



FILE NO:

COMPANY

LARAMIE ENERGY

API NO:

WELL

BRUTON FEDERAL 19-09E

05077104330000

FIELD

VEGA

STATE COLORADO

Version

LOCATION:

SHL: 39.262729 N, 107.815084 W
BHL: 39.263774 N, 107.806459 W

OTHER SERVICES

PERMANENT DATUM GL ELEVATION 7262 FT
LOG MEASURED FROM KB 24 FT ABOVE P.D.
DRILL. MEAS. FROM KB

ELEVATIONS:
KB 7286 FT
DF 7285 FT
GL 7262 FT

DATE 06-Dec-2017

RUN 2 TRIP 1

SERVICE ORDER US130067

DEPTH DRILLER 8132 FT

DEPTH LOGGER 8056 FT

BOTTOM LOGGED INTERVAL 8056 FT

TOP LOGGED INTERVAL 2400 FT

TIME STARTED 14:30

TIME FINISHED 21:00

OPERATOR RIG TIME 6 HOURS

TYPE OF FLUID IN HOLE FRESHWATER

FLUID DENSITY NA

FLUID SALINITY NA

FLUID LEVEL 25 FT

LOGGED CEMENT TOP 2632 FT

WELLHEAD PRESSURE 0 PSI

MAXIMUM HOLE DEVIATION NA

NOMINAL LOGGING SPEED 15 FMIN

MAX. RECORDED TEMP. 240 DEGF

REFERENCE LOG NA

REFERENCE LOG DATE NA

EQUIP. NO. LOCATION HL6670 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

RUN2 TRIP 1: *2 OPERATIONS IN WELLBORE*

**OPERATION 2: RPM/GR/CCL/TEMP RUN FREE*

LOGGED WITH 0 PSI ON WELLHEAD

SJ: 6242' - 6265'

SJ: 7263' - 7285'

CREW: J. PENA, A. SHAHNOOSHI, C.GOLBY

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
2	1	TELEMETRY	8250EA/8248EA	1174584/101935845	FREE
2	1	GAMMA RAY	8262XA	10186540	FREE
2	1	RPM	8281EA	10387162	FREE
2	1	RPM	8283PA	10184883	FREE
2	1	RPM	8281FA	10238007	FREE
1	1	TEMP	8255XA	120516	free

G-SAND SECTION PNC 3D MODE

ECLIPS 7.0w PC-ECLIPS General Release Rel 7.0w Fri Jun 09 11:02:06 Central Daylight Time 2017
Patches: 2

Plotted: Wed Dec 06 21:47:00 2017

PARAMETER AND FILTER SUMMARY REPORT

FILE: C:\dat1a\BRUTON FEDERAL_RAL 19-09E\PRM3D05.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 2393.250 ft BOTTOM DEPTH: 3034.750 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	7.78	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

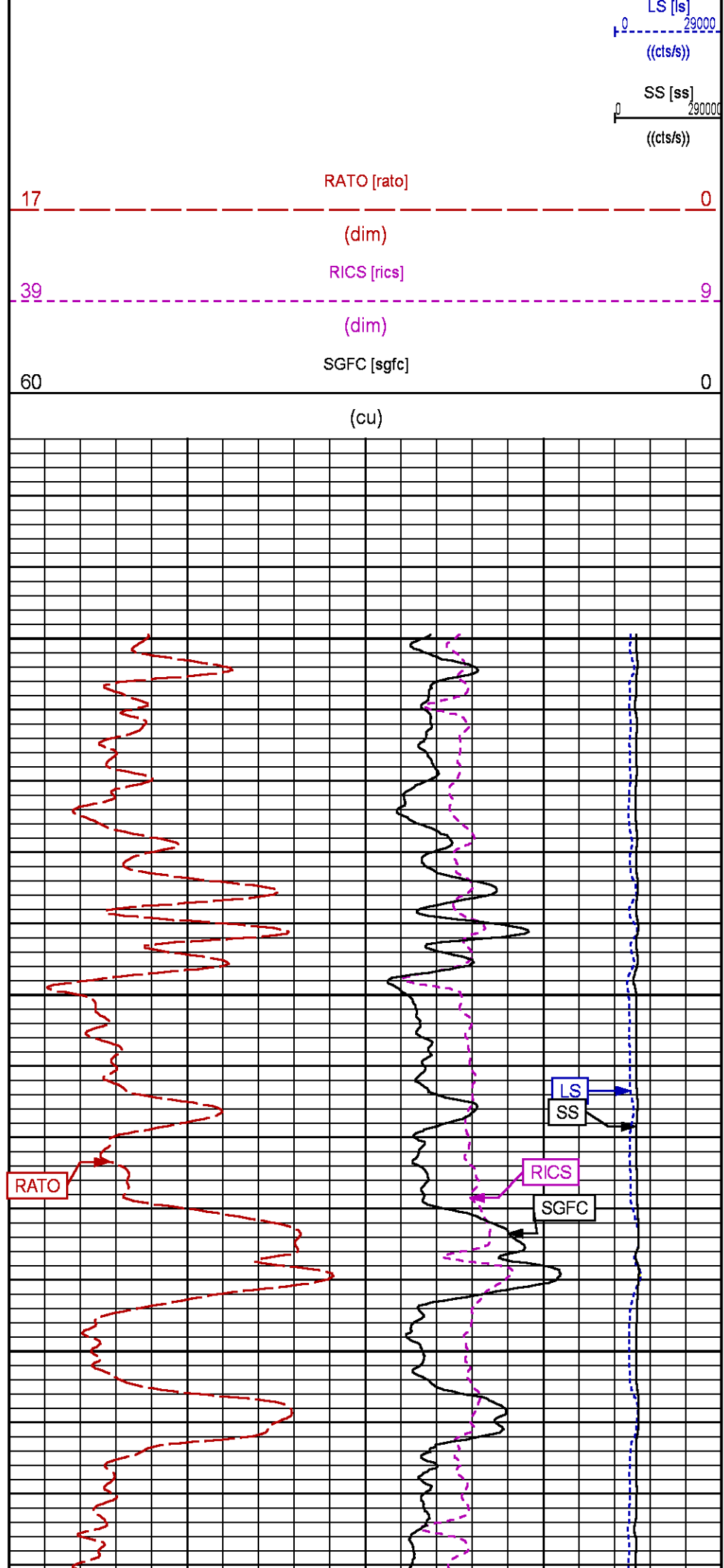
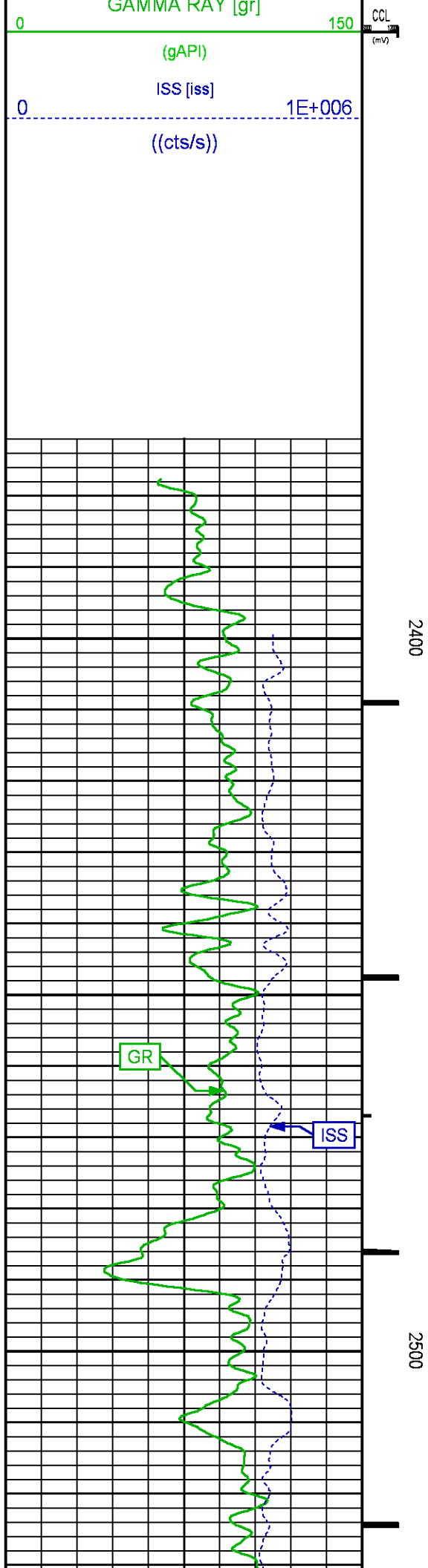
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	-26.00	ISS	-12.75	RATO	-12.75	SGFC	-12.75
GR	-23.00	LS	-12.75	RICS	-12.75	SS	-12.75

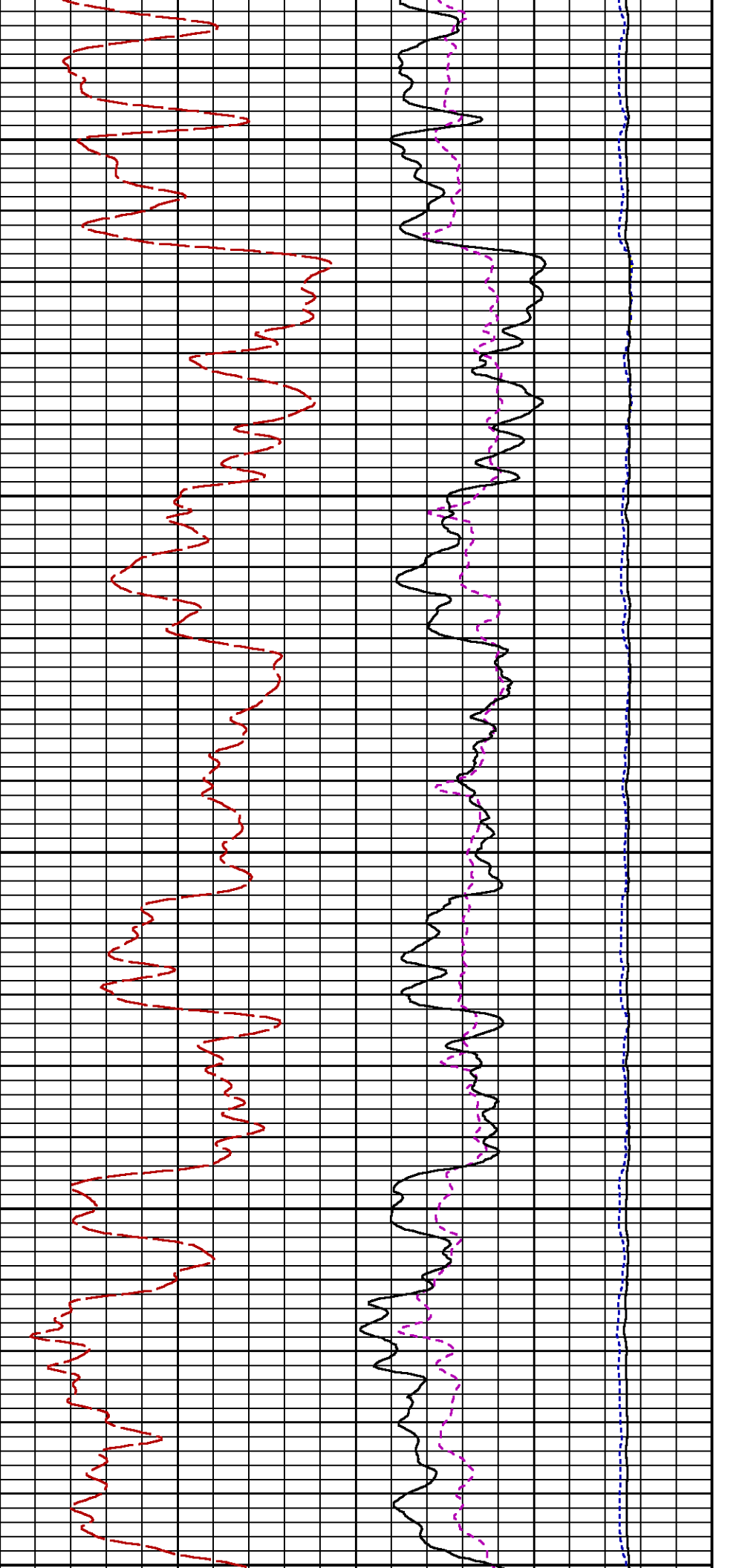
Presentation : BHI78FR4H2:C:\dat1a\BRUTON FEDERAL_RAL 19-09E\BRUTON_FEDERAL_19_09E_PRM_GSAND.fvpdf [5"/100' Scale]
Plot Interval : 2373.5 - 3031.25 Feet

Data File 1 : F1 : BHI78FR4H2:C:\dat1a\BRUTON FEDERAL_RAL 19-09E\BRUTON_FEDERAL_19_09E_PRM_GSAND.xtf
Created On : N/A
Company : LARAMIE ENERGY LLC
Well : BRUTON FEDERAL 19-09E
Field : VEGA
File Interval : 2372.75 - 3040 Feet
OCT : PRM3D

