



# RESERVOIR PERFORMANCE MONITOR

Baker Atlas

File No: CH070854	Company Well Field County	WPX ENERGY DUGGAN RWF 513-29 RULISON GARFIELD	State COLORADO
API No: 05045216620000			
Location 29 GS 94W RWF 14-29 NABORS SSD 573	SHL: 579' FSL & 582' FWL BHL: 2481' FSL & 734' FWL SEC 29 TWP 6S RGE 94W	Other Services BOND LOG	
Permanent Datum Log Measured From Drill Measured From	G.L. _____ Elevation 5419.2 ft K.B. _____ 26 ft Above P. D. KELLY BUSHING	Elevations KB 5445.2 ft DF GL 5419.2 ft	

Date	20/APR/13	
Run	ONE	
Service Order	533659	
Depth Driller	8276 ft	
Depth Logger	8243 ft	
Bottom Logged Interval	8233 ft	
Top Logged Interval	4340 ft	
Time Started	7:30	
Time Finished	14:00	
Operator Rig Time	6.5 HRS	
Type of Fluid in Hole	WATER	
Fluid Density	N/A	
Salinity	N/A	
Fluid Level	122 ft	
Logged Cement Top	N/A	
Wellhead Pressure	0 psi	
Maximum Hole Deviation	N/A	
Nominal Logging Speed	10 fpm	
Maximum Recorded Temperature	232 degF	
Reference Log	BAKER HUGHES BOND LOG	
Reference Log Date	19/APR/15	
Equipment No.	6726	ROCK SPRINGS
Recorded By	M. KINSEL	9712
Witnessed By	MR. BOB CADY	GRAND JUNCTION

- 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	1155 ft
8.75 In	0 ft	8333 ft

Casing Record				
Size	Weight	Grade	From	To
9.625 In	N/A	N/A	0 ft	1100 ft
4.5 In	11.6 lbm/ft	1-80	0 ft	8278 ft

Remarks
ALL DATA IN THIS LOG WAS DEPTH SHIFTED TO MATCH A BAKER HUGHES BOND LOG DATED 19 APRIL 2013 AT THE CLIENT'S REQUEST. THE AMOUNT OF LINEAR SHIFT WAS 7 FEET DOWN. DEPTH SHIFTING PROCESS CREATES THE POTENTIAL FOR COLLAR LENGTHS TO VARY FROM OTHER CASED HOLE LOGS WITHOUT A GAMMA RAY REFERENCE.  SHORT JOINT: 4890' - 4910'  BHT: 232 degF

Equipment Data					
Run	Trip	Tool	Series Number	Serial Number	Position
1	1	RPM	8281FA	10460082	FREE
1	1	RPM	8281PA	10466231	FREE
1	1	RPM	8281EA	10190984	FREE
1	1	GAMMA RAY	8262XA	10485470	FREE
1	1	TEL/CCL	8248EA	10460262	FREE
1	1	PCM	8250EA	10586851	FREE

MAIN LOG  
PNC 3D MODE

SPL PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
PNC Porosity	Borehole	Cased		4307.891	8234.000
PNC Porosity	Borehole Size	8.750	inch	4307.891	8234.000
PNC Porosity	Casing Size	4.500	inch	4307.891	8234.000
PNC Porosity	Gas Filled	Non Gas Filled		4307.891	8234.000
PNC Porosity	Matrix	Sandstone		4307.891	8234.000

DEPTH OFFSETS							
(for Acquired Curves)							
SERIES	DEPTH OFFSET	ACQUIRED CURVES					
8248EA	-15.320	FLTM					
8248EA	-13.320	CCL	CHV				
8262XA	-10.189	GR					
8281XA	-0.662	HVC3Q0	SEQ3	AMA3	AML3	BKX	CXS
		CPT3Q0	CPT3Q2	CPT3Q3	CPT3Q4	ET3	IXS
		MCS3	MCS3Q0	QCAL3	RGN3	RICX	SDA3
		CDL3	CDL3	CDL3	CDL3	YD	LOGF07

8281XA

-0.250

SDL3	SGA3	SGL3	STA3	X5	ASPEC3
AMB3	AMF3	CHF3	IXSC	IXSN	RAT023
RICXC	RIN13C	RIN23	RIN23C	SD3D	SG3D
SGB3	SGF3	WDTH3	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	RTW023	SDA2
SDL2	SGA2	SGB2	SGF2	SGK2	SGL2
STA2	ASPEC2	ILSC	ILSN	WDTH2	RICLC

