



FILE NO: CH137650	COMPANY LARAMIE ENERGY LLC
API NO: 05077103940000	WELL NICHOLS 0994-24-17E
	FIELD VEGA
	COUNTY MESA STATE COLORADO

Ver. 4.10	LOCATION: SHL: 2302' FNL & 2792' FWL BHL: 1176' FSL & 1433' 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	RUN	TRIP	
01-Jul-2018	1	1	
SERVICE ORDER	US137650		
DEPTH DRILLER	7885 FT		
DEPTH LOGGER	7735 FT		
BOTTOM LOGGED INTERVAL	7735 FT		
TOP LOGGED INTERVAL	2237 FT		
TIME STARTED	11:30		
TIME FINISHED	17:00		
OPERATOR RIG TIME	5.5 HOURS		
TYPE OF FLUID IN HOLE	WATER		
FLUID DENSITY	NA		
FLUID SALINITY	NA		
FLUID LEVEL	65 FT		
LOGGED CEMENT TOP	1010 FT		
WELLHEAD PRESSURE	0 PSI		
MAXIMUM HOLE DEVIATION	NA		
NOMINAL LOGGING SPEED	10 FMIN		
MAX. RECORDED TEMP.	227 DEGF		
REFERENCE LOG	BAKER HUGHES RAL		
REFERENCE LOG DATE	01-Jul-2018		
EQUIP. NO.	LOCATION	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

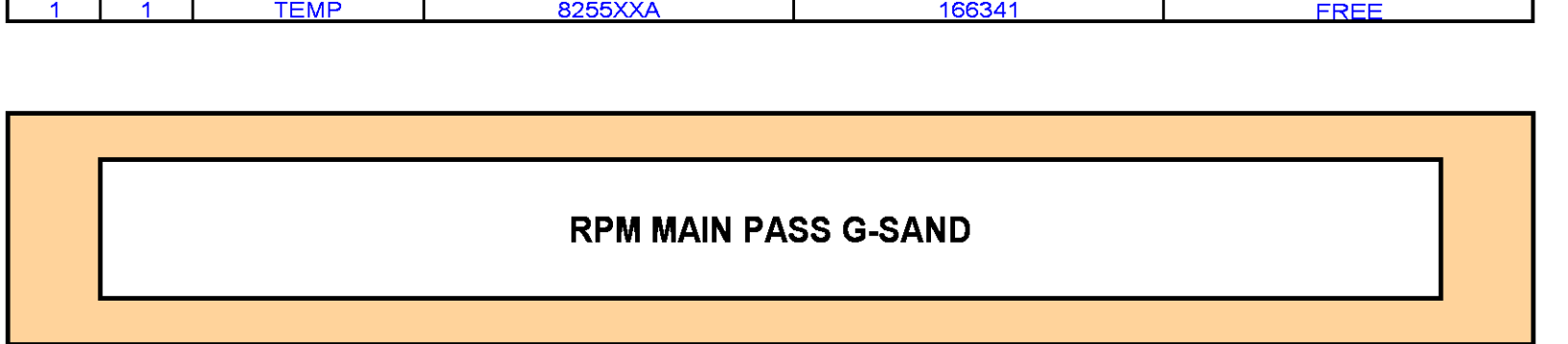
SJ: 5999' - 6019'

SJ: 6879' - 6899'

GR SPIKE @ 5017' ON WILLIAMS FORK PASS WAS CAUSED BY STOPPING AFTER REPEAT

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



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

Plotted: Sun Jul 1 18:32:46 2018

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_NICHOLS_0994-24-17E/p354h03.prm

LOGGING MODE: DEPTH DIRECTION: UP

TOP DEPTH: 2229.820 ft BOTTOM DEPTH: 2861.138 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	-25.00	ISS	-12.75	RATO	-12.75	SGFC	-12.75
GR2	-22.75	LS	-12.75	RICS	-12.75	SS	-12.75

Presentation : SysA:/dat1a/LARAMIE_NICHOLS_0994-24-17E/17E_RPM_GS.fvpdf [5"/100' Scale]

Plot Interval : 2230 - 2850 Feet

Data File 1 : F1 : SysA:/dat1a/LARAMIE_NICHOLS_0994-24-17E/17E_RPM_GS.xtf

Created On : N/A

Company : LARAMIE ENERGY LLC

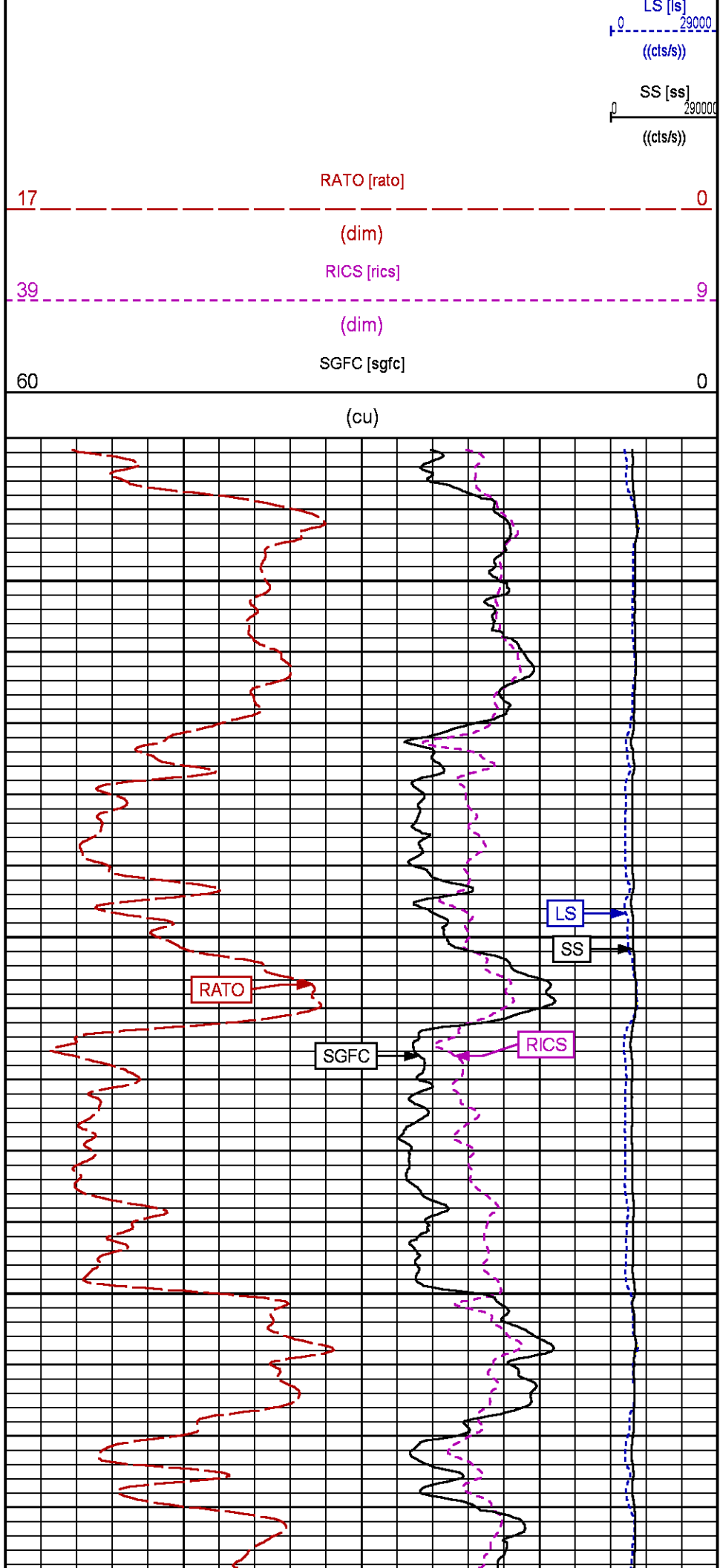
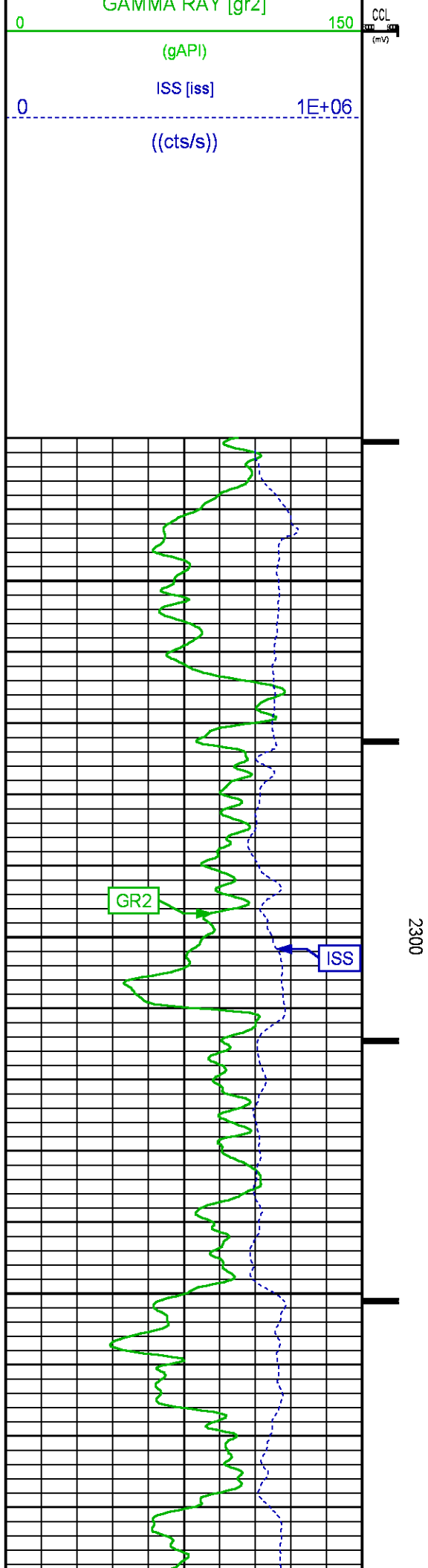
Well : NICHOLS 0994-24-17E

