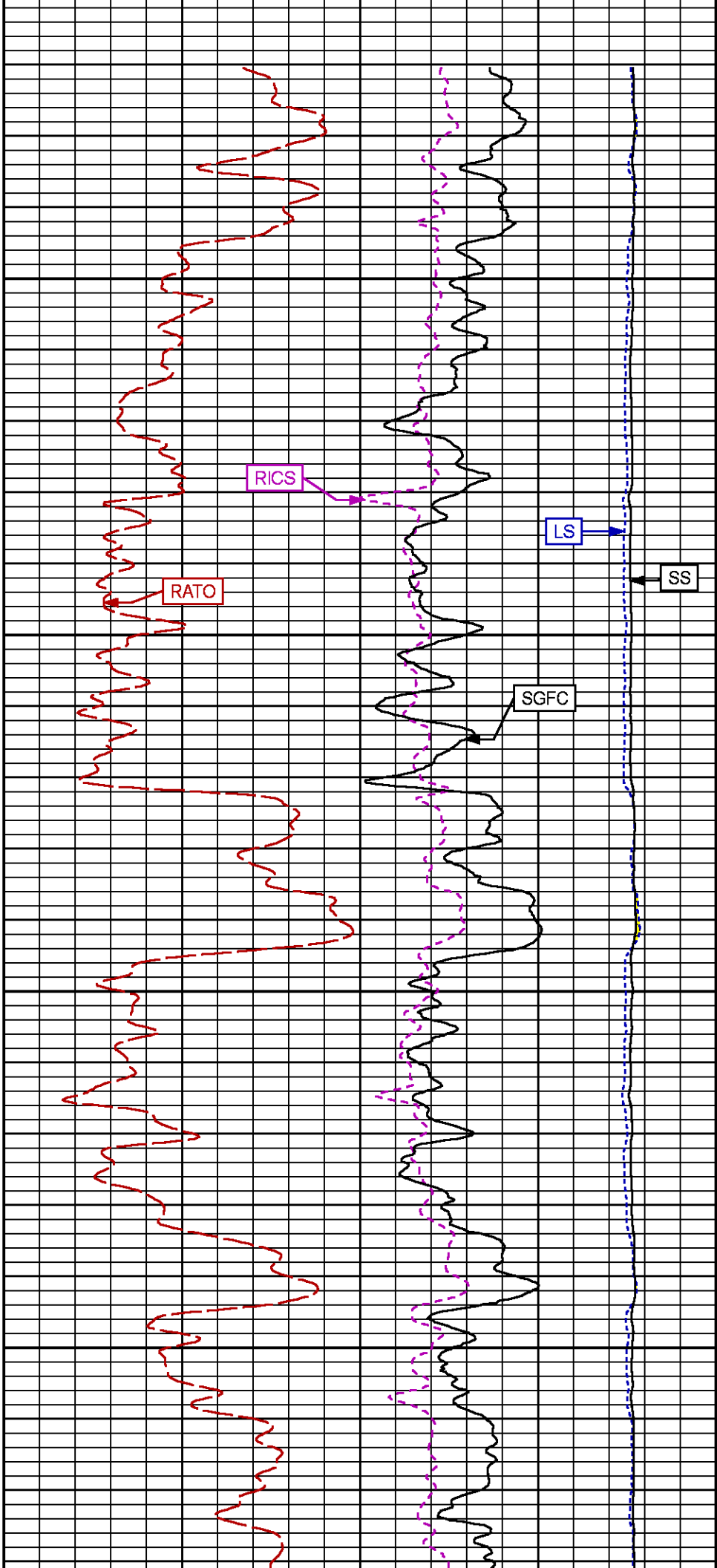
RPM PROCESSING				
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
PNC Parameters	BOREHOLE CONTENTS	FLUID		TOP
	OPEN/CASED HOLE	CASED HOLE		"
	BOREHOLE SIZE	7.87	in	"
	LARGEST CASING OD	4.50	in	"
	MATRIX	SANDSTONE		"

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

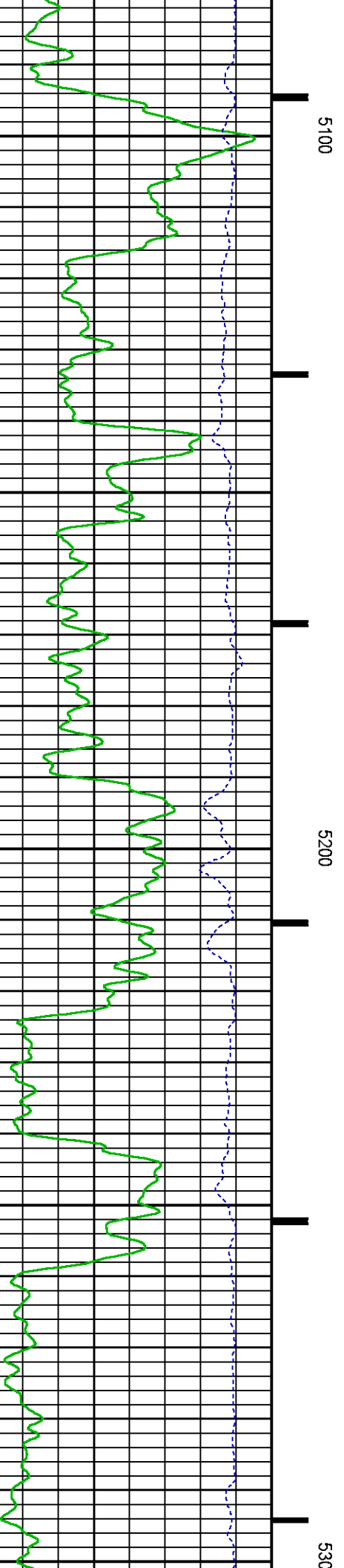
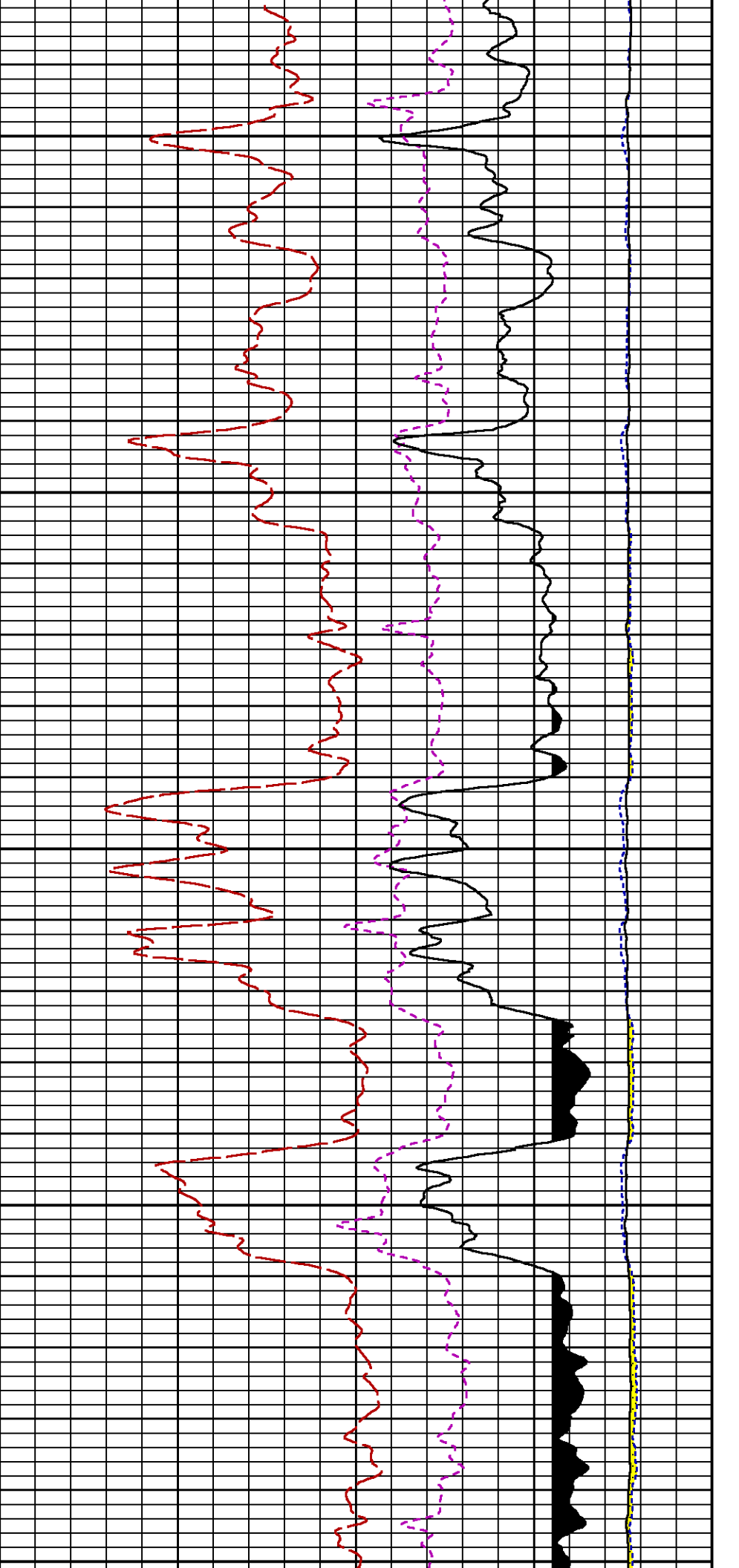
CURVE MEASURE POINT OFFSET								
CURVE		OFFSET (ft)	CURVE		OFFSET (ft)	CURVE		OFFSET (ft)
CCL		-25.00	ISS		-12.75	RATO		-12.75
GR		-22.75	LS		-12.75	RICS		-12.75
						SGFC		-12.75
						SS		-12.75