8281XA

0.000

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	RAT0	RAT013
RBOR	RGN1	RICS	RIN	RONE	RPOR
RTW0	RIN13	RONE13	RTW013	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	MM	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	HOC	FE2XC	ISSC	RINC
ISSN	RDEN	WDTH1	RICSC	CSSR	G1R
G2R	ISSR	SSR	SS2R	RATOR	RAT013R
RBORR	RICSR	RINR	RIN13R	RONER	RPORR

SYSTEM

0.000

TEN TTEN

Created by : RPM9, v5.3.1.0

Plotted by : PlotMgr, v5.4.504

Company : WPX ENERGY

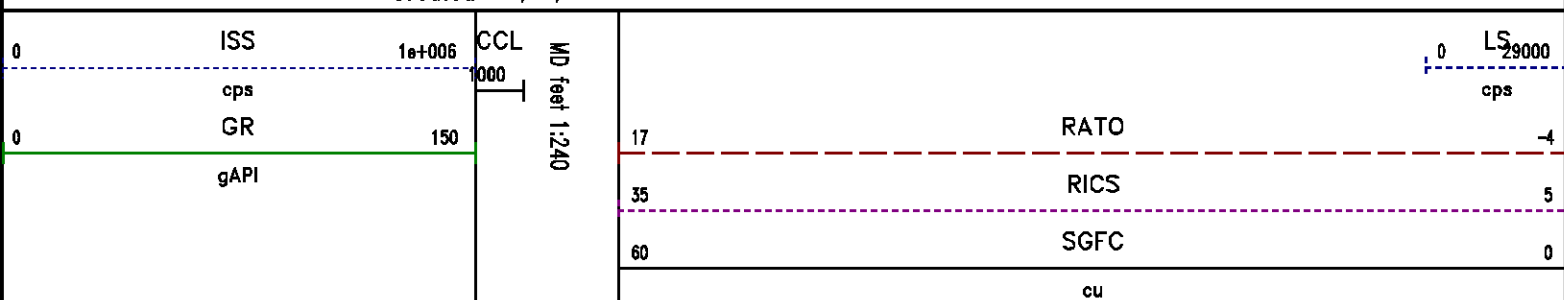