GR BACKUP

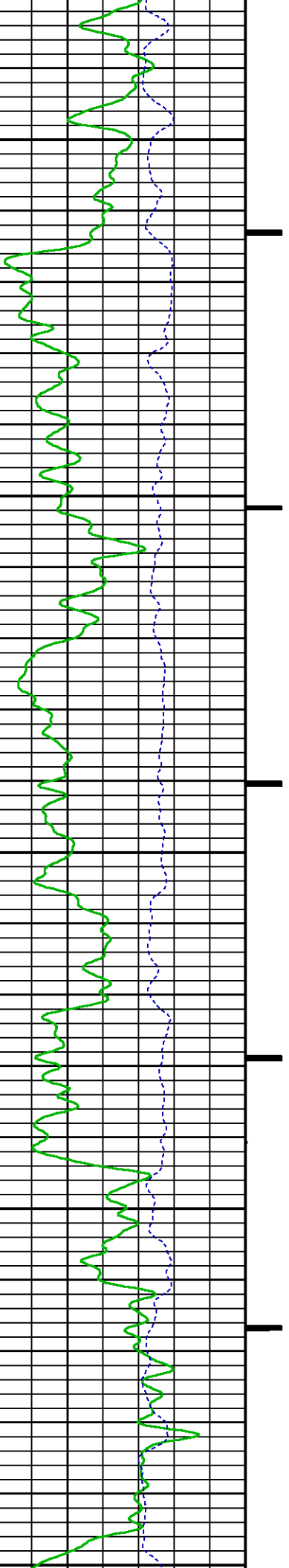
FEET

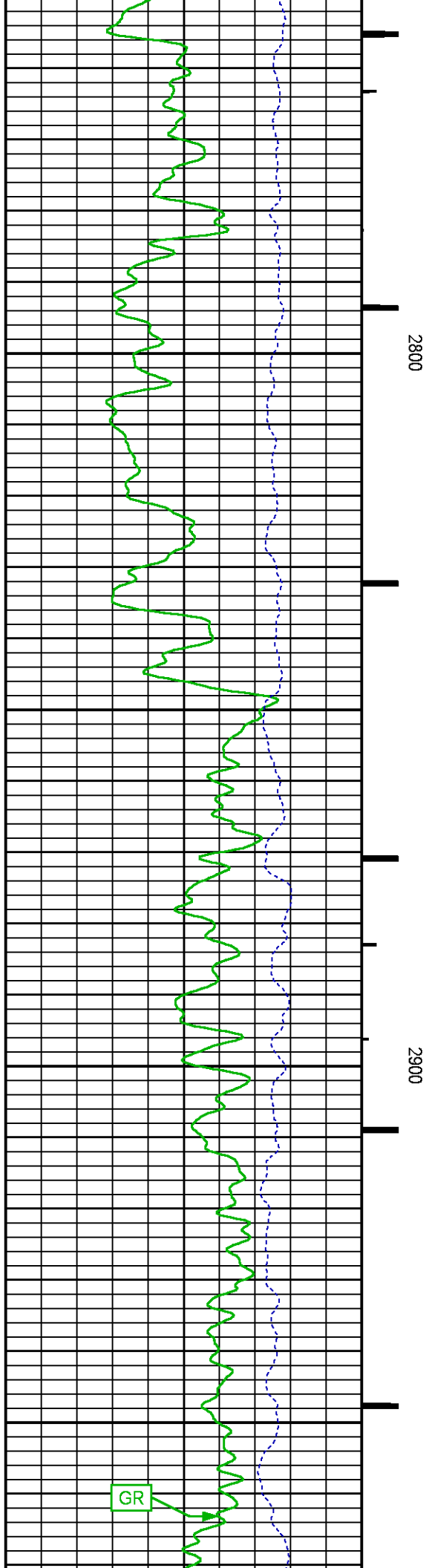
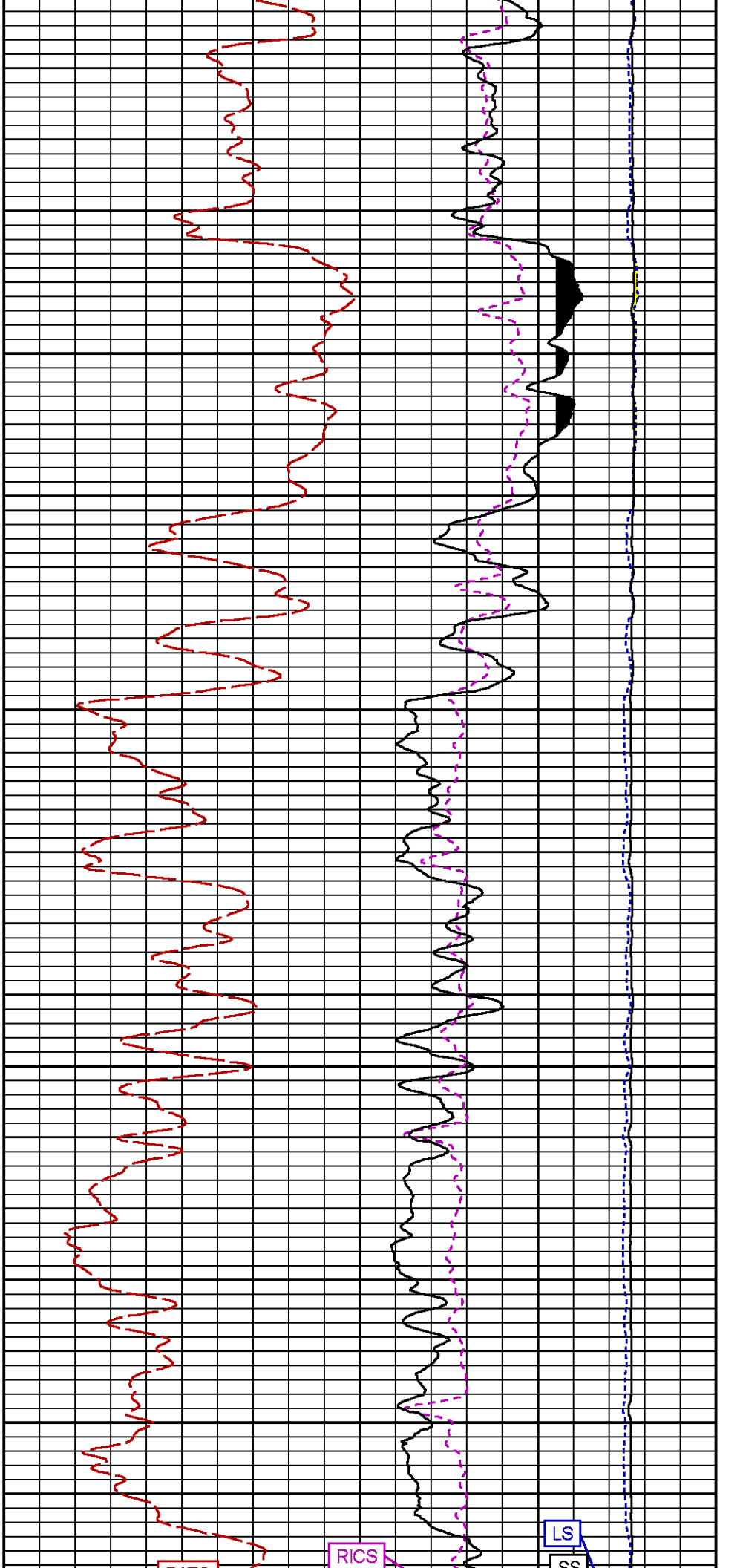


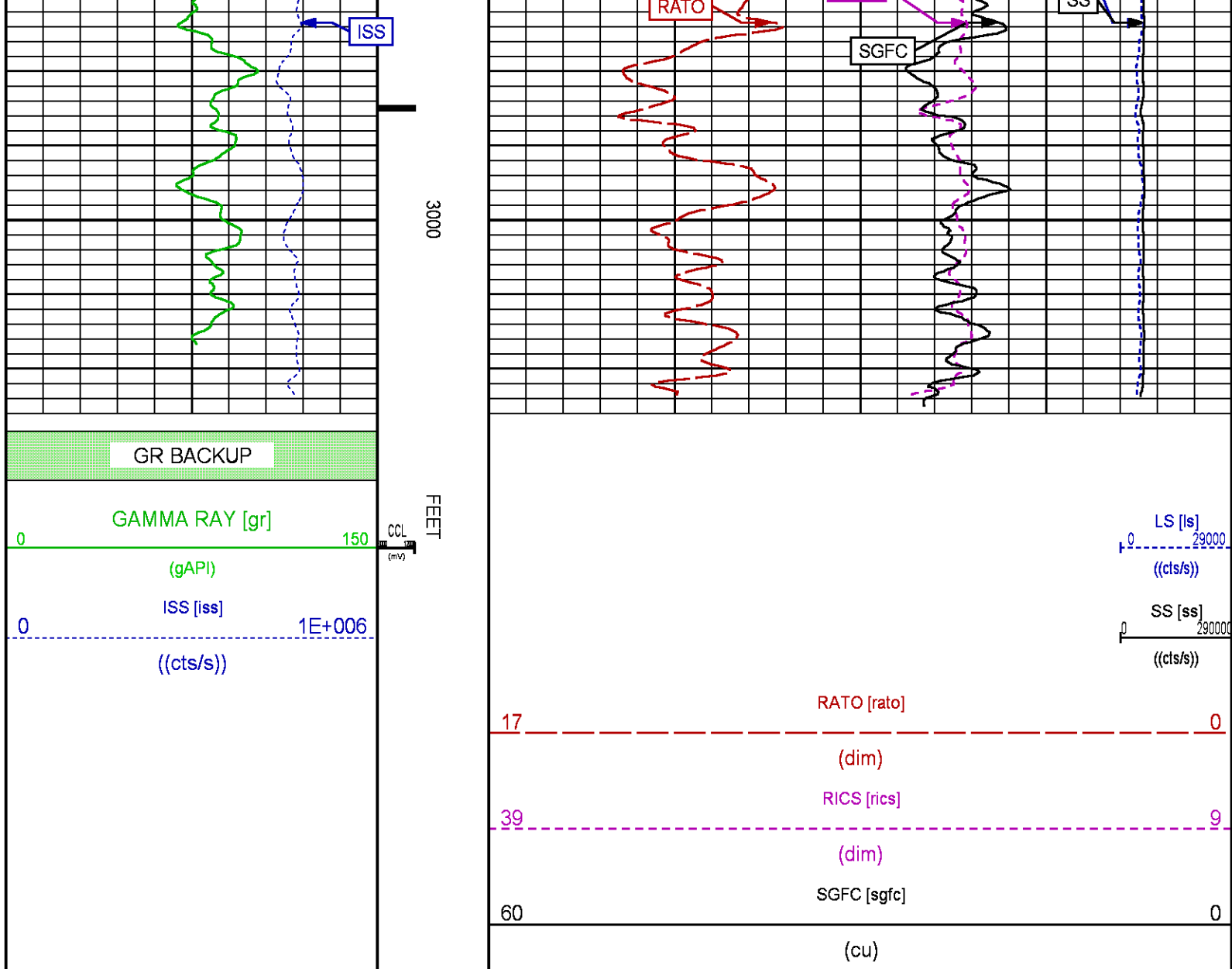


2600

2700







MAIN PASS PNC-3D MODE

ECLIPS 7.0w PC-ECLIPS General Release Rel 7.0w Fri Jun 09 11:02:06 Central Daylight Time 2017
Patches: 2

Plotted: Wed Dec 06 21:15:59 2017

PARAMETER AND FILTER SUMMARY REPORT

FILE: C:\dat1a\BRUTON FEDERAL RAL 19-09\PRM3D04.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 4721.750 ft BOTTOM DEPTH: 7349.000 ft

SYMMETRIC FILTER

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

RPM PROCESSING

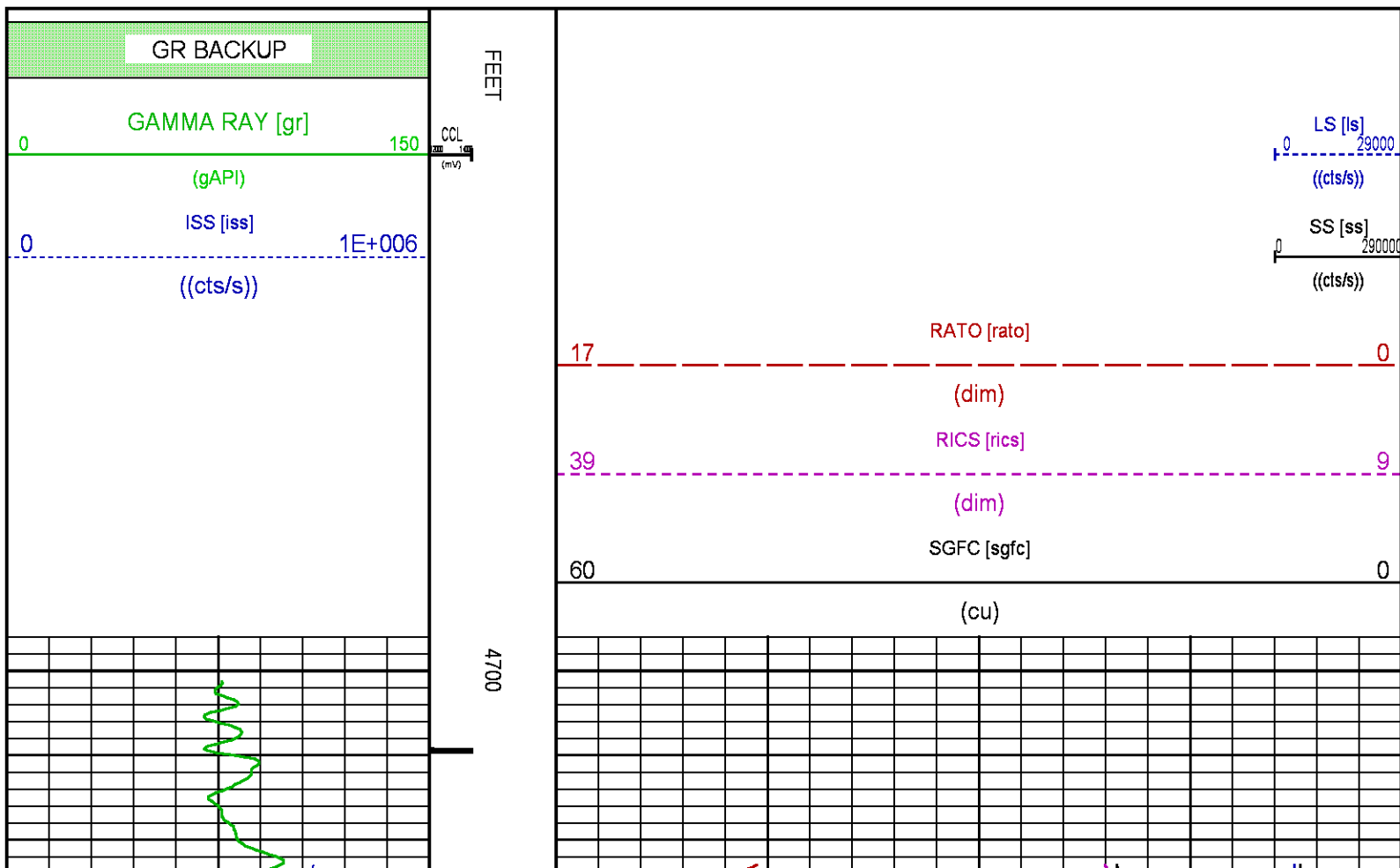
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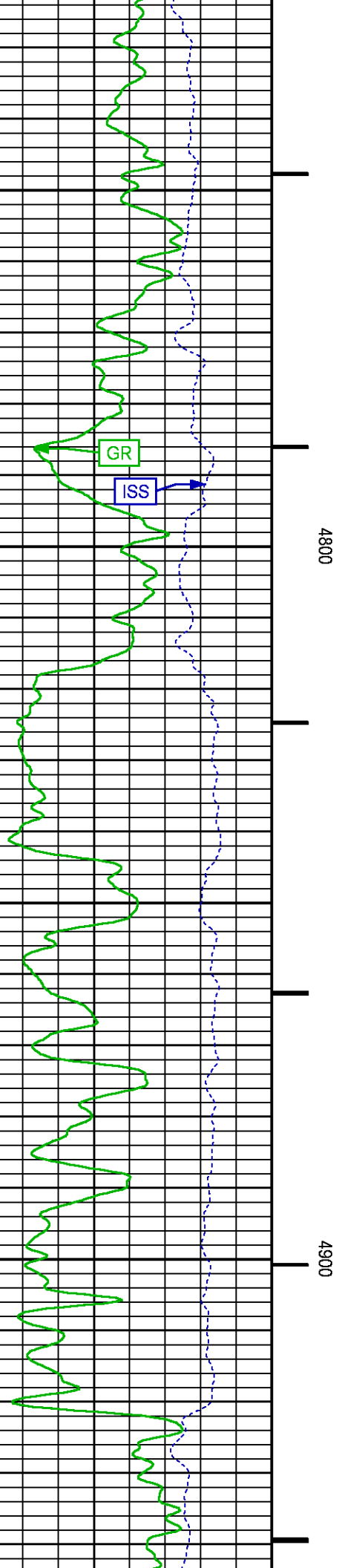
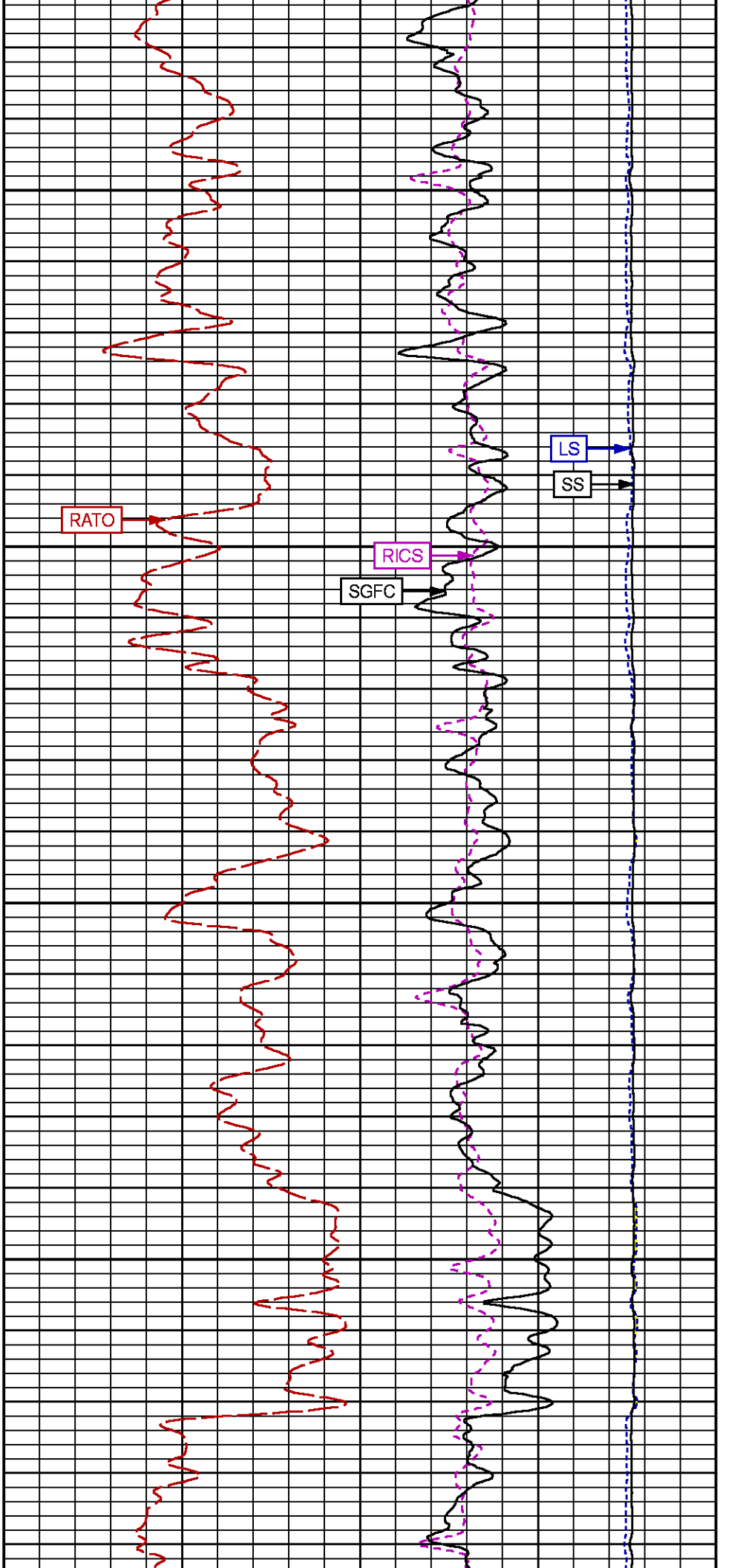
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	N/A	CASING COLLAR LOCATOR
F1:GR	N/A	GAMMA RAY
F1:ISS	N/A	INELASTIC SHORT SPACE COUNT RATE
F1:LS	N/A	LONG SPACE COUNT RATE
F1:RATO	N/A	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	N/A	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	N/A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

