



FILE NO:

COMPANY

LARAMIE ENERGY

WELL

GUNDERSON 20-05W

FIELD

VEGA

API NO:
05077103390000

COUNTY

MESA

STATE COLORADO

Ver. 4.06

LOCATION:

LAT:39.266864N;LONG:107.795317W

OTHER SERVICES
RALBHL: LAT:39.266479N;LONG:107.797721W
SEC 20 TWP 9S RGE 93WPERMANENT DATUM GL ELEVATION 7144 FT
LOG MEASURED FROM KB 30 FT ABOVE P.D.
DRILL. MEAS. FROM KBELEVATIONS:
KB 7176 FT
DF 7176 FT
GL 7146 FT

DATE 25-AUG-2017

RUN TRIP

2

1

SERVICE ORDER US125426

DEPTH DRILLER 7504 FT

DEPTH LOGGER 7434 FT

BOTTOM LOGGED INTERVAL 7434 FT

TOP LOGGED INTERVAL 2095 FT

TIME STARTED 15:30

TIME FINISHED 21:00

OPERATOR RIG TIME 5.5 HOURS

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 FMN

MAX. RECORDED TEMP. 243 DEGF

REFERENCE LOG BAKER RALGR

REFERENCE LOG DATE 25-AUG-2017

EQUIP. NO. LOCATION HL-6670 WOODWARD

RECORDED BY S.YASSAL.SINICKI

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 2 TRIP 1: *2 OPERATIONS IN WELL*

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

LOGGED WITH 0 PSI ON WELLHEAD

SJ: 5642' - 5663'

SJ: 6638' - 6650'

CREW: D.HUTCHINSON, G.SUAREZ

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
2	1	TELEMETRY	8250EA/8248EA	10185091/10323398	FREE
2	1	GAMMA RAY	8262XA	10485470	FREE
2	1	RPM	8281EA	10387162	FREE
2	1	RPM	8283PA	10184883	FREE
2	1	RPM	8281FA	10315572	FREE
2	1	TEMP	8255XA	120516	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: 9

Plotted: Fri Aug 25 21:26:05 2017

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_GUNDERSON_20_05W/RPM3D03.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 2060.000 ft BOTTOM DEPTH: 2760.312 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	Aug 25 20:34:11 2017	CASING COLLAR LOCATOR
F1:GR	Aug 25 20:34:11 2017	GAMMA RAY
F1:ISS	Aug 25 20:34:11 2017	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Aug 25 20:34:11 2017	LONG SPACE COUNT RATE
F1:RATO	Aug 25 20:34:11 2017	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Aug 25 20:34:11 2017	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Aug 25 20:34:11 2017	CORRECTED FORMATION SIGMA
F1:SS	Aug 25 20:34:11 2017	SHORT SPACE COUNT RATE

CURVE MEASURE POINT OFFSET

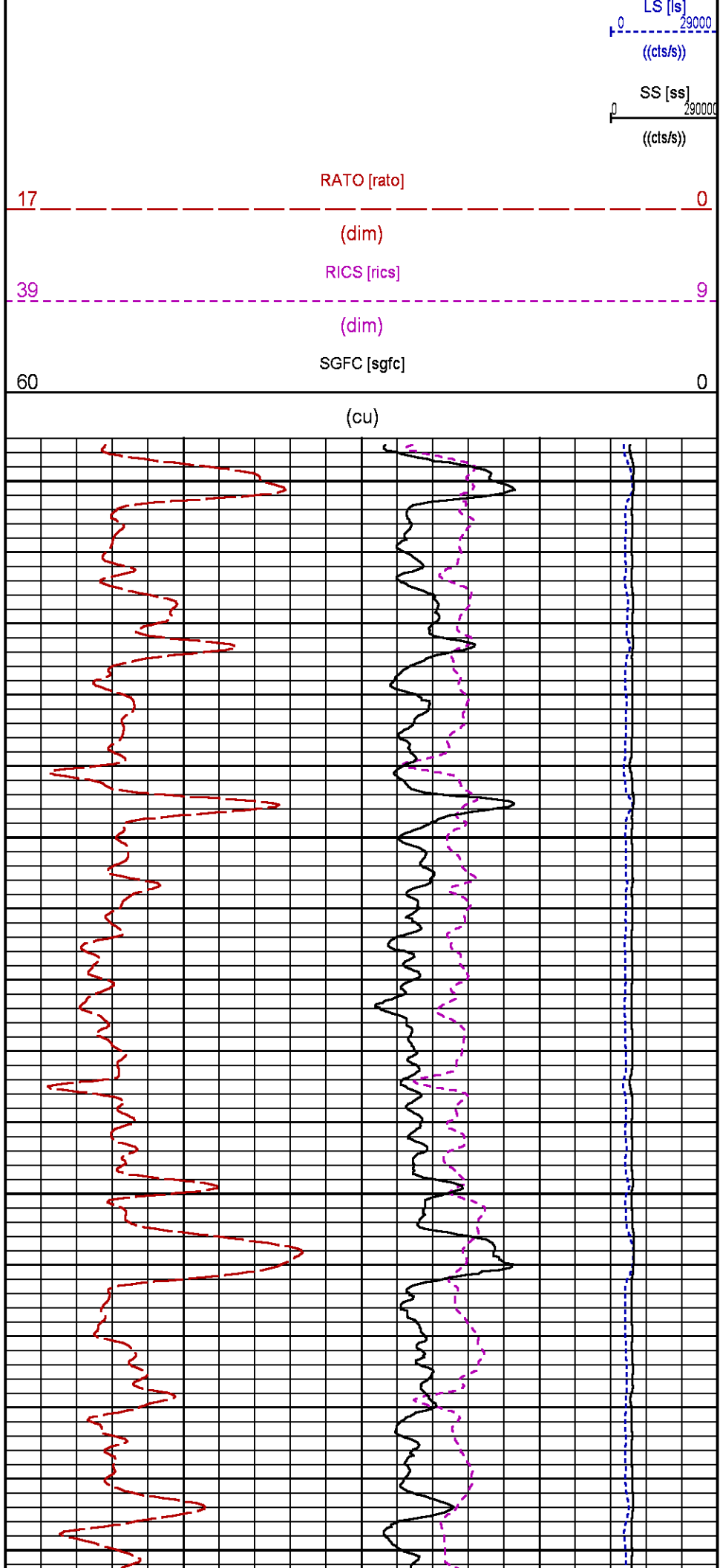
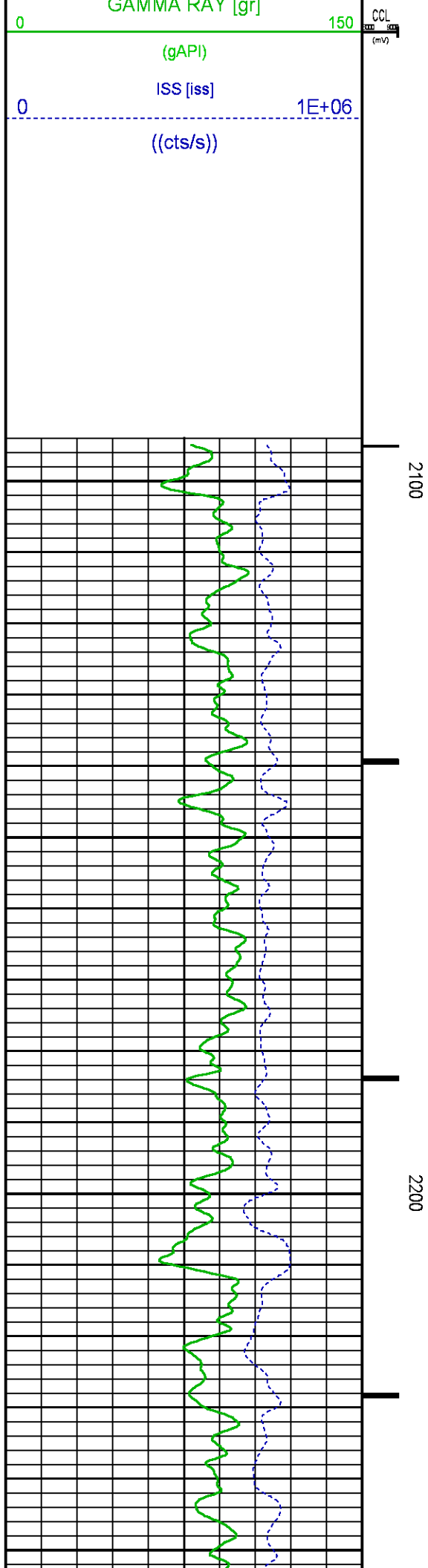
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	26.00	ISS	12.75	RATO	12.75	SGFC	12.75
GR	23.00	LS	12.75	RICS	12.75	SS	12.75

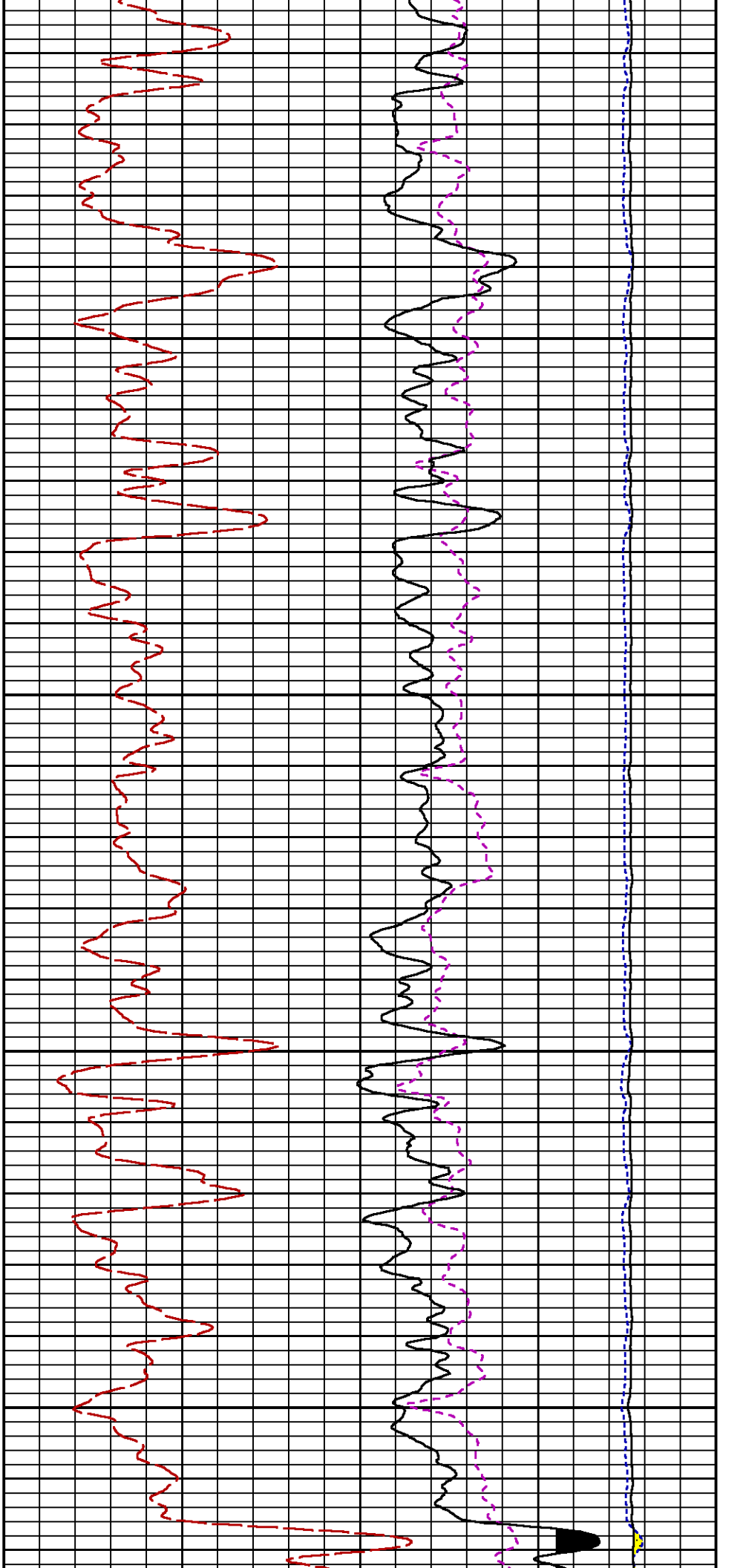
Presentation : cpu100:/dat1a/LARAMIE_GUNDERSON_20_05W/GUNDERSON_20_05W_RPM_GSAND.fvpdf [5"/100' Scale]
Plot Interval : 2095 - 2695 Feet

Data File 1 : F1 : cpu100:/dat1a/LARAMIE_GUNDERSON_20_05W/GUNDERSON_20_05W_RPM_GSAND.xtf
Created On : Aug 25 20:34:11 2017
Company : LARAMIE ENERGY
Well : GUNDERSON 20-05W
Field : VEGA
File Interval : 2033.75 - 2755 Feet
OCT : RPM3D

