



# RESERVOIR PERFORMANCE MONITOR

Baker Atlas

File No: **Company** **WPX ENERGY**

CH087682 **Well** **FEDERAL RGU 523-24-198**

API No: **Field** **SULPHUR CREEK**

05103120790000 **County** **RIO BLANCO** **State** **COLORADO**

24 1S 98W **Location** **SHL: 2144' FSL & 1703' FEL**

RGU 33-24-198 PAD **BHL: 1438' FSL & 1905' FWL (NESW)**

CYCLONE 29 **SEC** **24** **TWP** **1S** **RGE** **98W**

**Other Services**  
BOND LOG

Permanent Datum **GL** **Elevation** **6596 ft**

Log Measured From **KB** **21 ft** **Above P. D.**

Drill Measured From **KELLY BUSHING** **Elevations** **KB** **6617 ft** **DF** **GL** **6596 ft**

Date	07/JUL/14	
Run	ONE	
Service Order	US087682J	
Depth Driller	12927 ft	
Depth Logger	12842 ft	
Bottom Logged Interval	12832 ft	
Top Logged Interval	21 ft	
Time Started	1900	
Time Finished	0330	
Operator Rig Time	8.5 HRS	
Type of Fluid in Hole	WATER	
Fluid Density	NA	
Salinity	NA	
Fluid Level	88 ft	
Logged Cement Top	NA	
Wellhead Pressure	0 psi	
Maximum Hole Deviation	NA	
Nominal Logging Speed	15 fpm	
Maximum Recorded Temperature	280 degF	
Reference Log	BAKER HUGHES BOND LOG	
Reference Log Date	07/JUL/14	
Equipment No.	Location	
Recorded By	FLORYD RENEAU	GRAND UCT
Witnessed By	WAYNE MARGOTTE	

- 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
30 in	21 ft	80 ft
14.73/13.5	80 ft	3928 ft
8.75/7.875	3928 ft	12927 ft

Casing Record				
Size	Weight	Grade	From	To
18 in			21 ft	80 ft
9.625 in			21 ft	3928 ft
4.5 in	11.6 lbm/ft	P-110	21 ft	12927 ft

Remarks
All data on this log is shifted and depth matched using the Gamma Ray curve to the Baker Hughes bond log dated 7/7/2014 at the client's request.
Logged in PNC-3D mode.
The amount of linear shift is -2 feet.
BHT = 280°F

SJ = 7858'-7879'

SPLICE @ 7382'

Equipment Data					
Run	Trip	Tool	Series Number	Serial Number	Position
1	1	TEMP	8255XA	Z176973	FREE
1	1	RPM	8281FA	10307727	FREE
1	1	RPM	8281PA	10169251	FREE
1	1	RPM	8281EA	10169250	FREE
1	1	GR	2812LA	10274385	FREE
1	1	TEL/CCL	8248ED	10460262	FREE
1	1	PCM	8250EA	10586851	FREE

MAIN SECTION  
PNC 3-D MODE

SPL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
PNC Porosity	Borehole	Cased		7279.843	7384.000
PNC Porosity	Borehole Size	8.750	inch	7279.843	7384.000
PNC Porosity	Casing Size	4.500	inch	7279.843	7384.000
PNC Porosity	Gas Filled	Non Gas Filled		7279.843	7384.000
PNC Porosity	Matrix	Sandstone		7279.843	7384.000
TPS Pressure	Temperature Corr. Source	Fixed (72.00)	degF	7279.843	7384.000
PNC Porosity	Borehole	Cased		7384.000	12855.272
PNC Porosity	Borehole Size	8.750	inch	7384.000	12855.272
PNC Porosity	Casing Size	4.500	inch	7384.000	12855.272
PNC Porosity	Gas Filled	Non Gas Filled		7384.000	12855.272
PNC Porosity	Matrix	Sandstone		7384.000	12855.272
TPS Pressure	Temperature Corr. Source	Fixed (72.00)	degF	7384.000	12855.272

DEPTH OFFSETS  
(for Acquired Curves)

SERIES	DEPTH OFFSET	ACQUIRED CURVES					
8248ED	-26.519	FLTM					
8248ED	-24.519	CCL	CHV				
2812LA	-21.969	GR					
8281XA	-12.702	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	WDTH3	CXSR	IXSR	XSR
		RICXR					
8281XA	-12.291	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	WDTH2	RICLC
		CLSR	ILSR	LSR	RICLR		
8281XA	-12.041	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	WDTH1	RICSC	CSSR	G1R
		G2R	ISSR	SSR	SS2R	RATOR	RATO13R
		RBORR	RICSR	RINR	RIN13R	RONER	RPORR
		RTWOR					
8255XA	-0.792	PTFS	PTMS				
8255XA	-0.775	SPF1	SPFQ	TSCP	TSDP		
8255XA	0.000	DTEM	TEMP	TNF			
SYSTEM	0.000	TEN	TTEN				

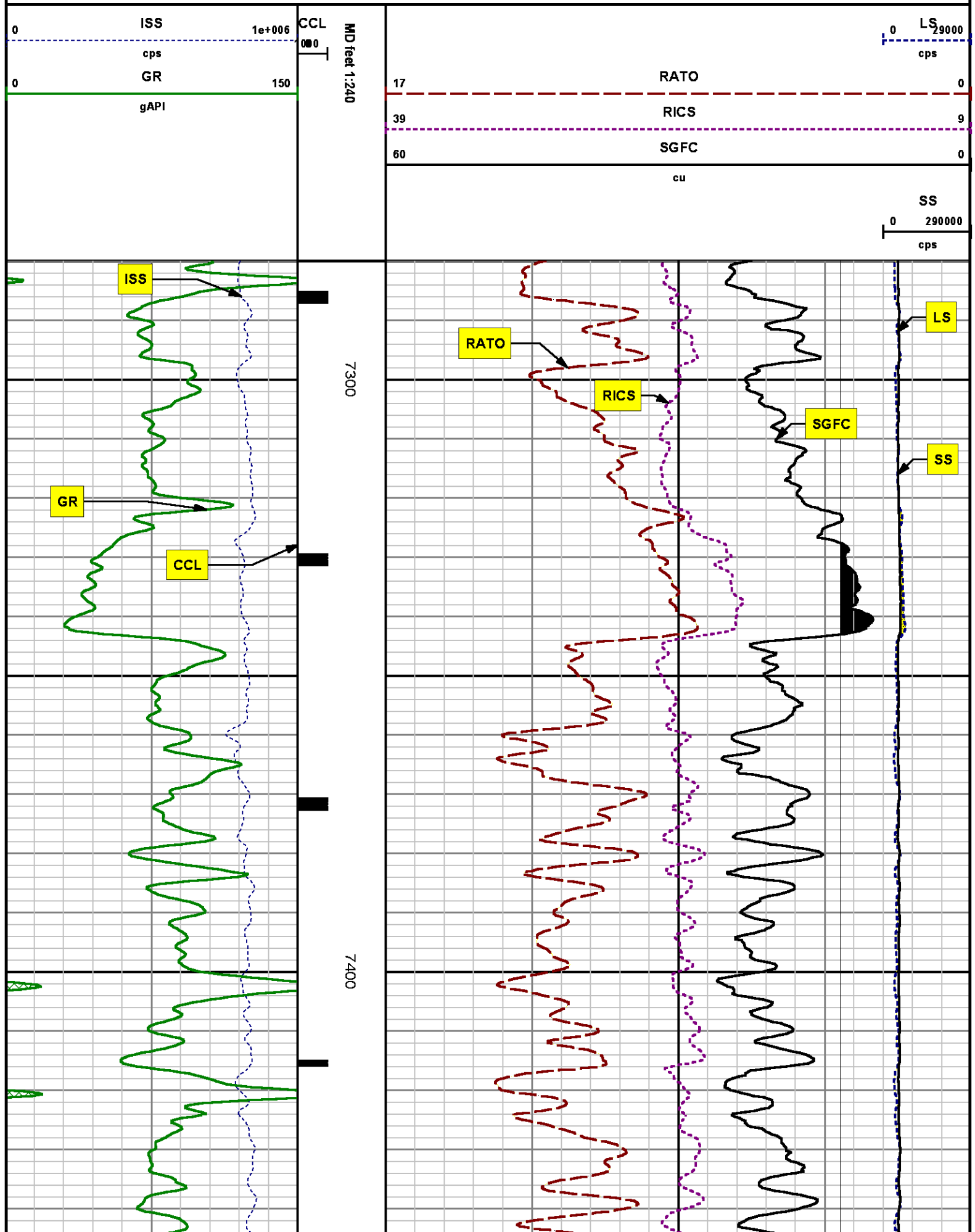
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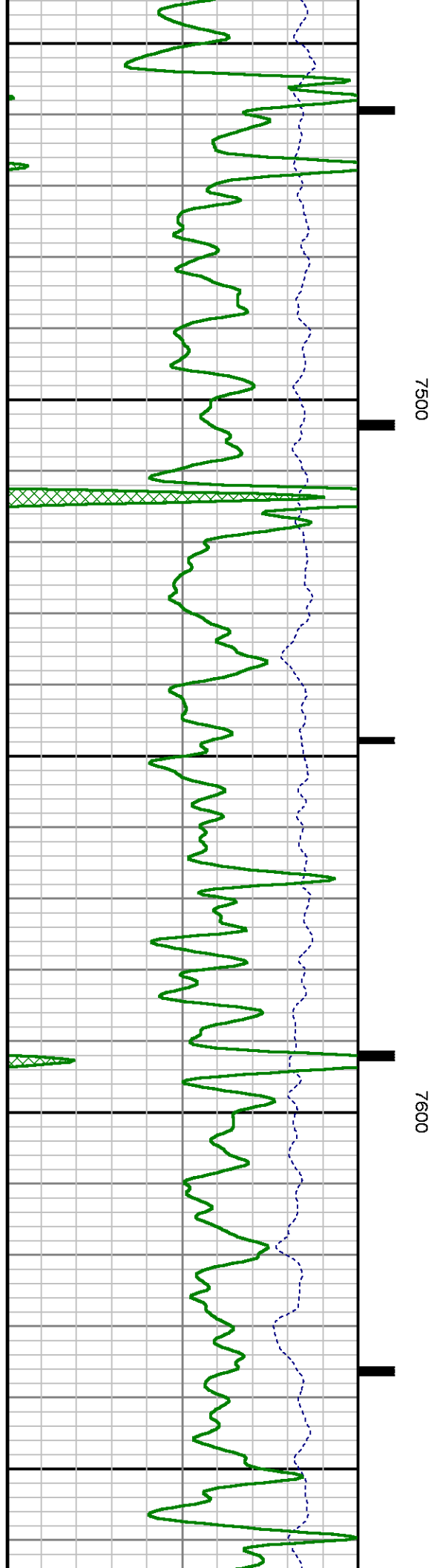
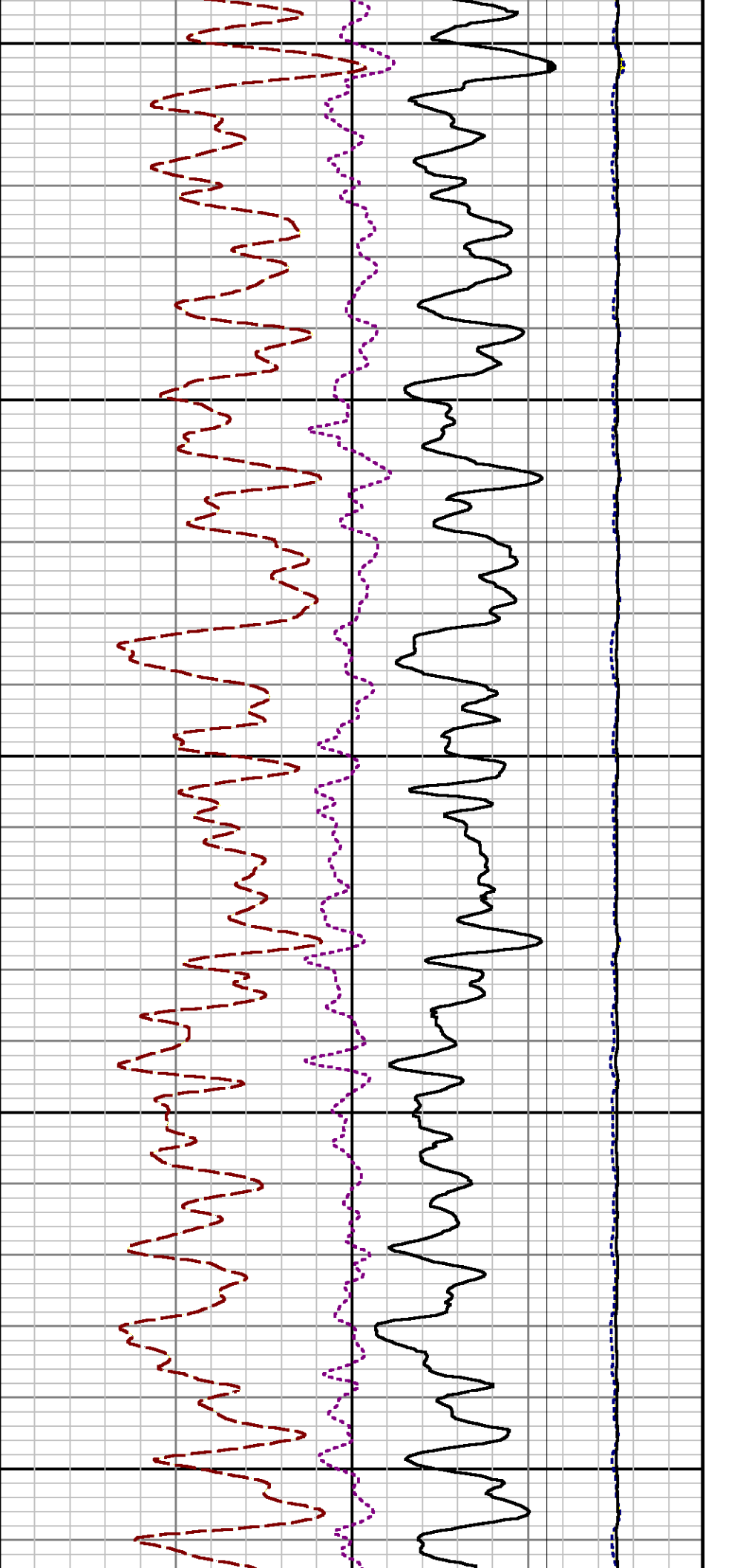
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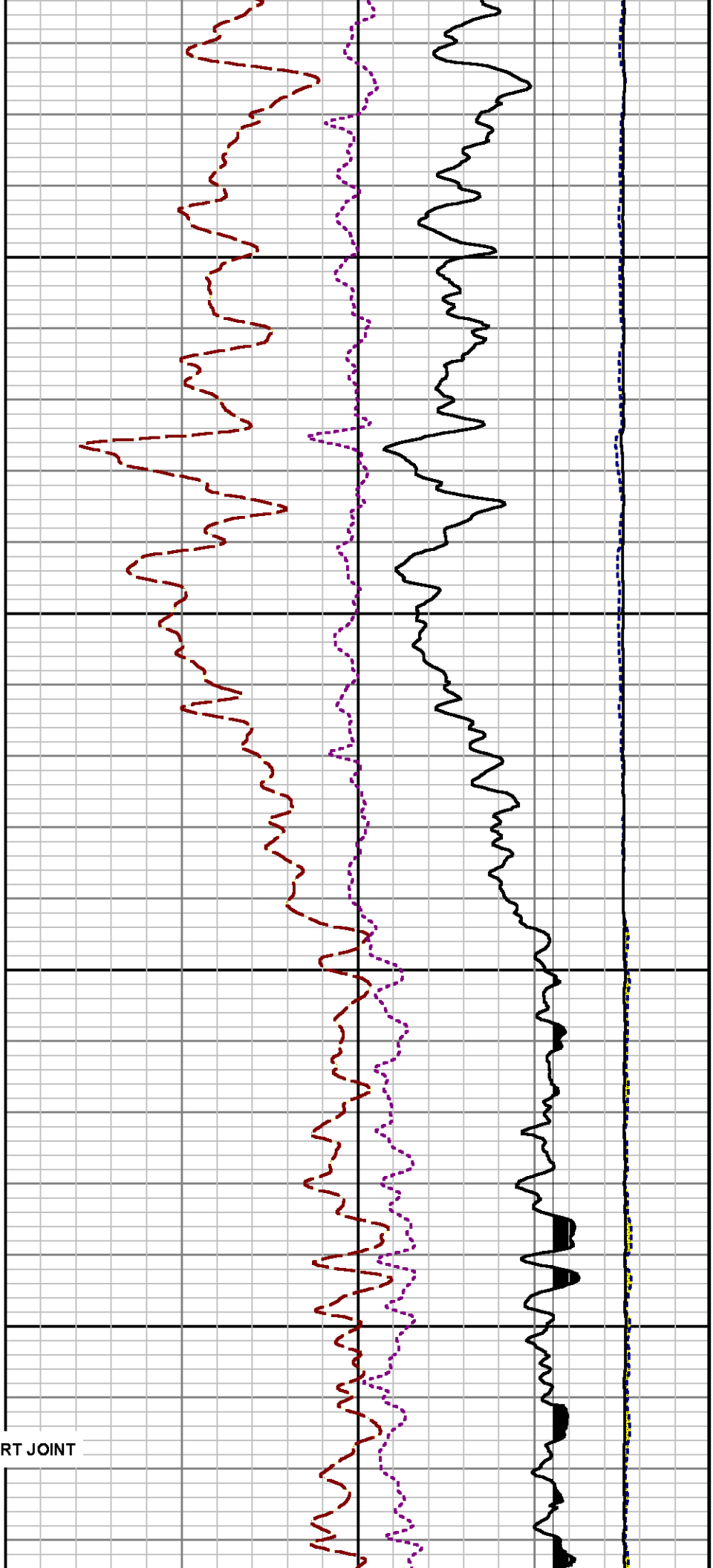
Company : WPX ENEREGY

Well : FEDERAL RGU 523-24-198

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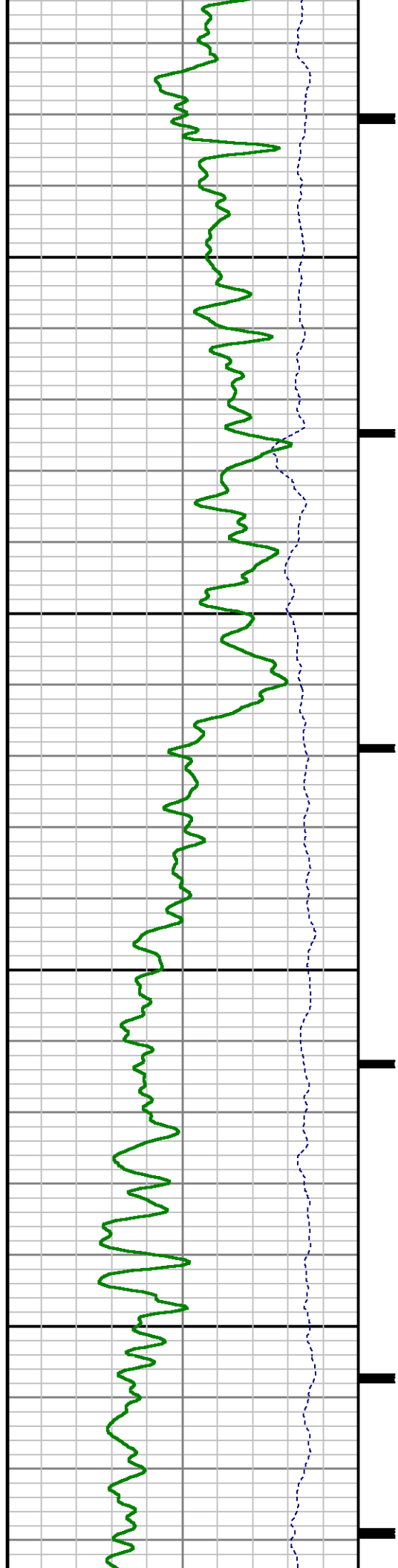