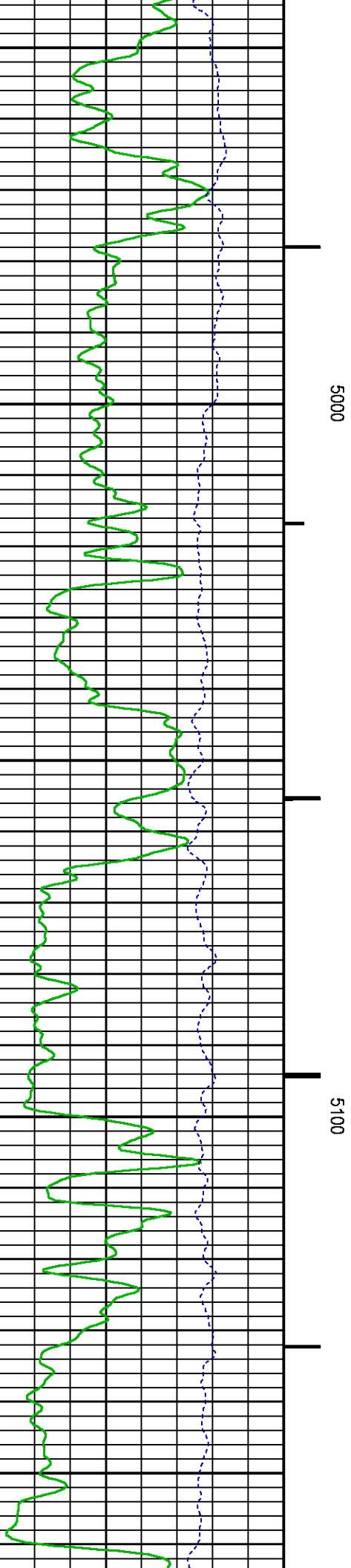
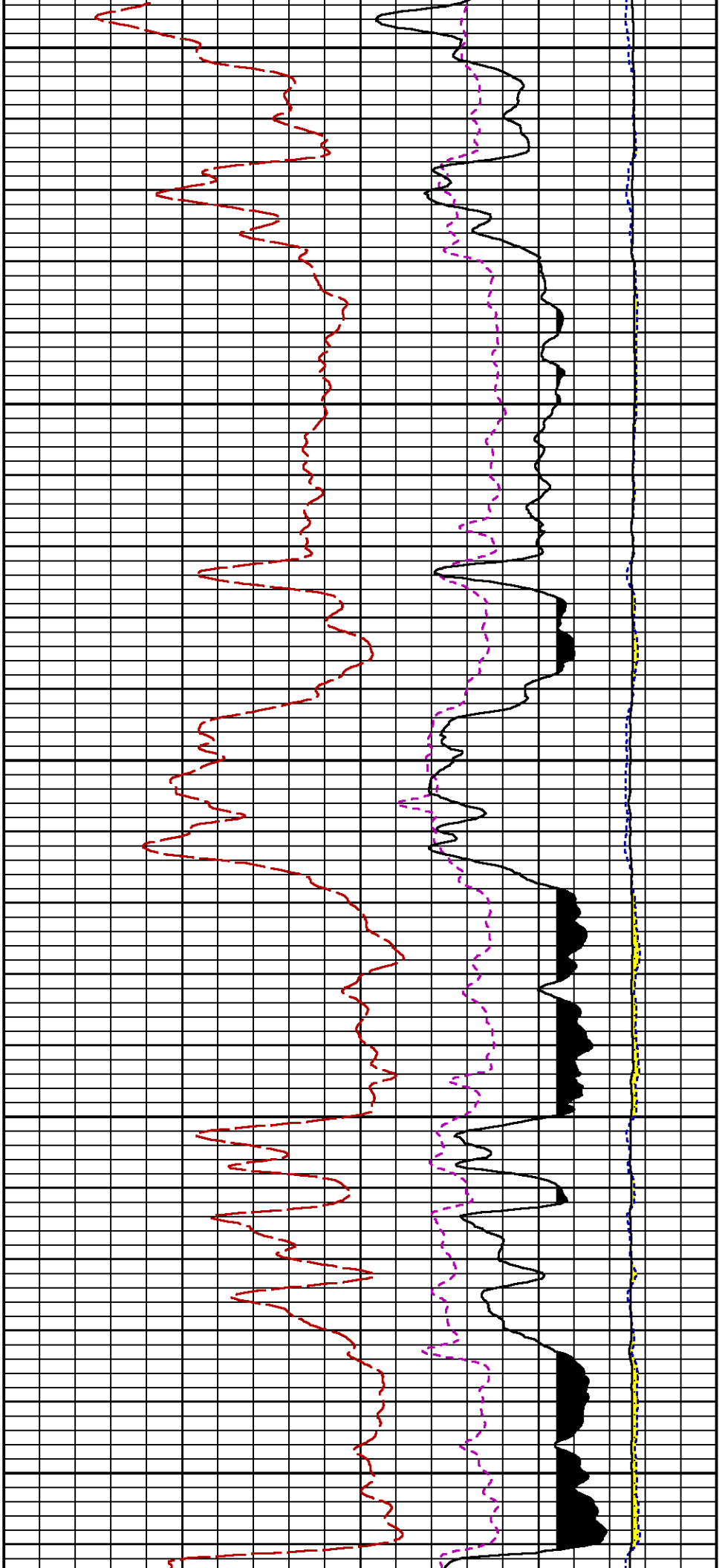
CURVE MEASURE POINT OFFSET

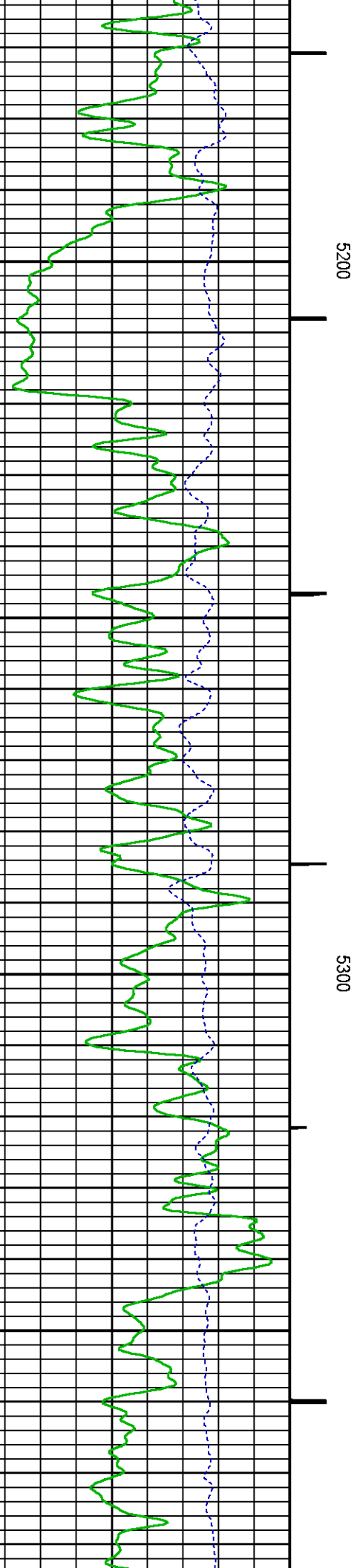
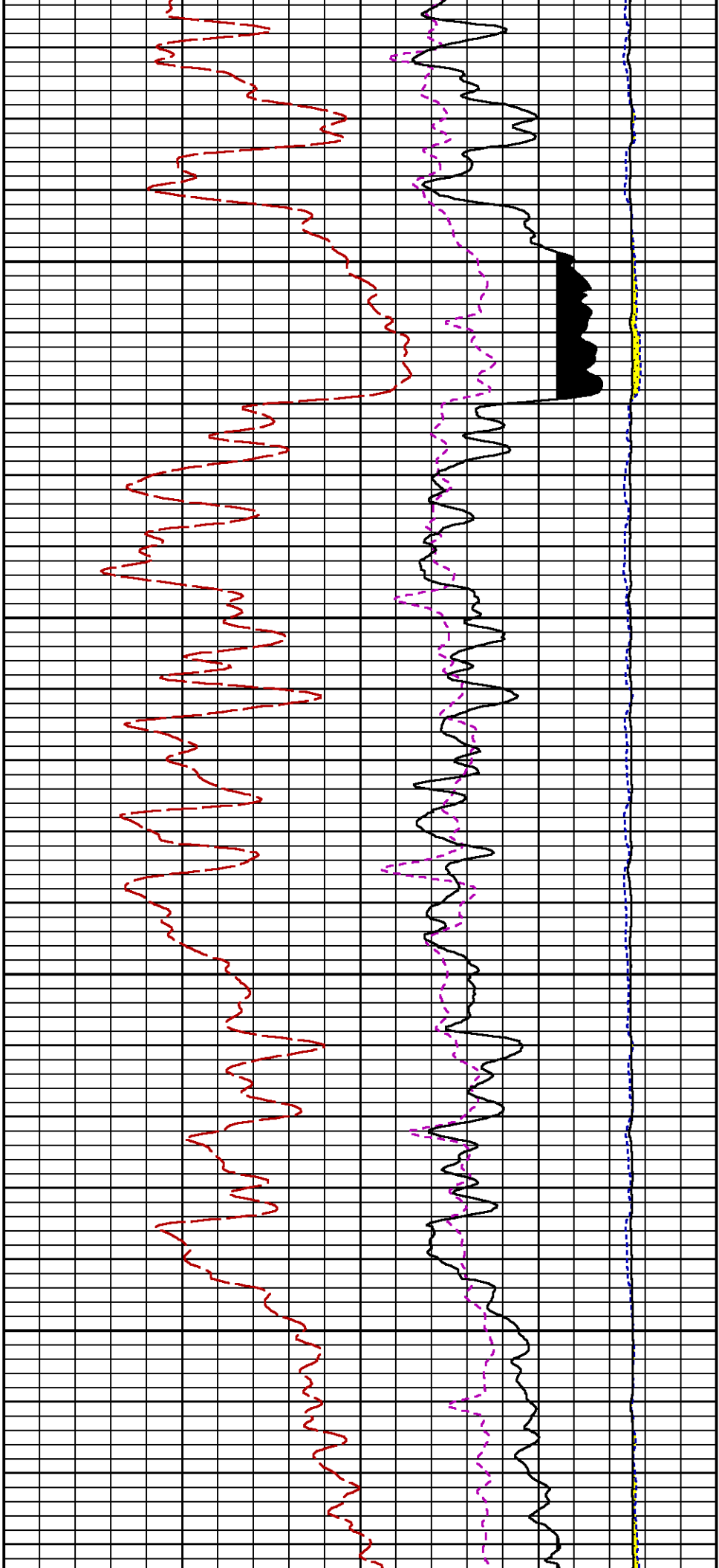
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	-26.00	ISS	-12.75	RATO	-12.75	SGFC	-12.75
GR	-23.00	LS	-12.75	RICS	-12.75	SS	-12.75