GR BACKUP

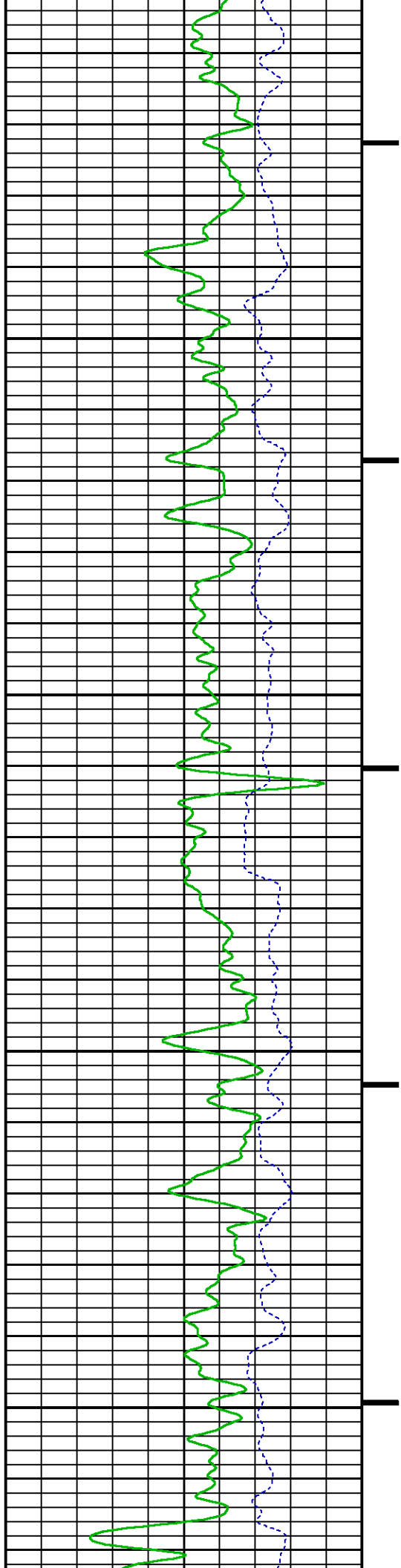
FEET

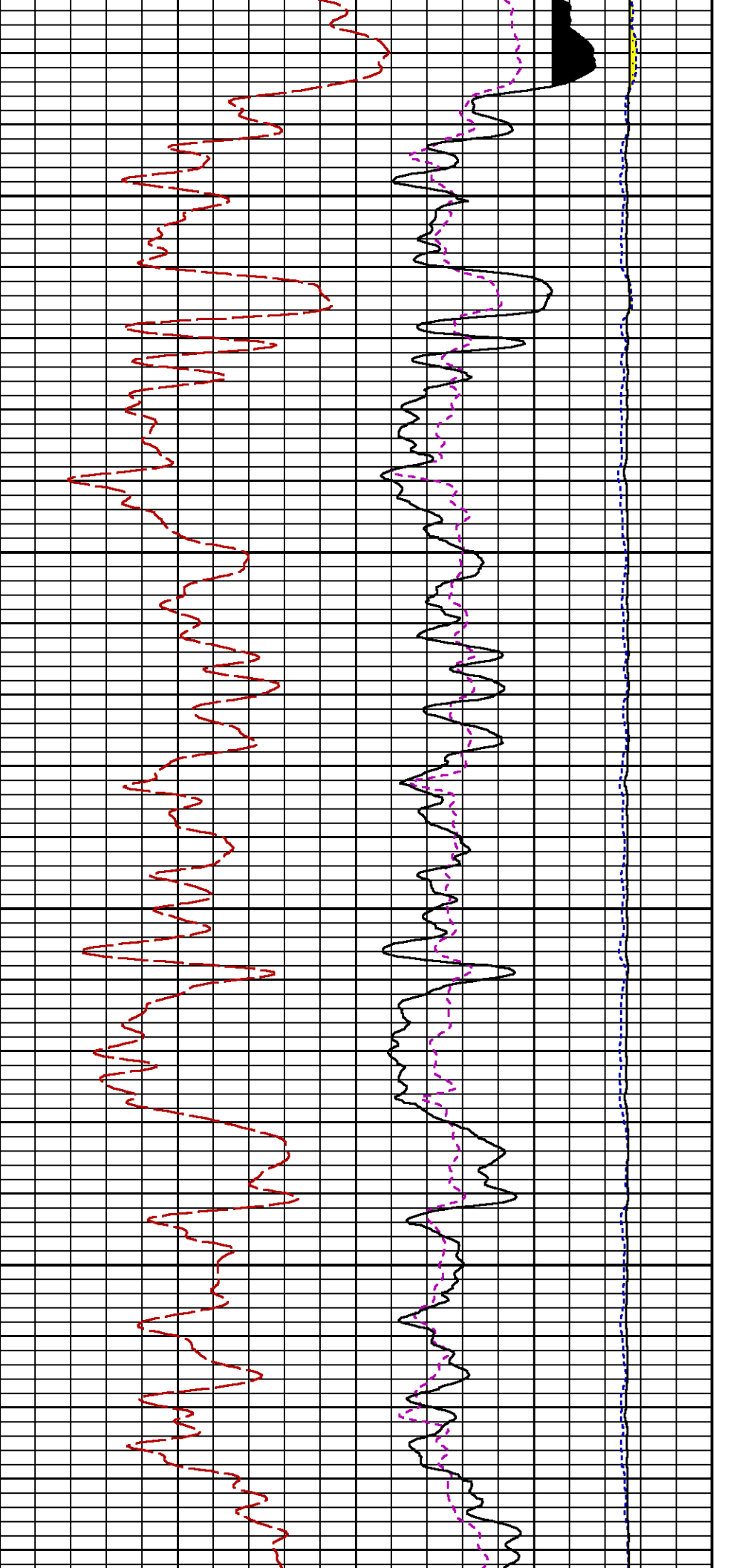




2300

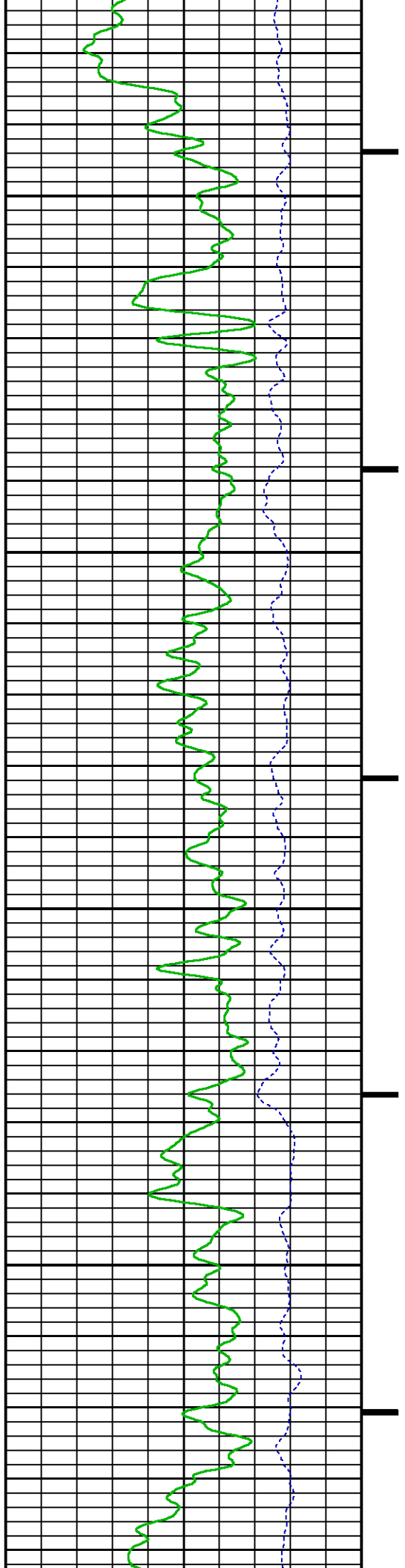
2400

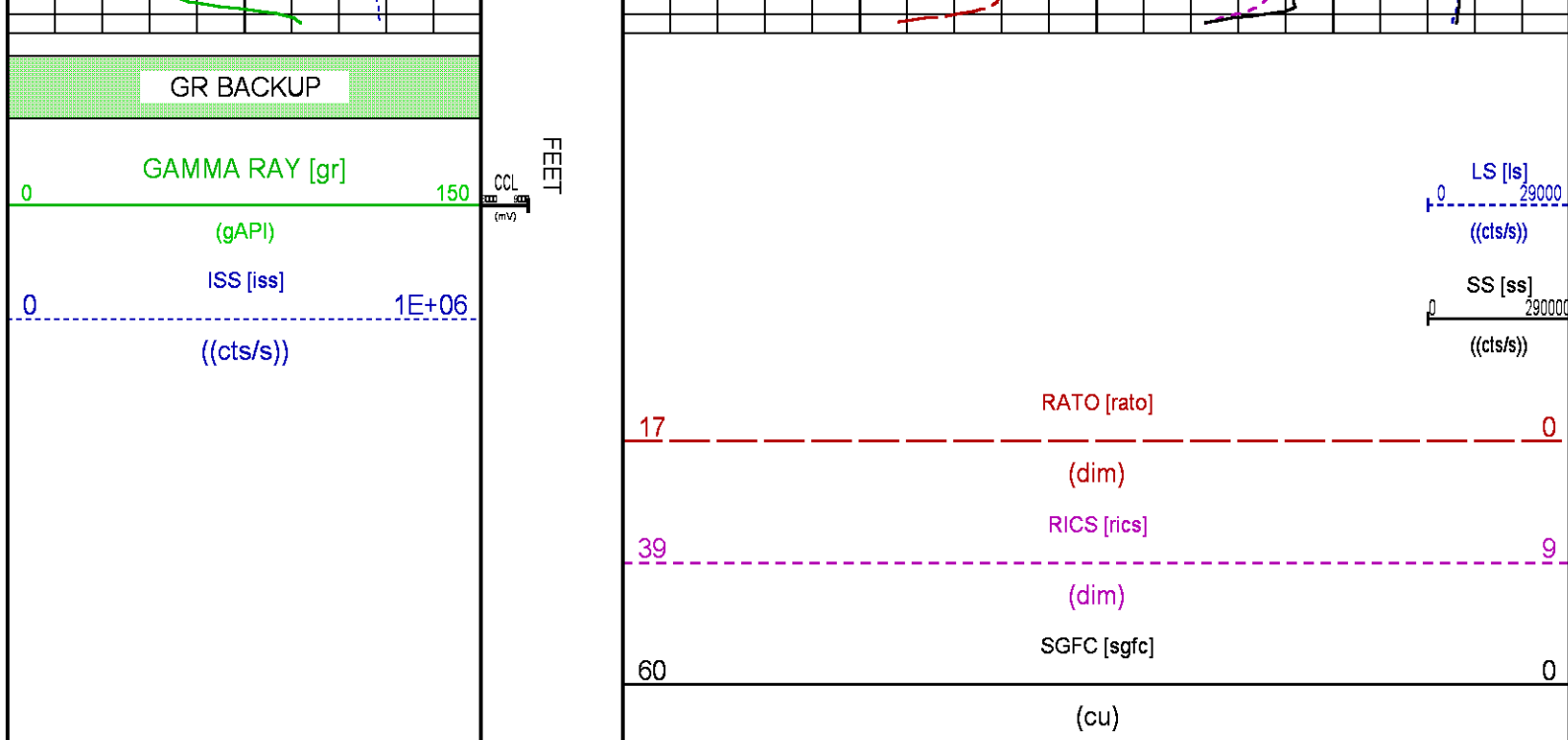




2500

2600





MAIN PASS PNC-3D MODE

ECLIPS 6.2i ECLIPS General Release Rel 6.2i Wed Jun 12 12:21:40 CDT 2013
Updates: 1 Patches: 9

Plotted: Fri Aug 25 21:17:22 2017

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_GUNDERSON_20_05W/RPM3D02.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 3763.250 ft BOTTOM DEPTH: 7450.750 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	7.88	in	" "
	CASING SIZE	4.50	in	" "
	MATRIX	SANDSTONE		" "
	CORRECTION BUFFER	11		" "

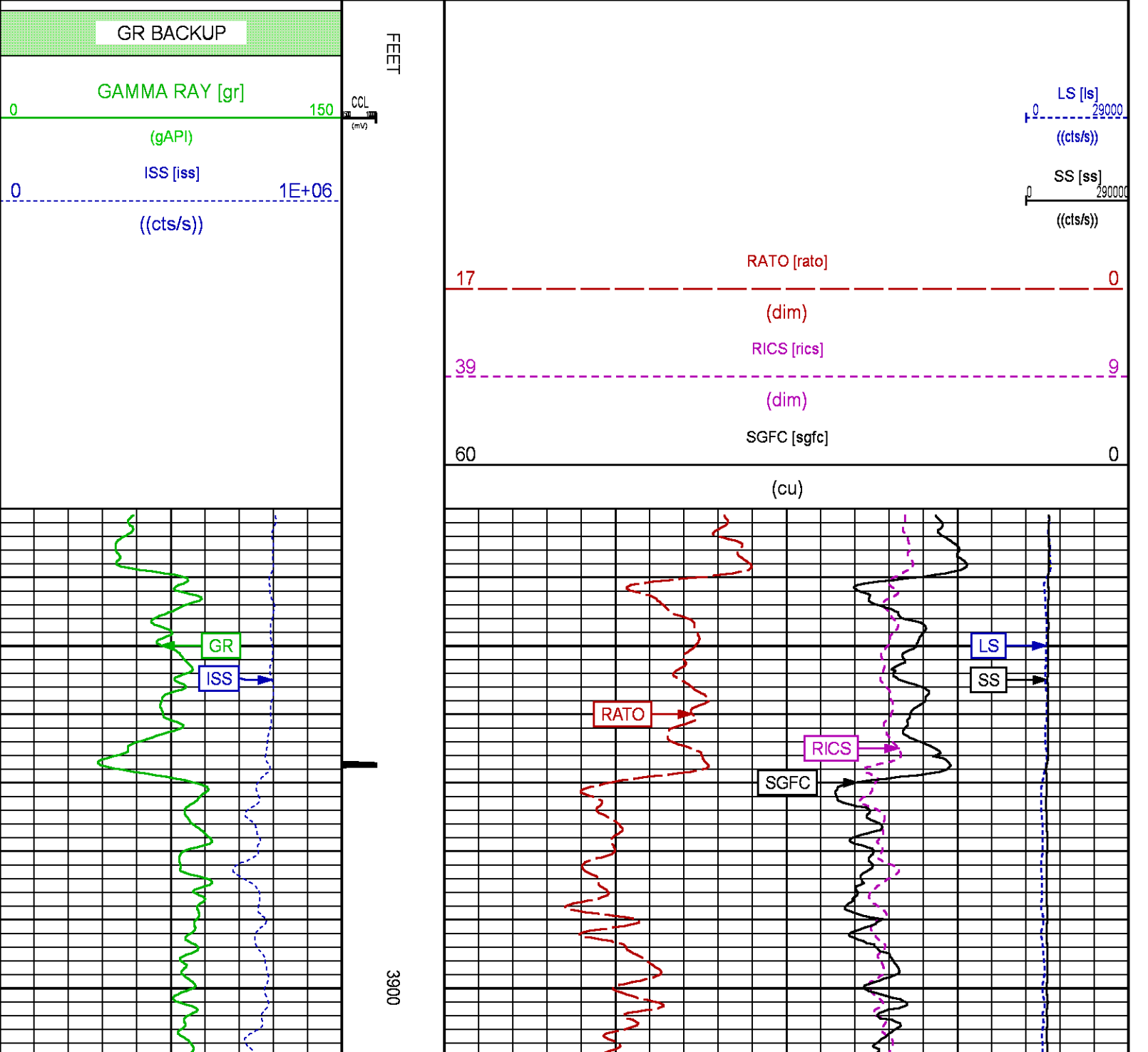
CURVE DESCRIPTION REPORT

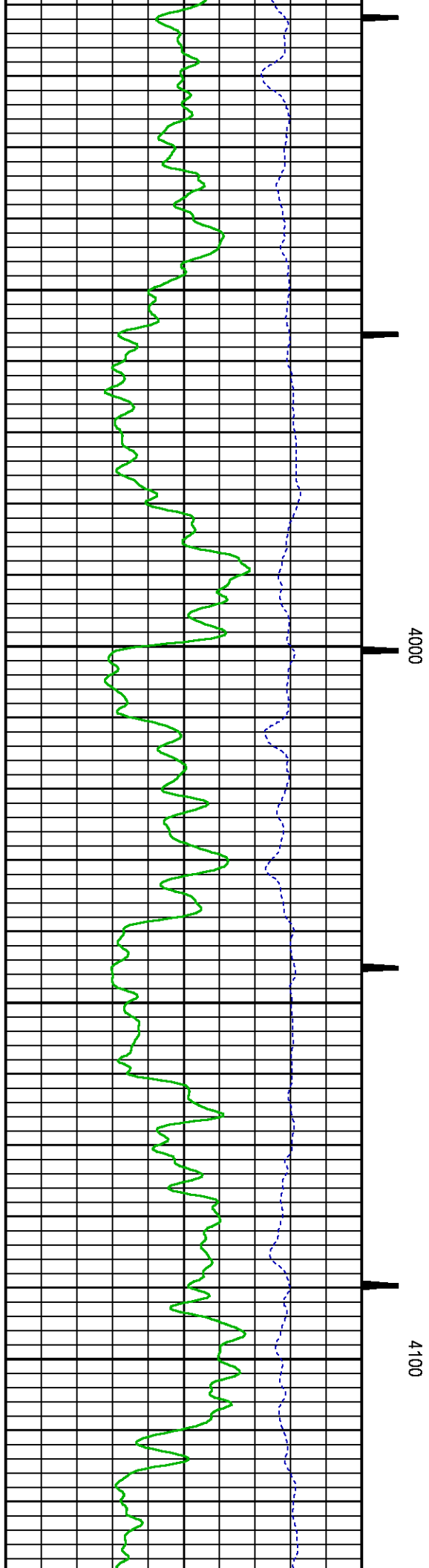
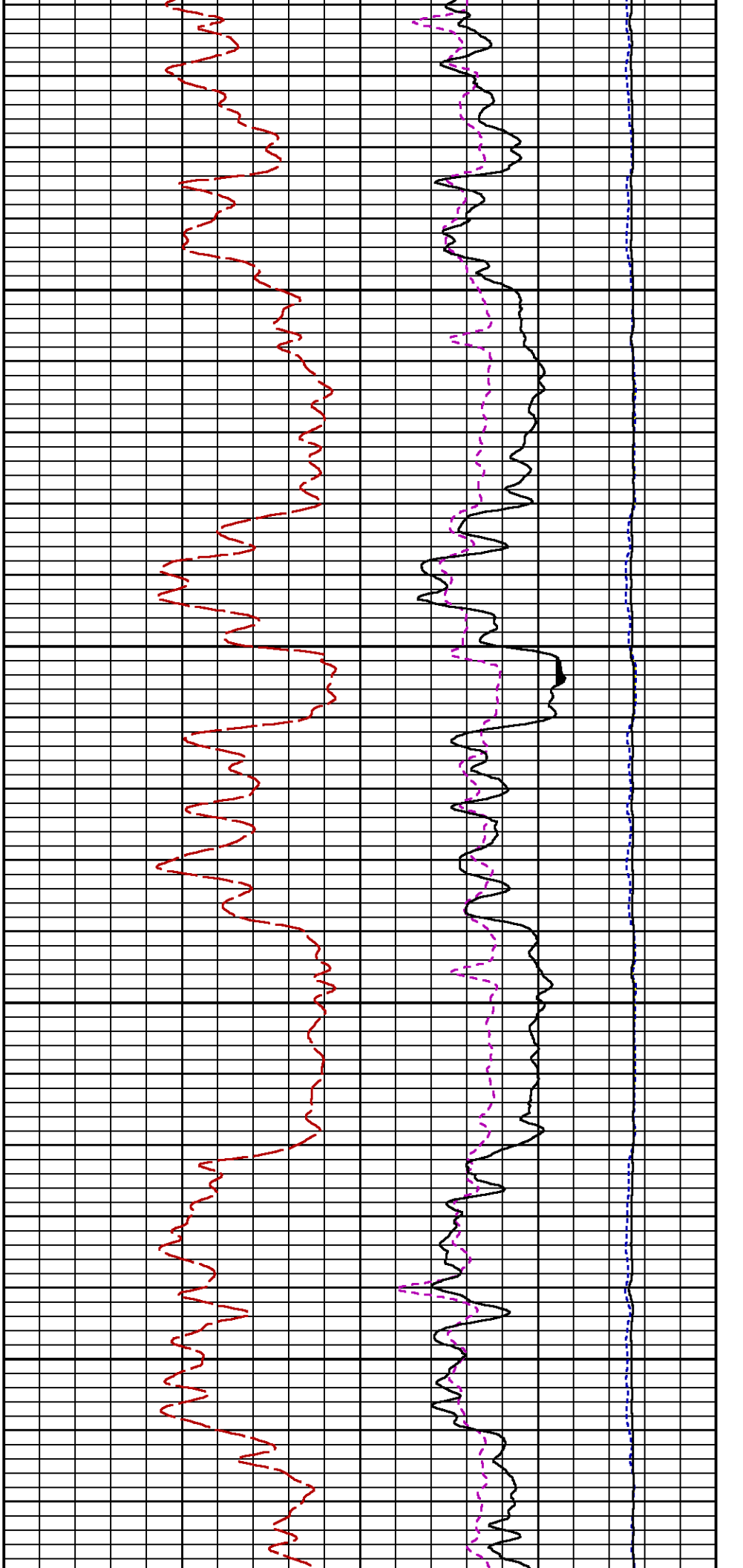
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	Aug 25 16:30:11 2017	CASING COLLAR LOCATOR
F1:GR	Aug 25 16:30:11 2017	GAMMA RAY
F1:ISS	Aug 25 16:30:11 2017	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Aug 25 16:30:11 2017	LONG SPACE COUNT RATE
F1:RATO	Aug 25 16:30:11 2017	SHORT/LONG SPACE COUNT RATE RATIO