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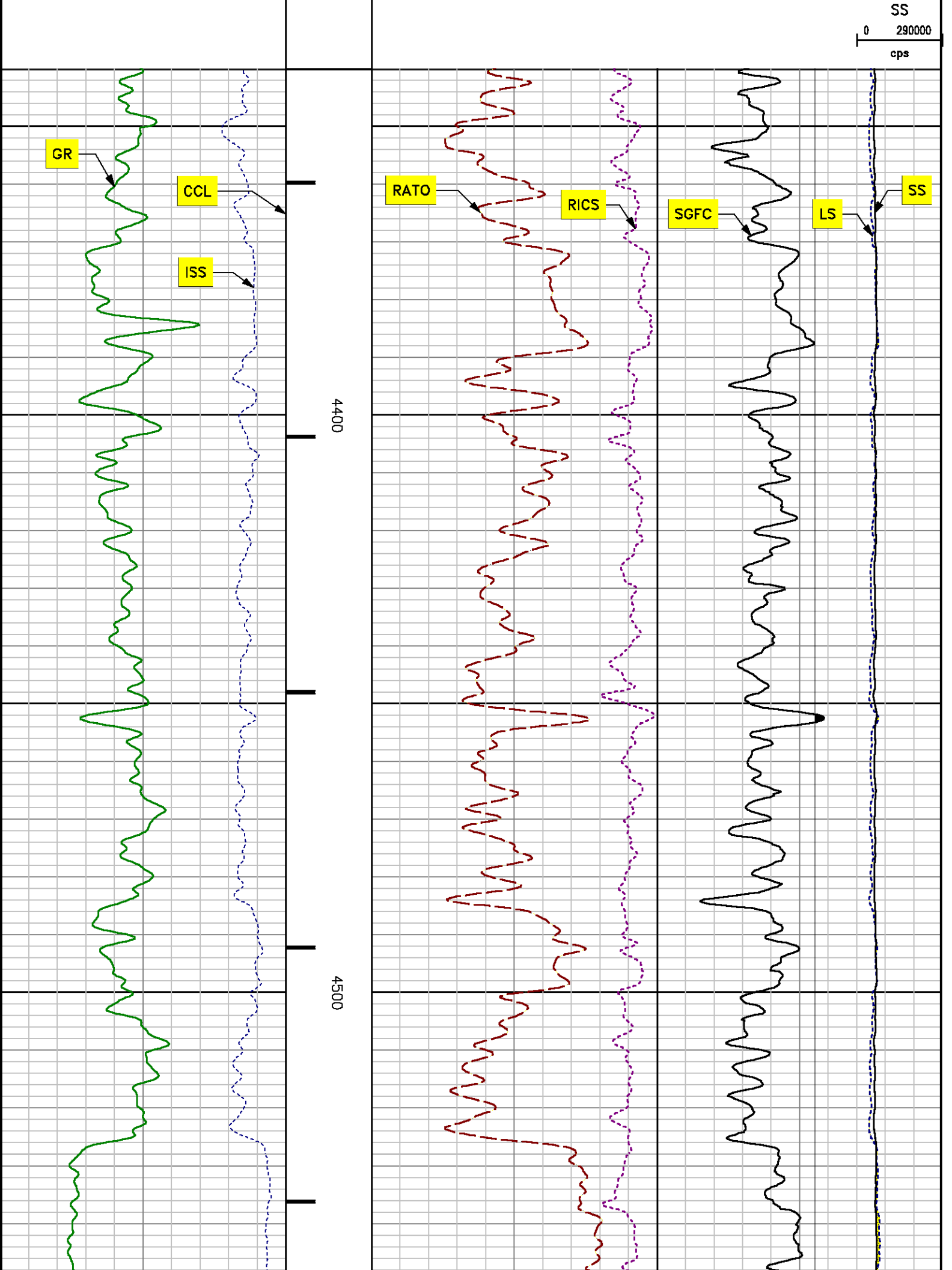
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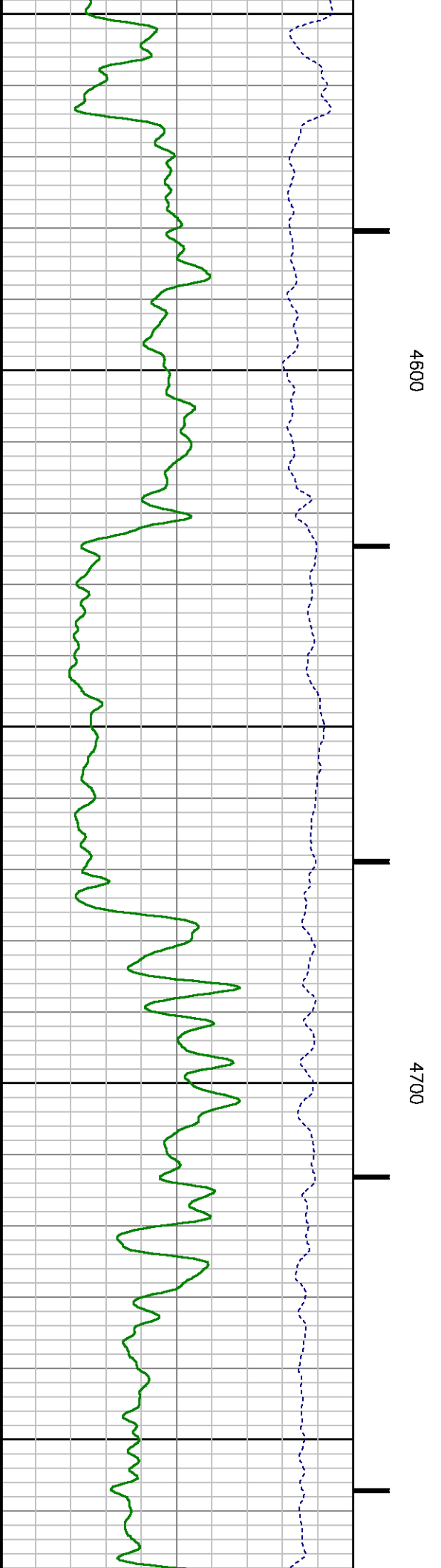
