



FILE NO: CH137639	COMPANY LARAMIE ENERGY LLC
API NO: 05077103960000	WELL NICHOLS 0994-24-13E
	FIELD VEGA
	COUNTY MESA STATE COLORADO

Ver. 4.10	LOCATION: SHL: 2280' FNL & 2794' FWL BHL: 2223' FSL & 1441' FEL SEC <u>24</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 KB KB	ELEVATION 24 FT ABOVE P.D.	ELEVATIONS: KB 7236 FT DF GL 7212 FT
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DATE	28-Jun-2018	
RUN	1	1
SERVICE ORDER	US137639	
DEPTH DRILLER	7659 FT	
DEPTH LOGGER	7512 FT	
BOTTOM LOGGED INTERVAL	7512 FT	
TOP LOGGED INTERVAL	2157 FT	
TIME STARTED	08:30	
TIME FINISHED	14:30	
OPERATOR RIG TIME	6 HOURS	
TYPE OF FLUID IN HOLE	WATER	
FLUID DENSITY	NA	
FLUID SALINITY	NA	
FLUID LEVEL	64 FT	
LOGGED CEMENT TOP	1980 FT	
WELLHEAD PRESSURE	0 PSI	
MAXIMUM HOLE DEVIATION	NA	
NOMINAL LOGGING SPEED	10 FMIN	
MAX. RECORDED TEMP.	222 DEGF	
REFERENCE LOG	BAKER HUGHES RAL	
REFERENCE LOG DATE	27-Jun-2018	
EQUIP. NO.	ML-4268	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: 5768' - 5788'

SJ: 6638' - 6658'

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 28 15:42:31 2018

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_NICHOLS_0994-24-13E/p354h03.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 2130.344 ft BOTTOM DEPTH: 2780.120 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

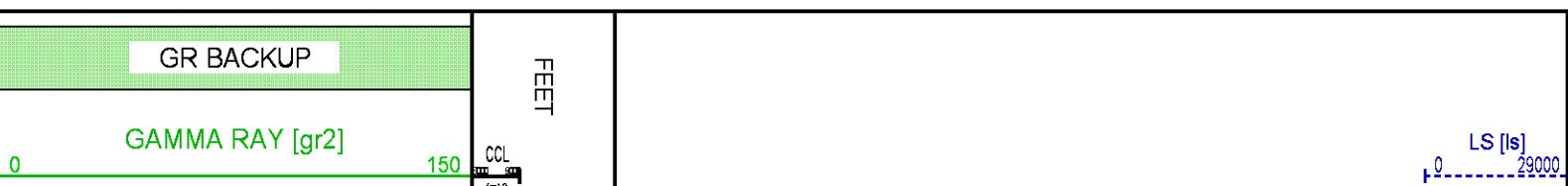
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	N/A	CASING COLLAR LOCATOR
F1:GR2	N/A	GAMMA RAY 2
F1:ISS	N/A	INELASTIC SHORT SPACE COUNT RATE
F1:LS	N/A	LONG SPACE COUNT RATE
F1:RATO	N/A	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	N/A	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC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

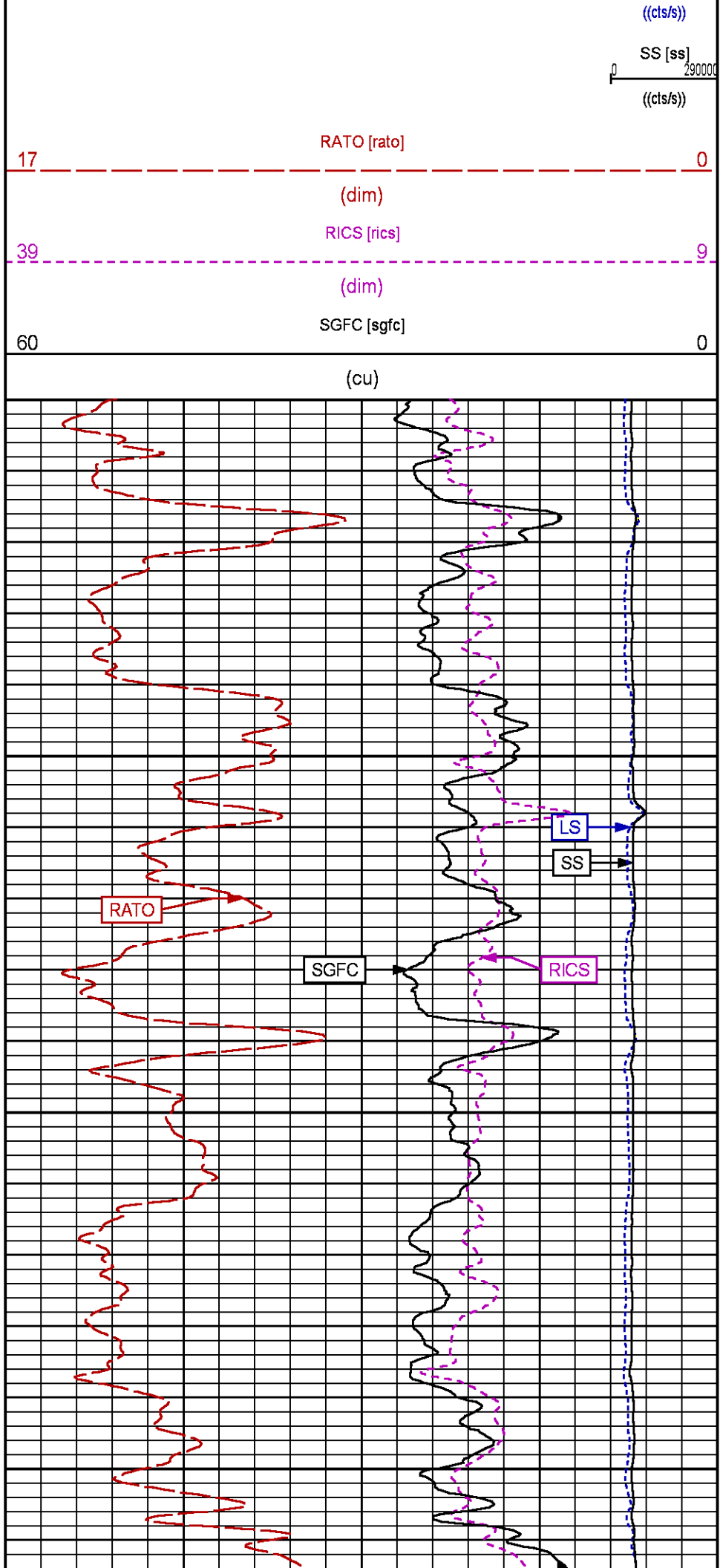
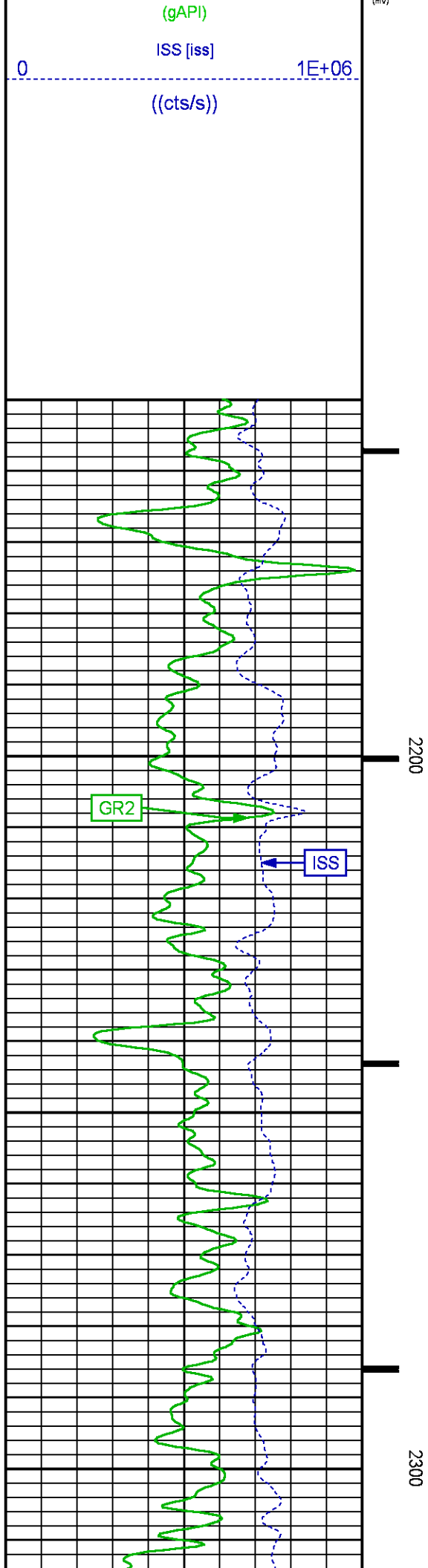
CURVE MEASURE POINT OFFSET

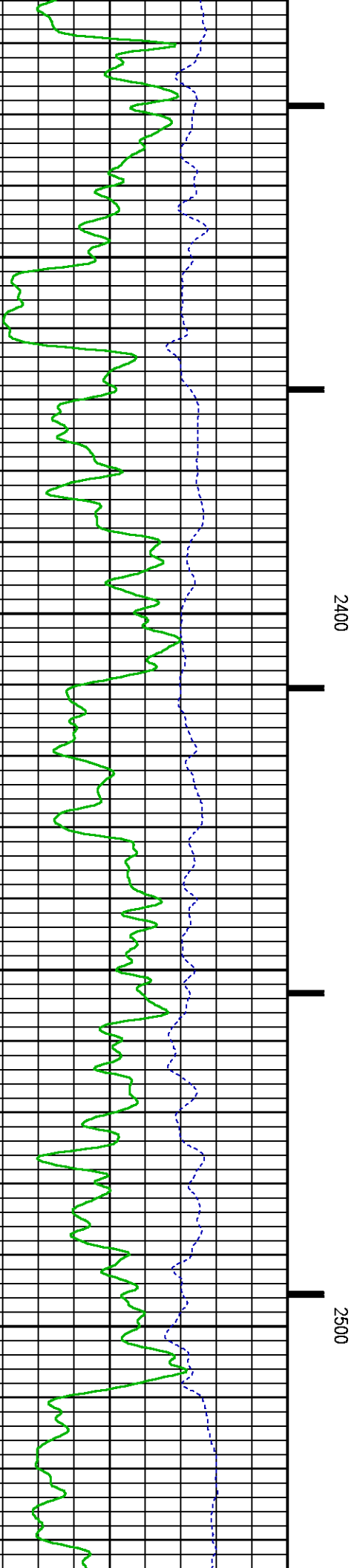
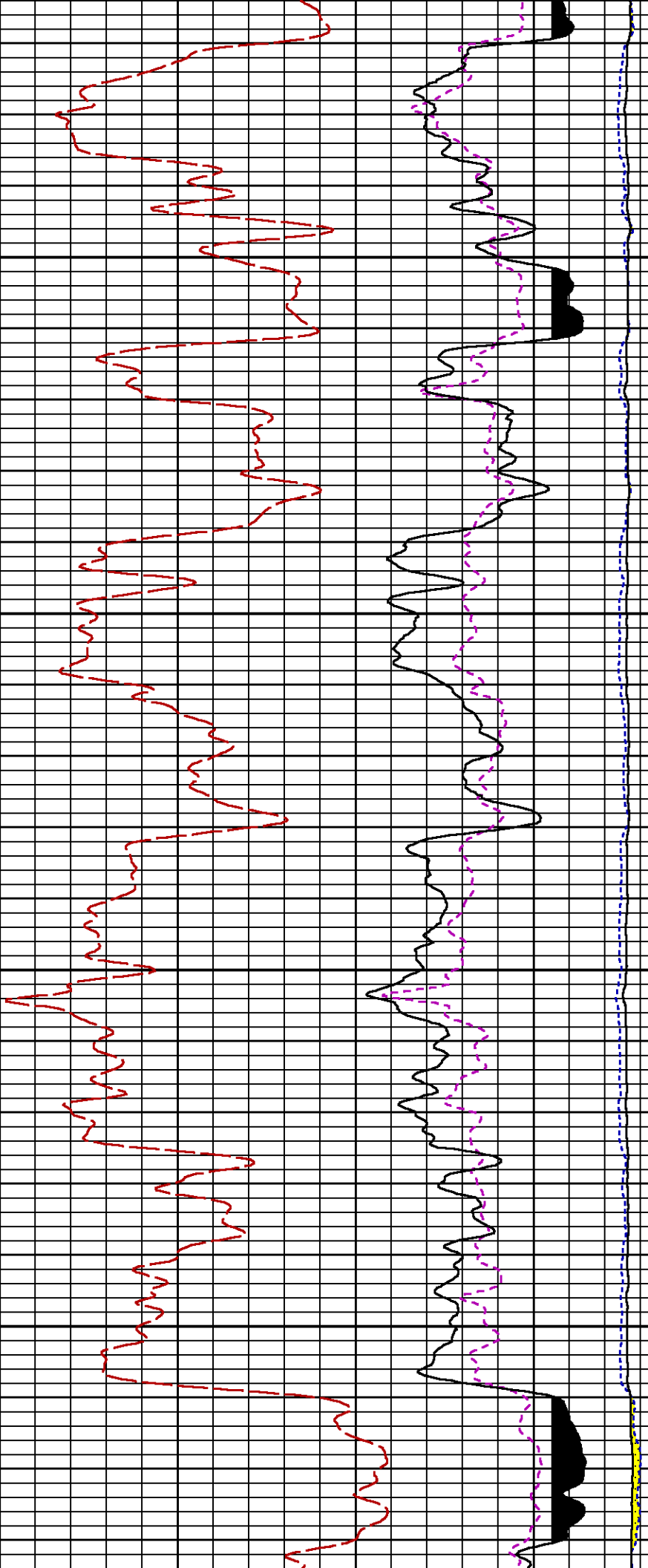
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	-21.75	ISS	-9.50	RATO	-9.50	SGFC	-9.50
GR2	-19.25	LS	-9.50	RICS	-9.50	SS	-9.50