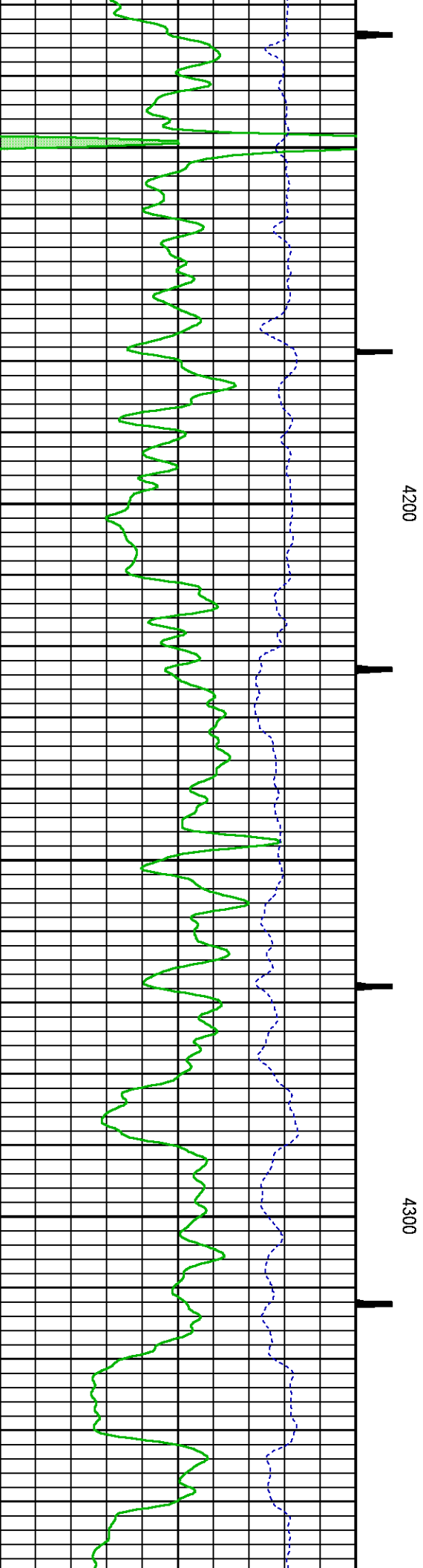
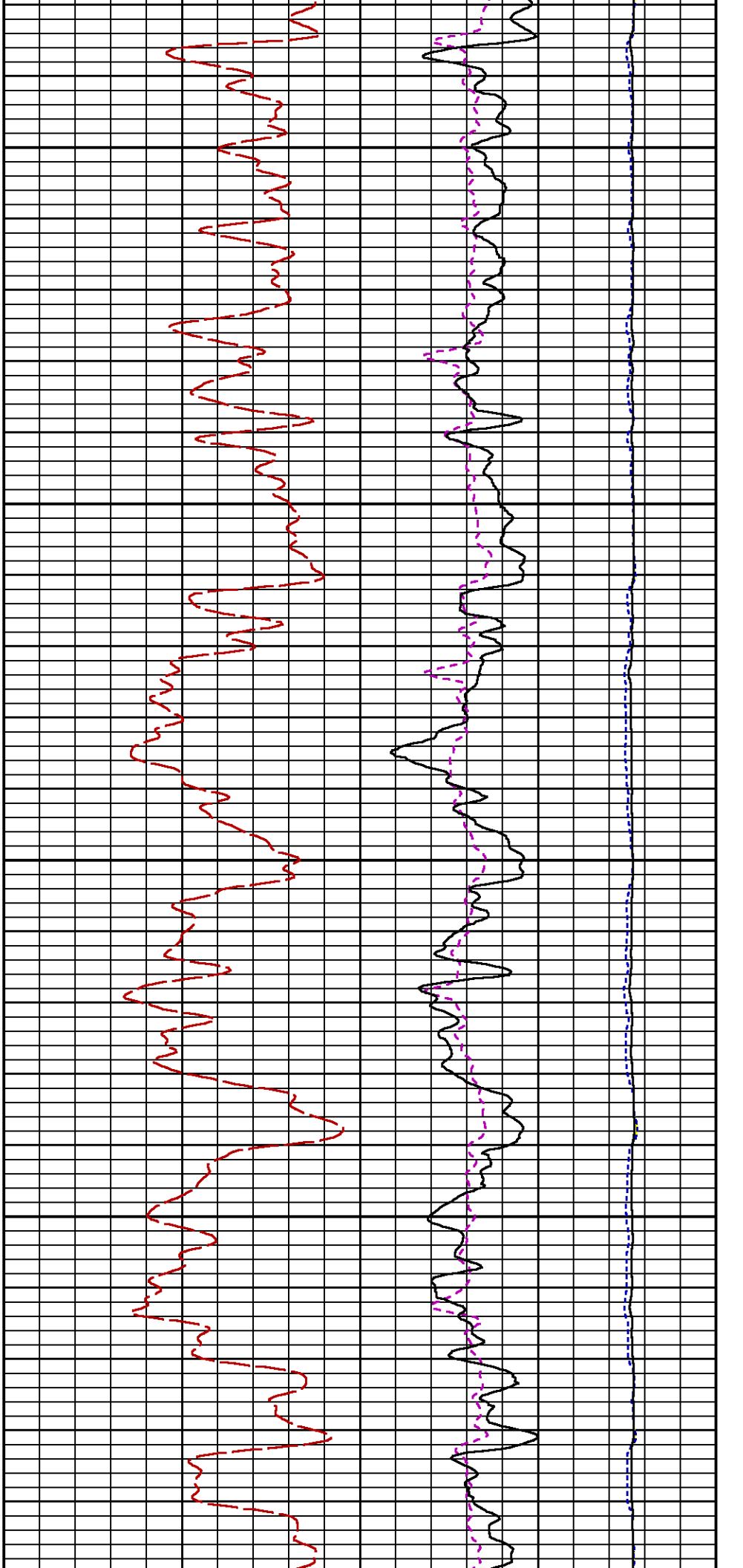
F1:RATO	Aug 25 16:30:11 2017	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Aug 25 16:30:11 2017	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Aug 25 16:30:11 2017	CORRECTED FORMATION SIGMA
F1:SS	Aug 25 16:30:11 2017	SHORT SPACE COUNT RATE

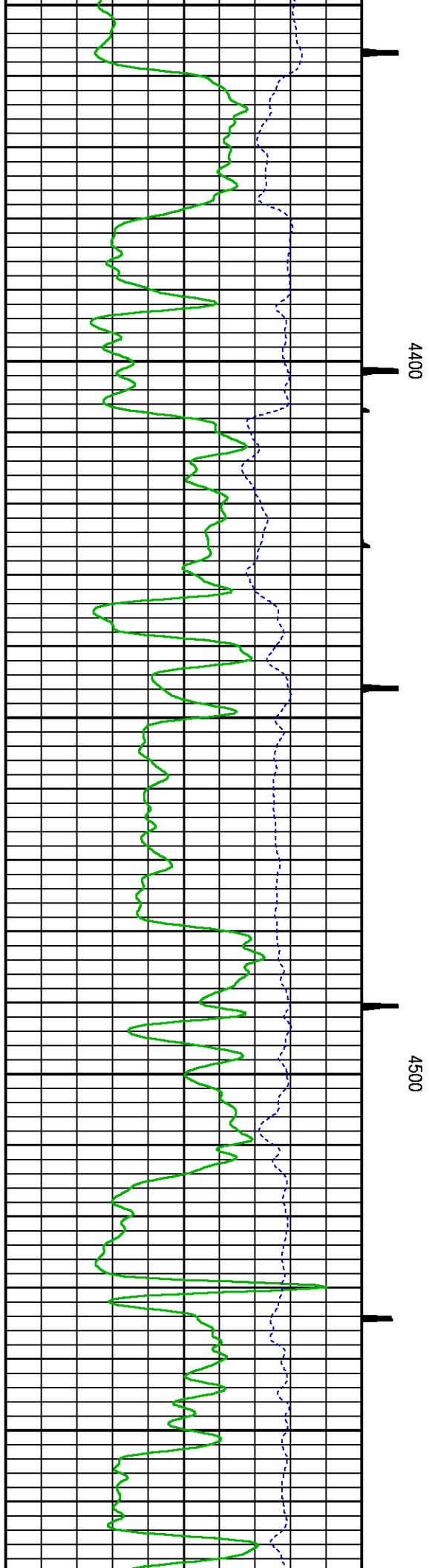
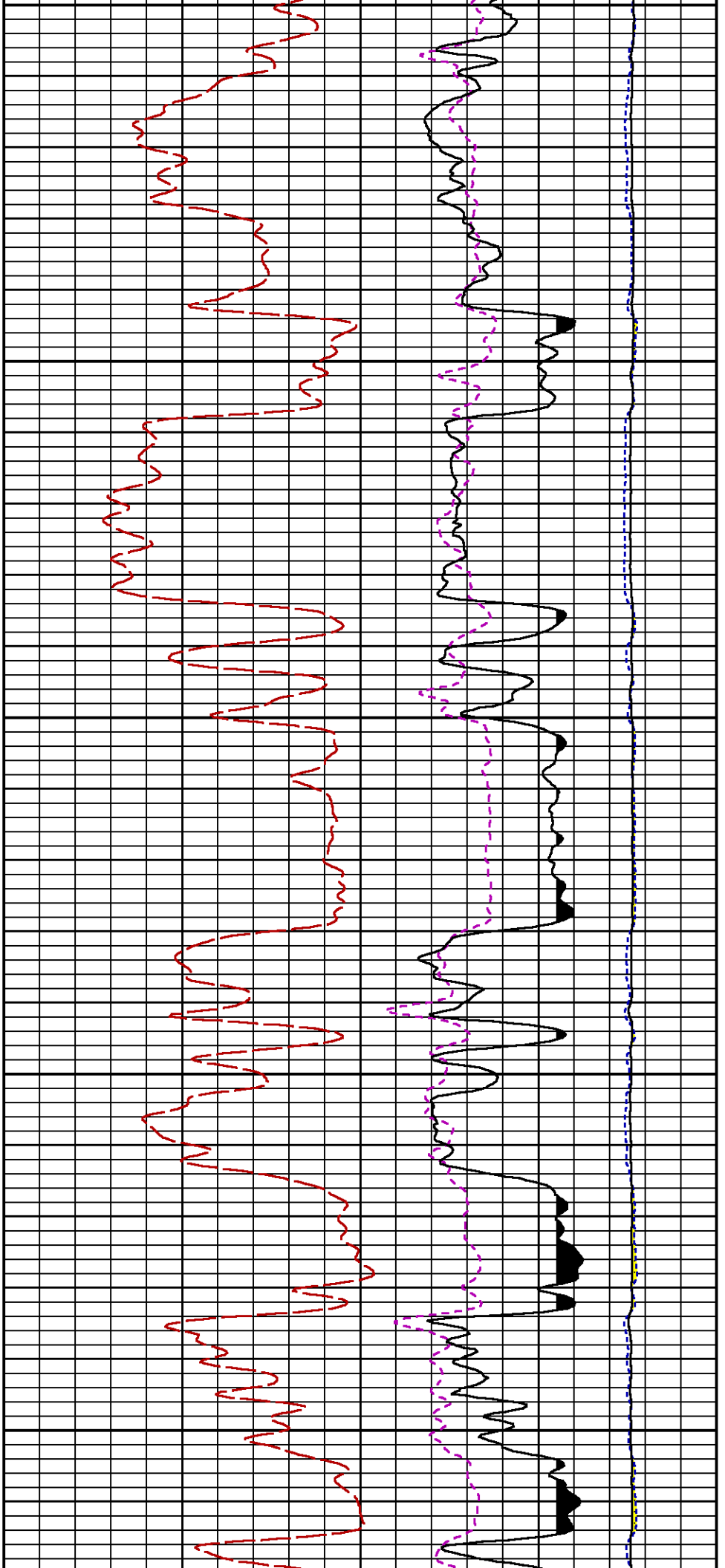
CURVE MEASURE POINT OFFSET							
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	26.00	ISS	12.75	RATO	12.75	SGFC	12.75
GR	23.00	LS	12.75	RICS	12.75	SS	12.75

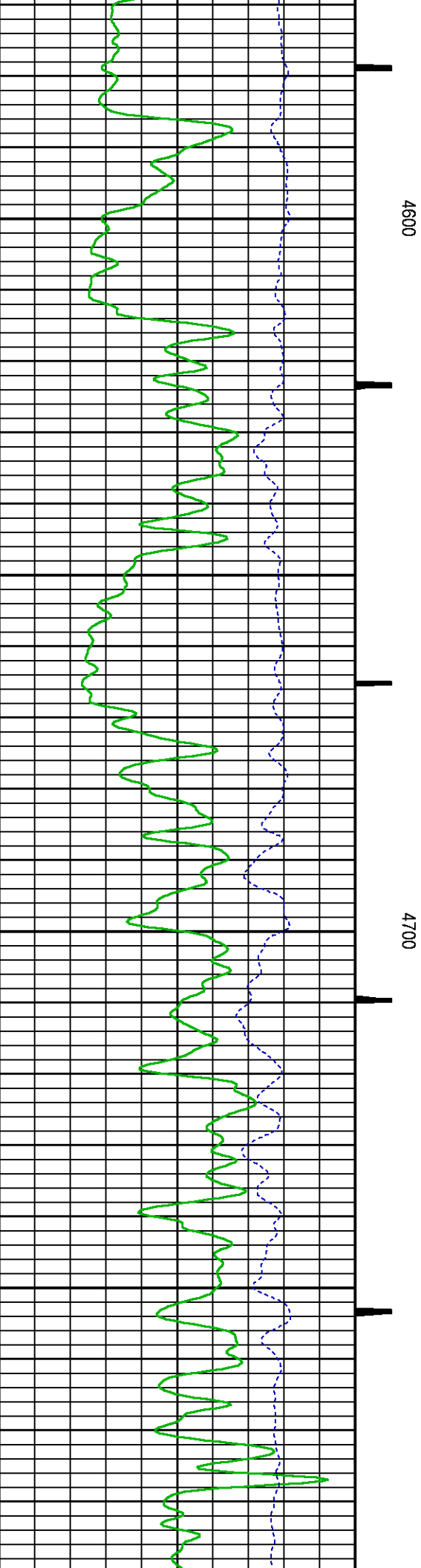
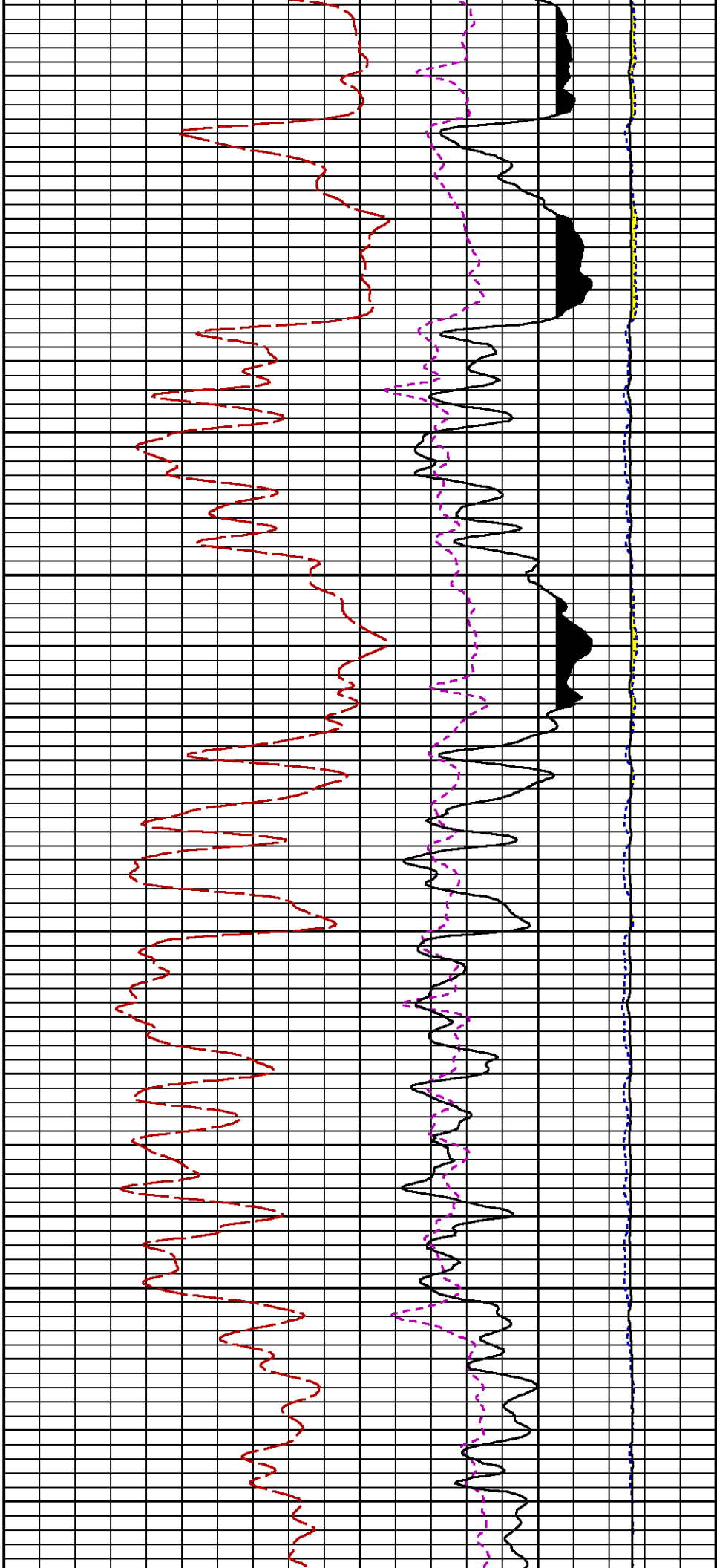
Presentation	: cpu100:/dat1a/LARAMIE_GUNDERSON_20_05W/GUNDERSON_20_05W_RPM_MAIN.fvpdf [5"/100' Scale]
Plot Interval	: 3831 - 7441.25 Feet
Data File 1	: F1 : cpu100:/dat1a/LARAMIE_GUNDERSON_20_05W/GUNDERSON_20_05W_RPM_MAIN.xtf
Created On	: Aug 25 16:30:11 2017
Company	: LARAMIE ENERGY
Well	: GUNDERSON 20-05W
Field	: VEGA
File Interval	: 3737 - 7450 Feet
OCT	: RPM3D