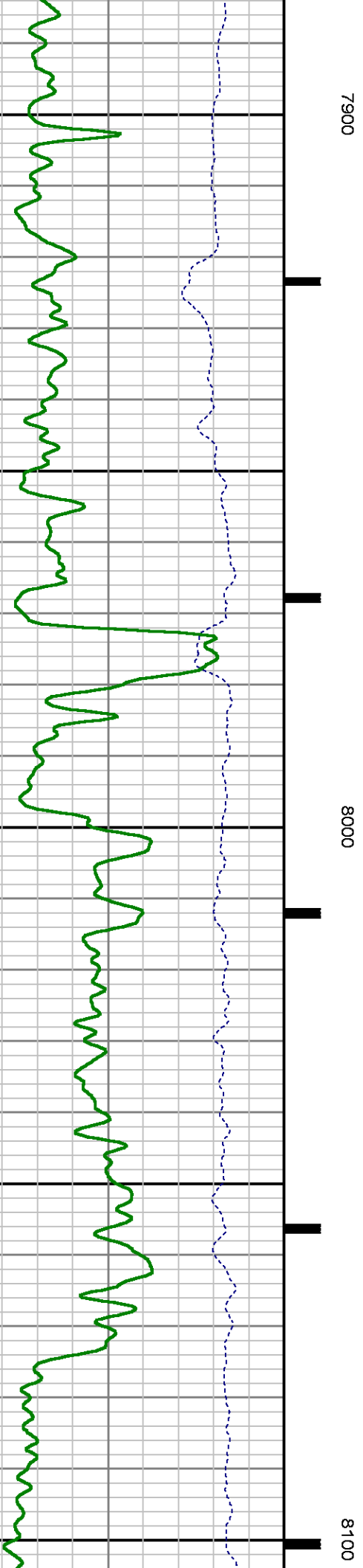
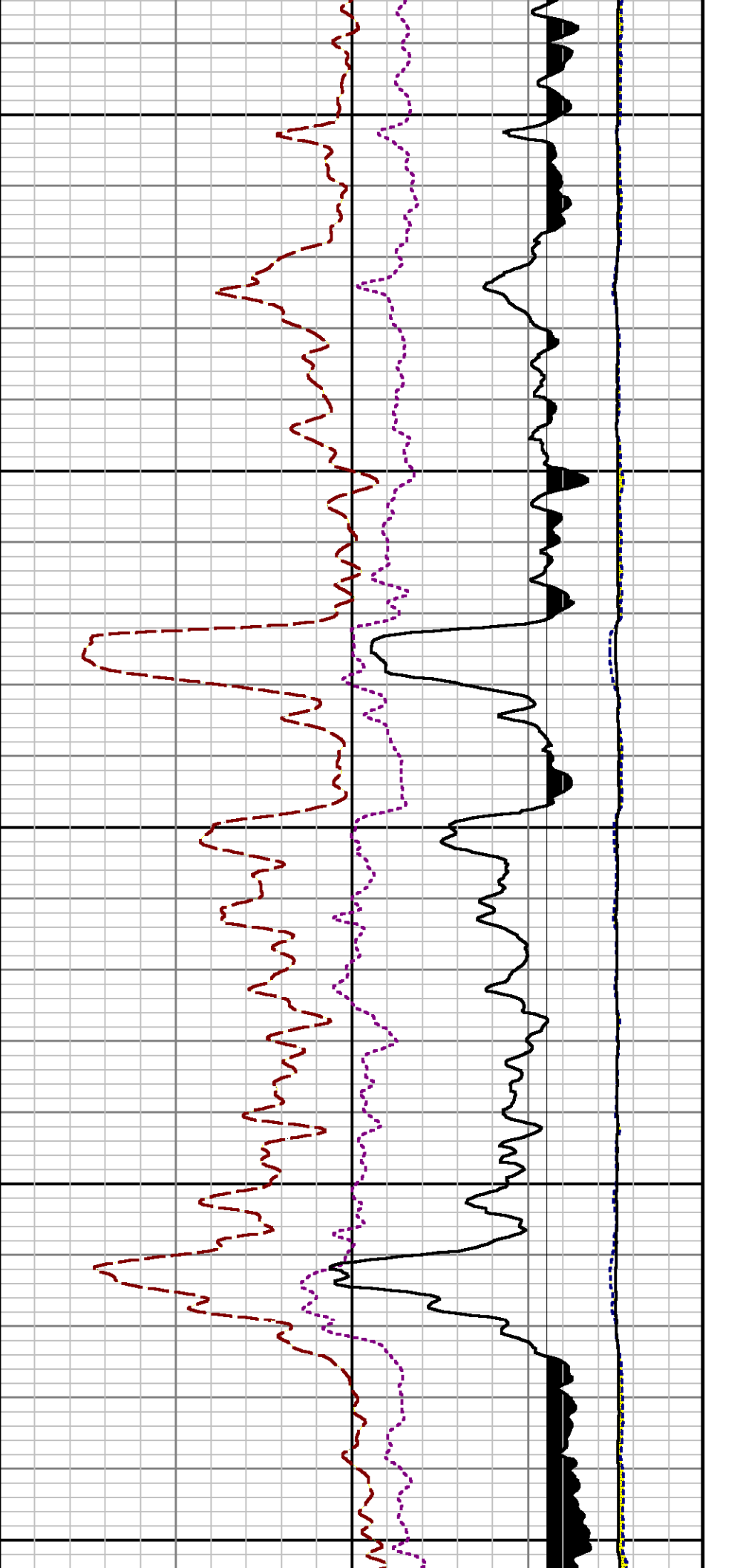


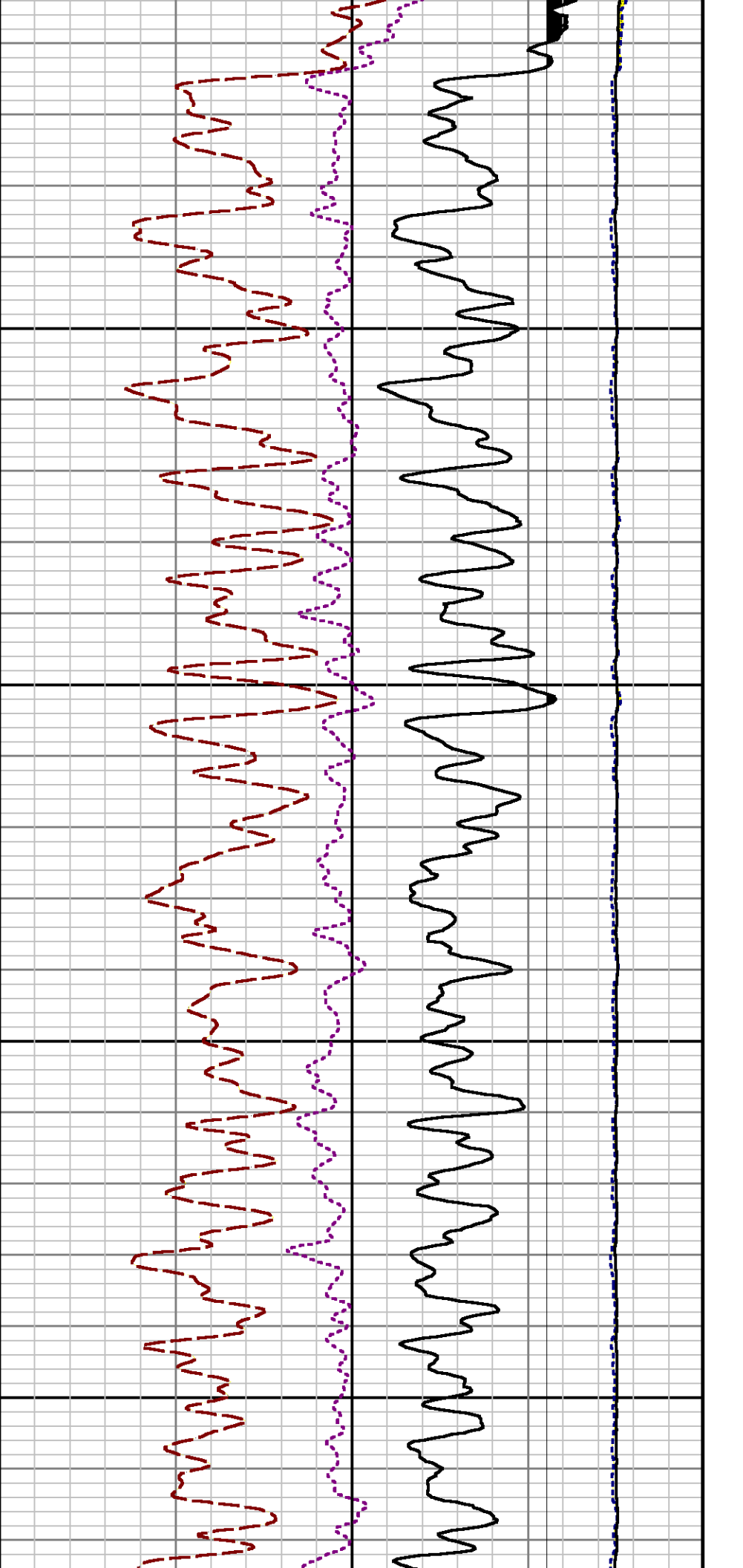
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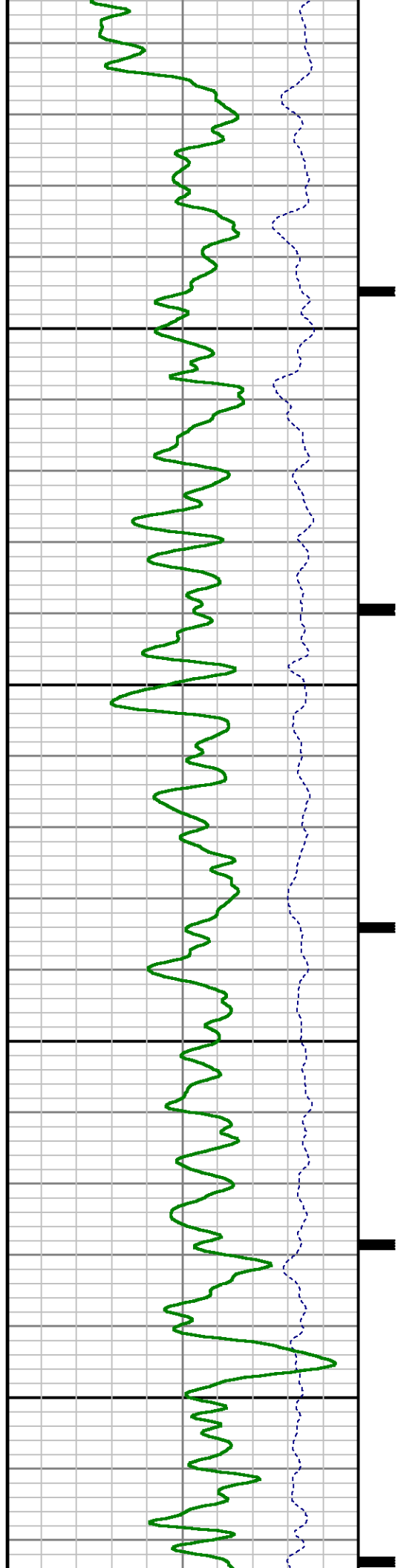




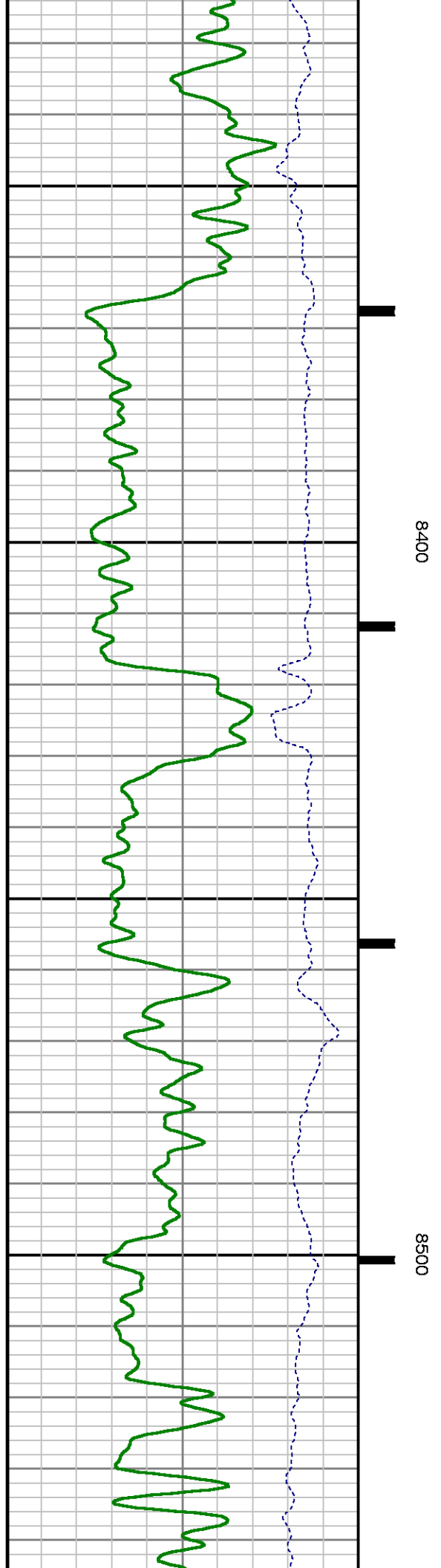
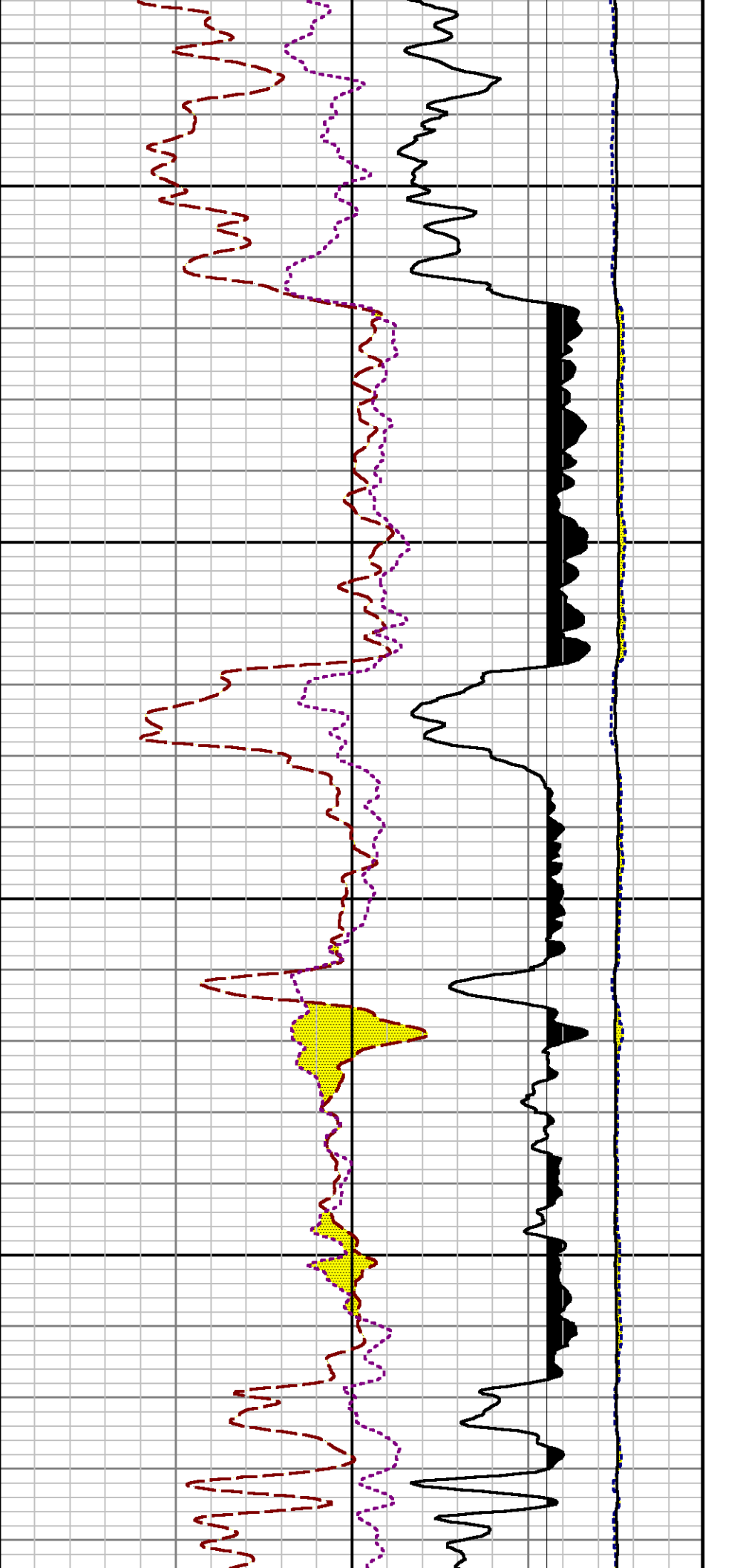


