



Baker Atlas

# RESERVOIR PERFORMANCE MONITOR

File No:	Company	WPX ENERGY
CH077432	Well	FEDERAL RU 322-5
API No:	Field	RULISON
0504521767	County	COLORADO
	State	COLORADO
Location		Other Services
5 7S 83W RU 23-6 PAD NABORS 576		BOND LOG TEMP
SHL: 257' FNL x 2614' FWL BHL: 1213' FNL x 1941' FWL (NENW)		
SEC 5 TWP 7S RGE 93W		
Permanent Datum	GL	Elevation
Log Measured From	KB	26 ft
Drill Measured From	KELLY BUSHING	Above P. D.
		Elevations
		KB 7628 ft
		DF
		GL 7602 ft

Date	09/OCT/13	
Run	ONE	
Service Order	US624006	
Depth Driller	10006 ft	
Depth Logger	9934 ft	
Bottom Logged Interval	9924 ft	
Top Logged Interval	26 ft	
Time Started	0830	
Time Finished	1600	
Operator Rig Time	7.5 HRS	
Type of Fluid in Hole	WATER	
Fluid Density	NA	
Salinity	NA	
Fluid Level	75 ft	
Logged Cement Top	NA	
Wellhead Pressure	0 psi	
Maximum Hole Deviation	NA	
Nominal Logging Speed	10 fpm	
Maximum Recorded Temperature	240 degF	
Reference Log	Baker Hughes HDIL/ZDL/CN/GR	
Reference Log Date	03/SEP/13	
Equipment No.	4271	GRAND JCT
Recorded By	FLOYD RENEAU	
Witnessed By	JEFF DUCY	

- FOLD HERE

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.

Borehole Record		
Bit Size	From	To
13.5 in	0 ft	1113 ft
8.75 in	1113 ft	10006 ft

Casing Record				
Size	Weight	Grade	From	To
9.625 in			0 ft	1113 ft
4.5 in	11.6 lbm/ft	P-110	0 ft	10006 ft

Remarks
All data on this log is shifted and depth matched using the Gamma Ray curve to the Baker Hughes HDIL/ZDL/CN/GR open hole log dated 9/3/2013 at the clients request.
The amount of linear shift is -1 feet.
Logged in PNC-3D mode.
The depth matching process creates potential for collar lengths to vary from those recorded on other cased hole wireline units without a Gamma Ray reference.

BHT = 240°F

SJ = 6595'-6618'

Equipment Data					
Run	Trip	Tool	Series Number	Serial Number	Position
1	1	RPM	8281FA	10191677	FREE
1	1	RPM	8281PA	10160383	FREE
1	1	RPM	8281EA	10423671	FREE
1	1	GR	8262XY	10485470	FREE
1	1	TEL/CCL	8248ED	10296408	FREE
1	1	PCM	8250EA	10397894	FREE

MAIN SECTION

PNC 3-D MODE

SPL PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
PNC Porosity	Borehole	Cased		5924.750	9938.754
PNC Porosity	Borehole Size	8.750	inch	5924.750	9938.754
PNC Porosity	Casing Size	4.500	inch	5924.750	9938.754
PNC Porosity	Gas Filled	Non Gas Filled		5924.750	9938.754
PNC Porosity	Matrix	Sandstone		5924.750	9938.754

DEPTH OFFSETS						
(for Acquired Curves)						
SERIES	DEPTH OFFSET	ACQUIRED CURVES				
8248ED	-15.320	FLTM				
8248ED	-13.320	CCL	CHV			
8262XY	-10.189	GR4				
8281XA	-0.662	HVC3Q0	SEQ3	AMA3	AML3	BKX CXS

8281XA

-0.250

8281XA

0.000

SYSTEM

0.000

CPT3Q0 CPT3Q2 CPT3Q3 CPT3Q4 ET3 IXS  
MCS3 MCS3Q0 QCAL3 RGN3 RICX SDA3  
SDL3 SGA3 SGL3 STA3 XS ASPEC3  
AMB3 AMF3 CHF3 IXSC IXSN RATO23  
RICXC RIN13C RIN23 RIN23C SD3D SG3D  
SGB3 SGF3 WDT3 CXSR IXSR XSR  
RICXR  
HVC2Q0 SEQ2 AMA2 AMB2 AMF2 AML2  
BKL CHF2 CLS CPT2Q0 CPT2Q2 CPT2Q3  
CPT2Q4 ET2 ILS LS MCS2 MCS2Q0  
QCAL2 RGN2 RICL RONE23 RTWO23 SDA2  
SDL2 SGA2 SGB2 SGF2 SGK2 SGL2  
STA2 ASPEC2 ILSC ILSN WDT2 RICLC  
CLSR ILSR LSR RICLR  
CPRS HVC1Q0 MV SEQ SEQ1 AMA1  
AMB1 AME1 AMF1 AML1 BKS CHF1  
CSS CORB CORF CPT1Q0 CPT1Q2 CPT1Q2A  
CPT1Q2B CPT1Q2C CPT1Q3 CPT1Q4 CPT1Q5 ET1  
G1 G2 GE1S GE2S ISS MCS1  
MCS1Q0 QA1 QCAL1 QM1 RATO RATO13  
RBOR RGN1 RICS RIN RONE RPOR  
RTWO RIN13 RONE13 RTWO13 SALB SC1  
SDA1 SDL1 SGA1 SGB1 SGB C SGE1  
SGF1 SGFC SGK1 SGL1 SS SS2  
STA1 PD1S PD2S PD3S MD1S MD2S  
MD3S DG1S DG2S DG3S PD1M PD2M  
PD3M MD1M MD2M MD3M DG1M DG2M  
DG3M MVS MA MVM FILV IAM  
TA PVM PVS IAS SSTAT QPD1  
QPD2 QPD3 QMD1 QMD2 QMD3 QDG1  
QDG2 QDG3 QMA QTA QFILV QMV  
QPV QIA DERR DCNT QPK1 QSA1  
PKS1 ASPEC1 H0C FE2XC ISSC RINC  
ISSN RDEN WDT1 RICSC CSSR G1R  
G2R ISSR SSR SS2R RATOR RATO13R  
RBORR RICSR RINR RIN13R RONER RPORR  
RTWOR  
TEN TTEN