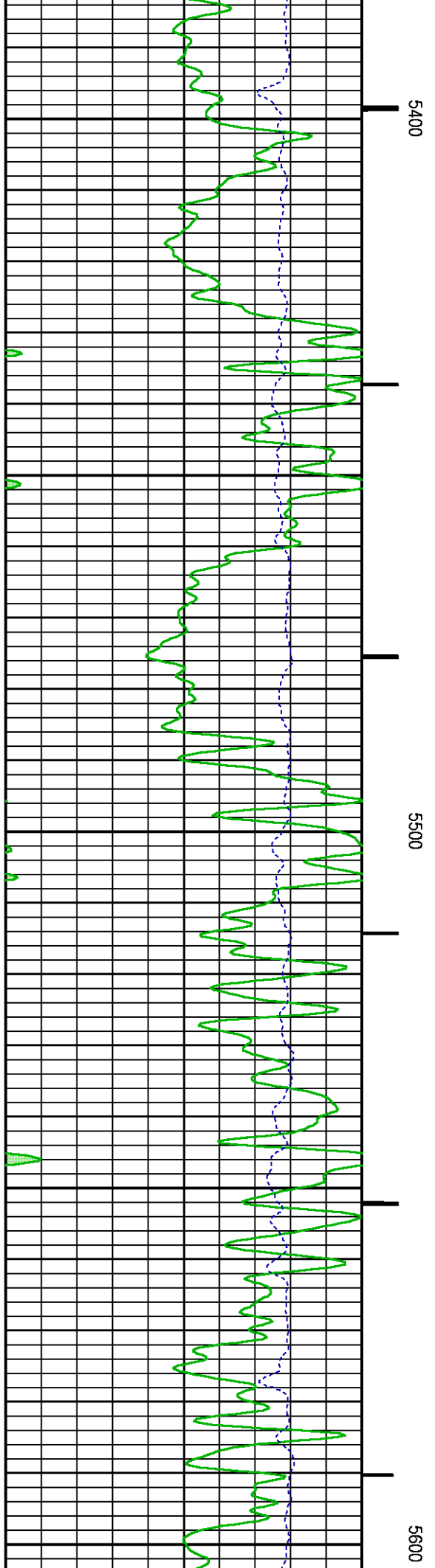
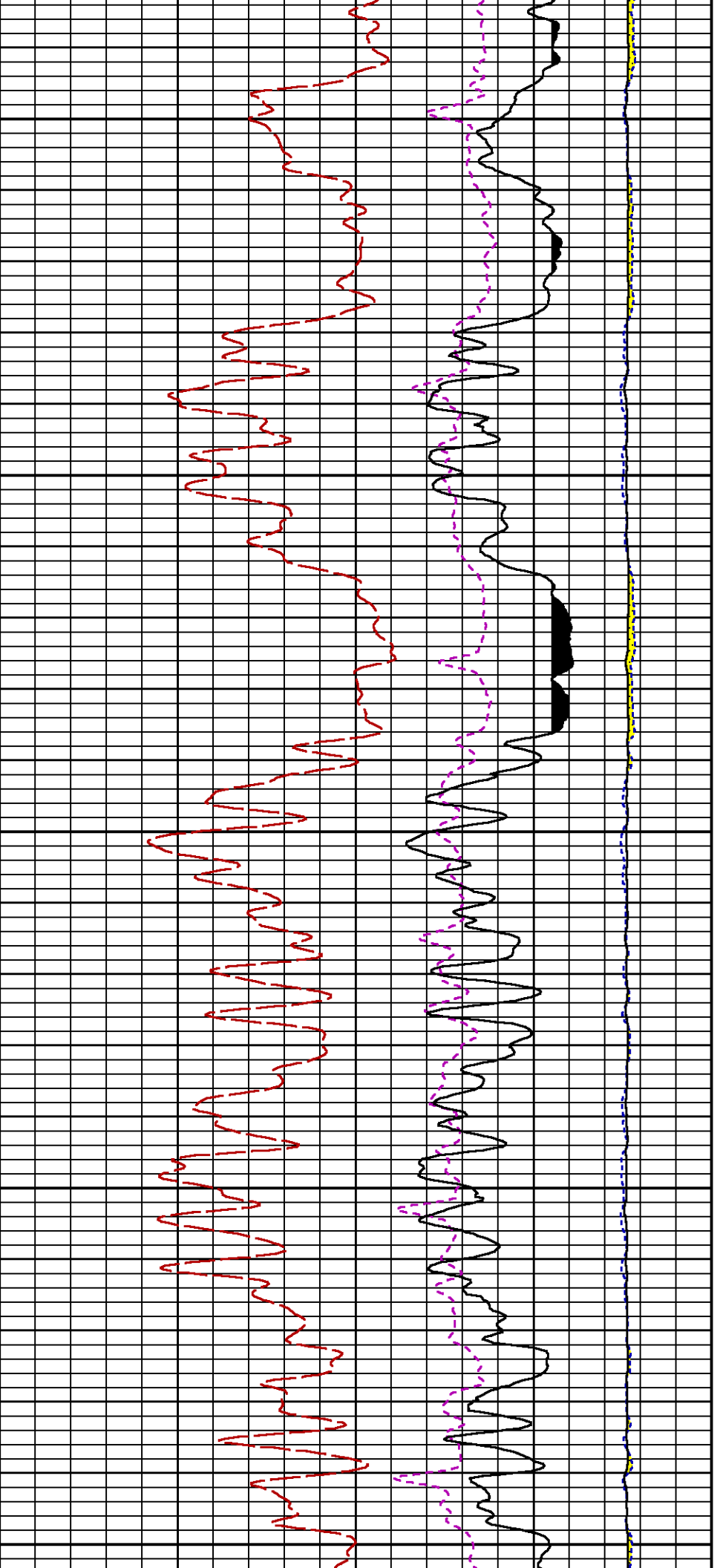
Presentation	: BHI78FR4H2:C:\dat1a\BRUTON FEDERAL RAL 19-09E\BRUTON_FEDERAL_19_09E_RPM_MAIN.fvpdf [5"/100' Scale]
Plot Interval	: 4696.25 - 8071.5 Feet
Data File 1	: F1 : BHI78FR4H2:C:\dat1a\BRUTON FEDERAL RAL 19-09E\BRUTON_FEDERAL_19_09E_PRM_MAIN.xtf
Created On	: N/A
Company	: LARAMIE ENERGY LLC
Well	: BRUTON FEDERAL 19-09E
Field	: VEGA
File Interval	: 4696.25 - 8071.5 Feet
OCT	: PRM3D

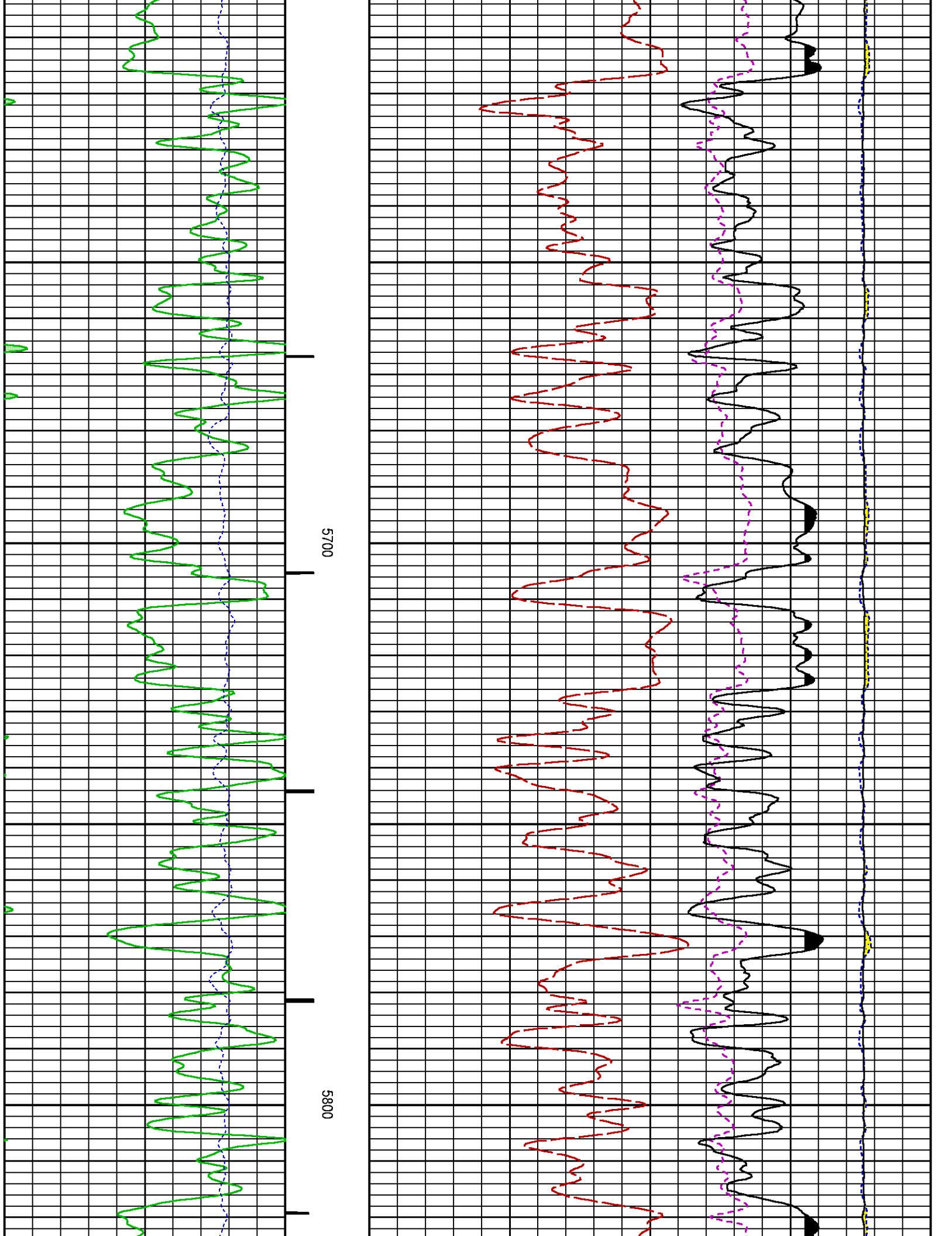


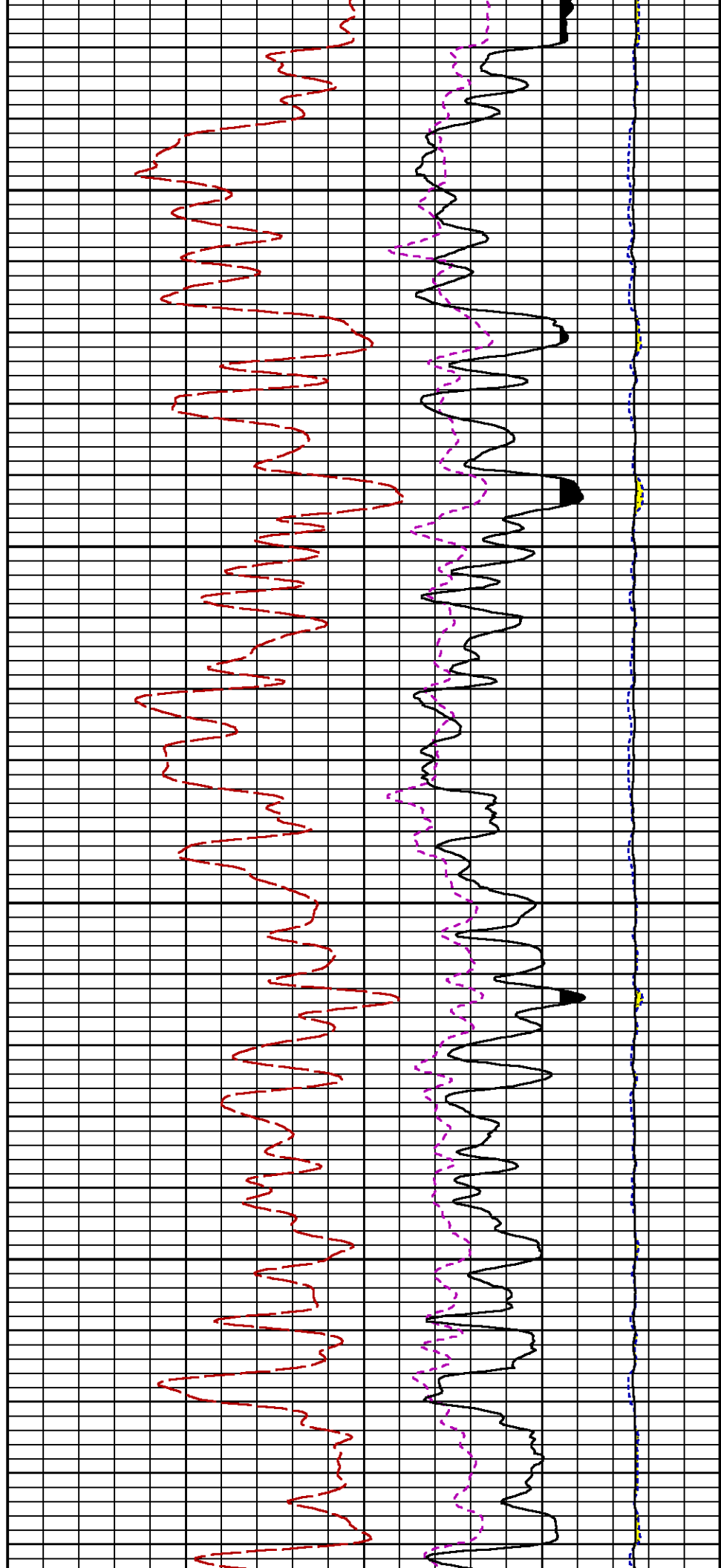
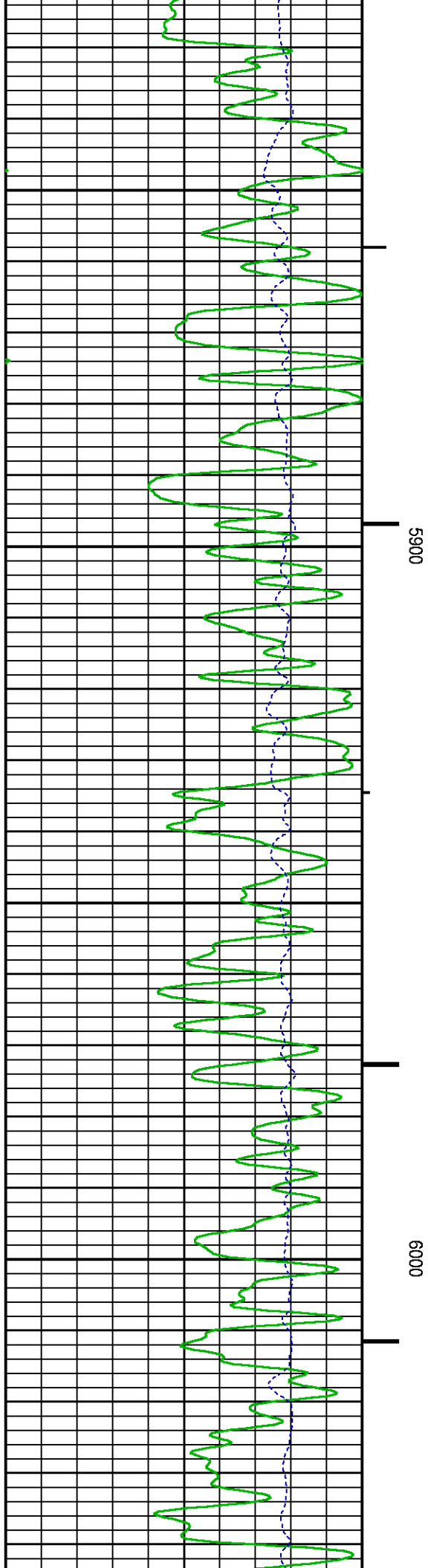