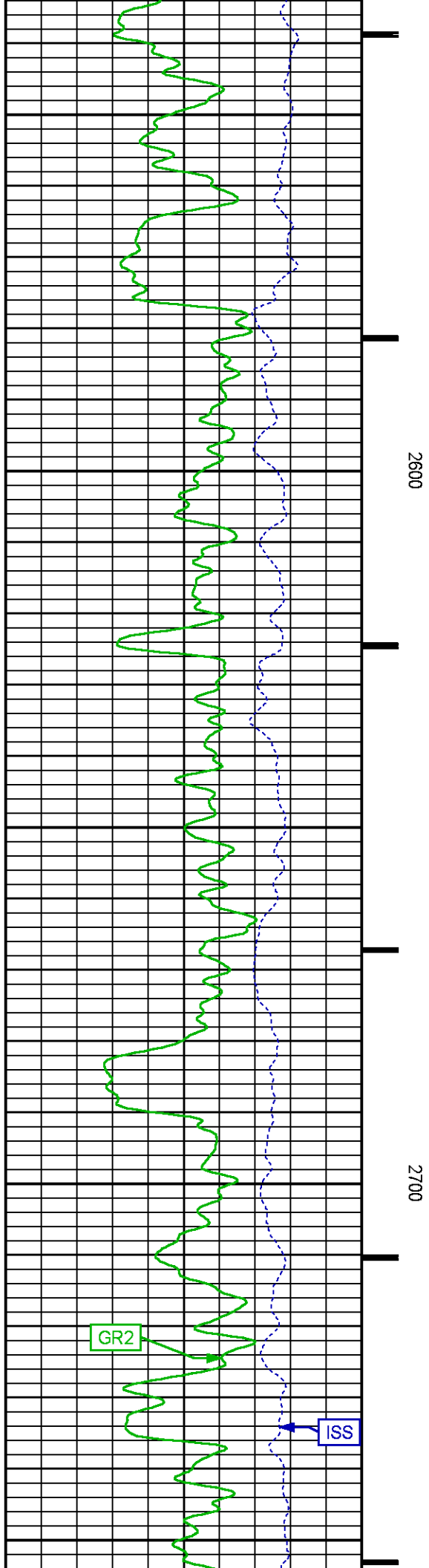
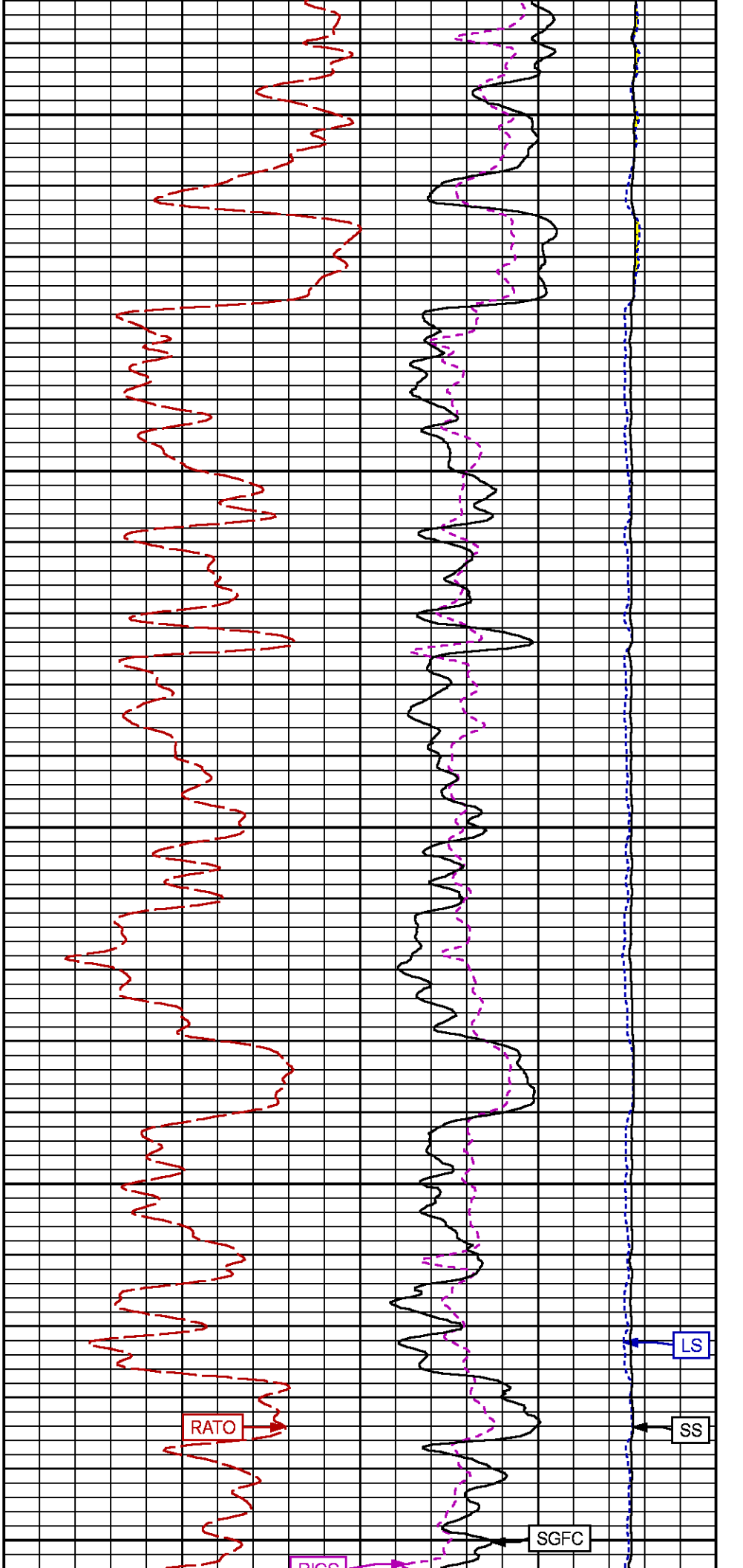
Presentation : SysA:/dat1a/LARAMIE_NICHOLS_0994-24-13E/13E_RPM_GS.fvpdf [5"/100' Scale]
 Plot Interval : 2150 - 2770 Feet

Data File 1 : F1 : SysA:/dat1a/LARAMIE_NICHOLS_0994-24-13E/13E_RPM_GS.xtf
 Created On : N/A
 Company : LARAMIE ENERGY LLC
 Well : NICHOLS 0994-24-13E
 Field : VEGA
 File Interval : 2119.25 - 2789 Feet
 OCT : p354h









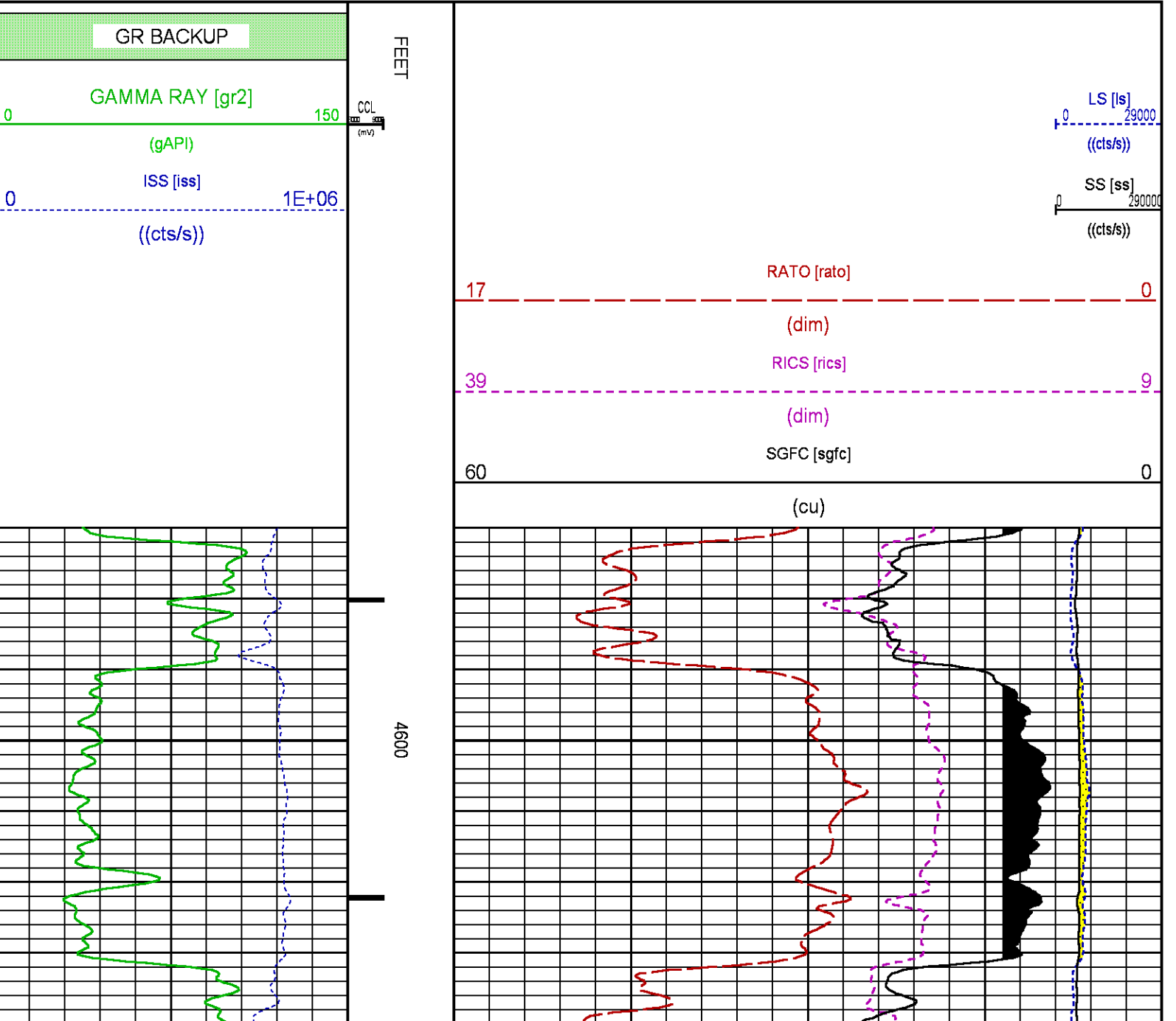
F1:GR2	N/A	GAMMA RAY 2
F1:ISS	N/A	INELASTIC SHORT SPACE COUNT RATE
F1:LS	N/A	LONG SPACE COUNT RATE
F1:RATO	N/A	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	N/A	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	N/A	BOREHOLE AND DIFFUSION CORRECTED SIGMA
F1:SS	N/A	SHORT SPACE COUNT RATE

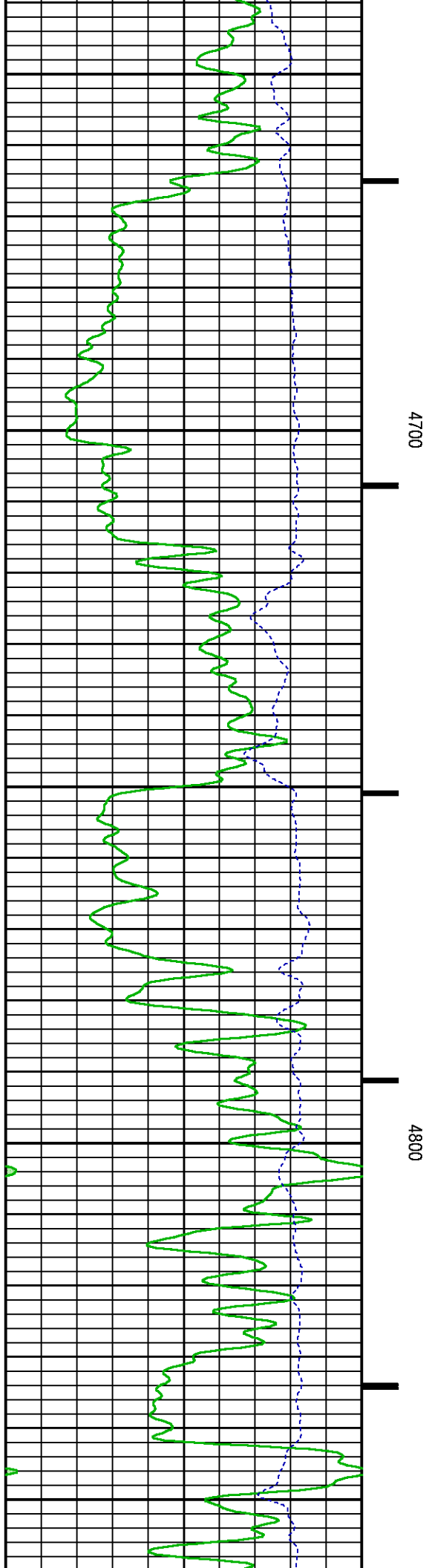
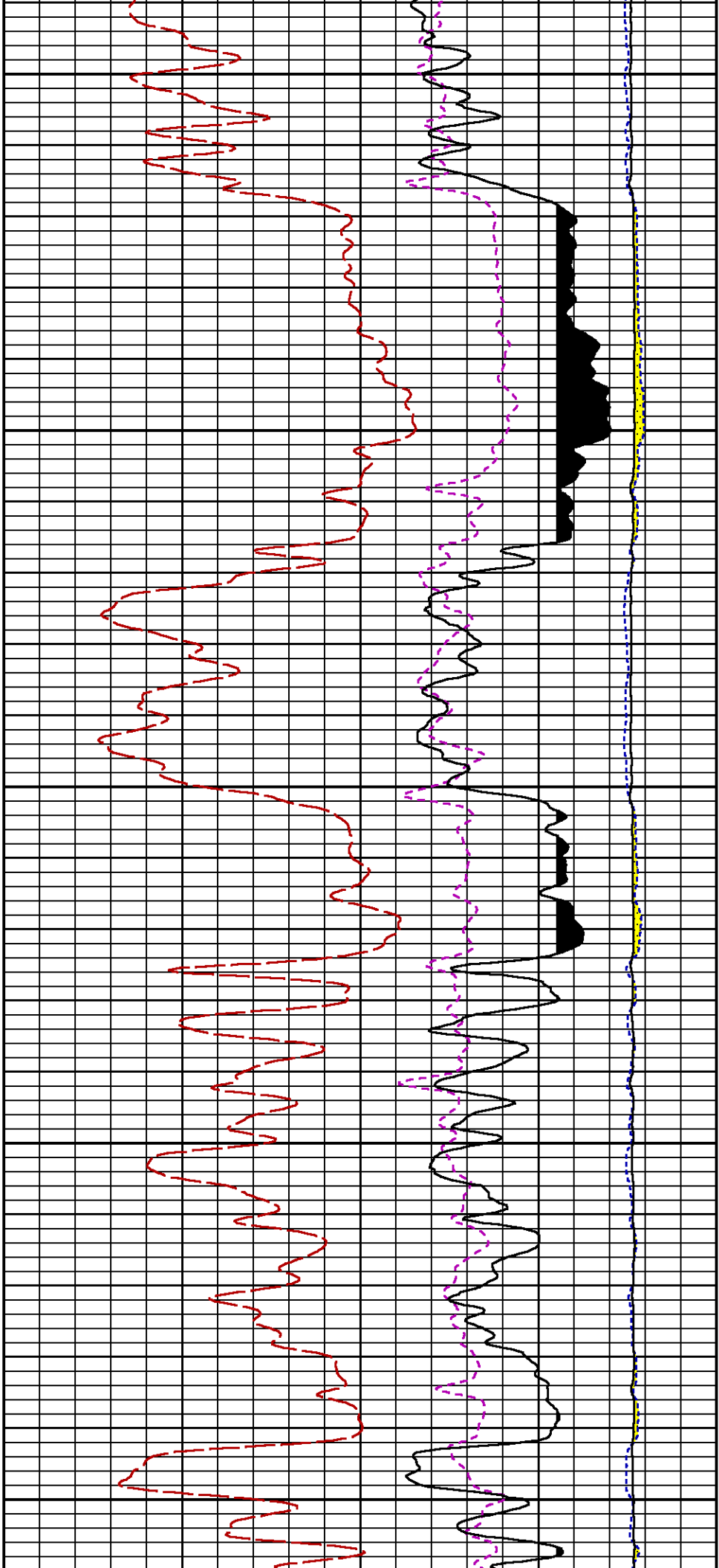
CURVE MEASURE POINT OFFSET