Created by : RPM9, v5.3.1.0

Plotted by : PlotMgr, v5.4.504

Company : WPX ENERGY

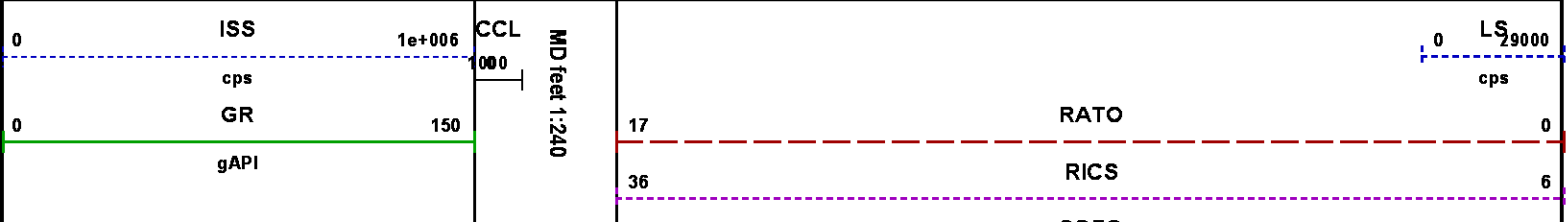
Well : FEDERAL RU 322-5

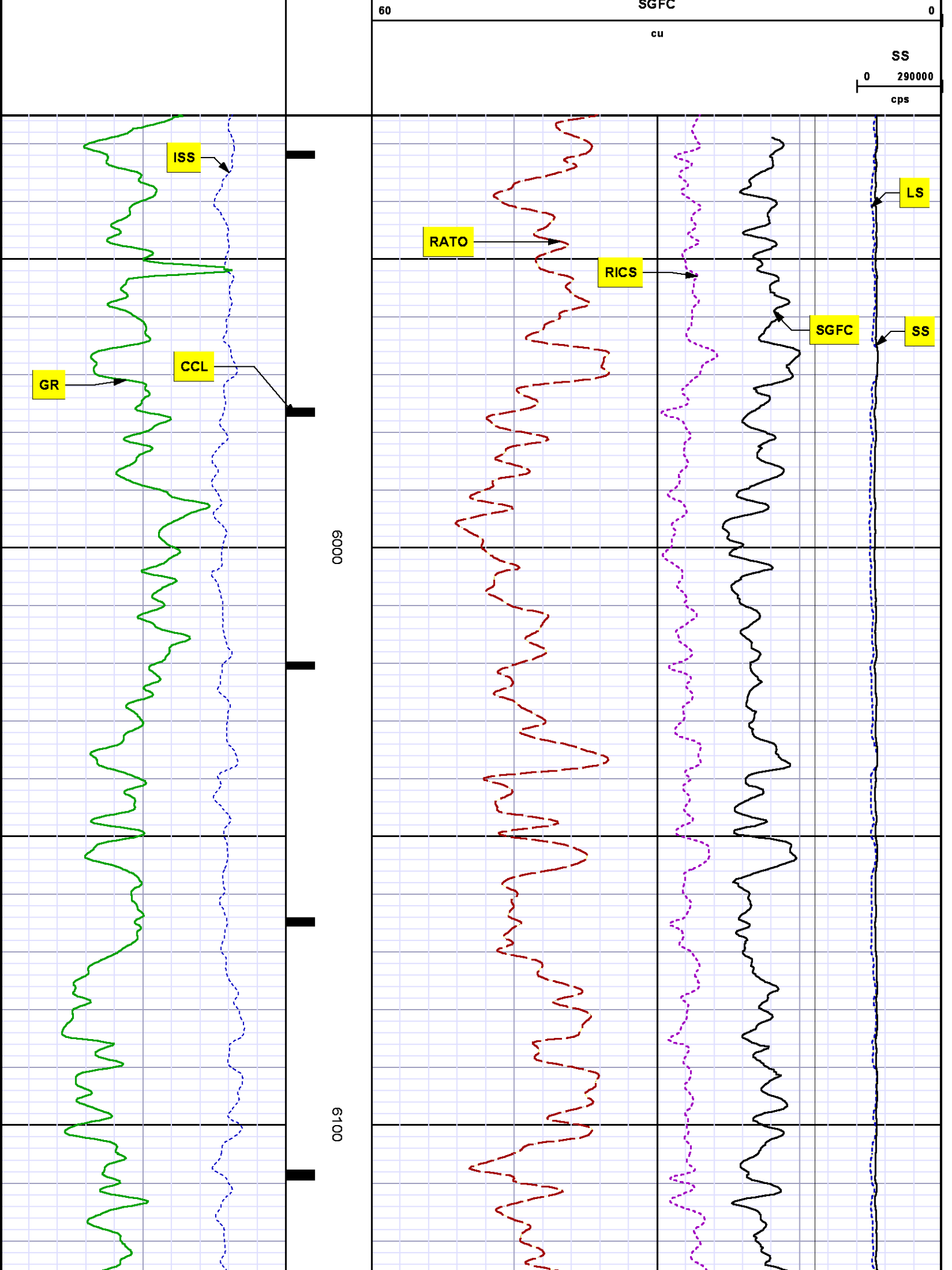
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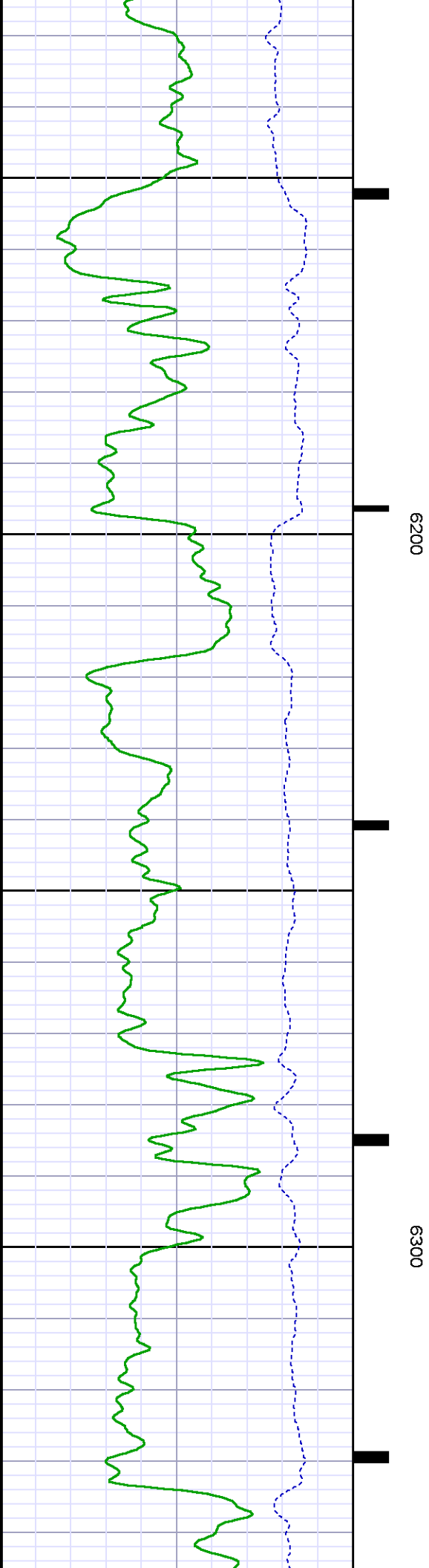
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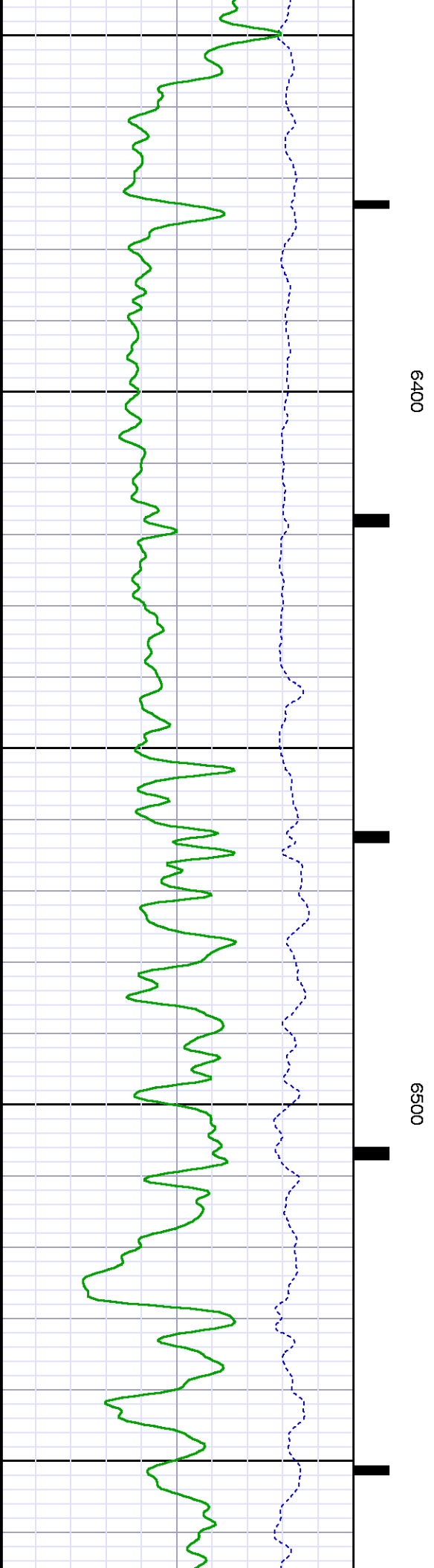
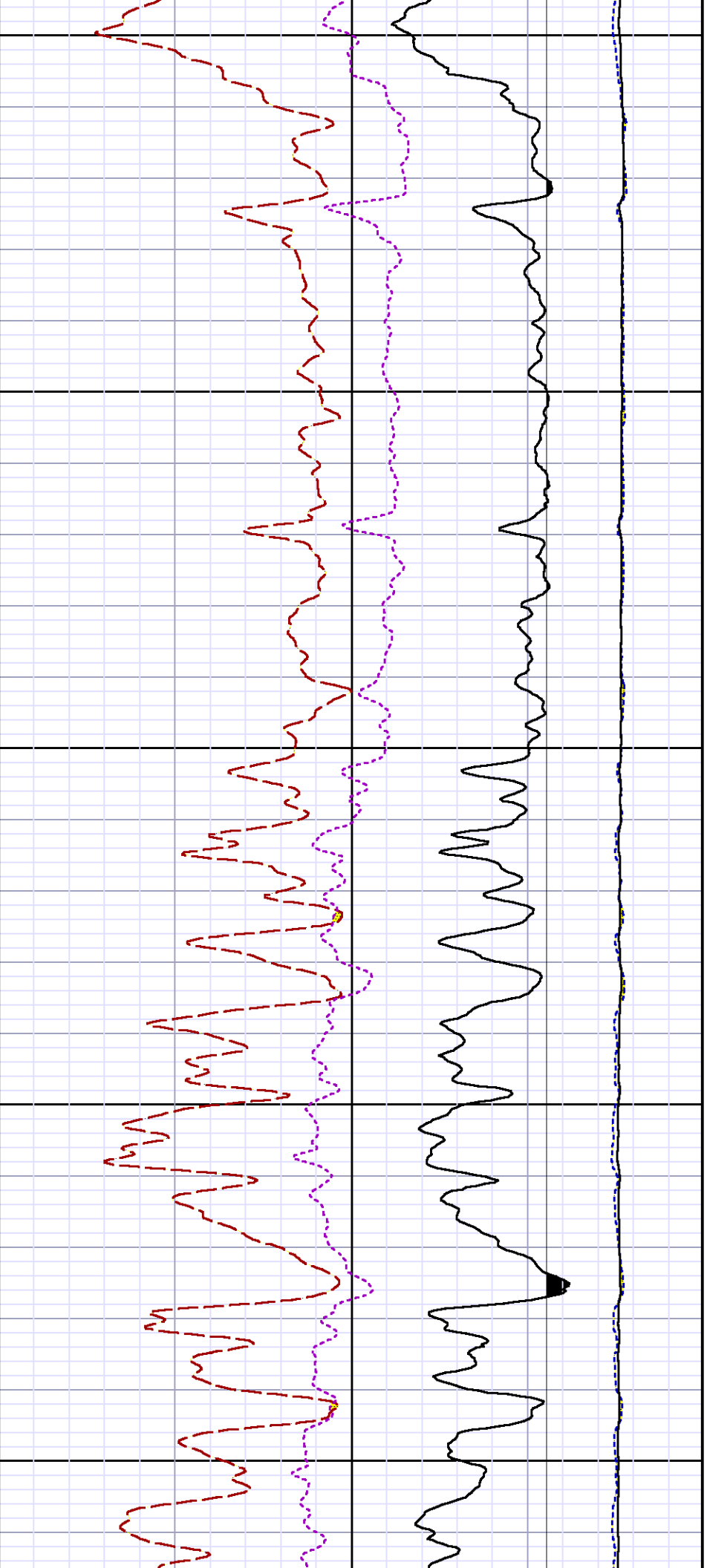
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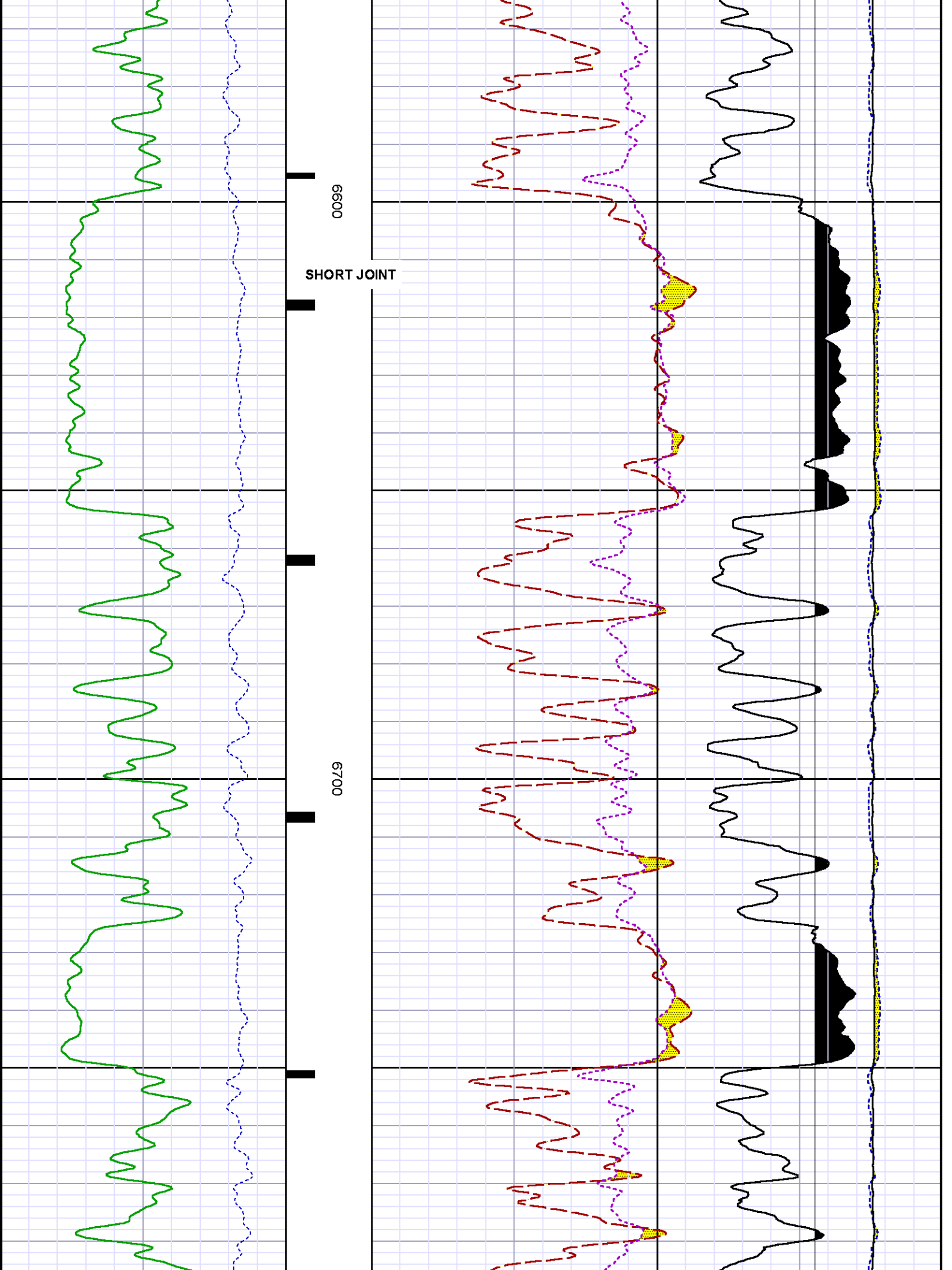
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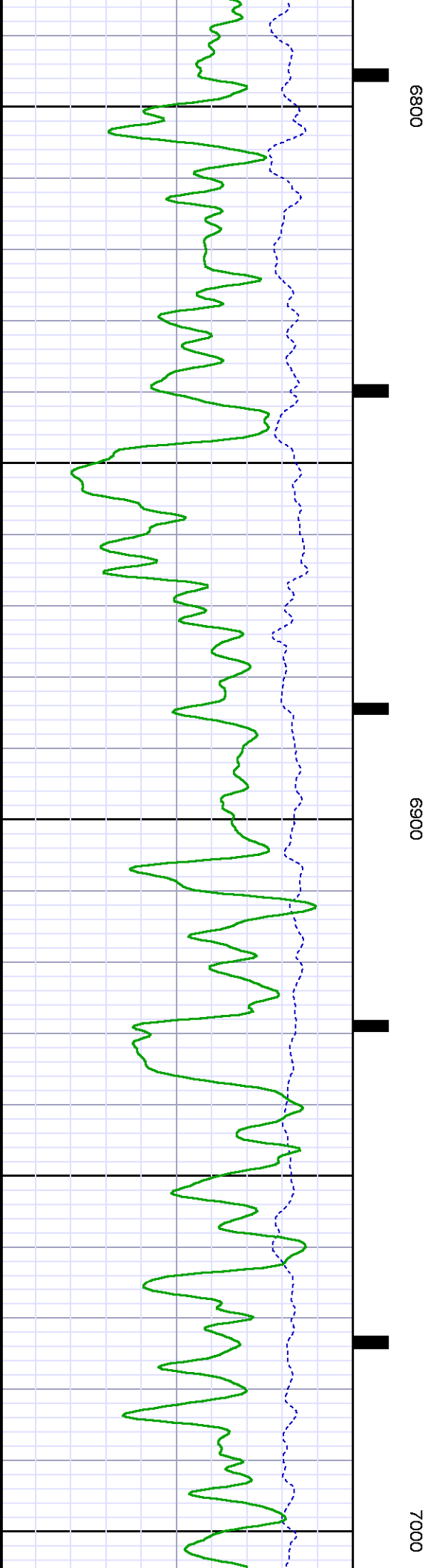
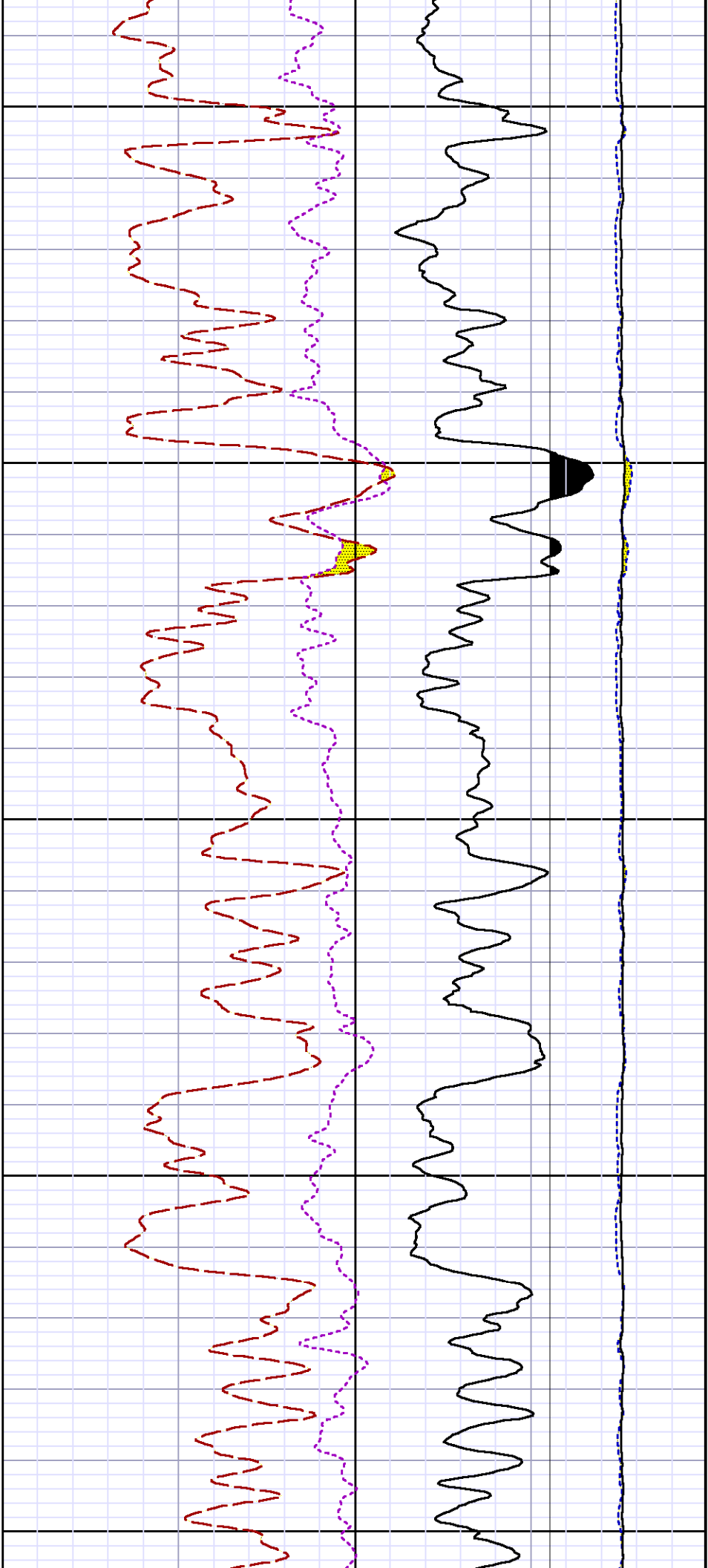