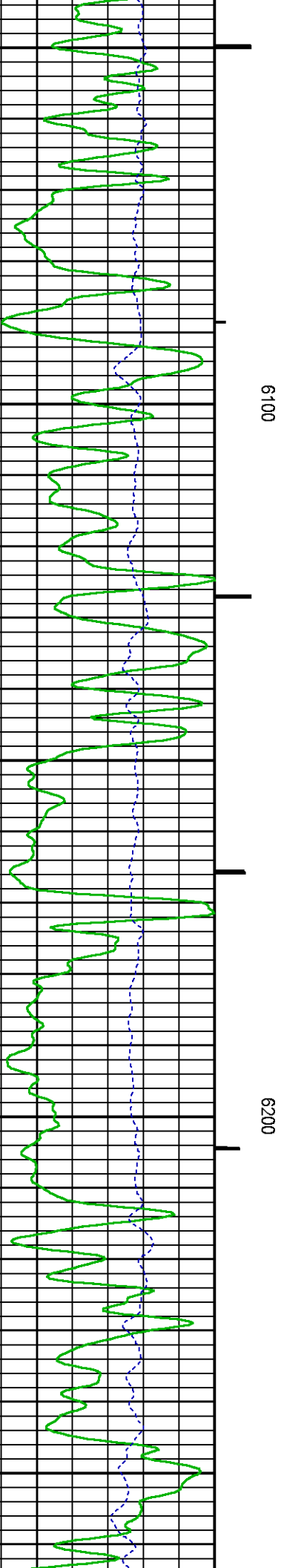
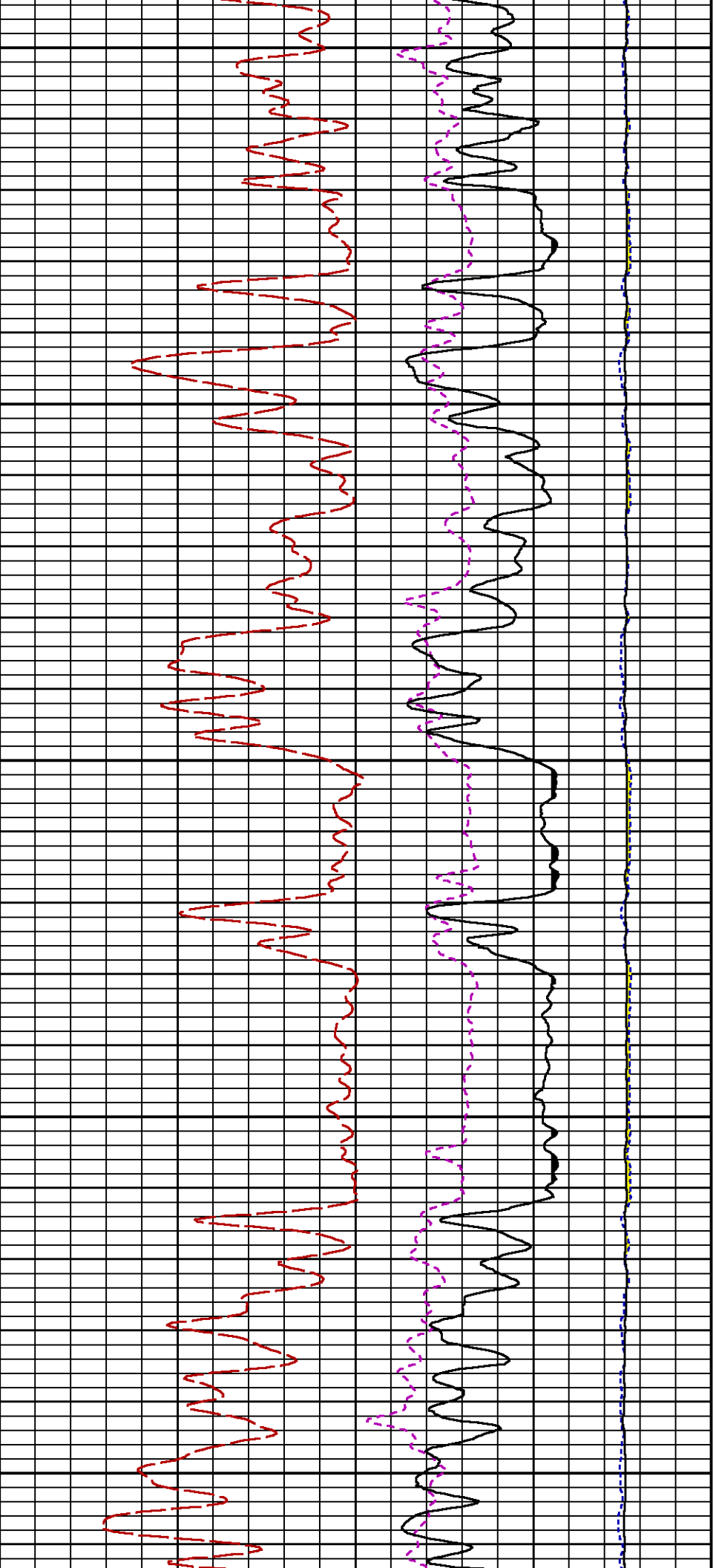


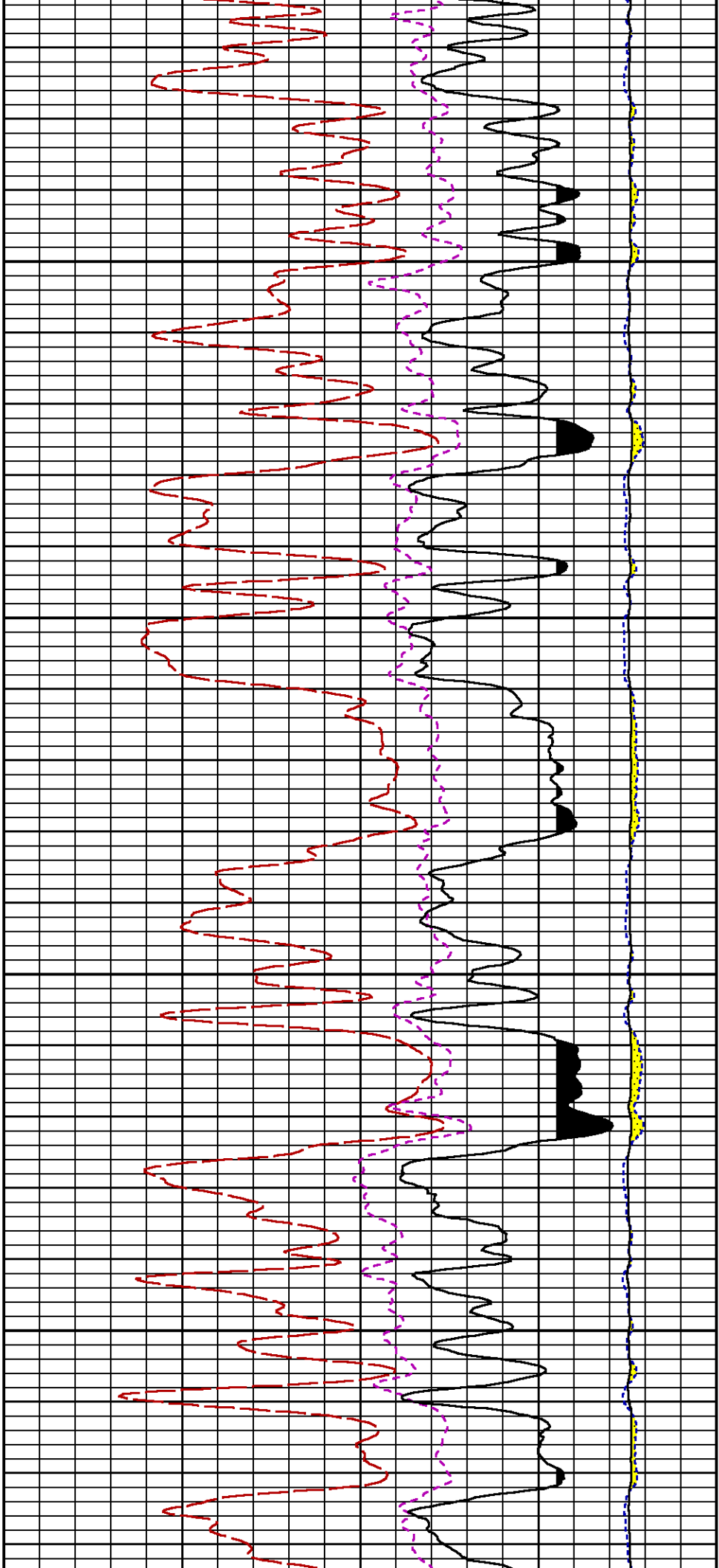






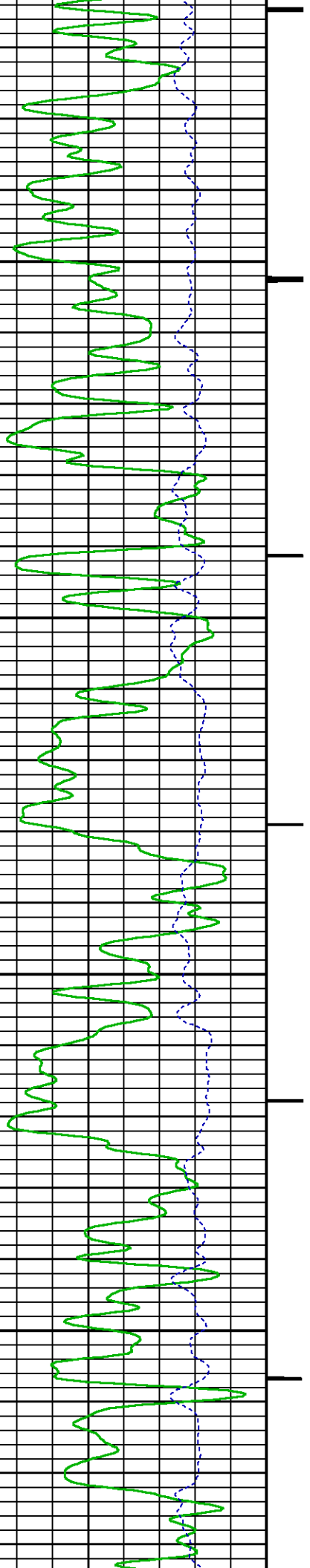


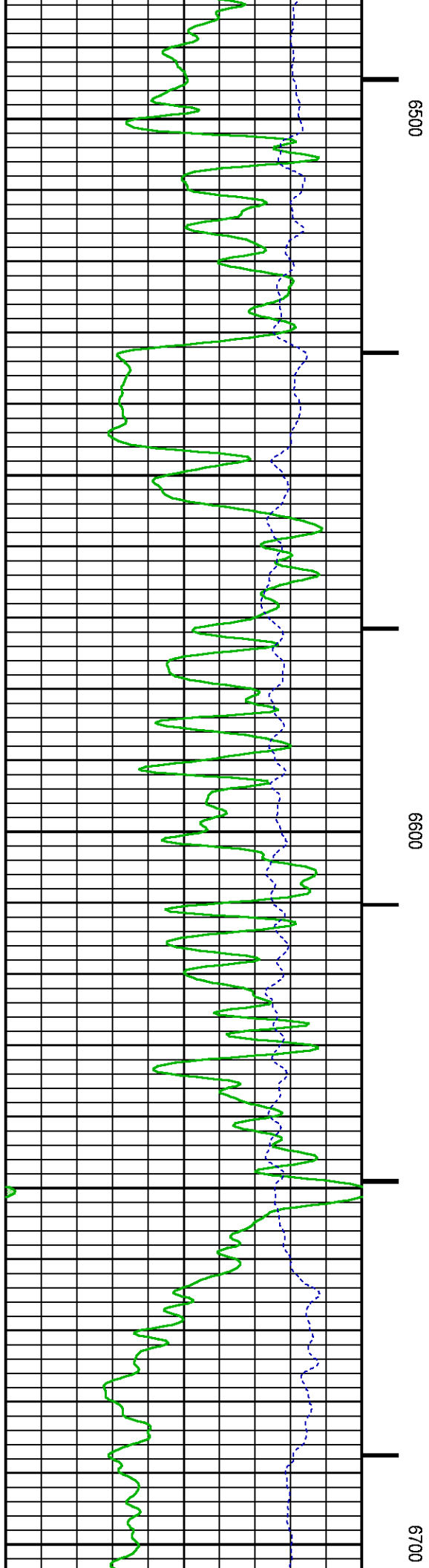
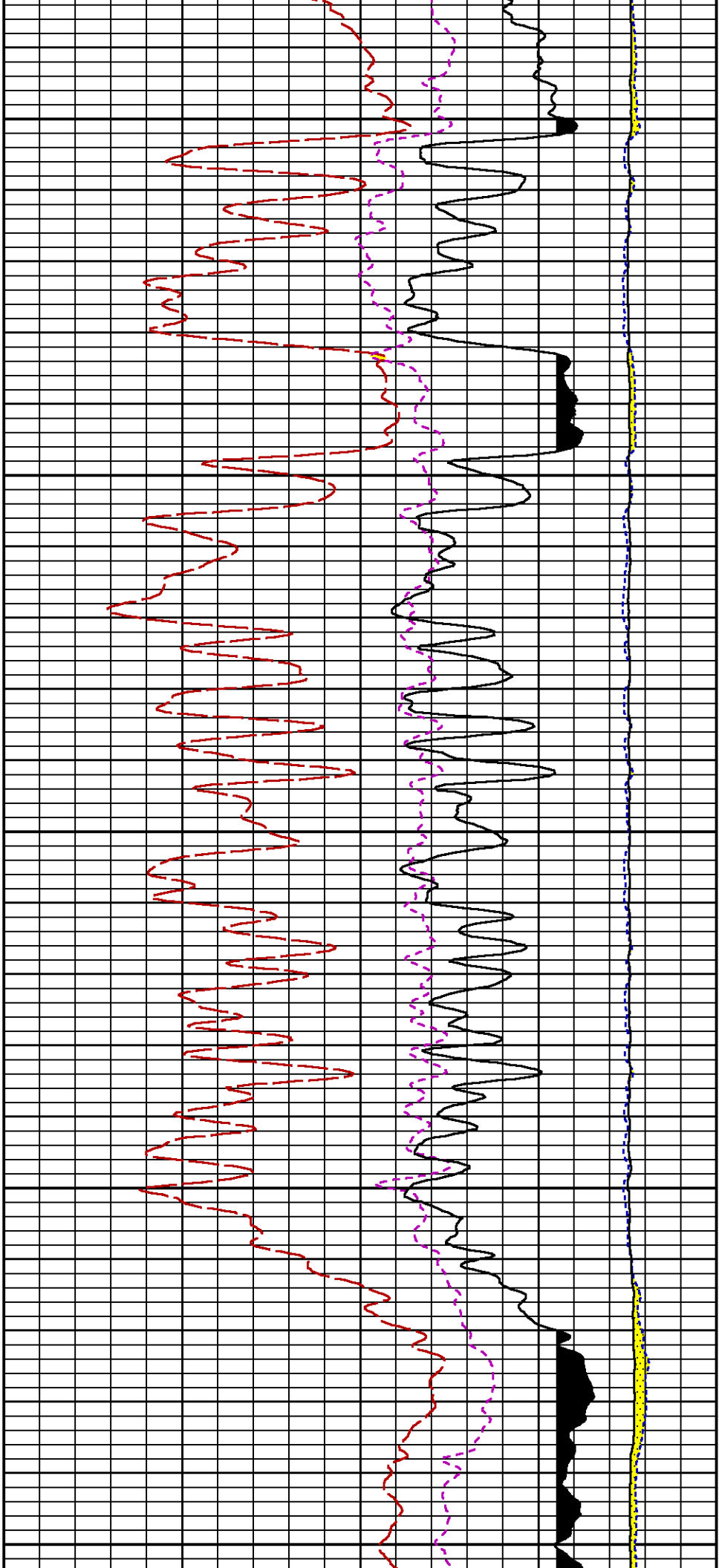