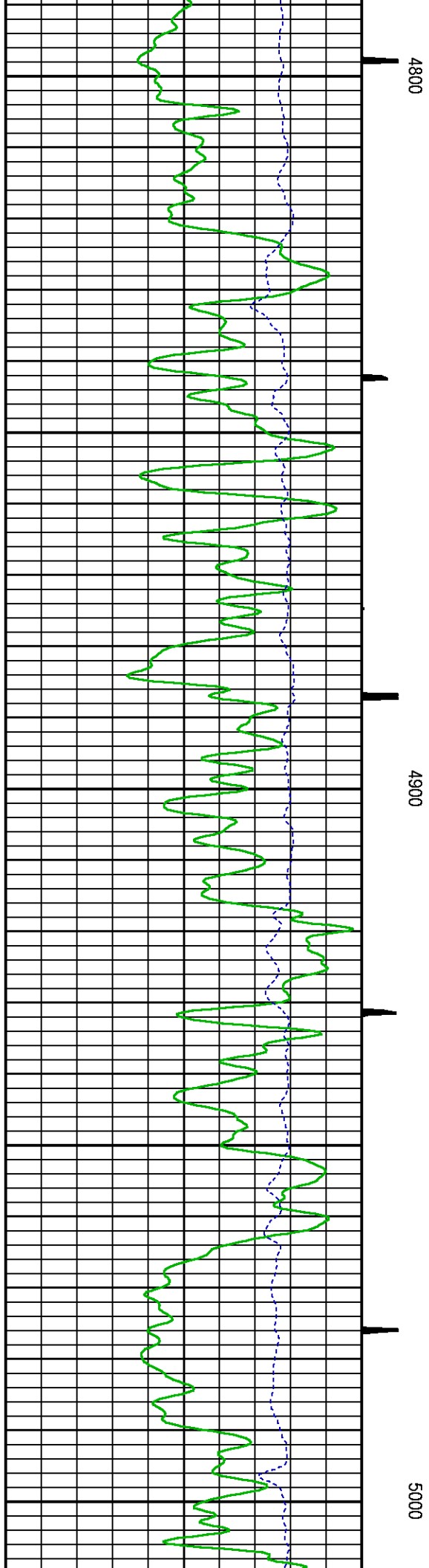
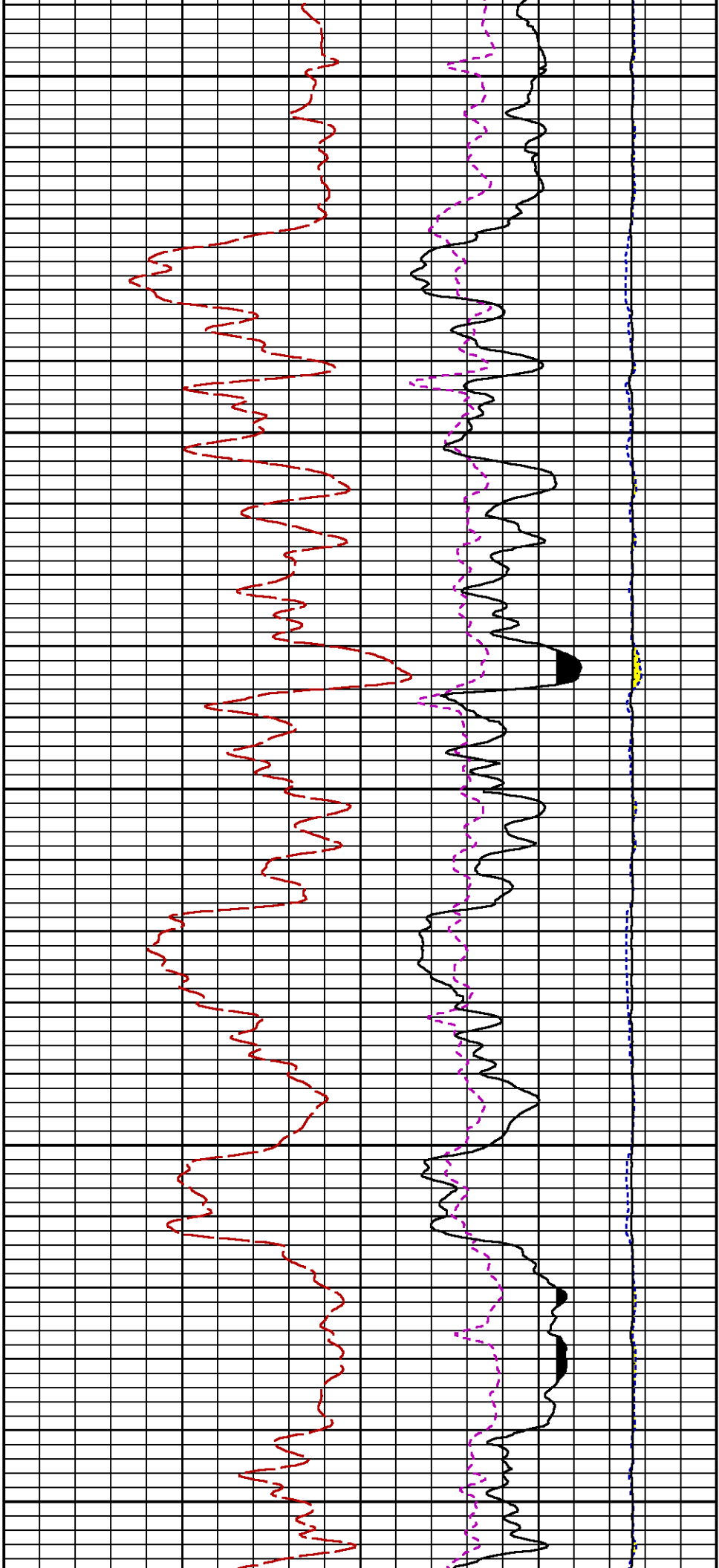


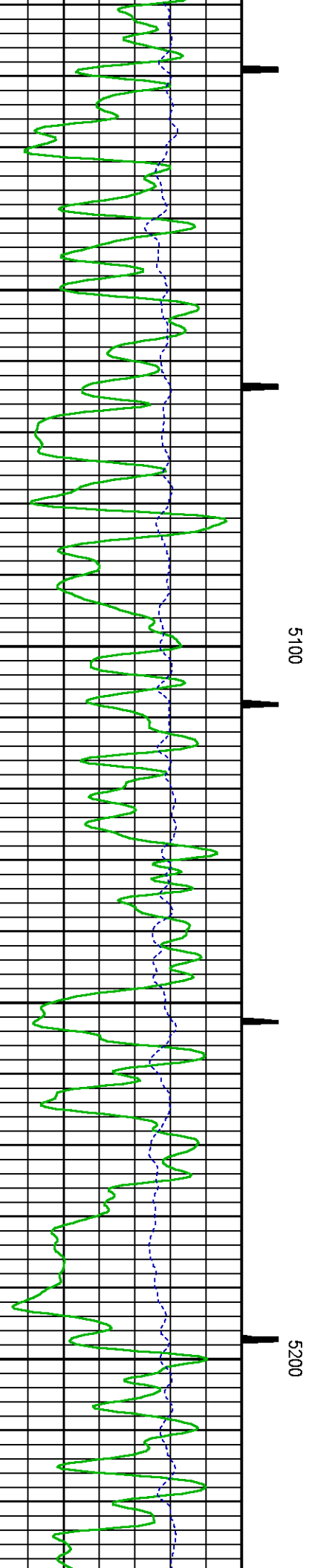
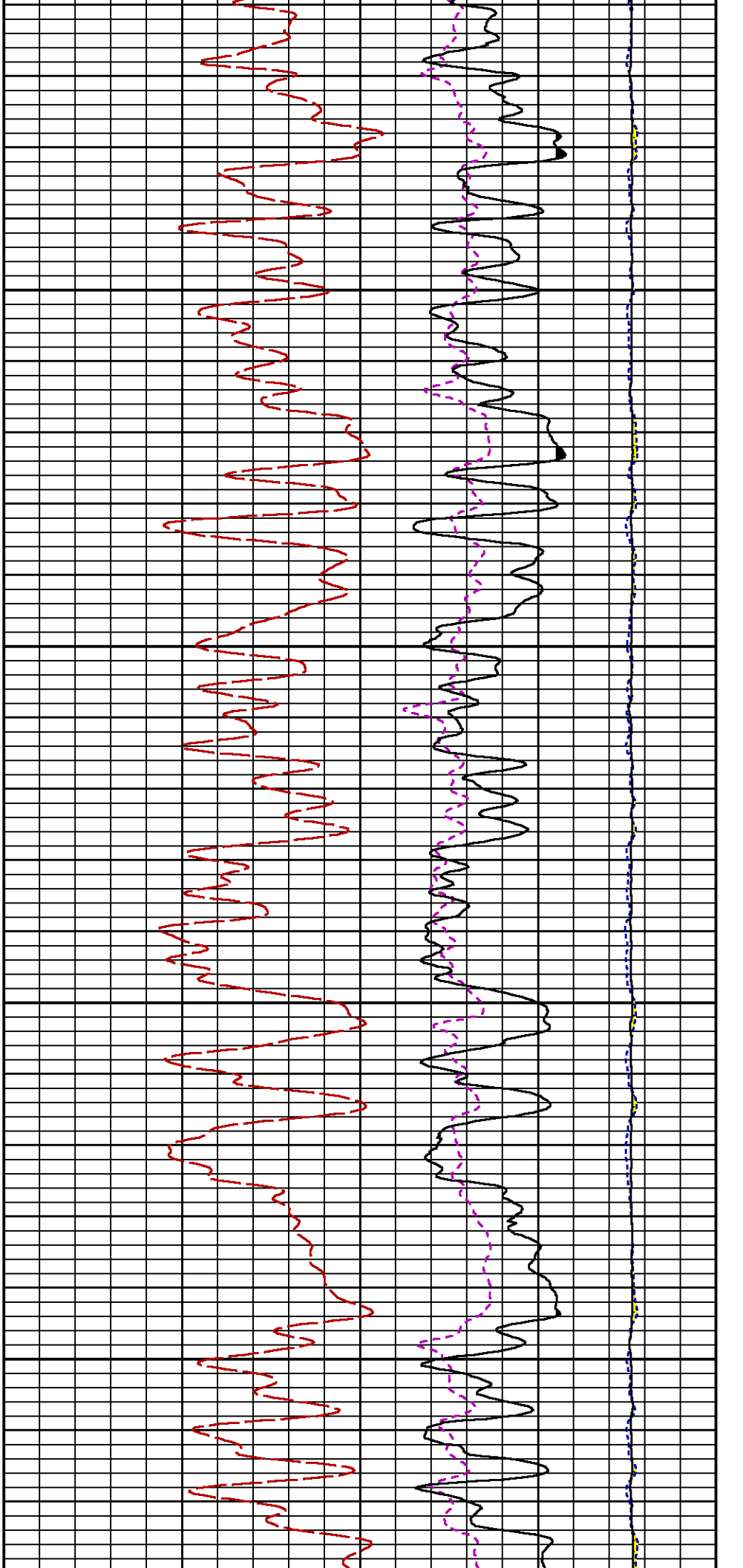






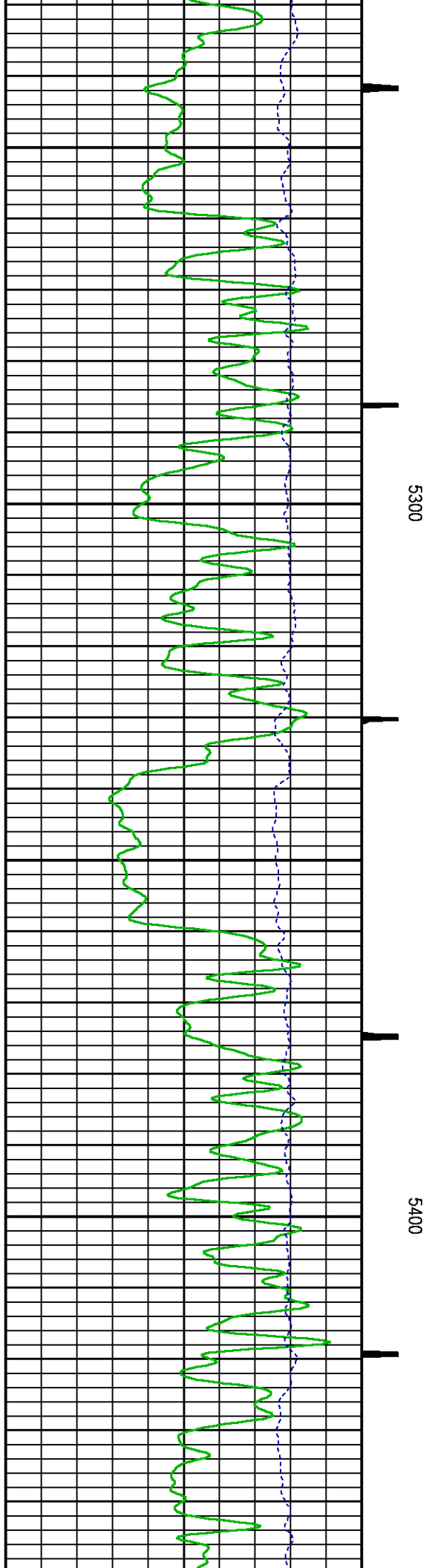
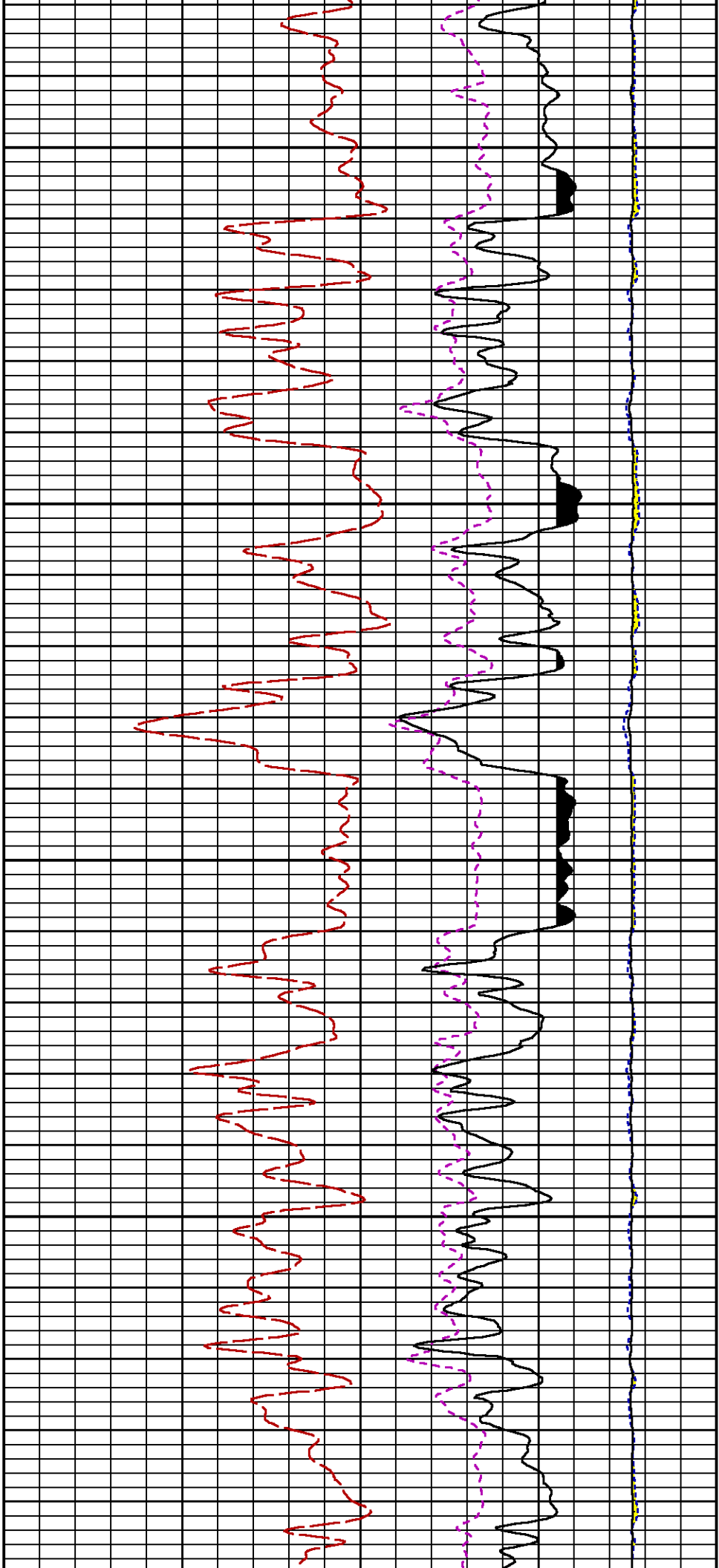