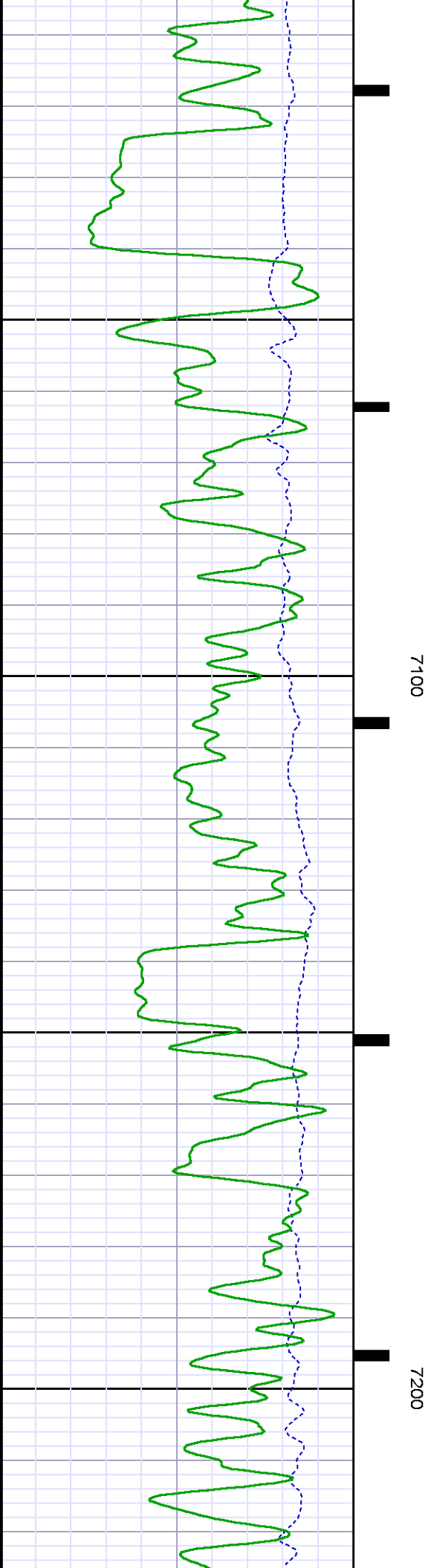
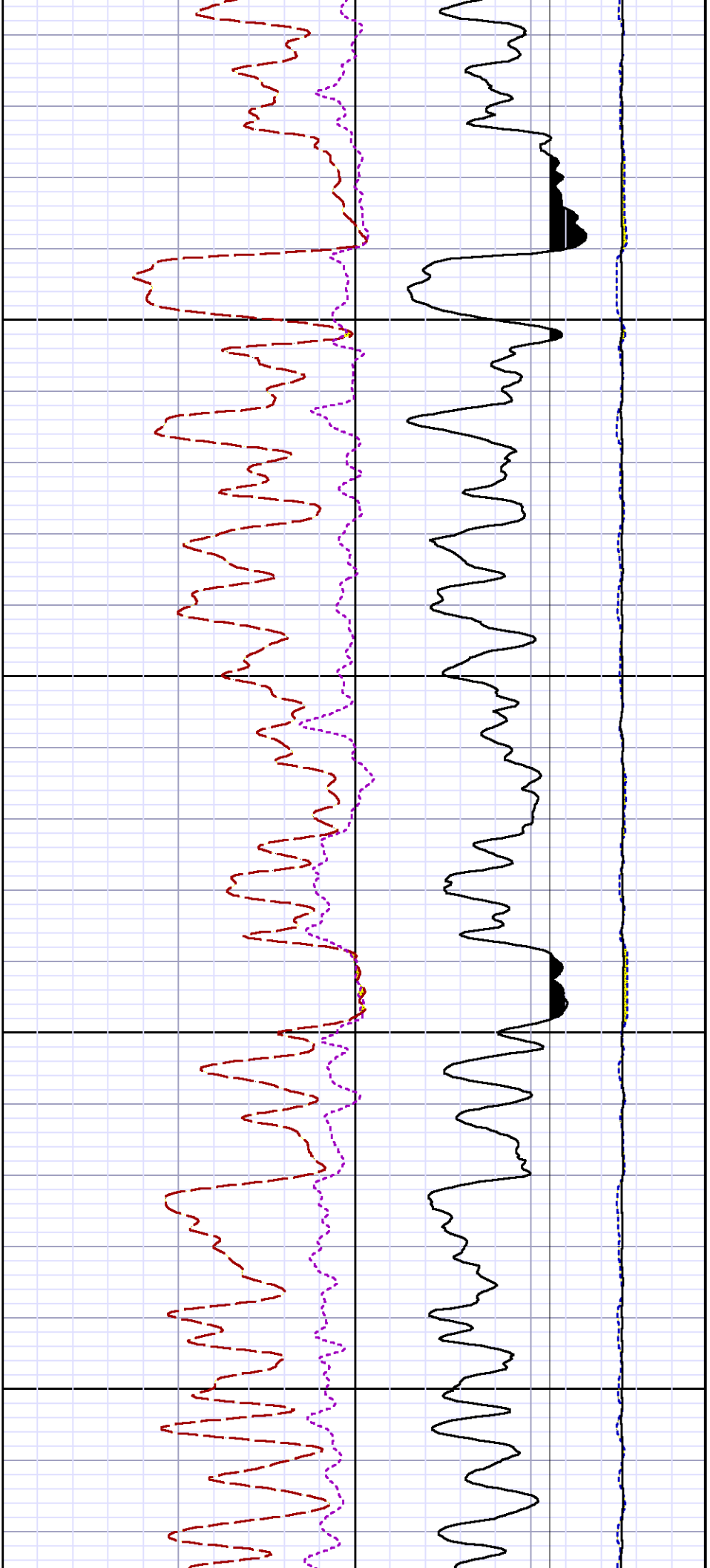


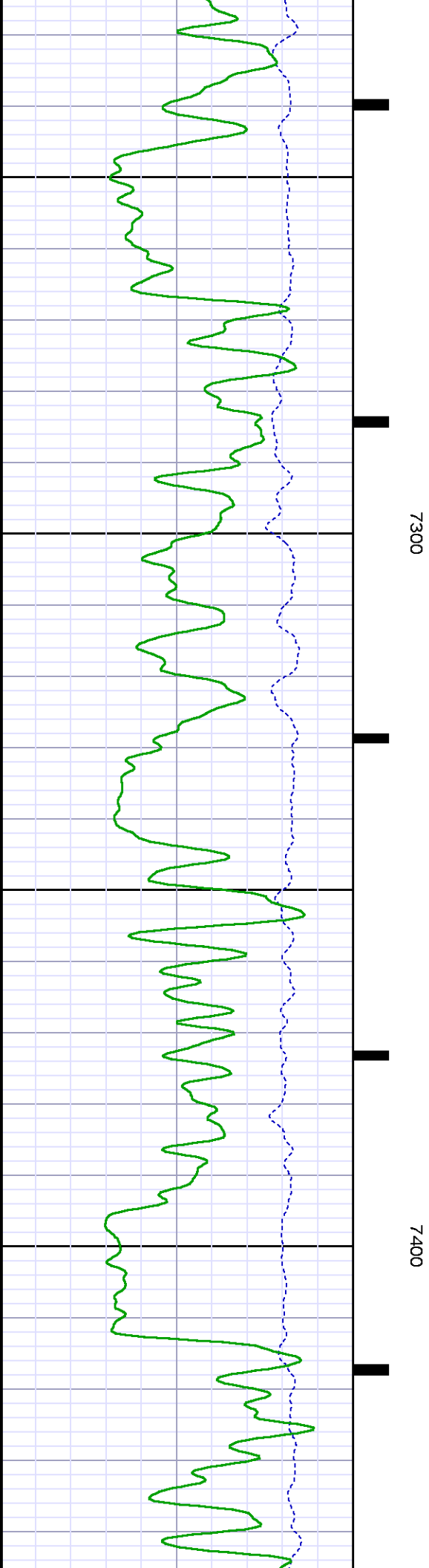
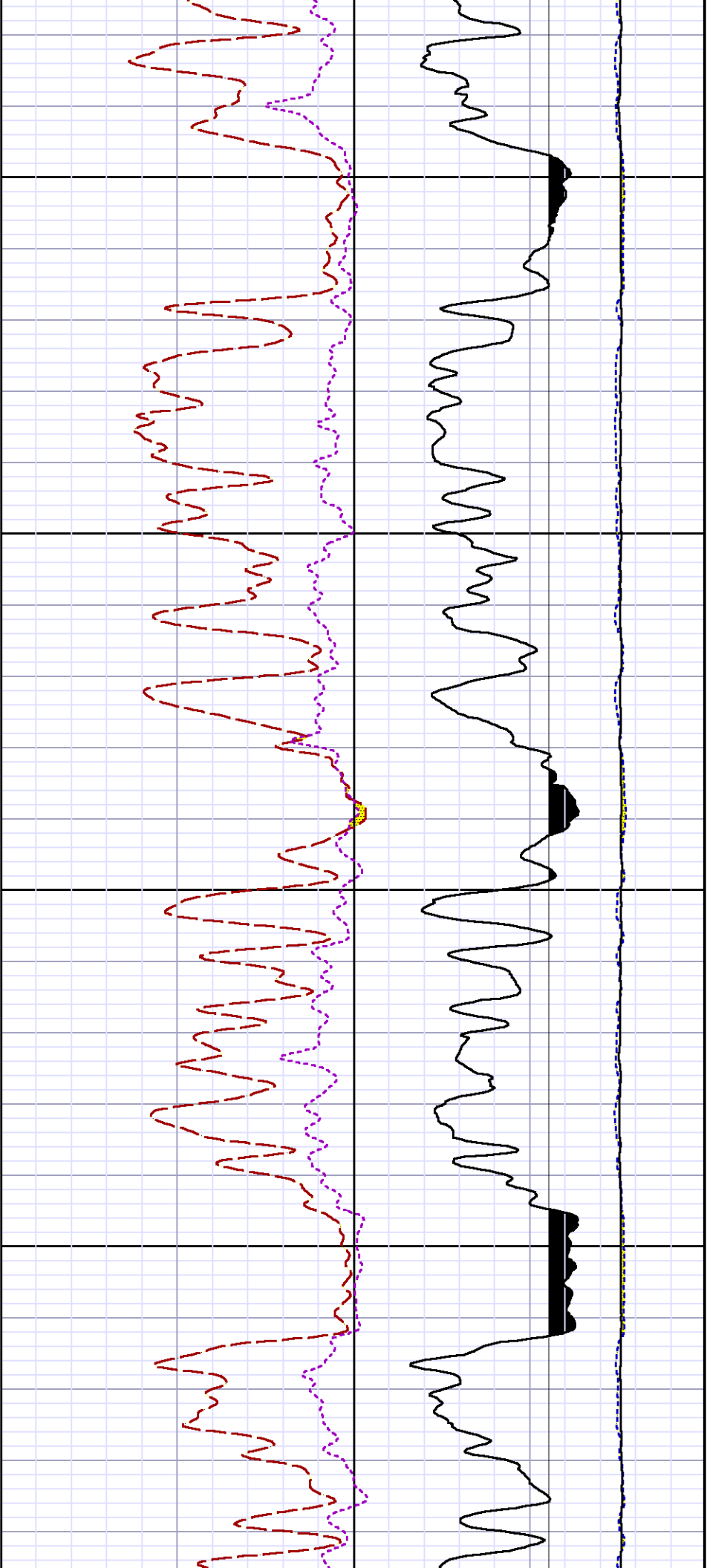


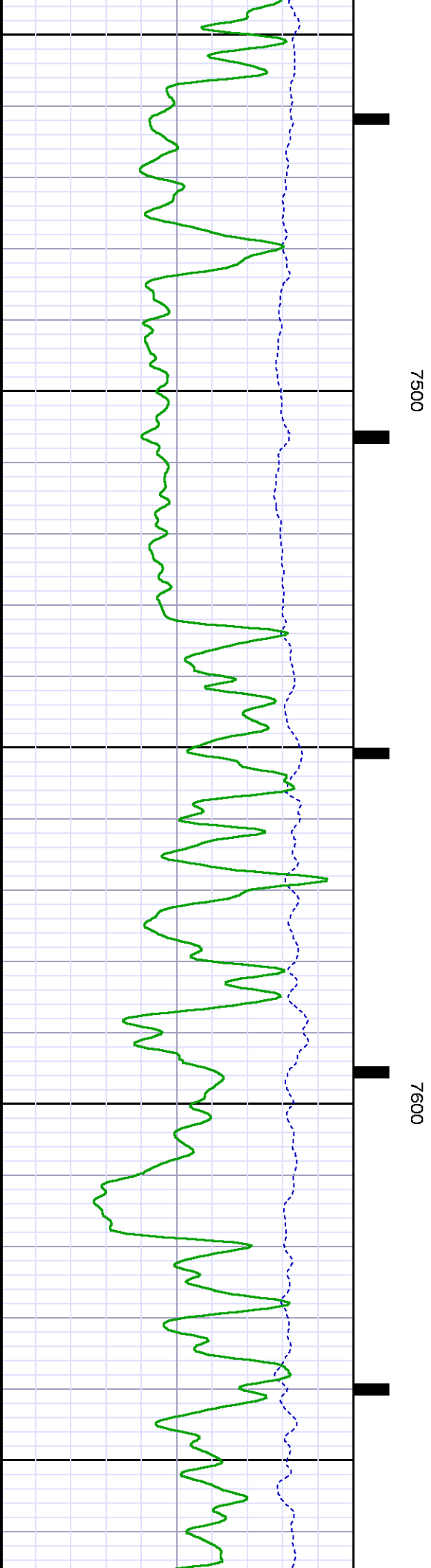
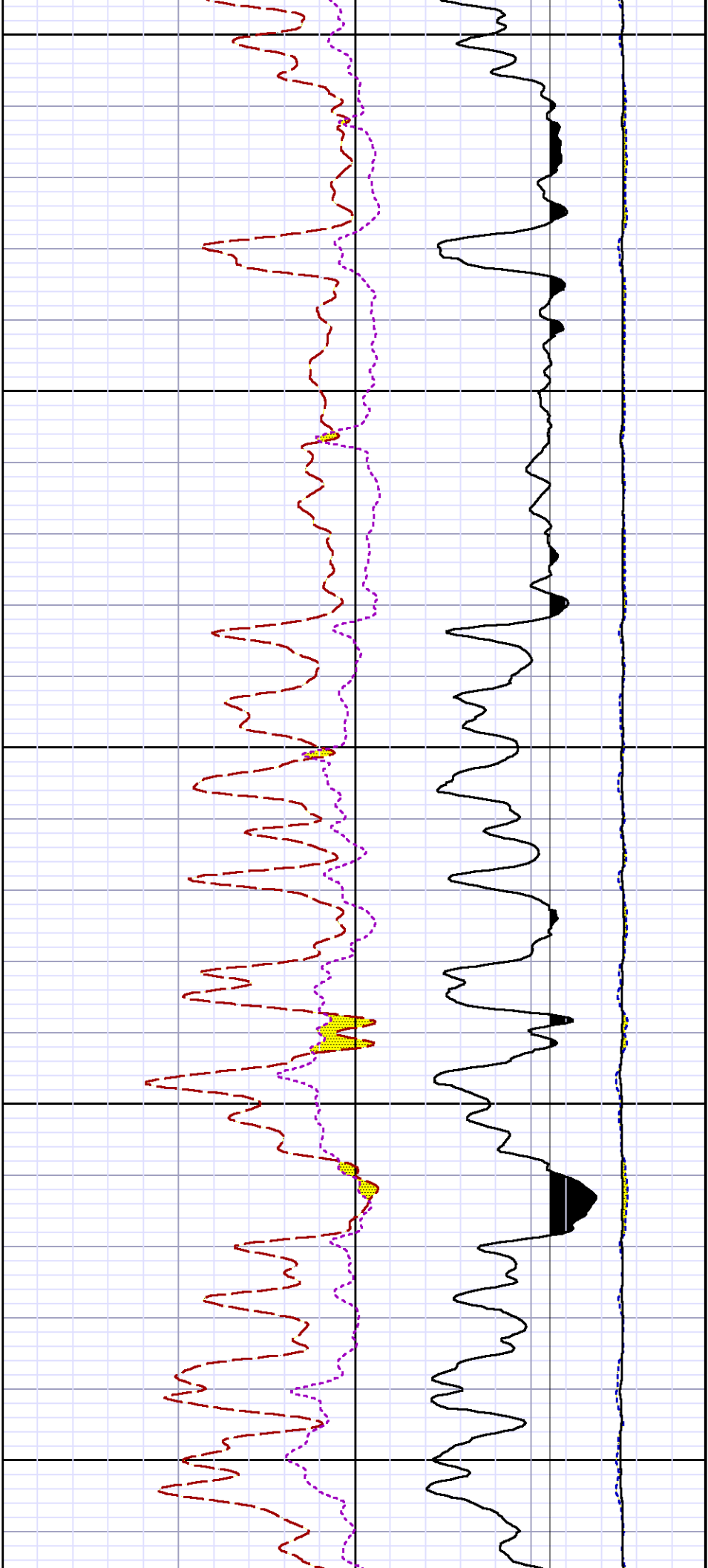