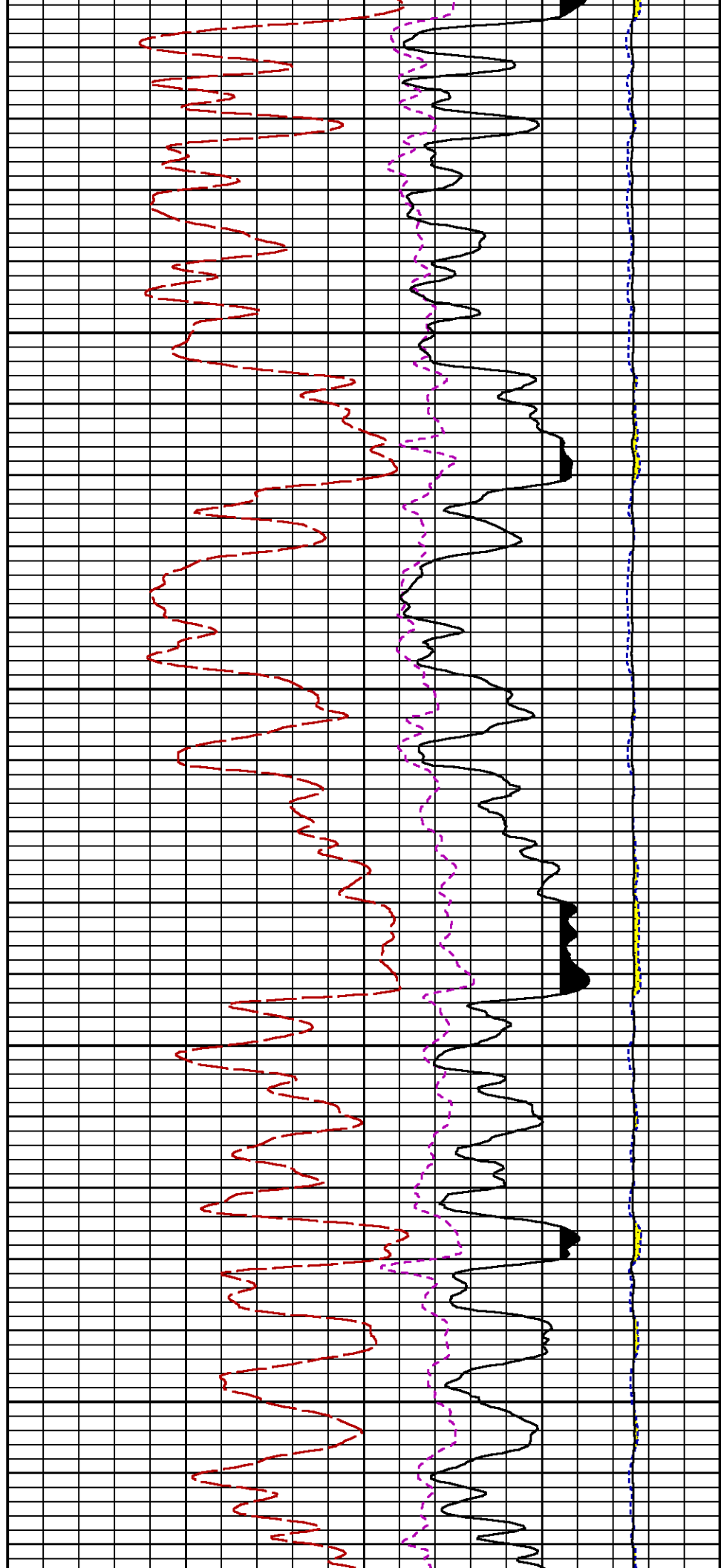
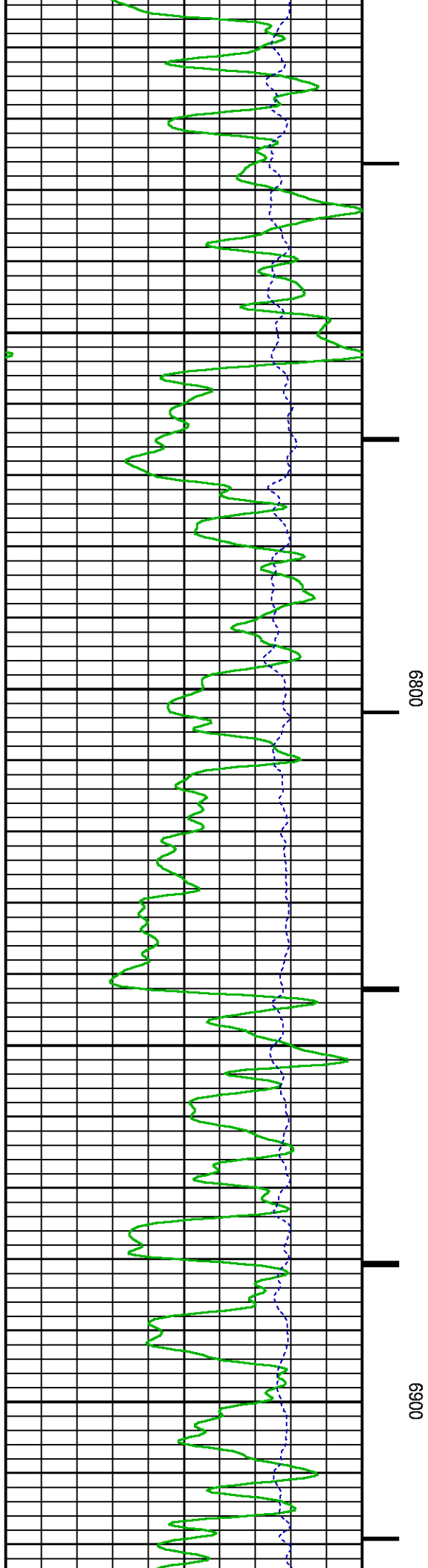


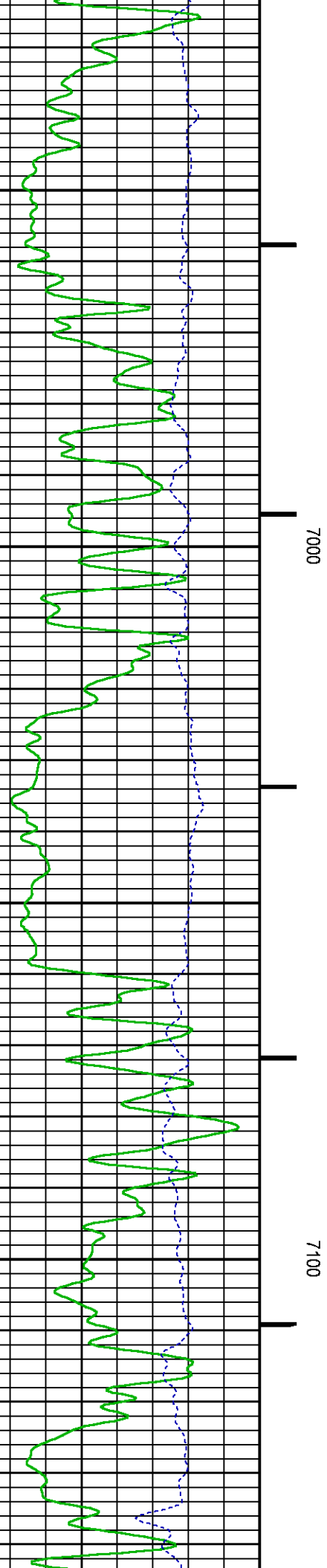
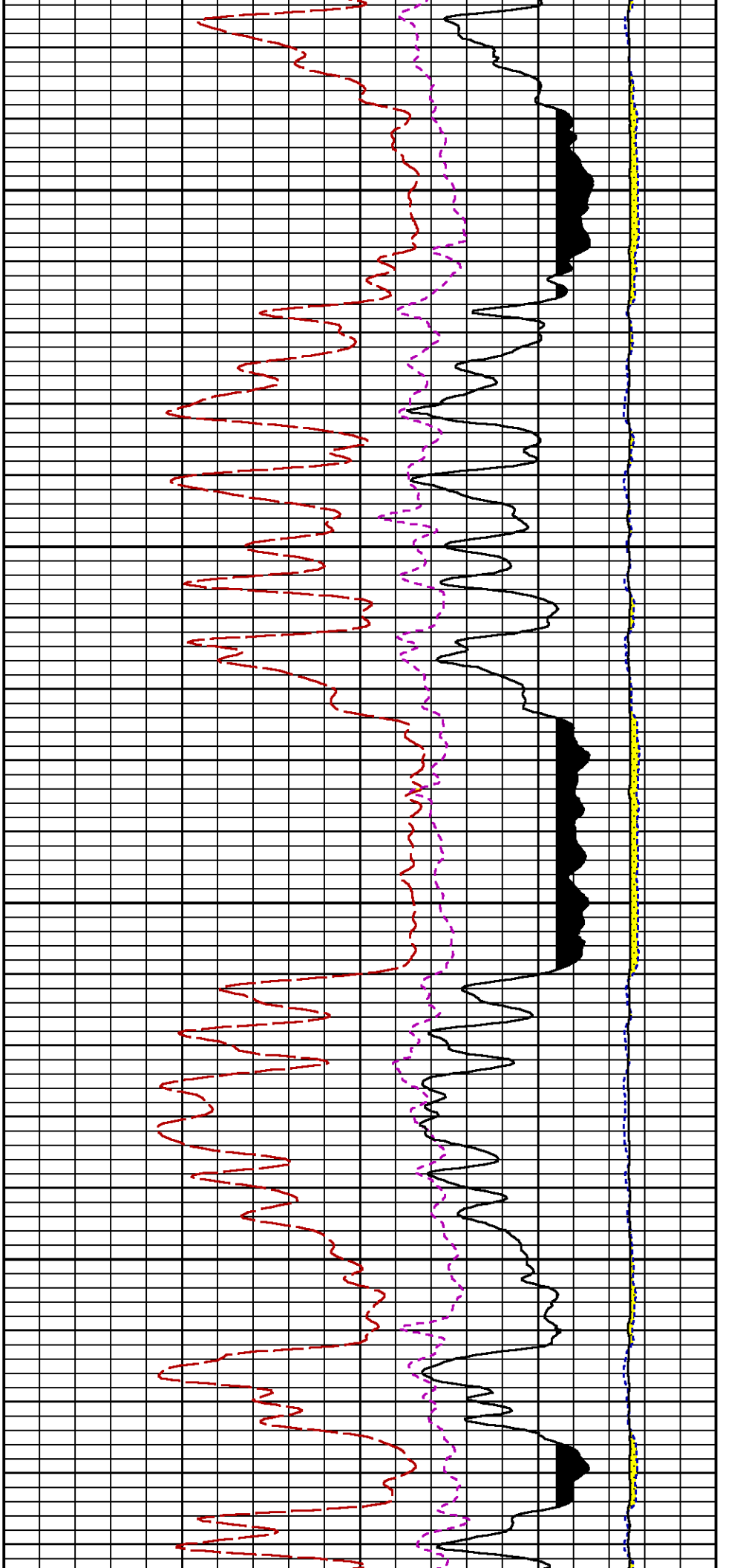
6300