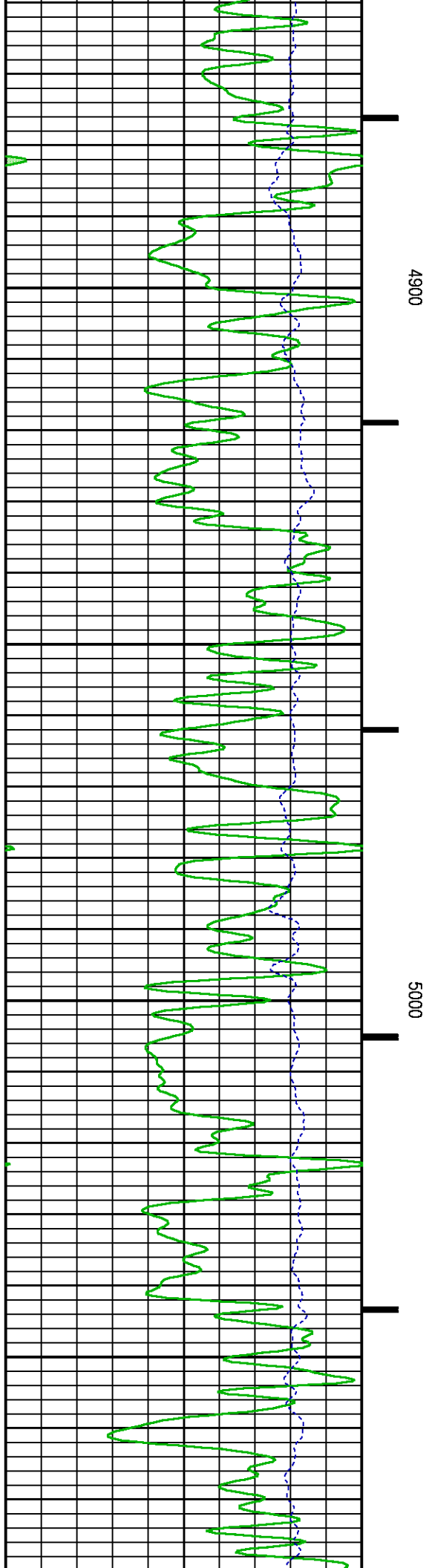
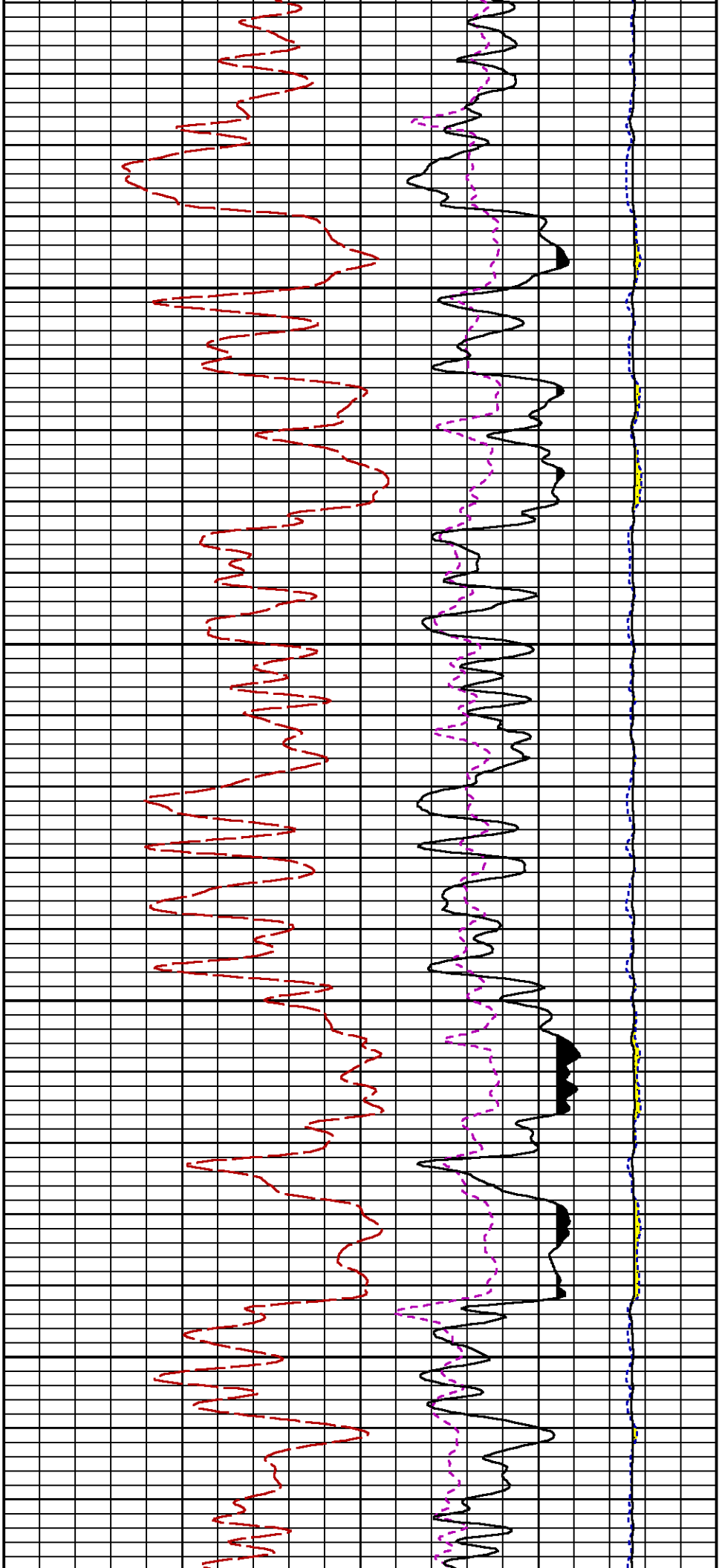
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	-21.75	ISS	-9.50	RATO	-9.50	SGFC	-9.50
GR2	-19.25	LS	-9.50	RICS	-9.50	SS	-9.50

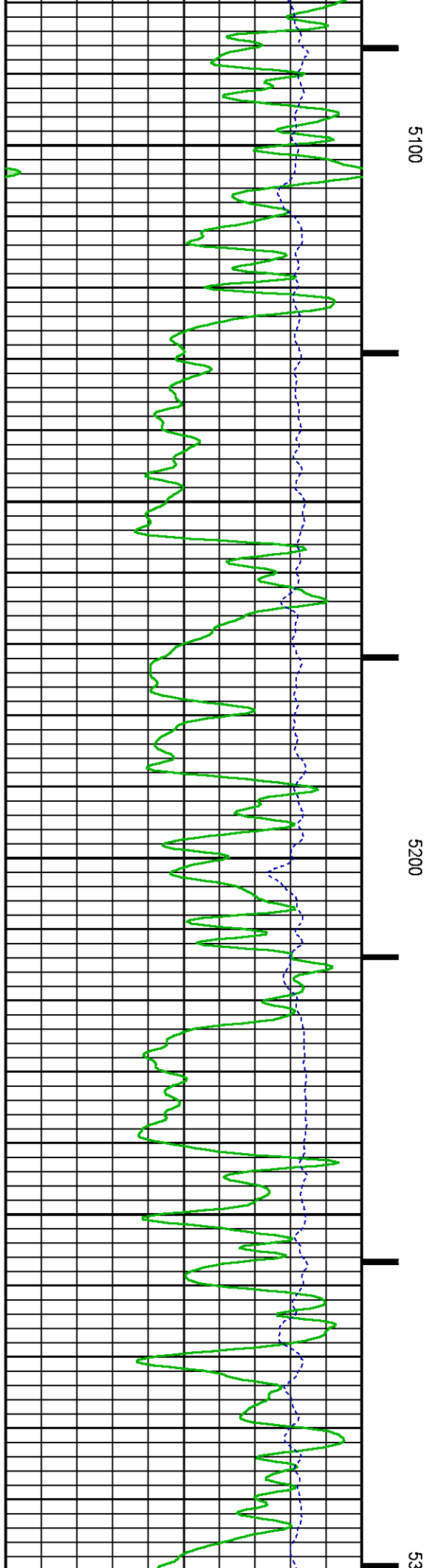
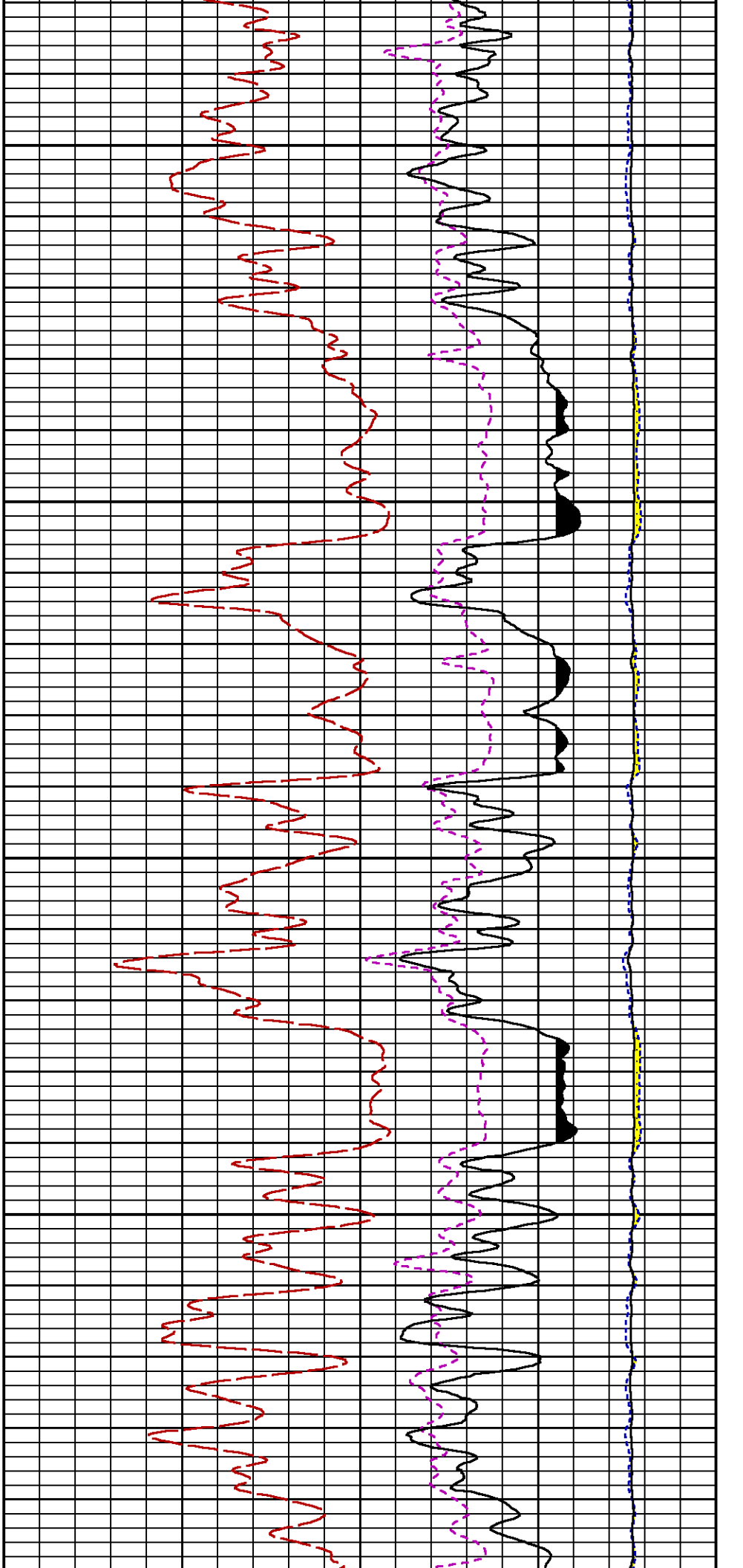
Presentation : SysA:/dat1a/LARAMIE_NICHOLS_0994-24-13E/13E_RPM_WF.fvpdf [5"/100' Scale]
Plot Interval : 4570 - 7519.75 Feet

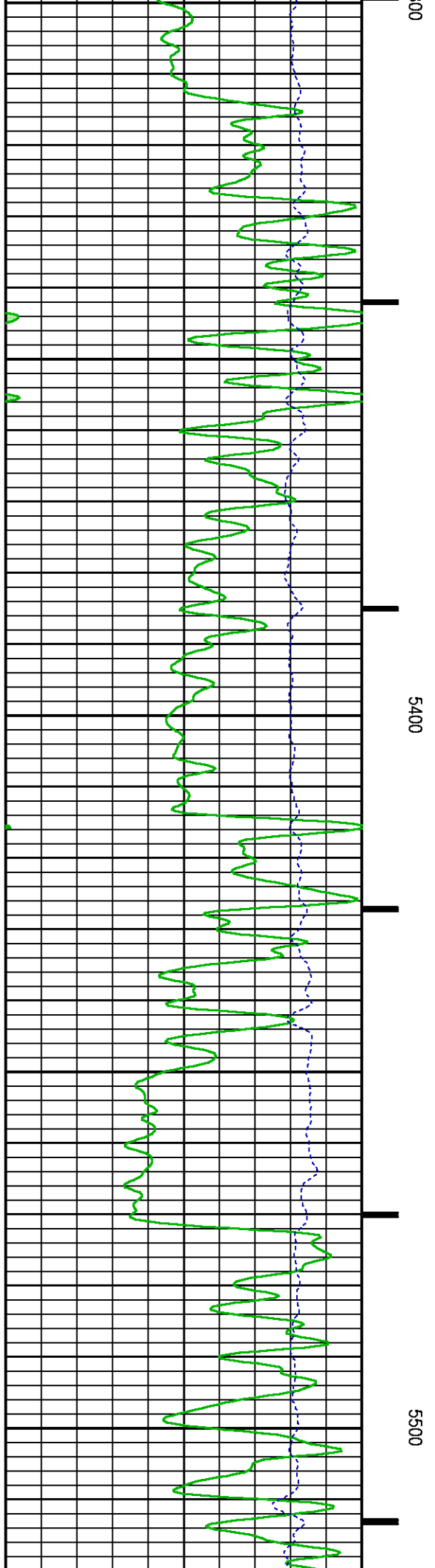
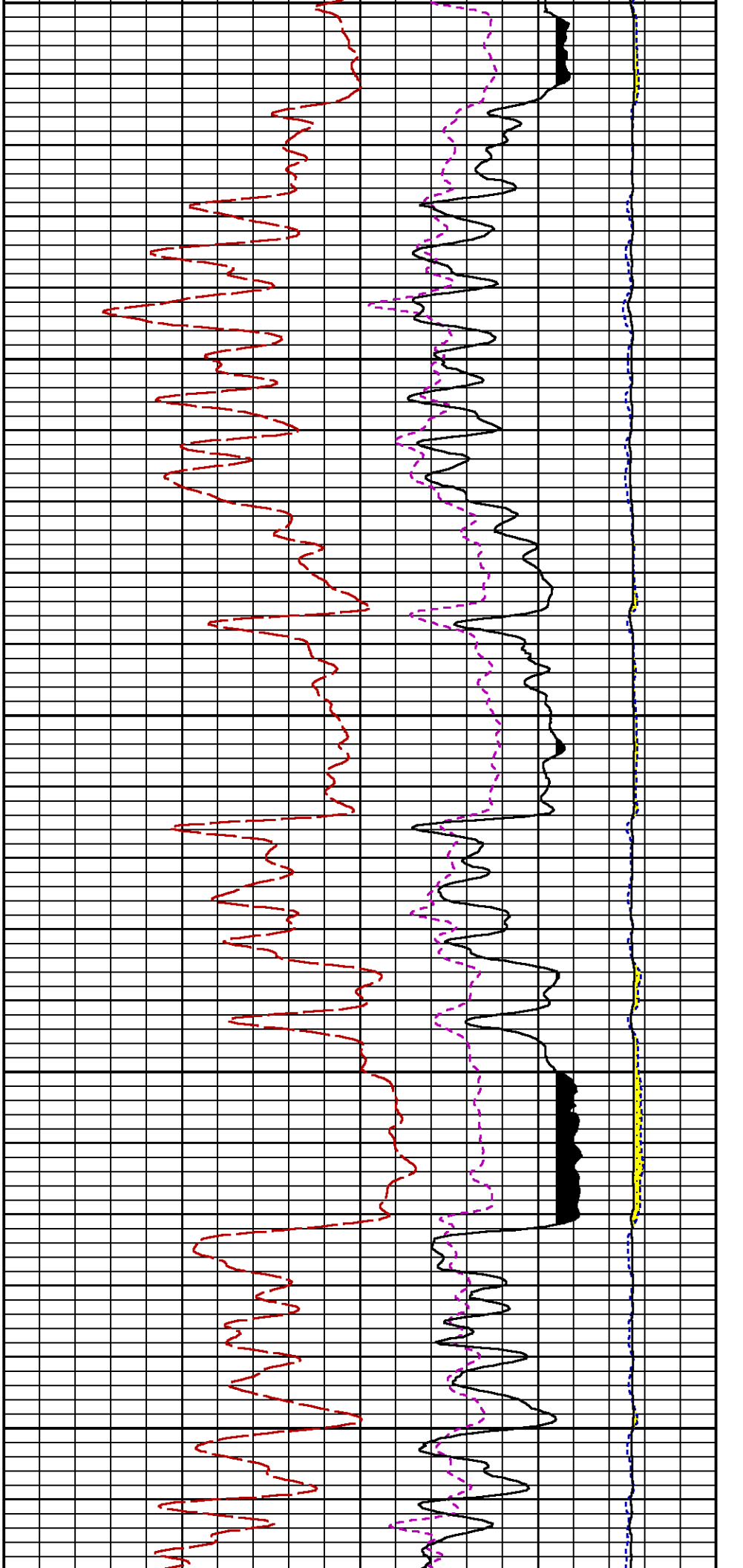
Data File 1 : F1 : SysA:/dat1a/LARAMIE_NICHOLS_0994-24-13E/13E_RPM_WF.xtf
Created On : N/A
Company : LARAMIE ENERGY LLC
Well : NICHOLS 0994-24-13E
Field : VEGA
File Interval : 4038.25 - 7520 Feet
OCT : p354h