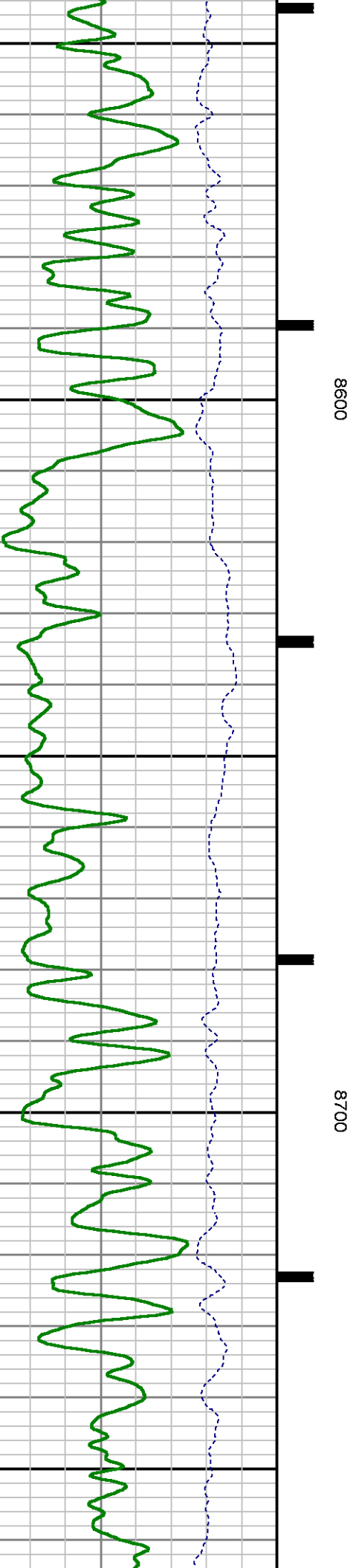
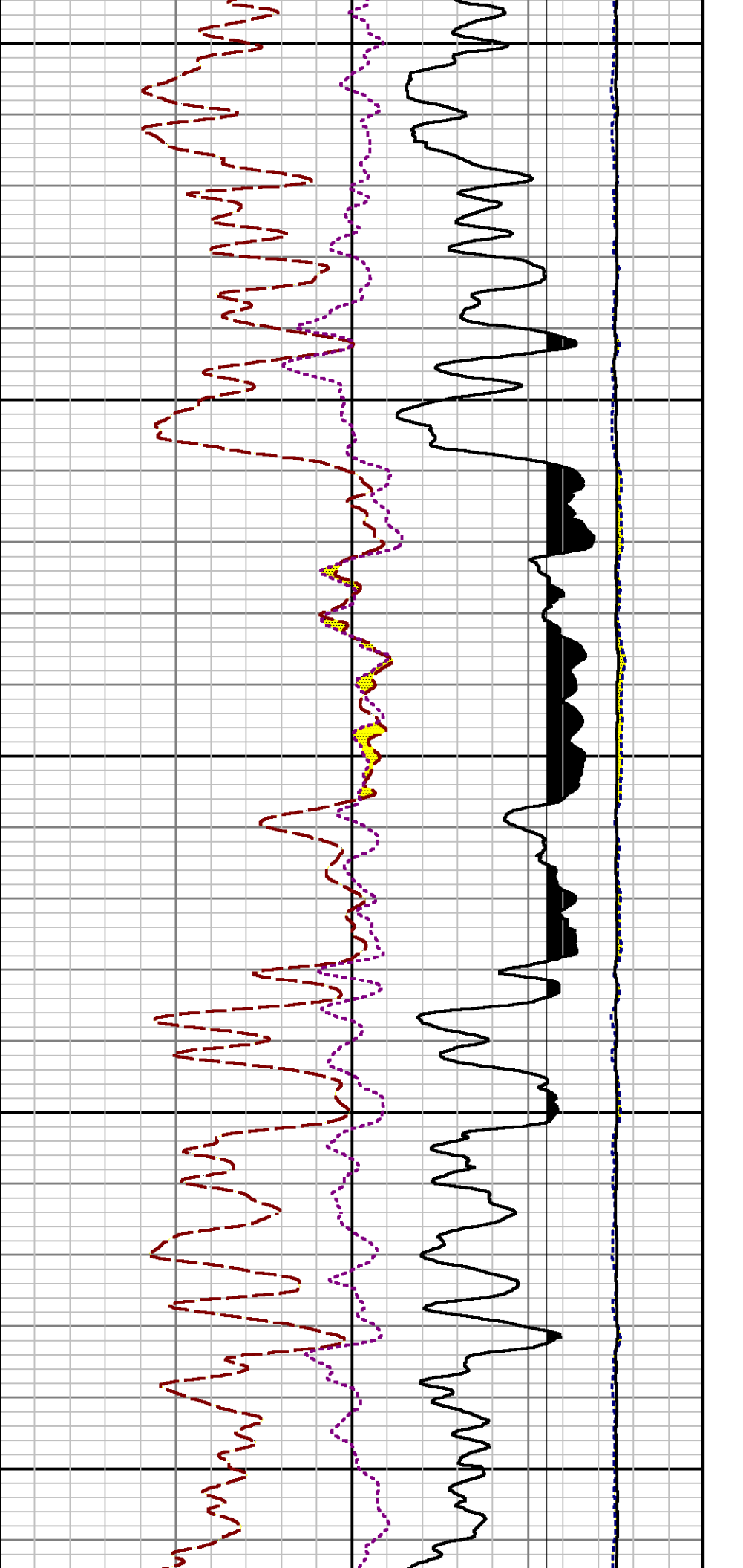
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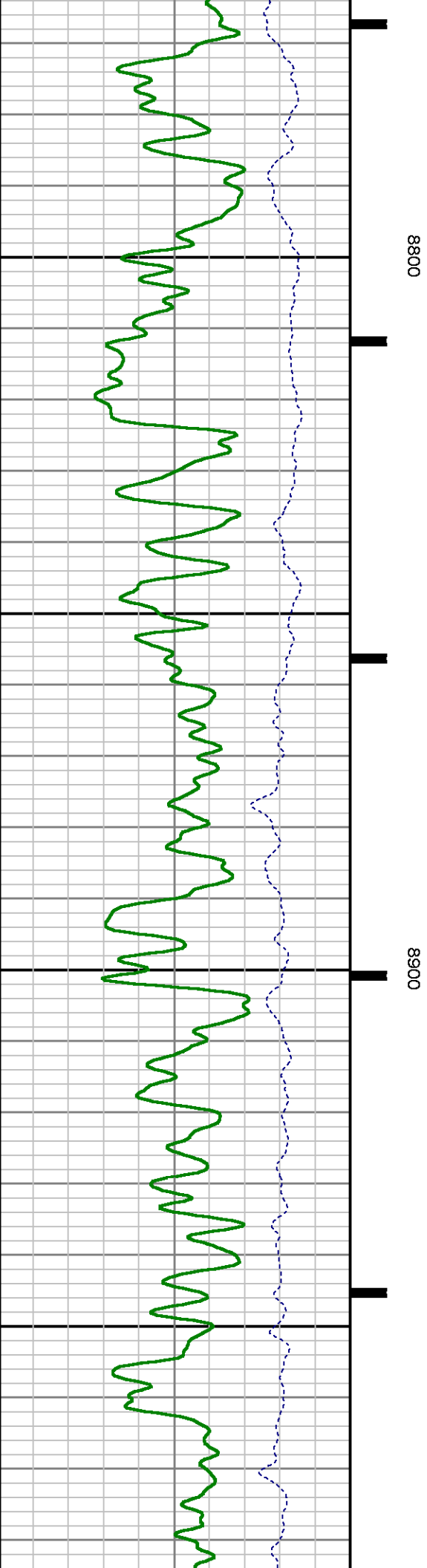
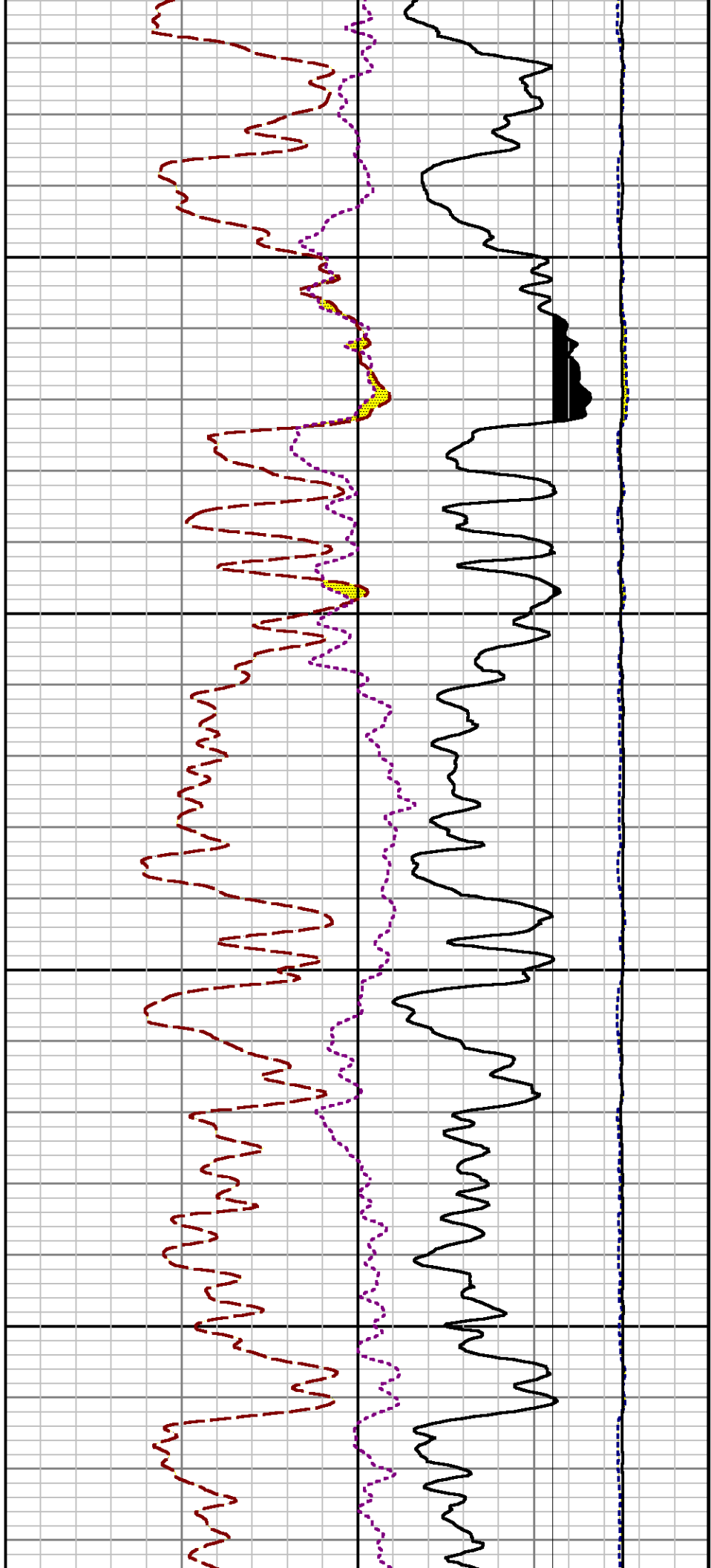
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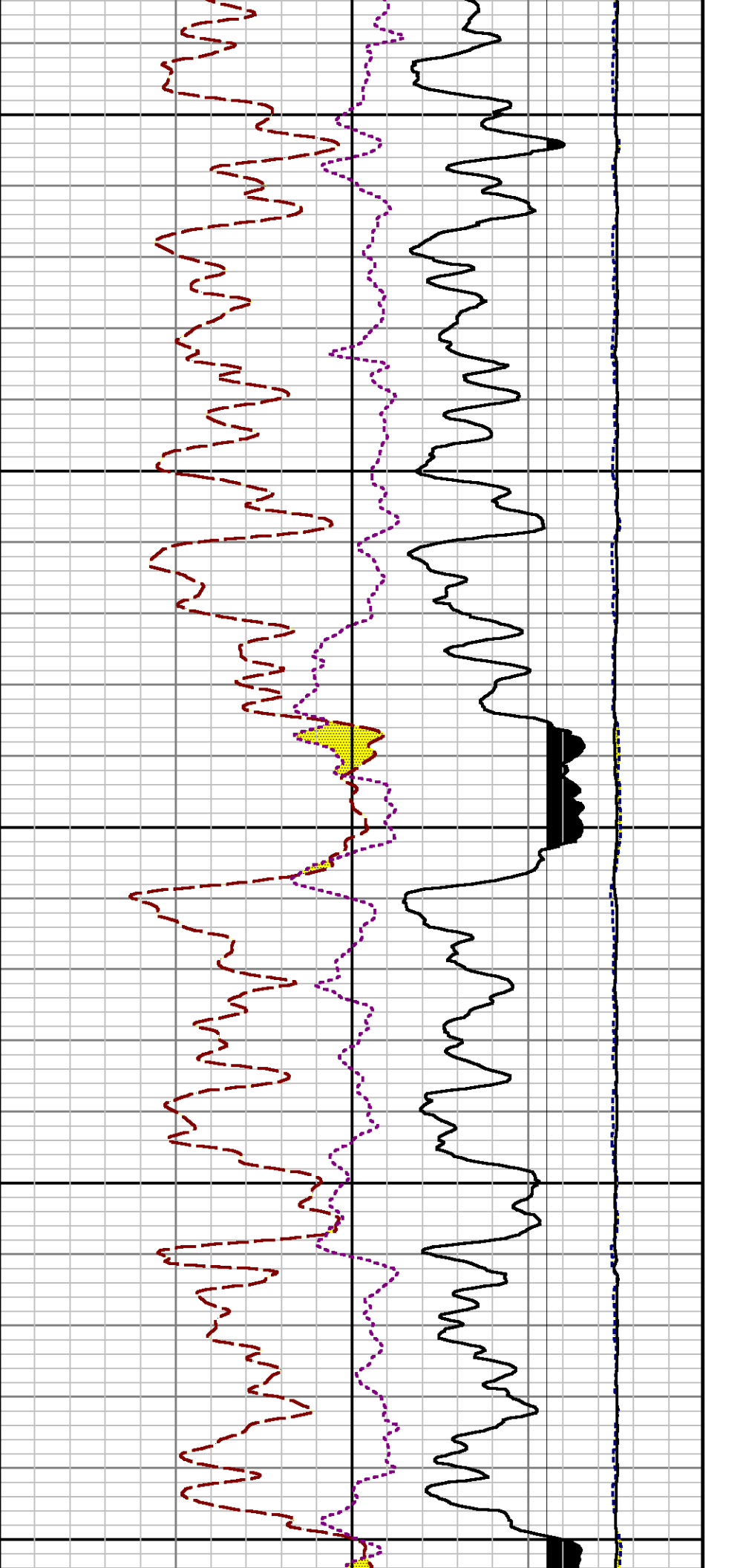








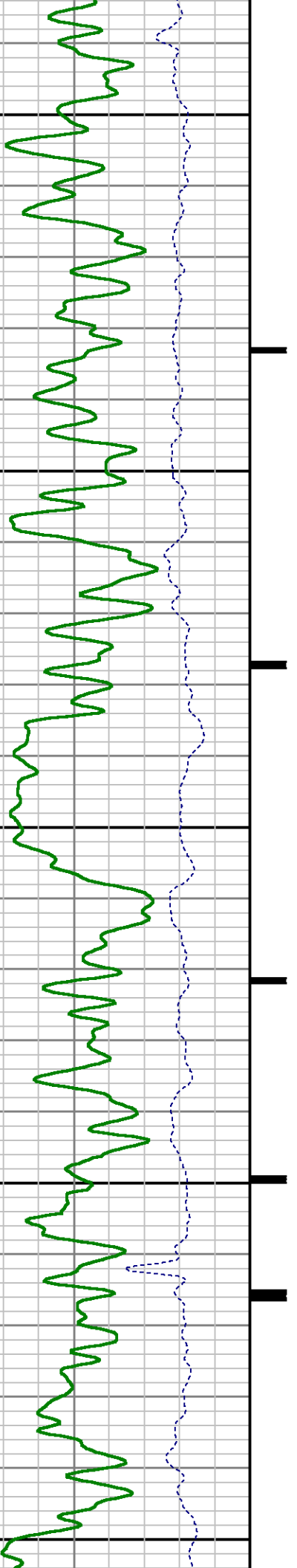


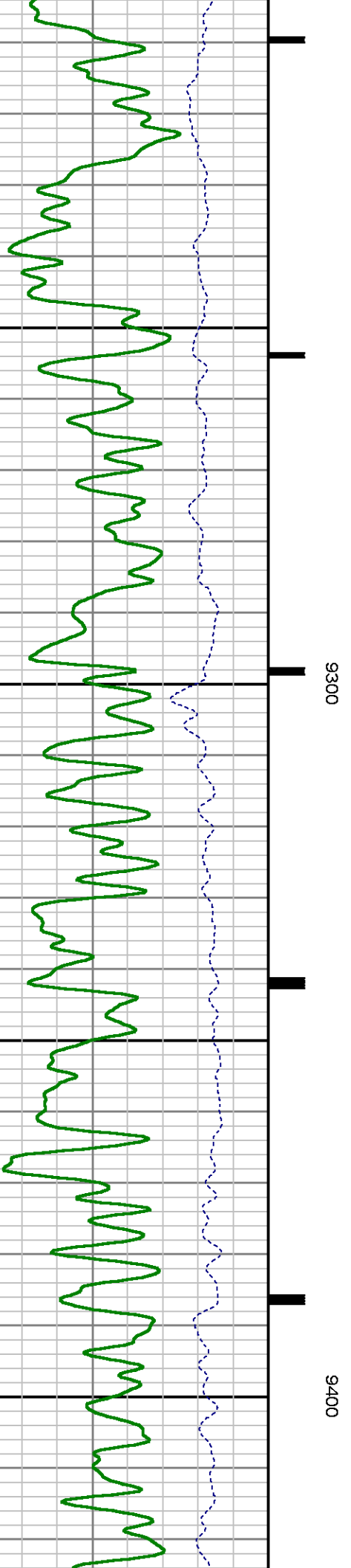
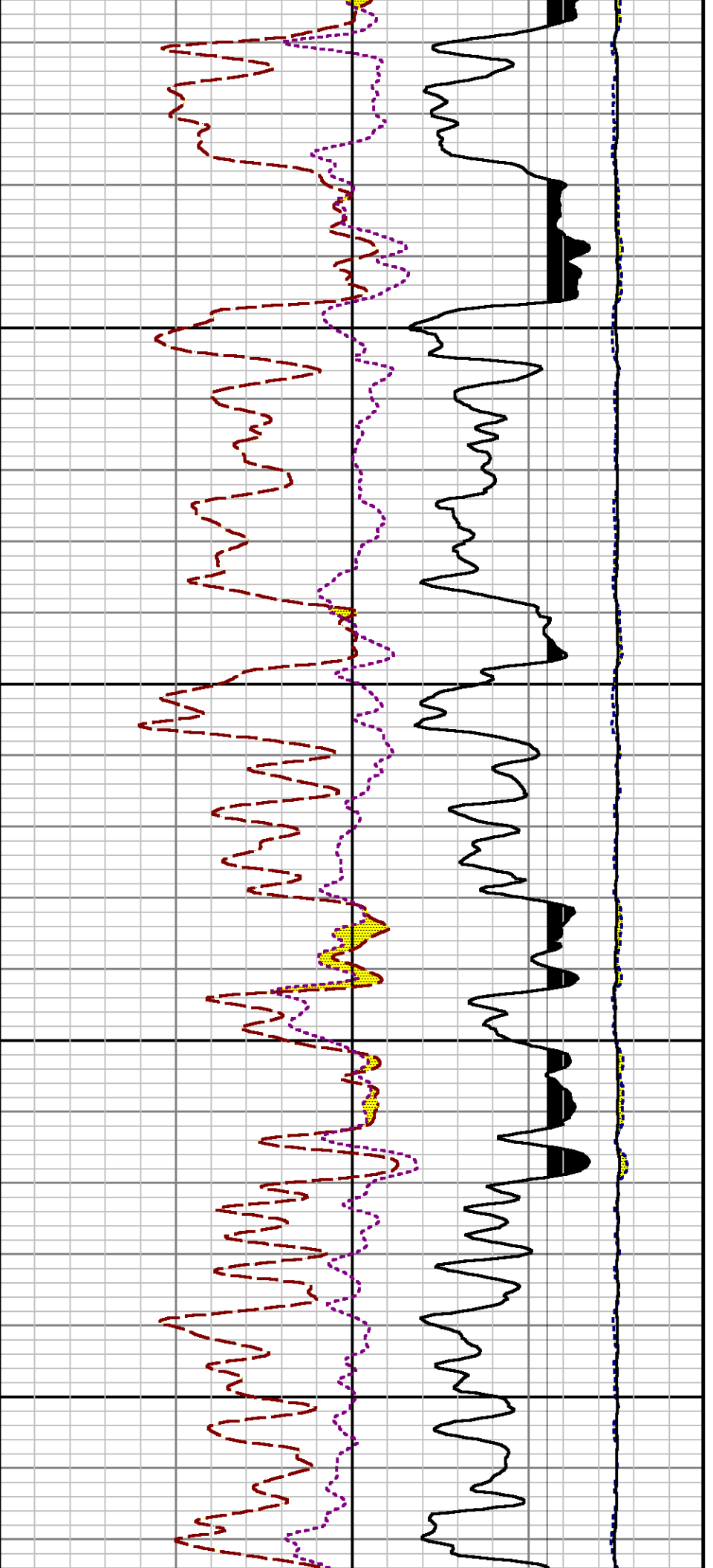