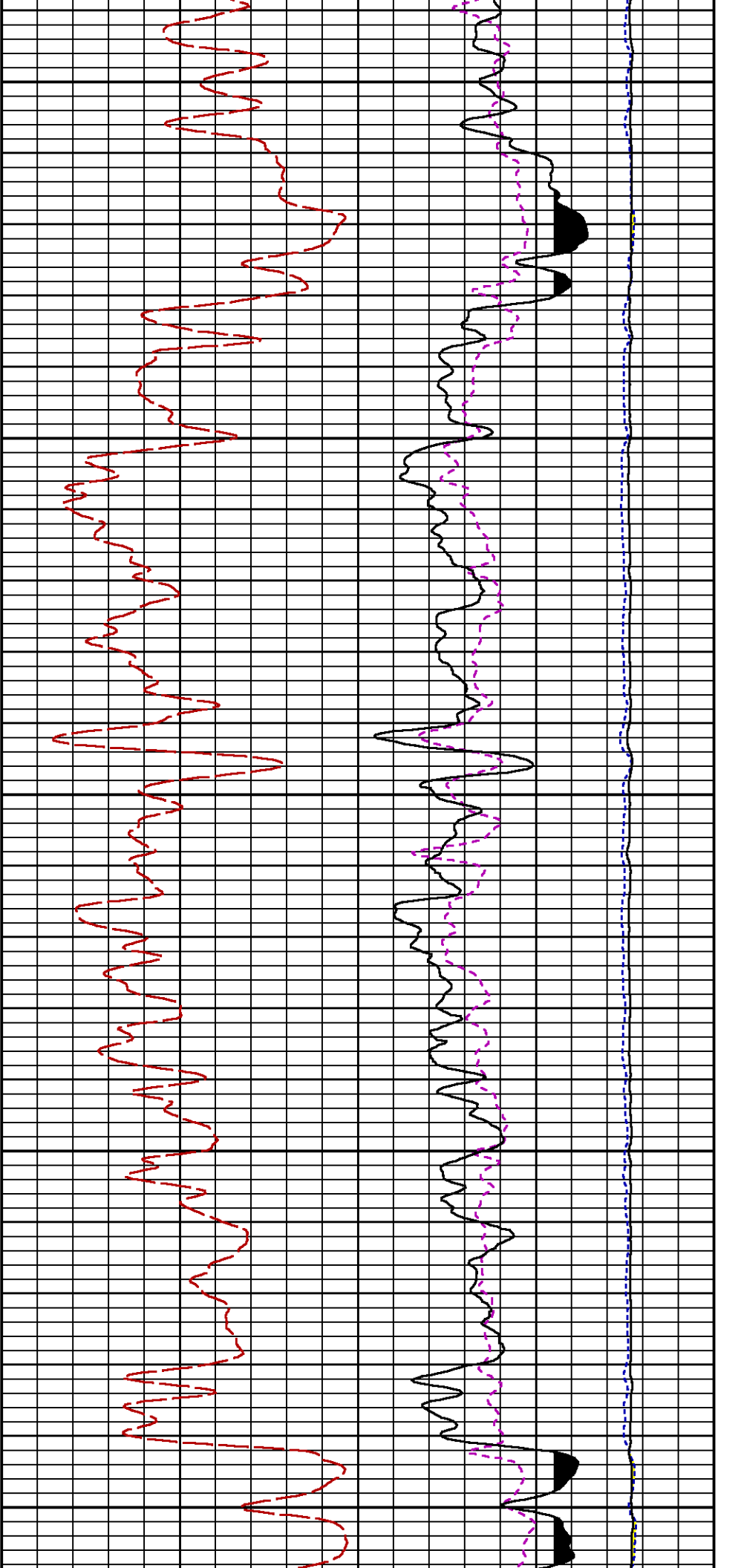
Field : VEGA

File Interval : 2206 - 2858.25 Feet

OCT : p354h



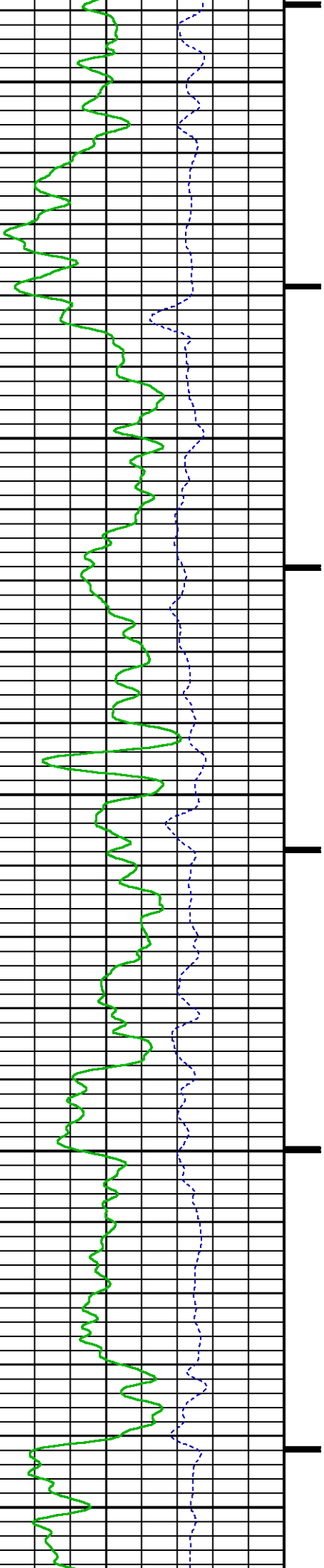


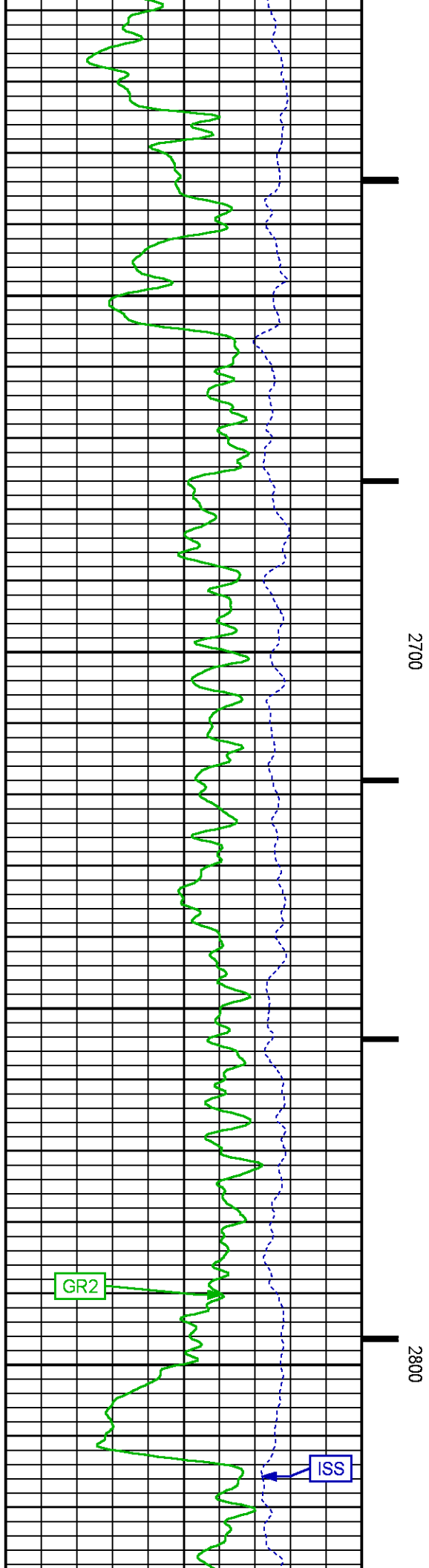
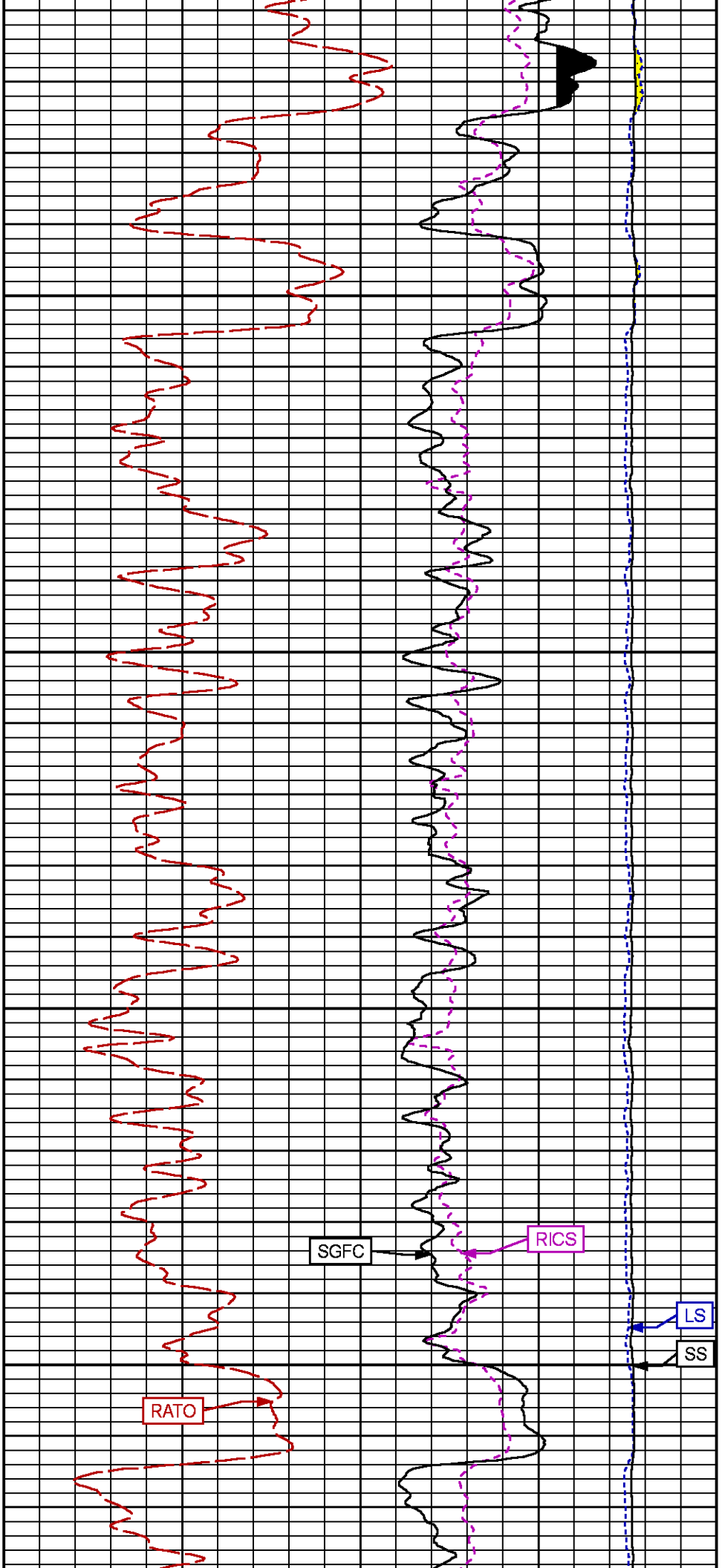


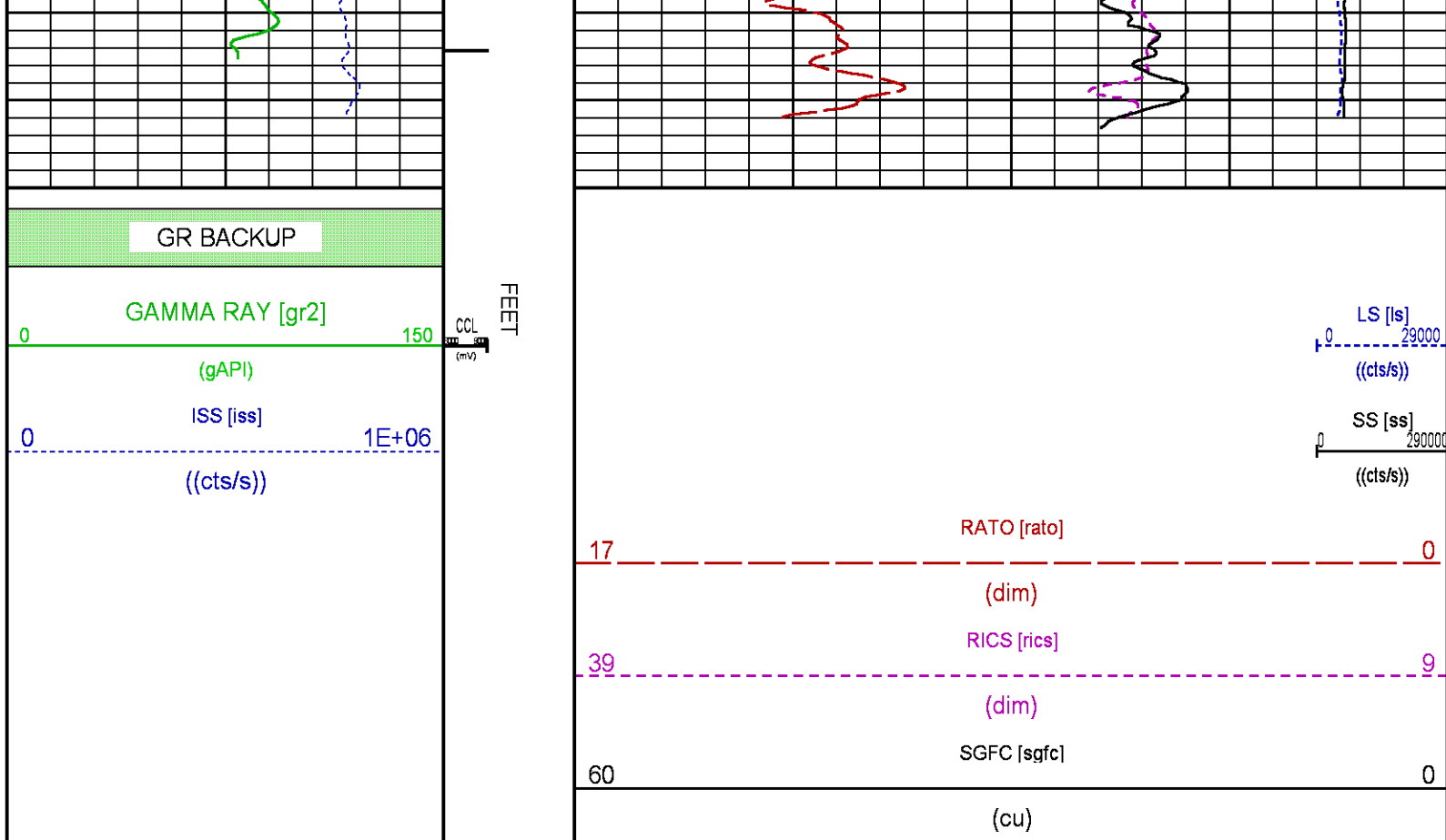
2400

2500

2600







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: Sun Jul 1 17:50:32 2018

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_NICHOLS_0994-24-17E/p354h02.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 4497.250 ft BOTTOM DEPTH: 7747.701 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

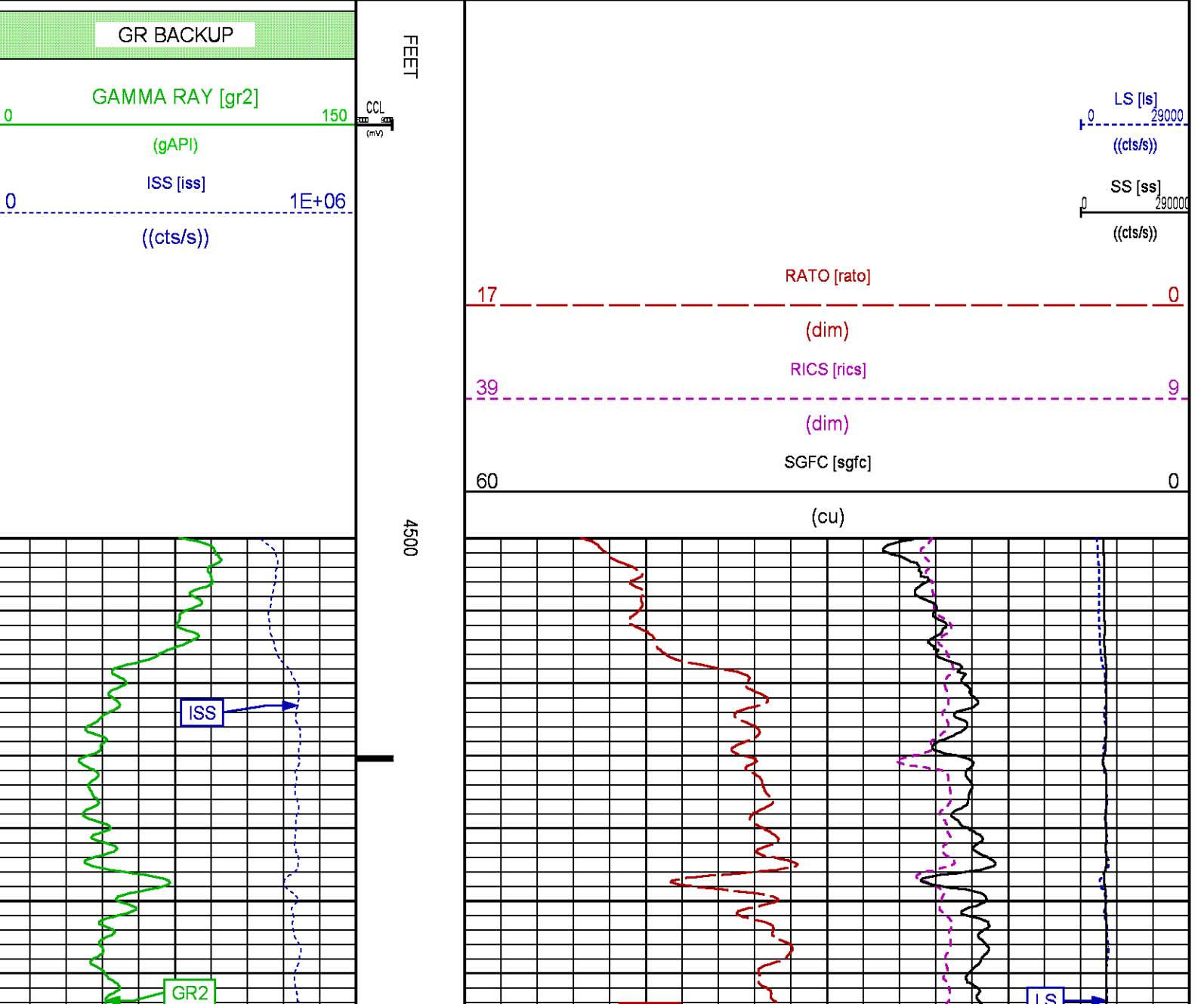
CURVE NAME CREATION DATE CURVE DESCRIPTION

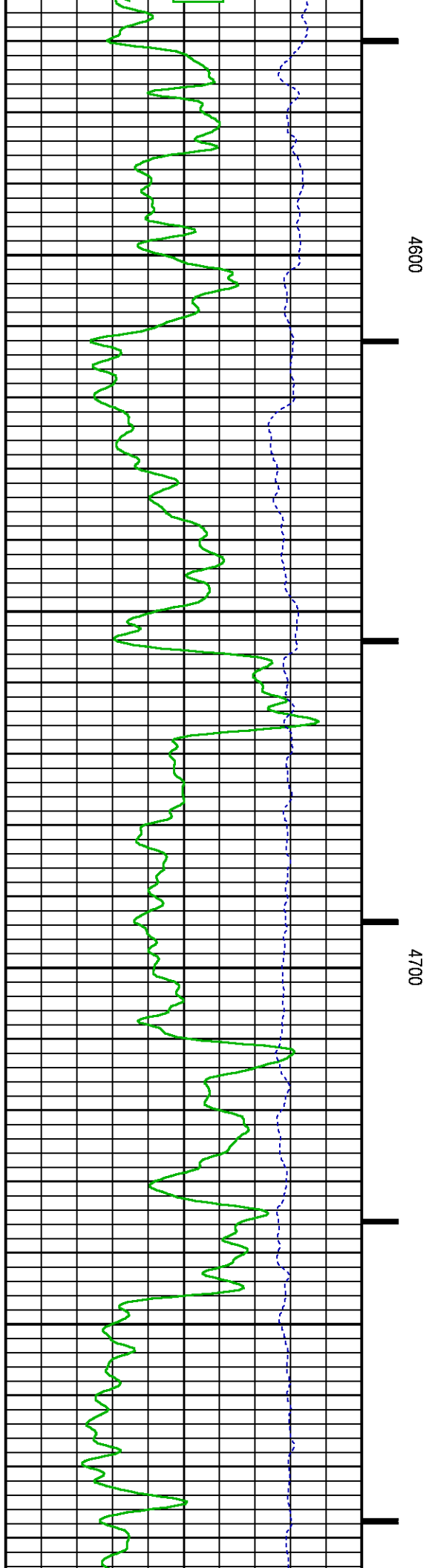
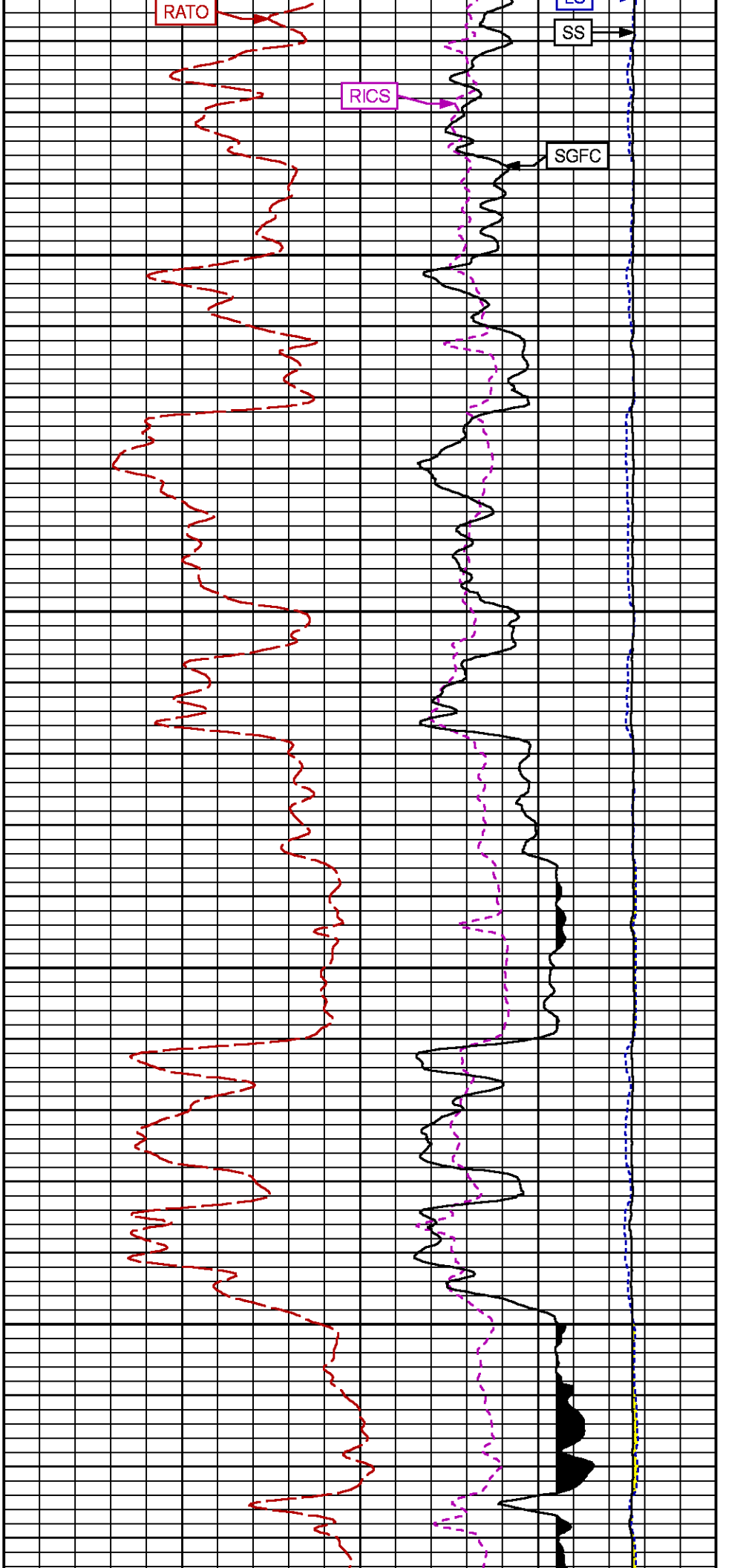
F1:CCL	N/A	CASING COLLAR LOCATOR
F1:GR2	N/A	GAMMA RAY 2
F1:ISS	N/A	INELASTIC SHORT SPACE COUNT RATE
F1:LS	N/A	LONG SPACE COUNT RATE
F1:RATO	N/A	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	N/A	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	N/A	BOREHOLE AND DIFFUSION CORRECTED SIGMA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