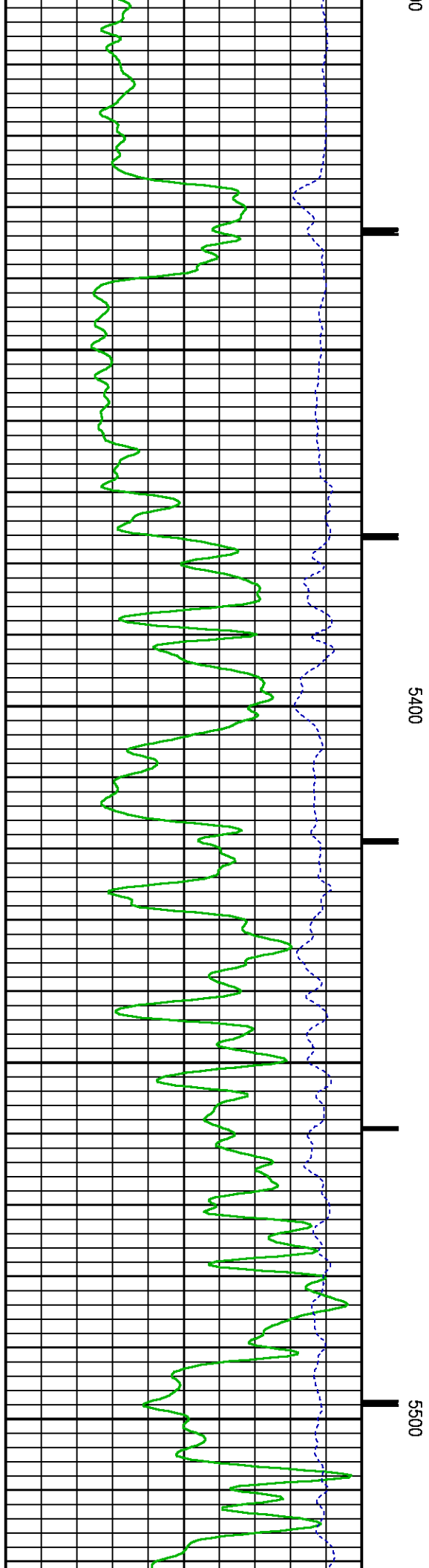
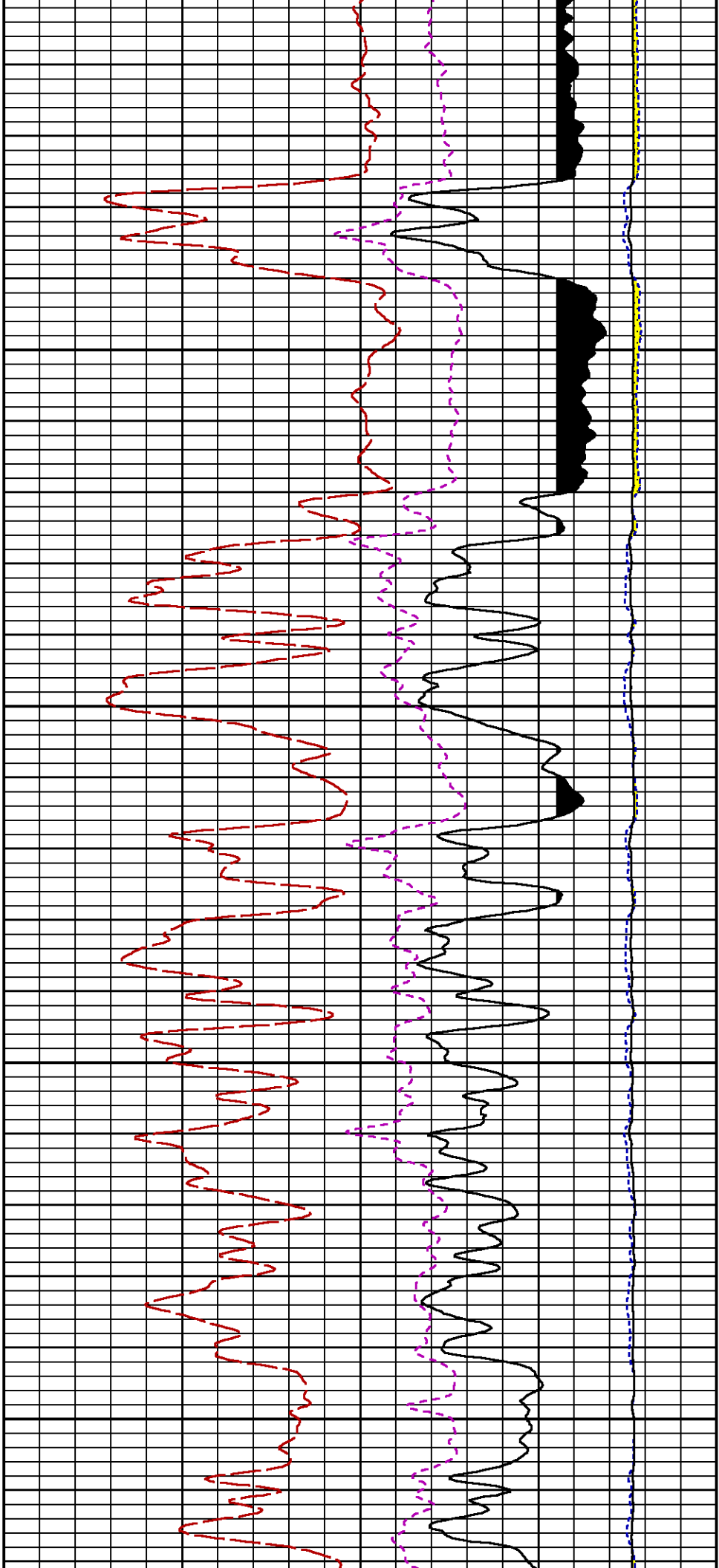
Presentation	: SysA:/dat1a/LARAMIE_GUNDERSON_0994-14-12E/0994-14-12E_RPM_MAIN_WF.fvpdf [5"/100' Scale]
Plot Interval	: 4860 - 8220 Feet
Data File 1	: F1 : SysA:/dat1a/LARAMIE_GUNDERSON_0994-14-12E/0994-14-12E_RPM_MAIN_WF.xtf
Created On	: N/A
Company	: LARAMIE ENERGY LLC
Well	: GUNDERSON 0994-014-12E
Field	: VEGA
File Interval	: 4844.75 - 8211.5 Feet
OCT	: p354h

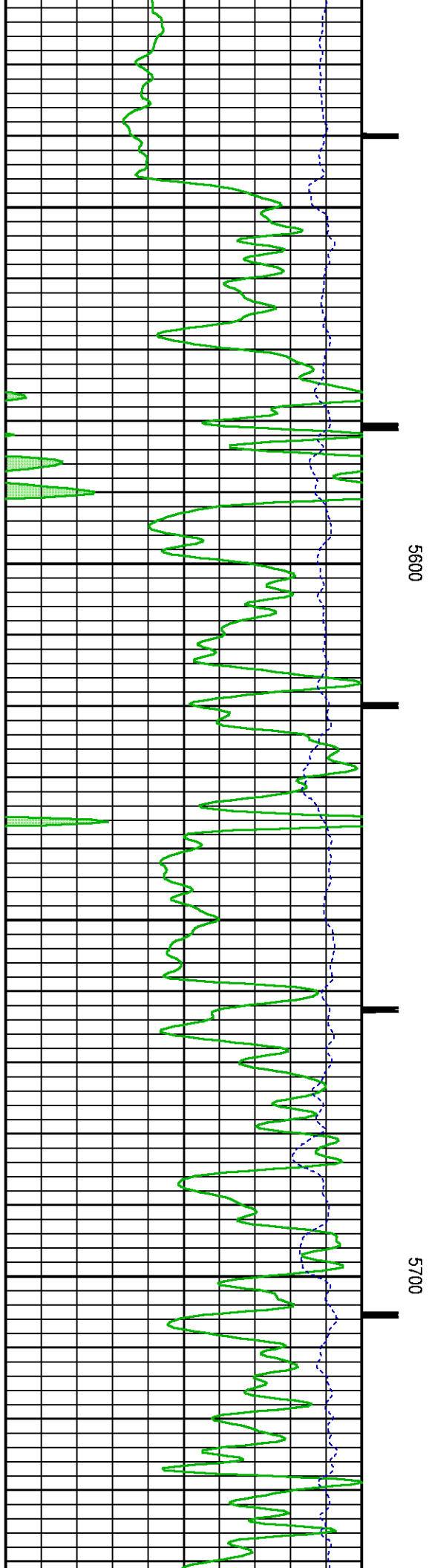
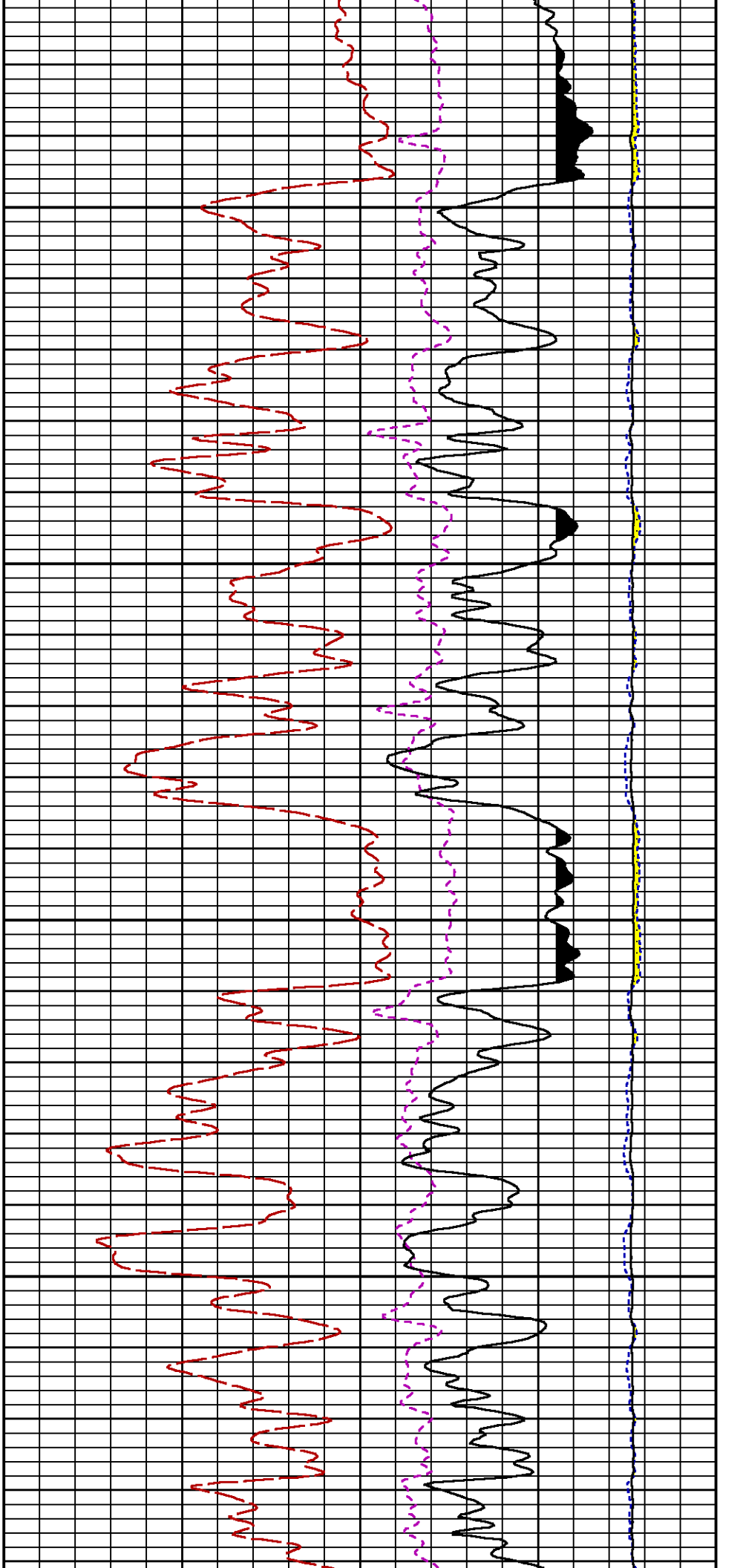