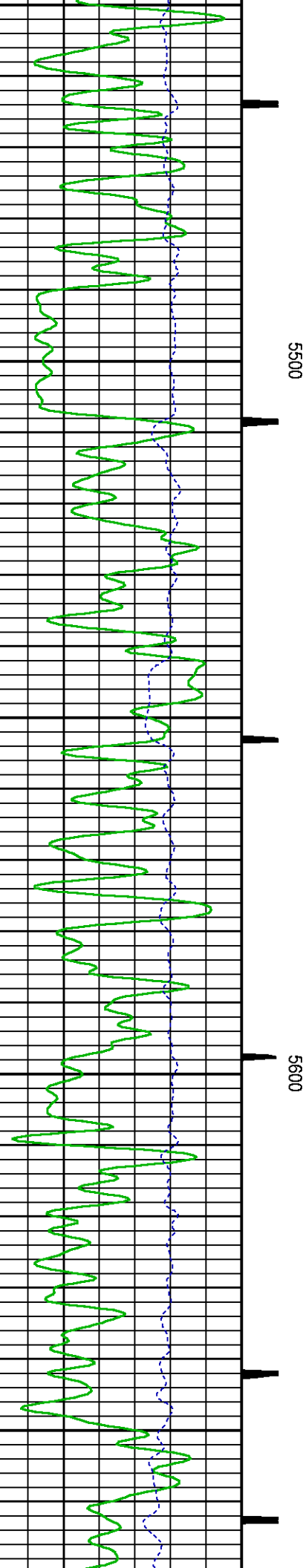




5100

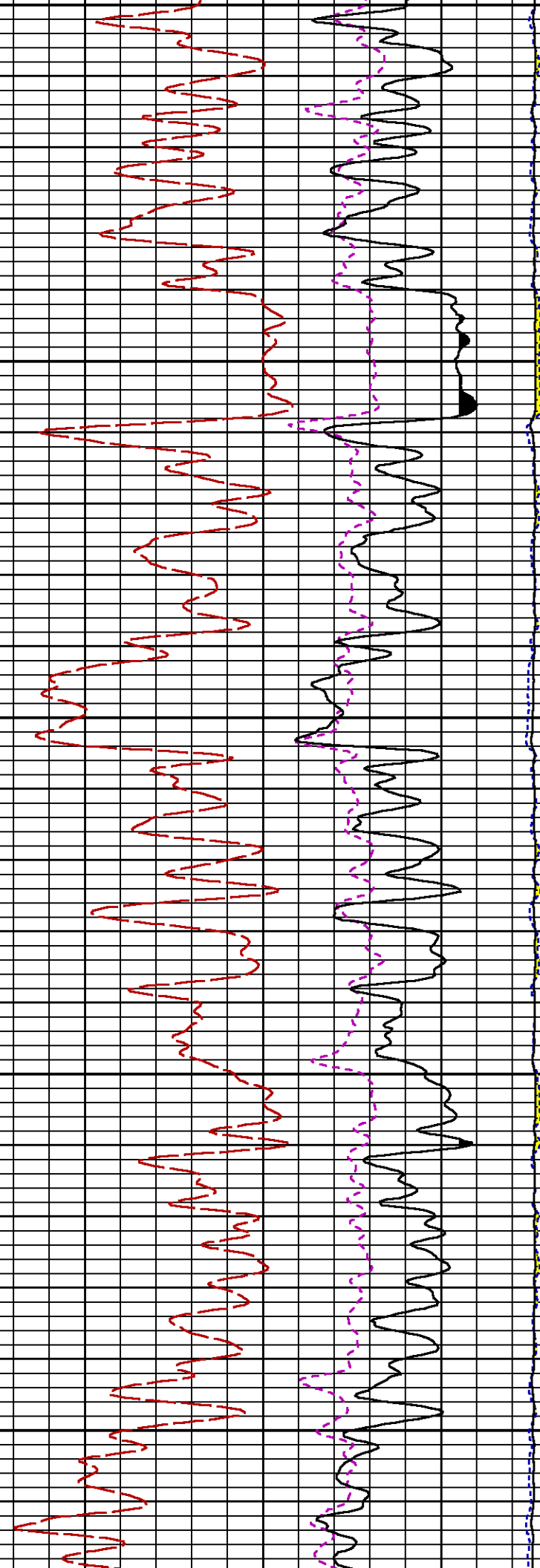
5200

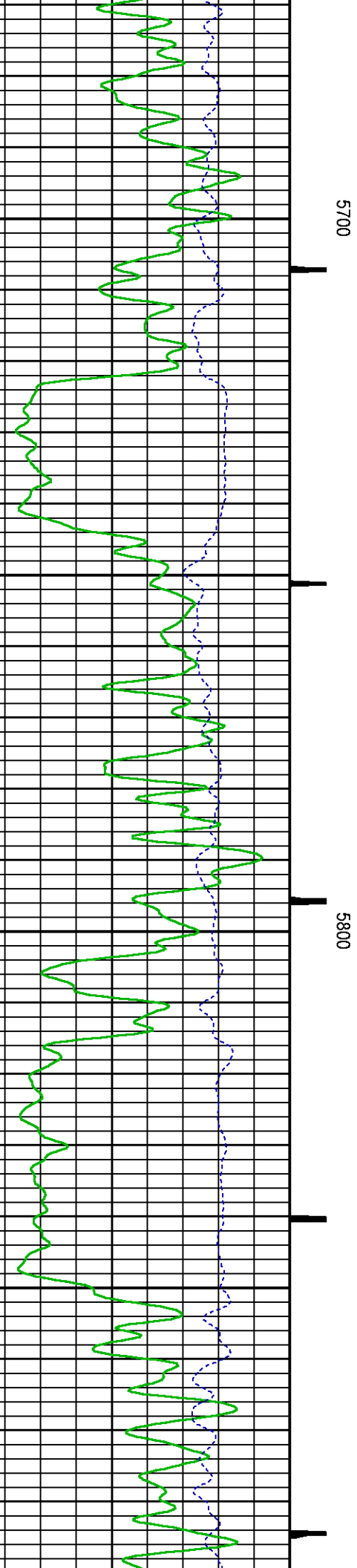
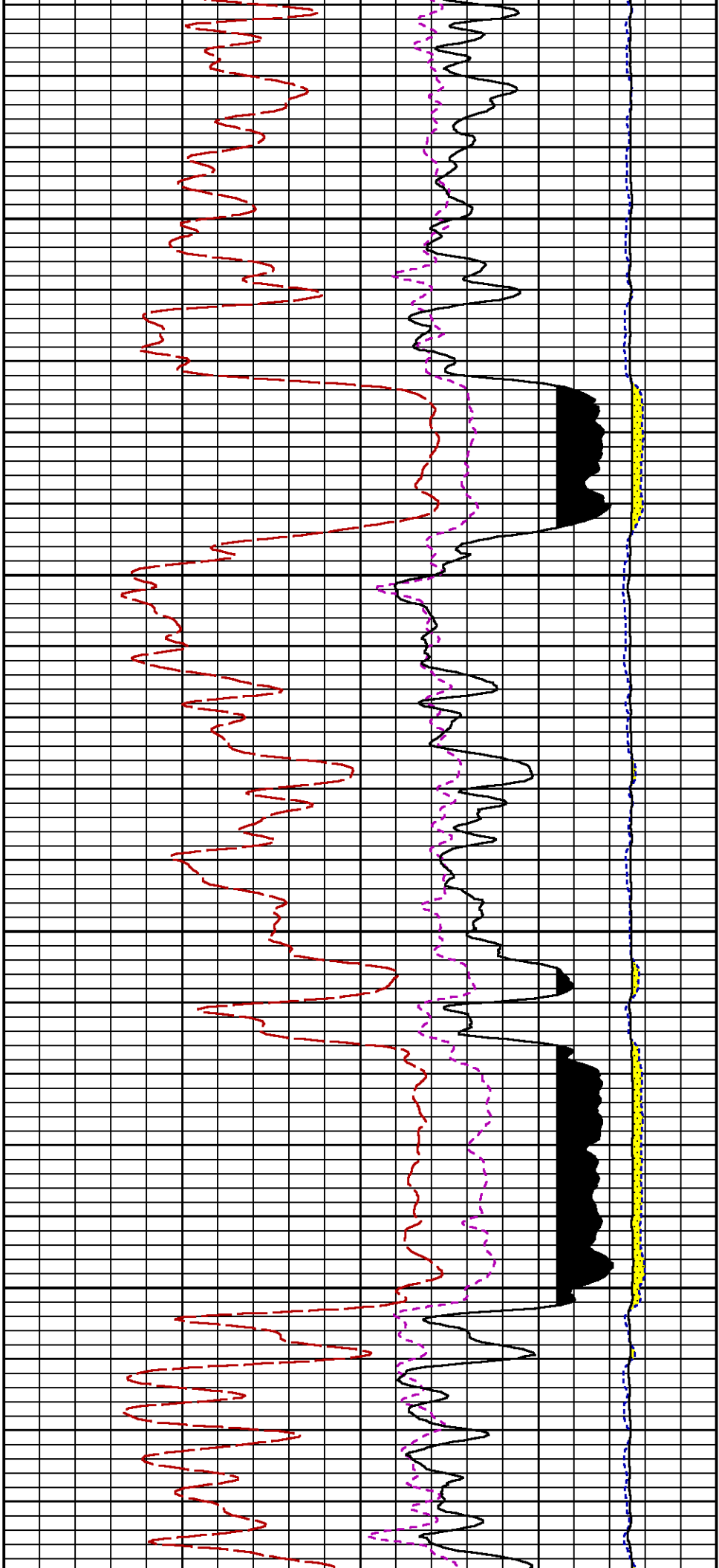


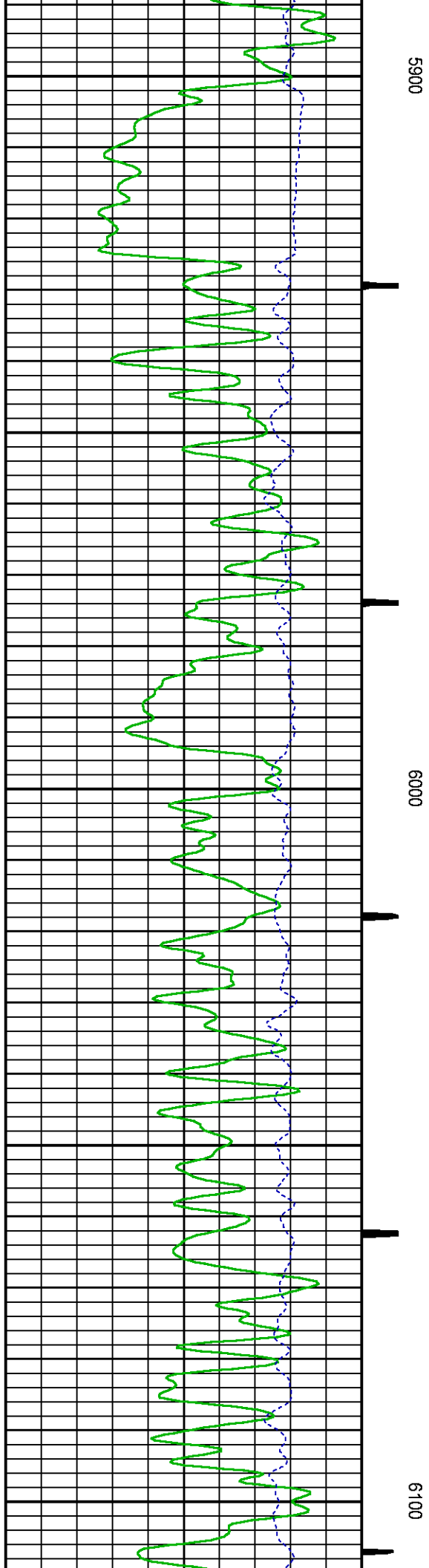
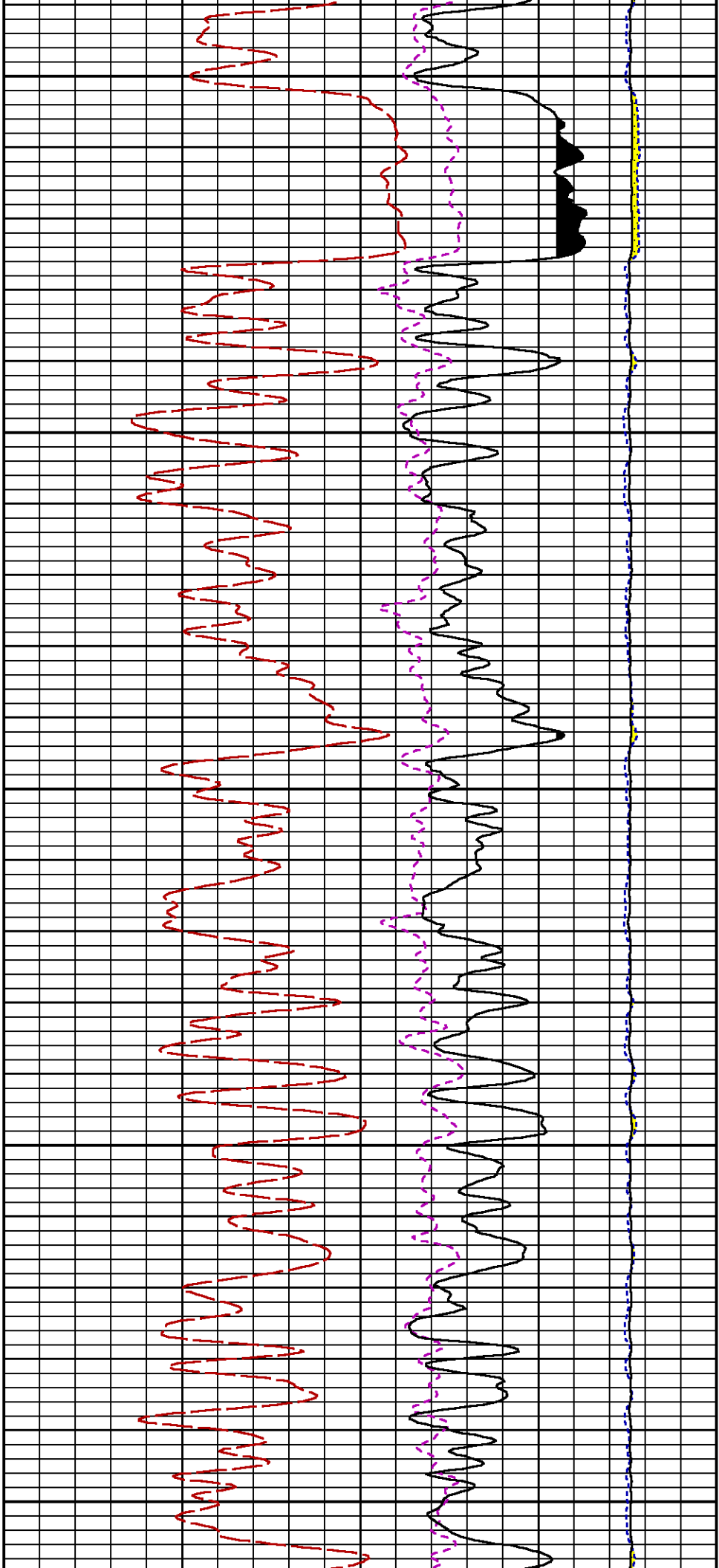