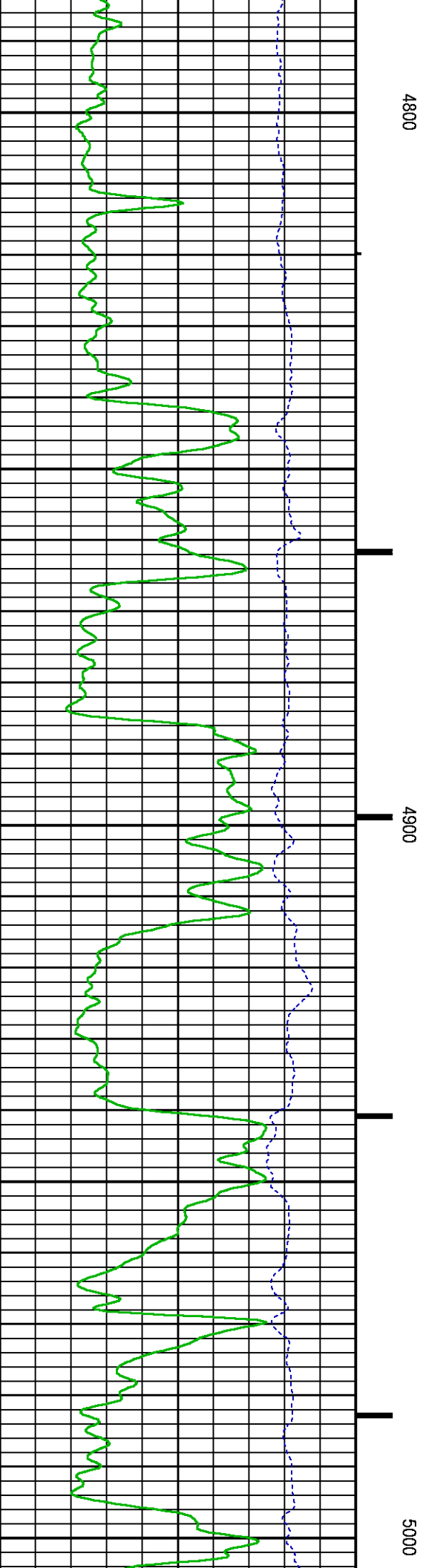
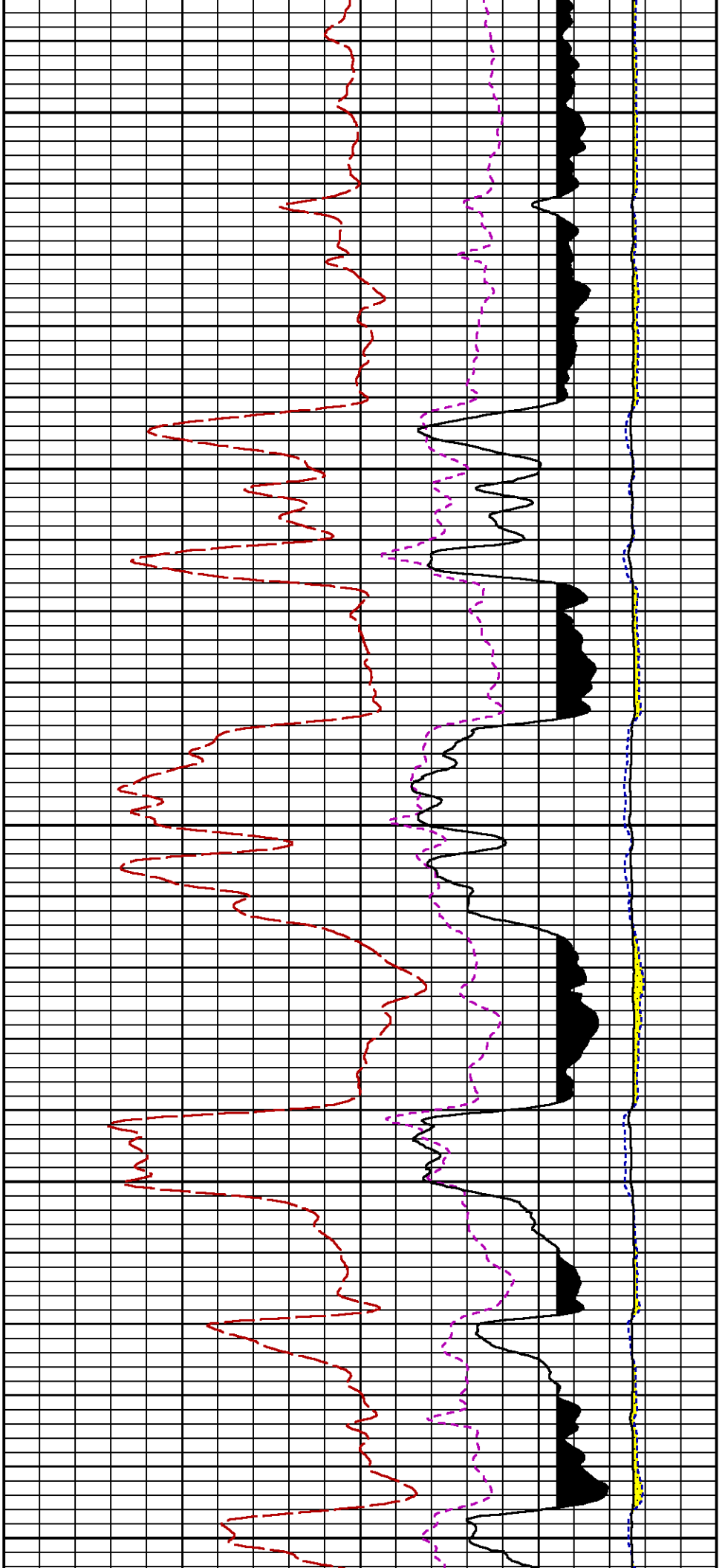
CURVE MEASURE POINT OFFSET

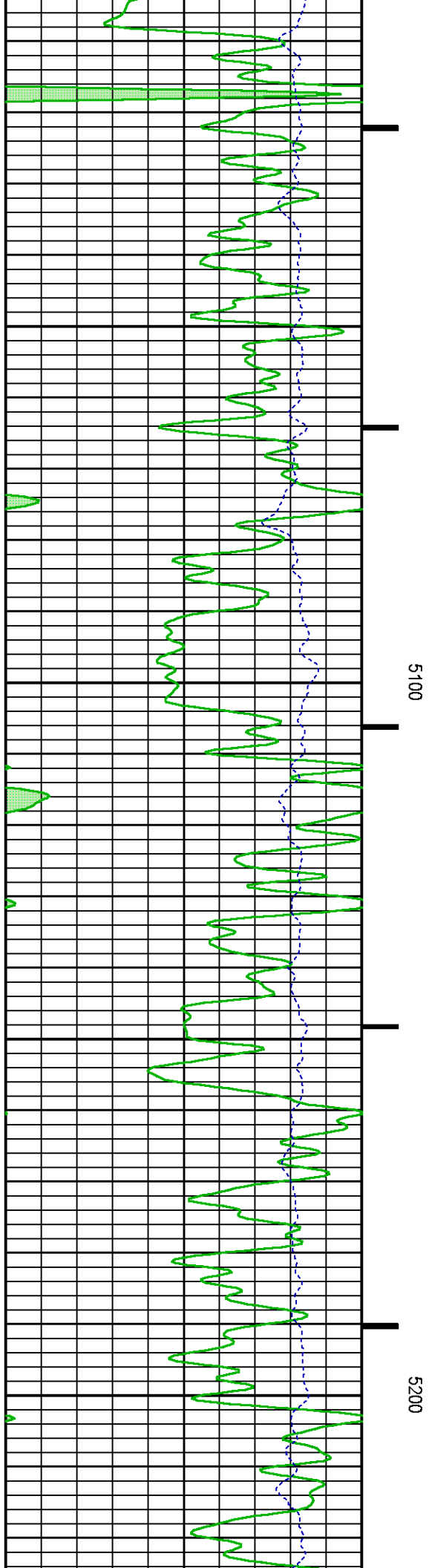
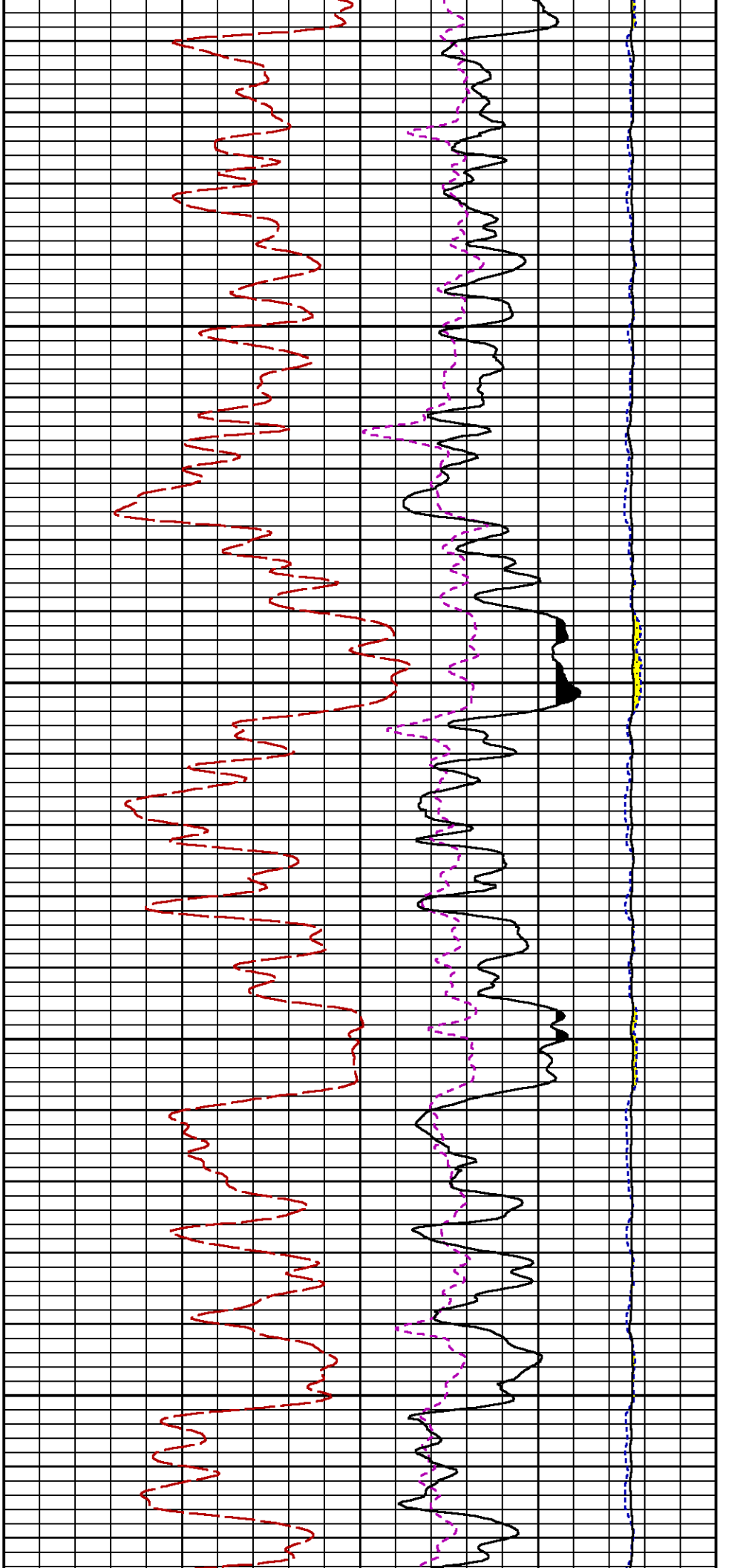
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	-25.00	ISS	-12.75	RATO	-12.75	SGFC	-12.75
GR2	-22.75	LS	-12.75	RICS	-12.75	SS	-12.75