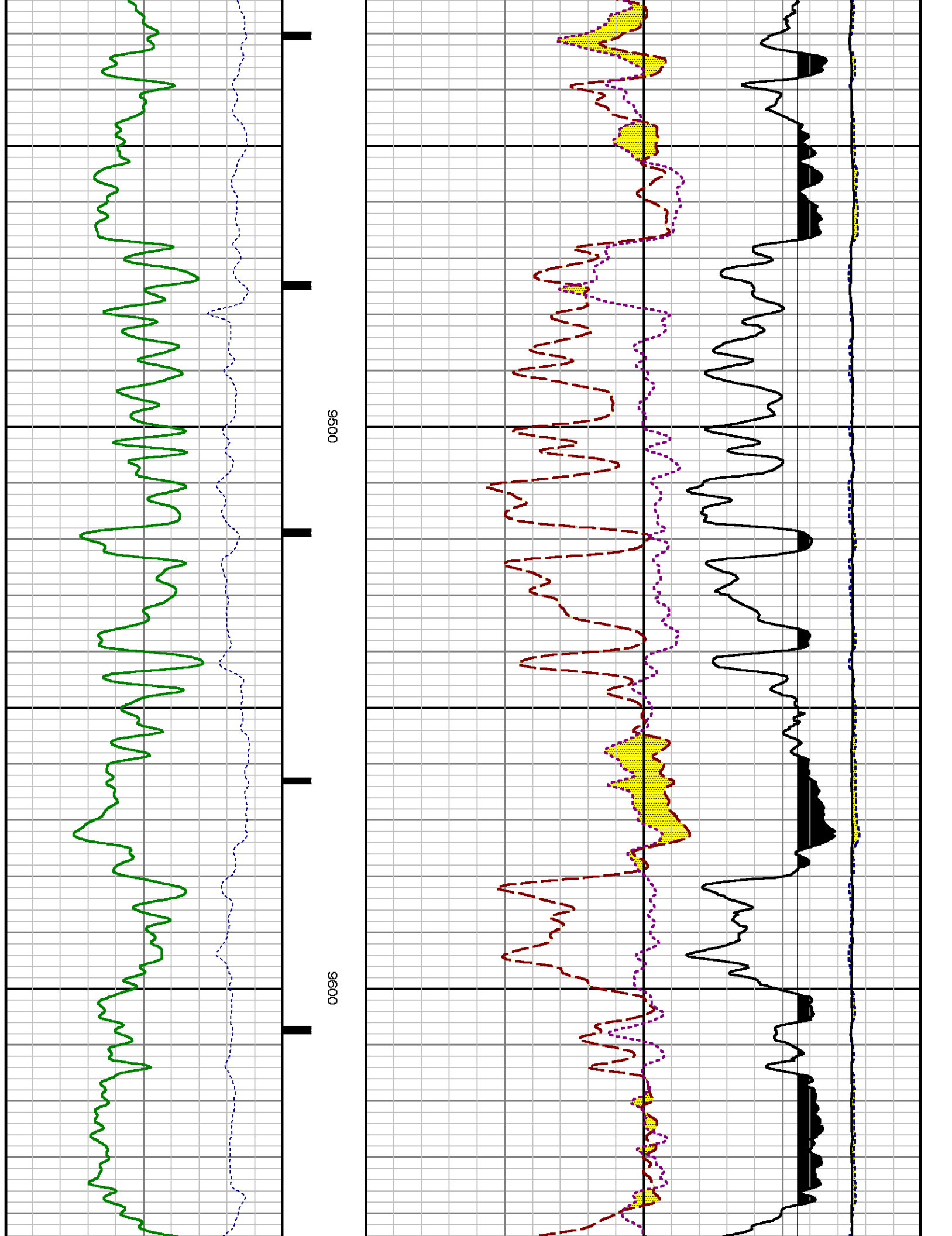
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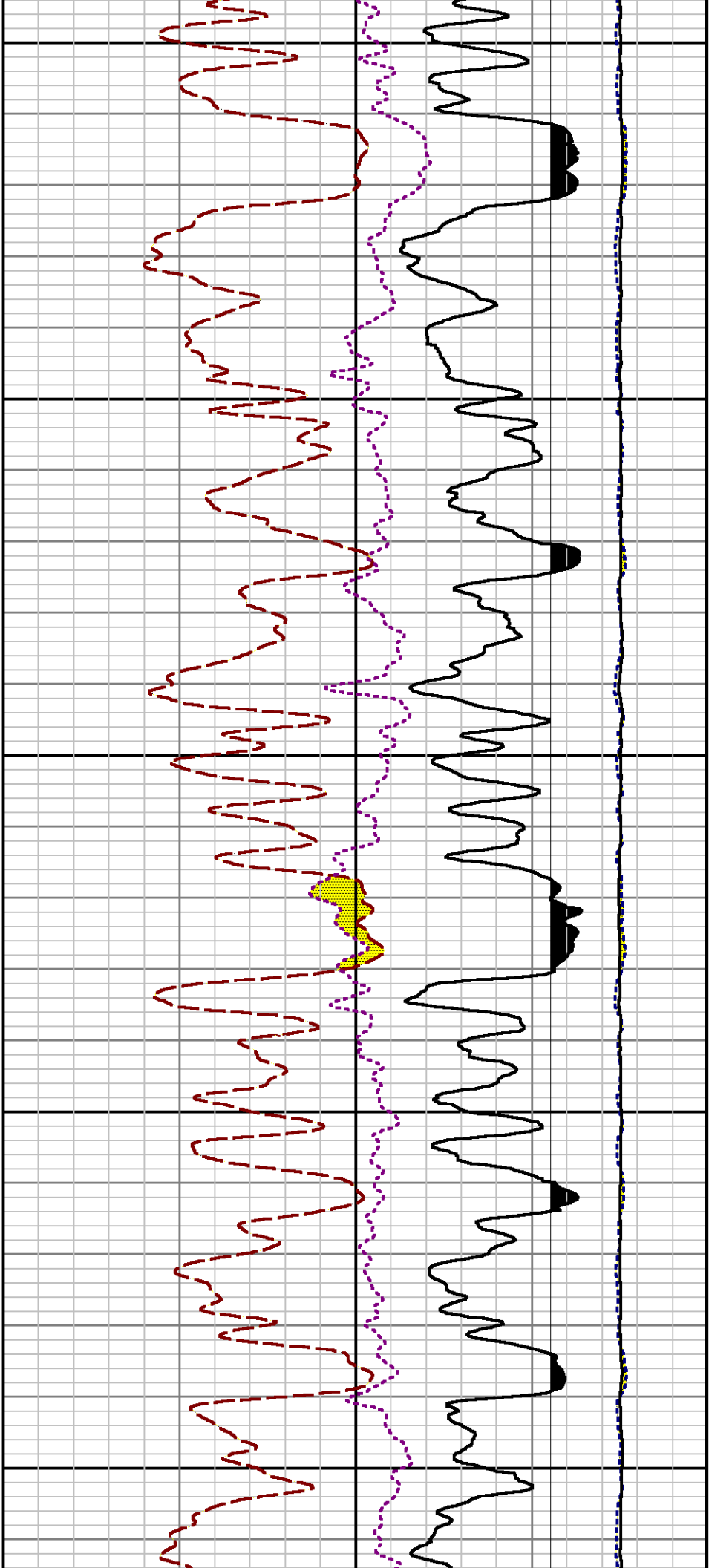
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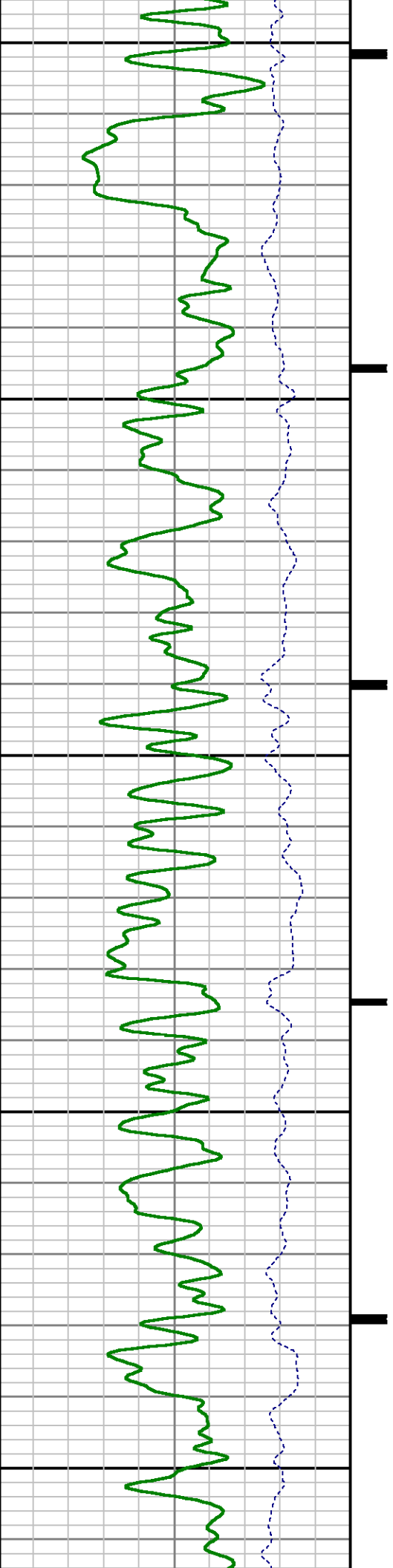


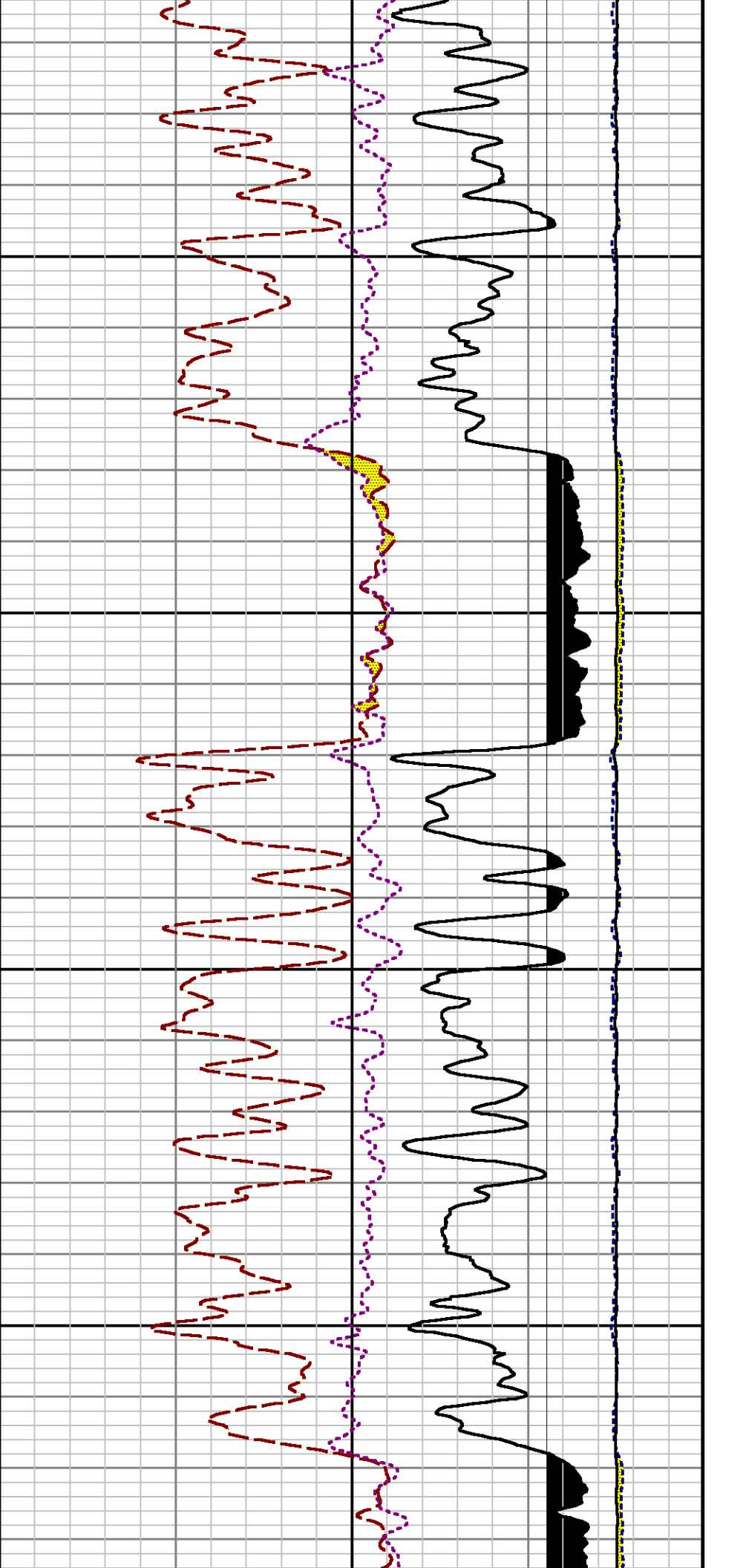




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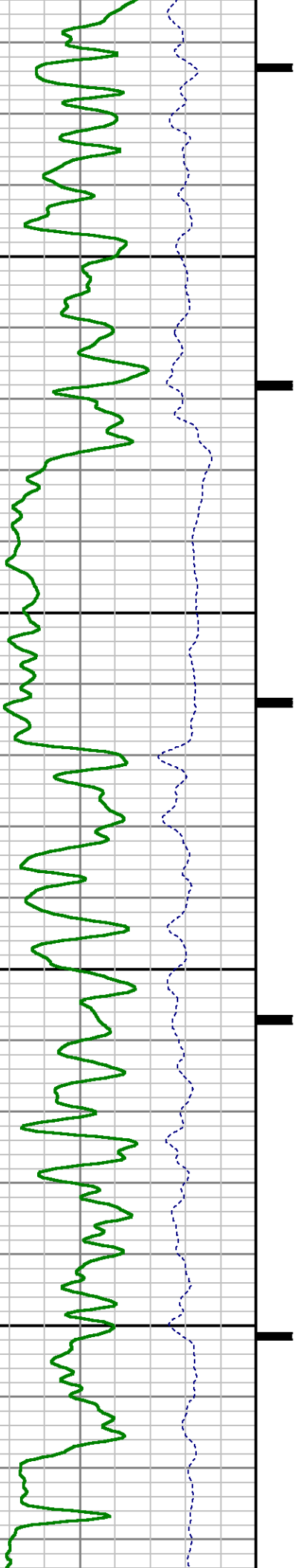
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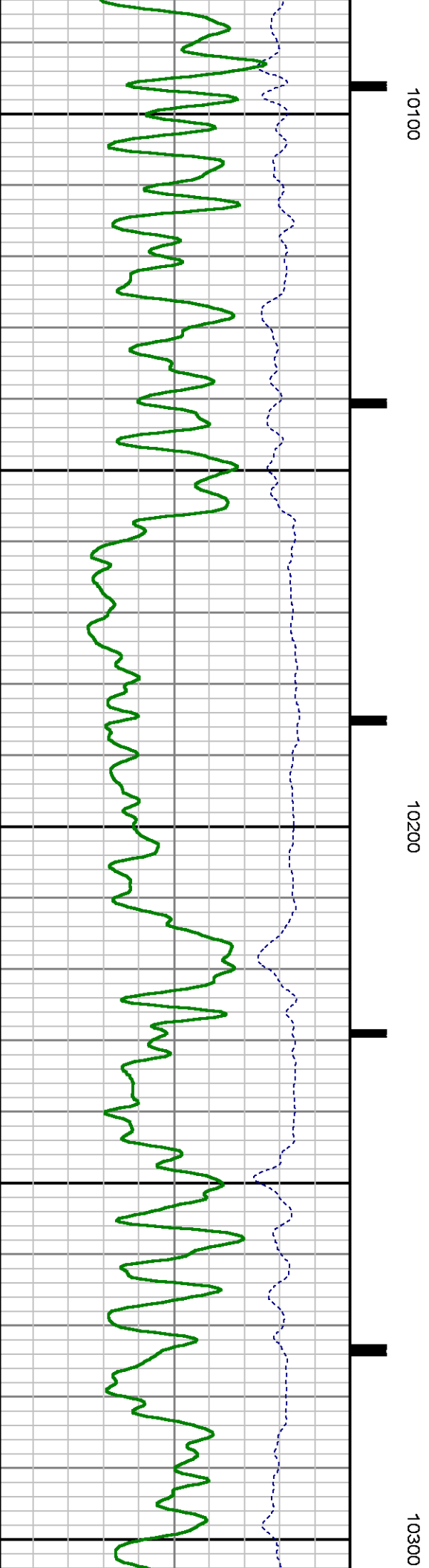
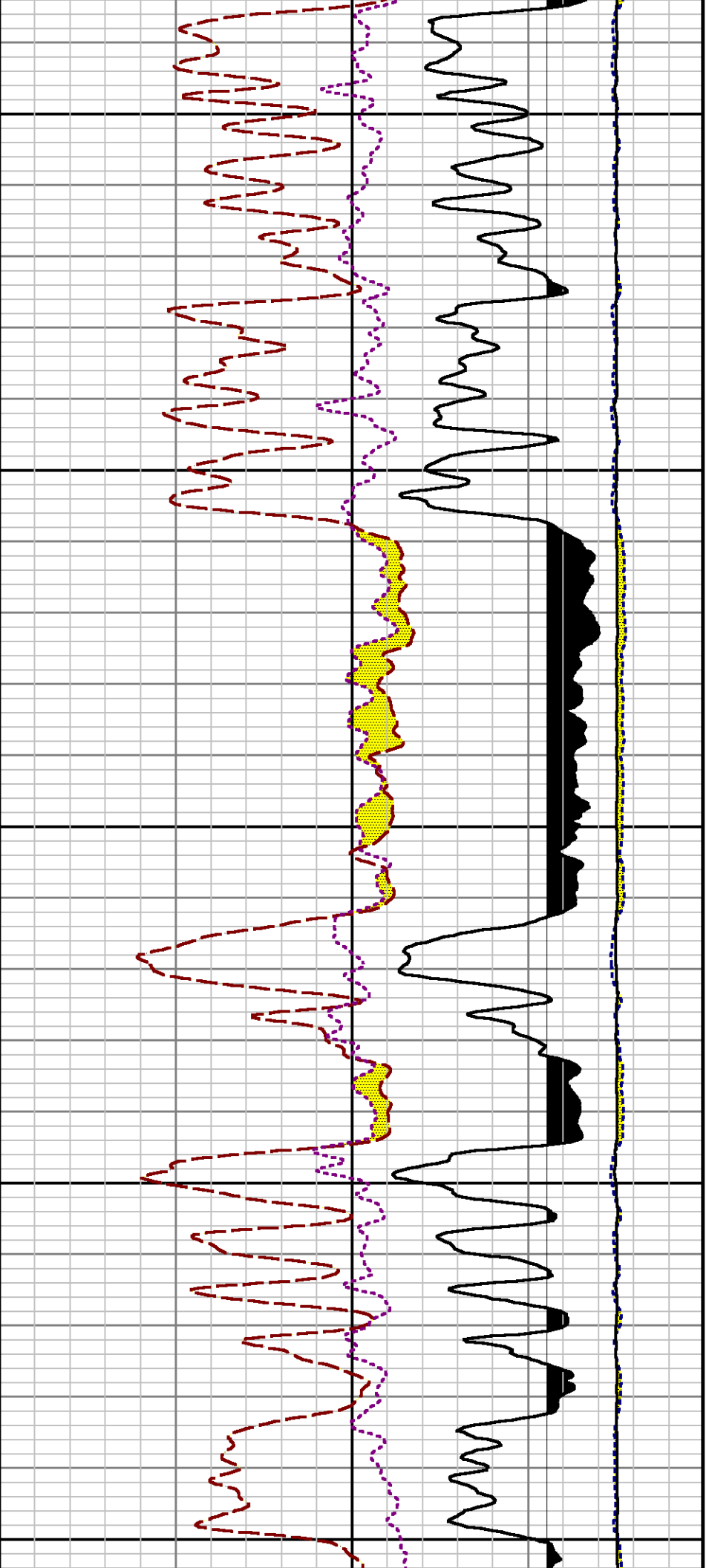