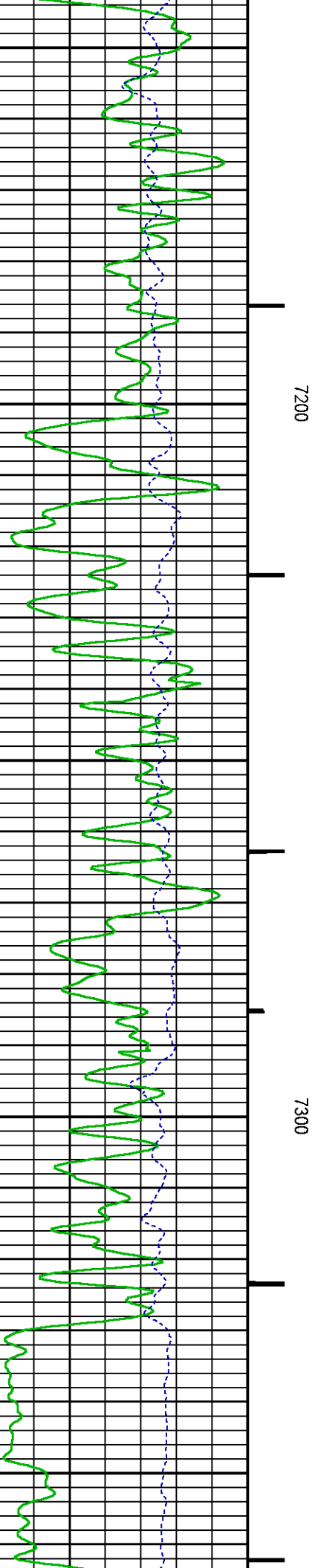
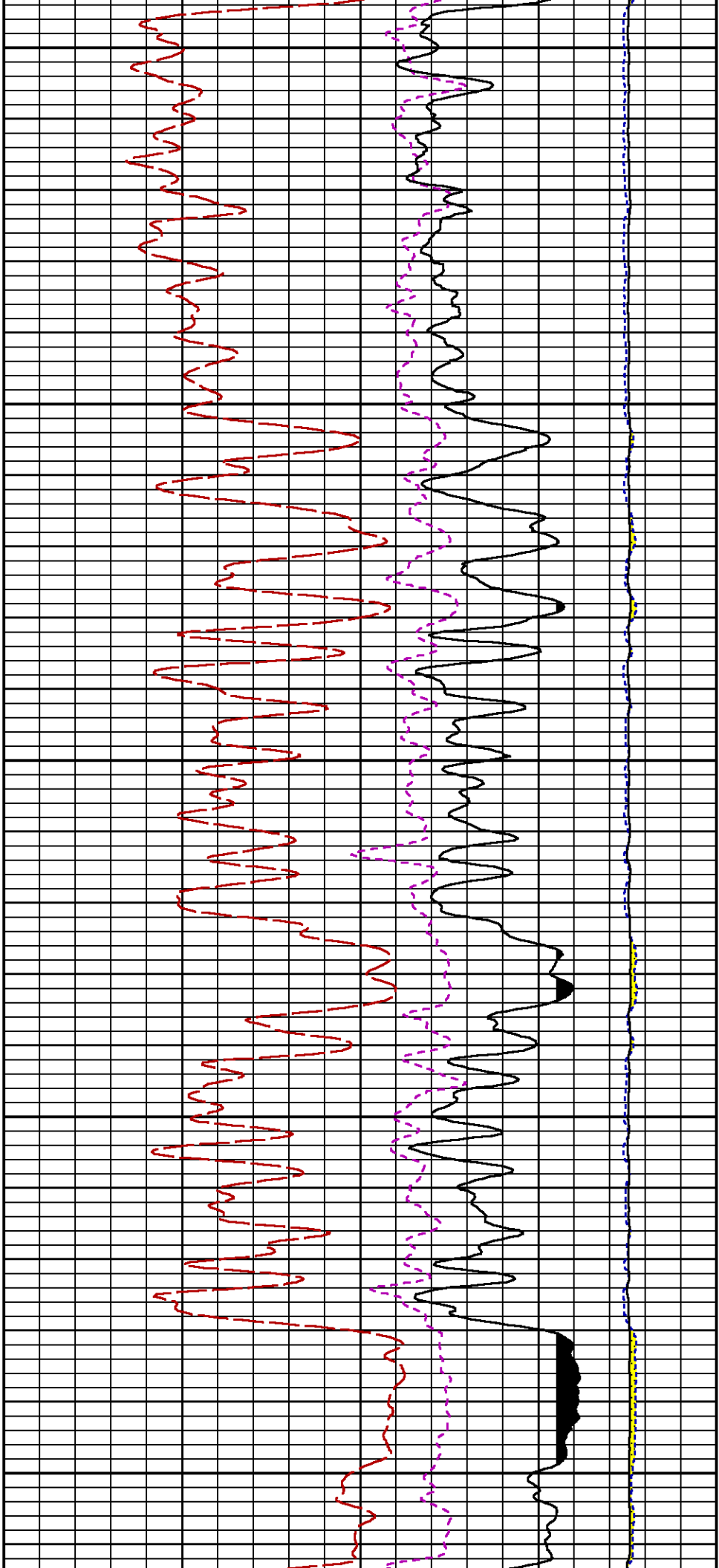
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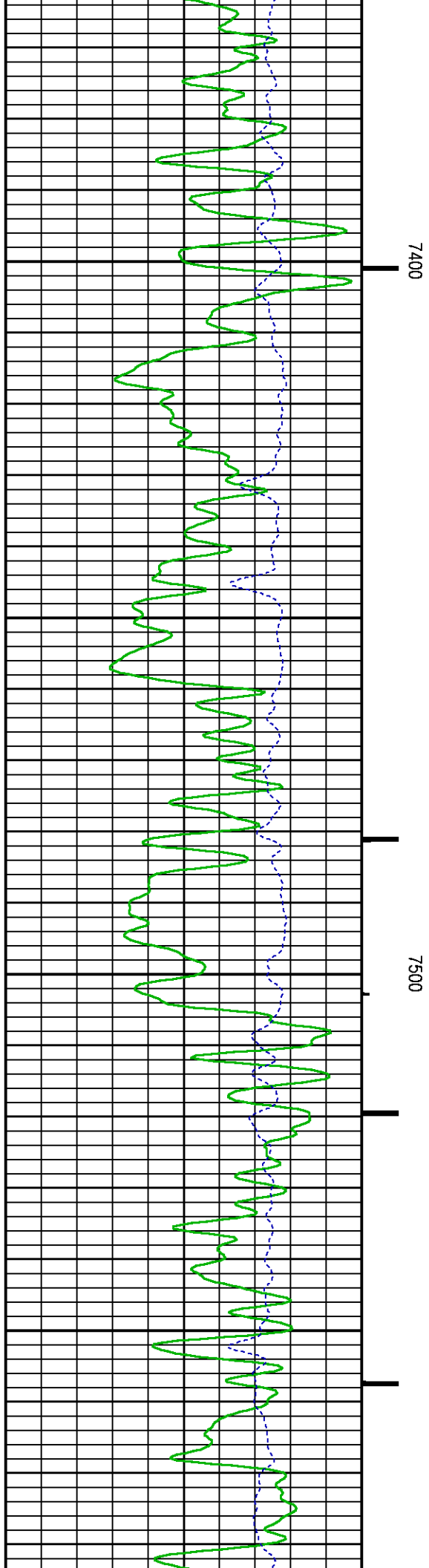
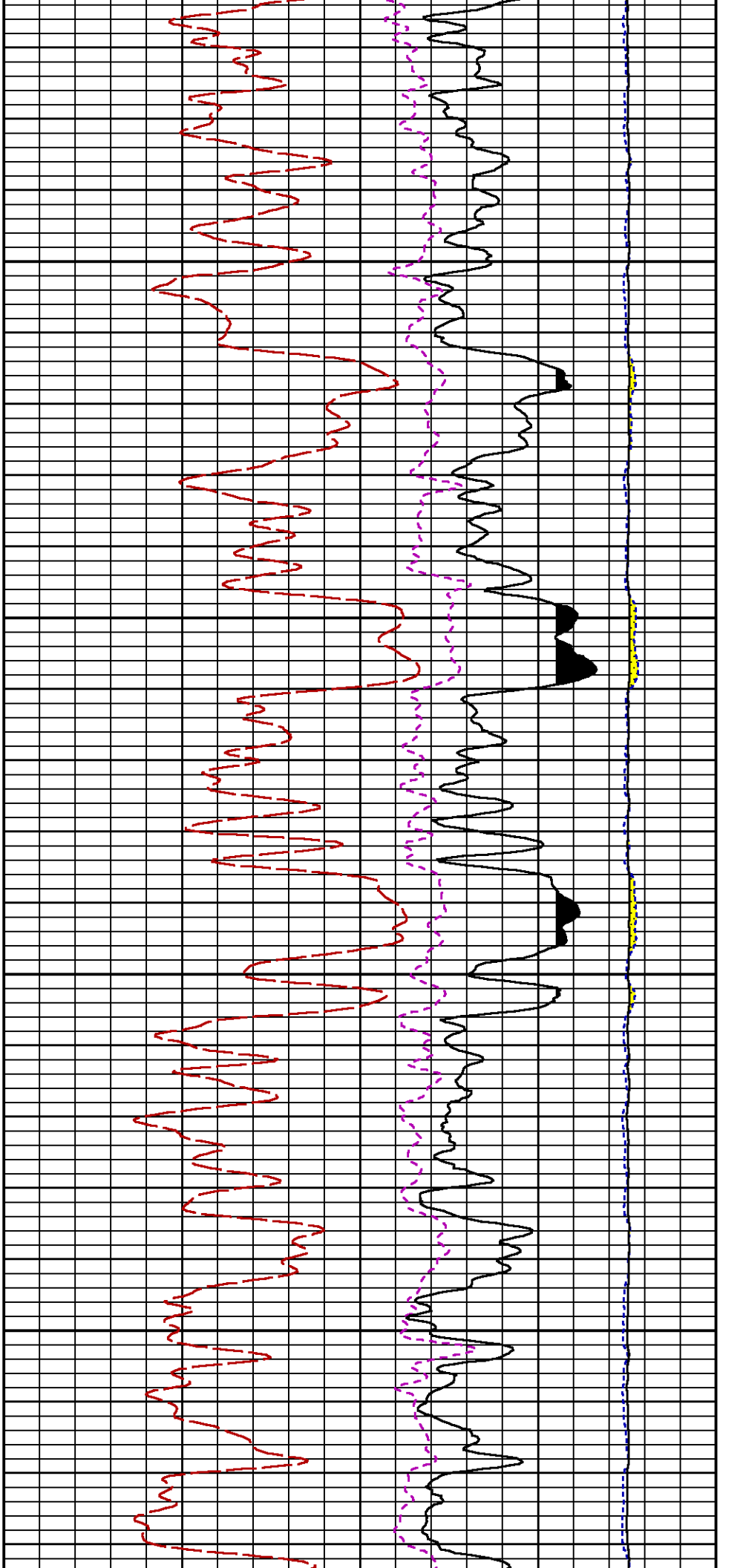


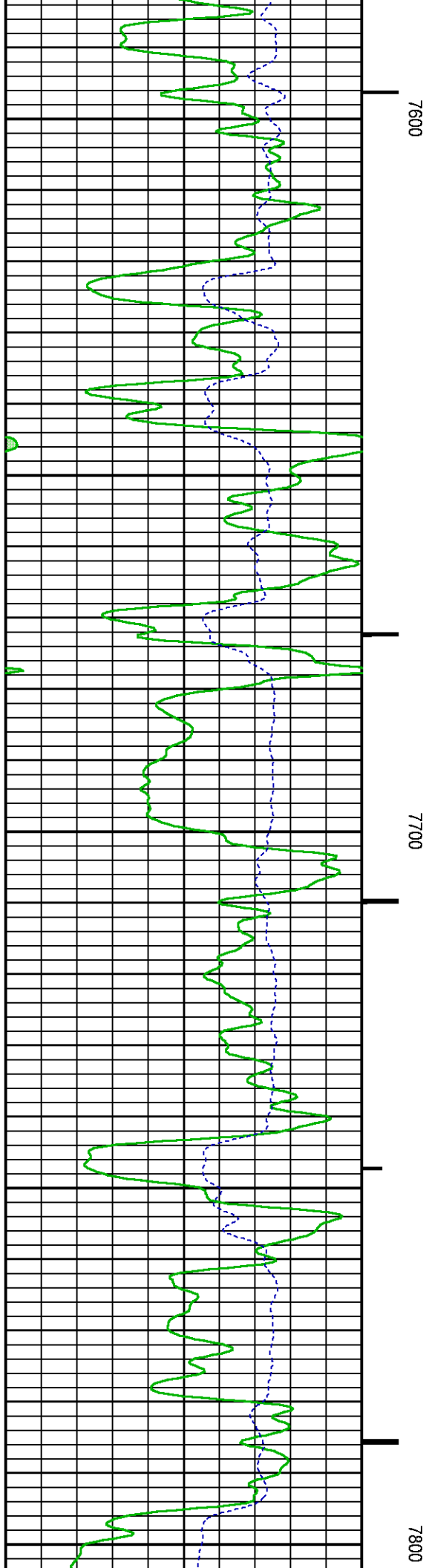
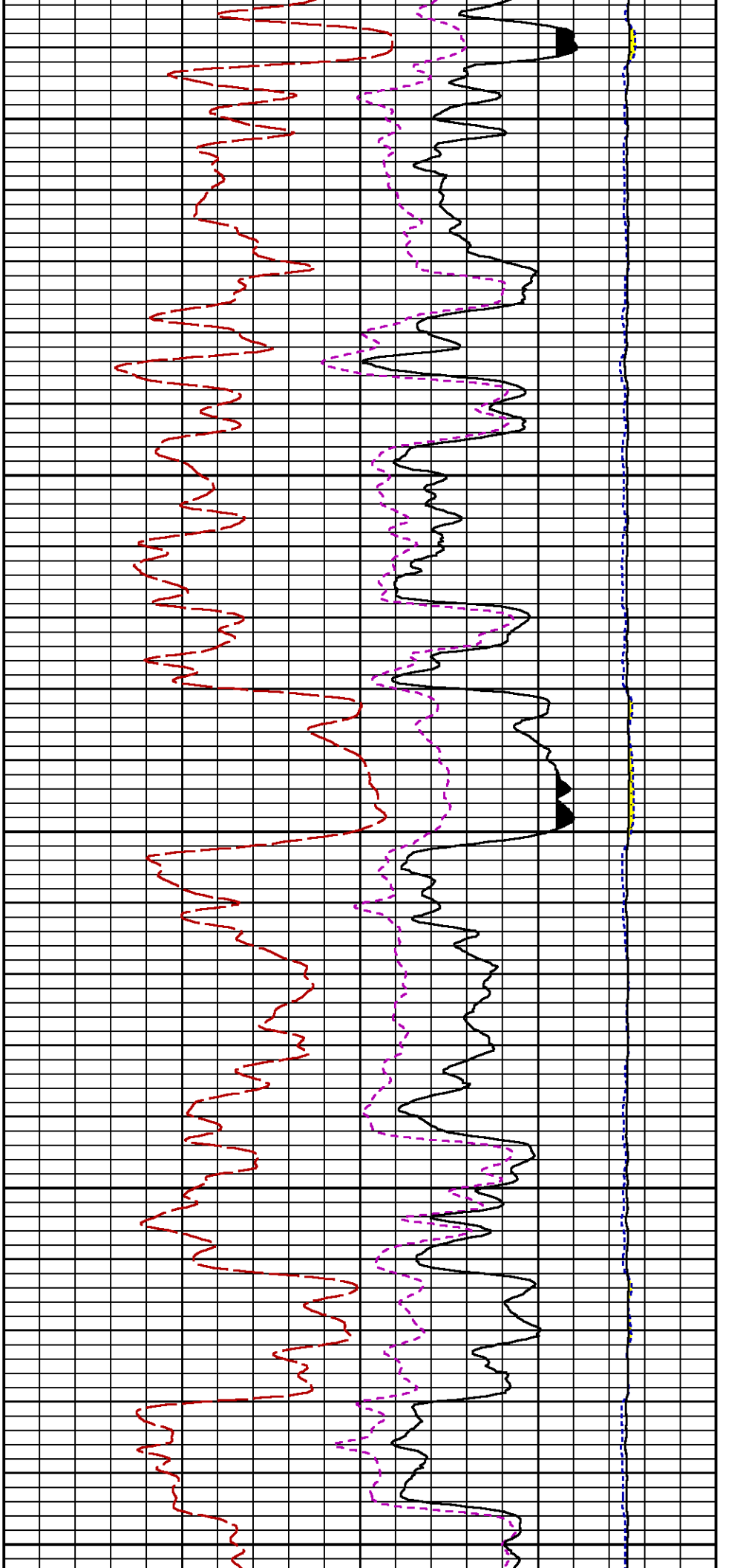


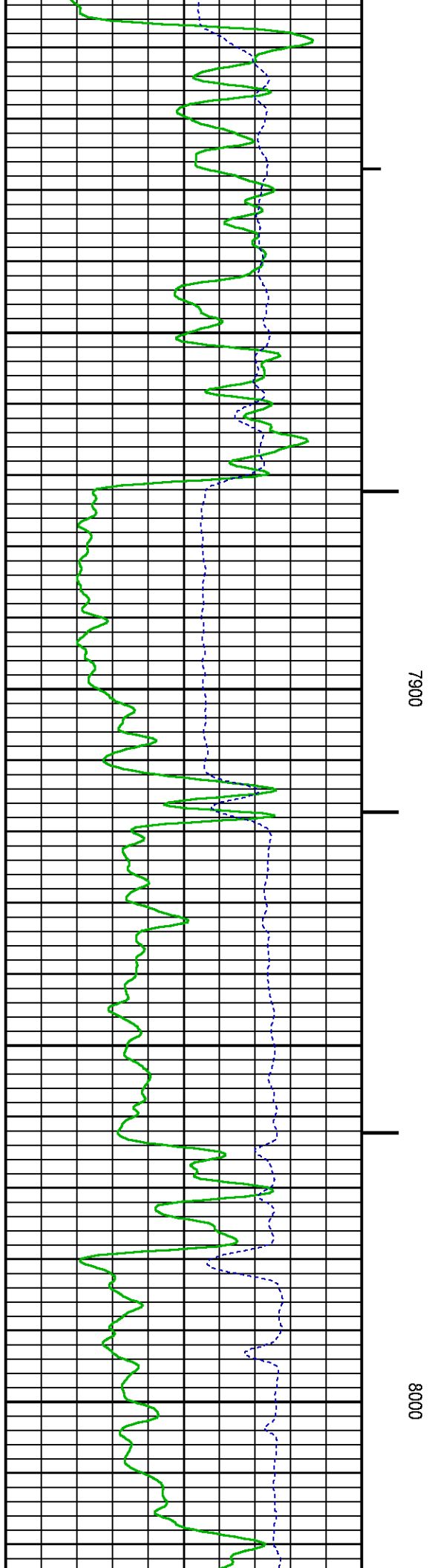
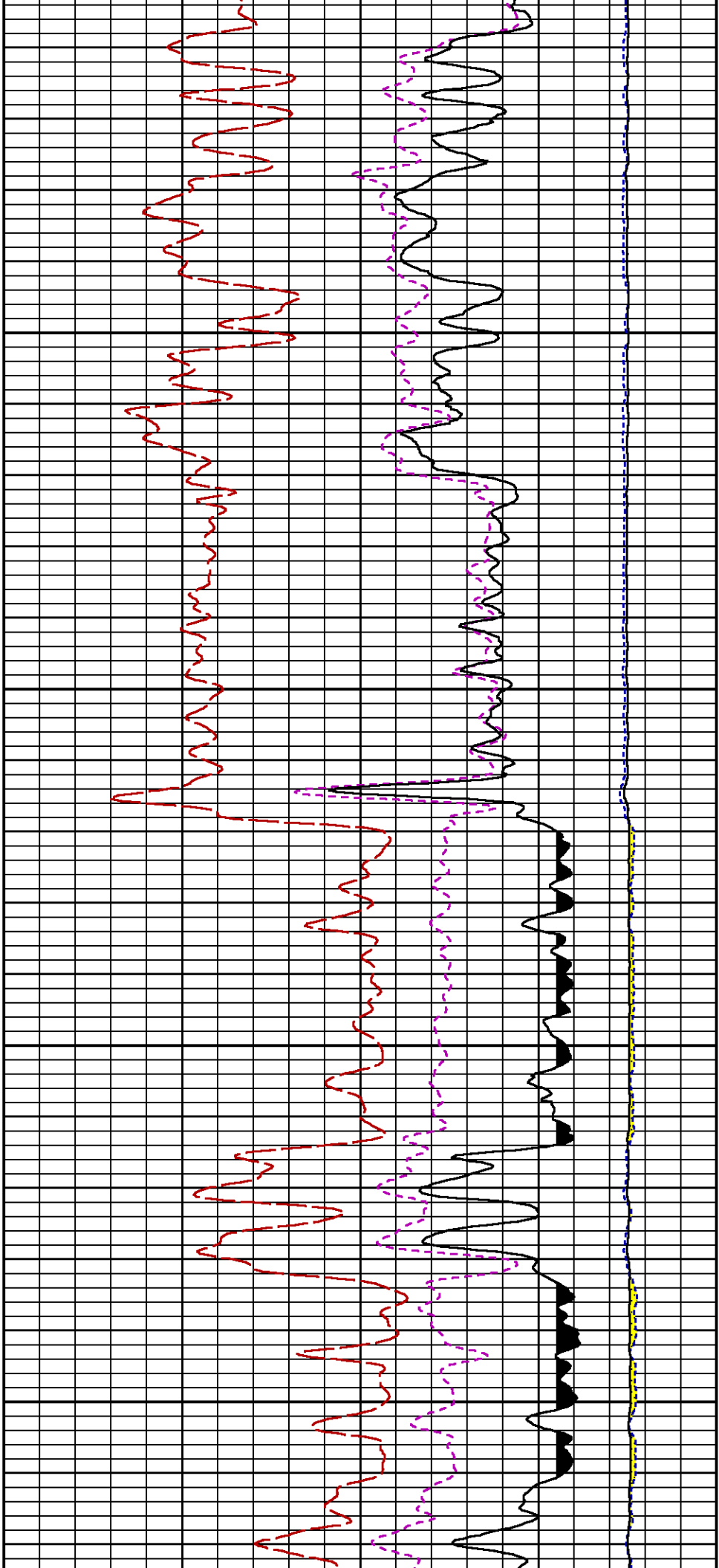