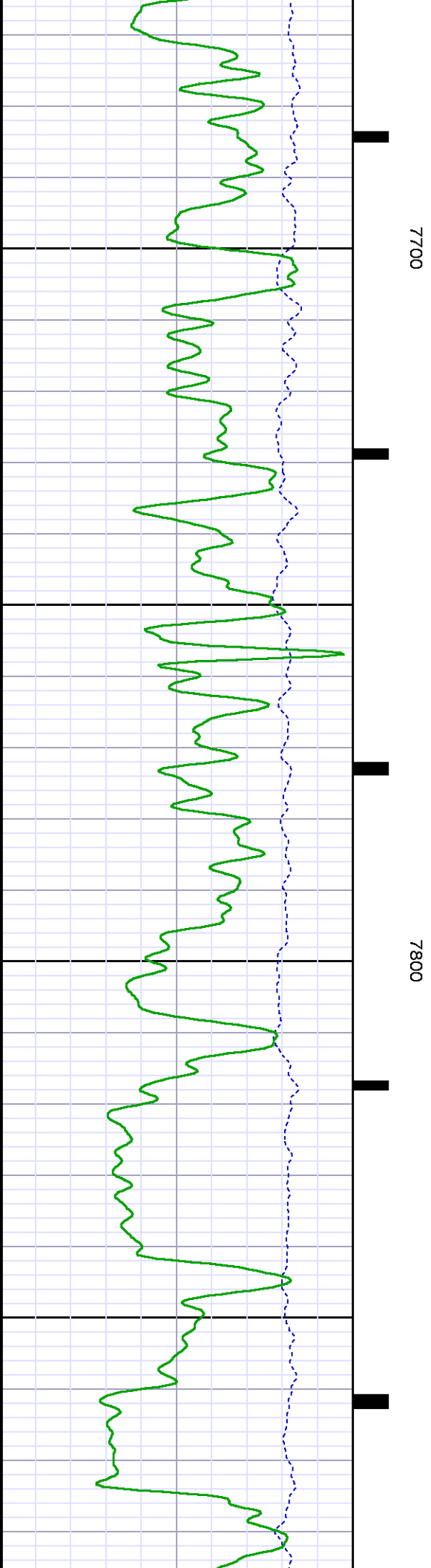
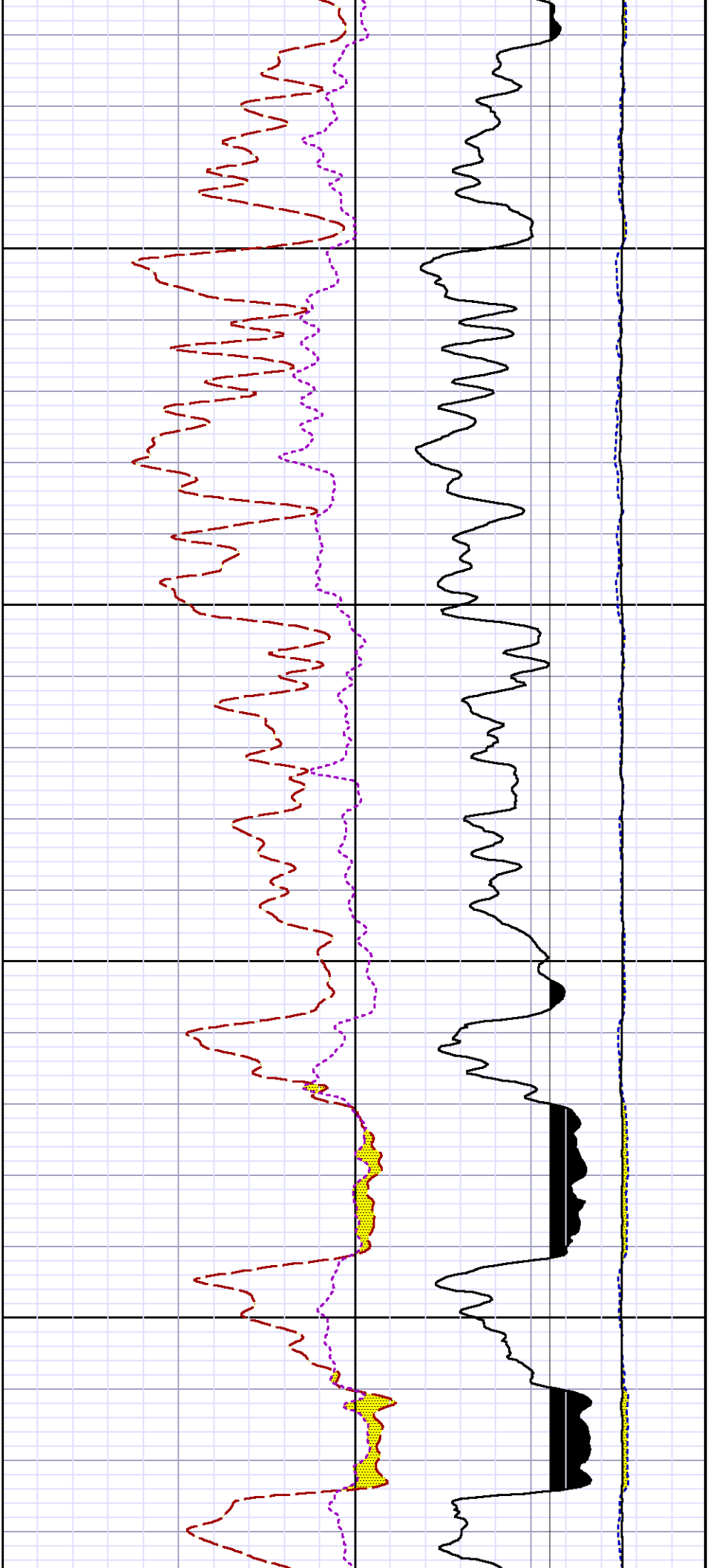


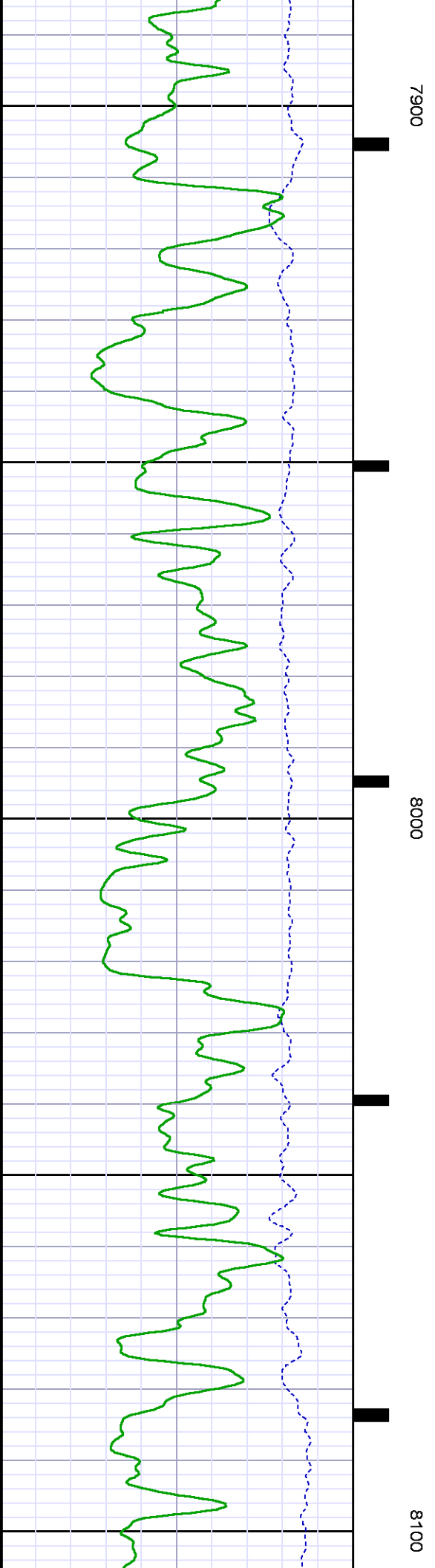
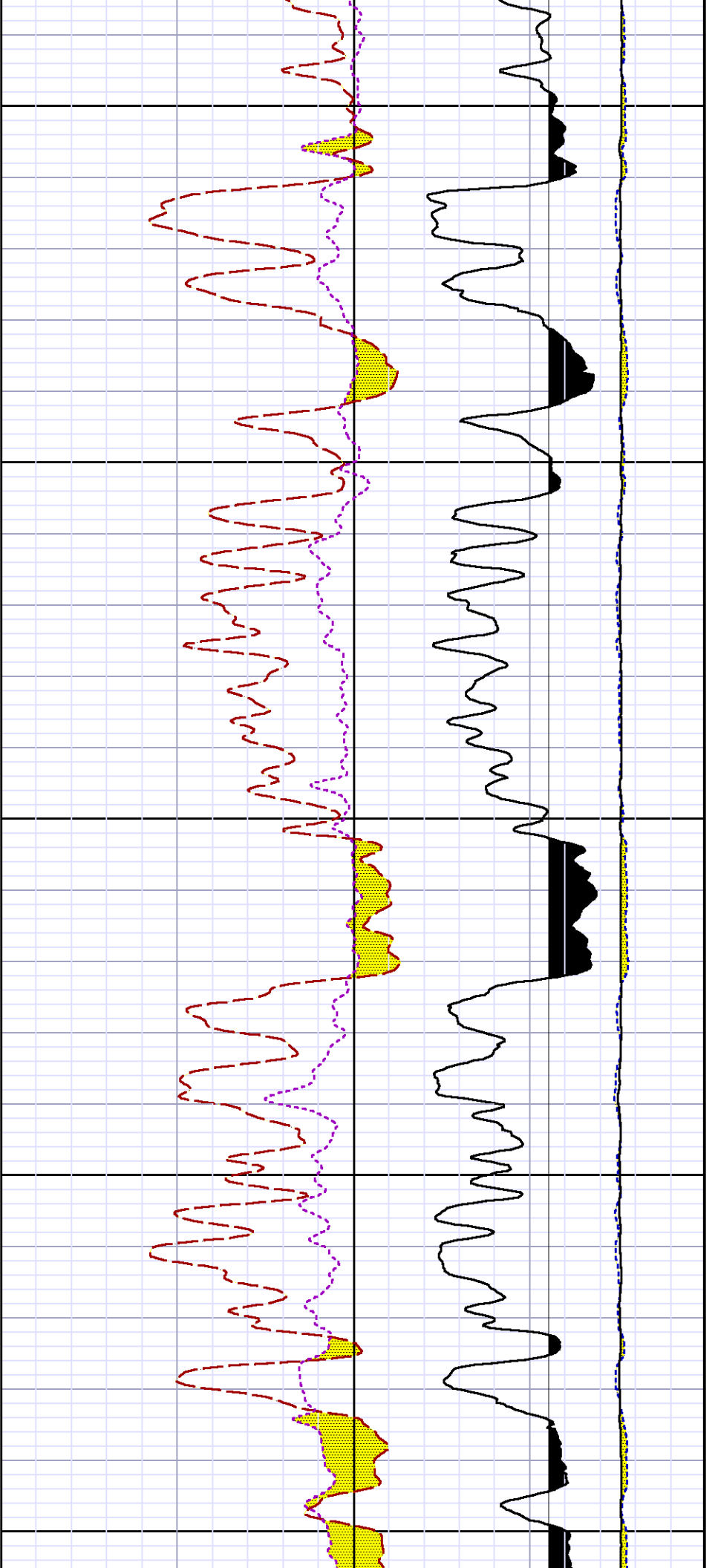


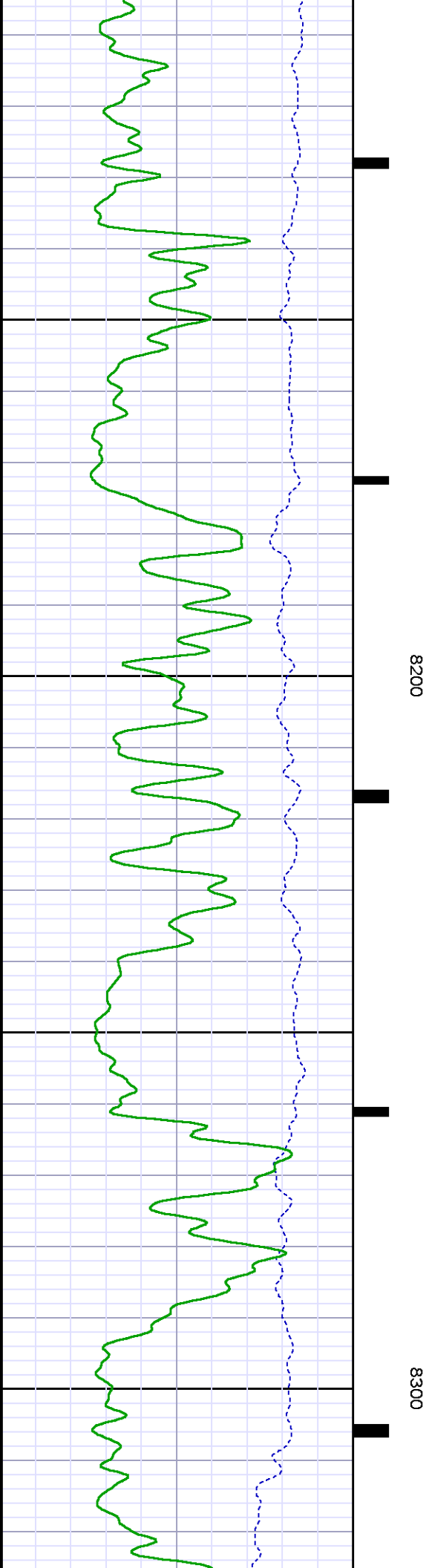
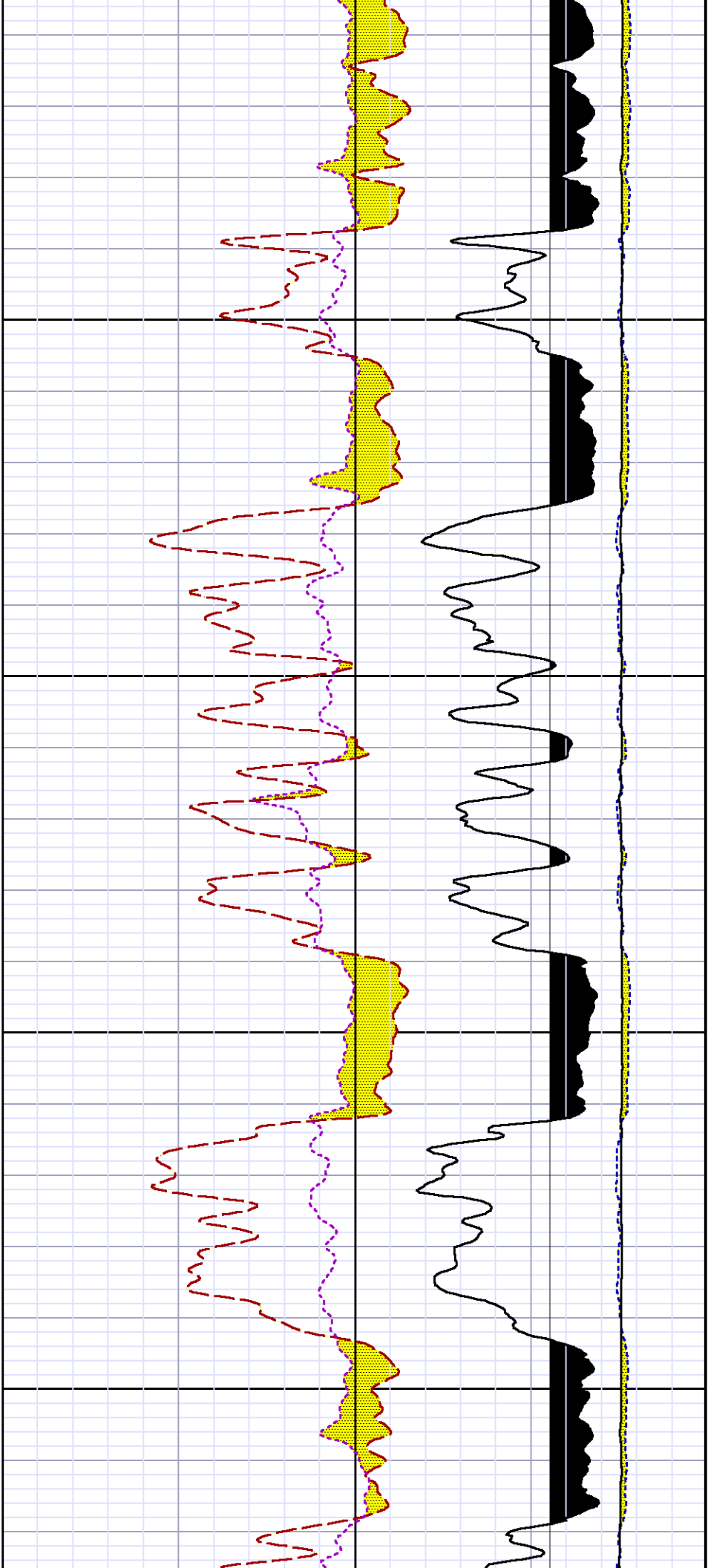