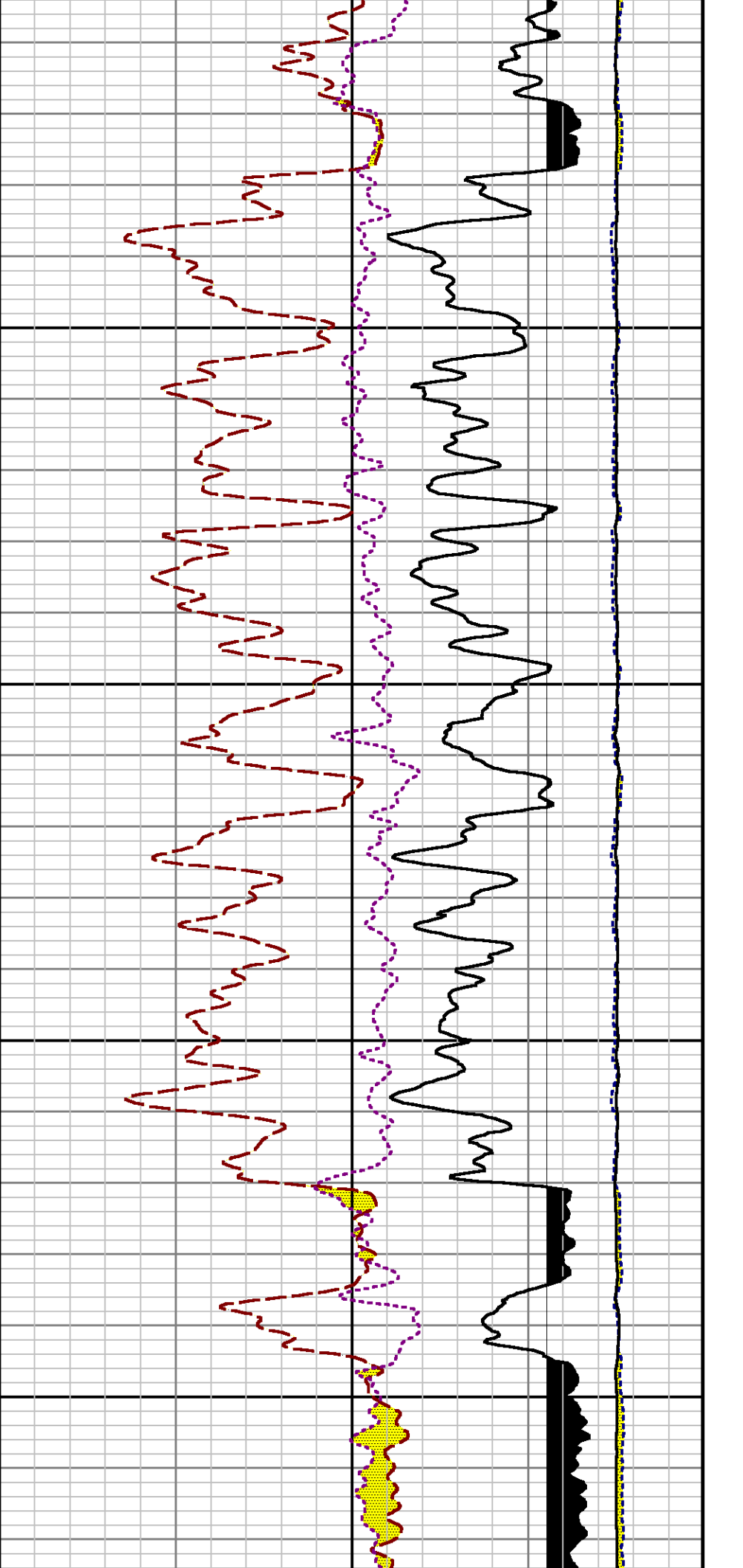
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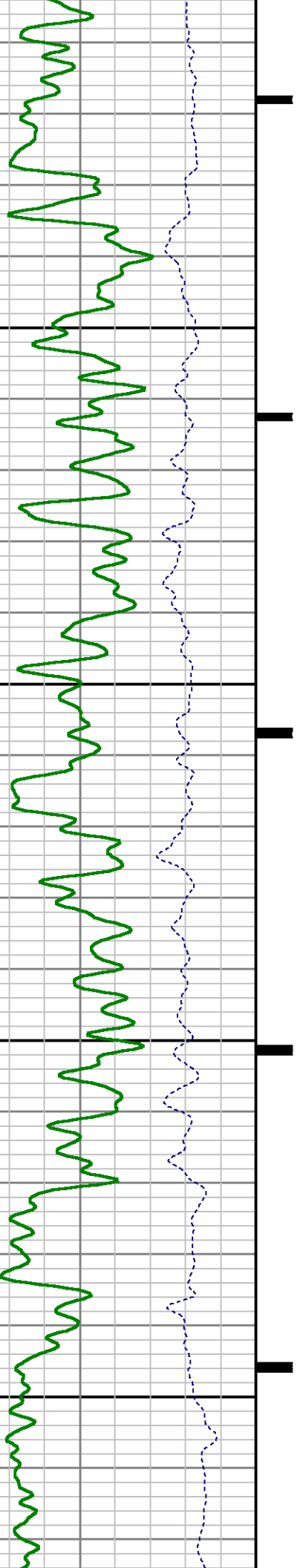


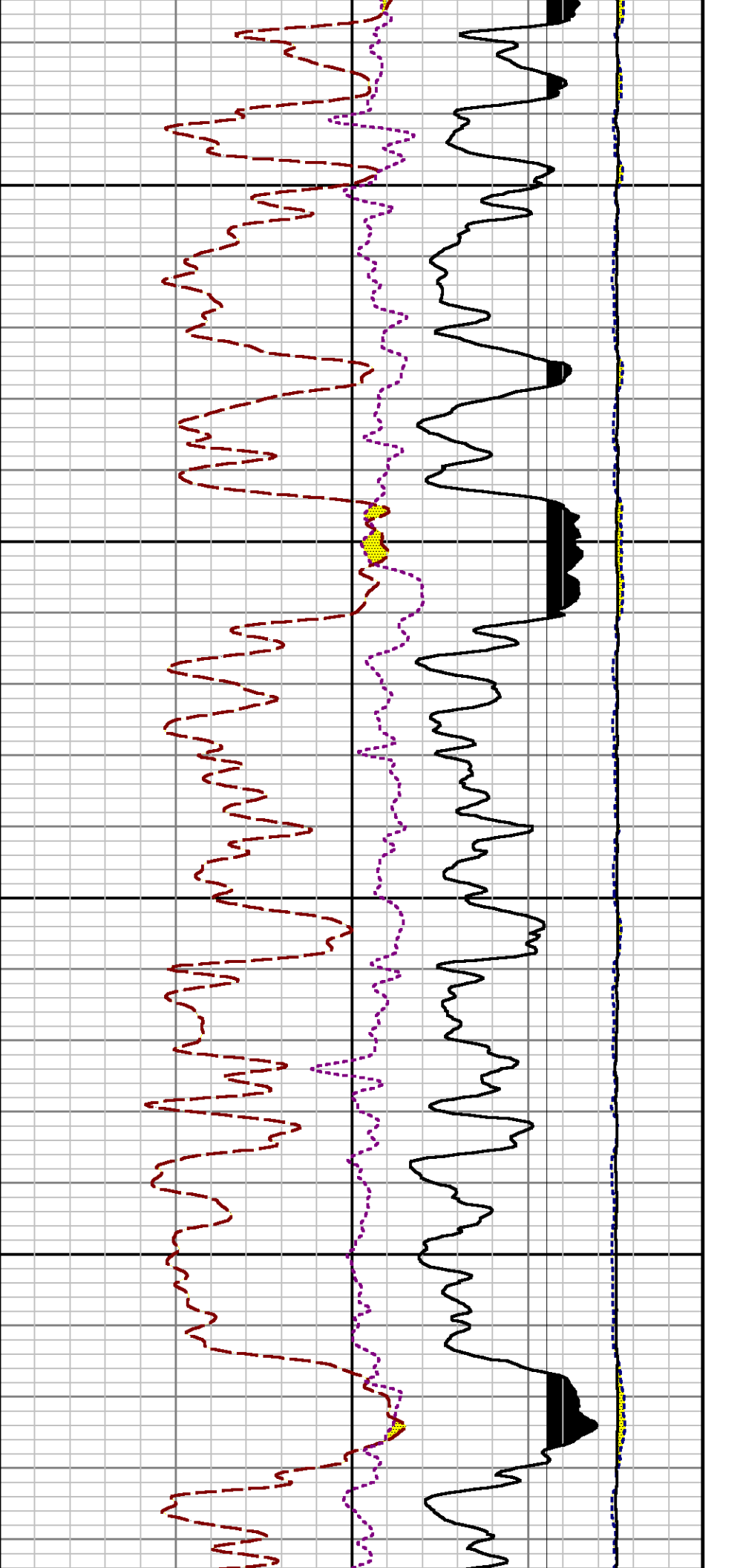




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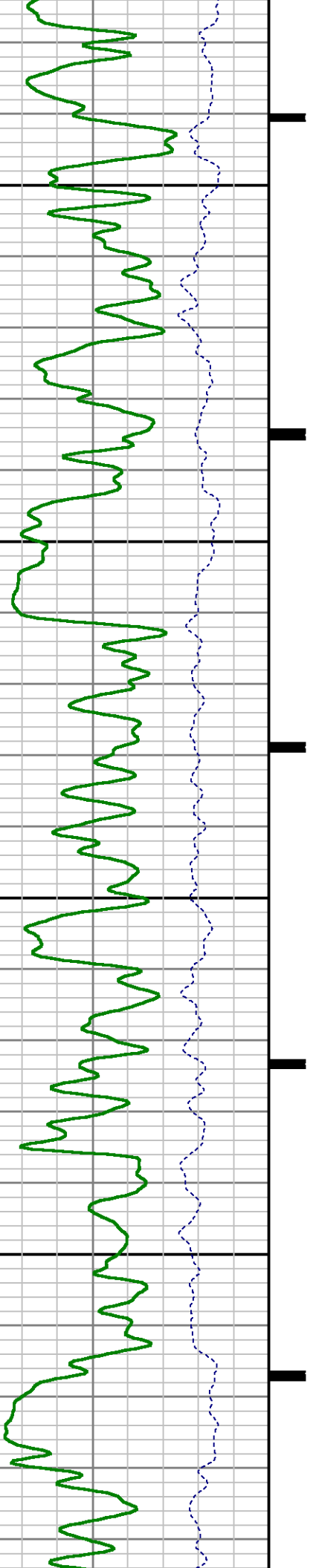
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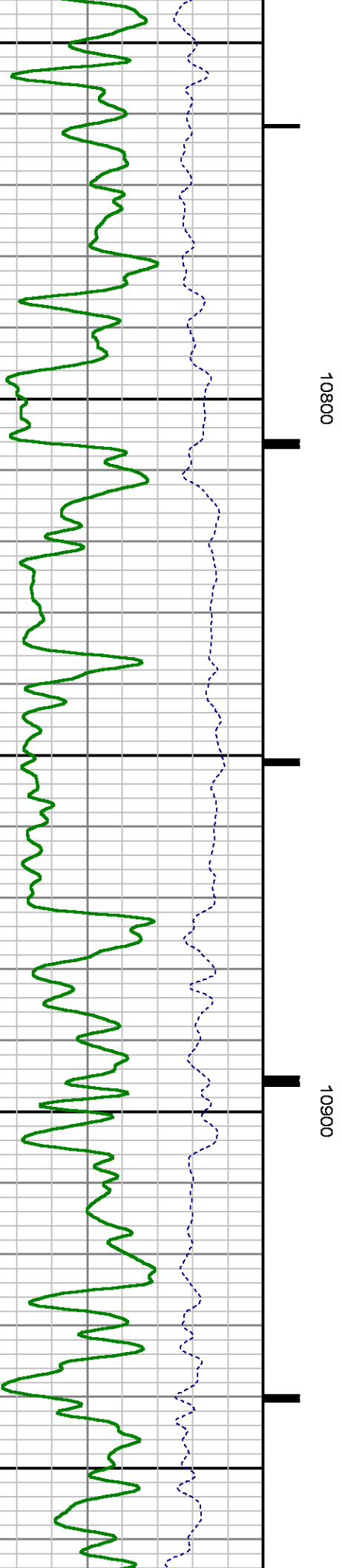
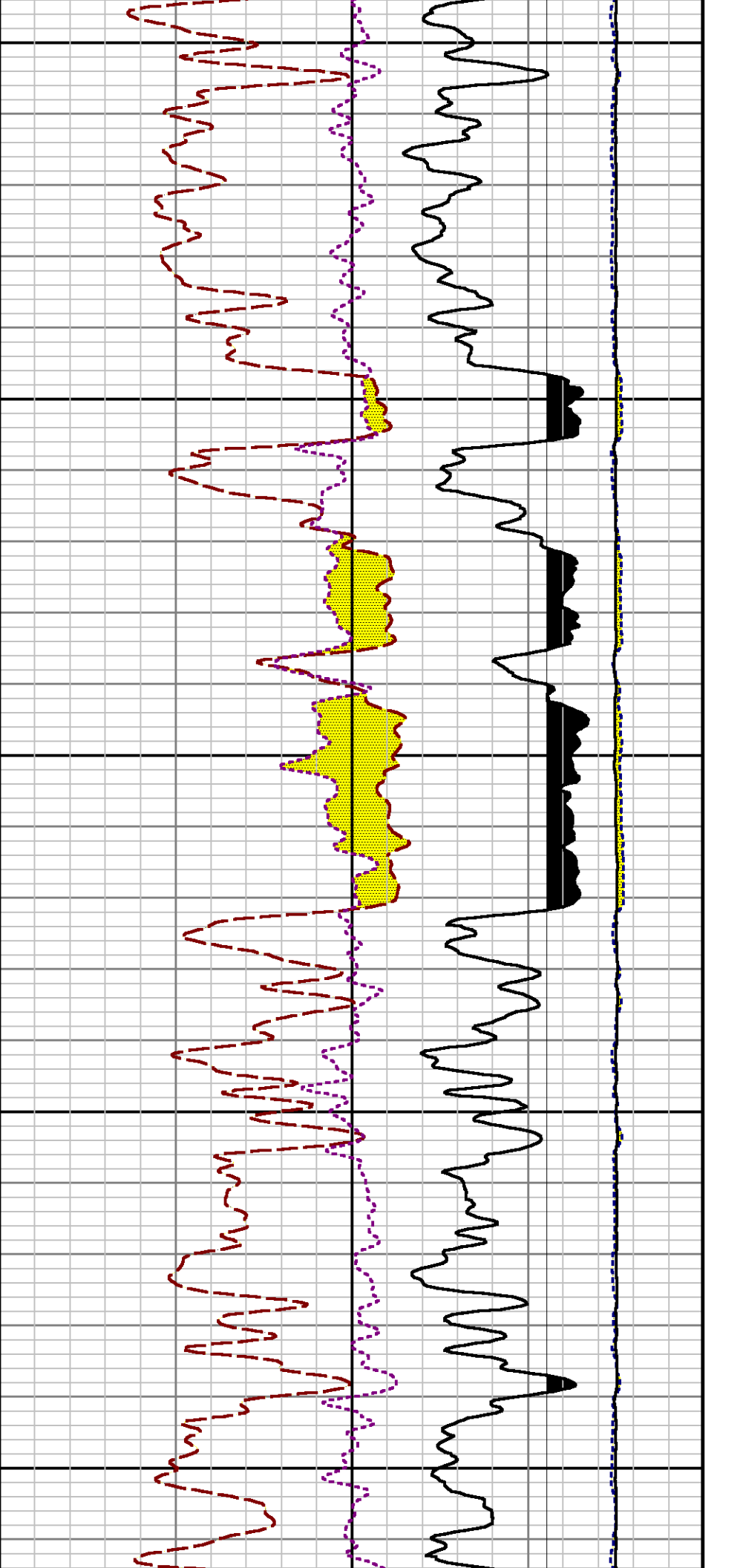


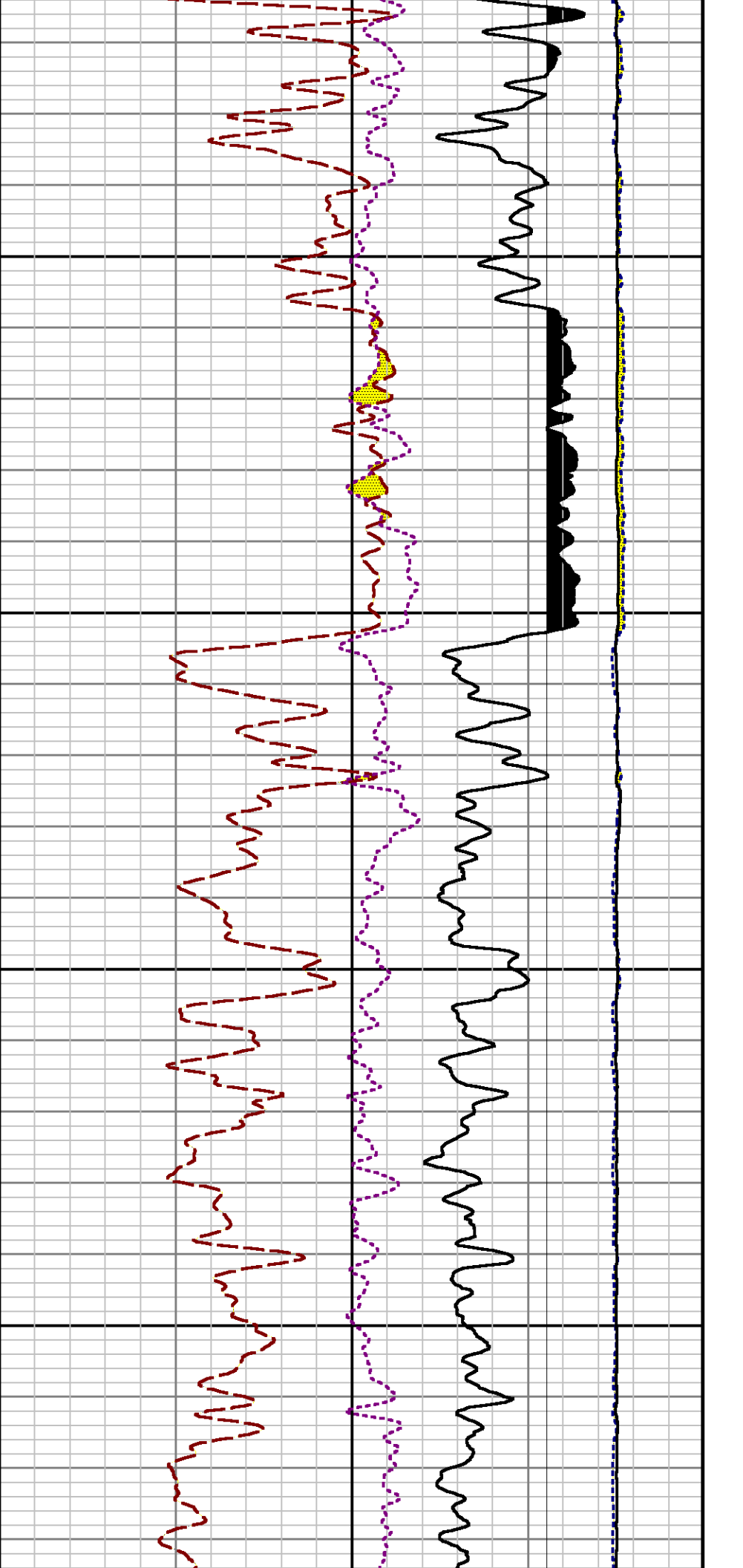


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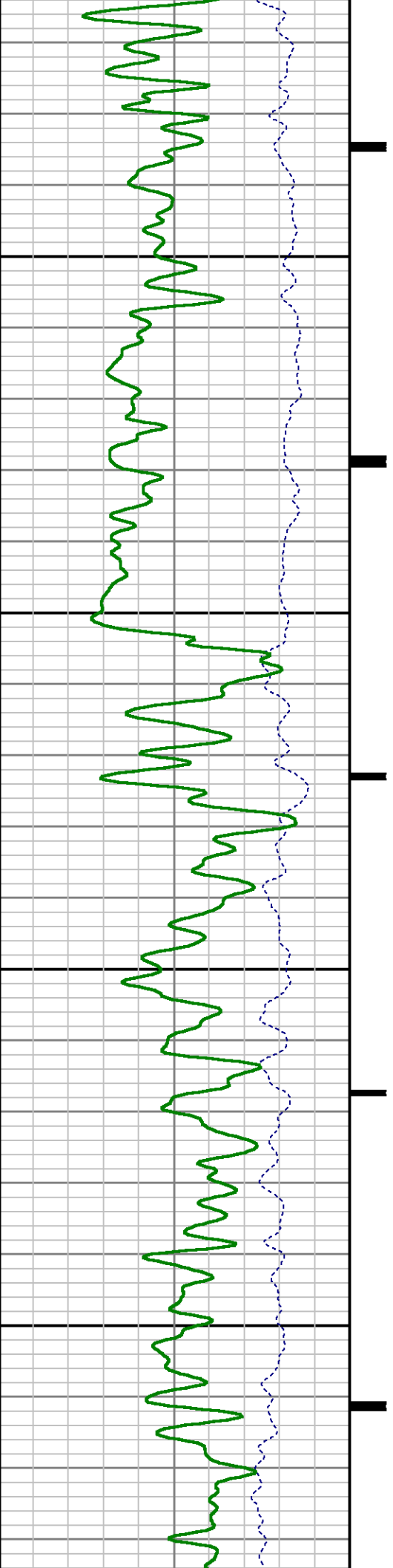