PNC Parameters	BOREHOLE CONTENTS	FLUID	TOP	BOTTOM
	OPEN/CASED HOLE	CASED HOLE	"	"
	BOREHOLE SIZE	7.78	in	"
	LARGEST CASING OD	4.50	in	"
	MATRIX	SANDSTONE	"	"

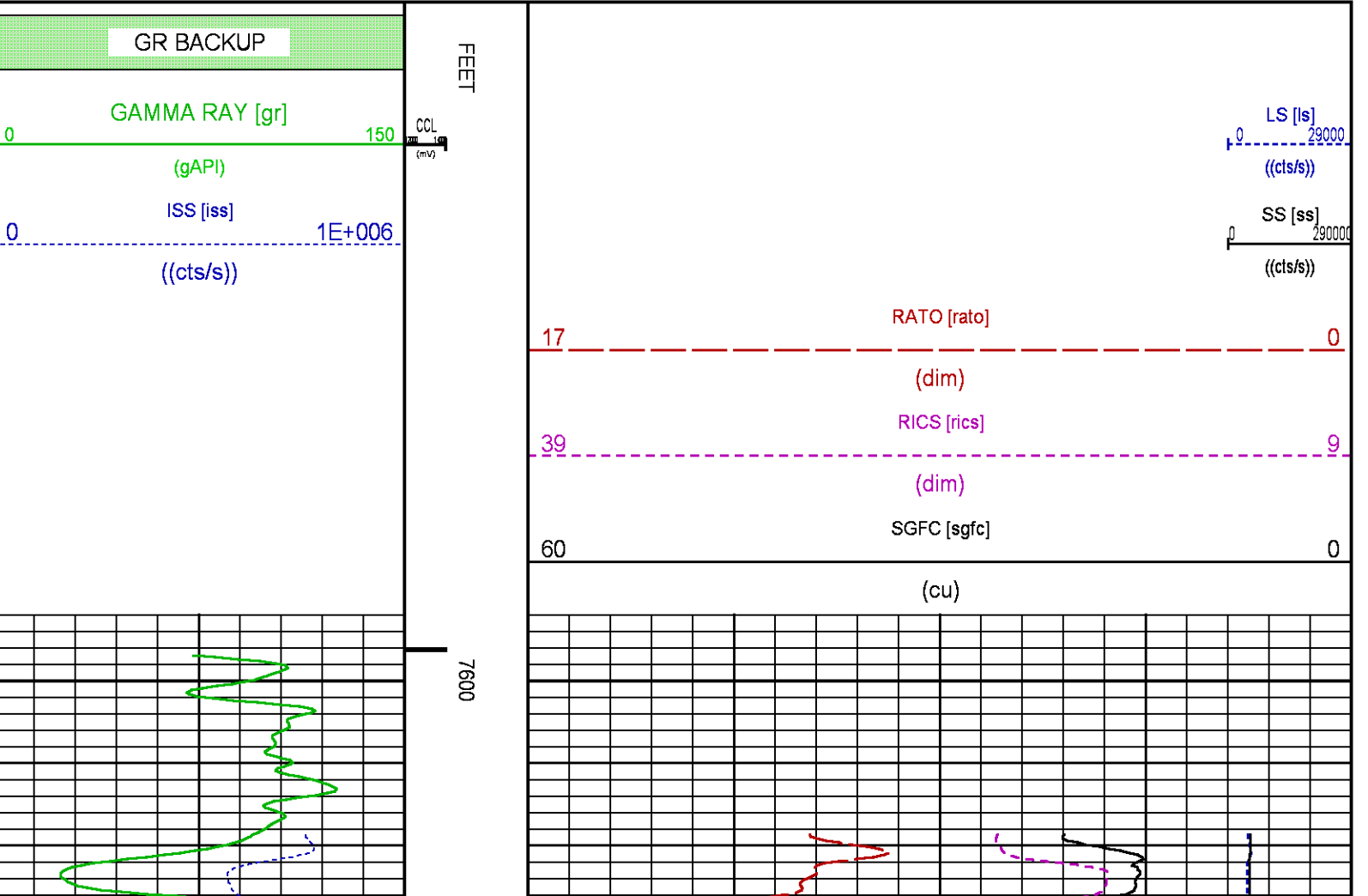
CURVE DESCRIPTION REPORT

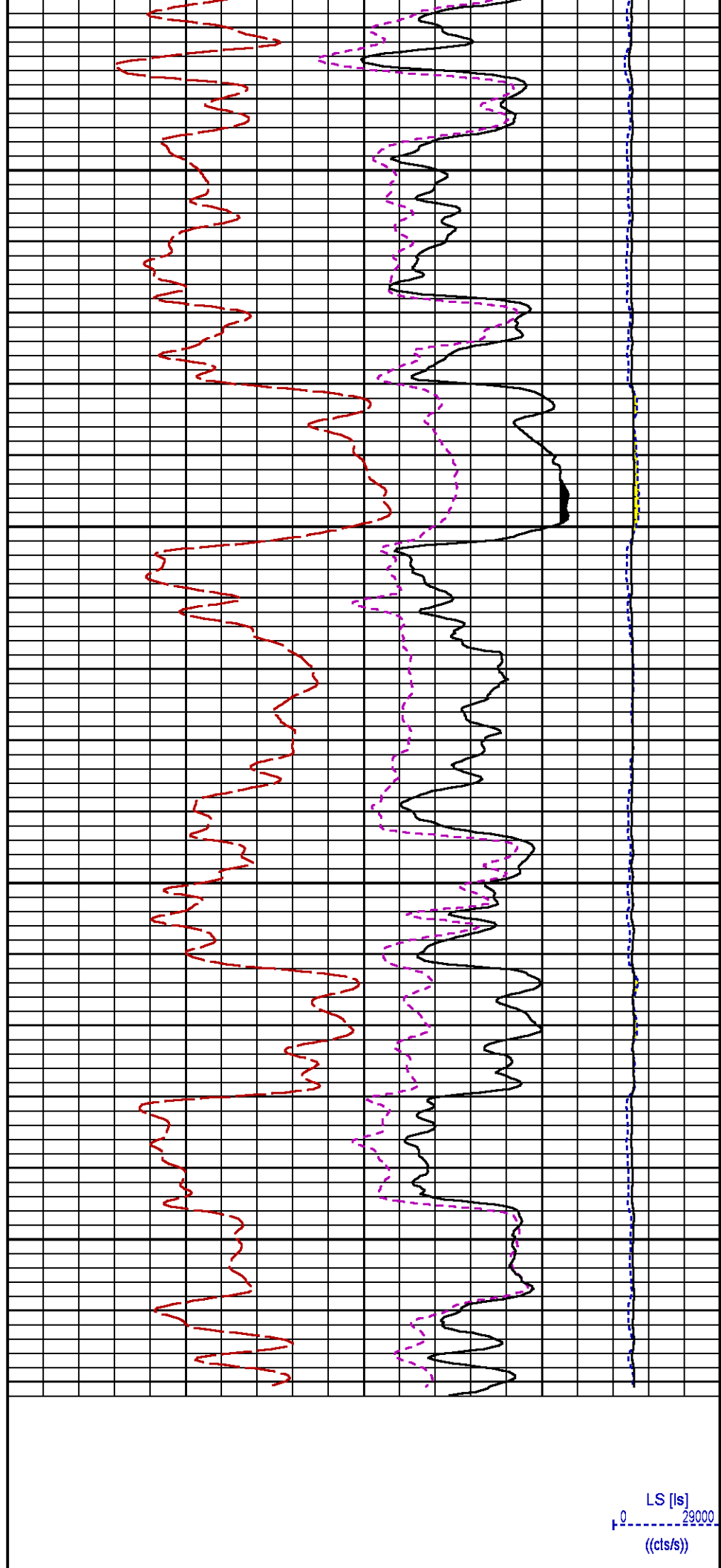
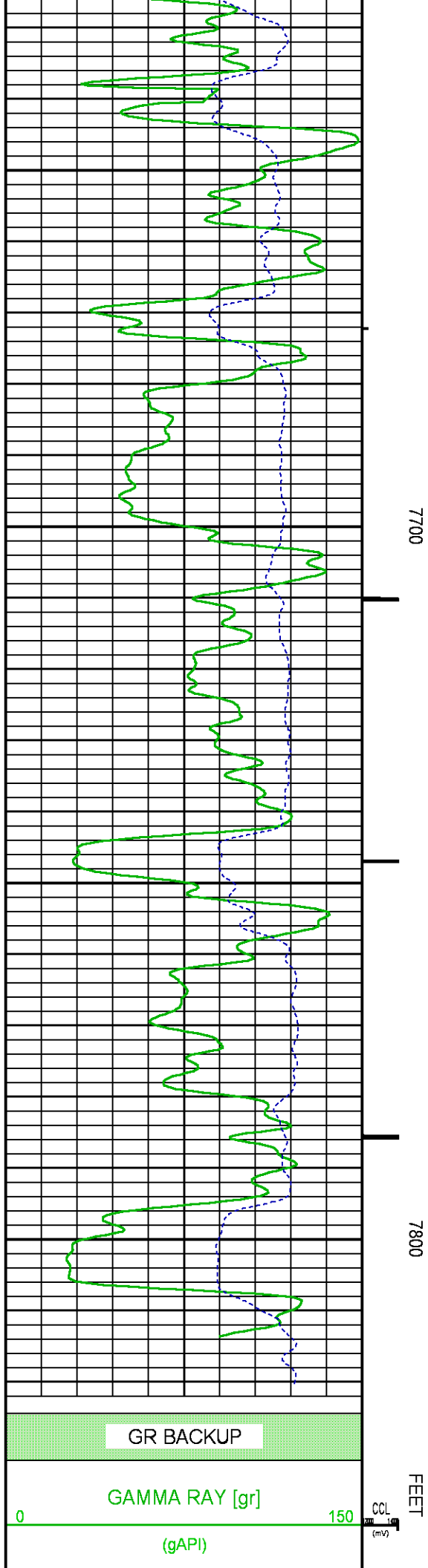
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	N/A	CASING COLLAR LOCATOR
F1:GR	N/A	GAMMA RAY
F1:ISS	N/A	INELASTIC SHORT SPACE COUNT RATE
F1:LS	N/A	LONG SPACE COUNT RATE
F1:RATO	N/A	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	N/A	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	N/A	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	-26.00	ISS	-12.75	RATO	-12.75	SGFC	-12.75
GR	-23.00	LS	-12.75	RICS	-12.75	SS	-12.75

Presentation	: BHI78FR4H2:C:\dat1a\BRUTON FEDERAL RAL 19-09E\BRUTON_FEDERAL_19_09E_PRM_RPT.fvpdf [5"/100' Scale]
Plot Interval	: 7592.75 - 7828.25 Feet
Data File 1	: F1 : BHI78FR4H2:C:\dat1a\BRUTON FEDERAL RAL 19-09E\BRUTON_FEDERAL_19_09E_PRM_RPT.xtf
Created On	: N/A
Company	: LARAMIE ENERGY LLC
Well	: BRUTON FEDERAL 19-09E
Field	: VEGA
File Interval	: 7575.75 - 7837 Feet
OCT	: PRM3D





0	ISS [iss] 1E+006				SS [ss] 290000
	((cts/s))				((cts/s))
				RATO [rato]	0
			17	(dim)	
				RICS [rics]	9
			39	(dim)	
				SGFC [sgfc]	0
			60	(cu)	

CALIBRATION / VERIFICATION SUMMARY

Source File: C:\dat1a\BRUTON FEDERAL RAL 19-09E\PRM3D.tp1

GR PRIMARY CALIBRATION SUMMARY

TOOL #: 8262XA 10196540

DATE/TIME PERFORMED: Fri Nov 17 17:20:19 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	70.96	367.73	296.8	0.623	44.23	229.23	185

GR PRIMARY VERIFICATION SUMMARY

TOOL #: 8262XA 10196540

DATE/TIME PERFORMED: Fri Nov 17 17:23:04 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	72.02	371.78	0.623	44.90	231.75	186.86
						175.00 195.00

RPM_PNC_3D PRIMARY CALIBRATION SUMMARY

TOOL: 8283PA 10184883

DATE/TIME PERFORMED: Thu Jul 13 15:06:49 2017

	ISS	Mtr Vlt (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
					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	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/ILS	RIN13 ISS/IXS	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
		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 %		0.052	0.128	0.117	0.144	0.021	0.011	0.031
Reduced	1232261	1.44	4.91	31.91	15.45	10.65	3.80	4.04
		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\BRUTON FEDERAL_RAL 19-09E\RRM3DT-tdg.meta

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

34.08'

CCL MP 26.03'

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

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

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

BULL PLUG 1 11/16

TOTAL LENGTH: 34.08'
TOTAL WEIGHT: 144 lbs
MAX DIAMETER: 0'1.70"

GR MP 22.90'

XLS MP 13.58'
LS MP 13.16'
SS MP 12.91'

TEMP MP 1.65'
PRES MP

0.00'



FILE NO:

API NO:

[05077104330000](#)

DATE 06-Dec-2017