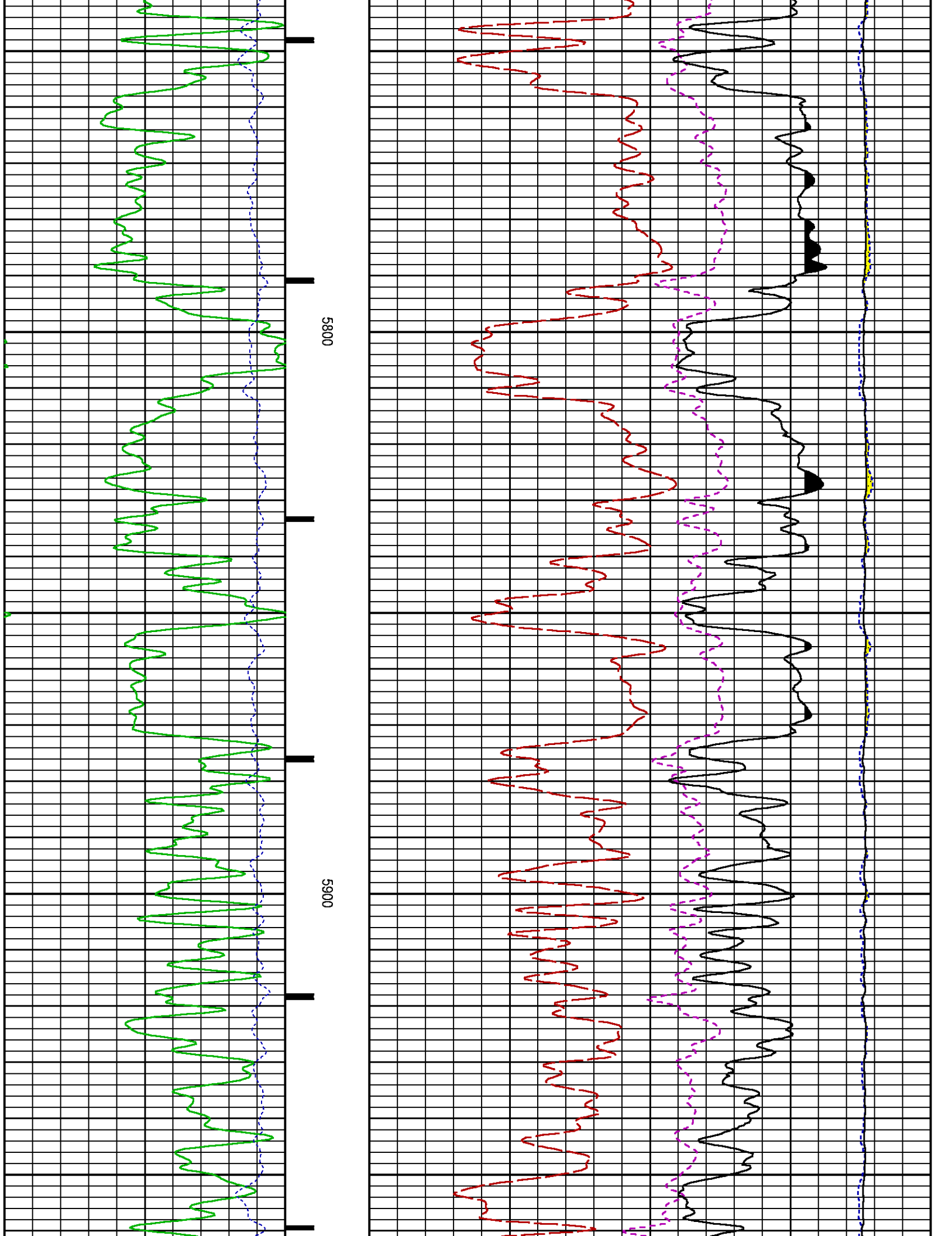


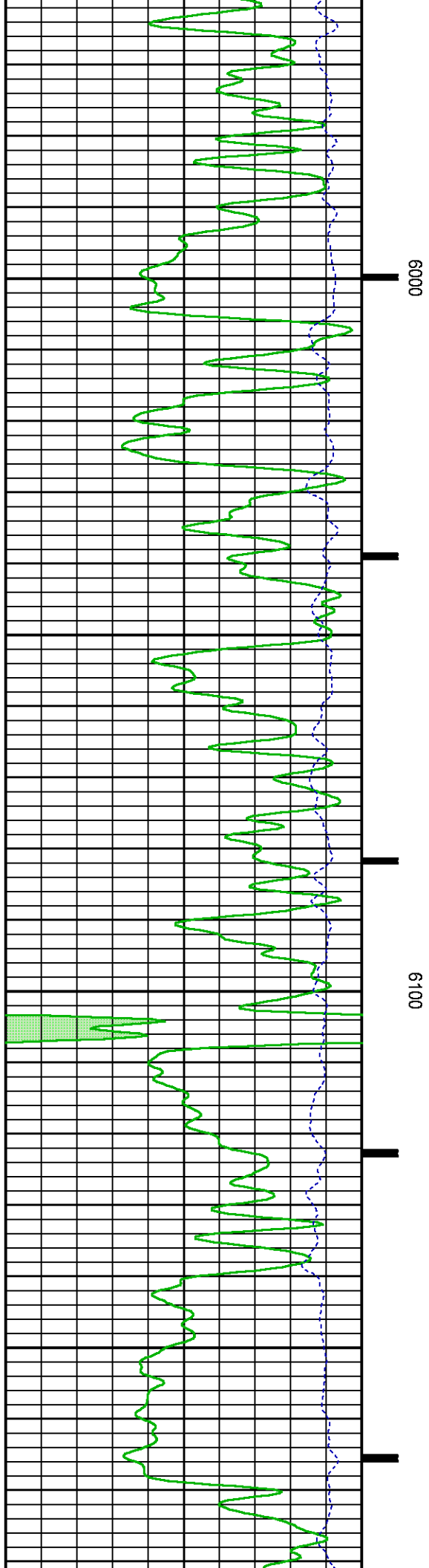
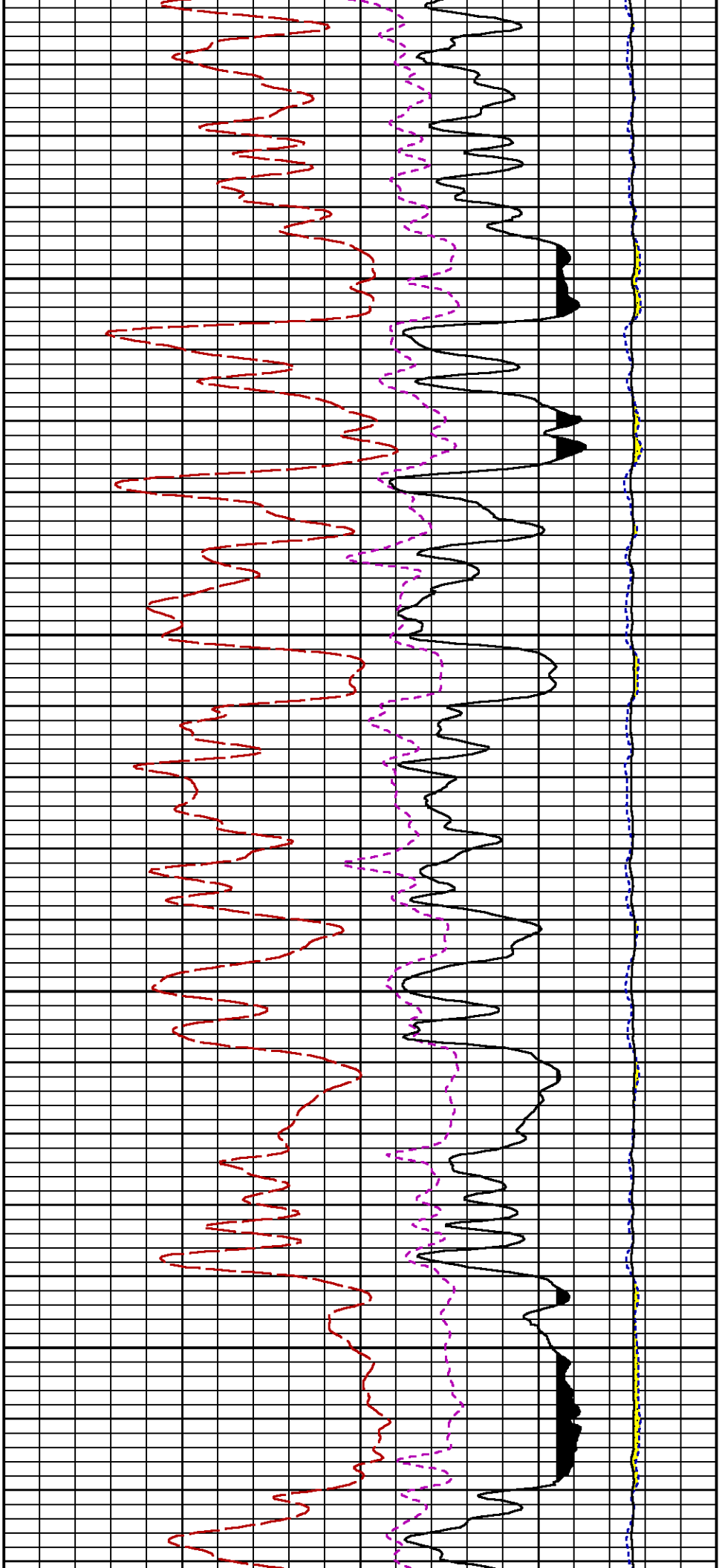


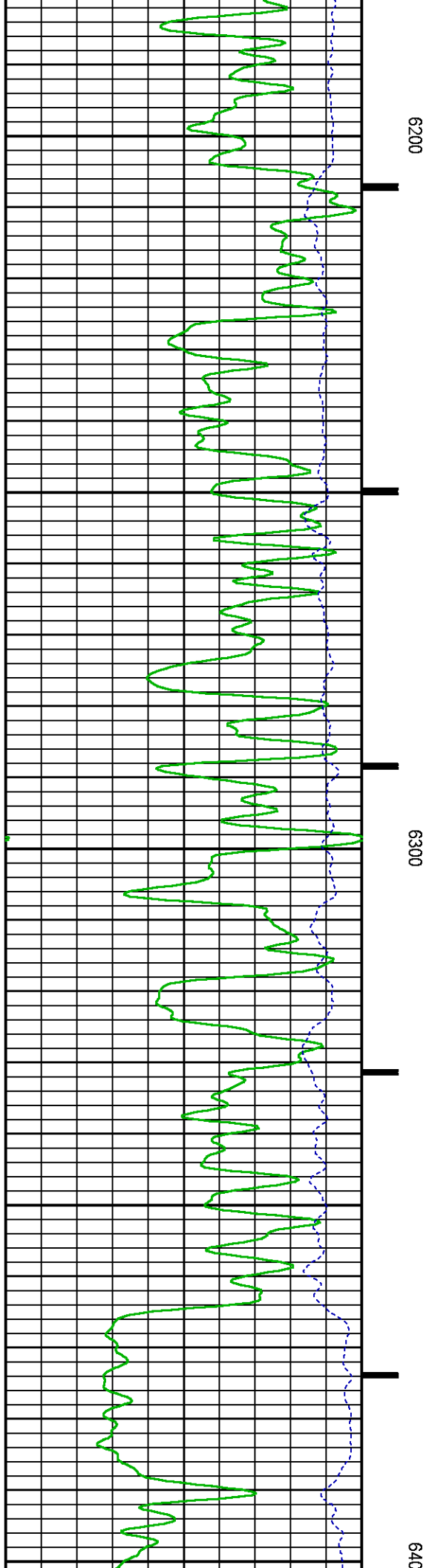
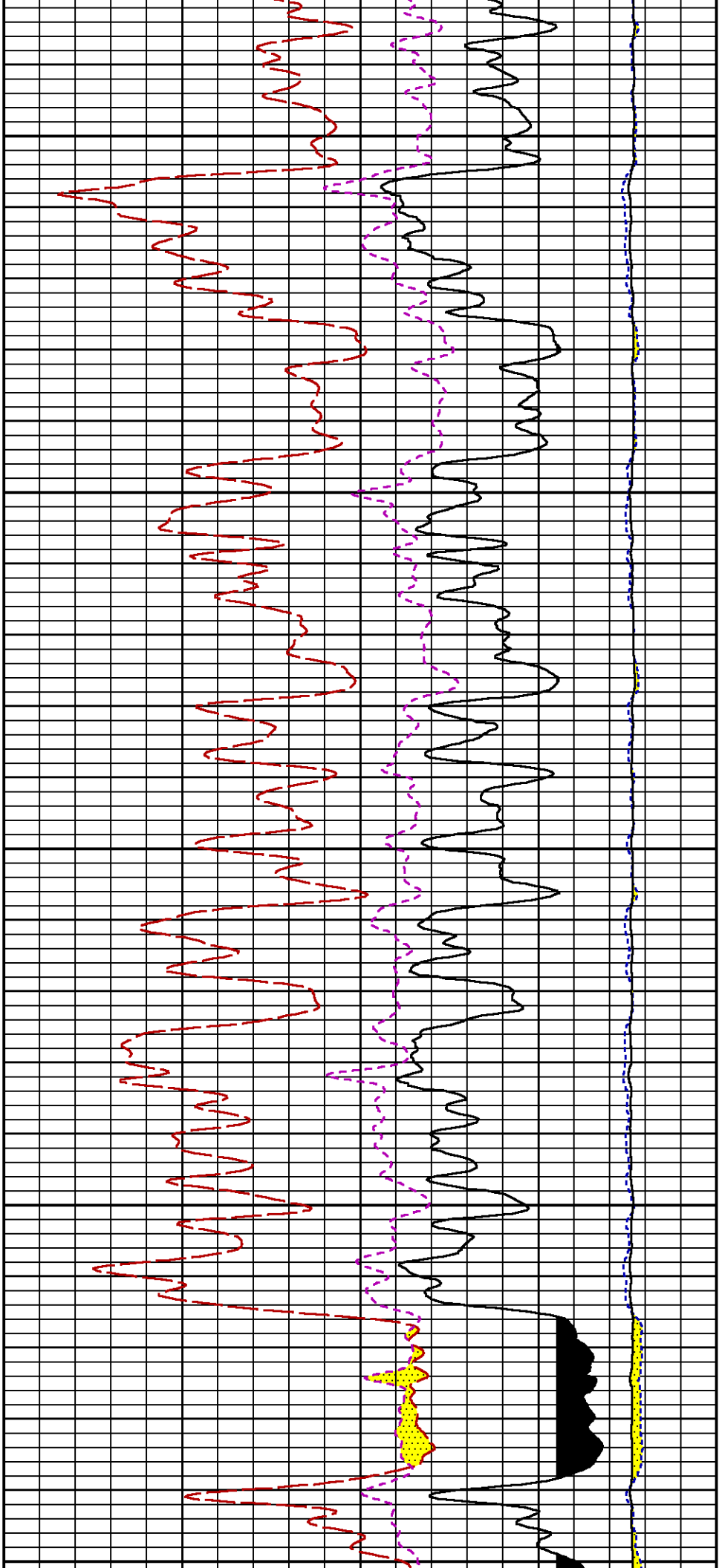