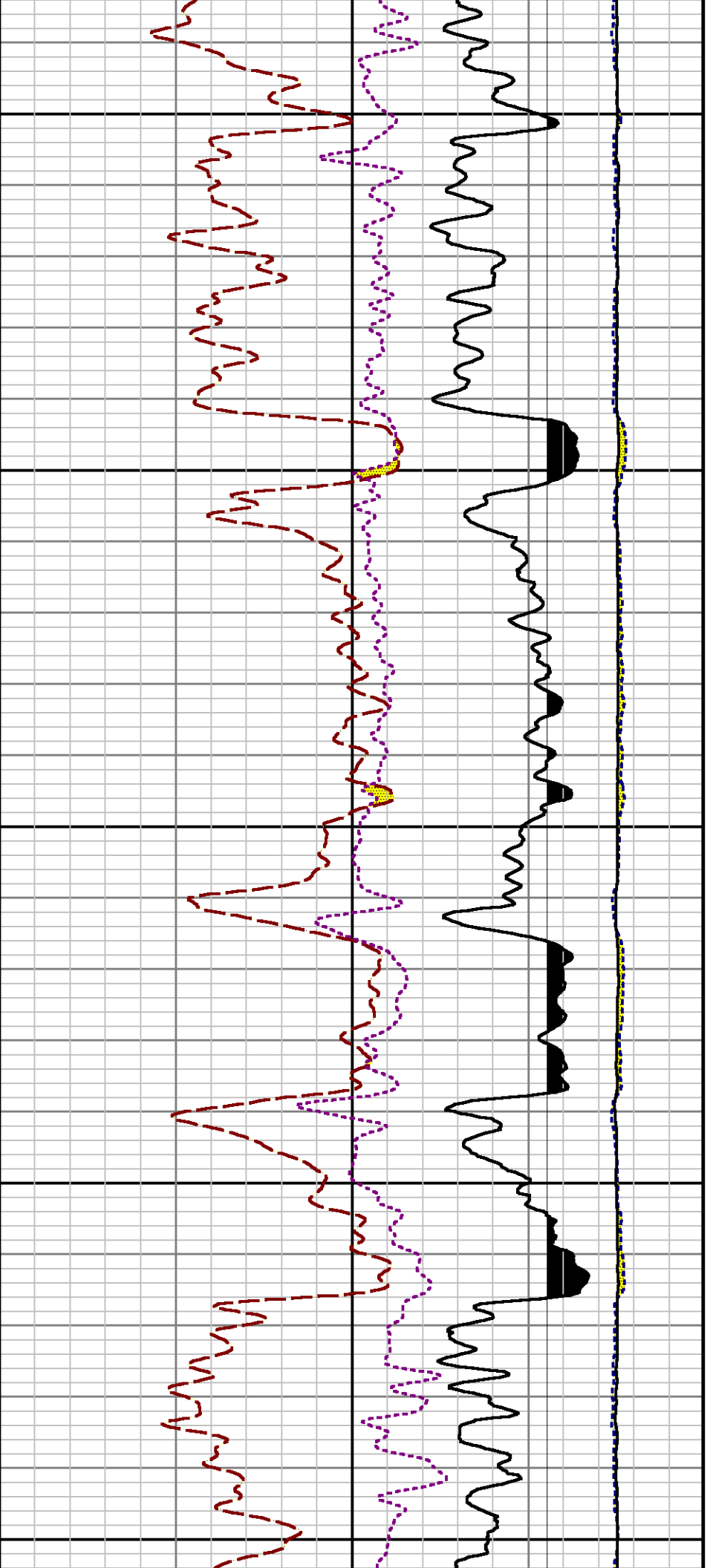




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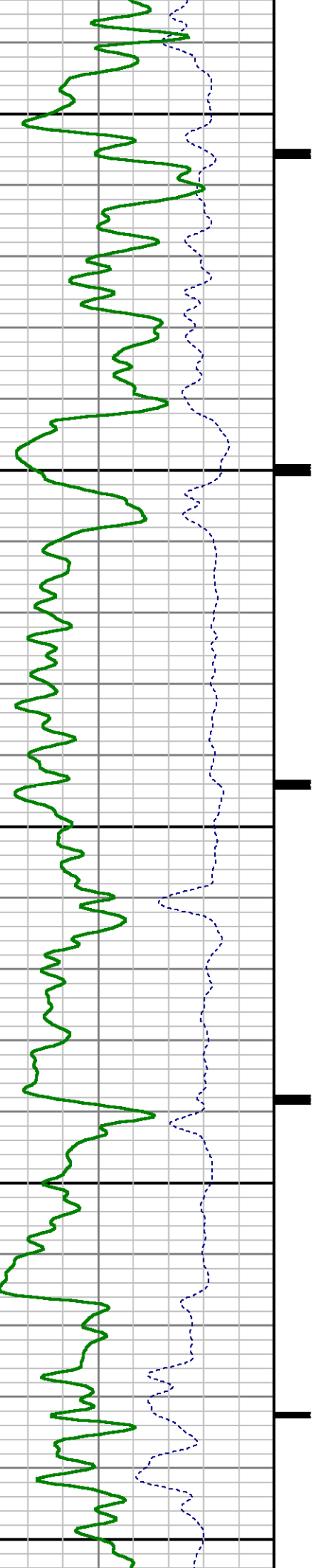


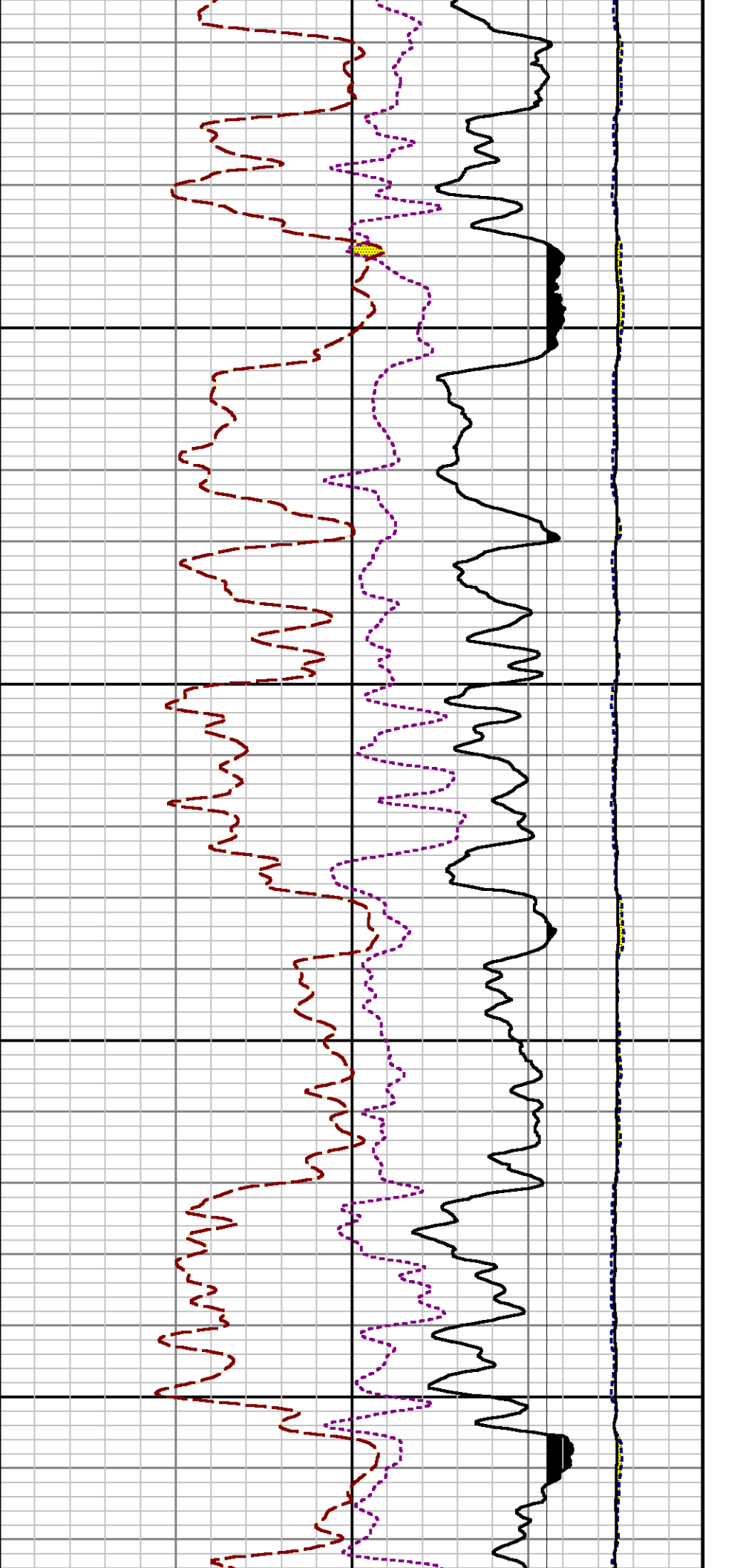


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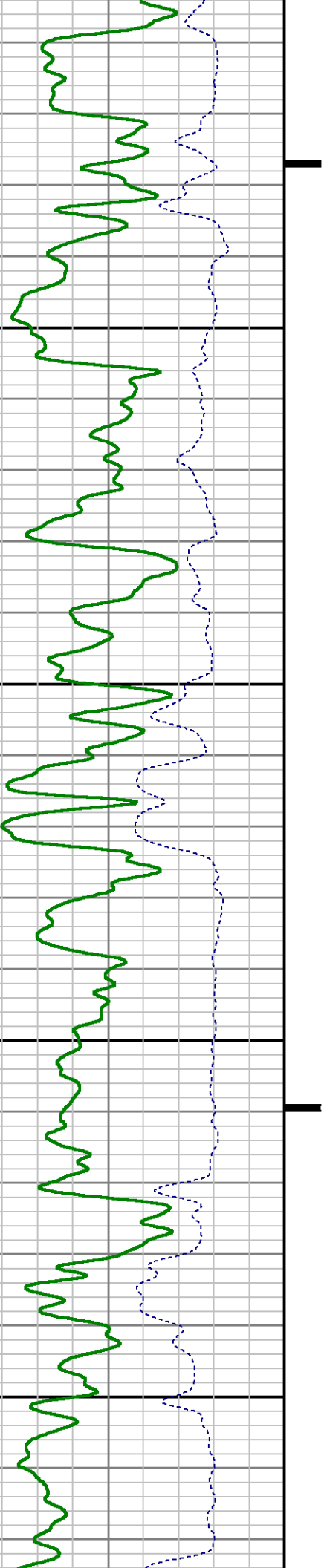
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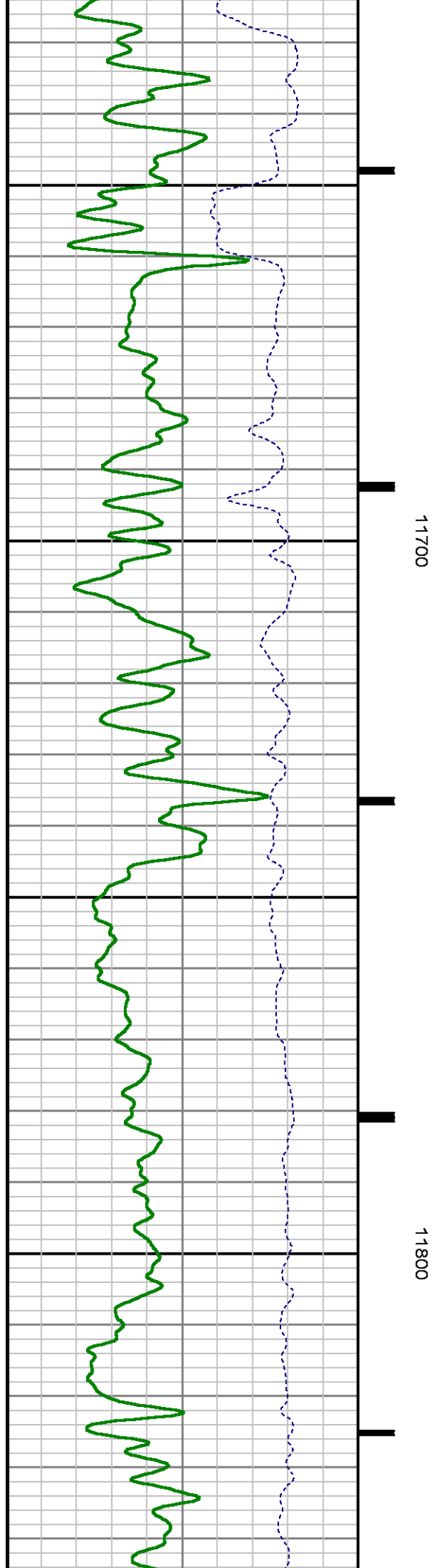
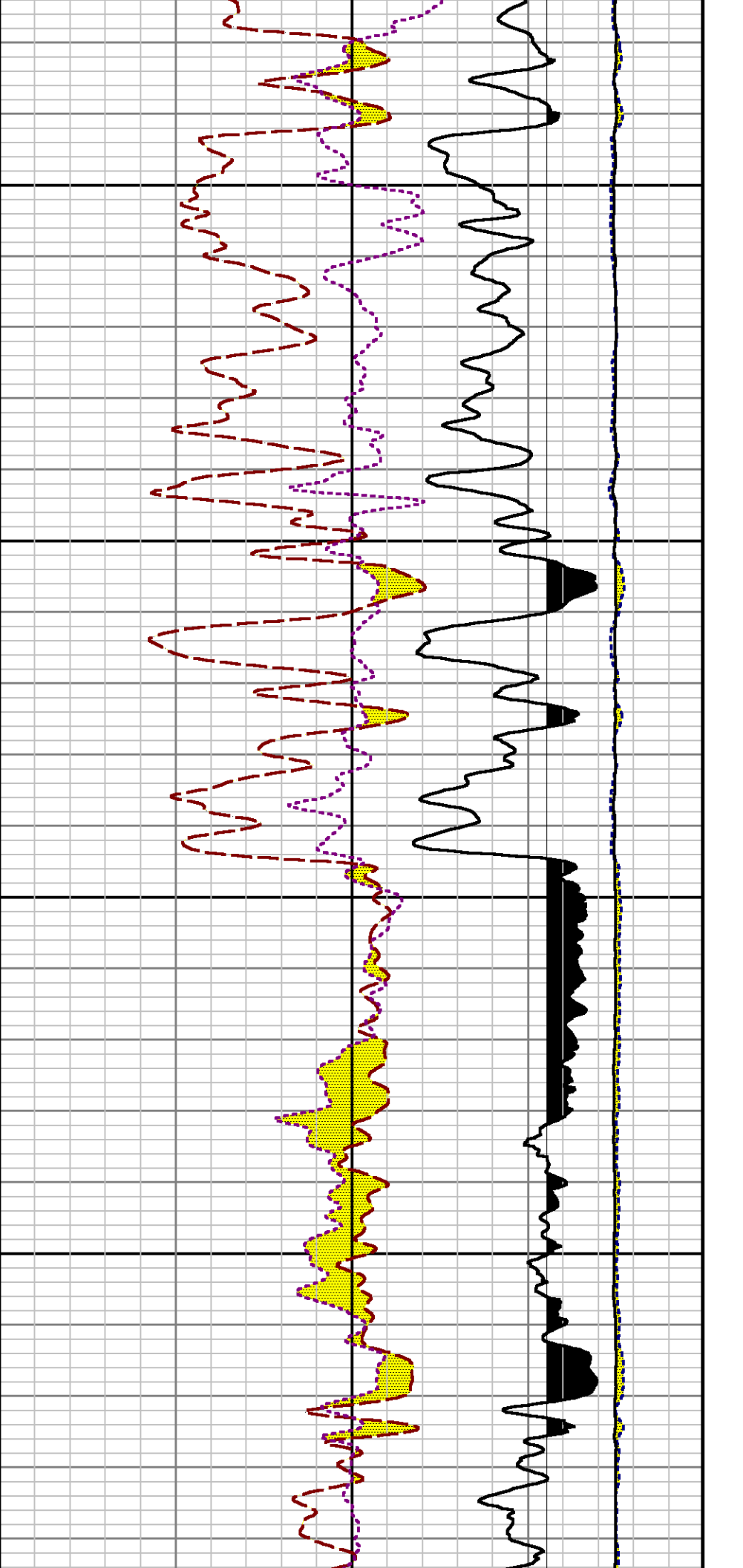