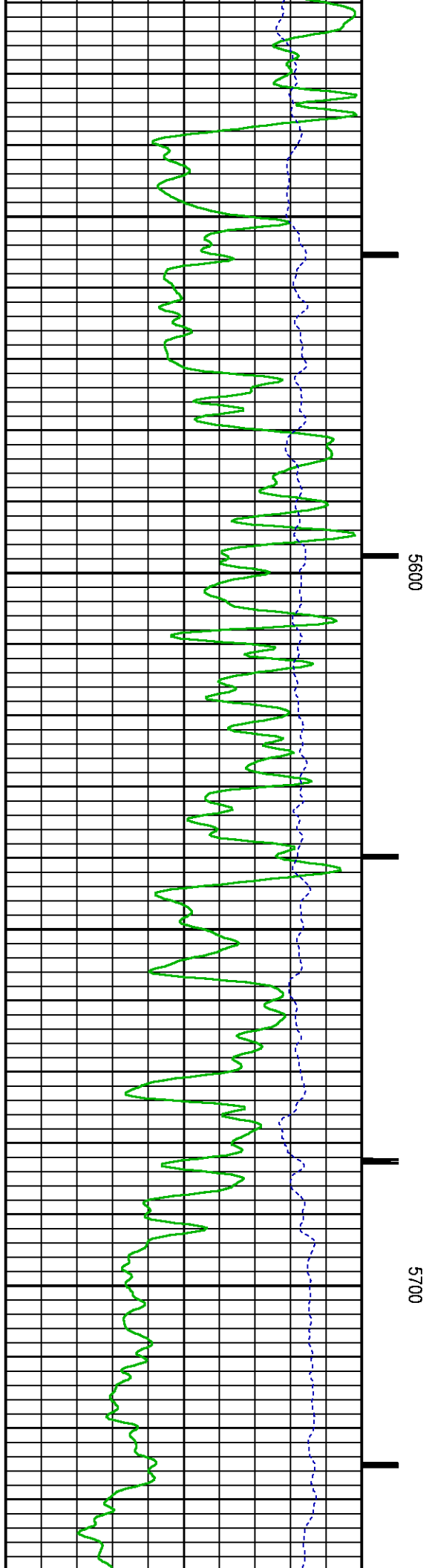
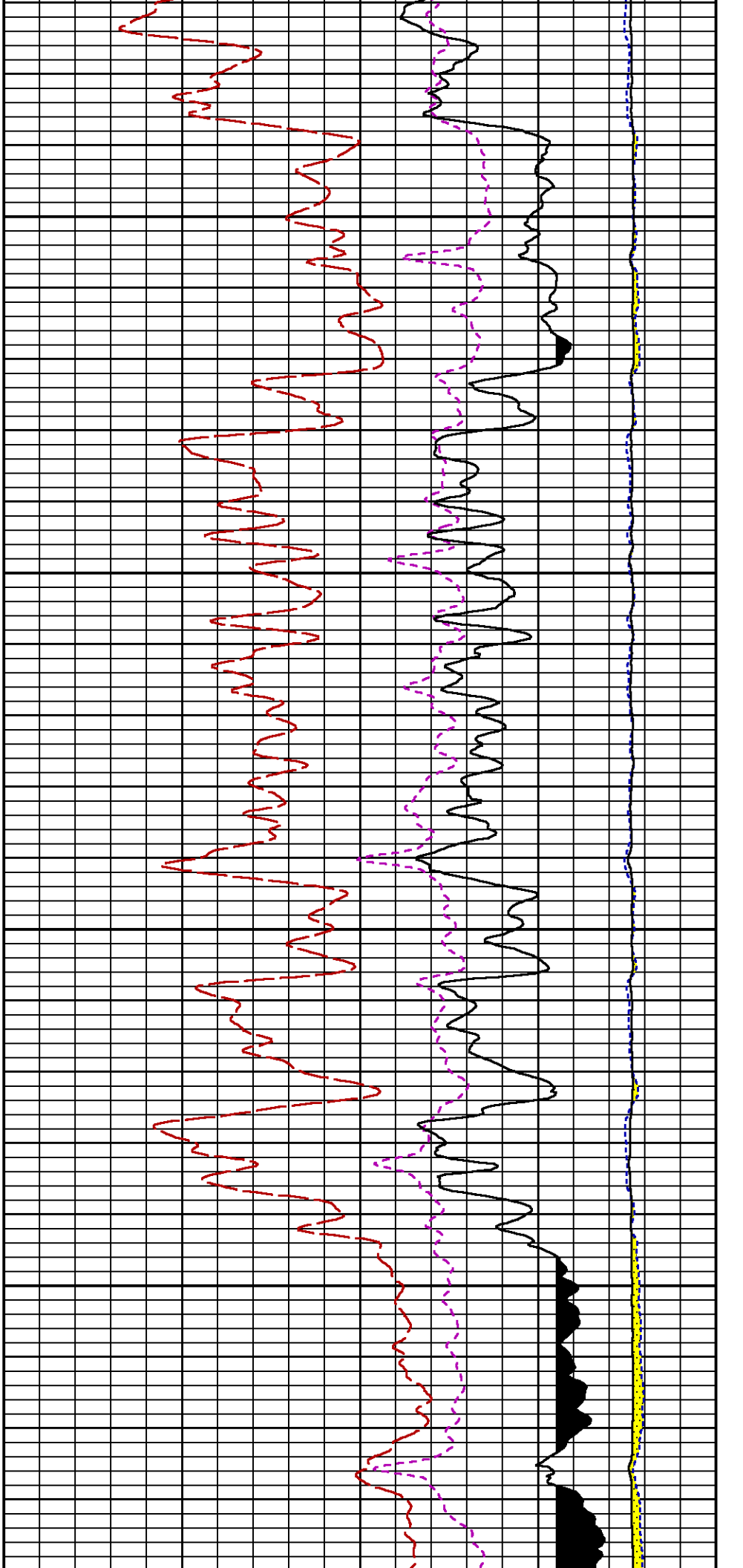


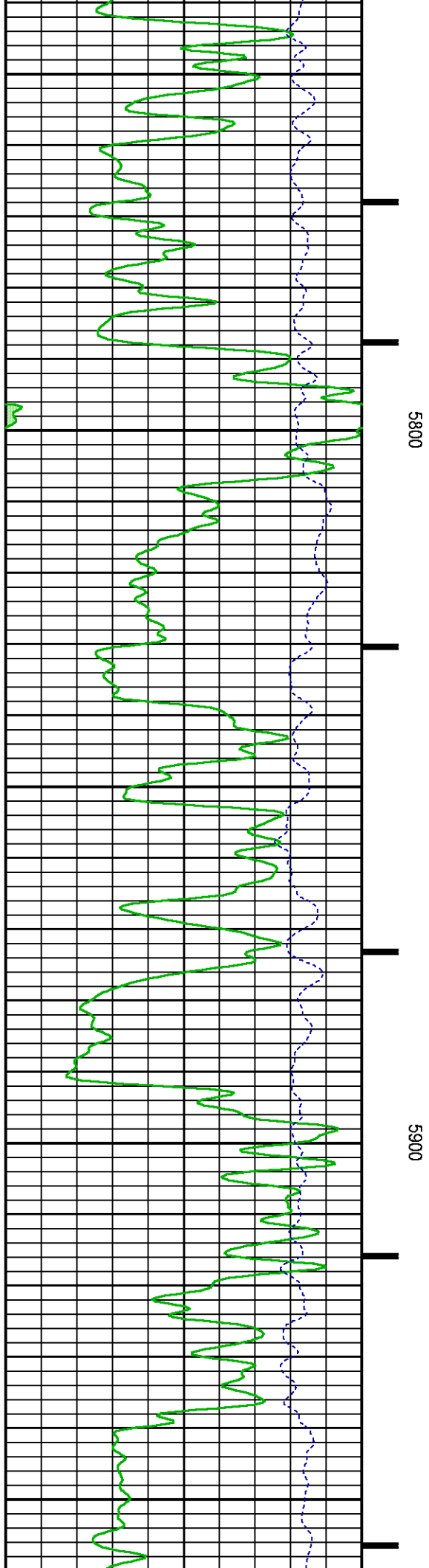
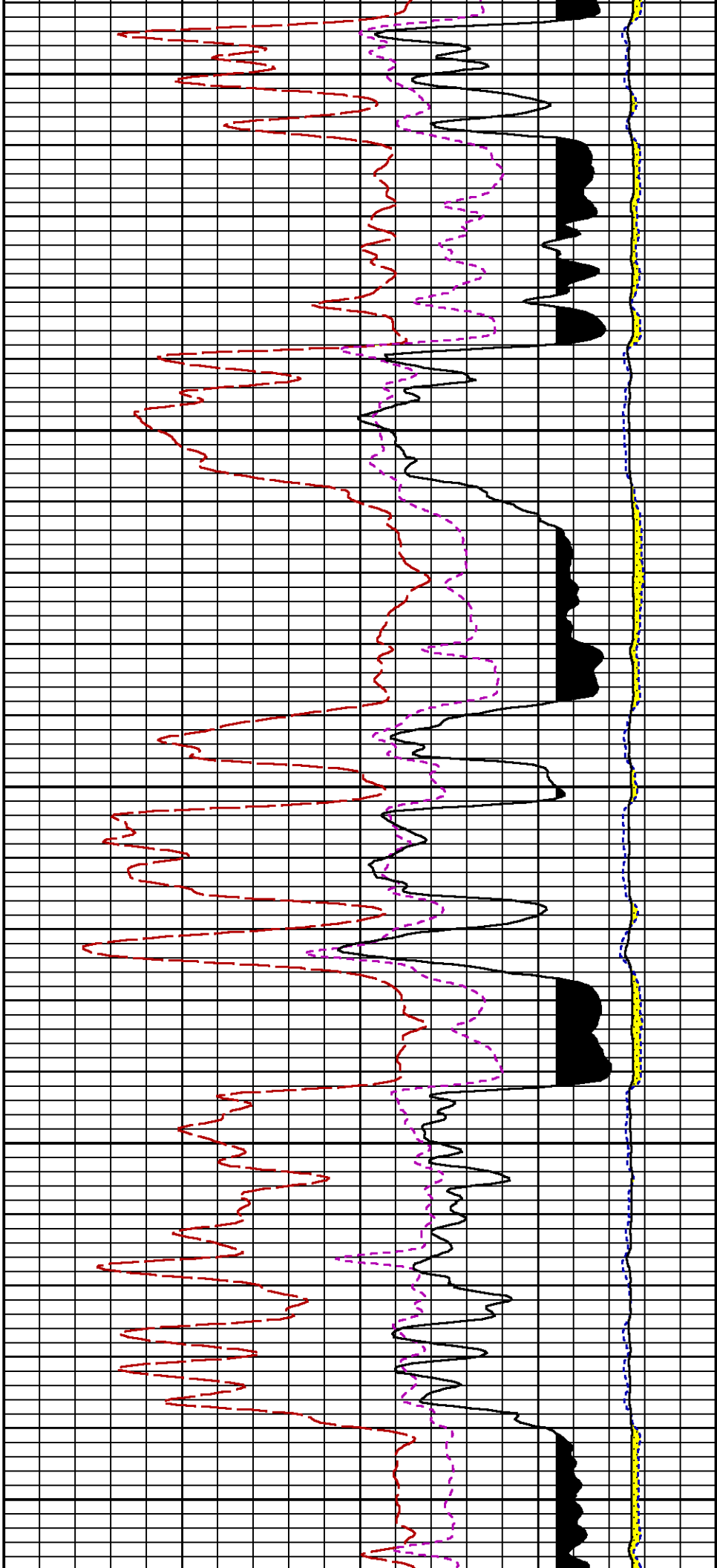