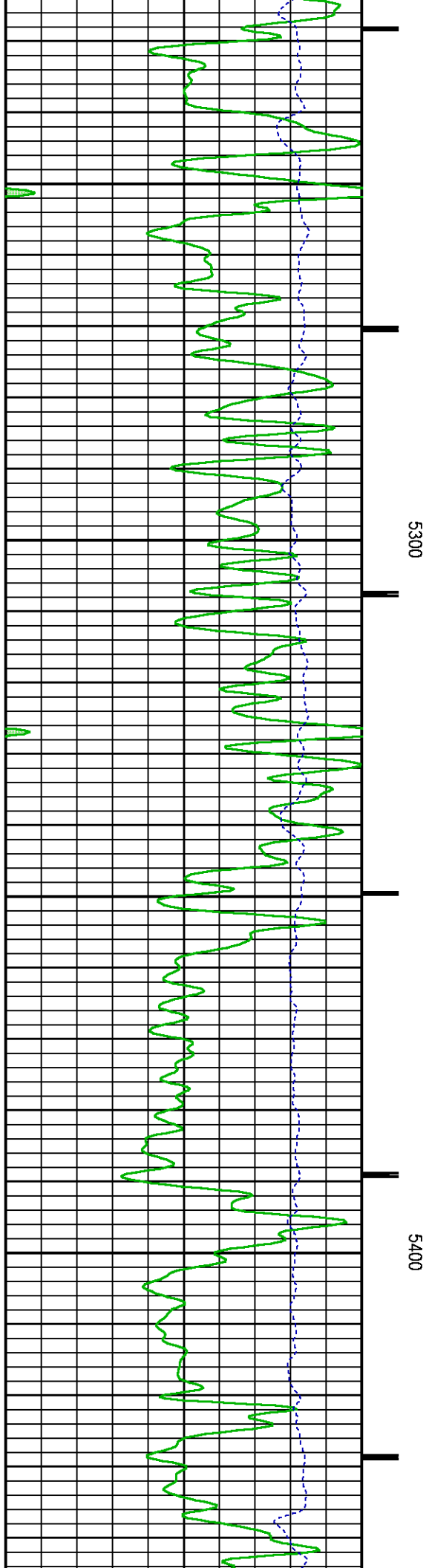
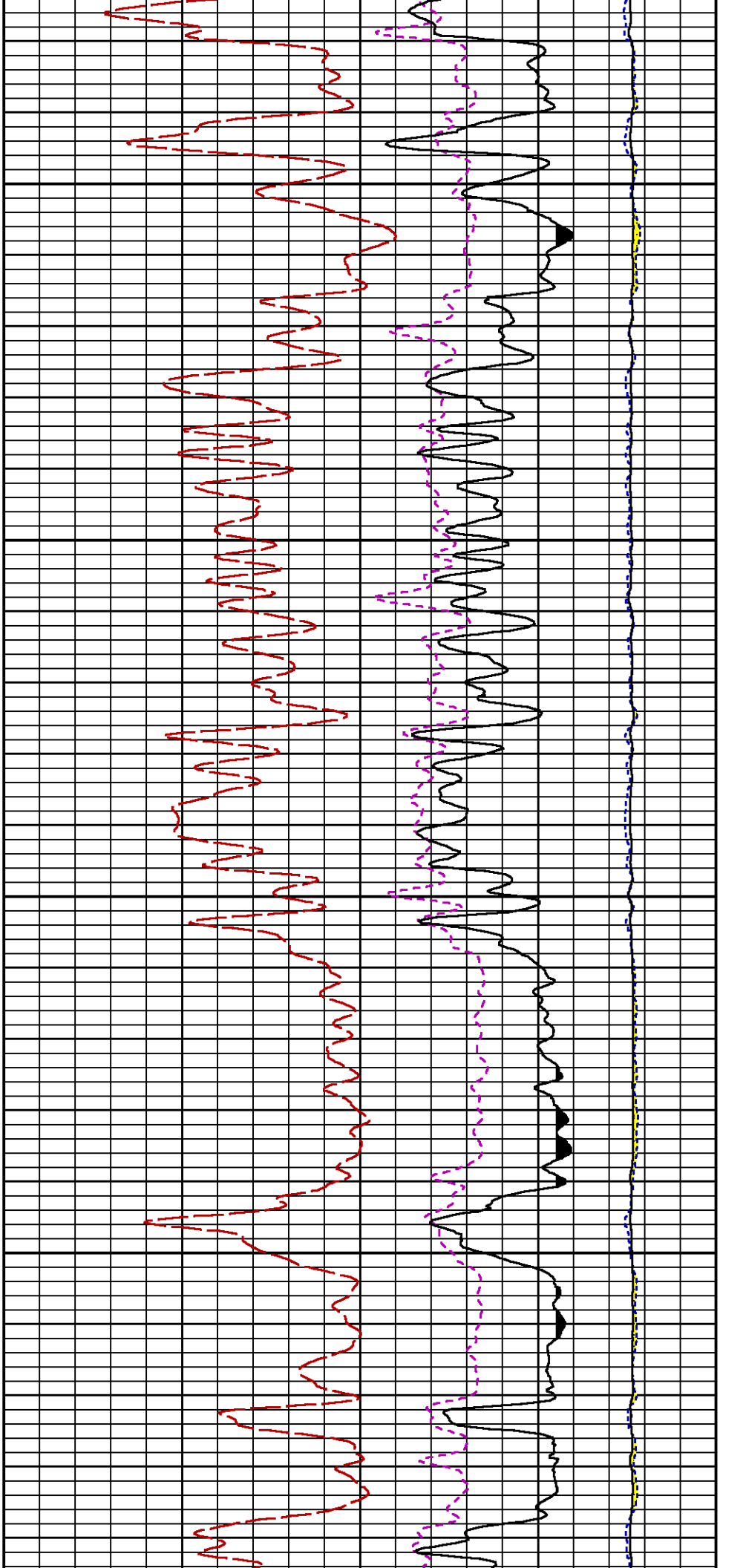
Presentation	: SysA:/dat1a/LARAMIE_NICHOLS_0994-24-17E/17E_RPM_WF.fvpdf [5"/100' Scale]
Plot Interval	: 4500 - 7746.25 Feet
Data File 1	: F1 : SysA:/dat1a/LARAMIE_NICHOLS_0994-24-17E/17E_RPM_WF.xtf
Created On	: N/A
Company	: LARAMIE ENERGY LLC
Well	: NICHOLS 0994-24-17E
Field	: VEGA
File Interval	: 4473 - 7746.5 Feet
OCT	: p354h

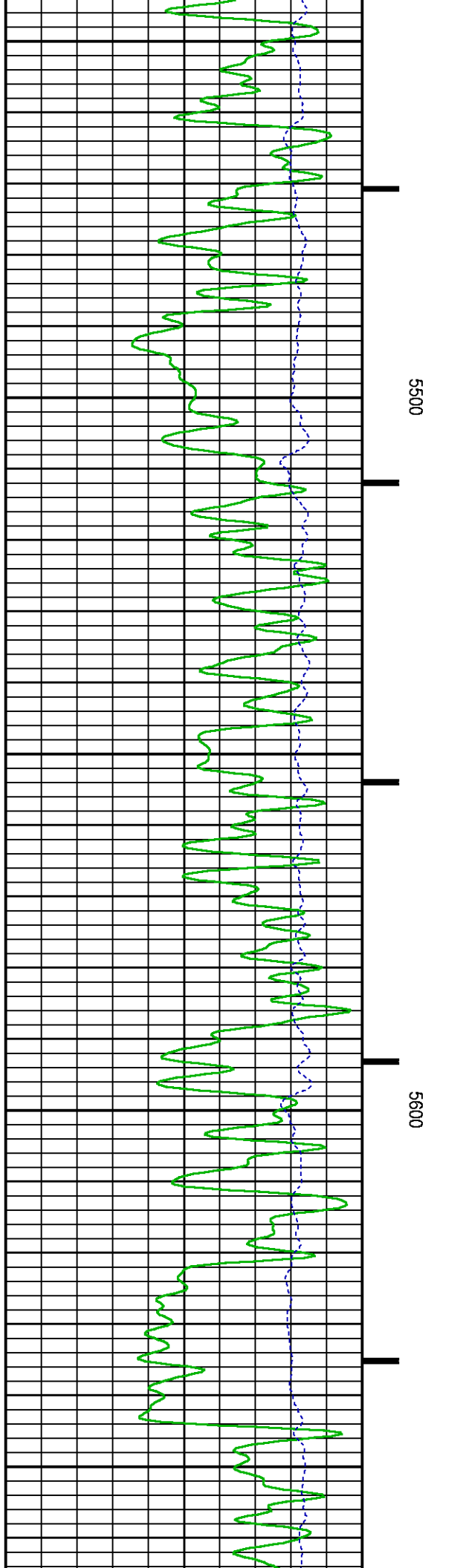
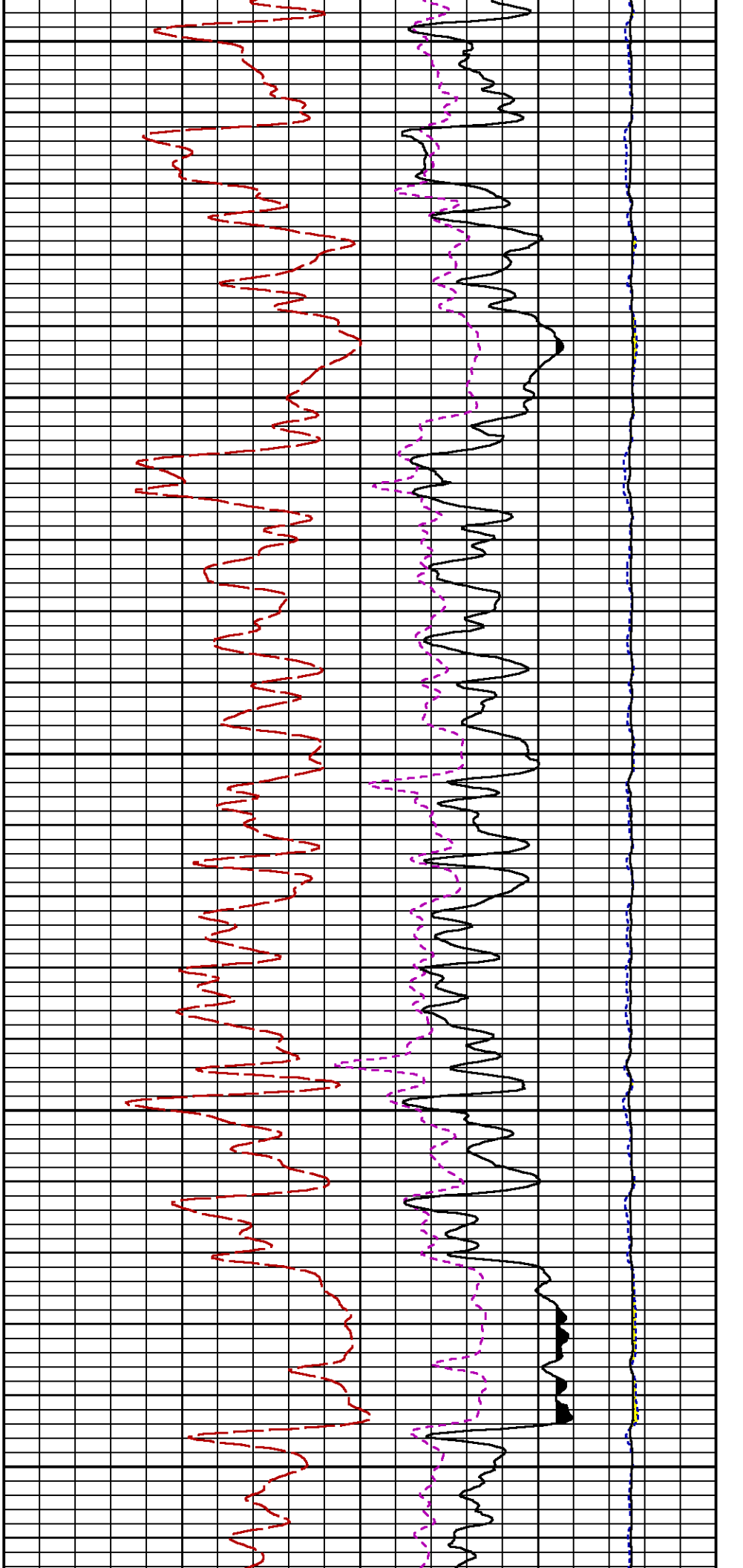


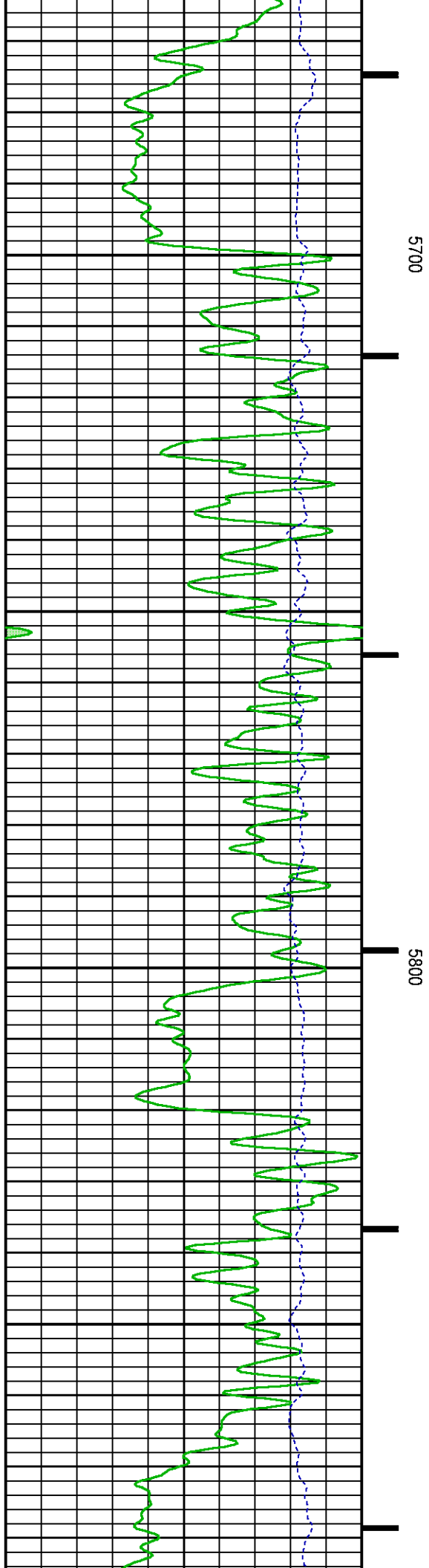
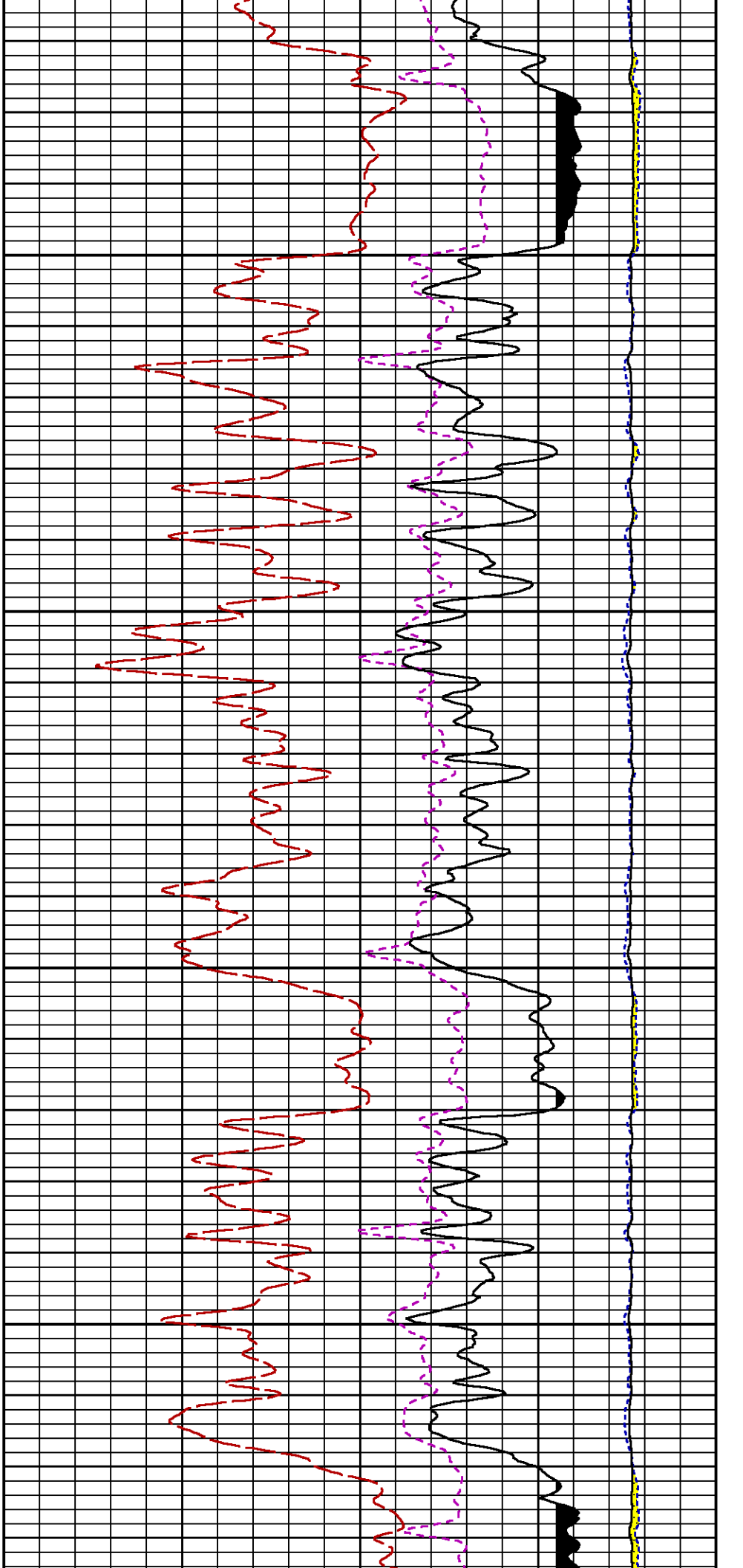