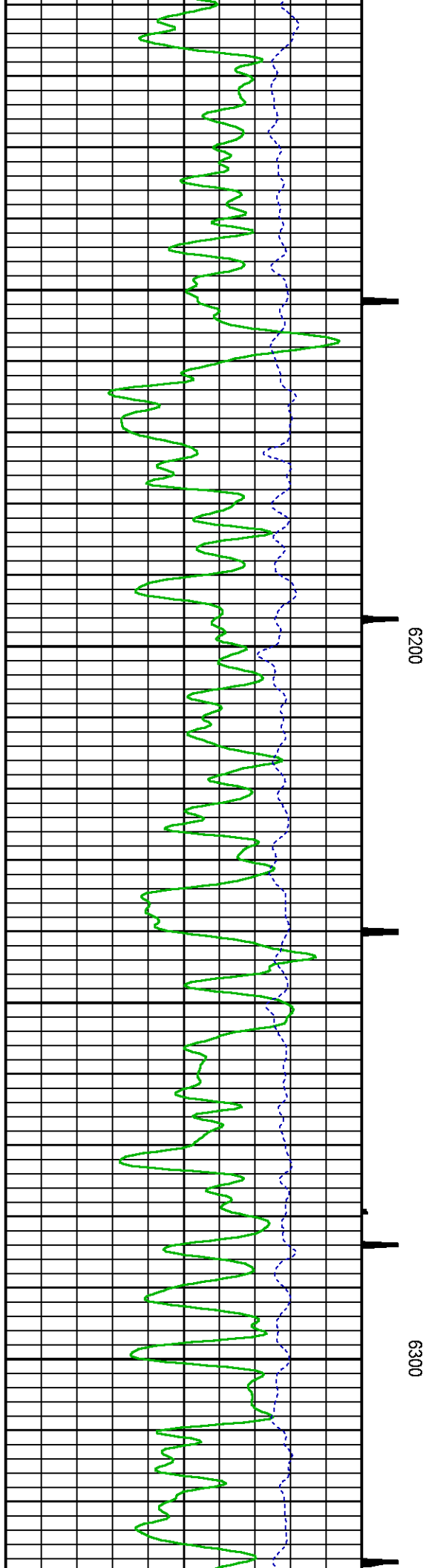
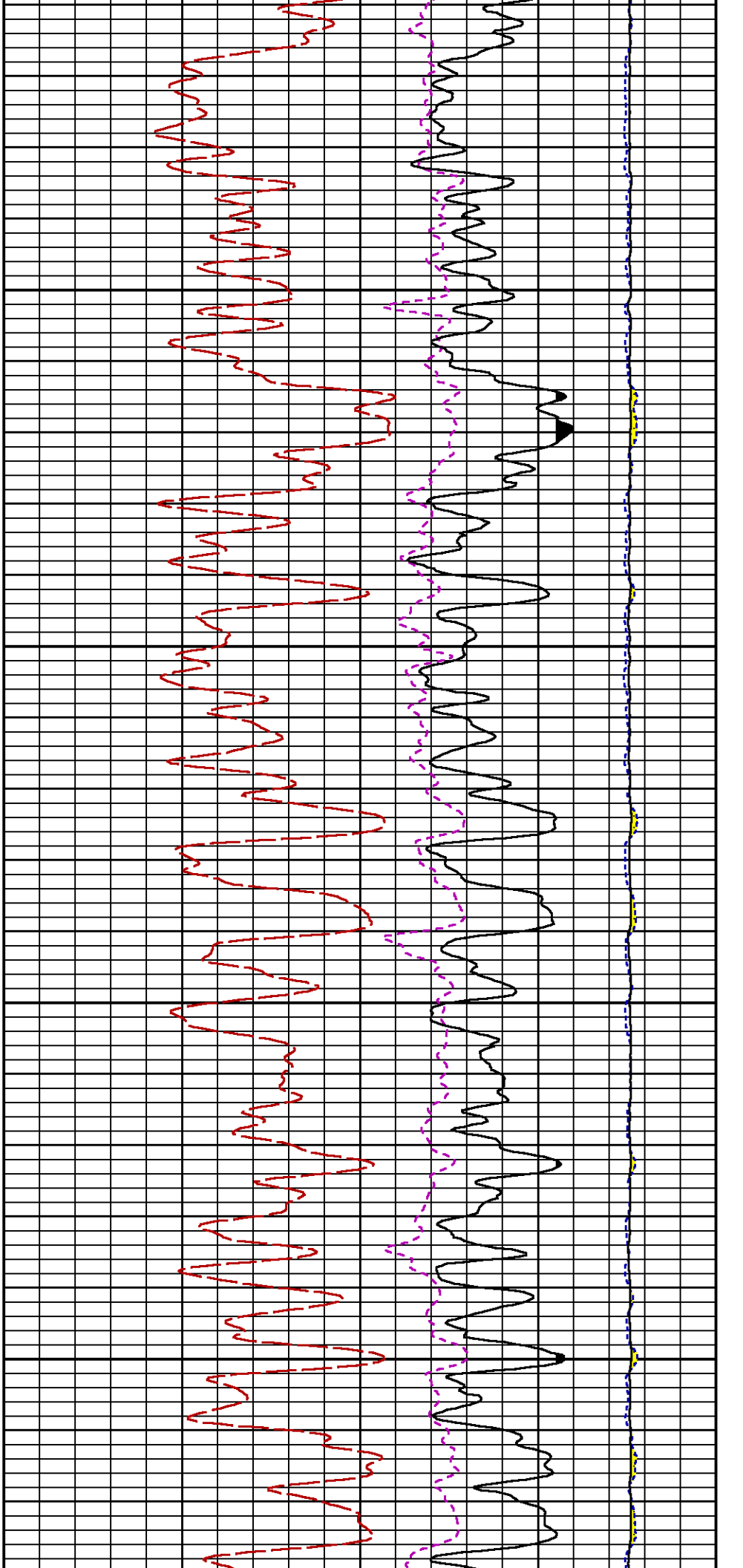
5500

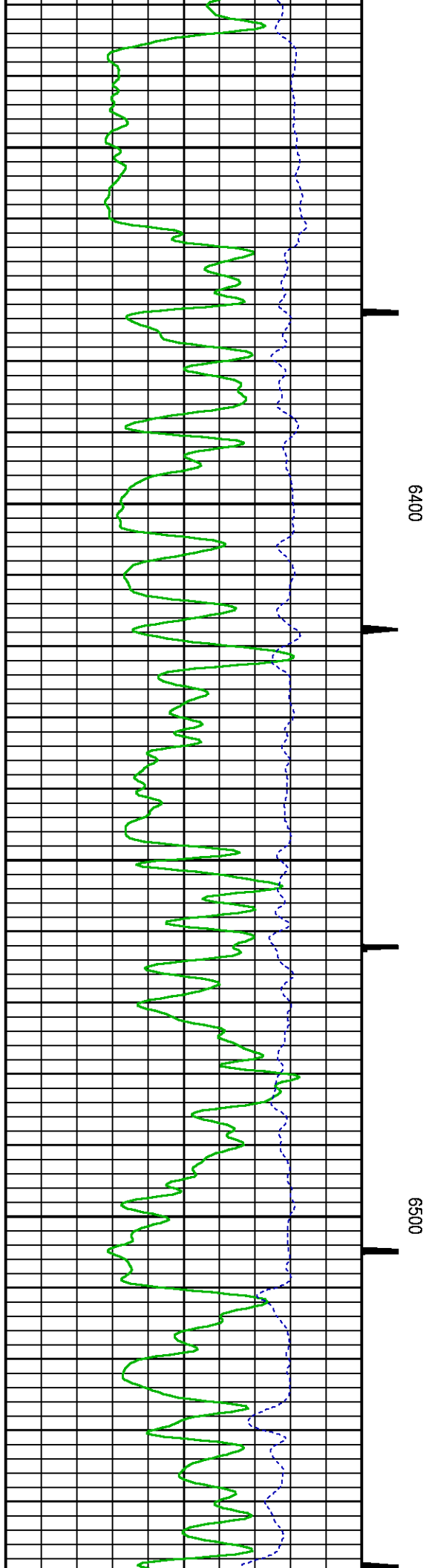
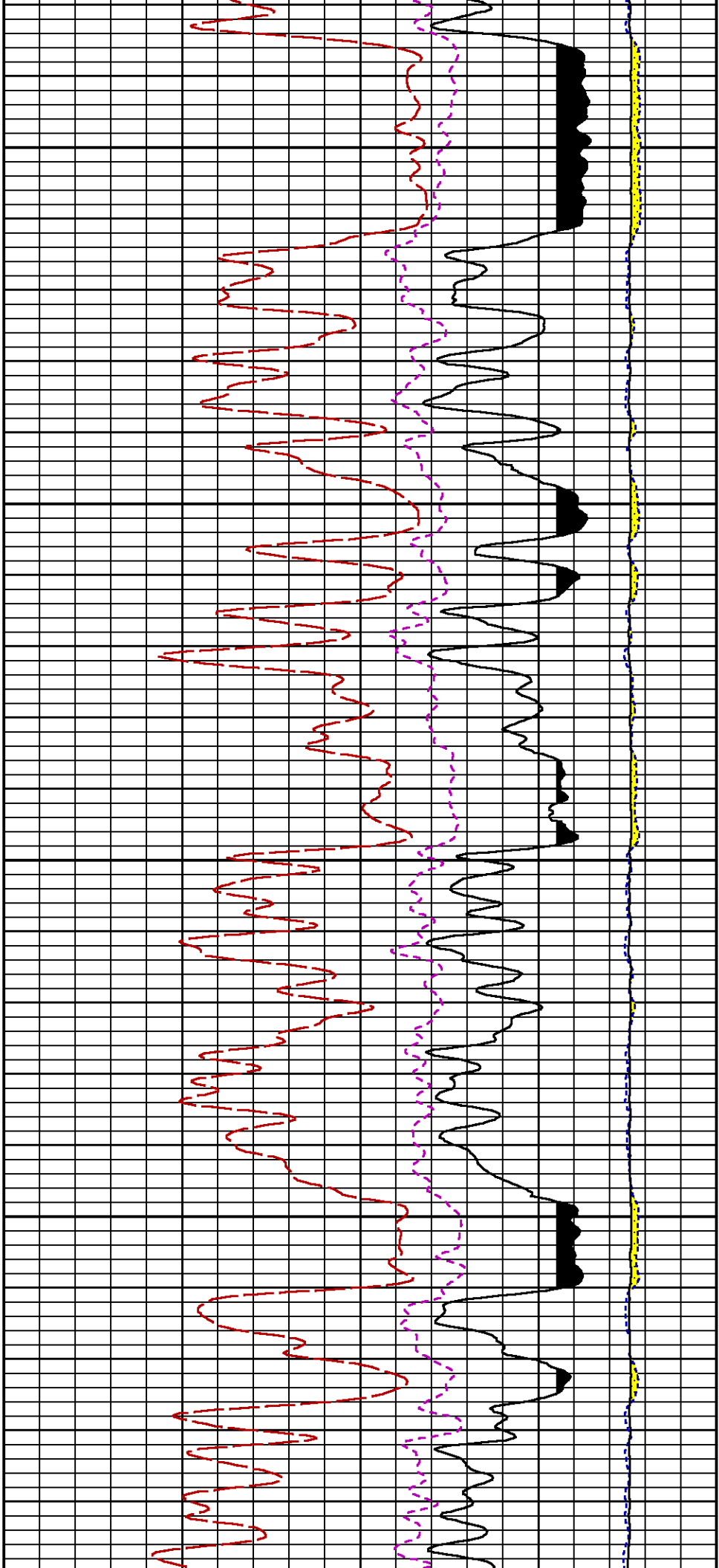
5600

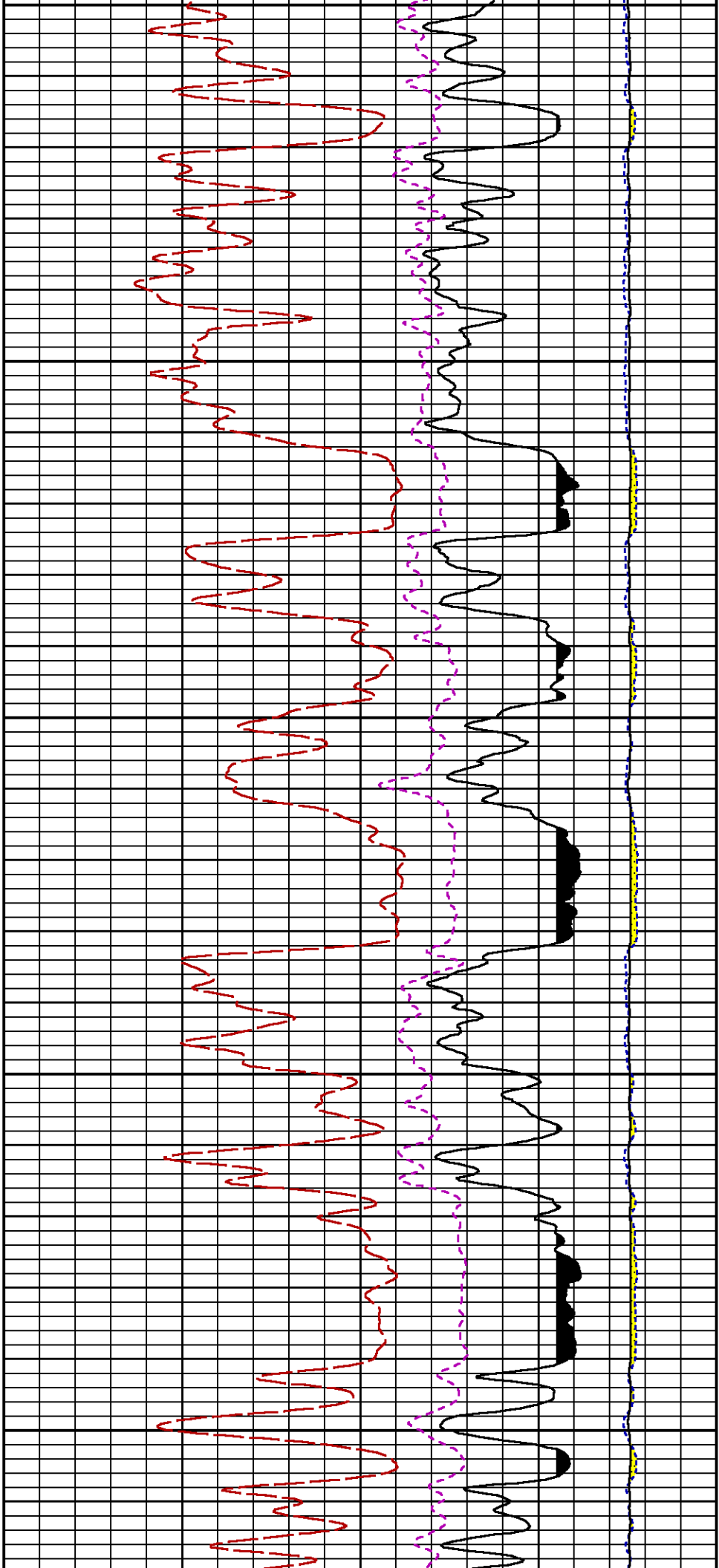






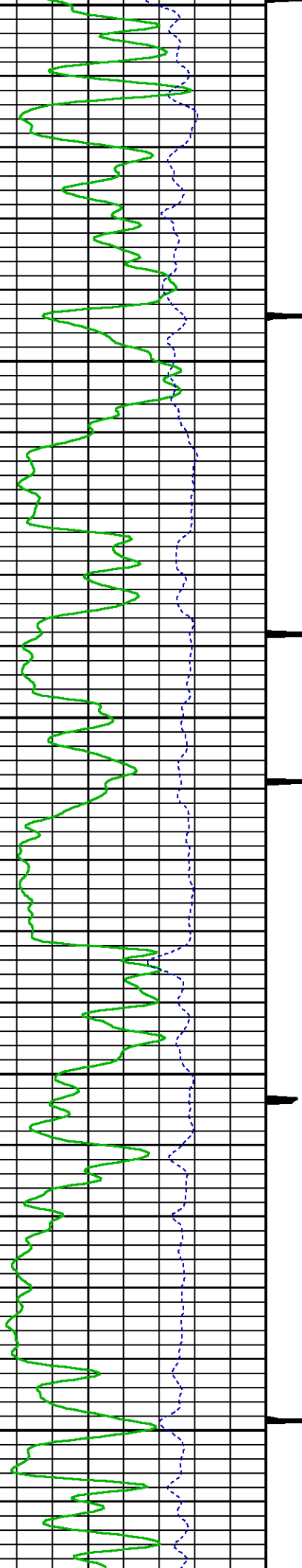


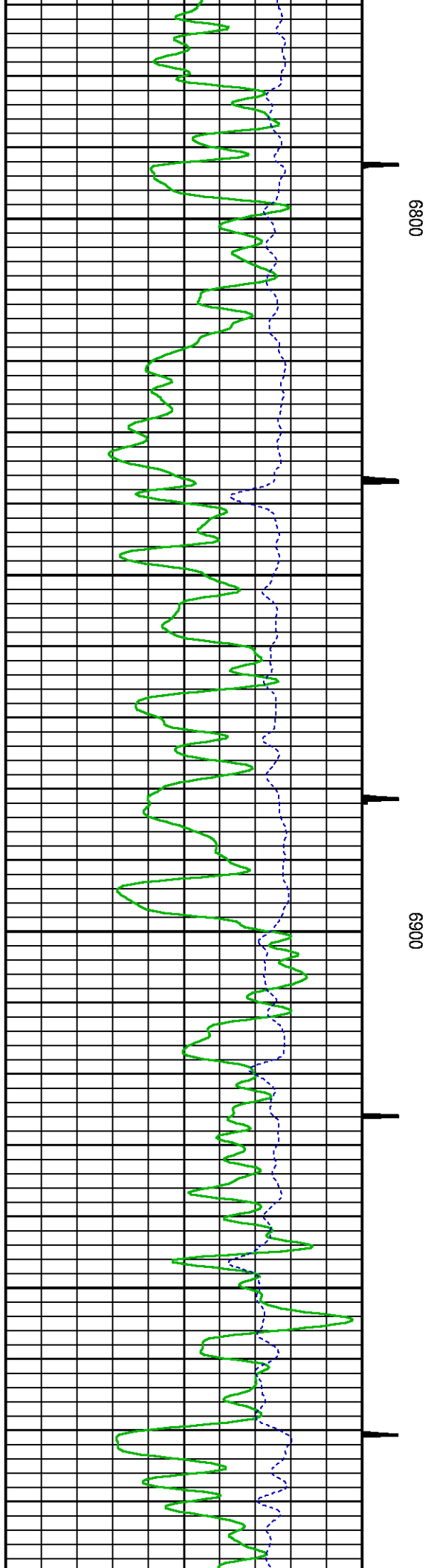
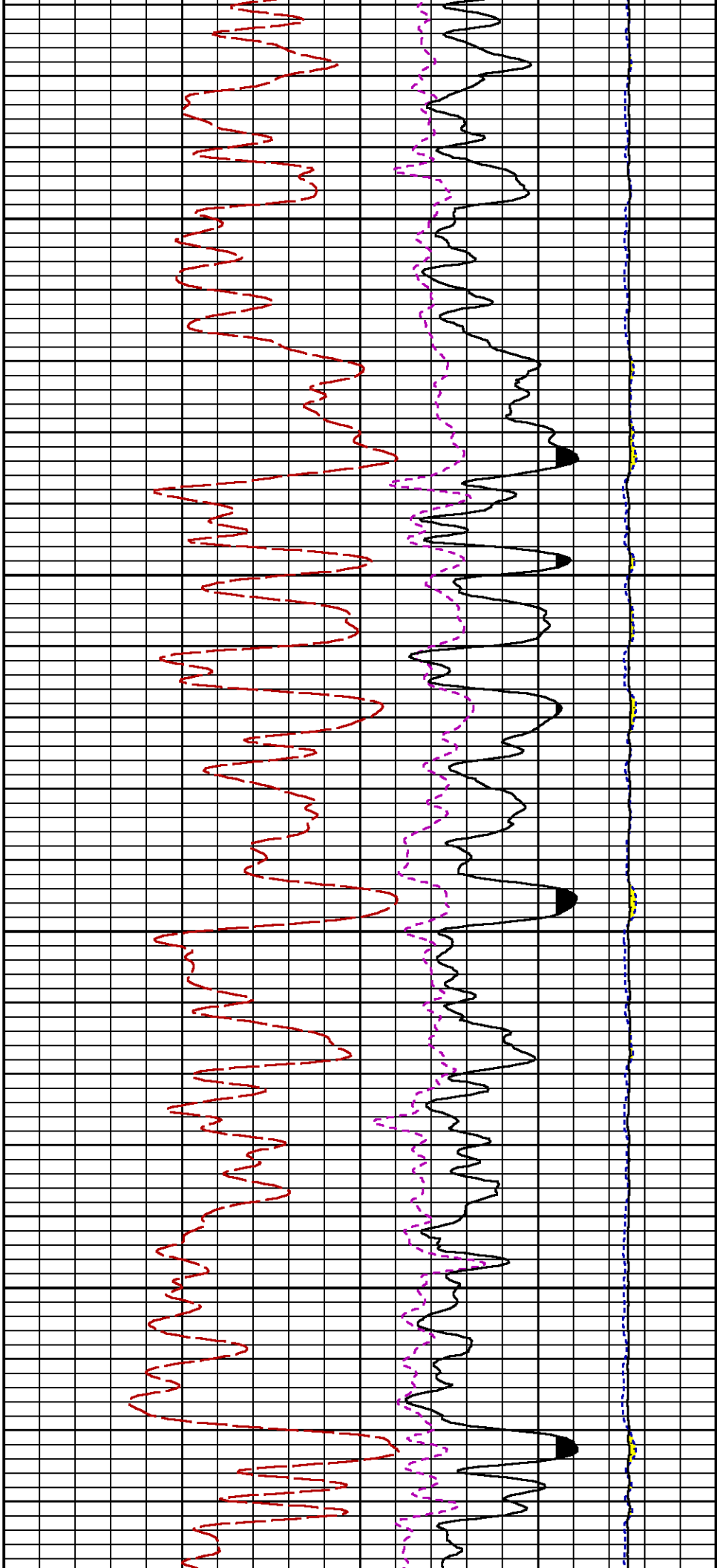