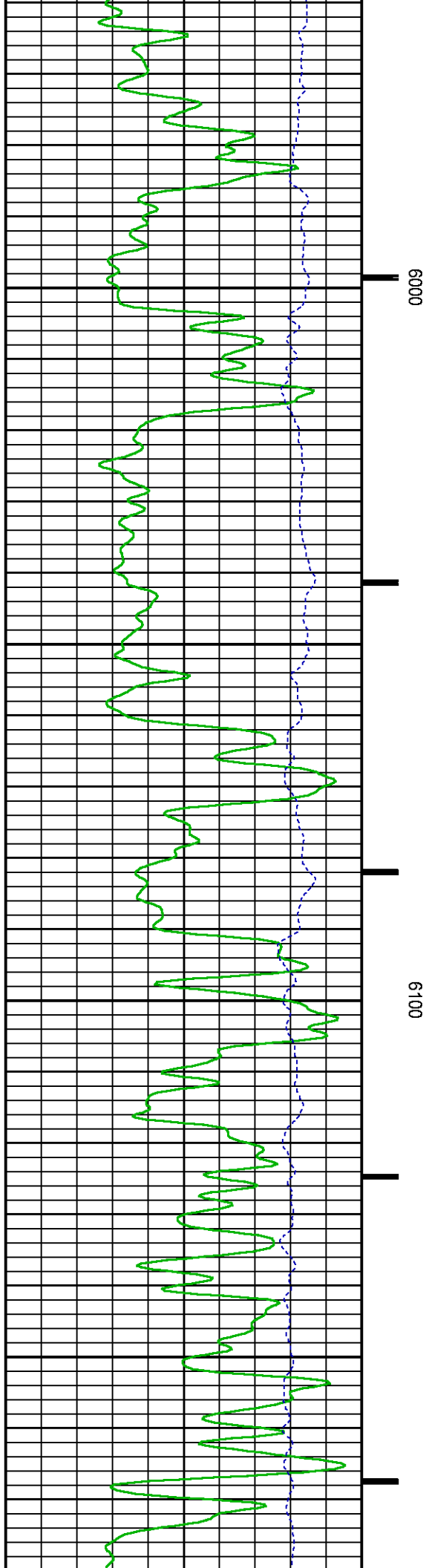
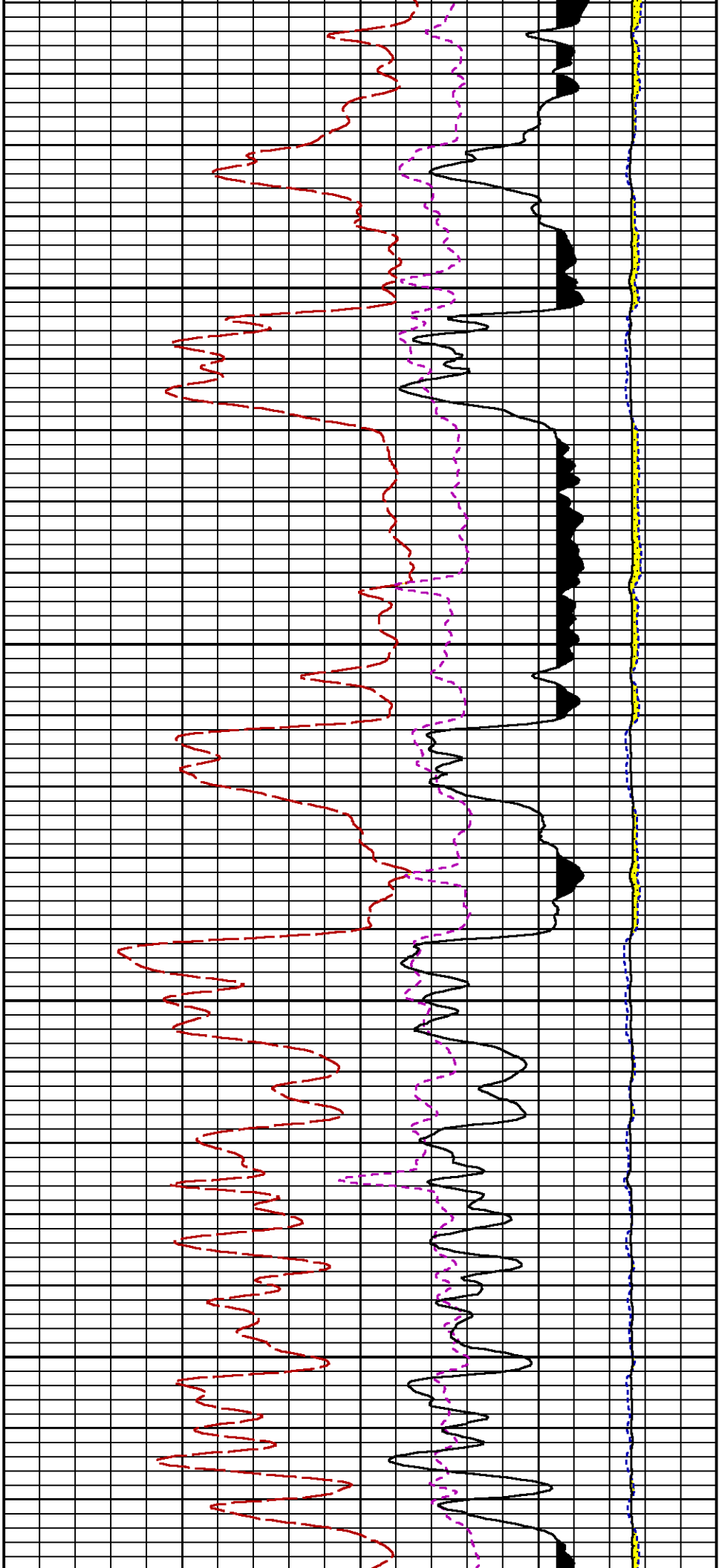


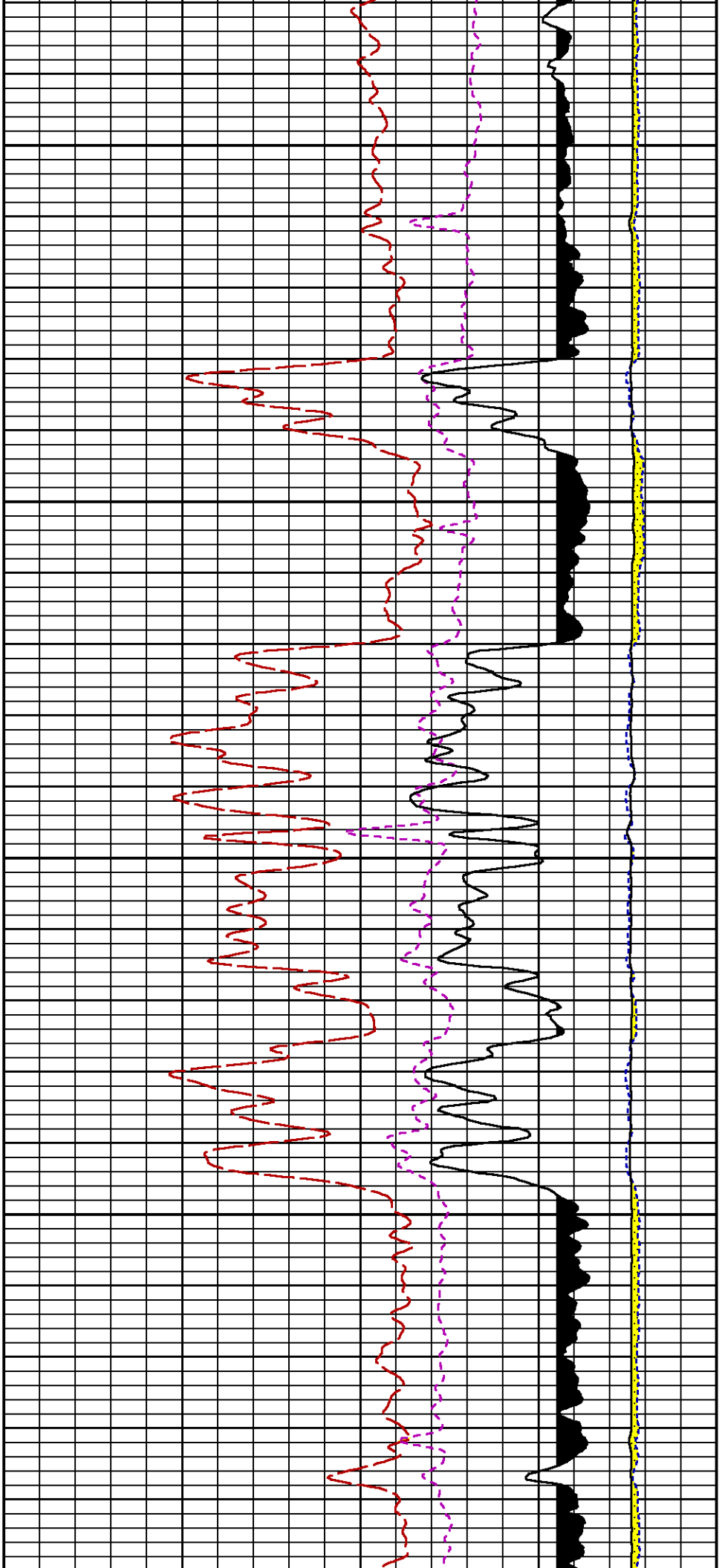








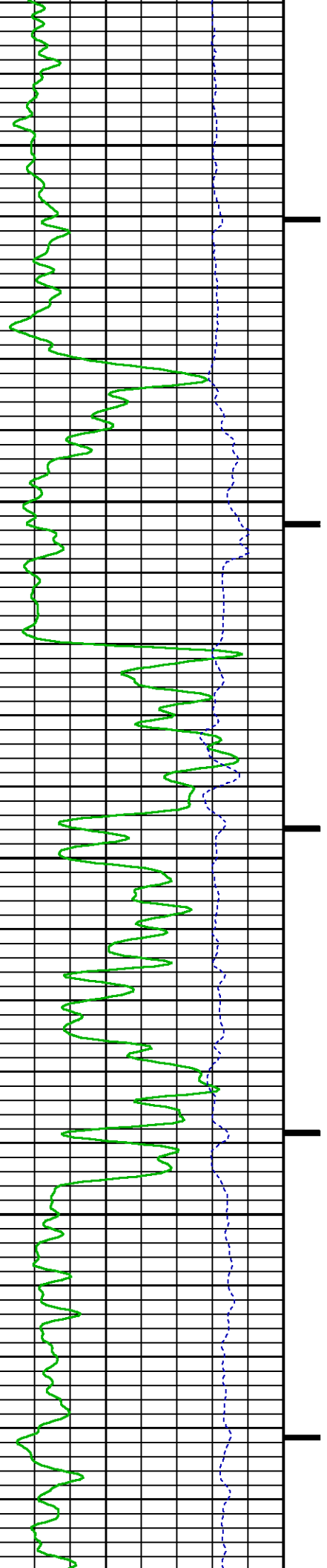


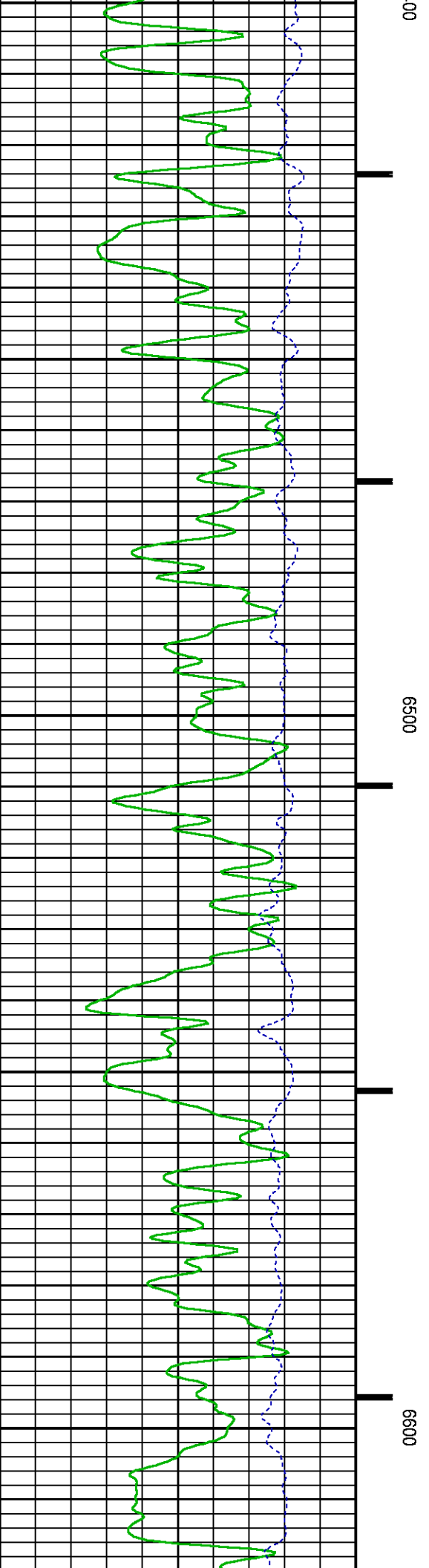
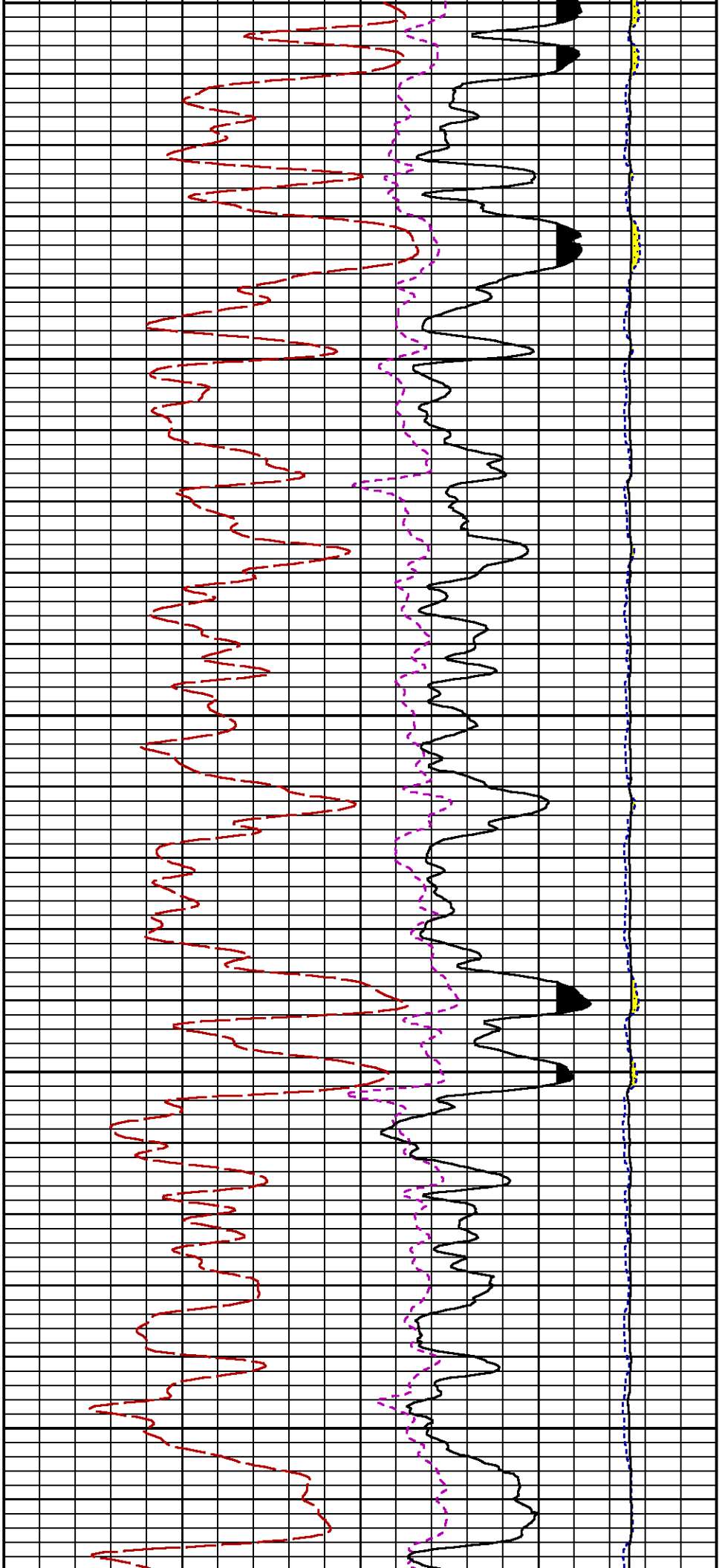