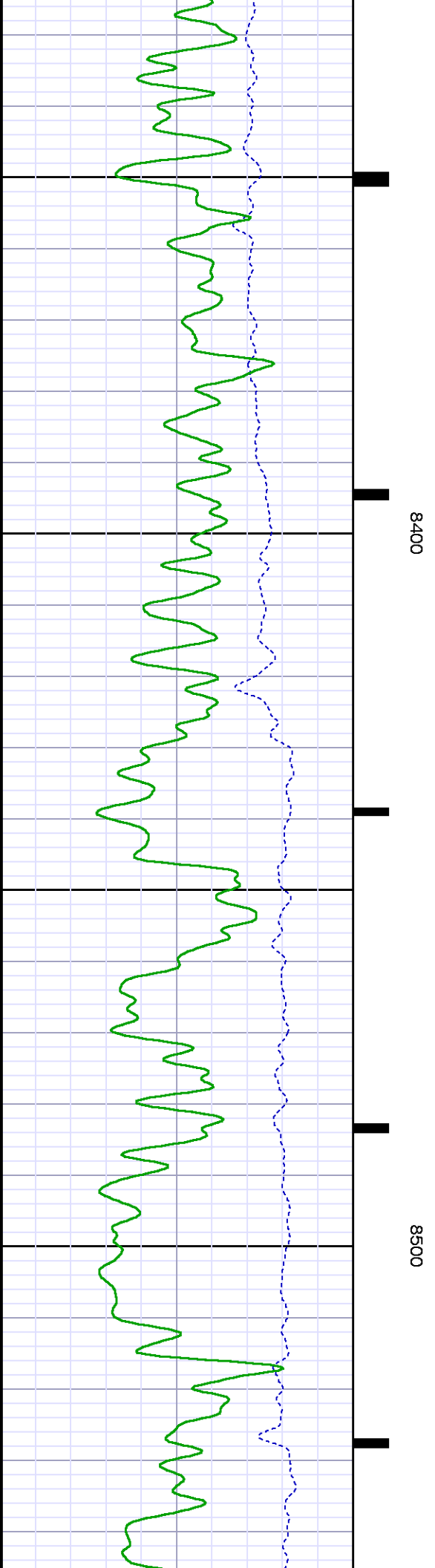
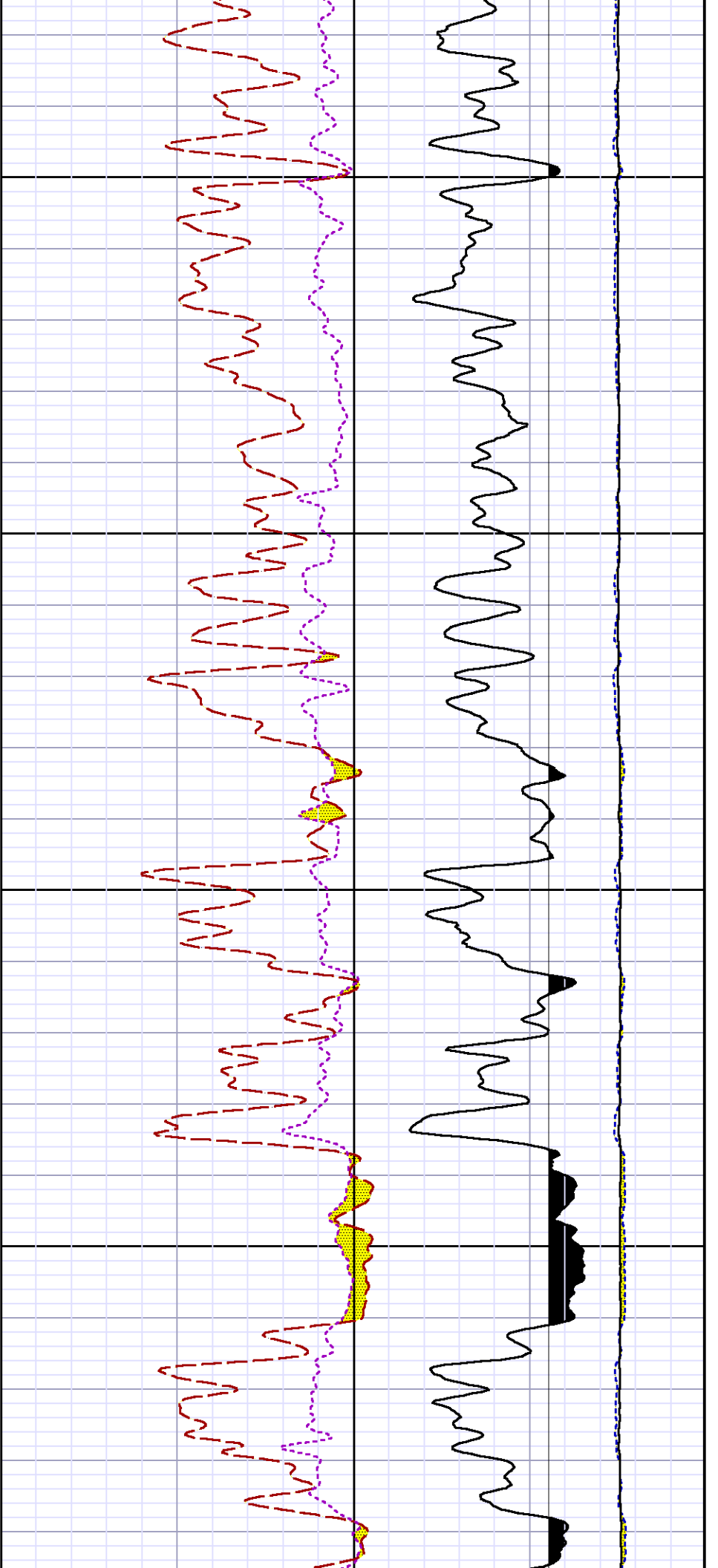


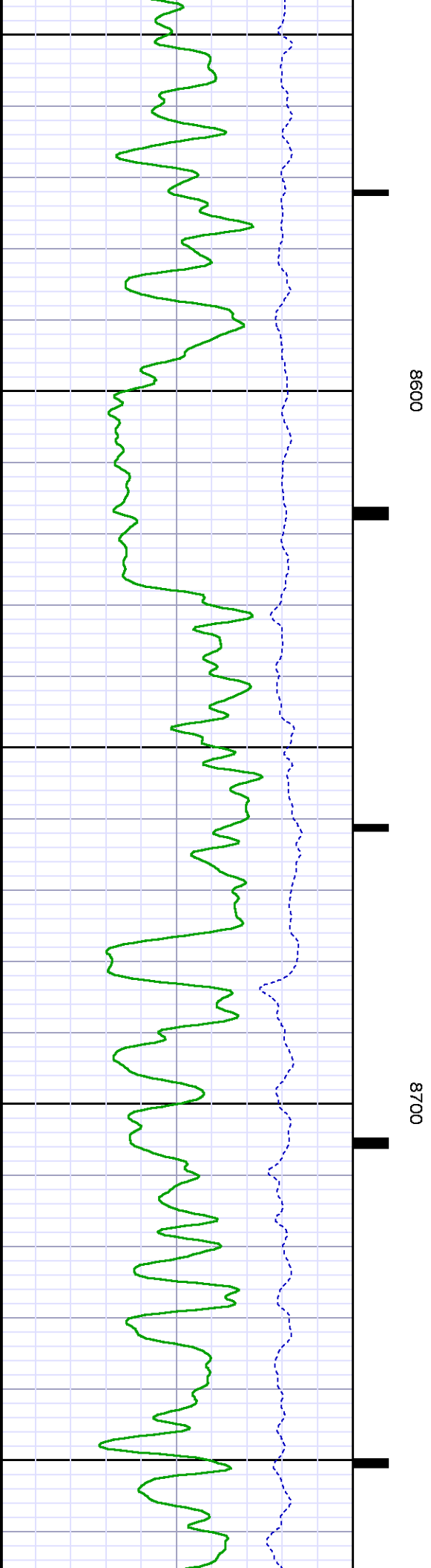
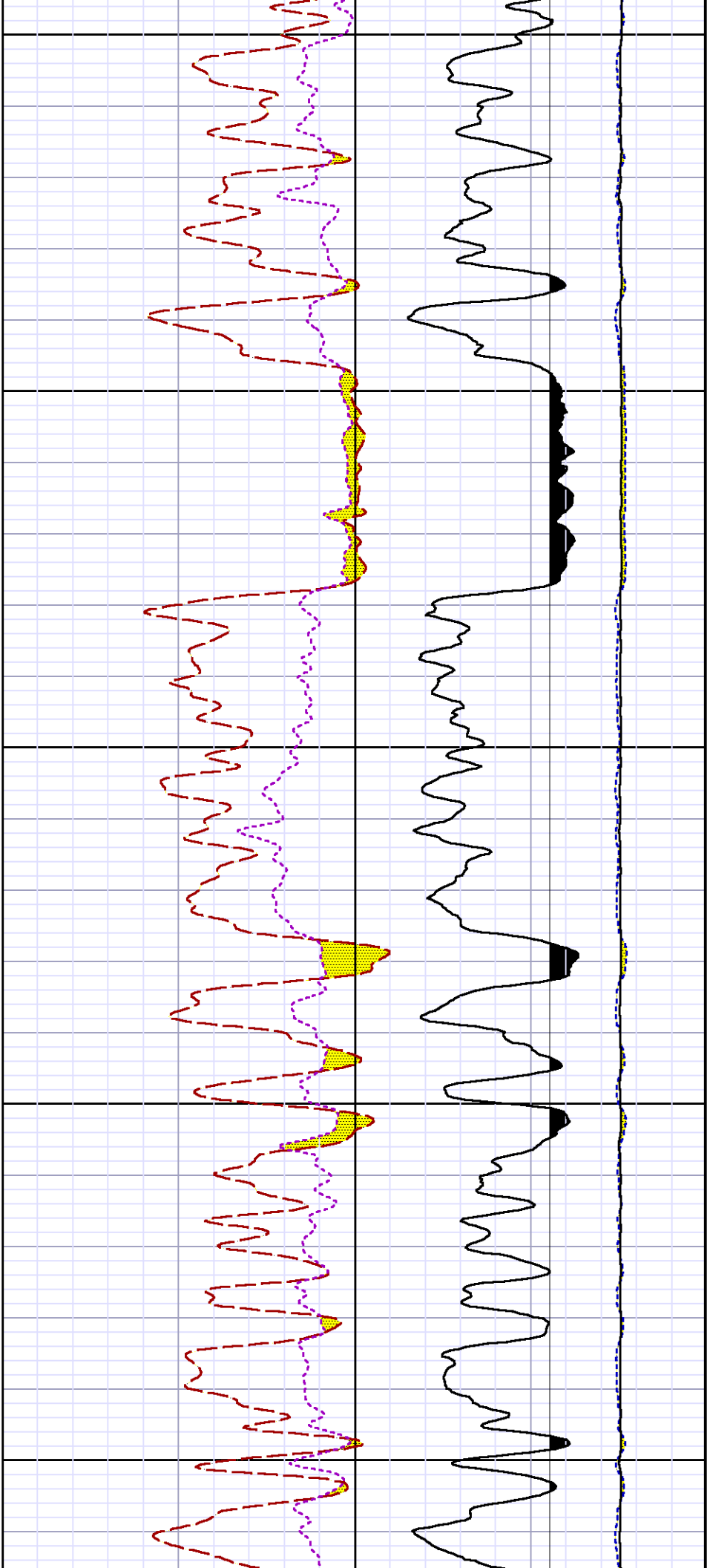