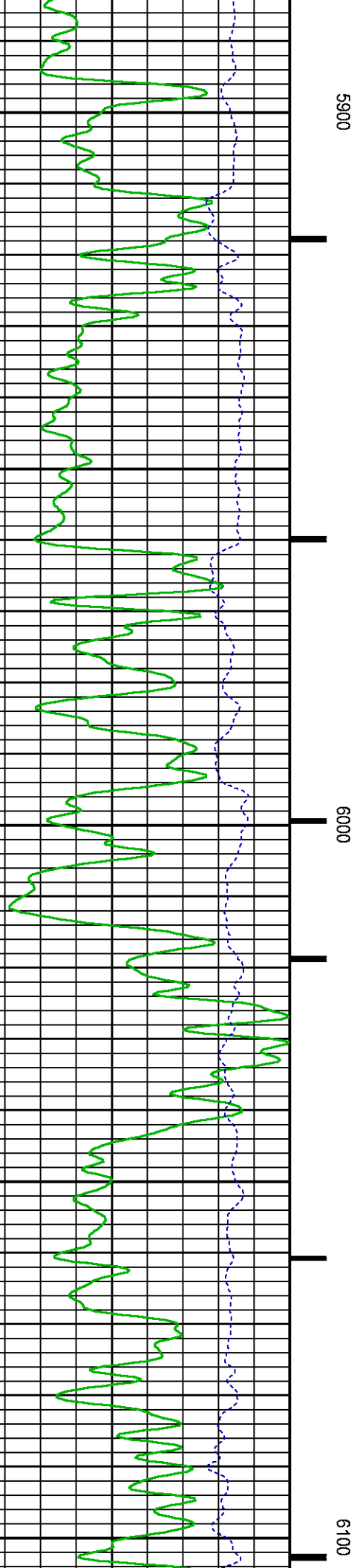
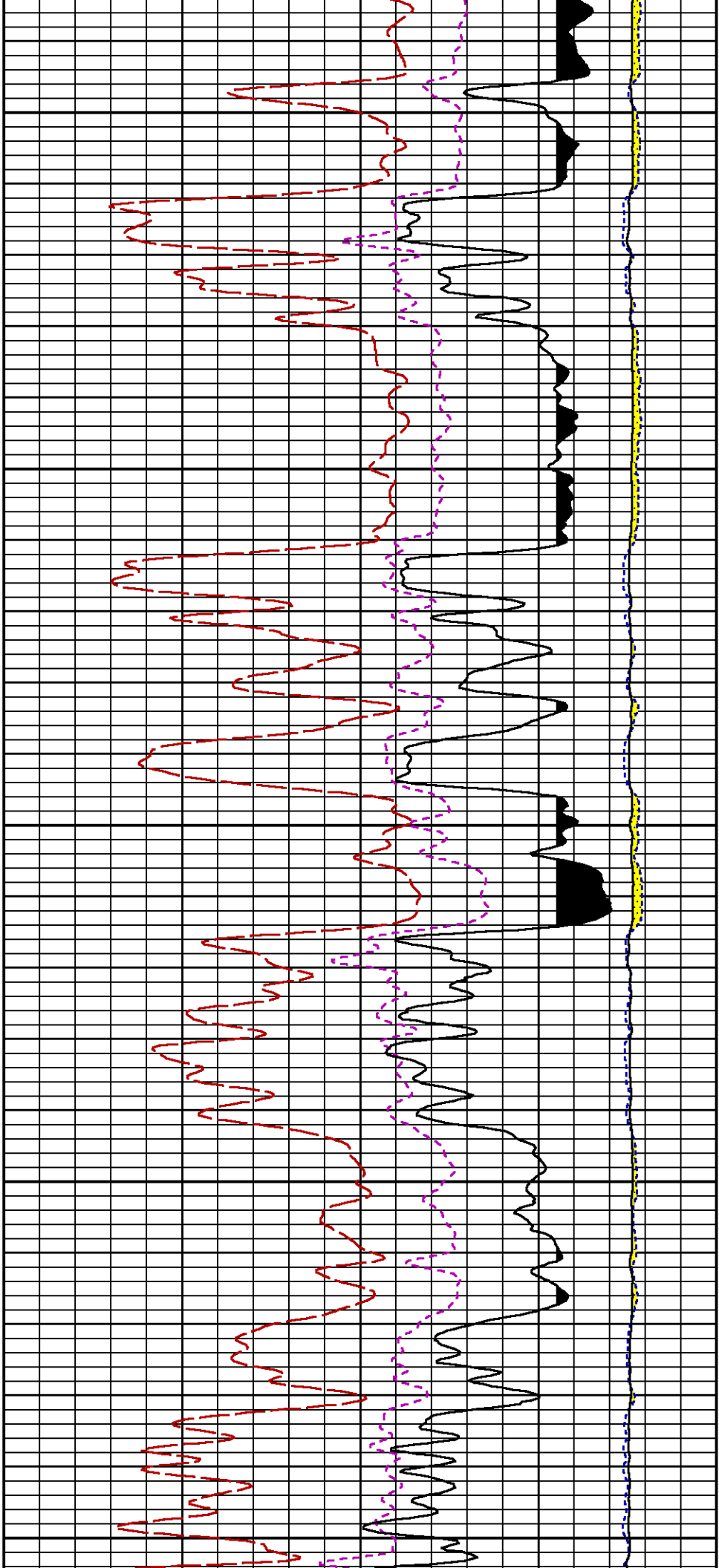


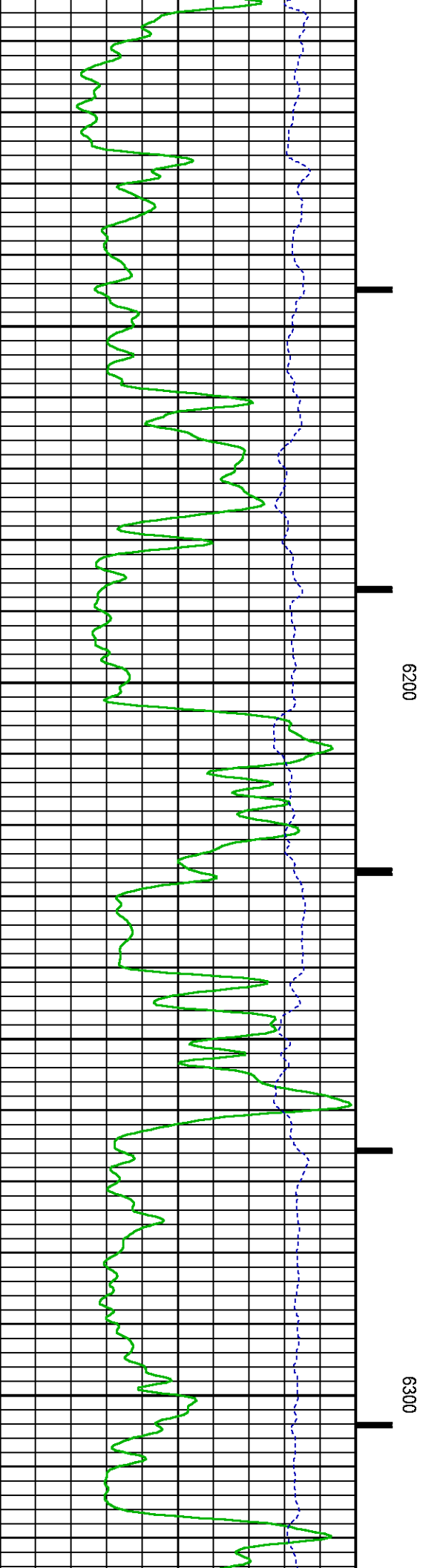
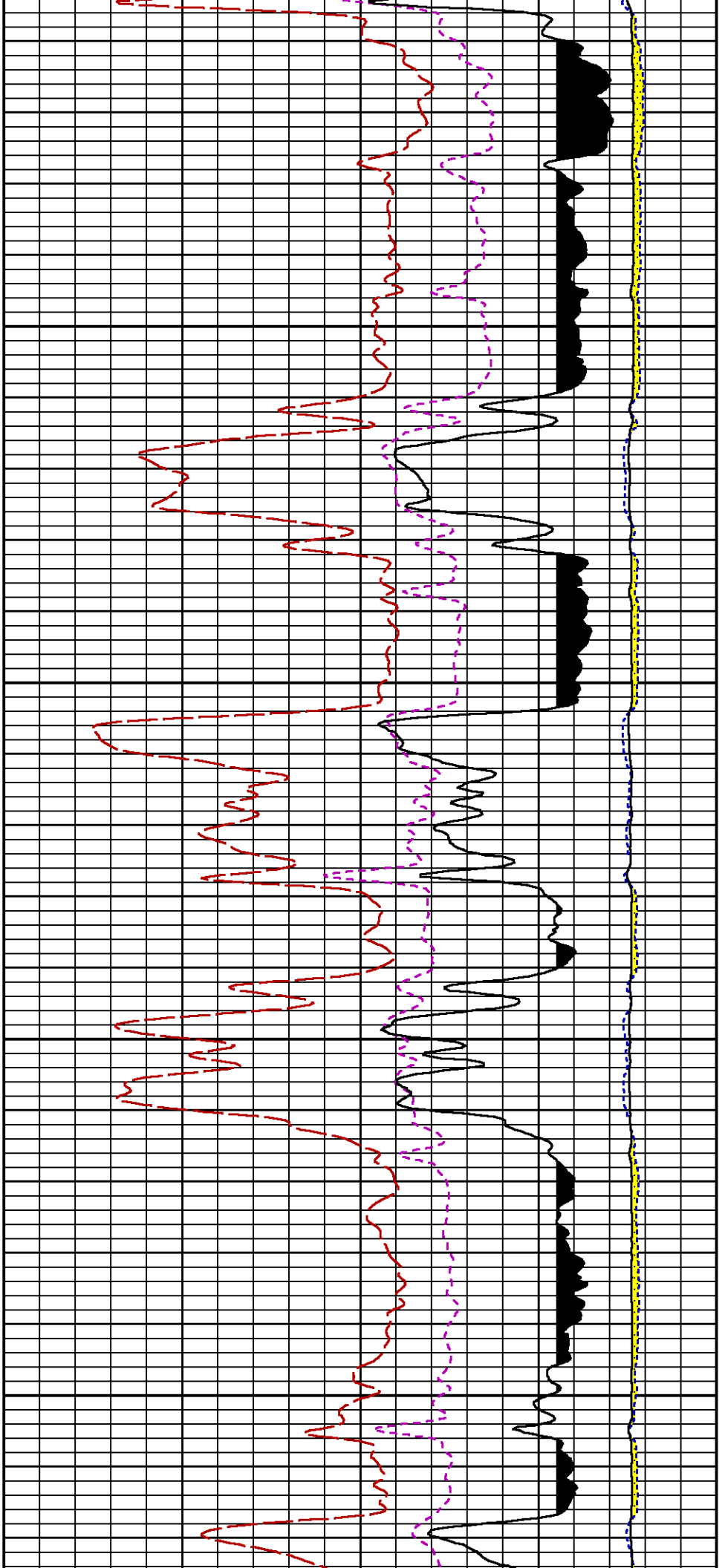


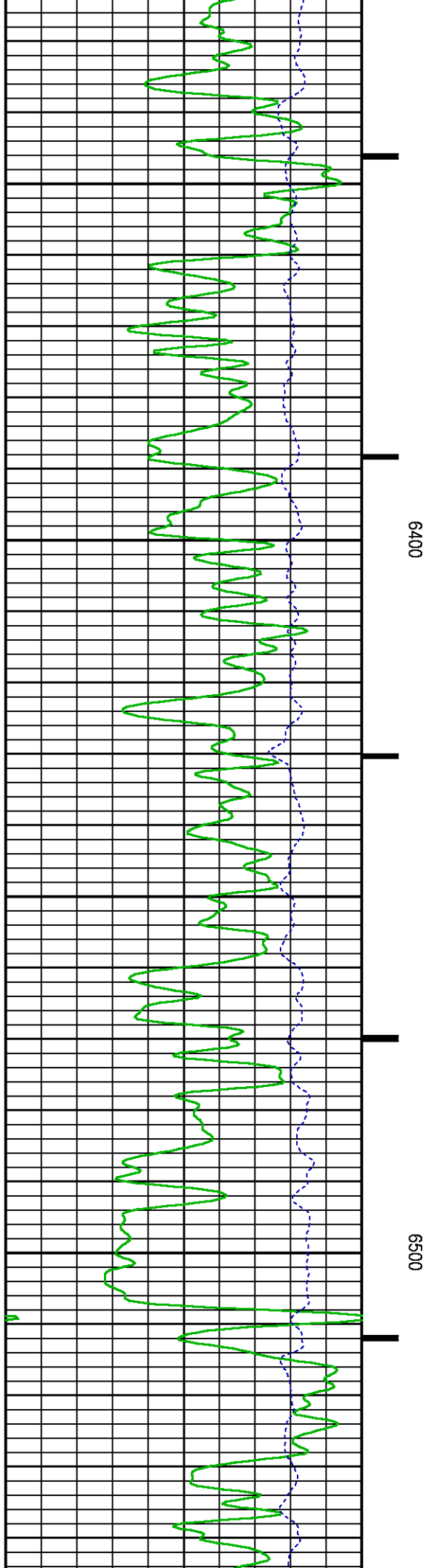
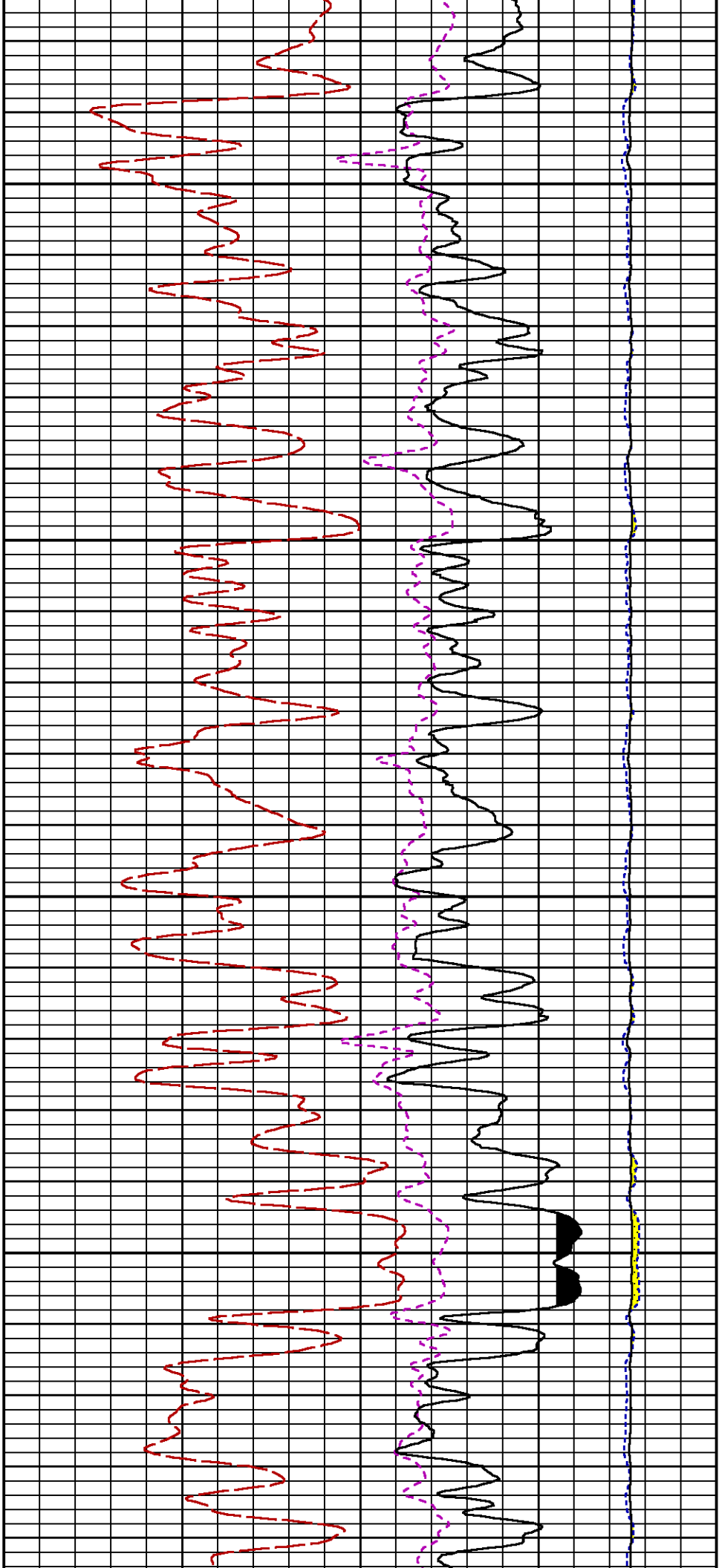