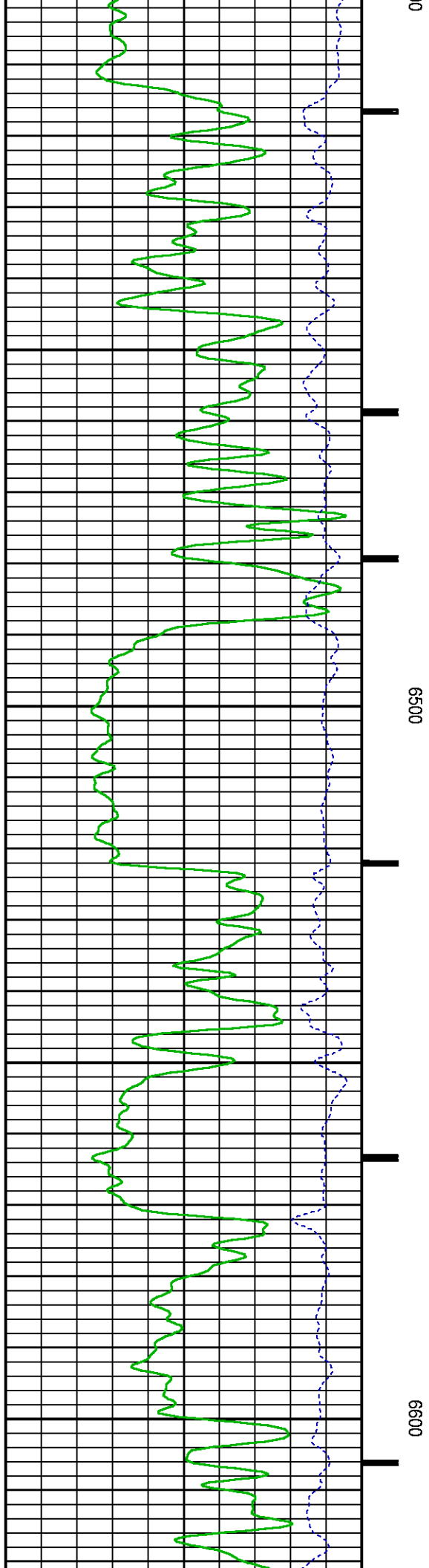
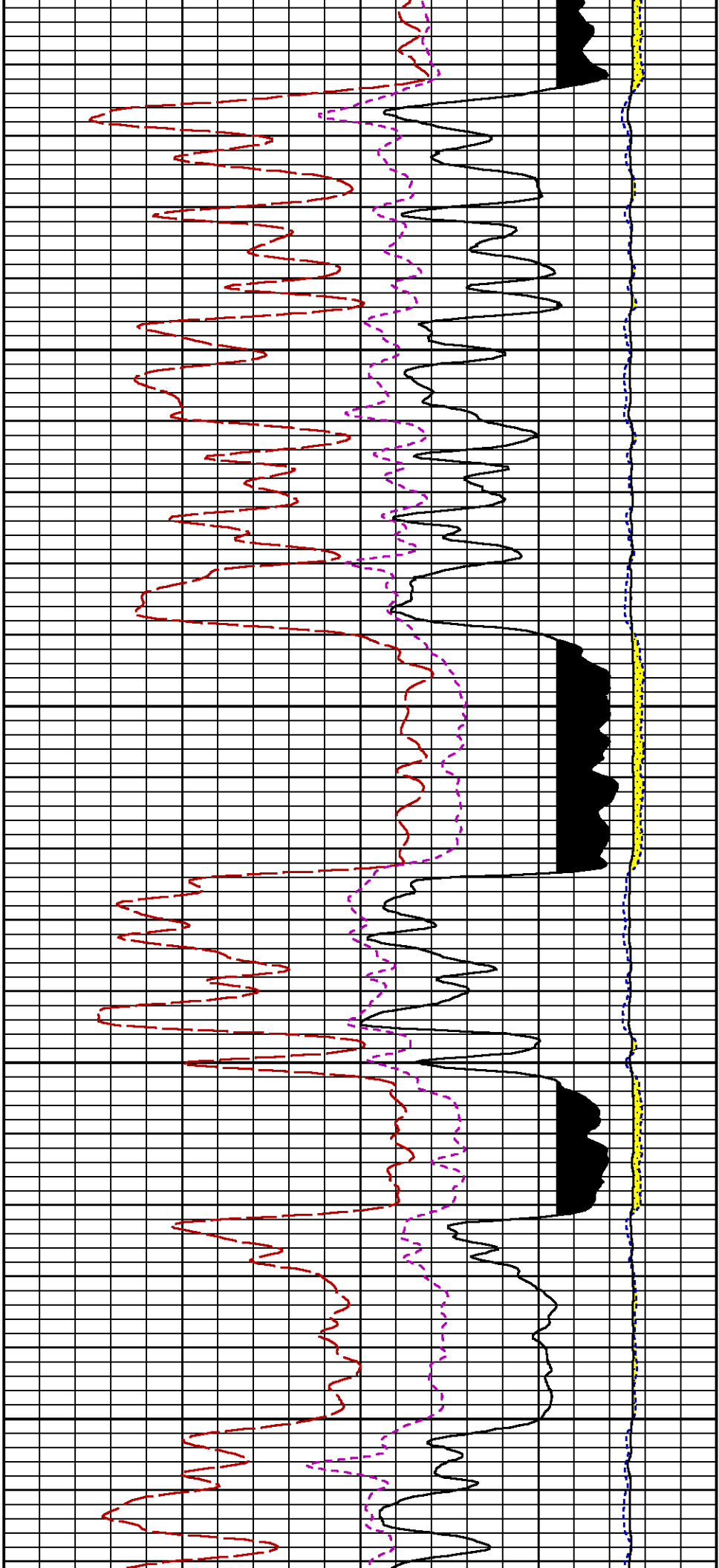


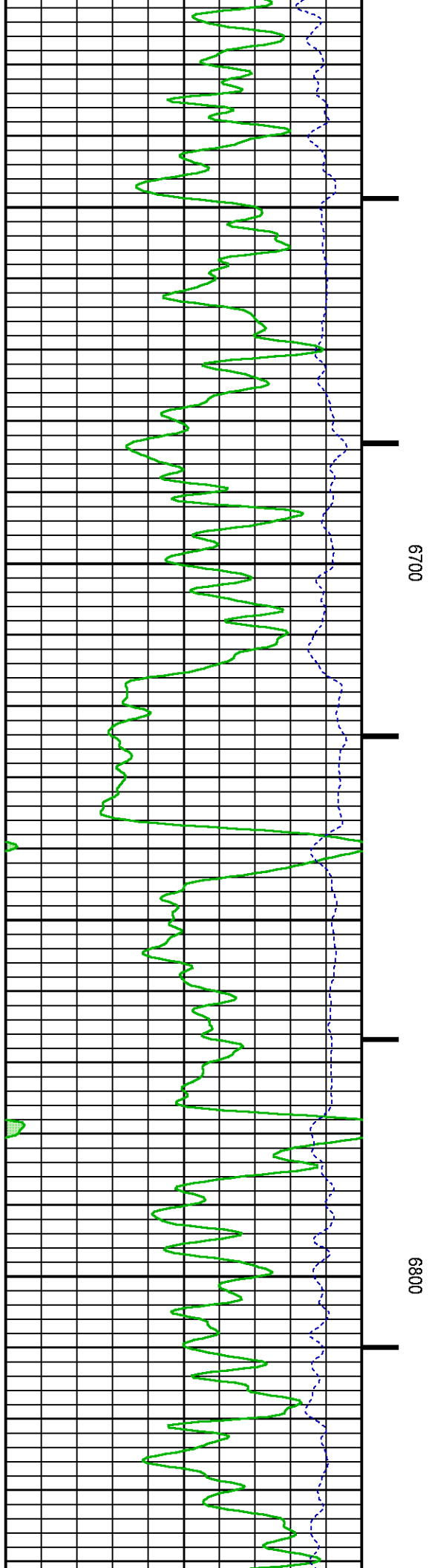
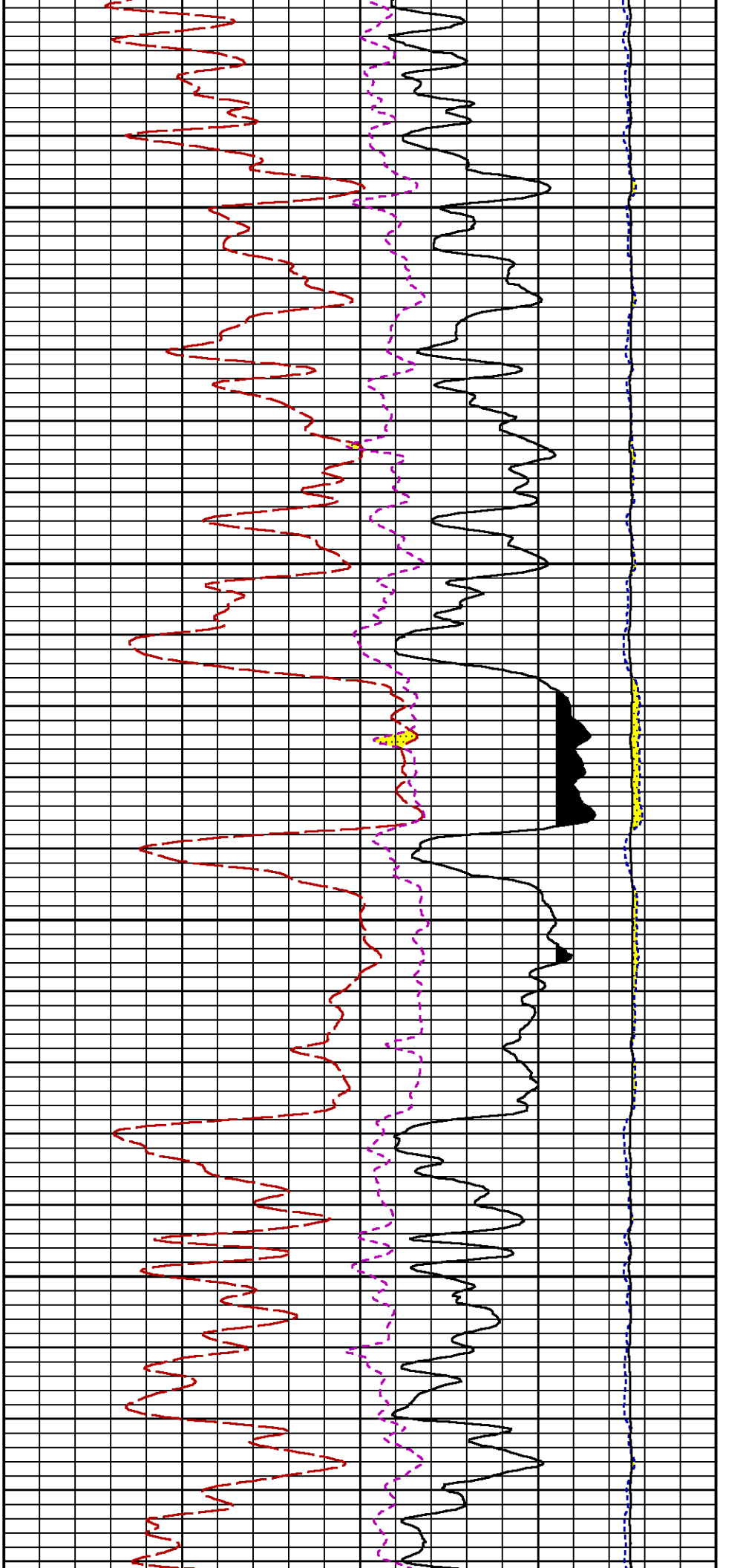