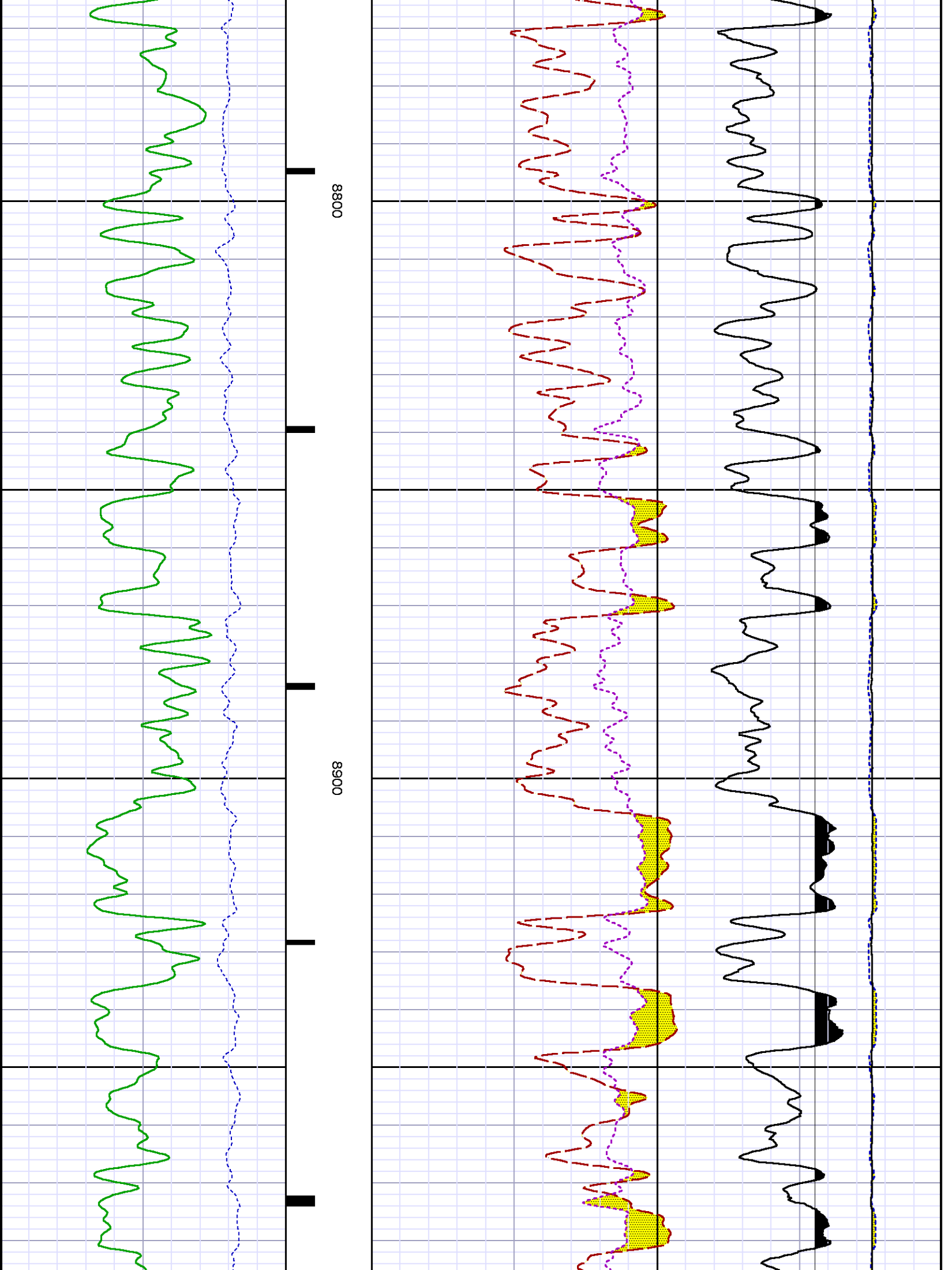


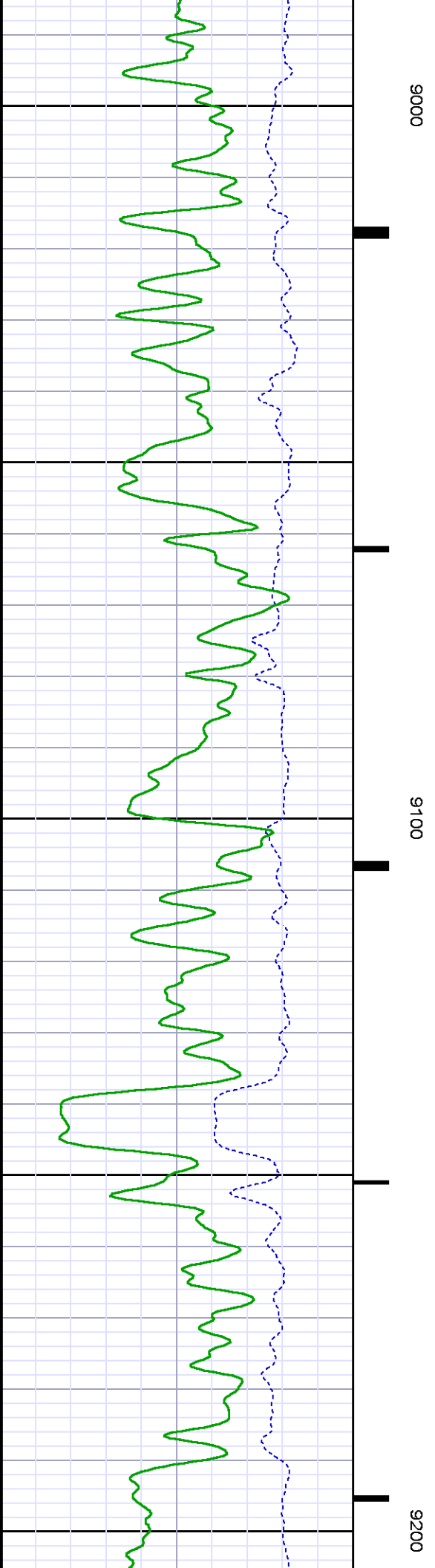
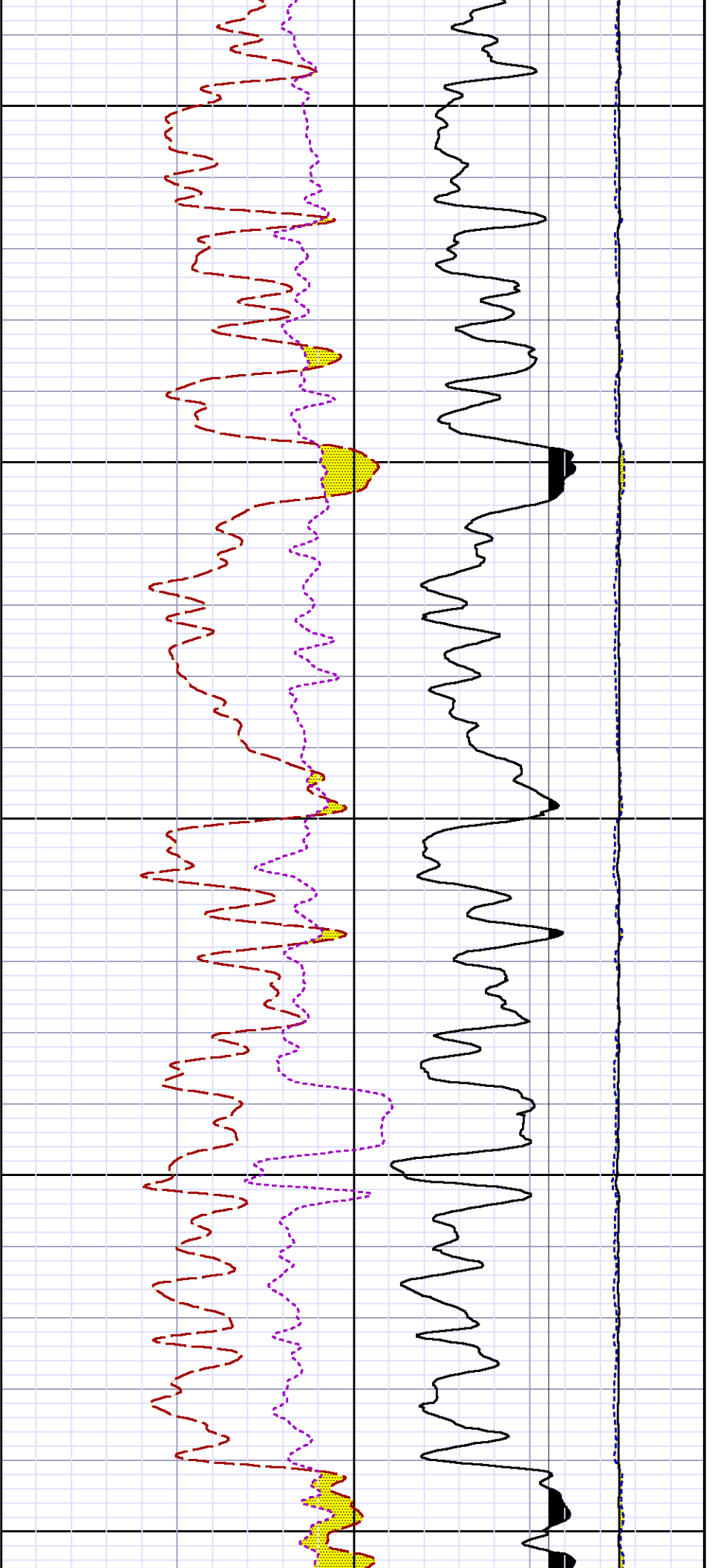