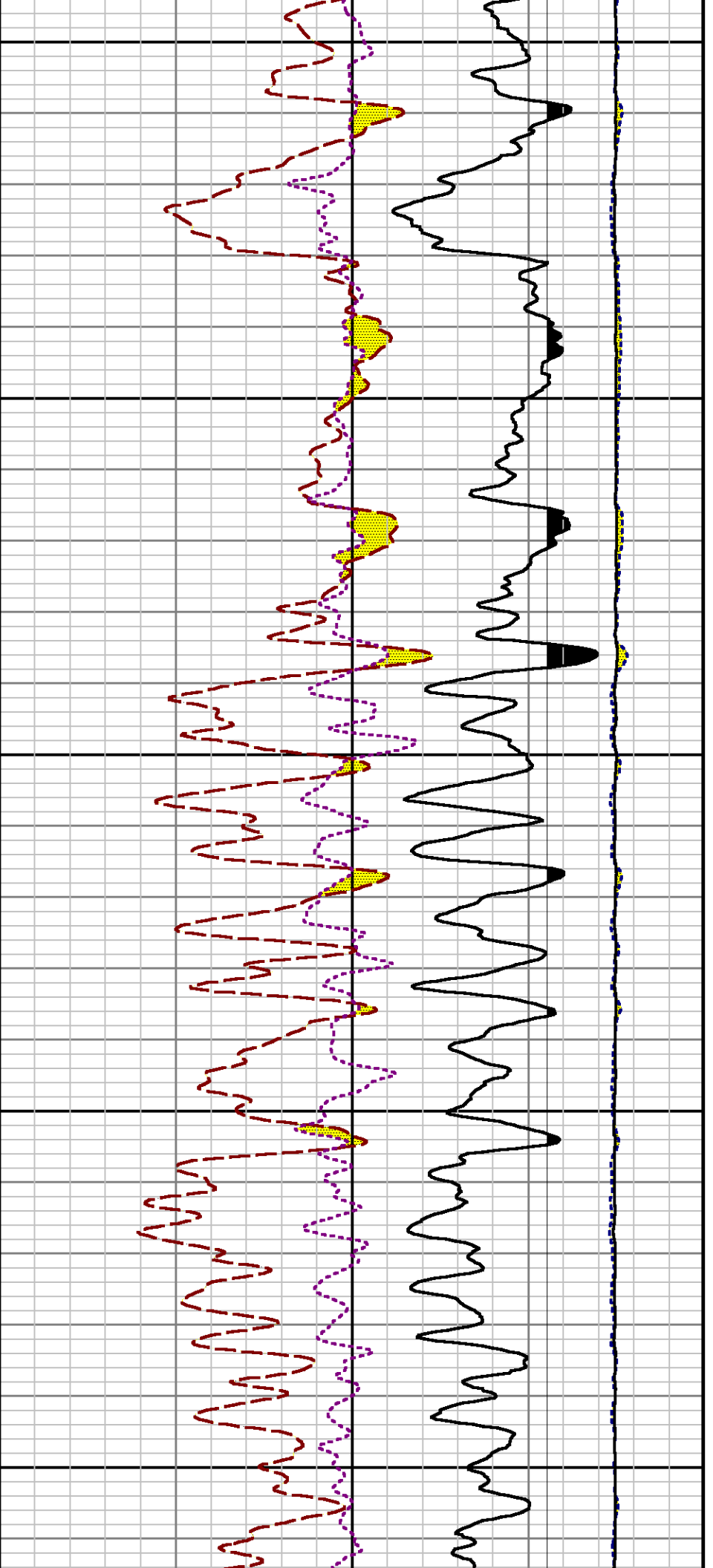
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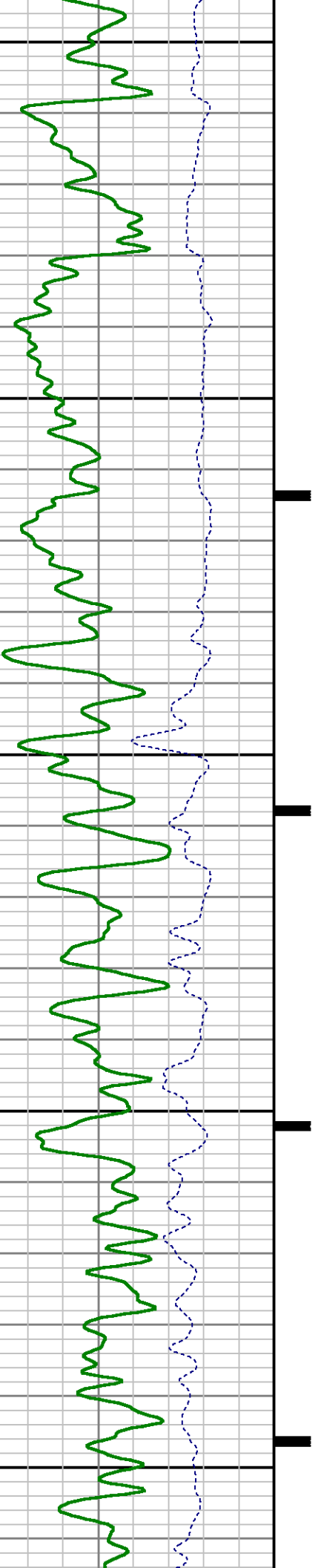


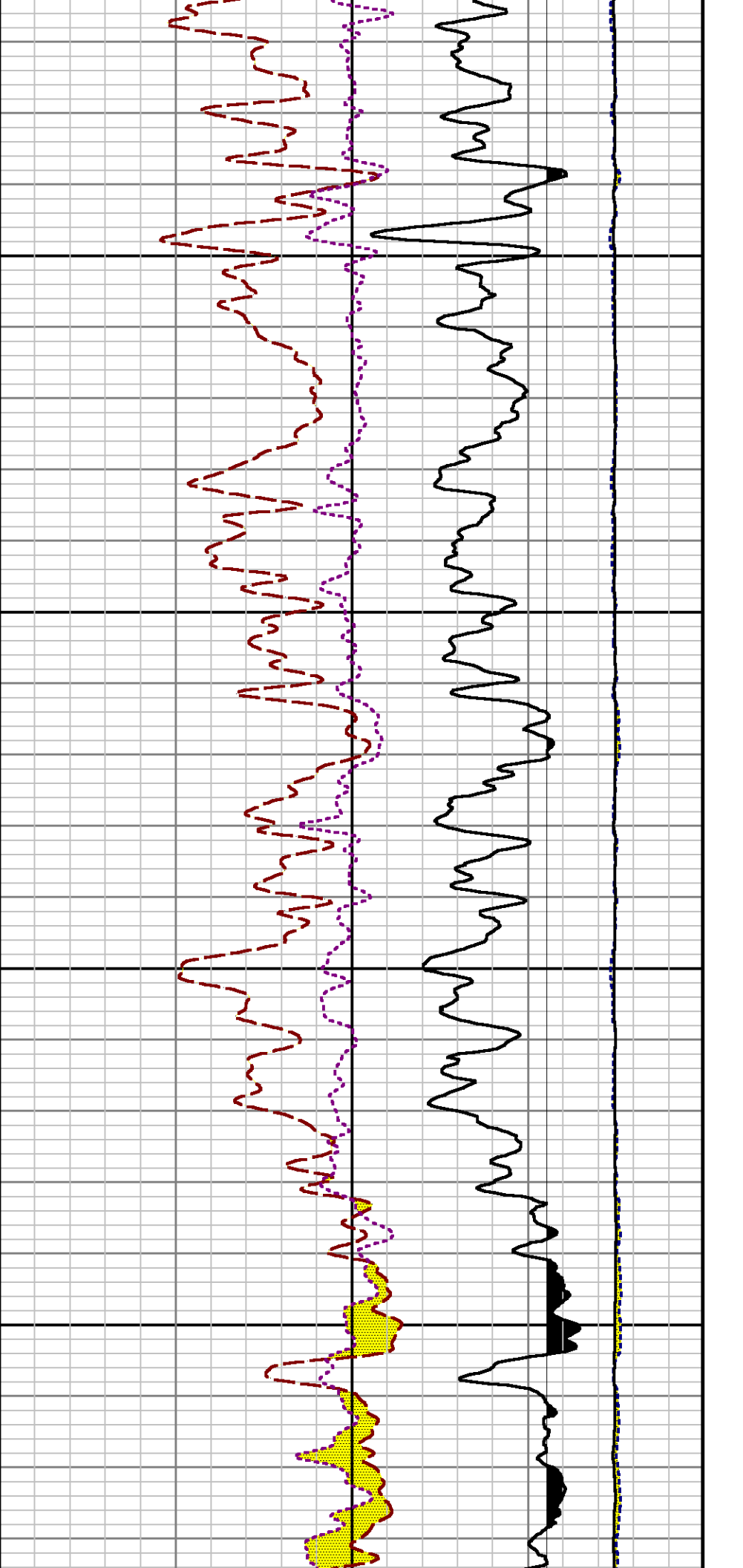




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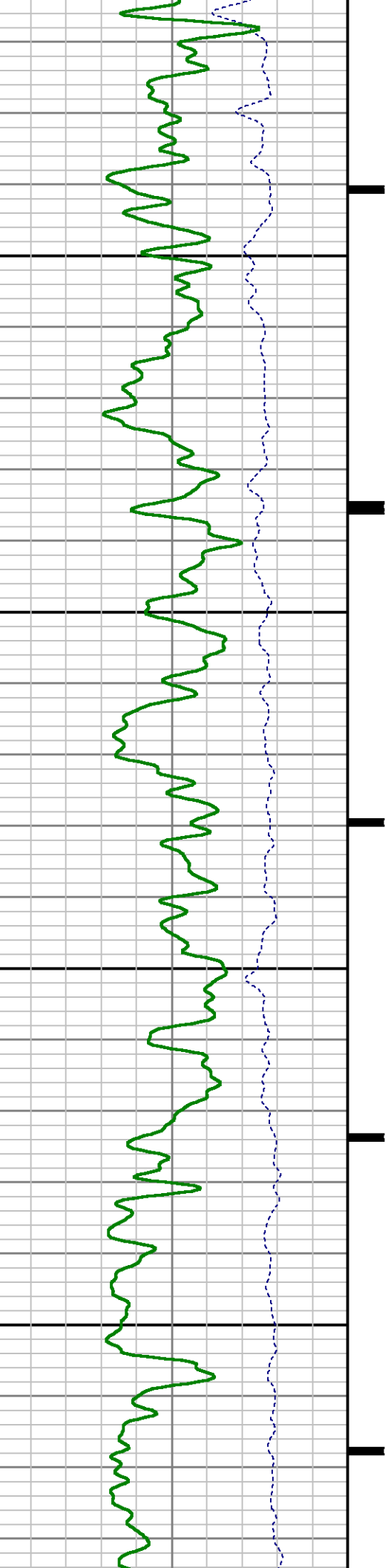
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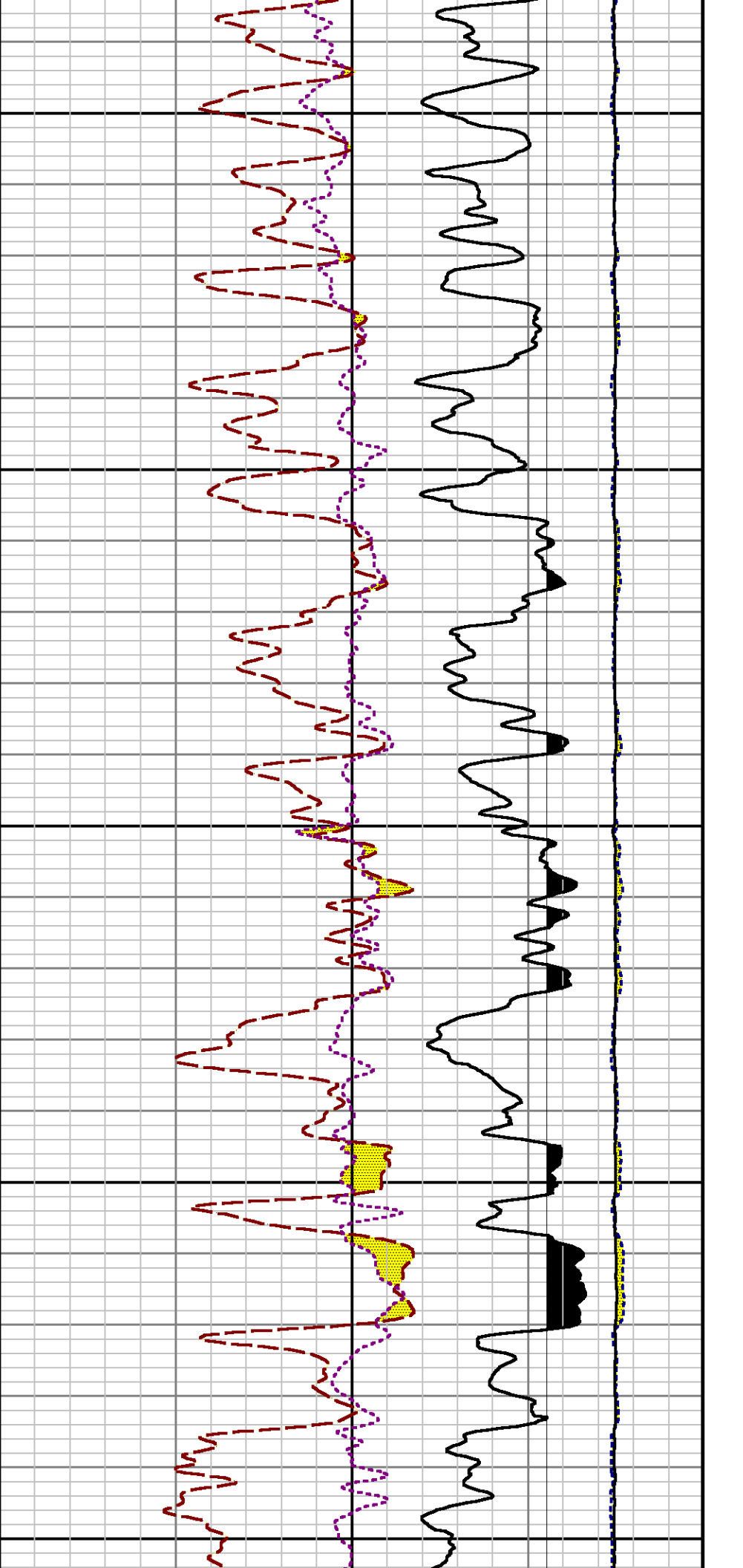




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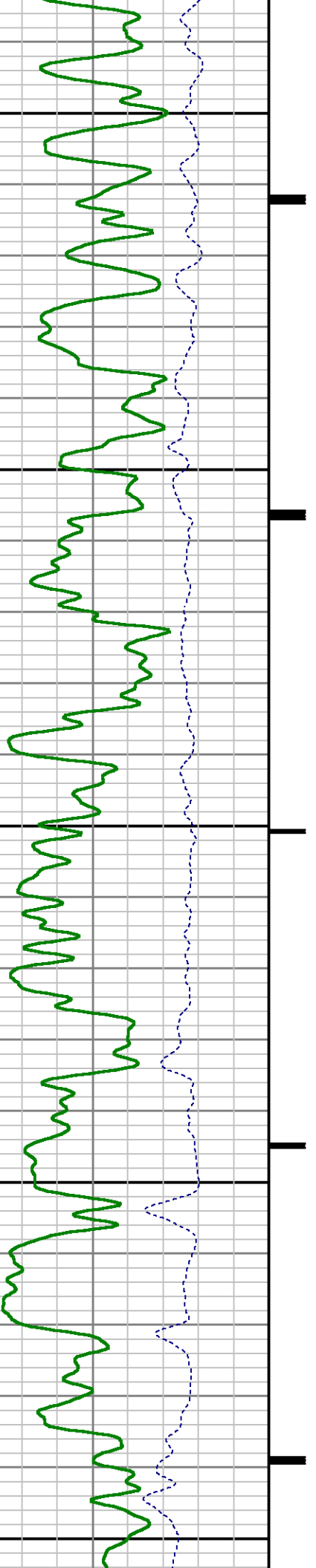