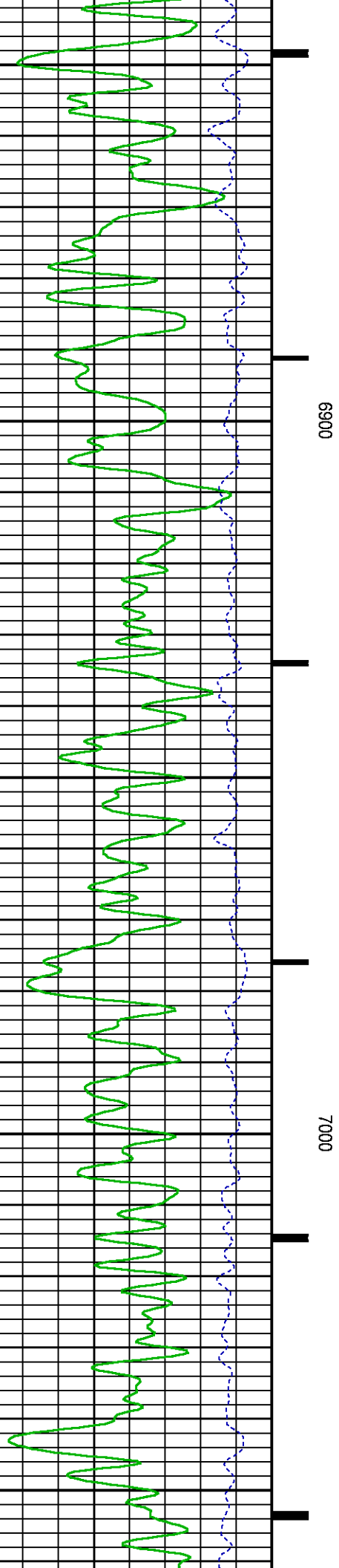
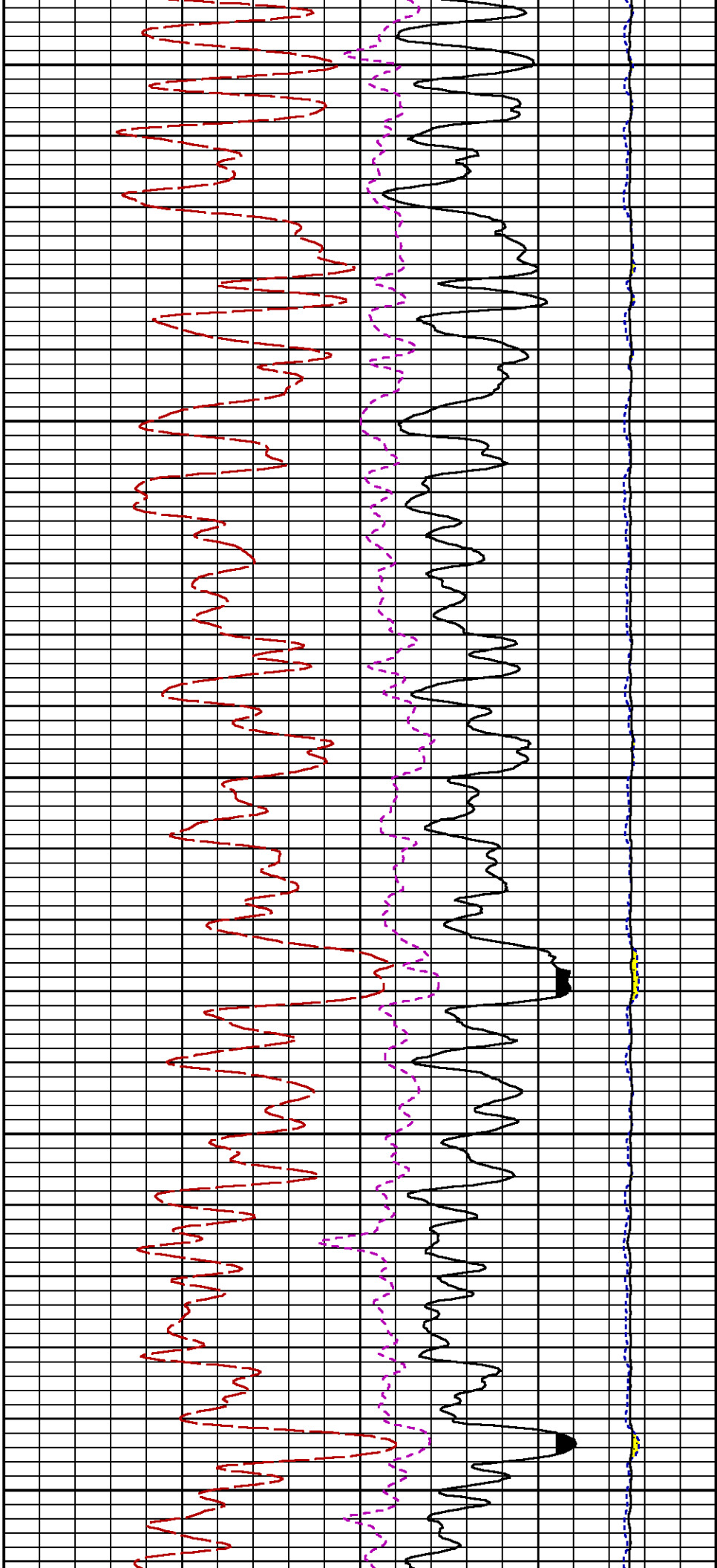