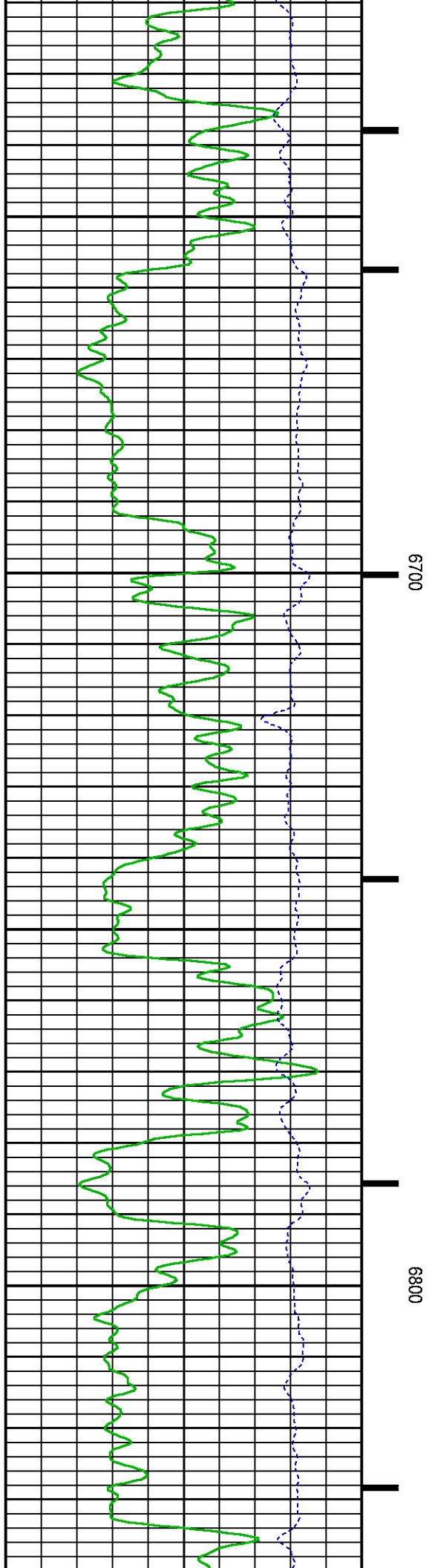
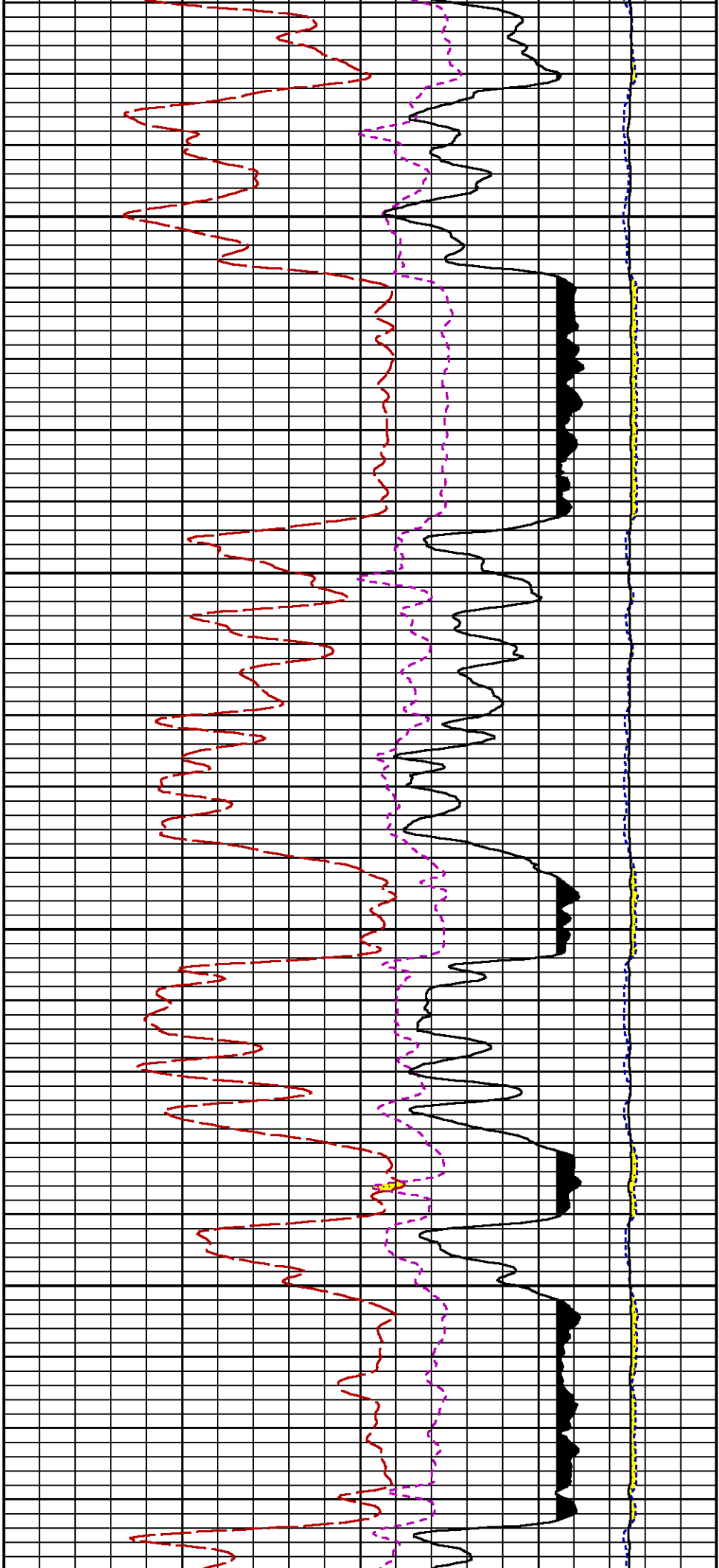
6200

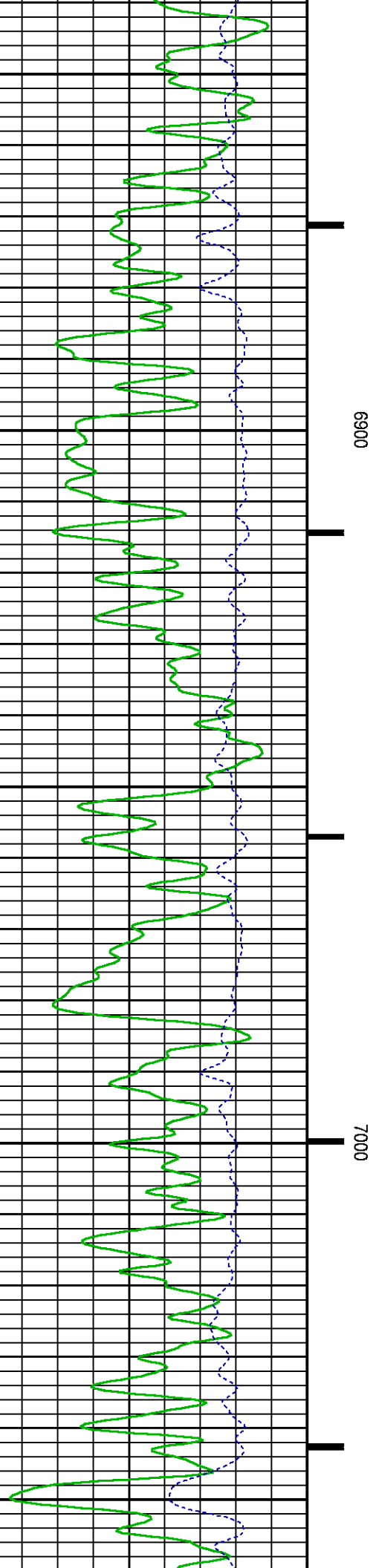
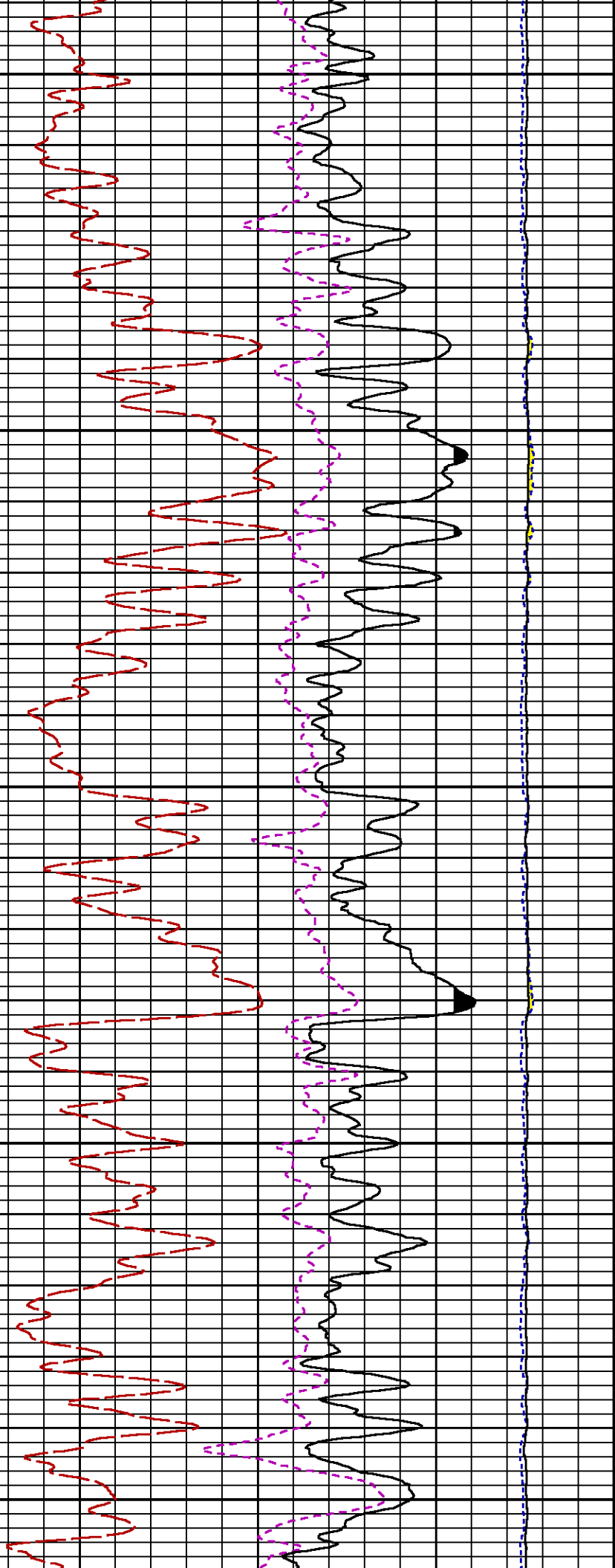
6300

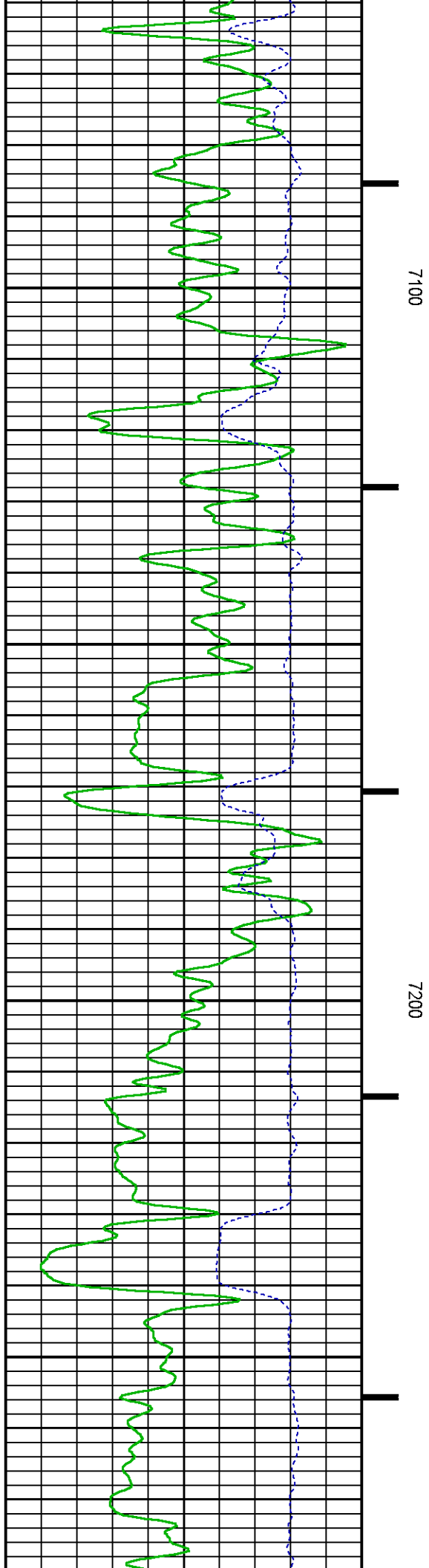
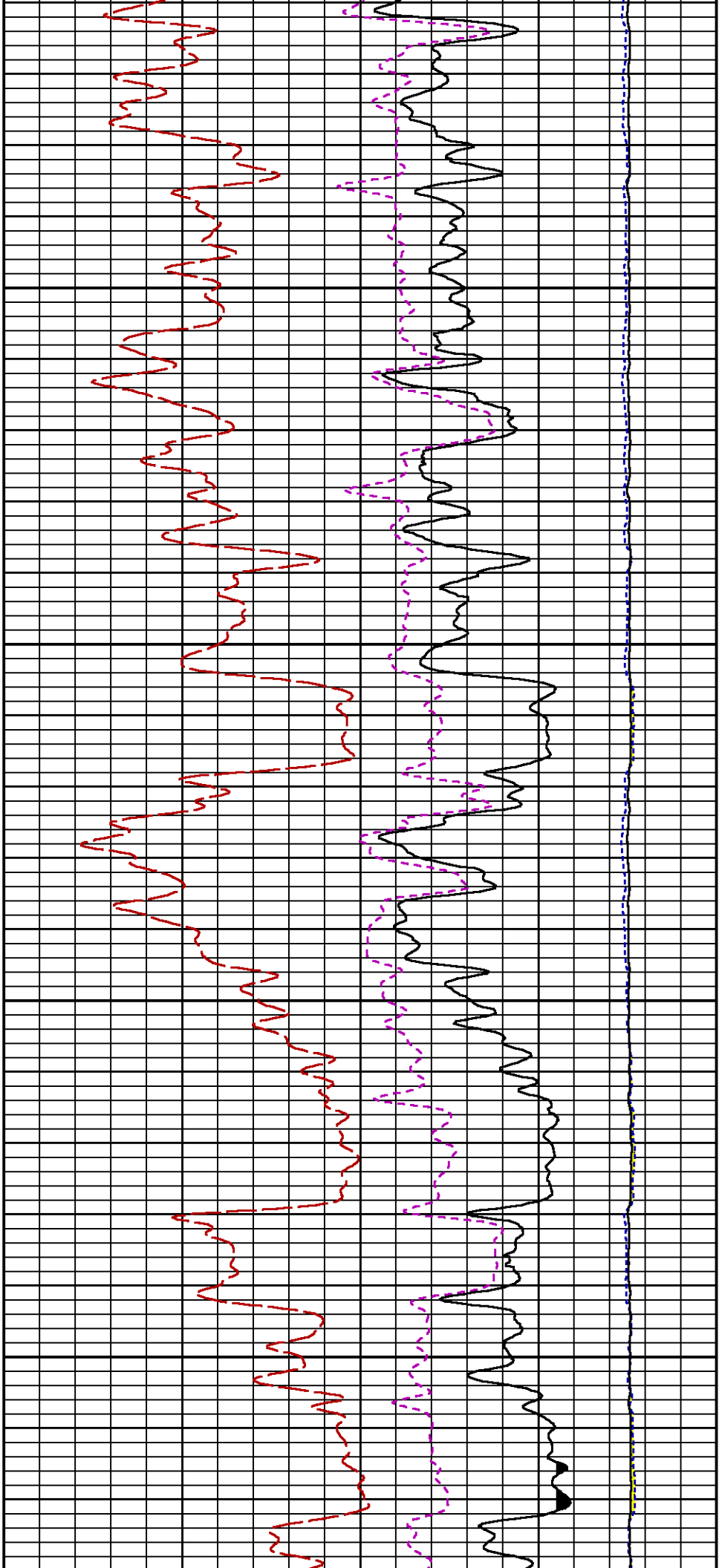
64