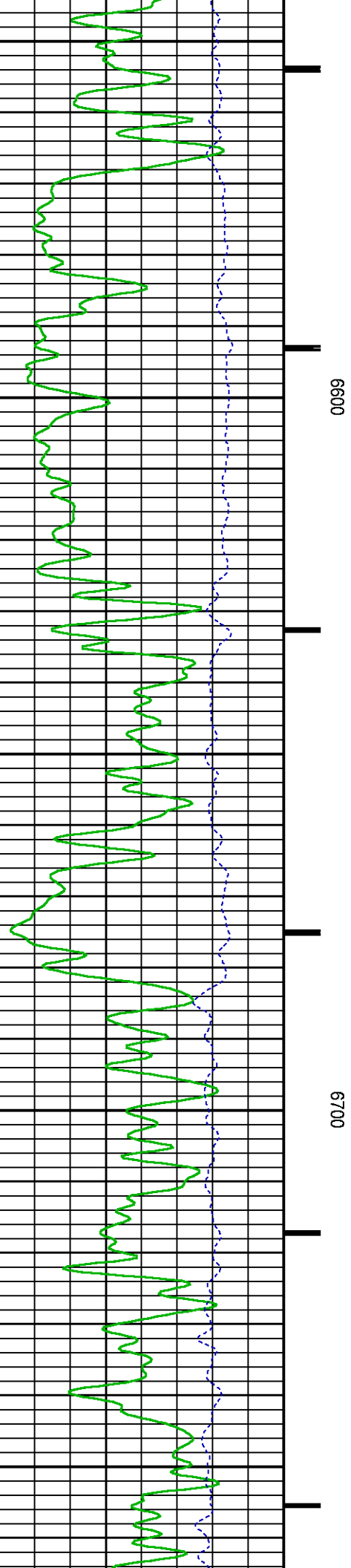
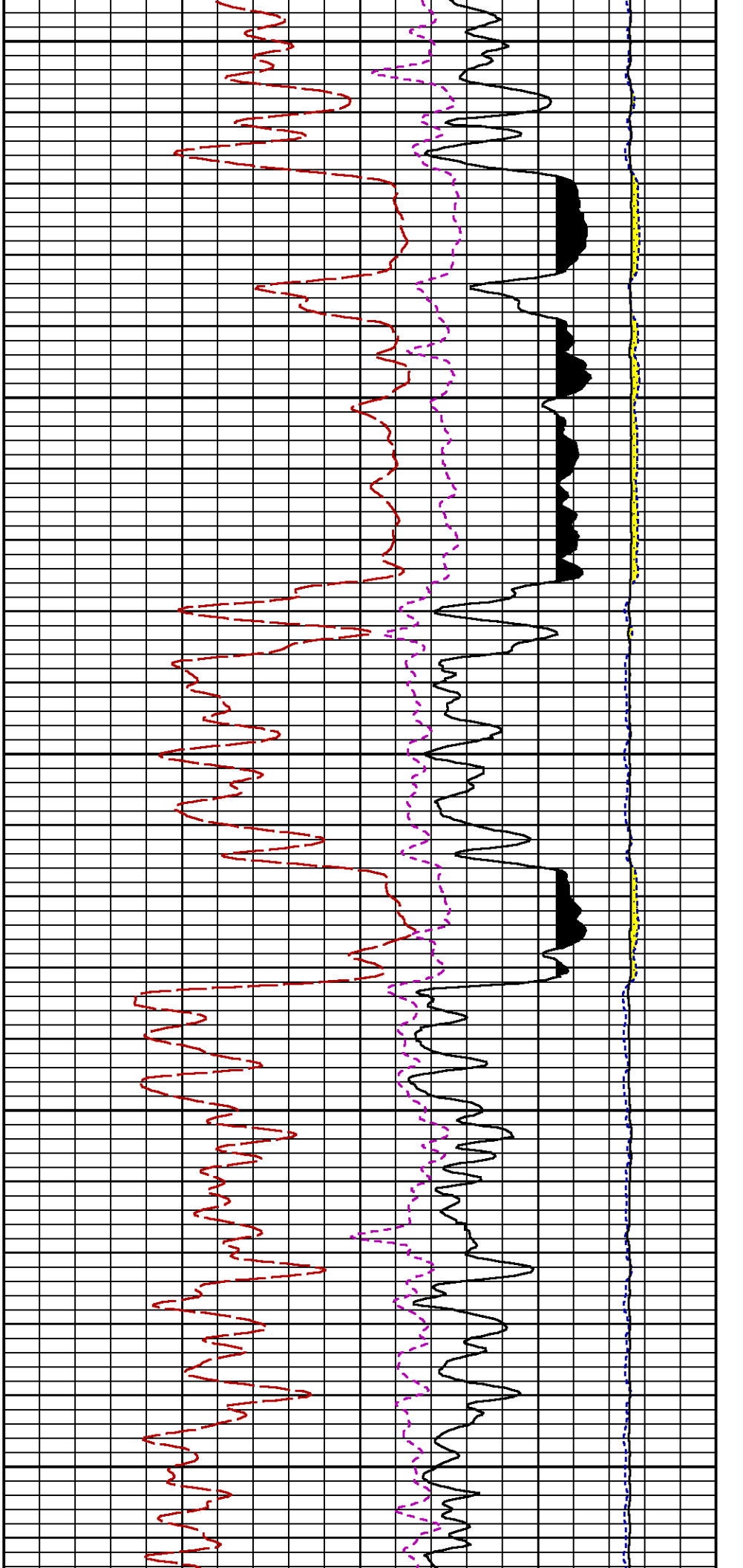


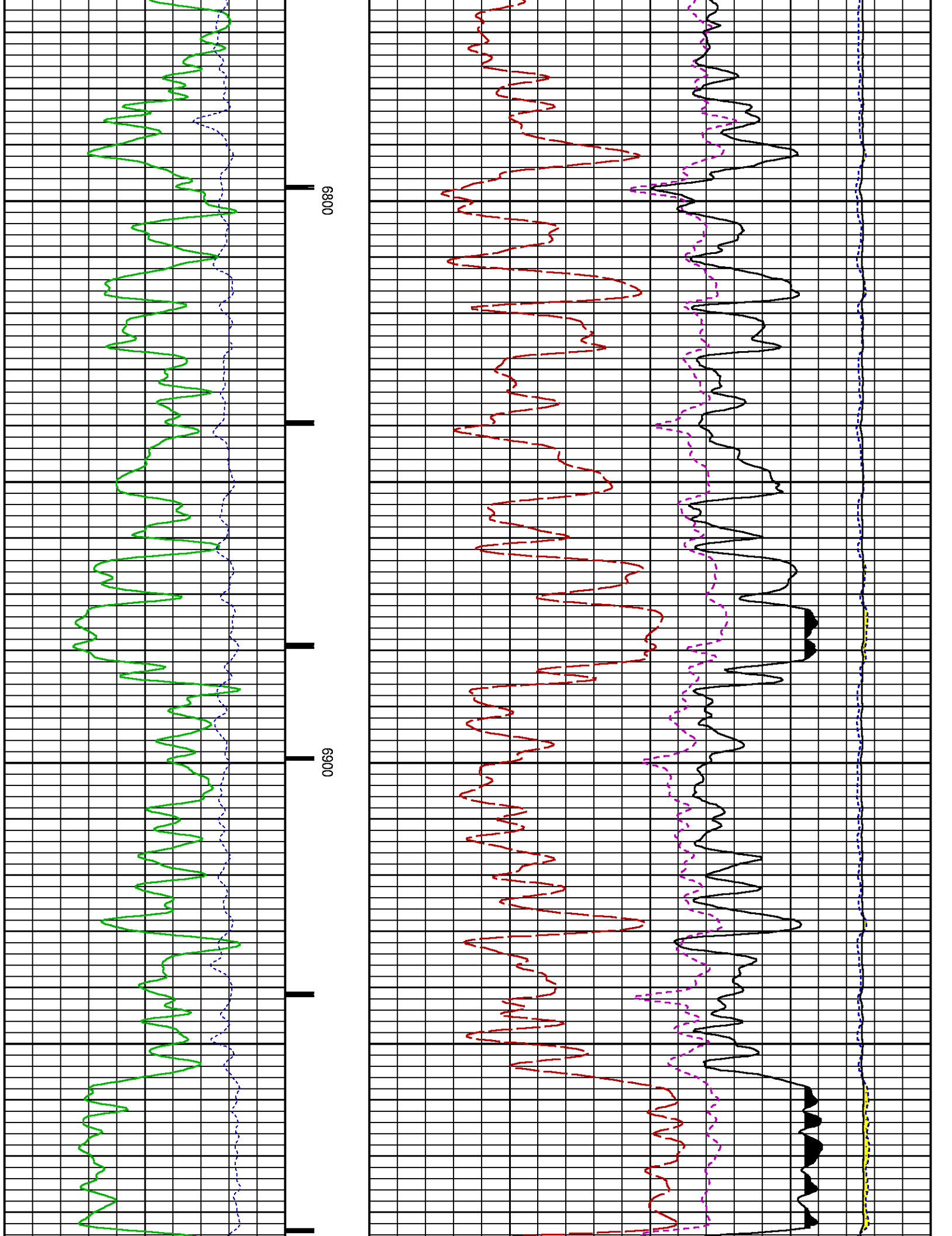


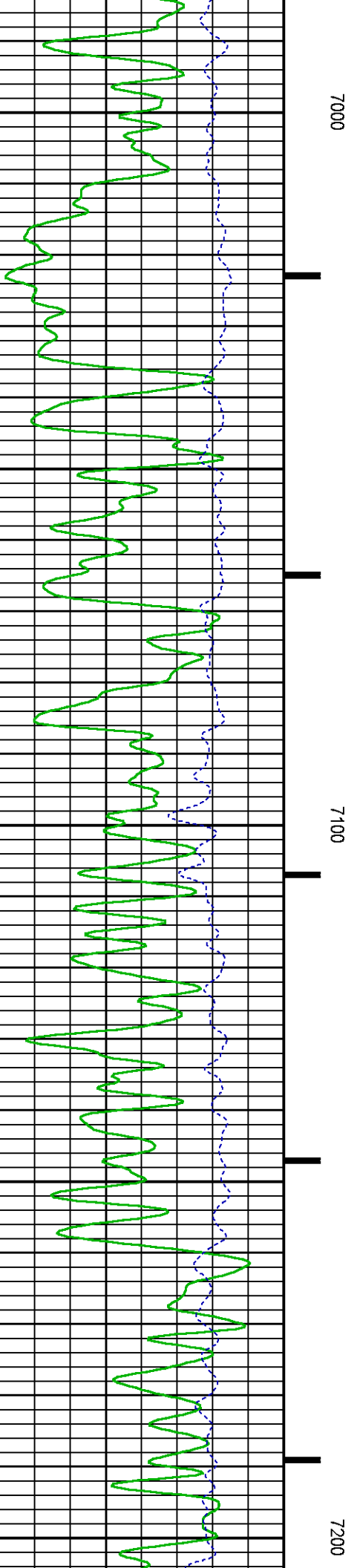
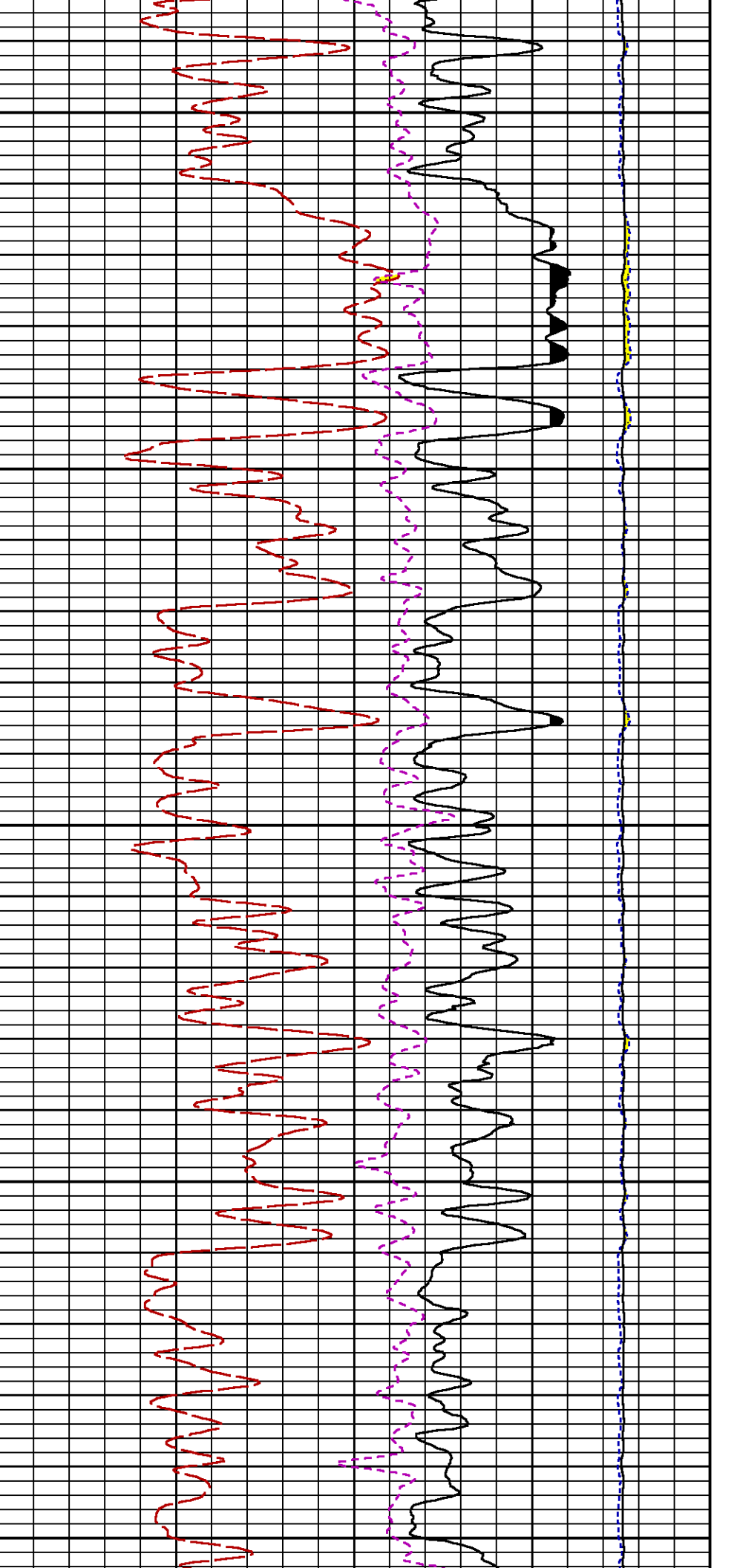