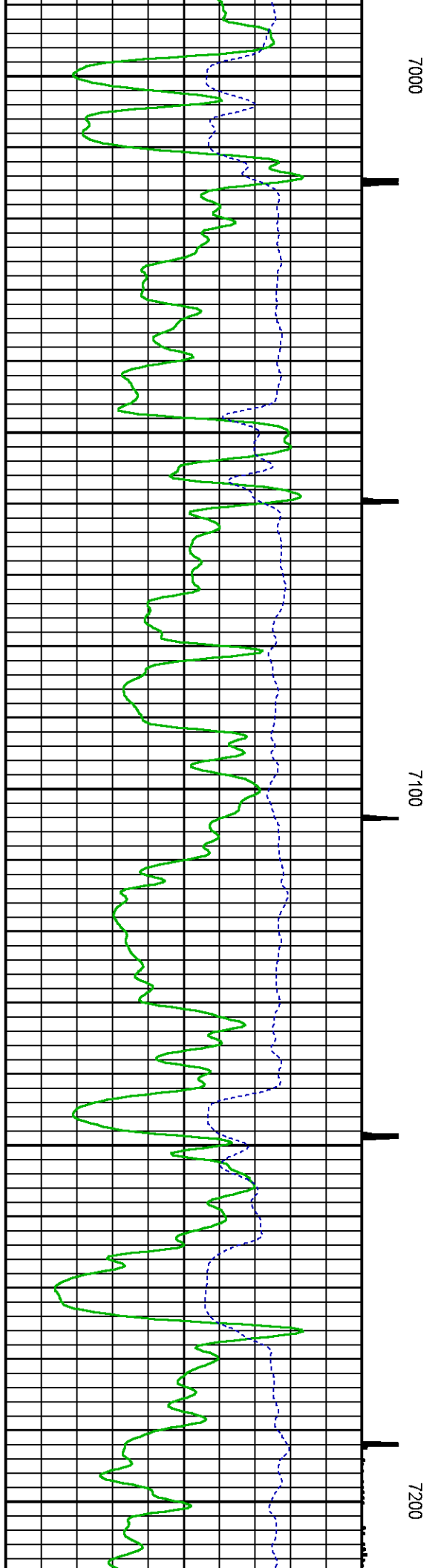
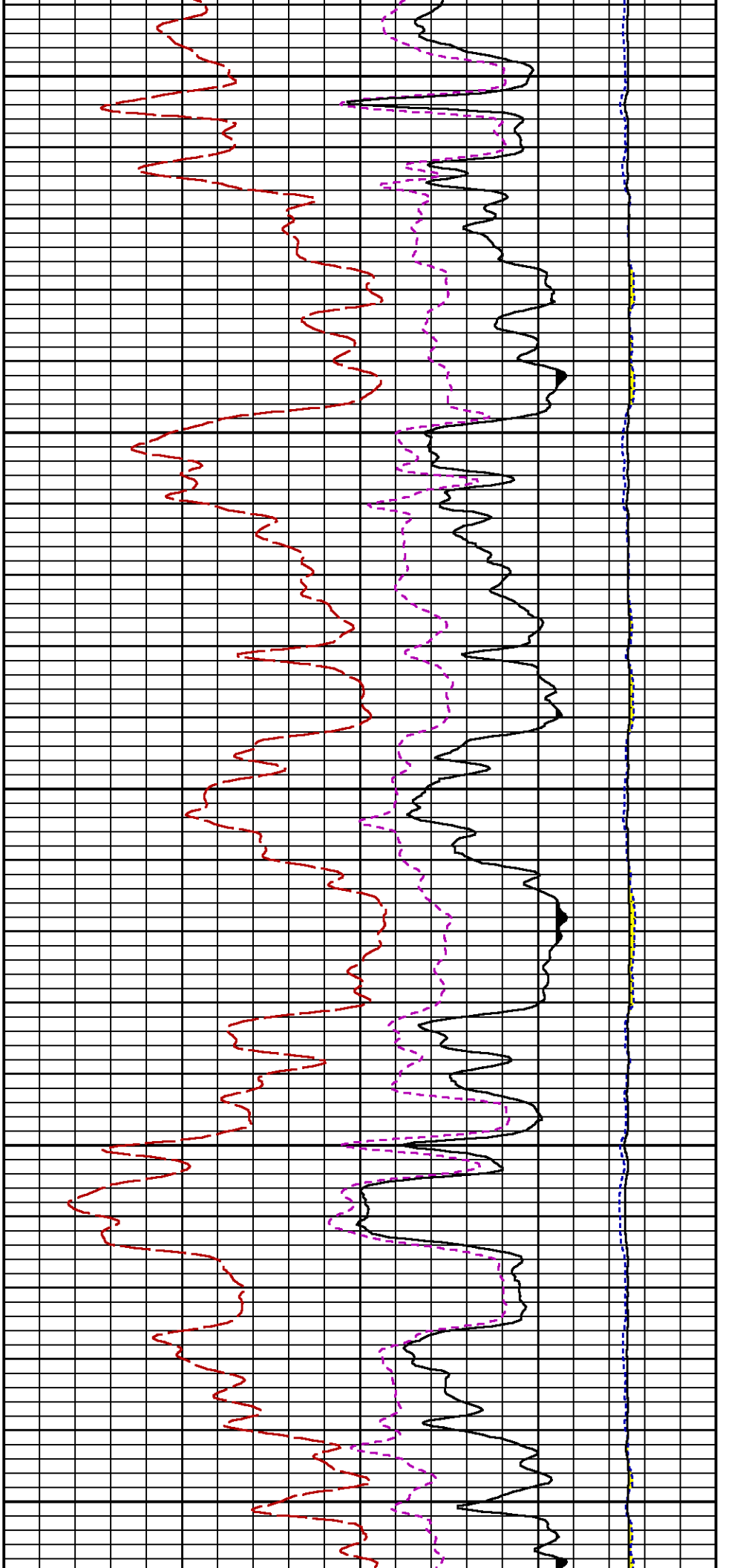


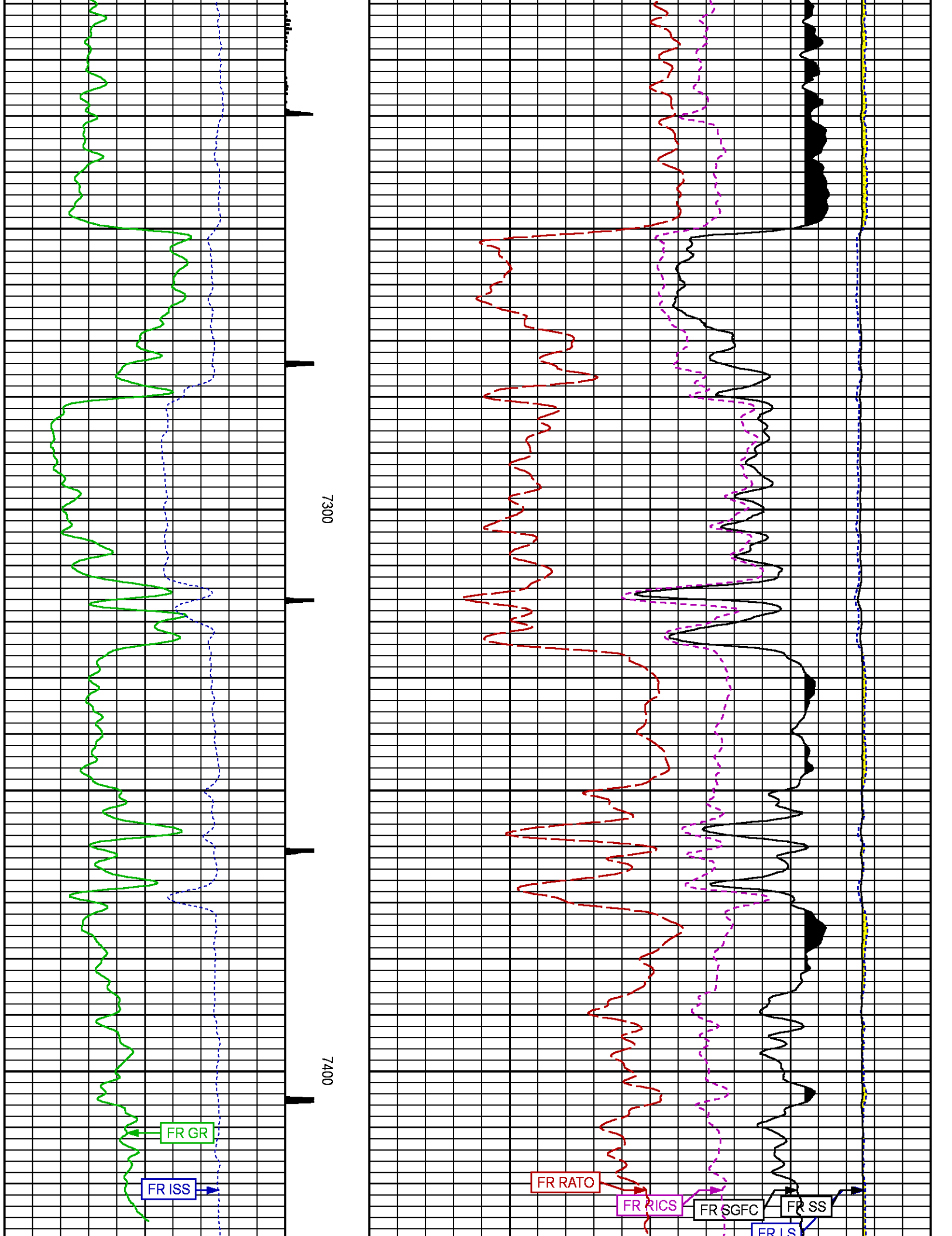
6600

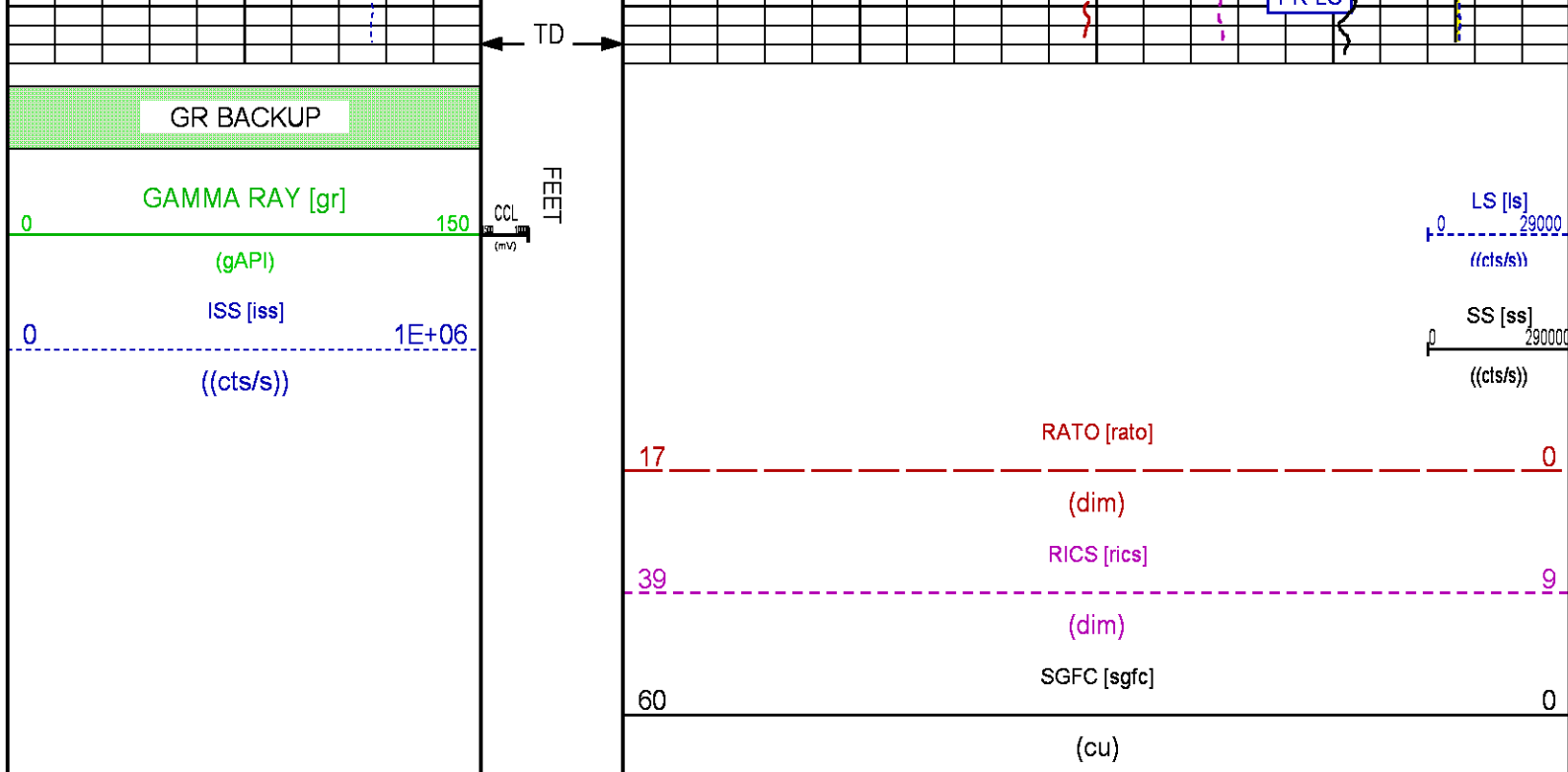
6700











REPEAT PASS PNC-3D MODE

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

Updates: 1 Patches: 9

Plotted: Fri Aug 25 21:16:52 2017

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_GUNDERSON_20_05W/RPM3D01.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 6856.750 ft BOTTOM DEPTH: 7096.500 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 BOTTOM
	OPEN/CASED HOLE	CASED HOLE		" "
	BOREHOLE SIZE	7.88	in	" "
	CASING SIZE	4.50	in	" "
	MATRIX	SANDSTONE		" "
	CORRECTION BUFFER	11		" "