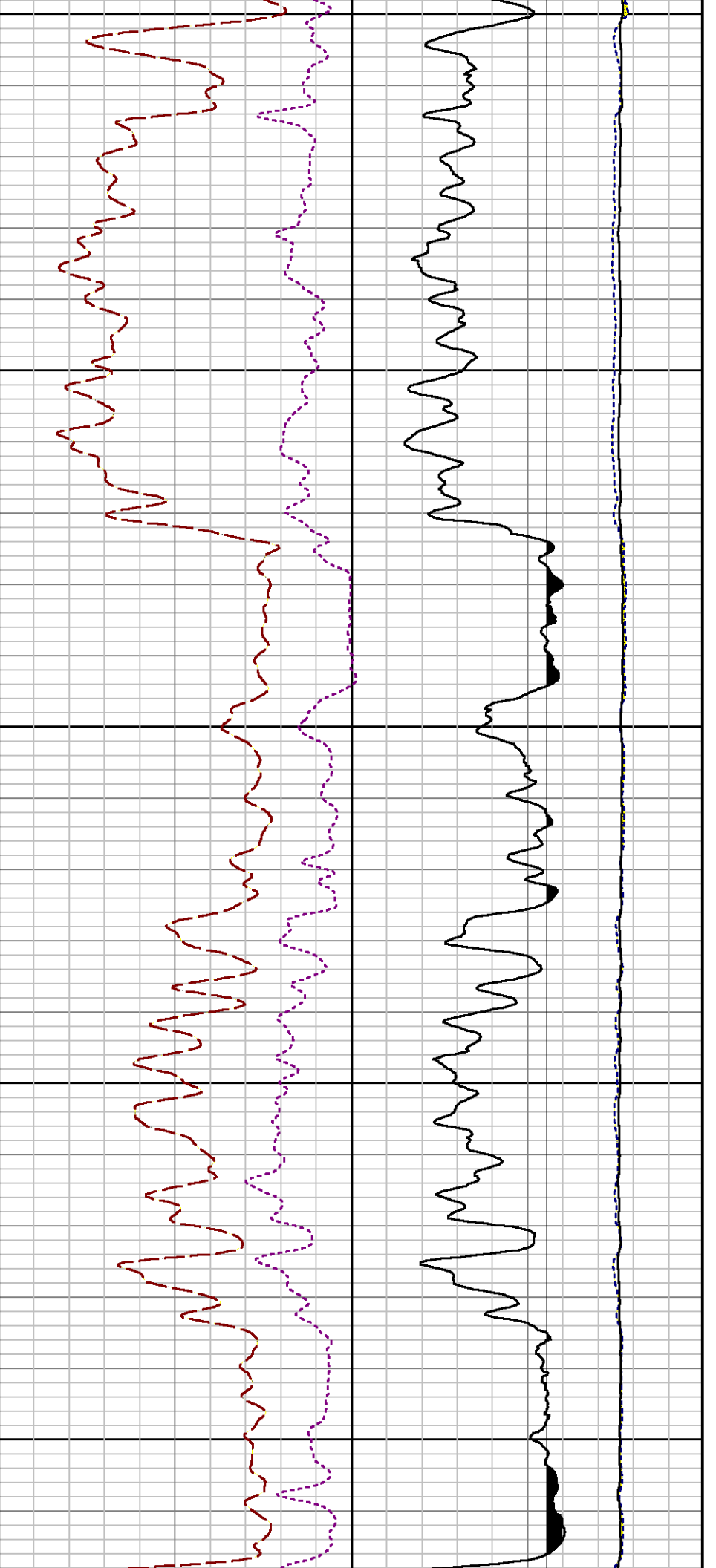
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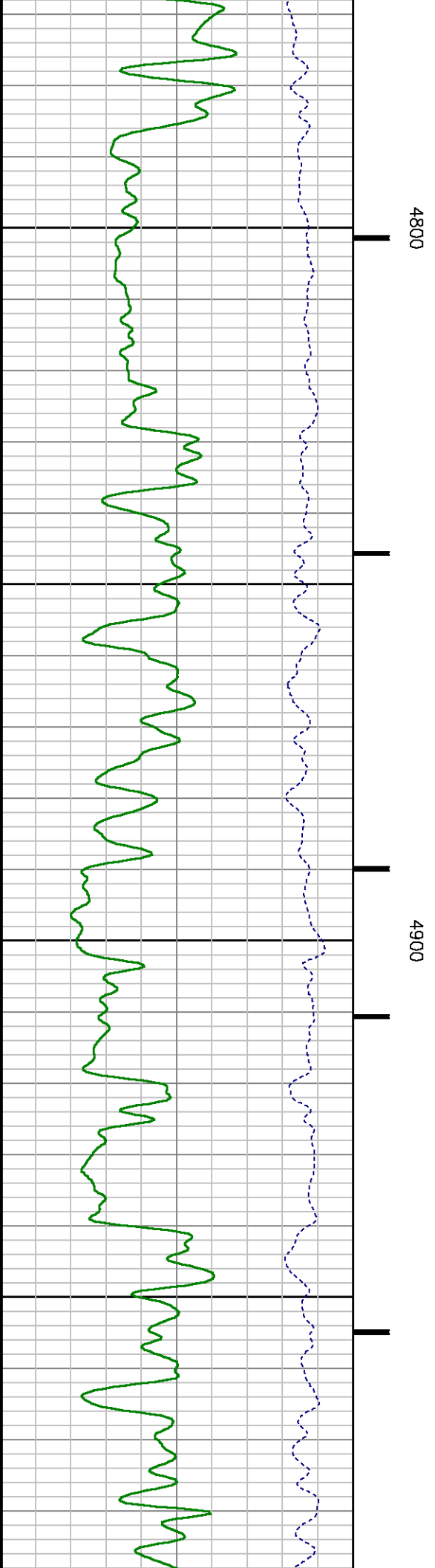
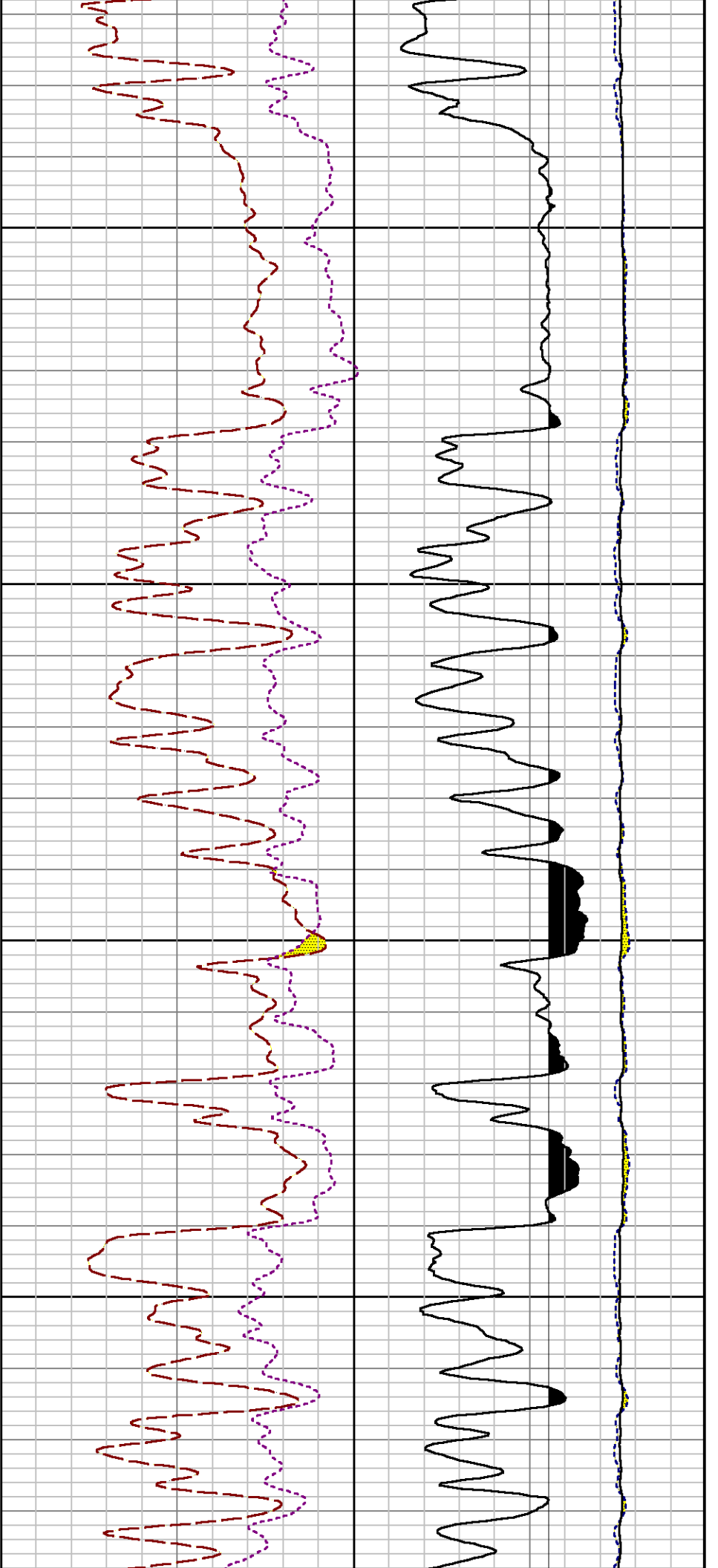