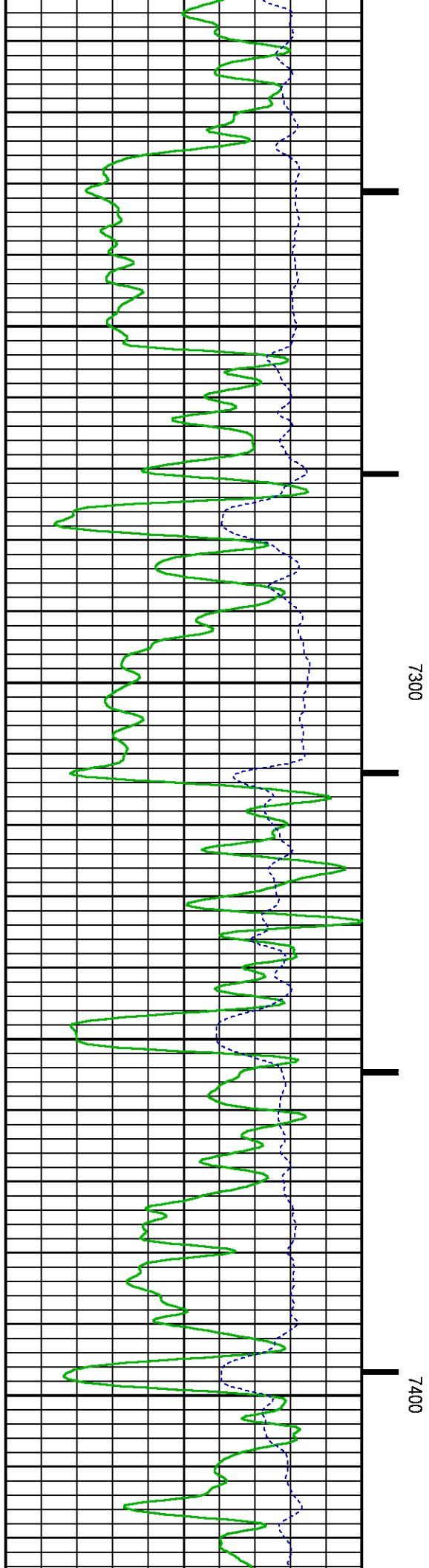
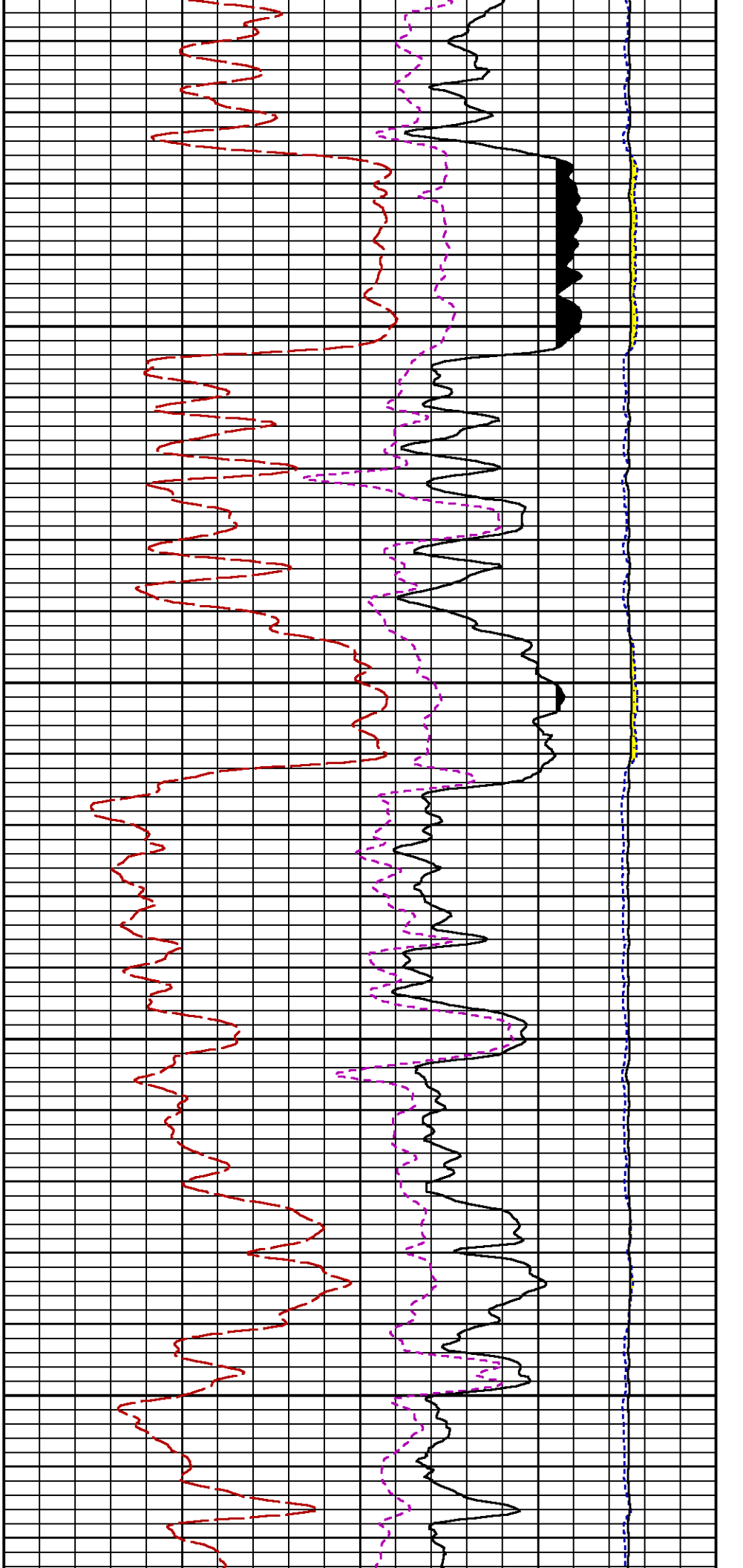


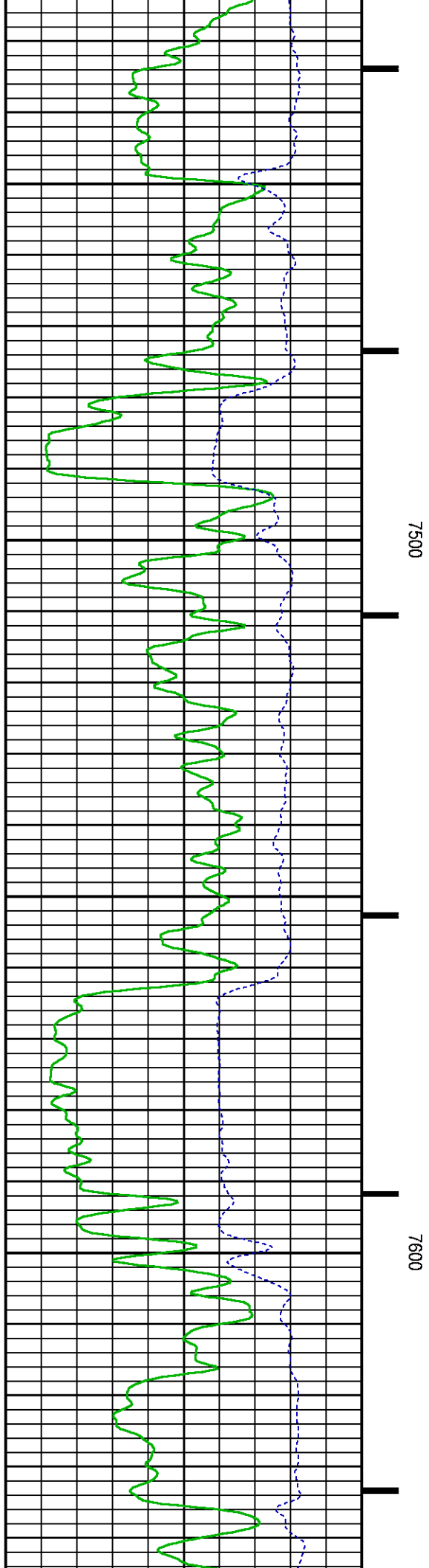
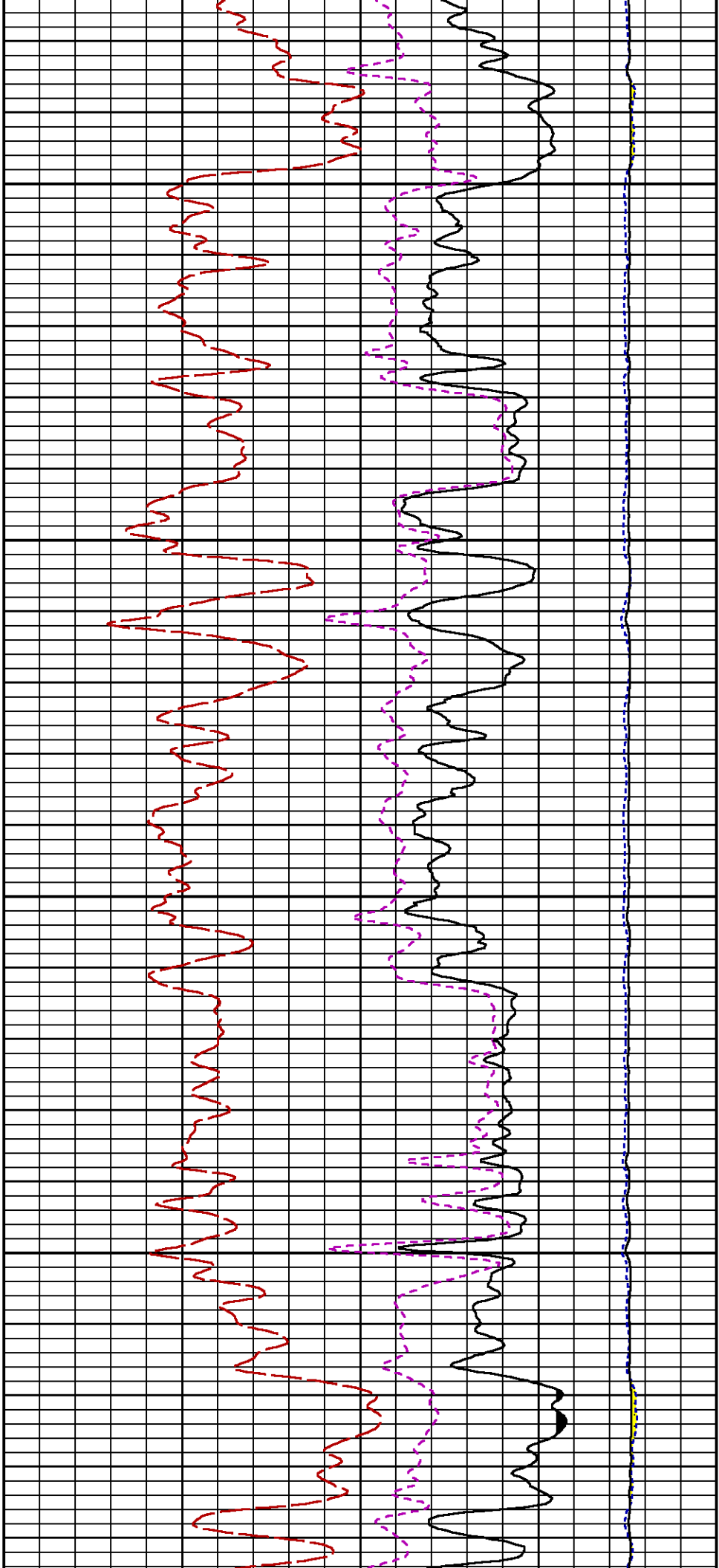


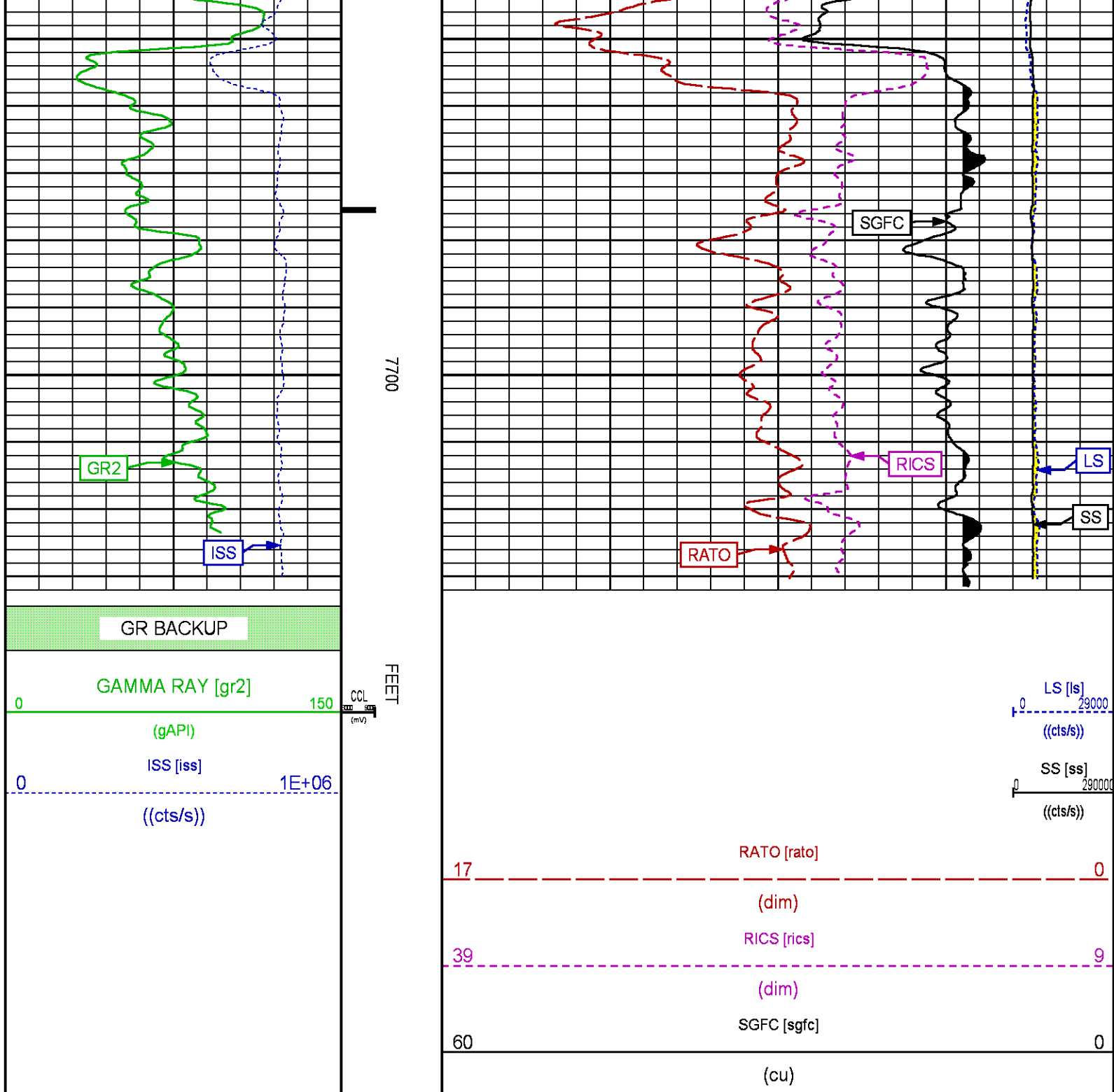












REPEAT PASS

FILE: /dat1a/LARAMIE_NICHOLS_0994-24-17E/p354h01.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 5021.779 ft BOTTOM DEPTH: 5267.870 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)
CCL	-25.00	ISS	-12.75	RATO	-12.75
GR2	-22.75	LS	-12.75	RICS	-12.75
				SS	-12.75

Presentation : SysA:/dat1a/LARAMIE_NICHOLS_0994-24-17E/17E_RPM_REPEAT.fvpdf [5"/100' Scale]