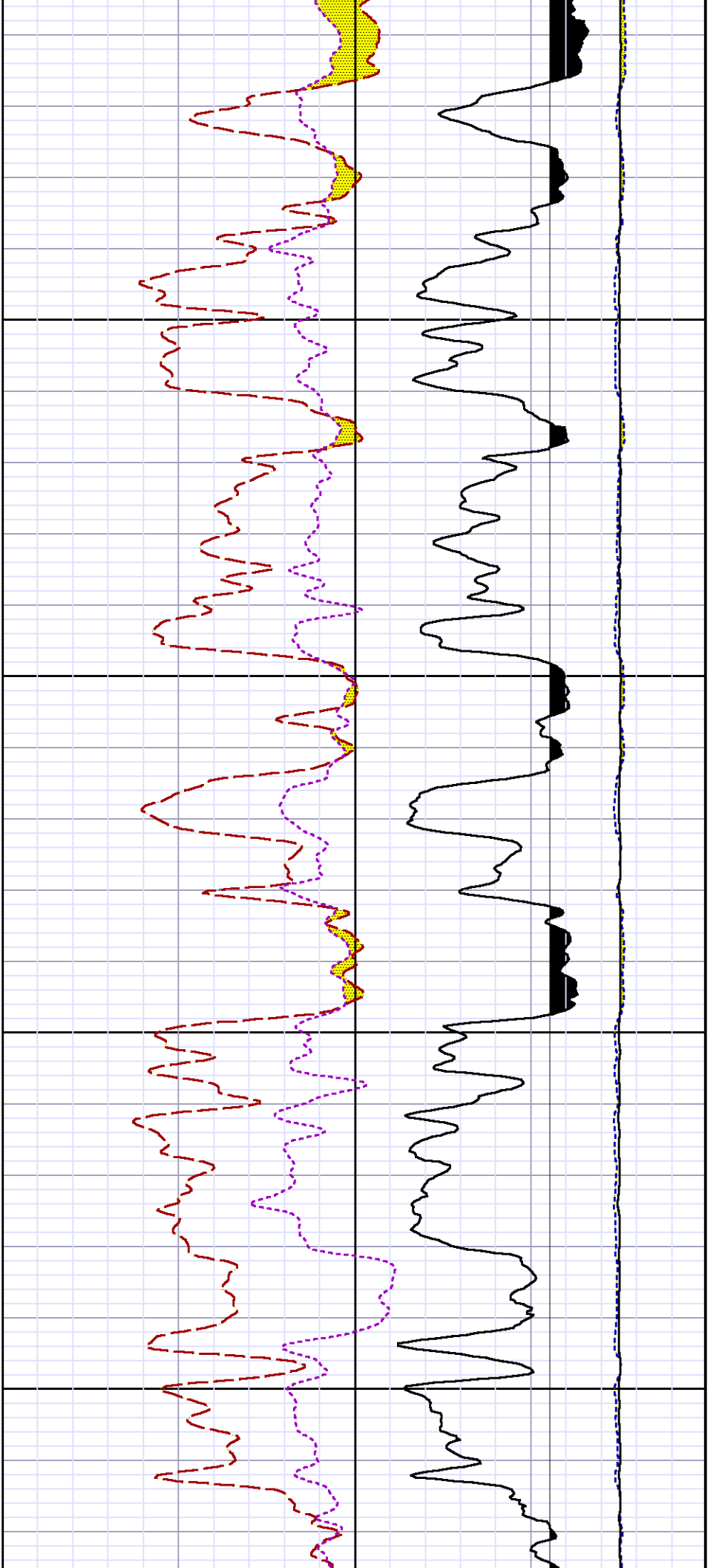






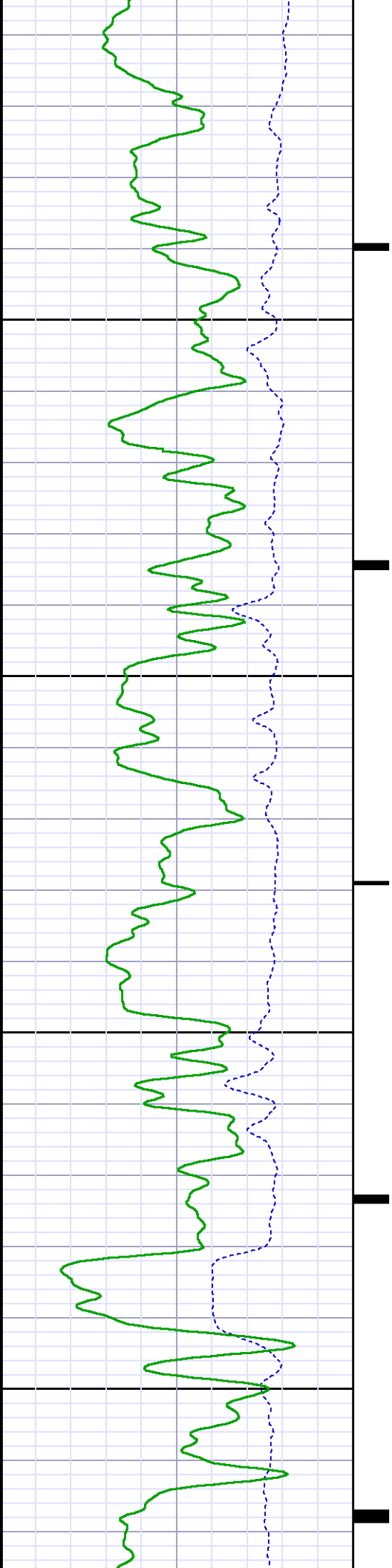


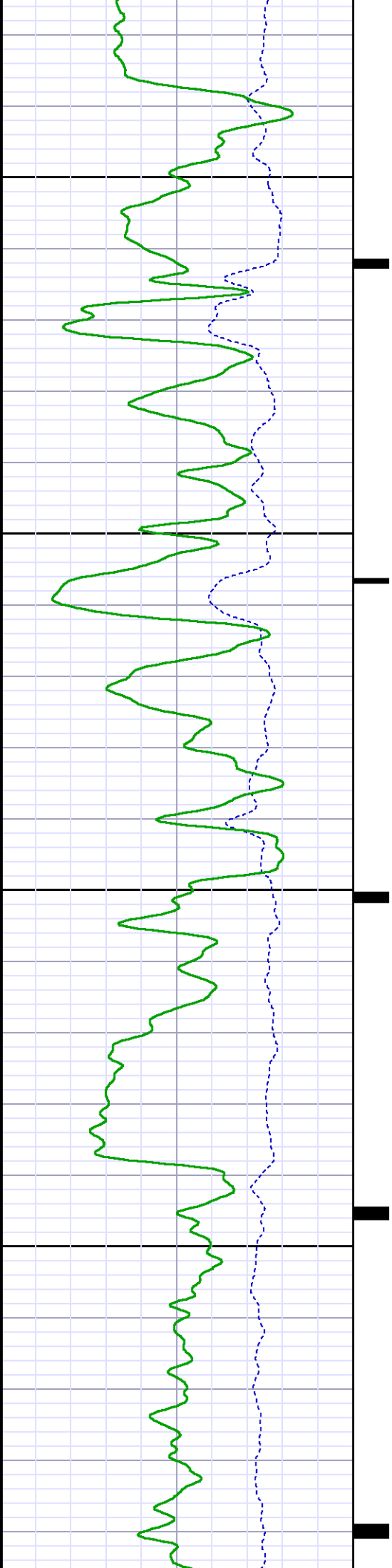




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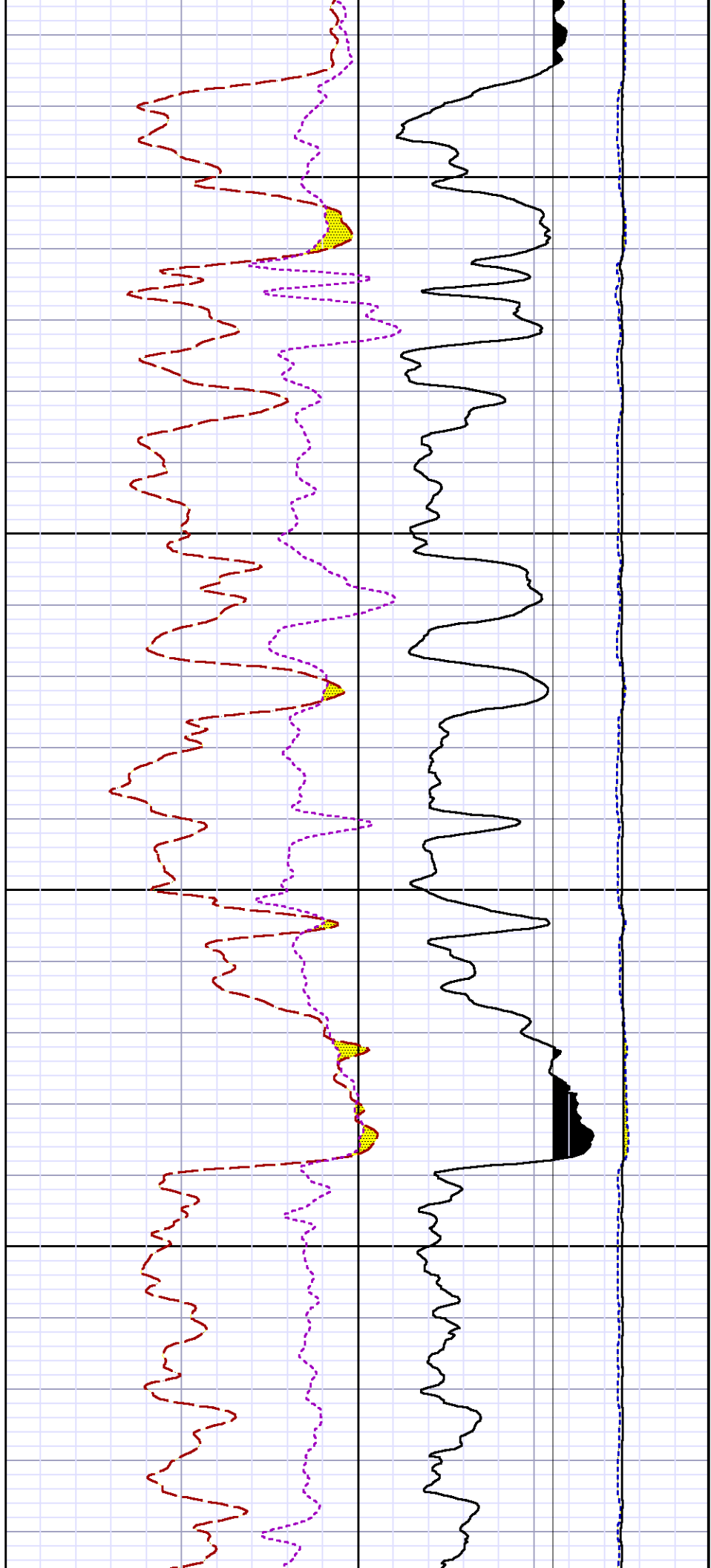
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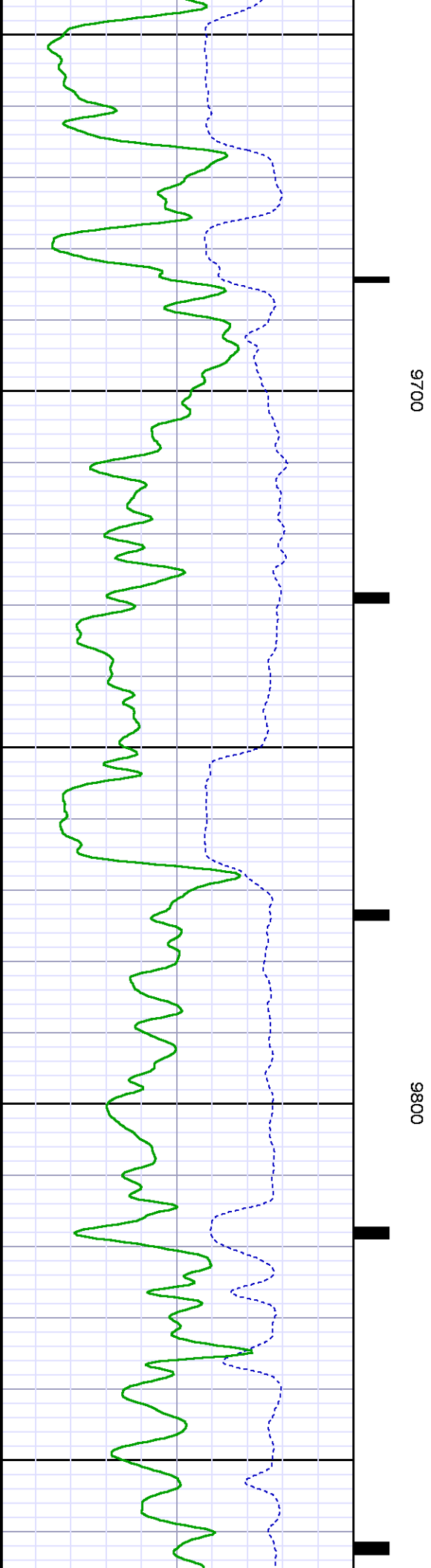
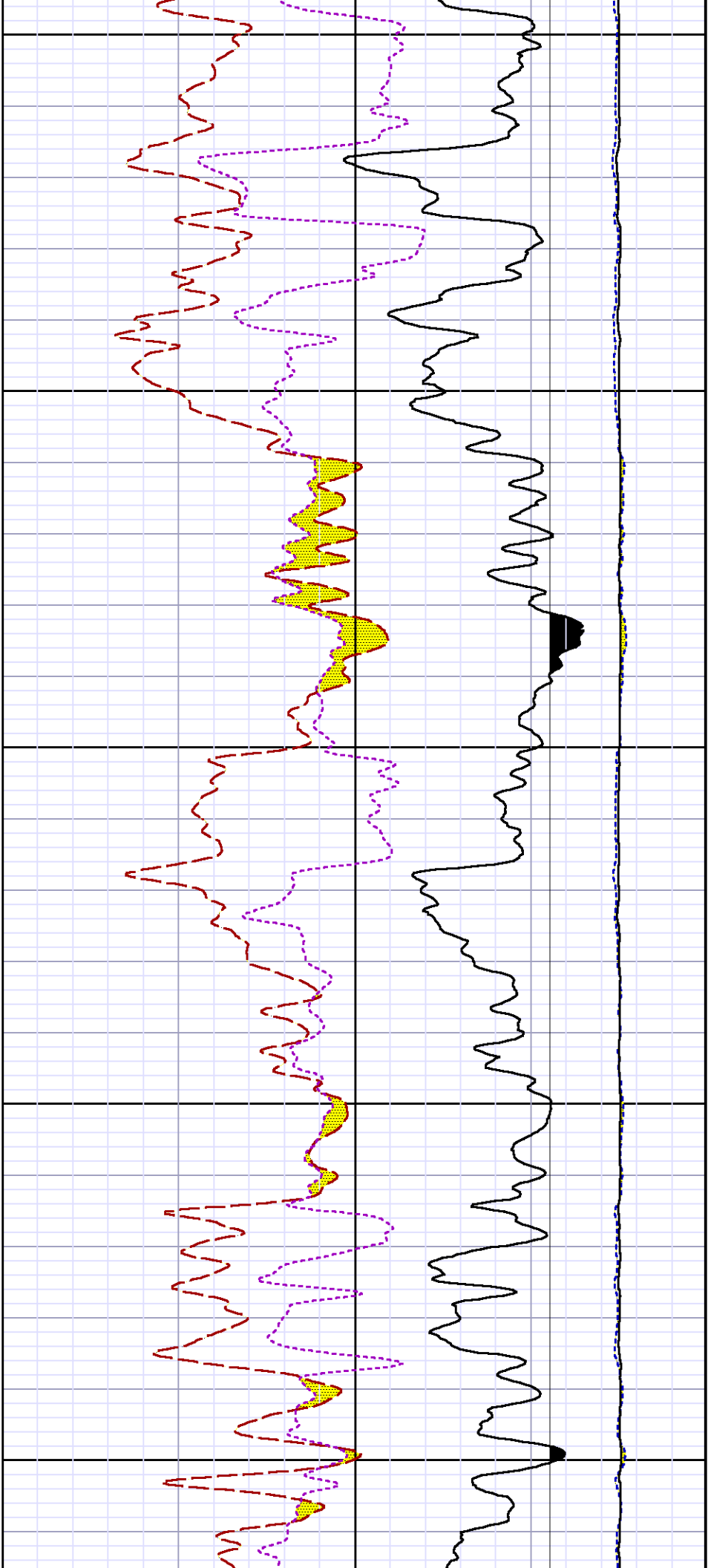


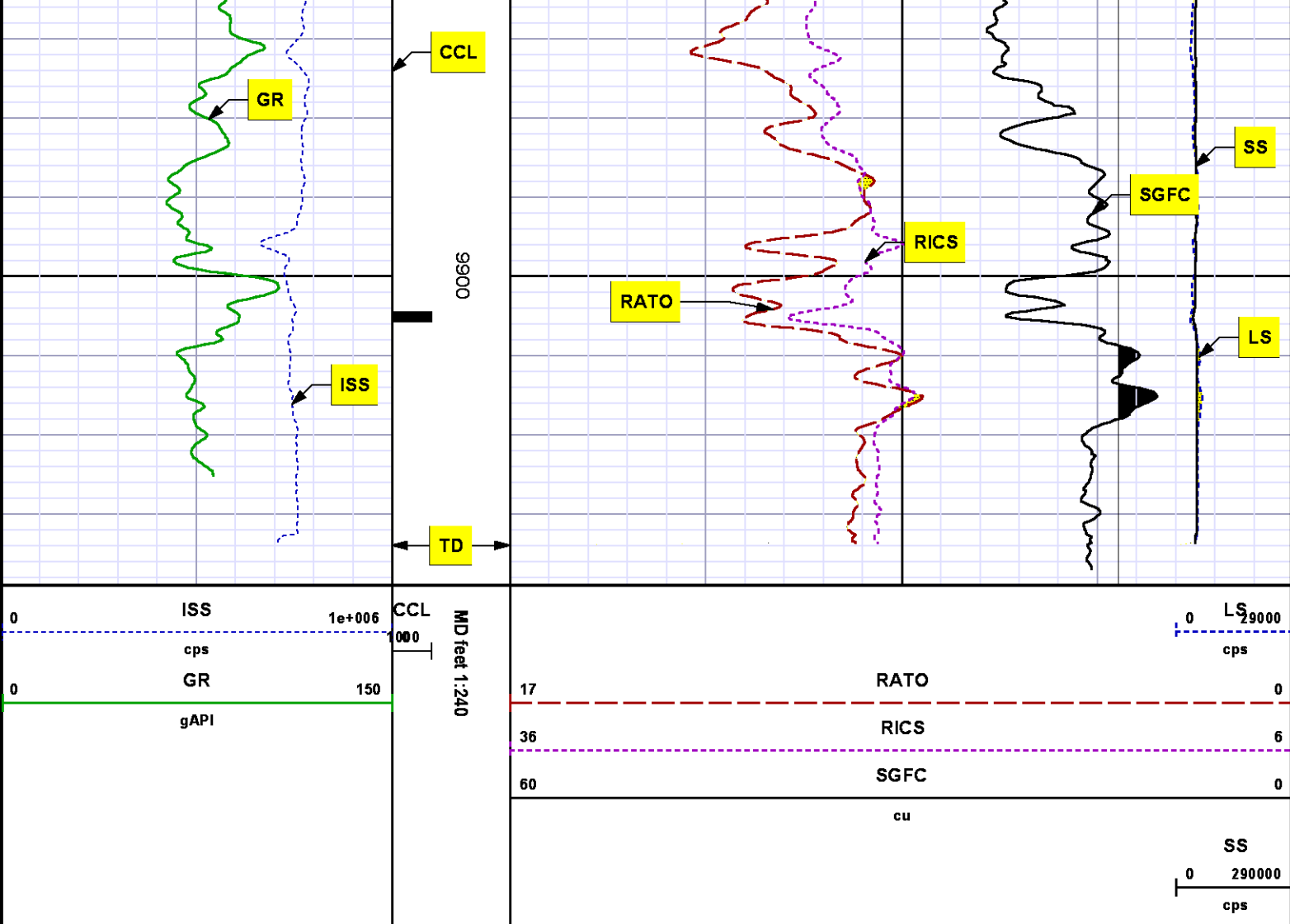


9500

9600







*REPEAT SECTION  
PNC 3-D MODE*

### SPL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
PNC Porosity	Borehole	Cased		9048.271	9369.771
PNC Porosity	Borehole Size	8.750	inch	9048.271	9369.771
PNC Porosity	Casing Size	4.500	inch	9048.271	9369.771
PNC Porosity	Gas Filled	Non Gas Filled		9048.271	9369.771
PNC Porosity	Matrix	Sandstone		9048.271	9369.771

## DEPTH OFFSETS

(for Acquired Curves)