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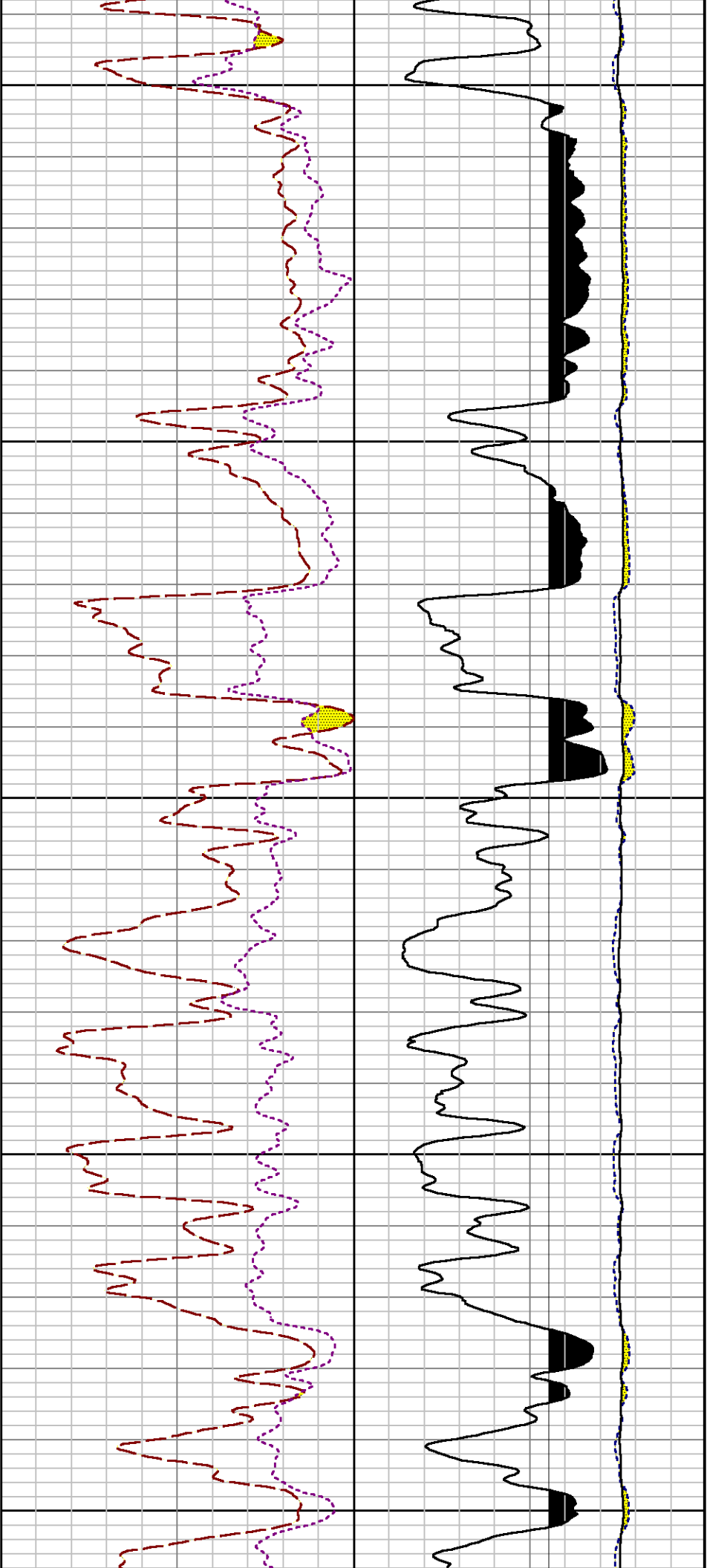
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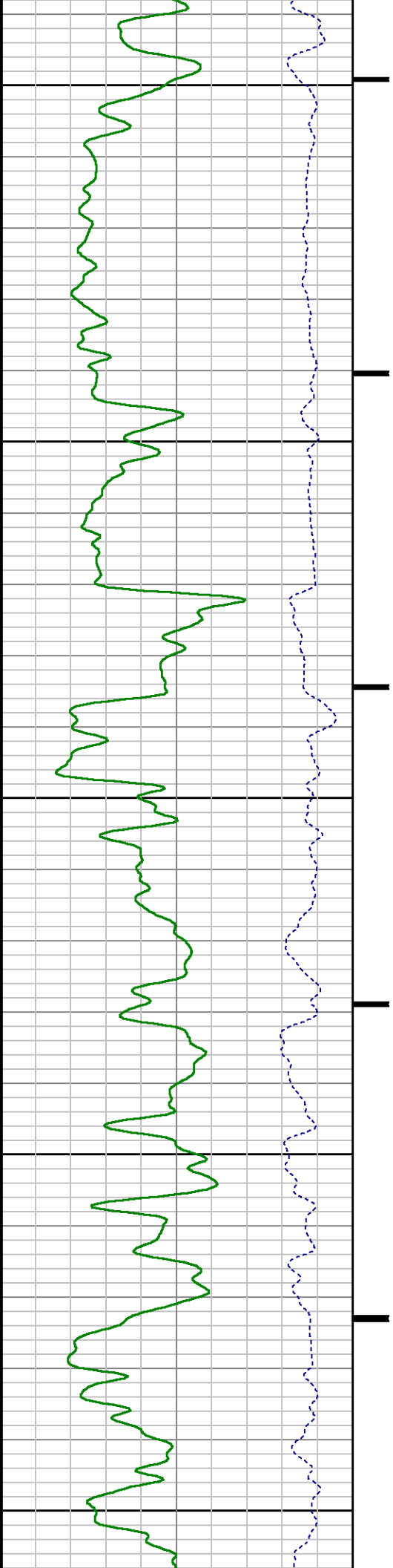