Plot Interval : 5040 - 5250 Feet

Data File 1 : F1 : SysA:/dat1a/LARAMIE_NICHOLS_0994-24-17E/17E_RPM_REPEAT.xtf

Created On : N/A

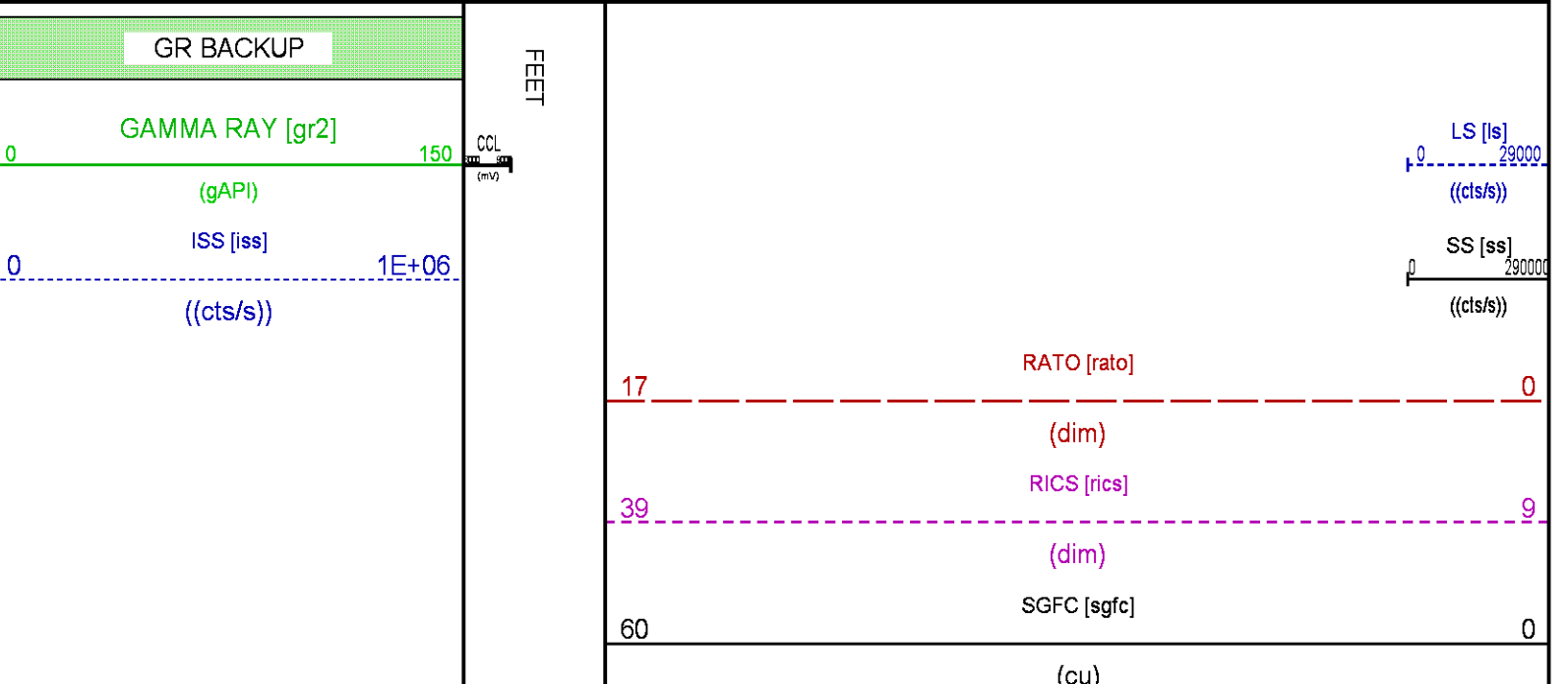
Company : LARAMIE ENERGY LLC

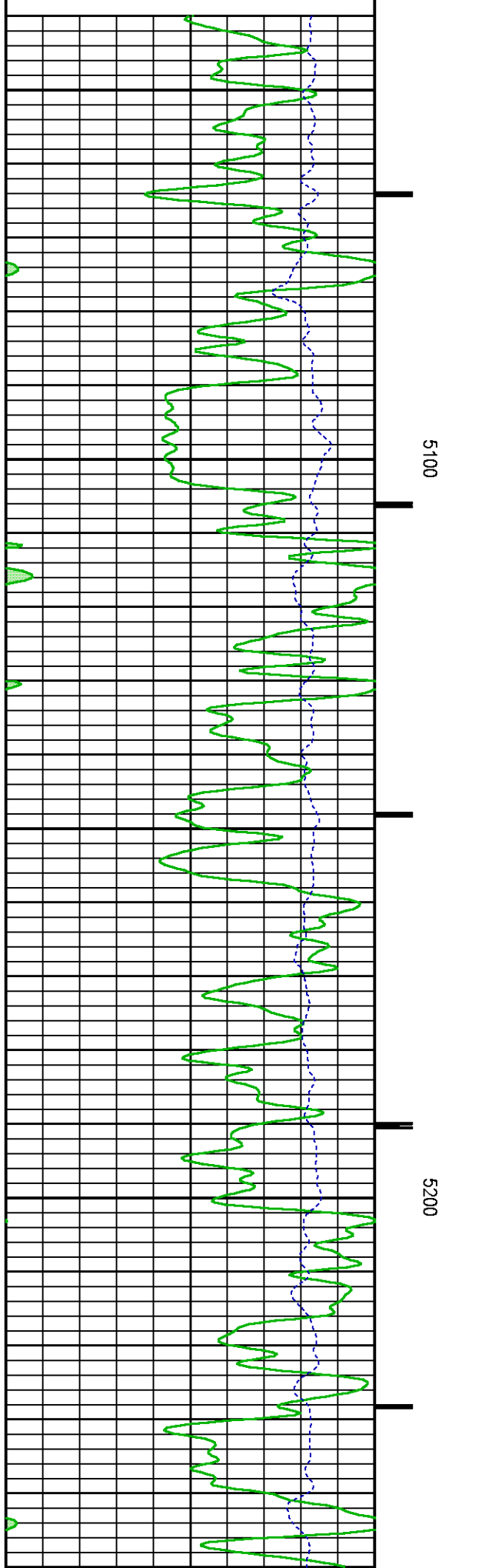
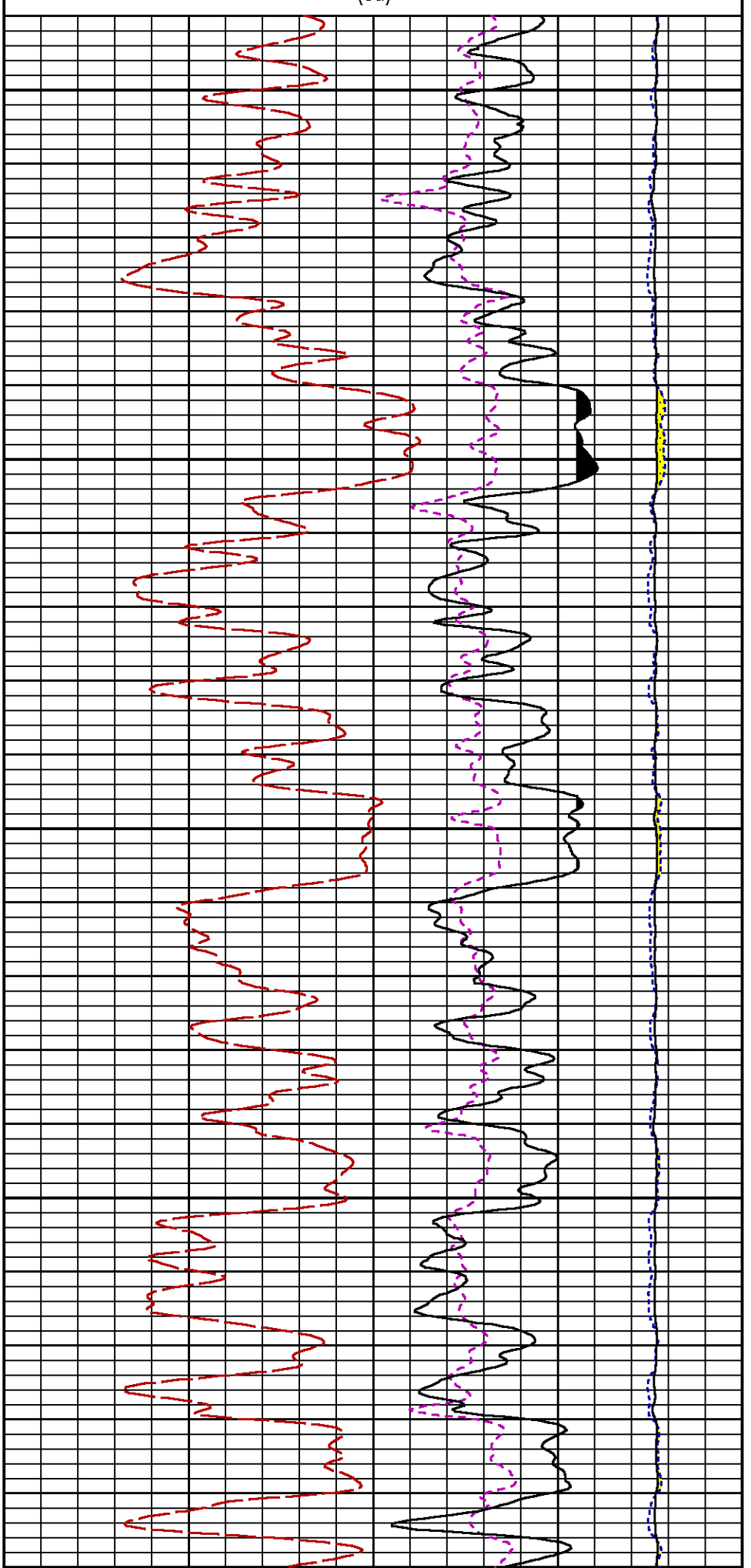
Well : NICHOLS 0994-24-17E

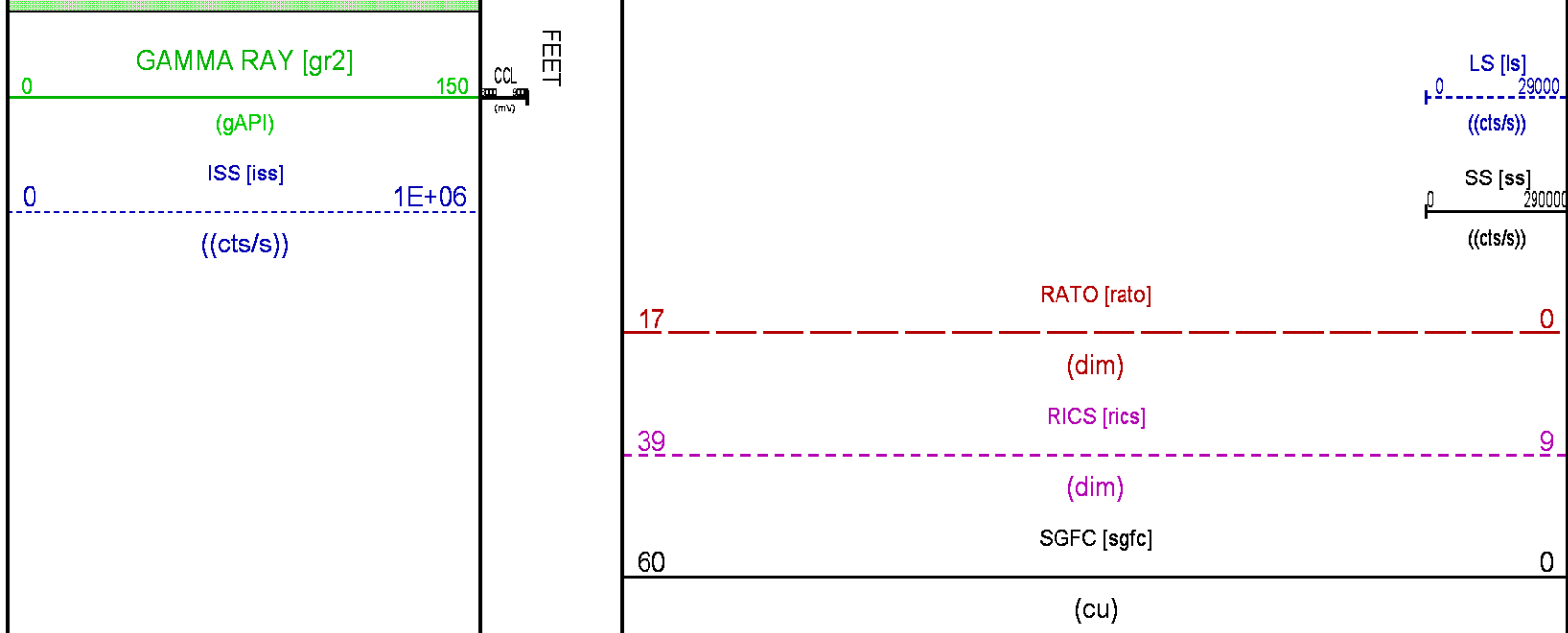
Field : VEGA

File Interval : 5004.5 - 5273 Feet

OCT : p354h







CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/LARAMIE_NICHOLS_0994-24-17E/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

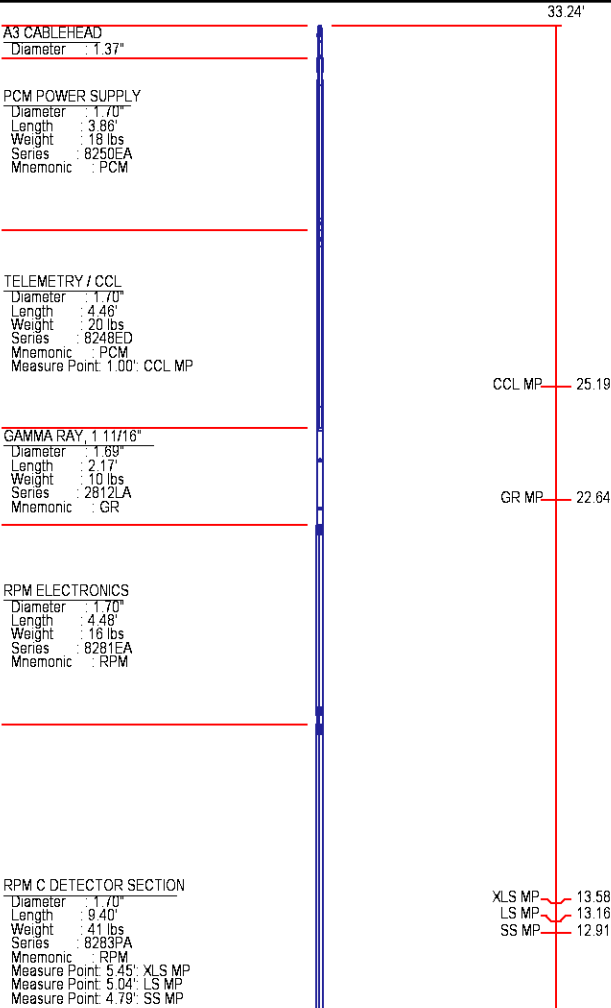
	ISS	Mtr Vlt (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	802814	119	2217	2481	2198	114	8.0	1.0138
Interpolated	1300000	139	2201	2485	2184			

	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	802814	7128	1185	158	25.96	0.15	24.13	0.33

Raw Data	802814	7129	1165	158	25.38 25.35 26.40	0.15 0.00 0.20	24.15 23.60 24.80	0.95 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_0994-13-17W/RPM-tdg



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

TEMP MP 1.65'
PRES MP

0.00'

**BAKER
HUGHES**
a GE company



COMPANY
WELL
FIELD
COUNTY

LARAMIE ENERGY LLC
NICHOLS 0994-24-17E
VEGA
MESA

STATE **COLORADO**

FILE NO:

CH137650

API NO:

05077103940000

LOCATION:

SHL: 2302' FNL & 2792' FWL
BHL: 1176' FSL & 1433' FEL

ELEVATIONS:

KB 7236 FT
DF
GL 7212 FT

SEC **24** **TWP** **9S** **RGE** **94W**

DATE **01-Jul-2018**