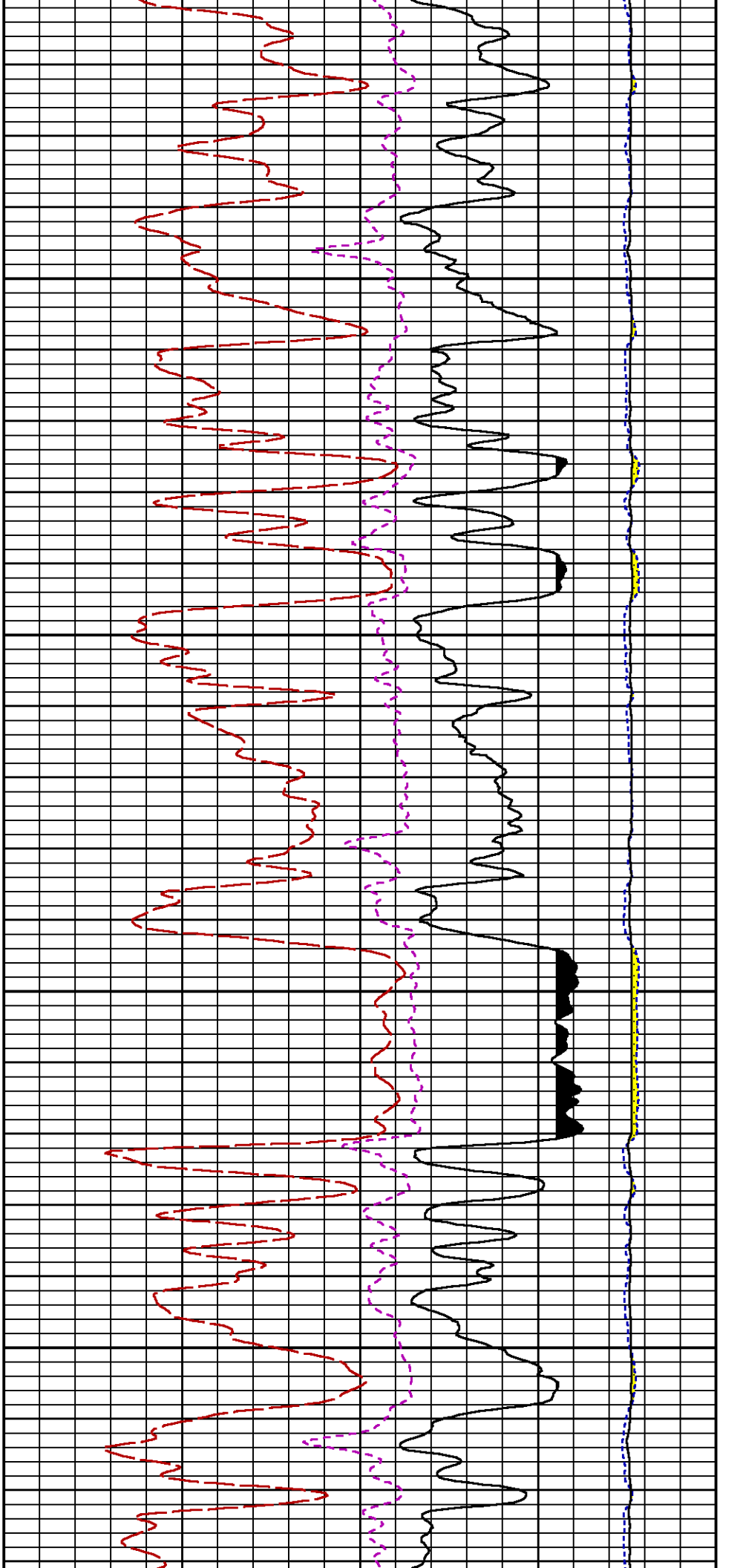






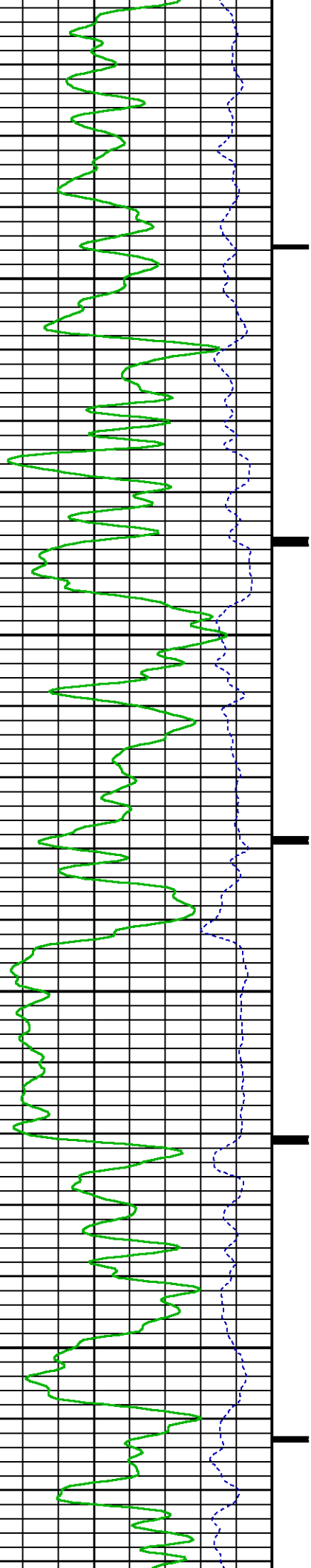


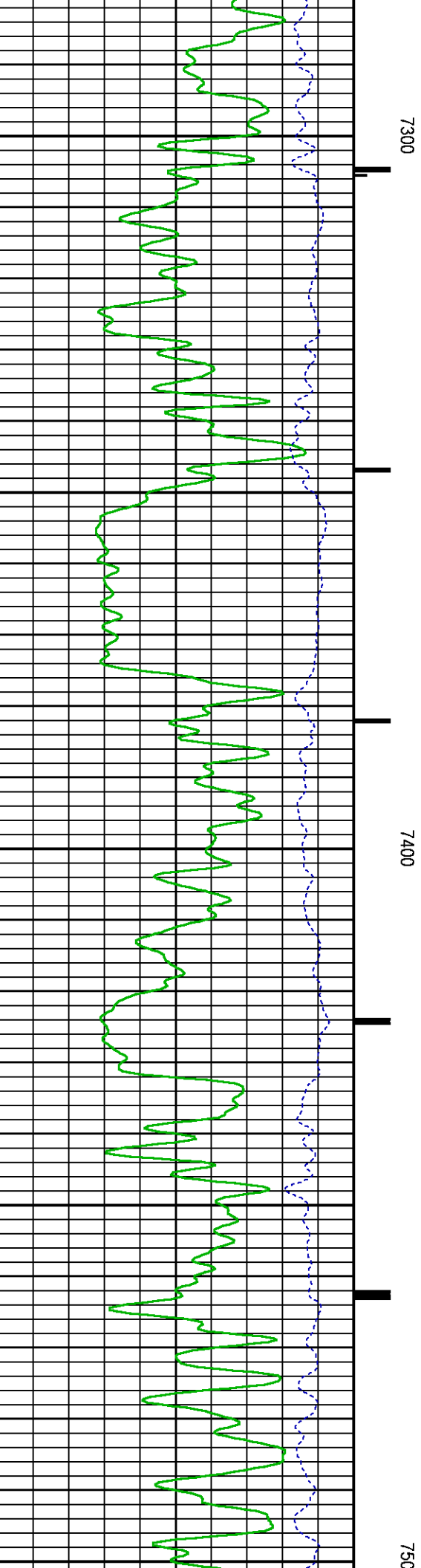
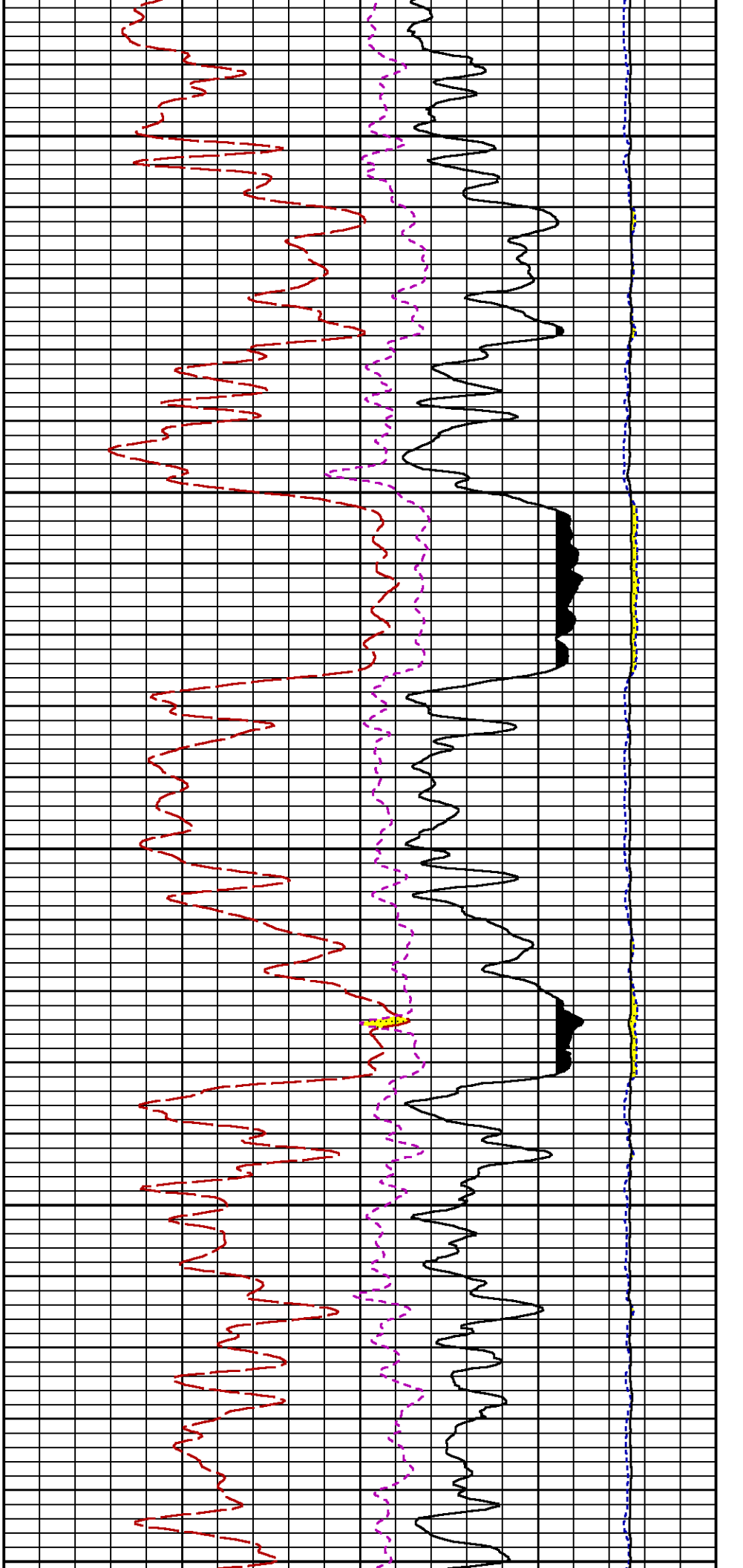


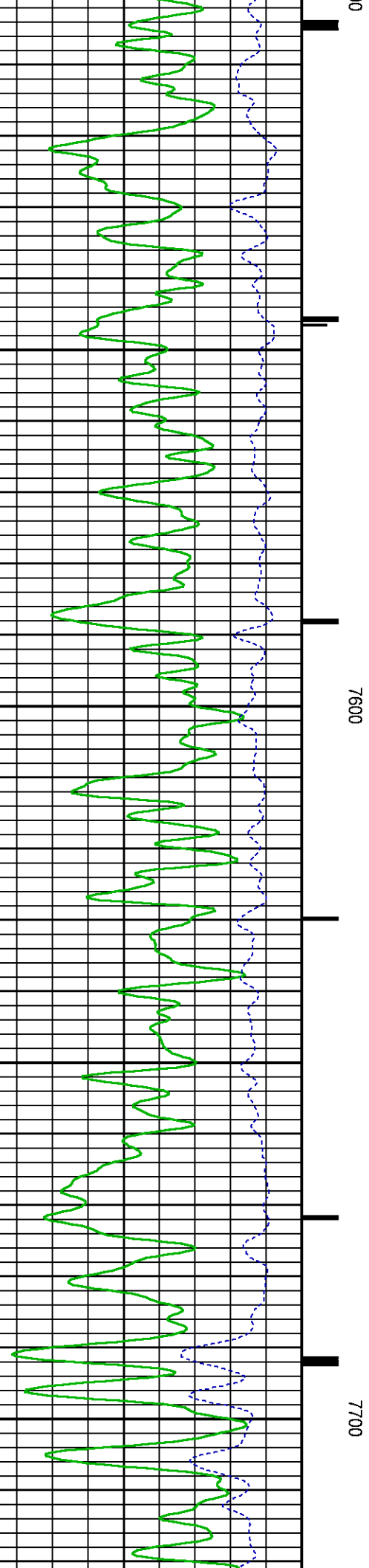
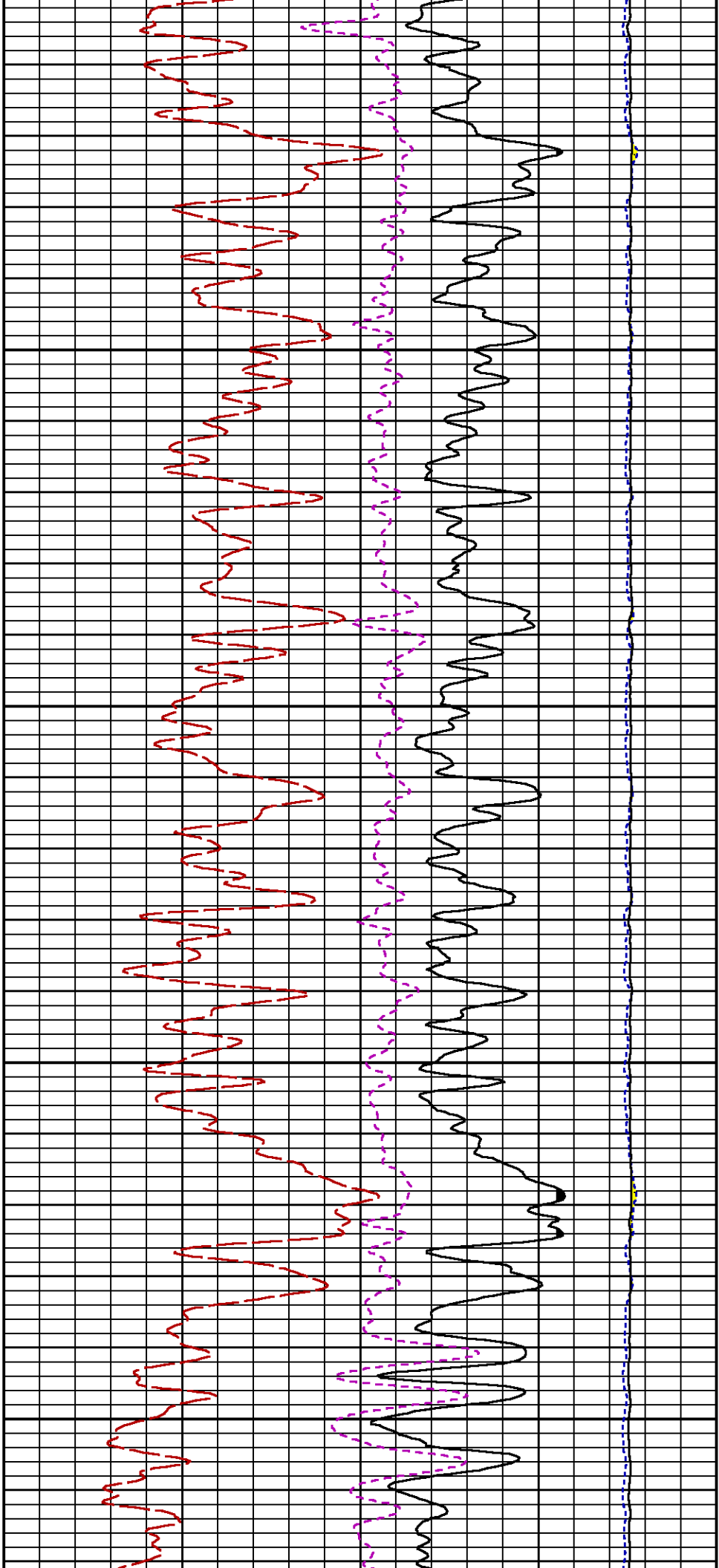