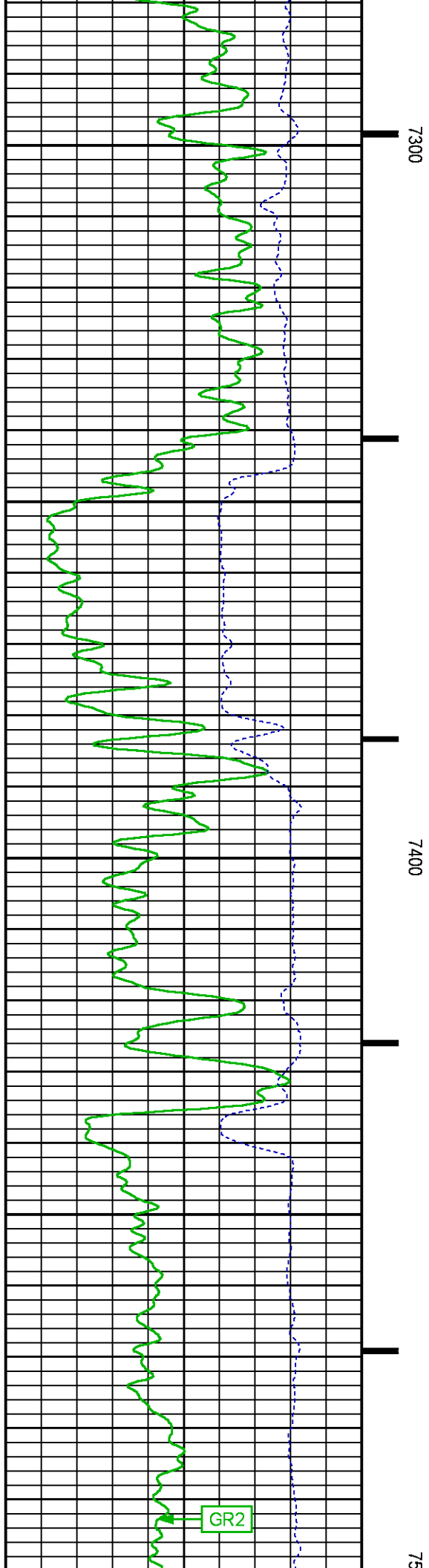
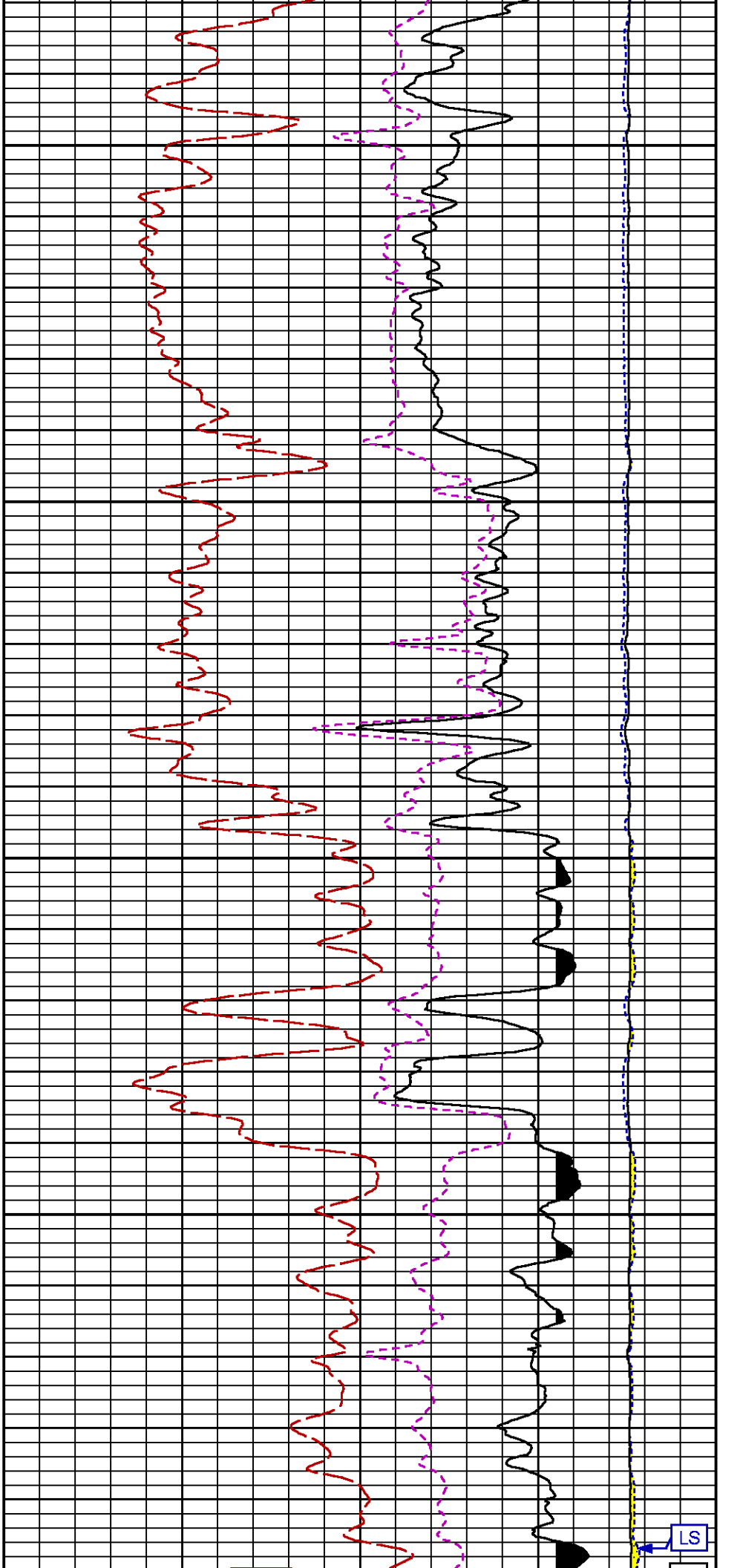


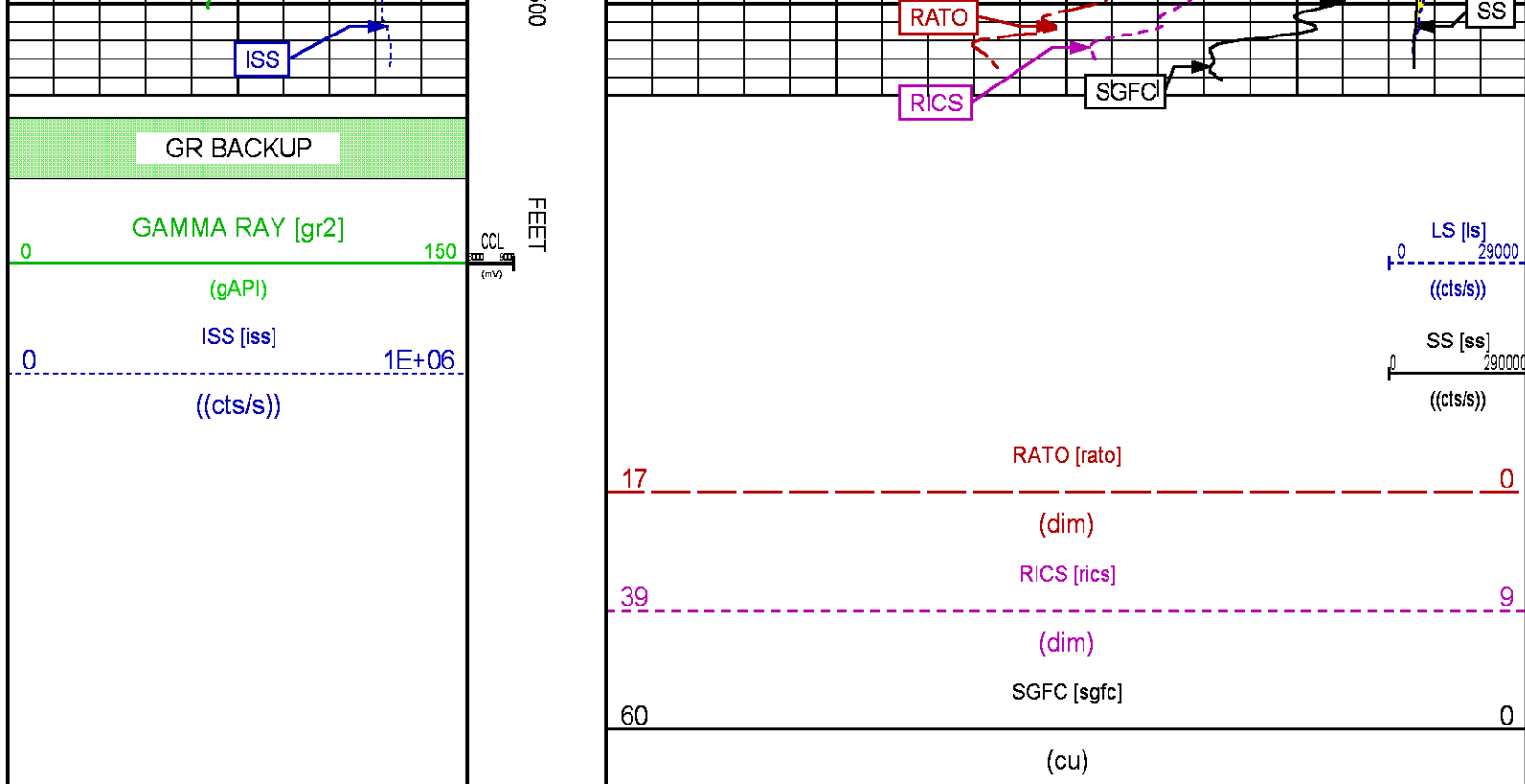












REPEAT PASS

ECLIPS 7.0i ECLIPS General Release Rel 7.0i Thu Jun 08 20:36:10 CDT 2017
Patches: 4

Plotted: Thu Jun 28 15:45:22 2018

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_NICHOLS_0994-24-13E/p354h01.prm
LOGGING MODE: DEPTH: 5258.035 ft DIRECTION: UP
TOP DEPTH: 5258.035 ft BOTTOM DEPTH: 5492.749 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

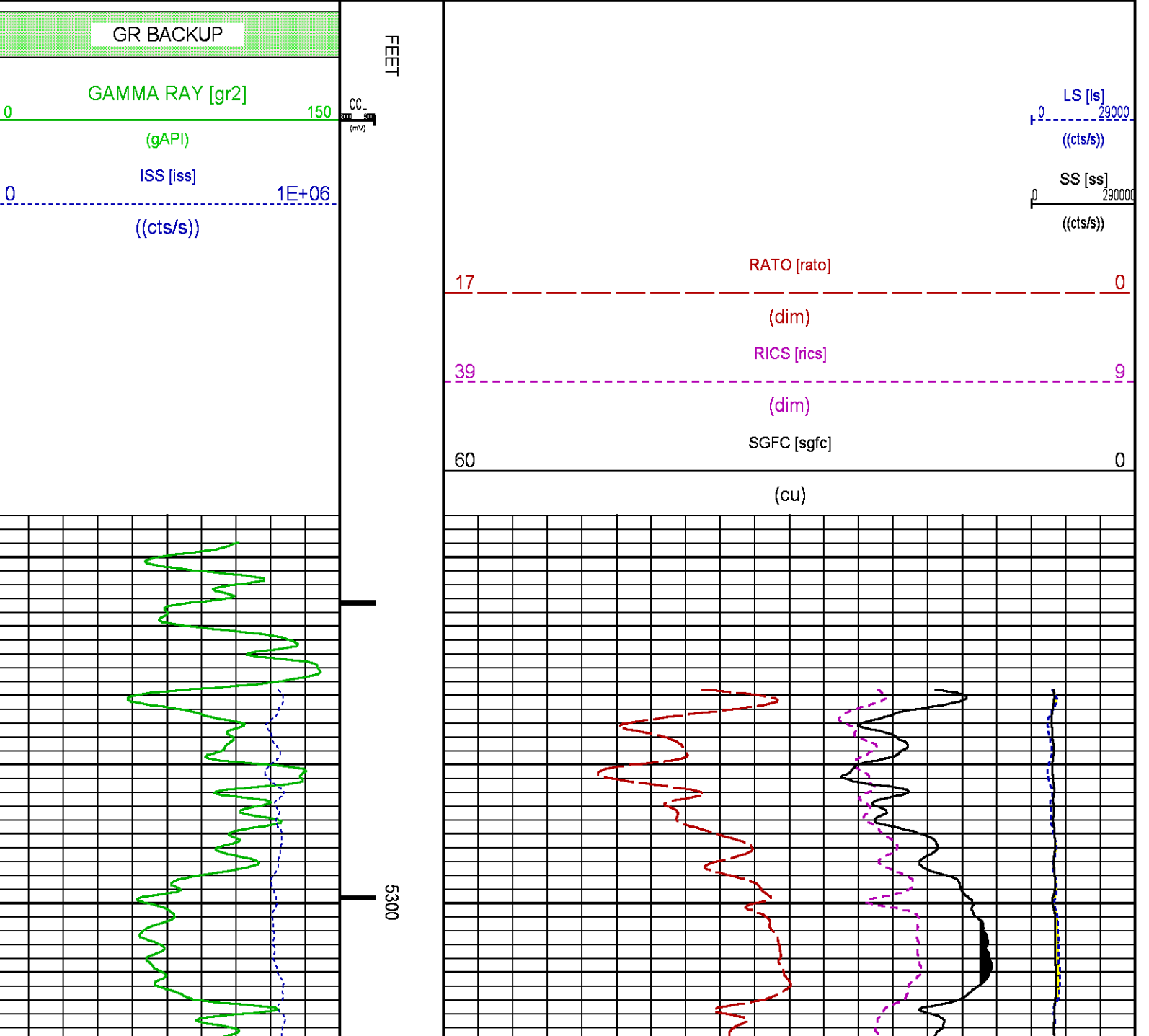
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	N/A	CASING COLLAR LOCATOR
F1:GR2	N/A	GAMMA RAY 2
F1:ISS	N/A	INELASTIC SHORT SPACE COUNT RATE