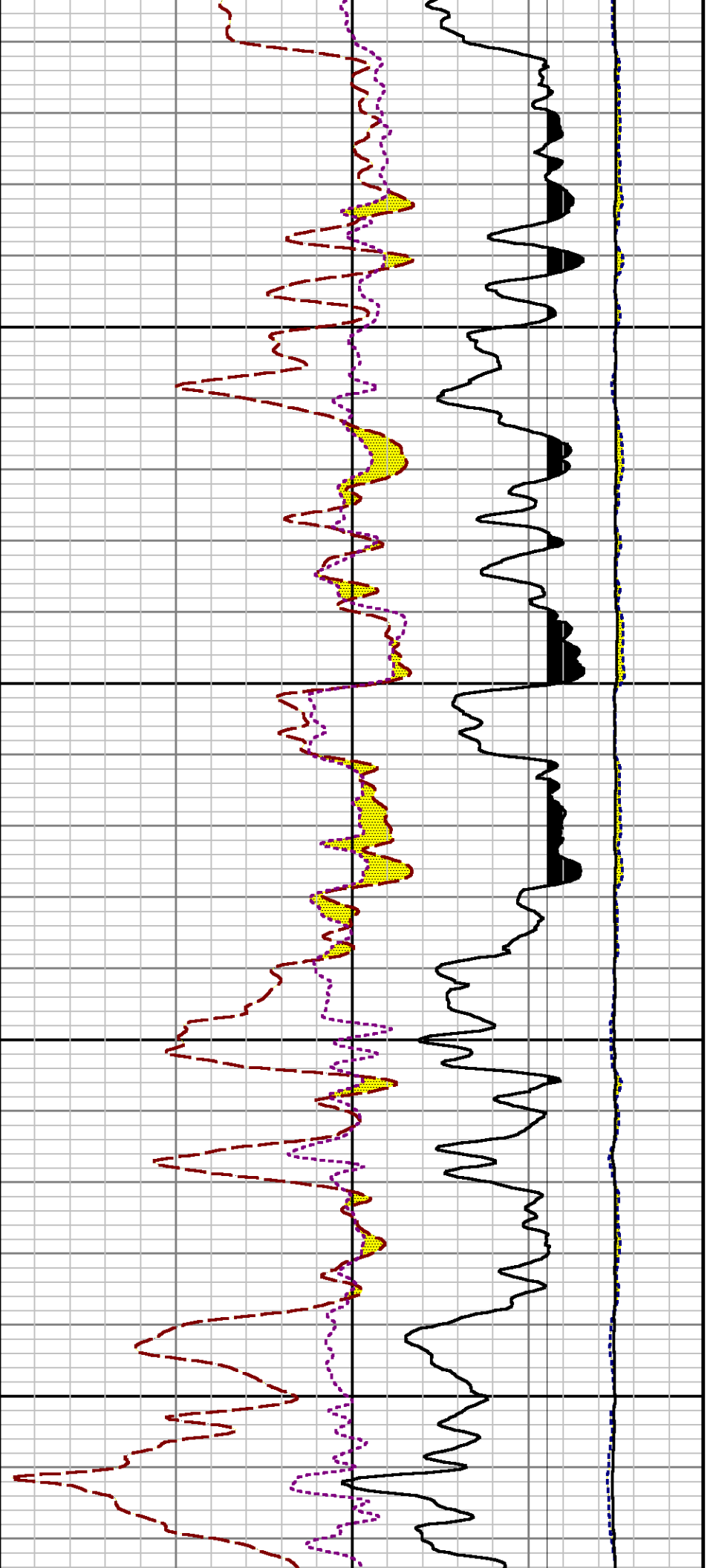


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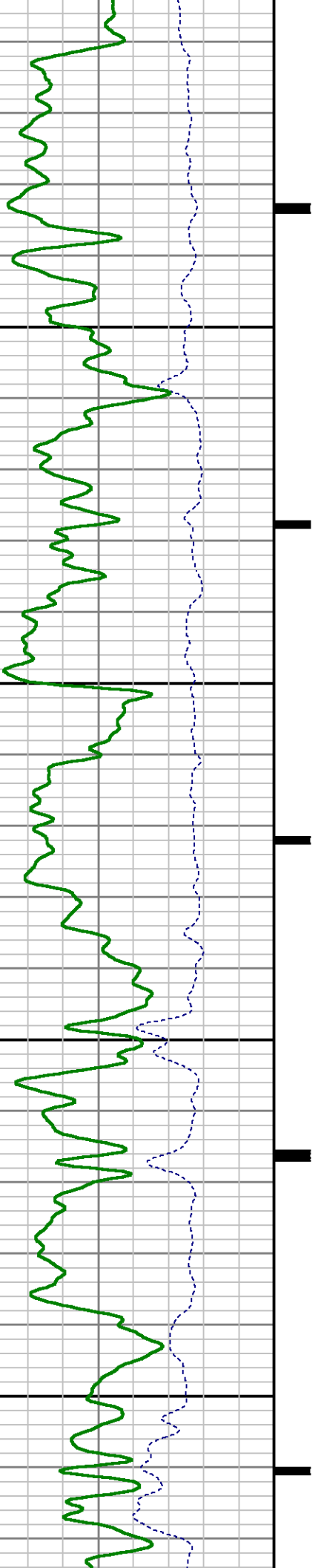
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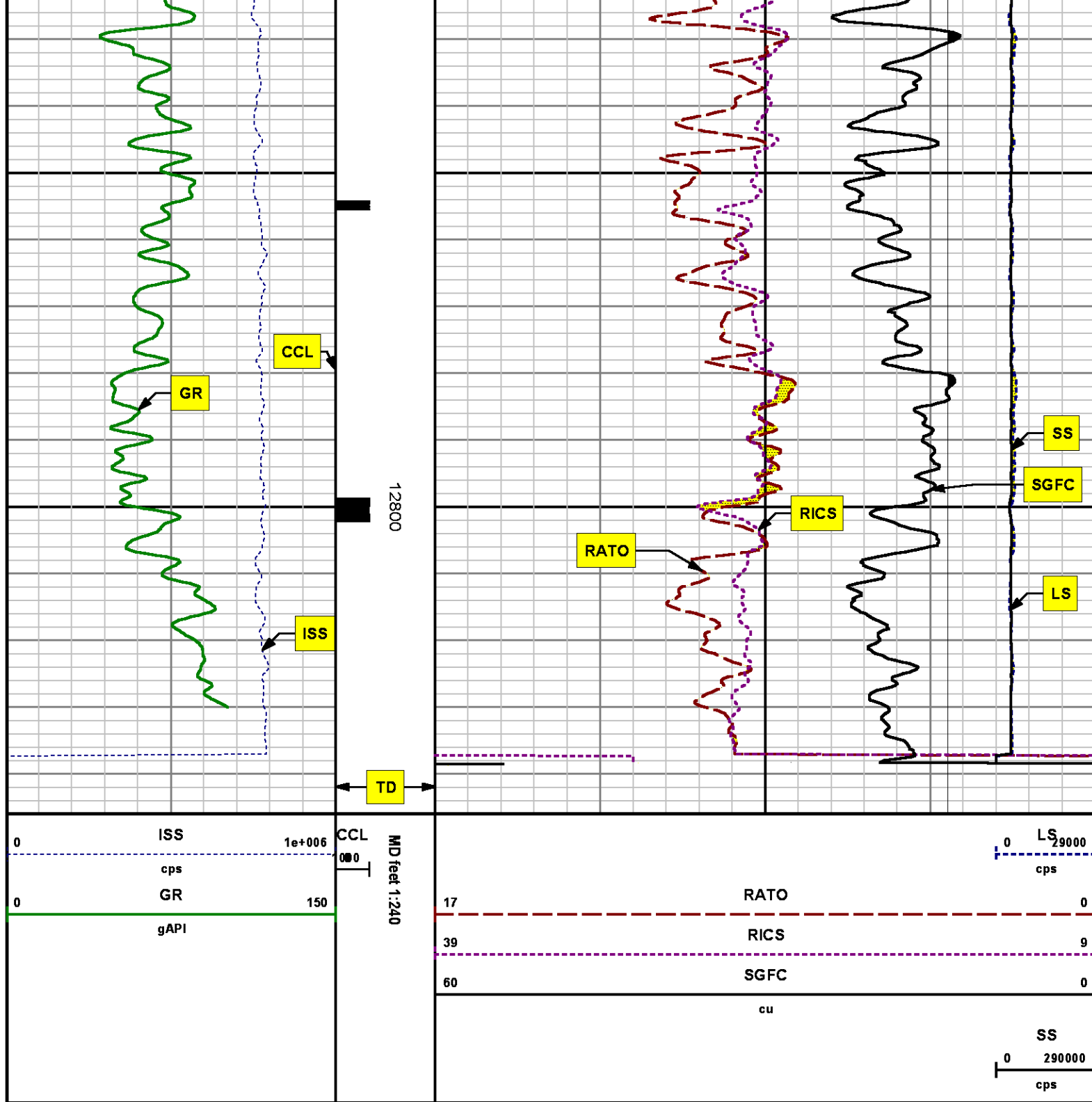




12600

12700





REPEAT SECTION  
PNC 3-D MODE

SPL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
PNC Porosity	Borehole	Cased		12019.386	12349.854
PNC Porosity	Borehole Size	8.750	inch	12019.386	12349.854
PNC Porosity	Casing Size	4.500	inch	12019.386	12349.854
PNC Porosity	Gas Filled	Non Gas Filled		12019.386	12349.854
PNC Porosity	Matrix	Sandstone		12019.386	12349.854
TPS Pressure	Temperature Corr. Source	Fixed (72.00)	degF	12019.386	12349.854

DEPTH OFFSETS  
(for Acquired Curves)

SERIES	DEPTH OFFSET	ACQUIRED CURVES
8248ED	-26.519	FLTM
8248ED	-24.519	CCL CHV
2812LA	-21.969	GR
8281XA	-12.702	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 WIDTH3 CXSR IXSR XSR RICXR
8281XA	-12.291	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 WIDTH2 RICLC CLSR ILSR LSR RICLR
8281XA	-12.041	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	WDTH1	RICSC	CSSR	G1R
G2R	ISSR	SSR	SS2R	RATOR	RATO13R
RBORR	RICSR	RINR	RIN13R	RONER	RPORR
RTWOR					
PTFS	PTMS				
SPF1	SPFQ	TSCP	TSDP		
DTEM	TEMP	TNF			
TEN	TTEN				

8255XA	-0.792
8255XA	-0.775
8255XA	0.000
SYSTEM	0.000

Created by : RPM9, v5.3.1.0

Plotted by : PlotMgr, v5.4.504

Company : WPX ENERGY

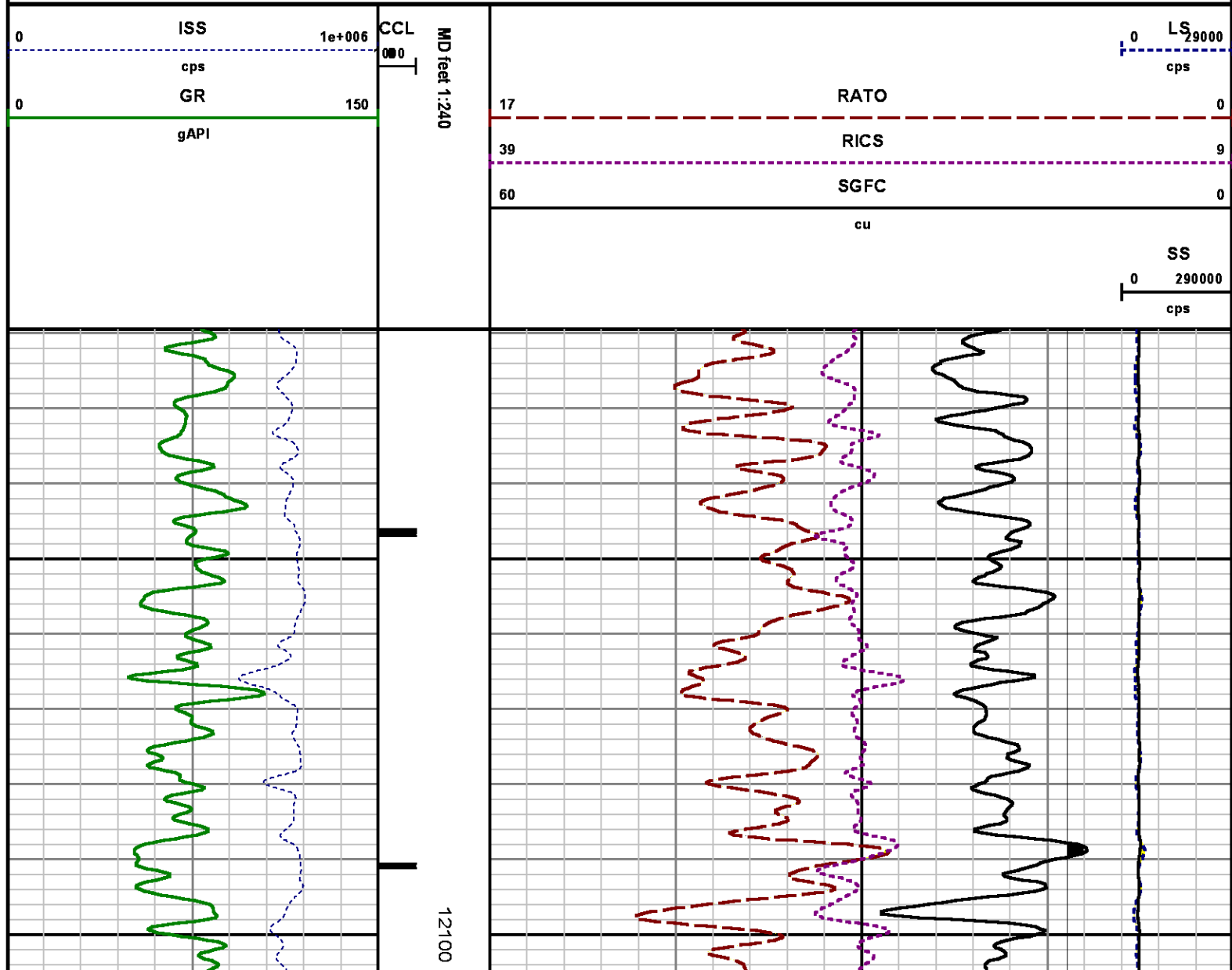
Well : FEDERAL RGU 523-24-198

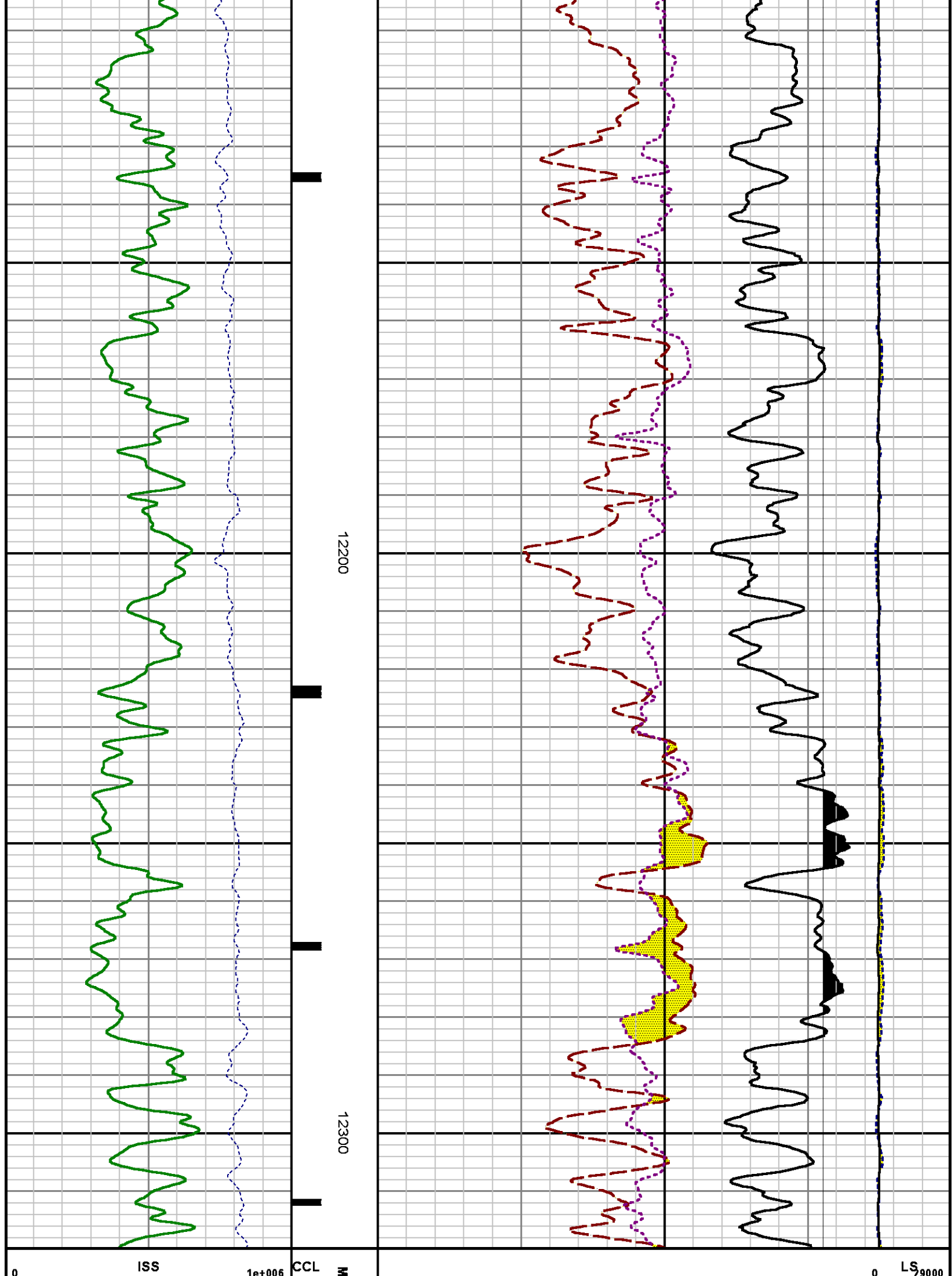
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Mode : PlotMgr 5.4.504

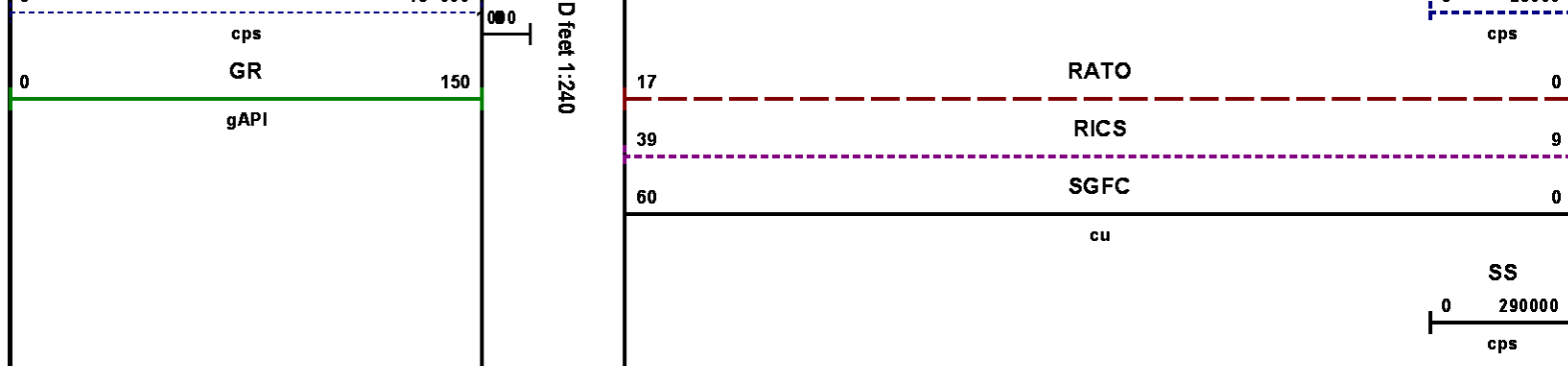
Interval : 12019.48 - 12320.00 feet UP

Created : 7/8/2014 4:28:56 PM









## CALIBRATION SUMMARY

## GAMMA RAY

Calibration File: C:\case\calver\GR\38530.cal

### CALIBRATION SUMMARY

DATE/TIME PERFORMED: Mon Jun 30 08:38:51 2014 TOOL SERIES: 2812LA ASSET: 385 SEQ: 30

Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
S2K WA-612	42.56	269.00	0.927	39.47	249.47	210.00

Verification File: C:\case\calver\GR\38530.VP

### PRIMARY VERIFICATION

DATE/TIME PERFORMED: Mon Jun 30 08:42:33 2014 TOOL SERIES: 2812LA ASSET: 385 SEQ: 30

Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
S2K WA-612	41.56	270.56	0.927	38.54	250.91	212.37

## PNC

Calibration File: C:\case\calver\PNC\25126.cal

### PNC 3D CALIBRATION SUMMARY

DATE/TIME PERFORMED: Thu Jun 26 10:34:29 2014 TOOL SERIES: 8281XA ASSET: 251 SEQ: 26

Calibrator #

2437XB 112674

Source #

8281AA 10220684

	ISS	Mtr Vltz (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	808104	121.00	2304.00	2298.00	2316.00	252.94	7.00	0.9838
Interpolated	1300000	140.62	2287.61	2288.89	2310.03			

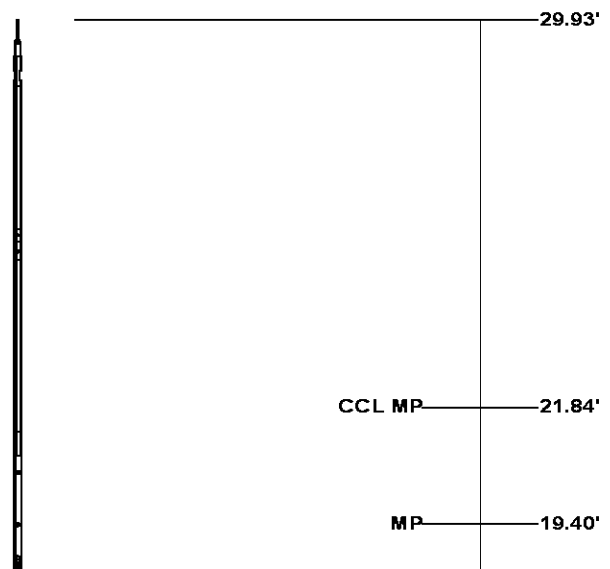
	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	808104	7675.62	1280.04	159.97	25.73	0.14	24.27	0.28
					25.35 26.40	0.00 0.20	23.60 24.80	0.00 0.40

	ISS	ILS	IXS	SS	SS2	LS	CSS	CLS
Raw Data	808104	167031.69	26349.41	87906.17	31316.05	8210.99	53315.01	13125.35
Fit Quality %		0.36	0.30	0.50	0.47	0.32	0.47	0.30

	ISS	RBOR	RIN ISS/ILS	RIN13 ISS/IXS	RICS ISS/CSS	RATO SS/LS	RTWO SS2/LS	RONE CSS/CLS
Raw Data	808104	1.43	4.84	30.67	15.16	10.71	3.81	4.06
		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 %		0.06	0.20	0.23	0.14	0.08	0.08	0.10
Reduced	1388893	1.43	4.84	30.68	15.18	10.70	3.81	4.06
		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	
<b>PCM POWER SUPPLY</b>	
Series	8250EA
Mnemonic	PCM
Diameter	1.70"
Weight	18.00 lb
Length	3.86'
Temp Rating	350.00 °F
<b>TELEMETRY / CCL</b>	
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
<b>SONDEX GAMMA RAY</b>	
Series	2812LA
Mnemonic	SNDX
Diameter	1.69"



**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

XLS DETECTOR 12.78'

LS DETECTOR 9.80'  
SS DETECTOR 9.58'

0.00'

**Total Length: 29.93'**  
**Total Weight: Not Available**  
**Max Diameter: 0' 1.70"**

**Baker Atlas***CASE***Company**

WPX ENERGY

**Well**

FEDERAL RGU 523-24-198

**Field**

SULPHUR CREEK

**County**

RIO BLANCO

**State**

COLORADO

**Location**

SHL: 2144' FSL &amp; 1703' FEL

BHL: 1438' FSL &amp; 1905' FWL (NESW)

**Elevations**

KB 6617 ft

DF

GL 6596 ft

SEC 24 TWP 1S RGE 98W

**File No:**

CH087682

**API No:**

05103120790000

24 1S 98W

RGU 33-24-198 PAD

CYCLONE 29