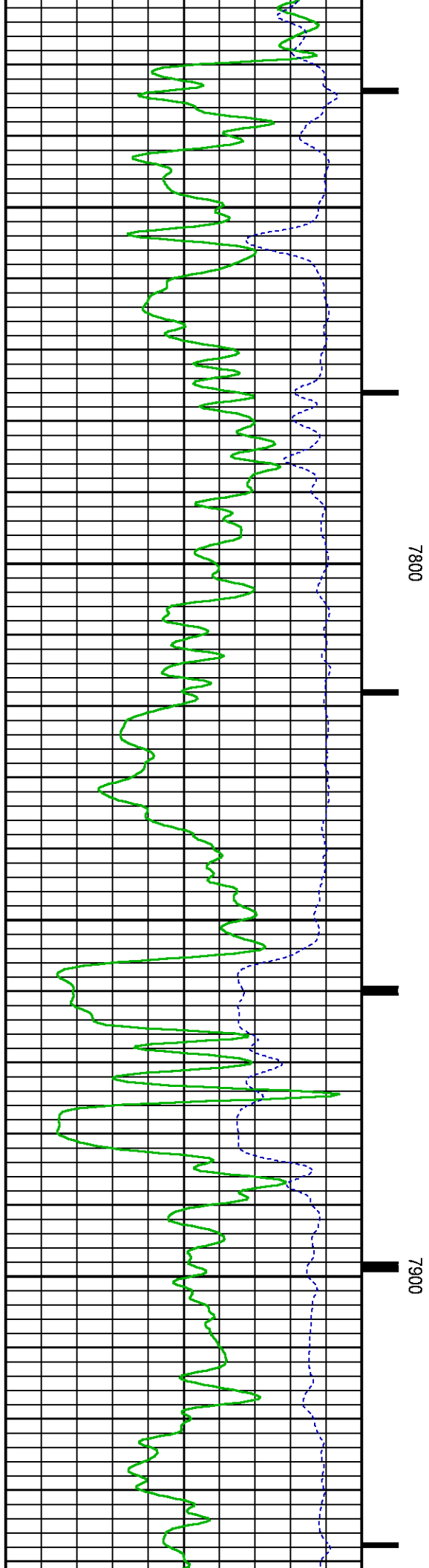
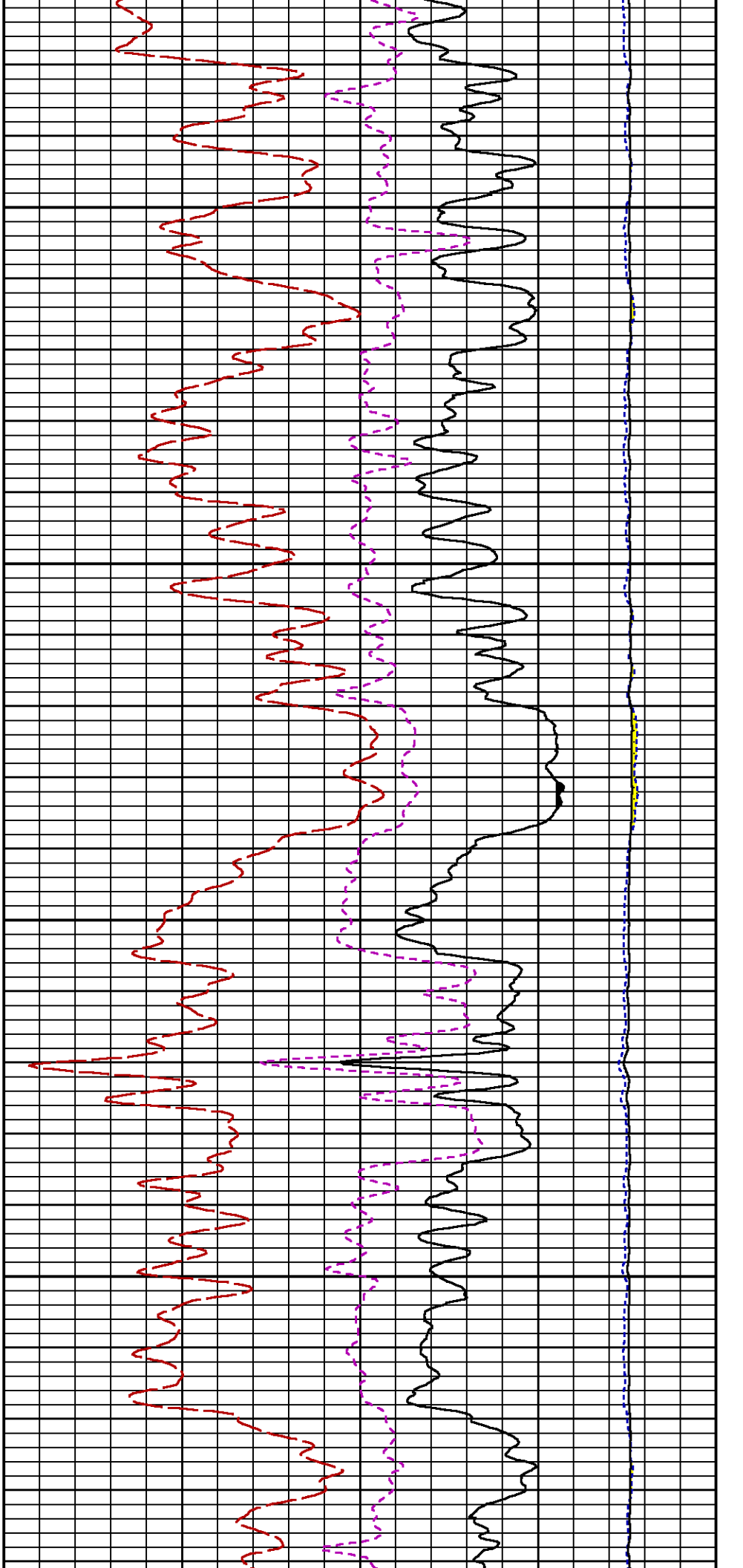
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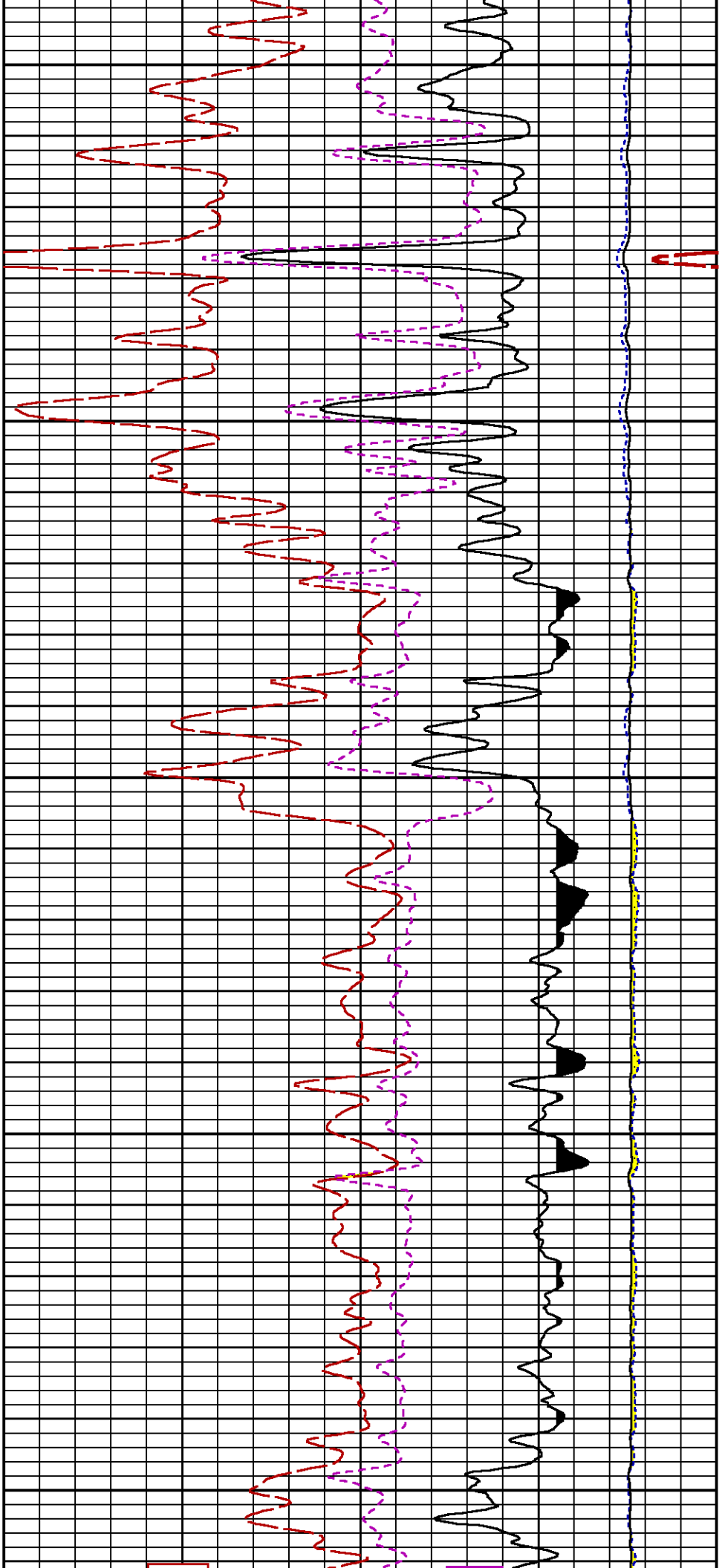
7200





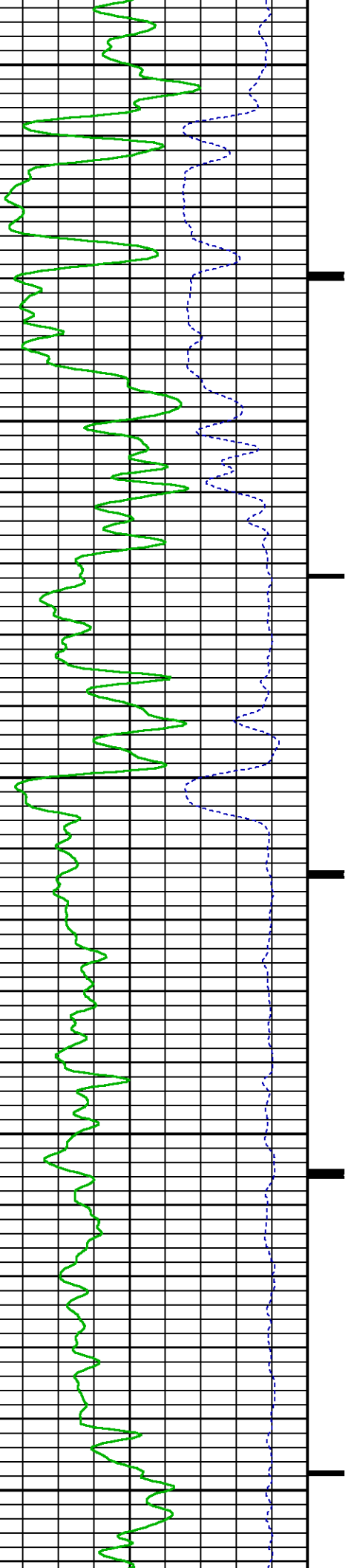






8000

8100



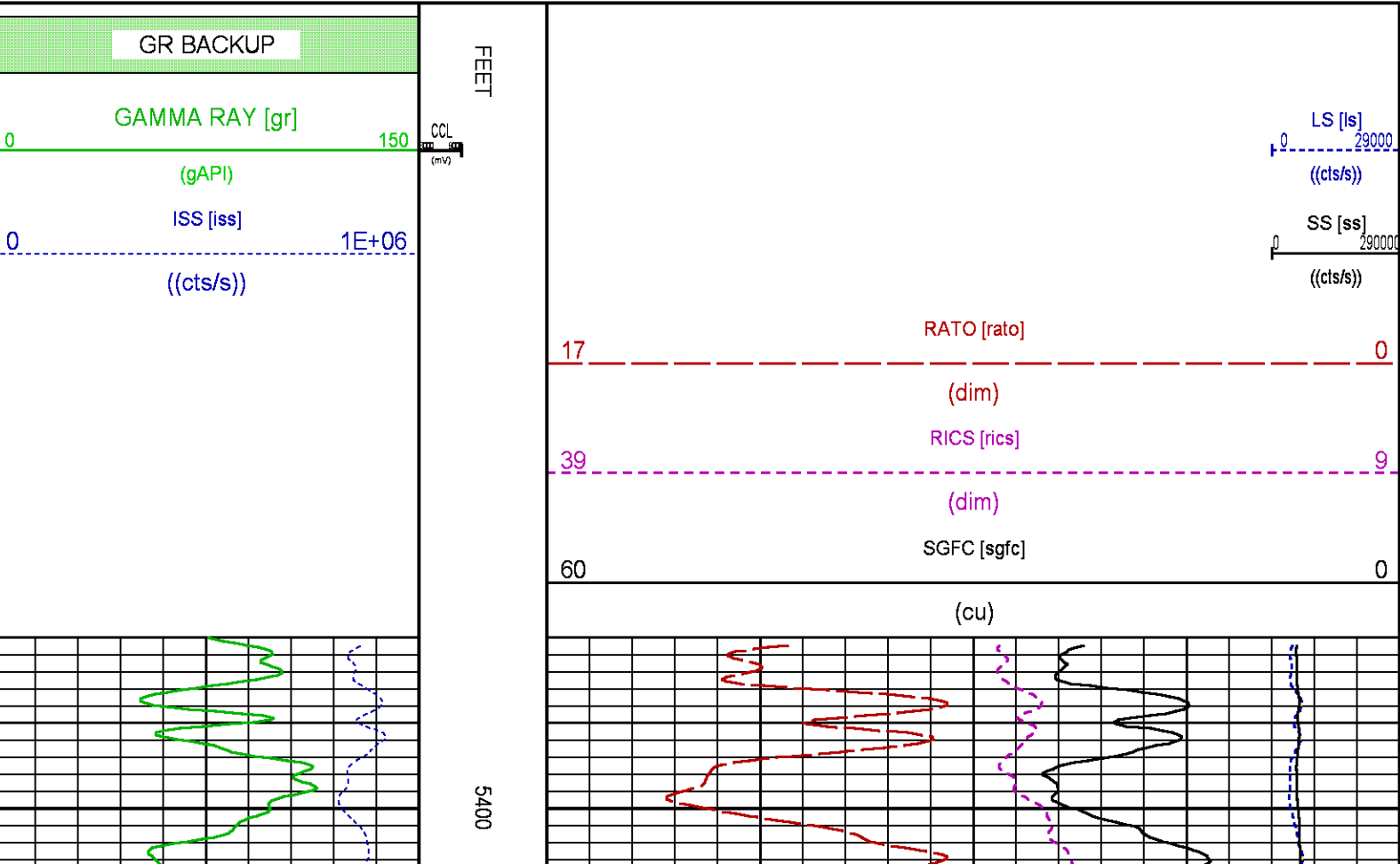


MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
PNC Parameters	BOREHOLE CONTENTS	FLUID		TOP	BOTTOM
	OPEN/CASED HOLE	CASED HOLE		"	"
	BOREHOLE SIZE	7.87	in	"	"
	LARGEST CASING OD	4.50	in	"	"
	MATRIX	SANDSTONE		"	"