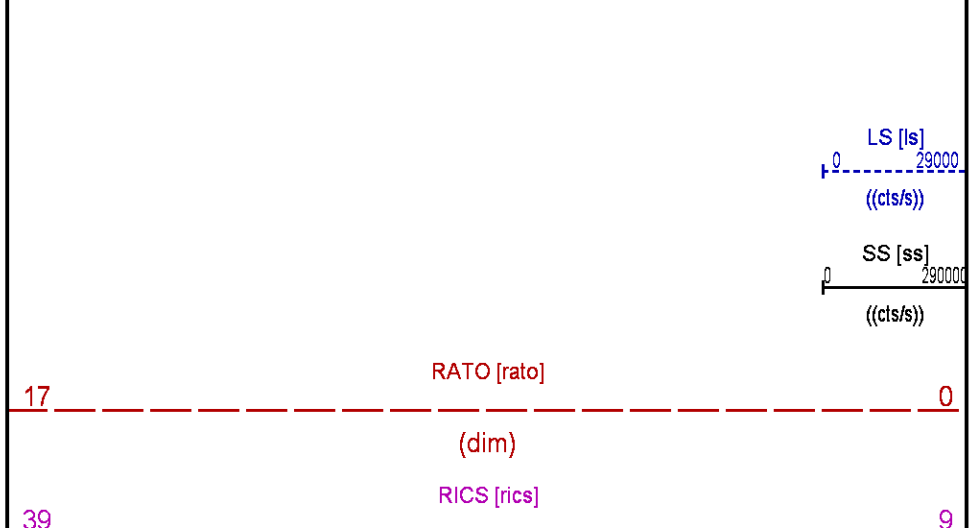
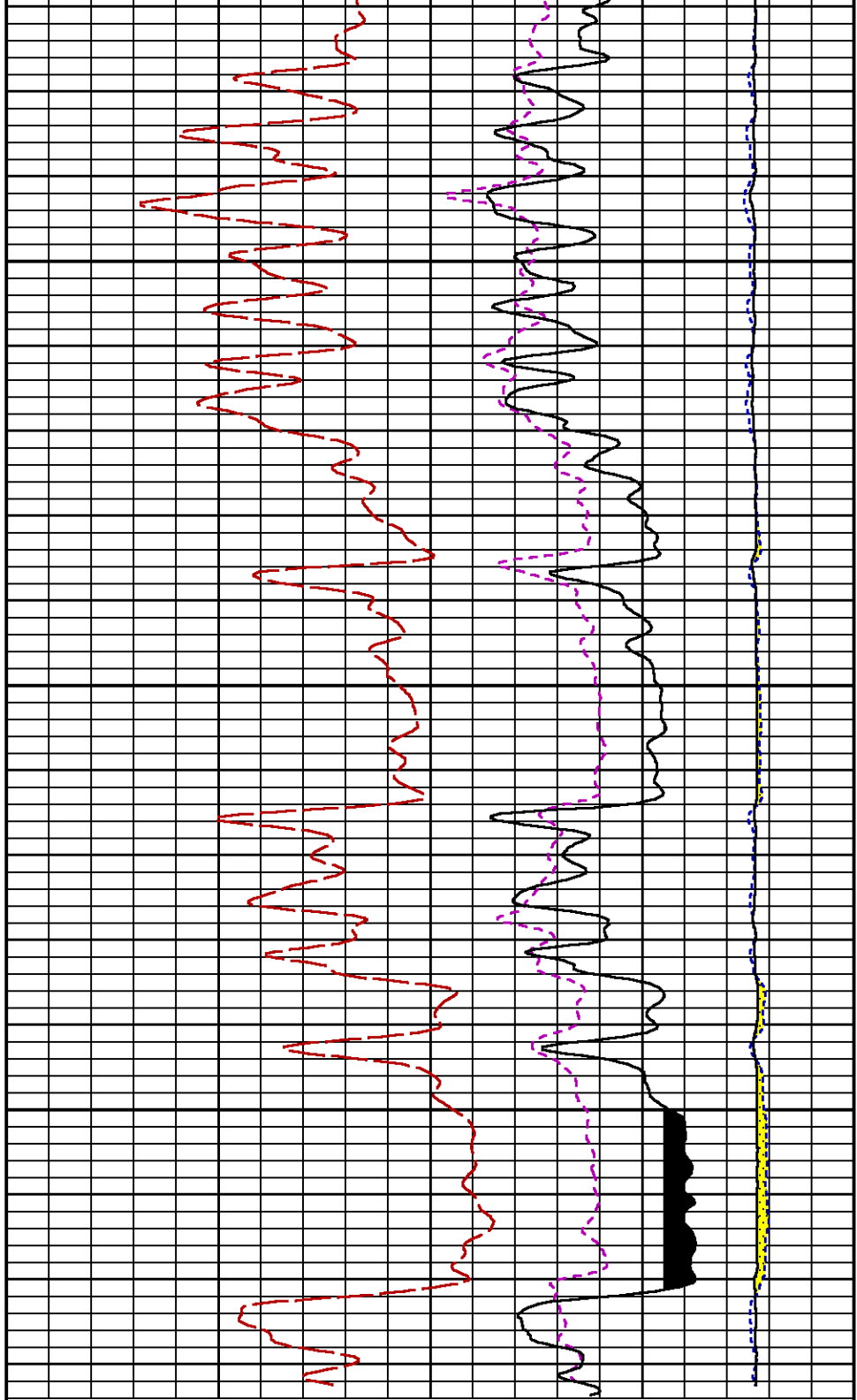
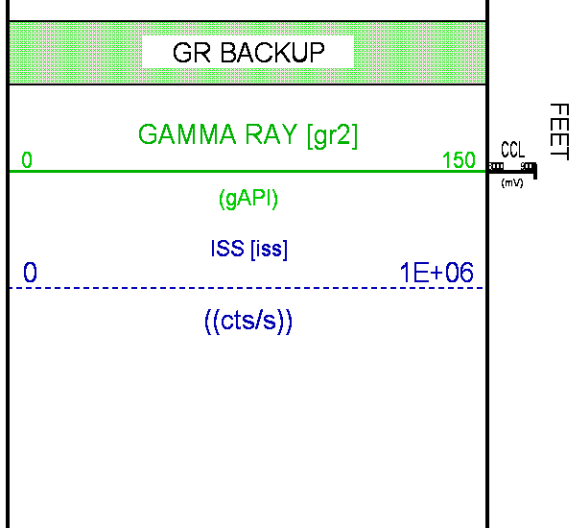
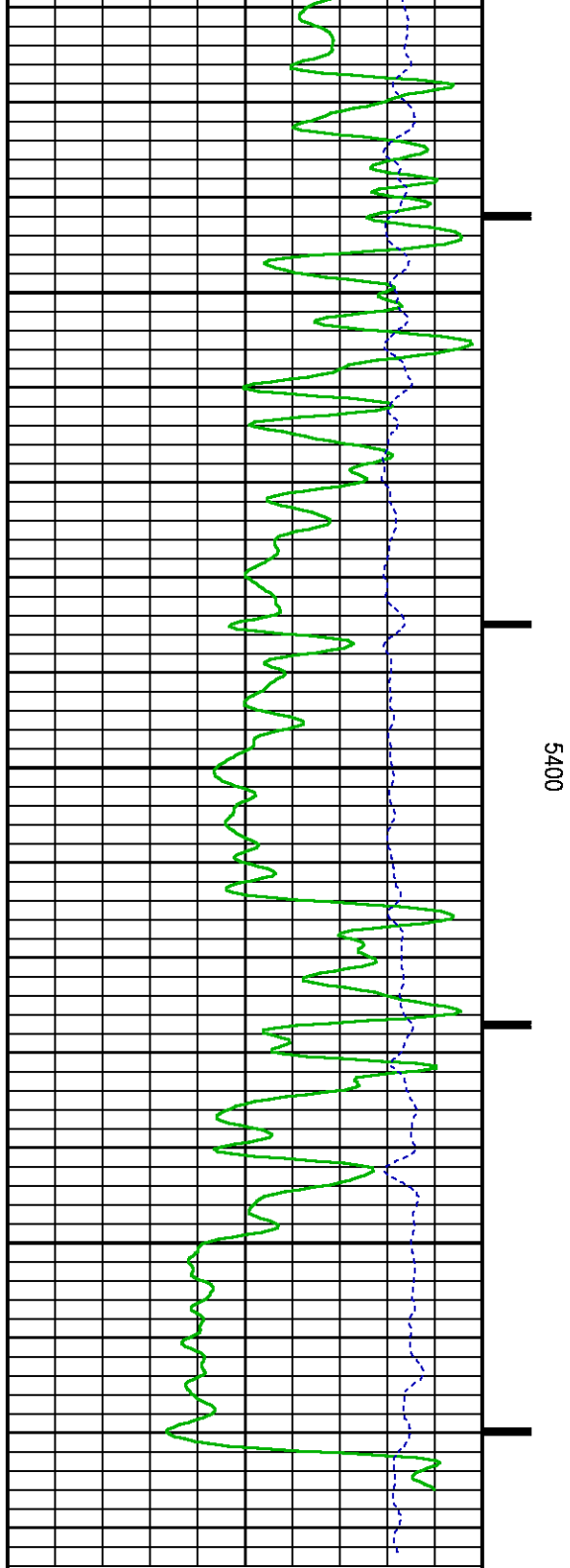
F1:LS	N/A	LONG SPACE COUNT RATE
F1:RATO	N/A	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	N/A	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	N/A	BOREHOLE AND DIFFUSION CORRECTED SIGMA
F1:SS	N/A	SHORT SPACE COUNT RATE

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_NICHOLS_0994-24-13E/13E_RPM_REPEAT.fvpdf [5"/100' Scale]
Plot Interval	: 5244.25 - 5495.25 Feet
Data File 1	: F1 : SysA:/dat1a/LARAMIE_NICHOLS_0994-24-13E/13E_RPM_REPEAT.xtf
Created On	: N/A
Company	: LARAMIE ENERGY LLC
Well	: NICHOLS 0994-24-13E
Field	: VEGA
File Interval	: 5243.5 - 5495.5 Feet
OCT	: p354h





60

(dim)

SGFC [sgfc]

0

(cu)

CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/LARAMIE_NICHOLS_0994-24-13E/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 (cts/s)	CALBRTR ON (cts/s)	CR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	CALBRTR (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 (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (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			

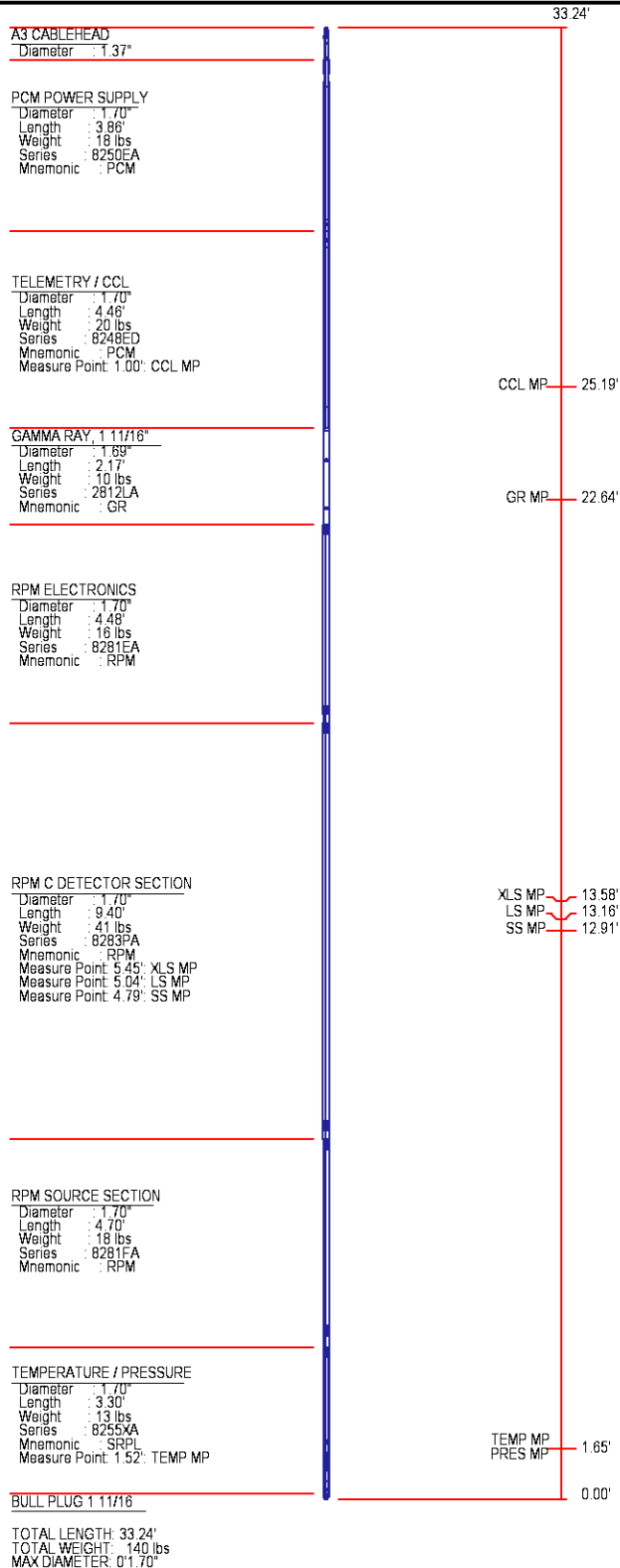
	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	802814	7129	1185	158	25.96	0.15	24.13	0.33
					25.35 26.40	0.00 0.20	23.60 24.80	0.00 0.40

	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 ISS/ILS	RIN13 ISS/IXS	RICS ISS/CSS	RATO SS/LS	RTWO SS2/LS	RONE CSS/CLS
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	0.113	0.110	0.077
Reduced	1449874	1.44	4.61	27.83	15.26	10.37	3.69	3.93
		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_0994-14-17E/RPM-tdg





COMPANY	LARAMIE ENERGY LLC	
WELL	NICHOLS 0994-24-13E	
FIELD	VEGA	
COUNTY	MESA	STATE COLORADO

FILE NO:	CH137639
API NO:	05077103960000

LOCATION:

SHL: 2280' FNL & 2794' FWL
BHL: 2223' FSL & 1441' FEL

ELEVATIONS:

KB 7236 FT
DF
GL 7212 FT

SEC 24 TWP 9S RGE 94W

DATE 28-Jun-2018