CURVE DESCRIPTION REPORT

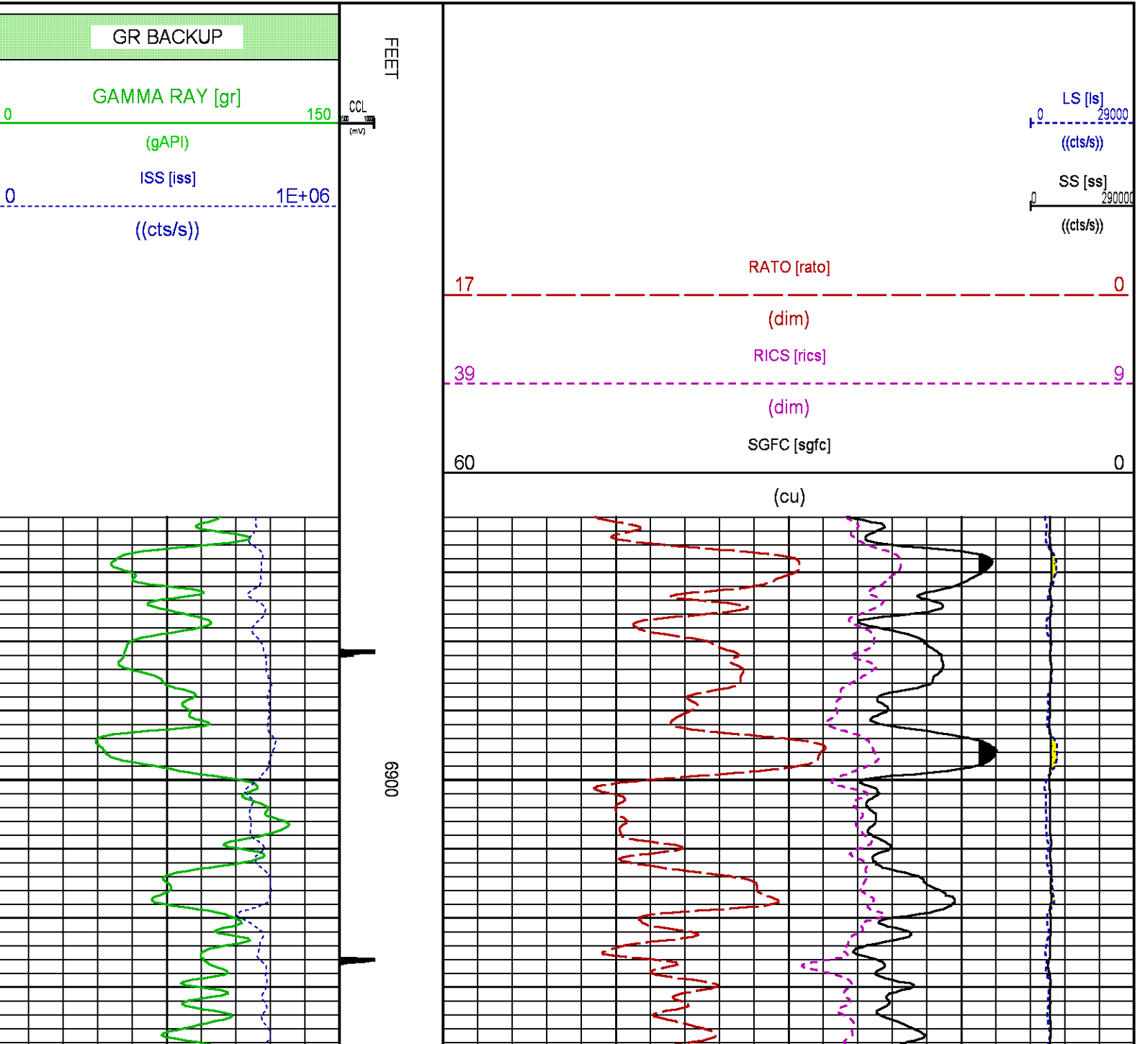
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	Aug 25 16:11:38 2017	CASING COLLAR LOCATOR
F1:GR	Aug 25 16:11:38 2017	GAMMA RAY
F1:ISS	Aug 25 16:11:38 2017	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Aug 25 16:11:38 2017	LONG SPACE COUNT RATE
F1:SS	Aug 25 16:11:38 2017	SHORT SPACE COUNT RATE

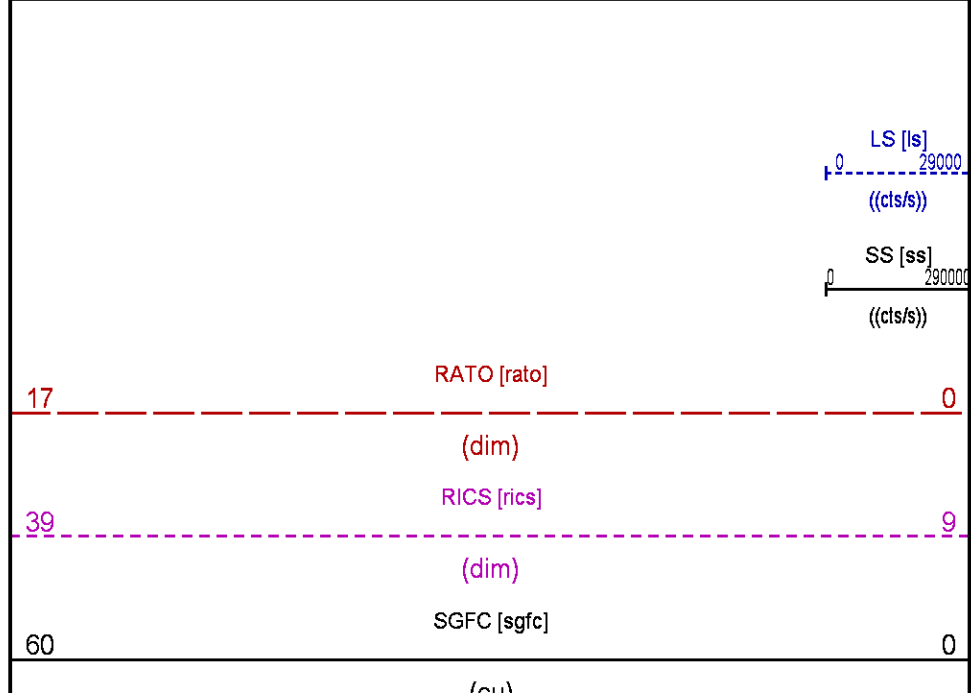
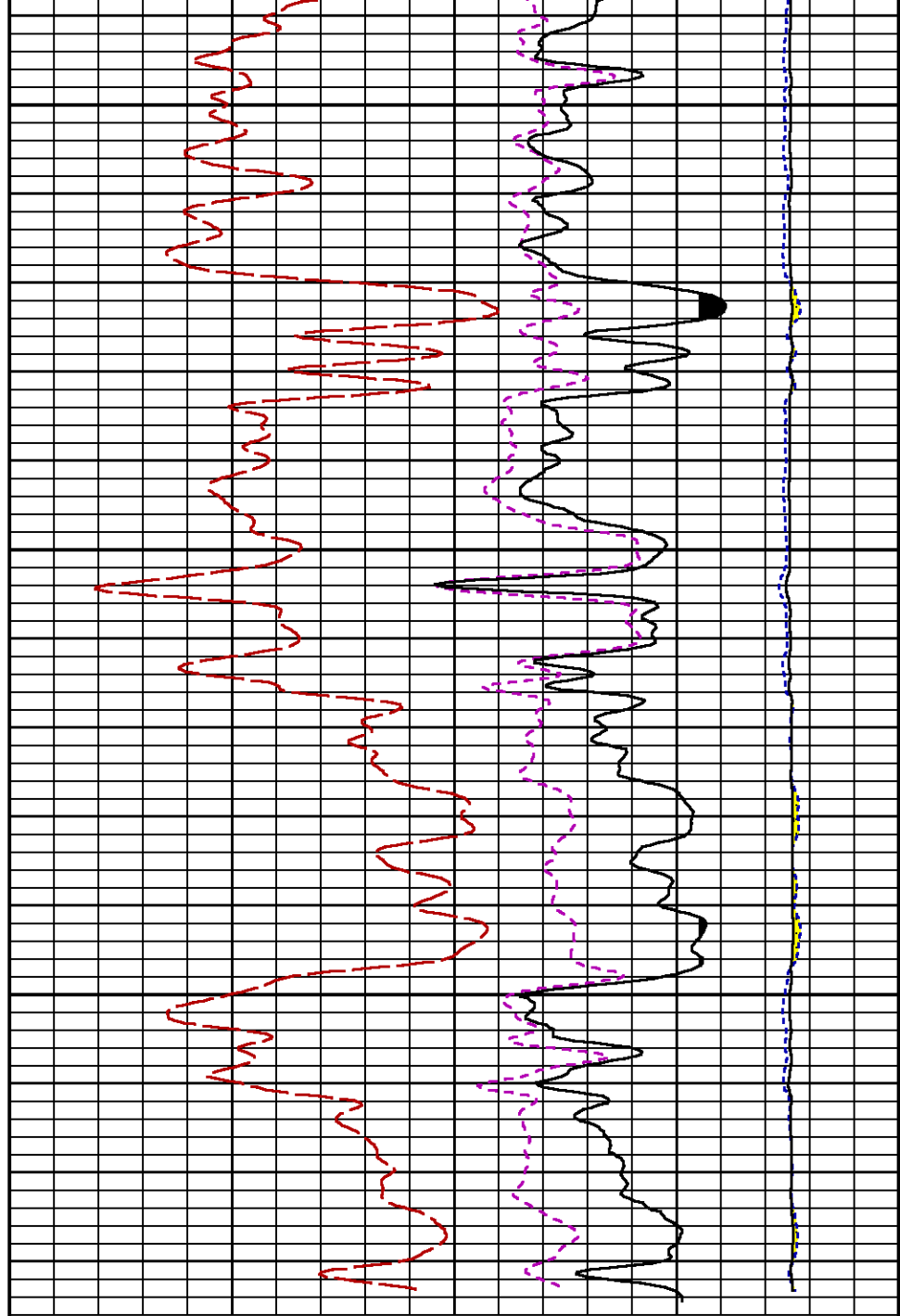
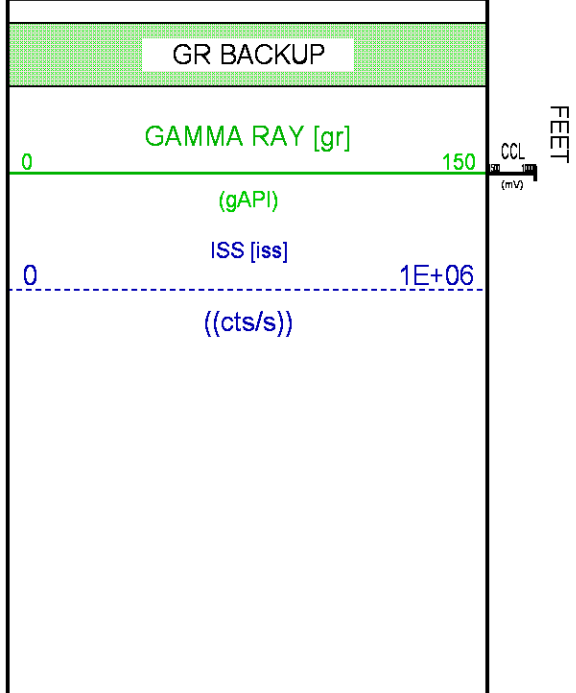
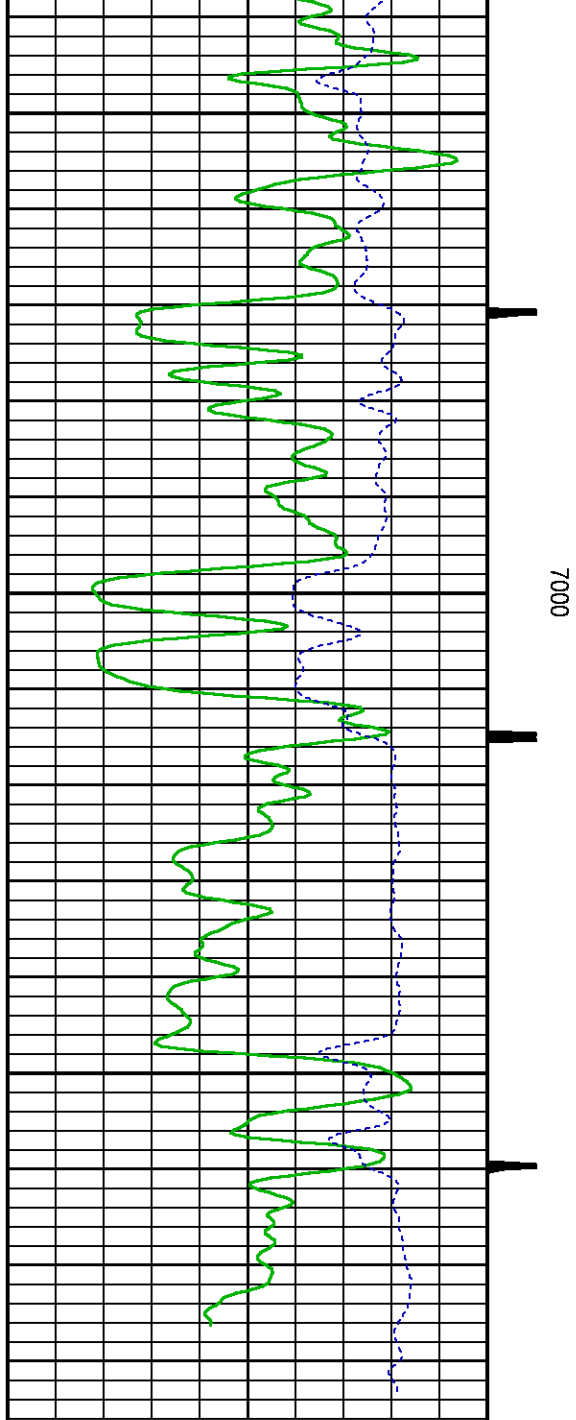
F1:LS	Aug 25 16:11:38 2017	LONG SPACE COUNT RATE
F1:RATO	Aug 25 16:11:38 2017	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Aug 25 16:11:38 2017	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Aug 25 16:11:38 2017	CORRECTED FORMATION SIGMA
F1:SS	Aug 25 16:11:38 2017	SHORT SPACE COUNT 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	: cpu100:/dat1a/LARAMIE_GUNDERSON_20_05W/GUNDERSON_20_05W_RPM_REPEAT.fvpdf [5"/100' Scale]
Plot Interval	: 6862 - 7090.75 Feet
Data File 1	: F1 : cpu100:/dat1a/LARAMIE_GUNDERSON_20_05W/GUNDERSON_20_05W_RPM_RPT.xtf
Created On	: Aug 25 16:11:38 2017
Company	: LARAMIE ENERGY
Well	: GUNDERSON 20-05W
Field	: VEGA
File Interval	: 6834.25 - 7099.5 Feet
OCT	: RPM3D





CALIBRATION / VERIFICATION SUMMARY

Source File: \dat1a\ARAME_GUNDERSON_20_09\WRPM3D tp1

GR PRIMARY CALIBRATION SUMMARY

TOOL #: 8262XA10485470 DATE/TIME PERFORMED: Tue Jan 17 13:32:11 2017
UNIT #: 3882ML ML4352 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	63.76	399.13	335.4	0.552	35.17	220.17	185

GR PRIMARY VERIFICATION SUMMARY

TOOL #: 8262XA10485470 DATE/TIME PERFORMED: Tue Jan 17 13:34:45 2017
UNIT #: 3882ML ML4352 VERI JIG #: 4702NK DA_228

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	63.44	394.18	0.552	35.00	217.44	182.44

RPM_PNC_3D PRIMARY CALIBRATION SUMMARY

TOOL: 8283PA10184883 DATE/TIME PERFORMED: Thu Jul 13 15:06:49 2017
UNIT: 3882TD HL6728 CALIBRATOR: 2437XB 120057 SOURCE: 8281AA10160595 HOURS: 8281AA 228

	ISS	Mr Vits (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	807240	123	2232	2259	2285	137	9.0	0.9874
Interpolated	1300000	146	2216	2251	2283			

	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	807240	6543	1352	236	25.88	0.15	24.03	0.34

	ISS	ILS	IXS	SS	SS2	LS	CSS	CLS
Raw Data	807240	164687	25336	86104	30690	8086	52299	12945
Fit Quality %		0.492	0.443	0.487	0.490	0.506	0.462	0.494

	ISS	RBOR	RIN ISS/LS	RIN13 ISS/XS	RICS ISS/CSS	RATO SS/LS	RTWO SS2/LS	RONE CSS/CLS
Raw Data	807240	1.44	4.90	31.88	15.44	10.65	3.80	4.04
Fit Quality %		0.052	0.128	0.117	0.144	0.021	0.011	0.031
Reduced	1232260	1.44	4.91	31.91	15.45	10.65	3.80	4.04

INSTRUMENT CONFIGURATION

Source File: \dat1a\ARAME_GUNDERSON_20_09\WRPM-ldg

A3 CABLEHEAD

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

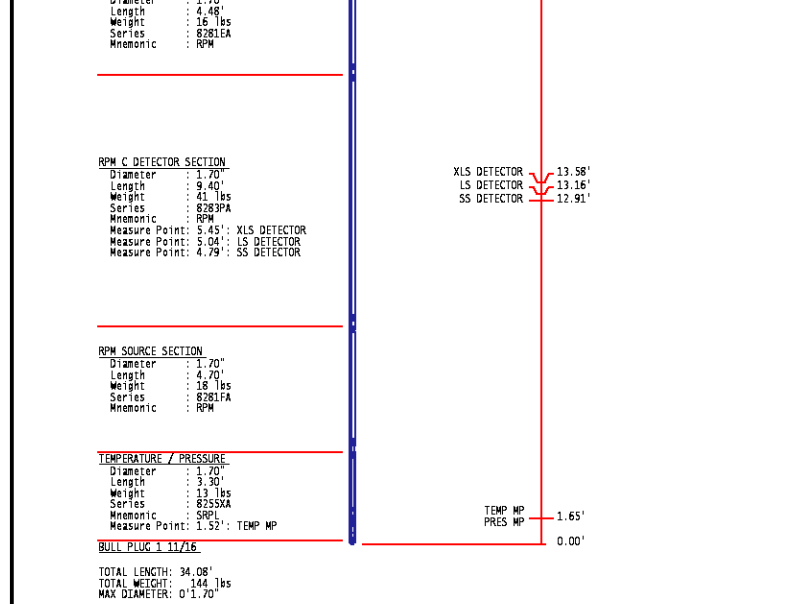
RPM ELECTRONICS


Diameter : 1.70"

34.08'

CCL MP 26.03'

GR MP 22.90'



	COMPANY <u>LARAMIE ENERGY</u>		FILE NO: _____
	WELL <u>GUNDERSON 20-05W</u>		API NO: _____
	FIELD <u>VEGA</u>	STATE <u>COLORADO</u>	<u>05077103390000</u>
	COUNTY <u>MESA</u>		
LOCATION: LAT:39.266864N;LONG:107.795317W BHL: LAT:39.266479N;LONG:107.797721W SEC <u>20</u> TWP <u>9S</u> RGE <u>93W</u>		ELEVATIONS: KB 7176 FT DF 7176 FT GL 7146 FT	
		DATE <u>25-AUG-2017</u>	