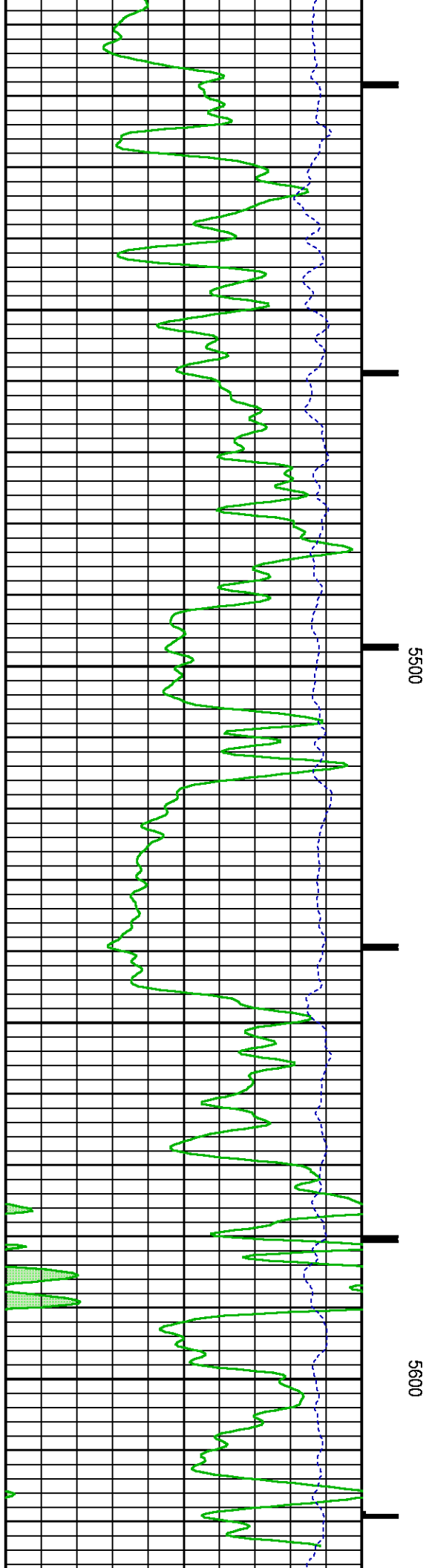
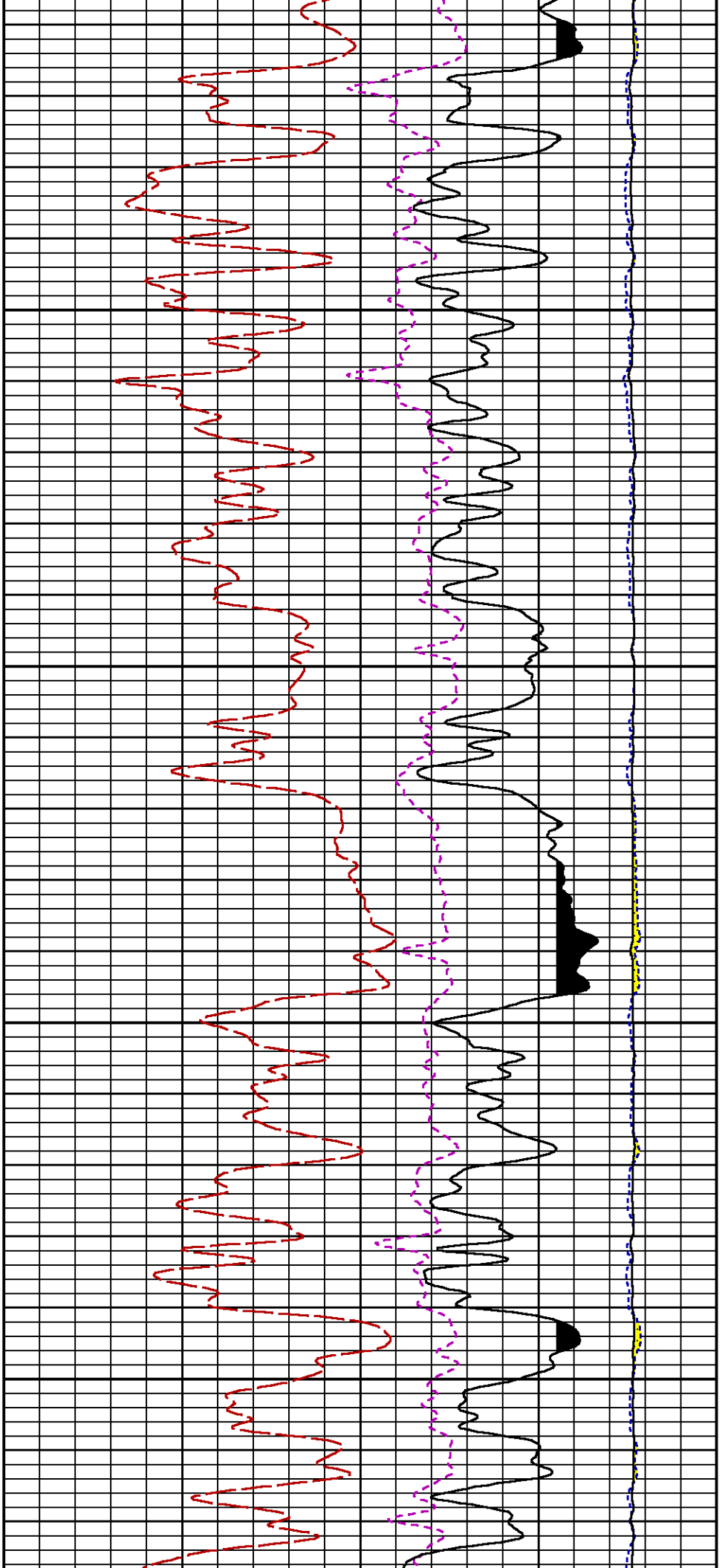
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	N/A	CASING COLLAR LOCATOR
F1:GR	N/A	GAMMA RAY
F1:ISS	N/A	INELASTIC SHORT SPACE COUNT RATE
F1:LS	N/A	LONG SPACE COUNT RATE
F1:RATO	N/A	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	N/A	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	N/A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

CURVE	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

**Data File 1 : F1 : SysA:/dat1a/LARAMIE\_GUNDERSON\_0994-14-12E/0994-14-12E\_RPM\_REPEAT.xtf**  
**Created On : N/A**  
**Company : LARAMIE ENERGY LLC**  
**Well : GUNDERSON 0994-014-12E**  
**Field : VEGA**  
**File Interval : 5355.25 - 5646.5 Feet**  
**OCT : p354h**







## GR BACKUP

GAMMA RAY [gr]

0 150

(gAPI)

ISS [iss]

0 1E+06

((cts/s))

FEET

CCL  
(mV)

LS [ls]

0 29000

((cts/s))

SS [ss]

0 290000

((cts/s))

RATO [rato]

17 0

(dim)

RICS [rics]

39 9

(dim)

SGFC [sgfc]

60 0

(cu)

## CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/LARAMIE\_GUNDERSON\_0994-14-12E/p354h.tp1

## GR PRIMARY CALIBRATION SUMMARY

TOOL #: 2812LA 10384613

DATE/TIME PERFORMED: Fri May 11 07:48:58 2018

UNIT #: 3885TD SHAFT1

CALB JIG #: 4702NK BA-930

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	CR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	CALBRTR (gAPI)
GR	63.60	272.31	208.7	1.006	63.99	273.99	210

## GR PRIMARY VERIFICATION SUMMARY

TOOL #: 2812LA 10384613

DATE/TIME PERFORMED: Fri May 11 07:52:37 2018

UNIT #: 3885TD SHAFT1

VERI JIG #: 4702NK BA-930

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	61.64	278.96	1.006	62.03	280.68	218.65
						200.00 220.00

## RPM\_PNC\_3D PRIMARY CALIBRATION SUMMARY

TOOL: 8283PA 10066991

DATE/TIME PERFORMED: Mon May 7 15:09:32 2018

UNIT: 5753XD 111111

CALIBRATOR: 2437XB 112674

SOURCE: 8281AA 10430258

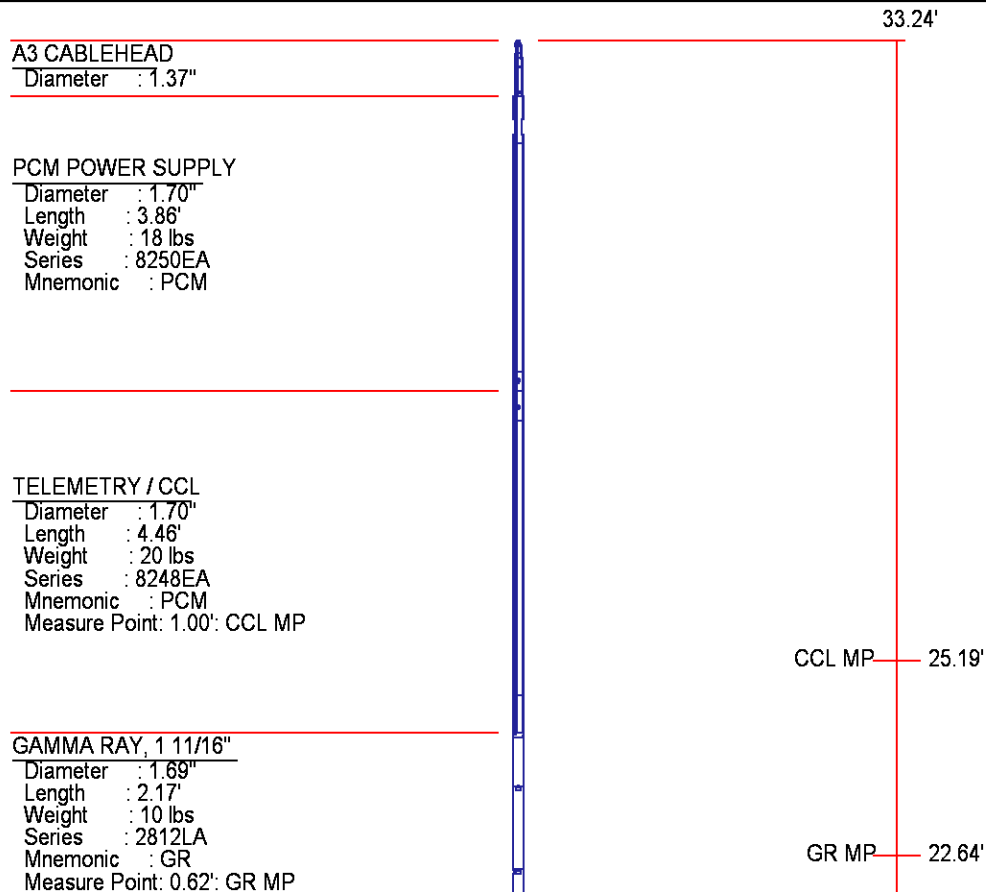
HOURS: 8281AA 88

ISS	Mtr Vits (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
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Raw Data	794247	124	2139	2383	2237	120	8.0	1.0374
Interpolated	1300000	145	2128	2374	2232			
	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	794247	6835	1065	142	25.87	0.15	24.10	0.32
					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	794247	178007	27088	88699	31638	8729	53712	13968
Fit Quality %		0.926	0.946	0.726	0.765	0.956	0.682	0.966
	ISS	RBOR	RIN ISS/ILS	RIN13 ISS/IXS	RICS ISS/CSS	RATO SS/LS	RTWO SS2/LS	RONE CSS/CLS
Raw Data	794247	1.43	4.46	29.33	14.79	10.16	3.63	3.85
		1.42 1.45	3.55 5.52	22.20 32.70	10.89 16.34	10.06 11.10	3.57 3.95	3.76 4.22
Fit Quality %		0.119	0.323	0.318	0.028	0.337	0.297	0.353
Reduced	1412538	1.43	4.47	29.36	14.77	10.20	3.64	3.86
		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: /dat1a/LARAMIE\_GUNDERSON\_0994-14-12E/p354h~SONDEX-tdg



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

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

0.00'



COMPANY  
WELL  
FIELD  
COUNTY

LARAMIE ENERGY LLC  
GUNDERSON 0994-14-12E  
VEGA  
MESA

STATE COLORADO

FILE NO:  
CH136897

API NO:  
05077105330000

LOCATION:

LAT: 39.273858 N  
LONG: 107.834945 W

ELEVATIONS:

KB 7302 FT  
DF





SEC <u>14</u> TWP <u>9 S</u> RGE <u>94 W</u>			GL <u>7272 FT</u>
DATE			<u>15-Jun-2018</u>