SERIES	DEPTH OFFSET	ACQUIRED CURVES
8248ED	-15.320	FLTM
8248ED	-13.320	CCL CHV
8262XY	-10.189	GR4
8281XA	-0.662	HVC3Q0 SEQ3 AMA3 AML3 BKX CXS CPT3Q0 CPT3Q2 CPT3Q3 CPT3Q4 ET3 IXS MCS3 MCS3Q0 QCAL3 RGN3 RICX SDA3 SDL3 SGA3 SGL3 STA3 XS ASPEC3 AMB3 AMF3 CHF3 IXSC IXSN RATO23 RICXC RIN13C RIN23 RIN23C SD3D SG3D SGB3 SGF3 WDT3 CXSR IXSR XSR RICXR
8281XA	-0.250	HVC2Q0 SEQ2 AMA2 AMB2 AMF2 AML2 BKL CHF2 CLS CPT2Q0 CPT2Q2 CPT2Q3 CPT2Q4 ET2 ILS LS MCS2 MCS2Q0 QCAL2 RGN2 RICL RONE23 RTWO23 SDA2 SDL2 SGA2 SGB2 SGF2 SGK2 SGL2 STA2 ASPEC2 ILSC ILSN WDT2 RICLC CLSR ILSR LSR RICLR
8281XA	0.000	CPRS HVC1Q0 MV SEQ SEQ1 AMA1 AMB1 AME1 AMF1 AML1 BKS CHF1 CSS CORB CORF CPT1Q0 CPT1Q2 CPT1Q2A CPT1Q2B CPT1Q2C CPT1Q3 CPT1Q4 CPT1Q5 ET1 G1 G2 GE1S GE2S ISS MCS1 MCS1Q0 QA1 QCAL1 QM1 RATO RATO13 RBOR RGN1 RICS RIN RONE RPOR RTWO RIN13 RONE13 RTWO13 SALB SC1 SDA1 SDL1 SGA1 SGB1 SGBC SGE1 SGF1 SGFC SGK1 SGL1 SS SS2 STA1 PD1S PD2S PD3S MD1S MD2S MD3S DG1S DG2S DG3S PD1M PD2M PD3M MD1M MD2M MD3M DG1M DG2M DG3M MVS MA MVM FILV IAM TA PVM PVS IAS SSTAT QPD1 QPD2 QPD3 QMD1 QMD2 QMD3 QDG1 QDG2 QDG3 QMA QTA QFILV QMV QPV QIA DERR DCNT QPK1 QSA1 PKS1 ASPEC1 H0C FE2XC ISSC RINC ISSN RDEN WDT1 RICSC CSSR G1R G2R ISSR SSR SS2R RATOR RATO13R RBORR RICSR RINR RIN13R RONE RPORR RTWOR
SYSTEM	0.000	TEN TTEN

Company : WPX ENERGY

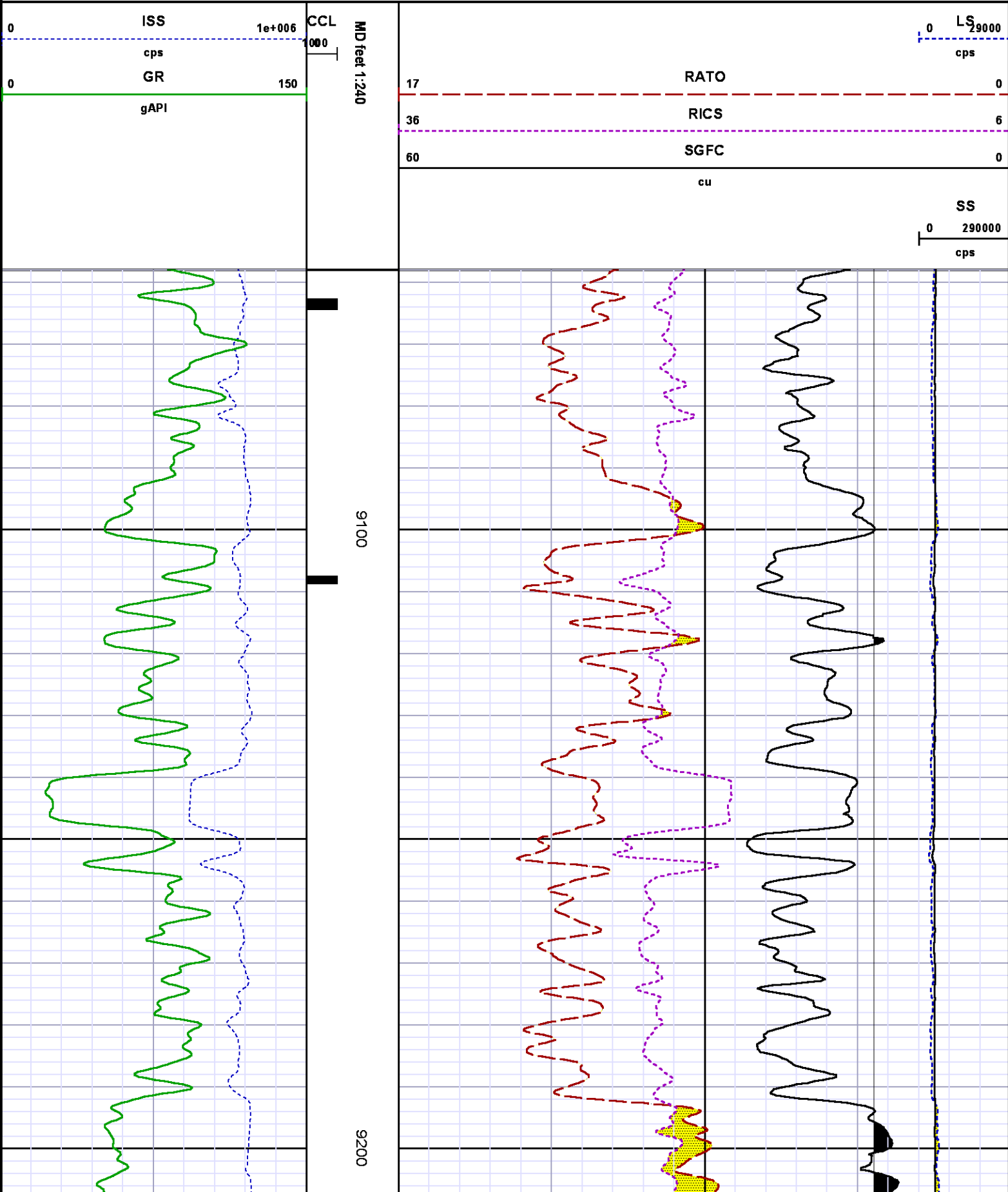
Well : FEDERAL RU 322-5

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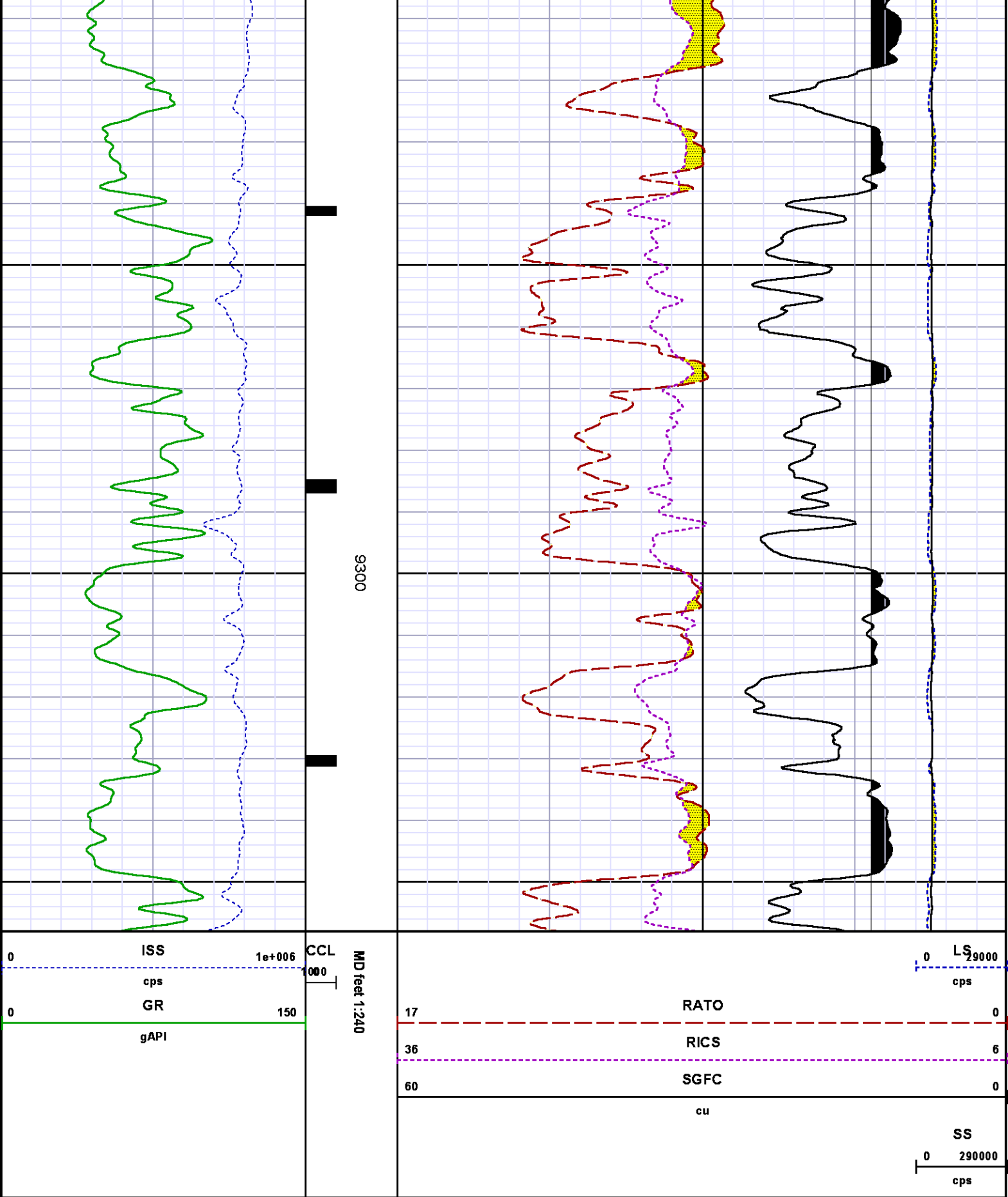
Mode : PlotMgr 5.4.504

Interval : 9058.00 - 9358.00 feet UP

Created : 10/9/2013 10:43:29 AM







## CALIBRATION SUMMARY

# GAMMA RAY (GR4)

Calibration File: C:\case\calver\GR\470S2.cal

## CALIBRATION SUMMARY

DATE/TIME PERFORMED:	Sat Sep 21 10:55:50 2013	TOOL SERIES:	8262XY	ASSET:	470	SEQ:	S2
Calibrator #	Background	Calibrator On	Multiplicative	Background	Calibrator On	Differential	
	[cps]	[cps]		[api]	[api]	[api]	
S2K WA612	70.67	409.62	0.531	37.53	217.53	180.00	

Verification File: C:\case\calver\GR\470S2.VP

## PRIMARY VERIFICATION

DATE/TIME PERFORMED:	Sat Sep 21 10:58:14 2013	TOOL SERIES:	8262XY	ASSET:	470	SEQ:	S2
Calibrator #	Background	Calibrator On	Multiplicative	Background	Calibrator On	Differential	
	[cps]	[cps]		[api]	[api]	[api]	
S2K WA612	69.47	406.69	0.531	36.89	215.97	179.08	

# PNC

Calibration File: C:\case\calver\PNC\383O3.cal

## PNC 3D CALIBRATION SUMMARY

DATE/TIME PERFORMED:	Thu Oct 03 15:47:48 2013	TOOL SERIES:	8281XA	ASSET:	383	SEQ:	O3
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### Calibrator #

GJ SHOP

### Source #

8281AA 10160601

	ISS	Mtr Vits (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	817966	128.00	2252.00	2245.00	2207.00	112.69	7.00	0.9933
Interpolated	1300000	151.77	2234.41	2233.65	2201.23			

	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	817966	6828.35	1107.86	146.95	25.75	0.14	24.44	0.27
					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	817966	177995.23	27757.60	93075.94	33143.24	8722.33	56296.65	13981.56
Fit Quality %		0.43	0.39	0.72	0.70	0.42	0.62	0.44

	ISS	RBOR		RIN ISS/ILS		RIN13 ISS/IXS		RICS ISS/CSS		RATO SS/LS		RTWO SS2/LS		RONE CSS/CLS	
Raw Data	817966	1.43		4.60		29.47		14.53		10.67		3.80		4.03	
		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 %		0.04		0.38		0.36		0.23		0.19		0.19		0.15	
Reduced	1401781	1.43		4.62		29.61		14.61		10.65		3.79		4.02	
		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

## TOOL DIAGRAM

### OTA SHORT CABLE HEAD

#### PCM POWER SUPPLY

Series 8250EA  
 Mnemonic PCM  
 Diameter 1.70"  
 Weight 18.00 lb  
 Length 3.86'  
 Temp Rating 350.00 °F

#### TELEMETRY / CCL

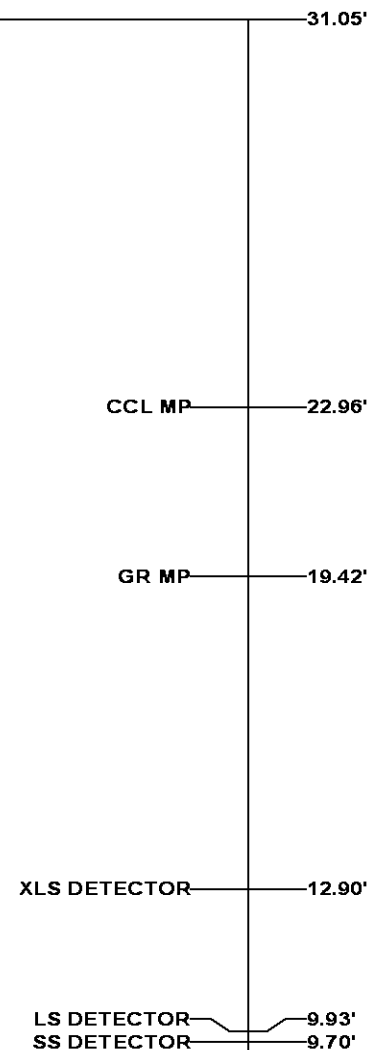
Series 8248EA  
 Mnemonic PCM  
 Diameter 1.70"  
 Weight 20.00 lb  
 Length 4.46'  
 Measure Point 1.00' CCL MP  
 Temp Rating 350.00 °F  
 Press Rating 15000.00 PSI

#### GAMMA RAY

Series 8262XA  
 Mnemonic GR  
 Diameter 1.70"  
 Weight 15.00 lb  
 Length 3.17'

### RESERVOIR PERFORMANCE MONITOR

Series 8281XA  
 Mnemonic RPM  
 Diameter 1.70"  
 Weight 75.00 lb  
 Length 18.58'  
 Measure Point 9.49' SS DETECTOR  
 Measure Point 9.72' LS DETECTOR  
 Measure Point 12.69' XLS DETECTOR  
 Temp Rating 350.00 °F  
 Press Rating 20000.00 PSI



0.00'

**Total Length: 31.05'**  
**Total Weight: Not Available**  
**Max Diameter: 0' 1.70"**



Baker Atlas

CASE

Company	WPX ENERGY		
Well	FEDERAL RU 322-5		
Field	RULISON		
County	COLORADO	State	COLORADO

File No:
CH077432
API No:
0504521767

Location

SHL: 257' FNL x 2614' FWL  
BHL: 1213' FNL x 1941' FWL (NENW)

Elevations

KB 7628 ft  
DF  
GL 7602 ft

5 7S 93W  
RU 23-5 PAD  
NABORS 576

SEC 5 TWP 7S RGE 93W