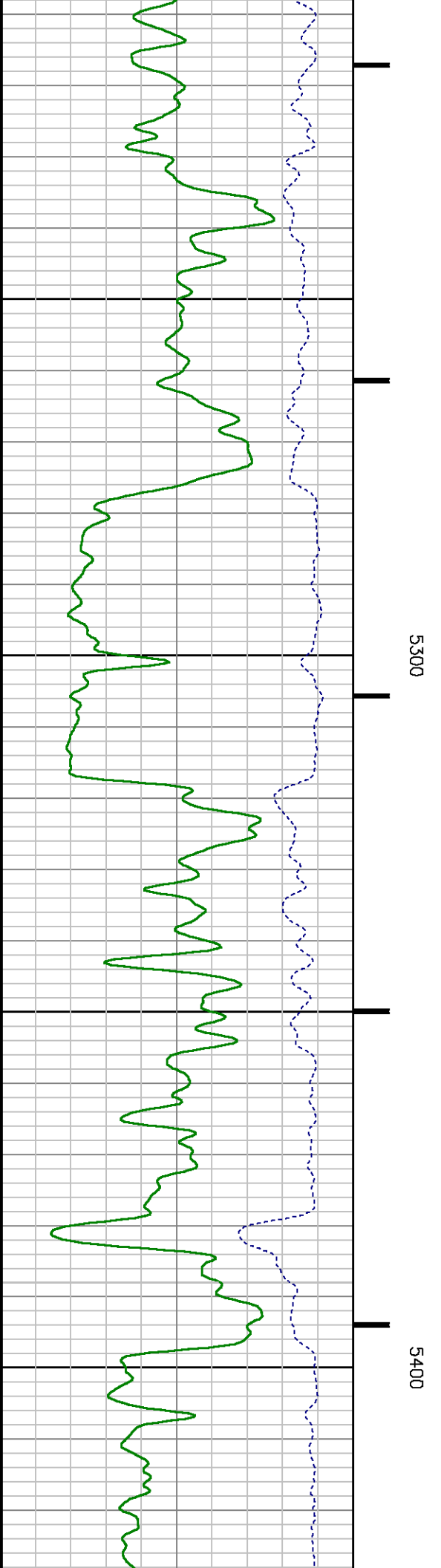
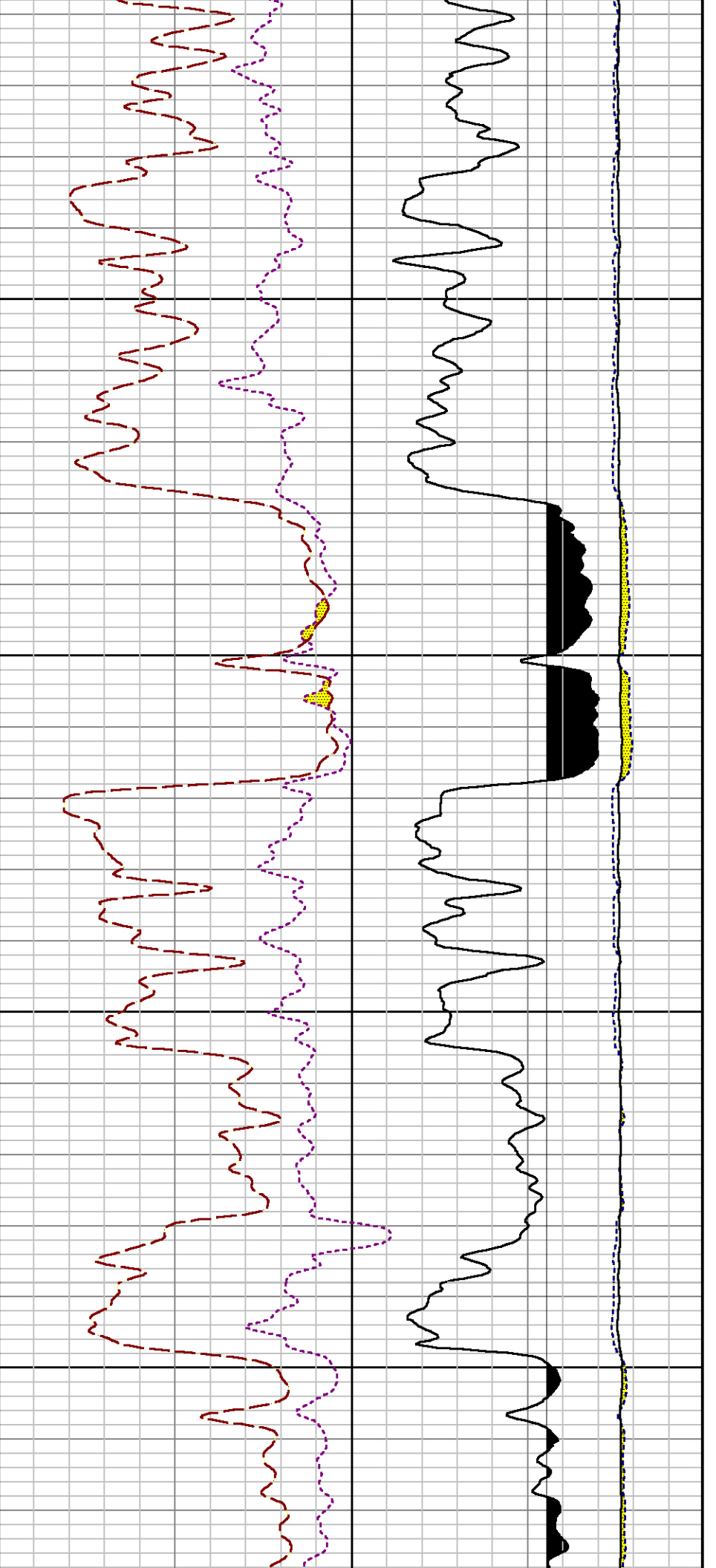


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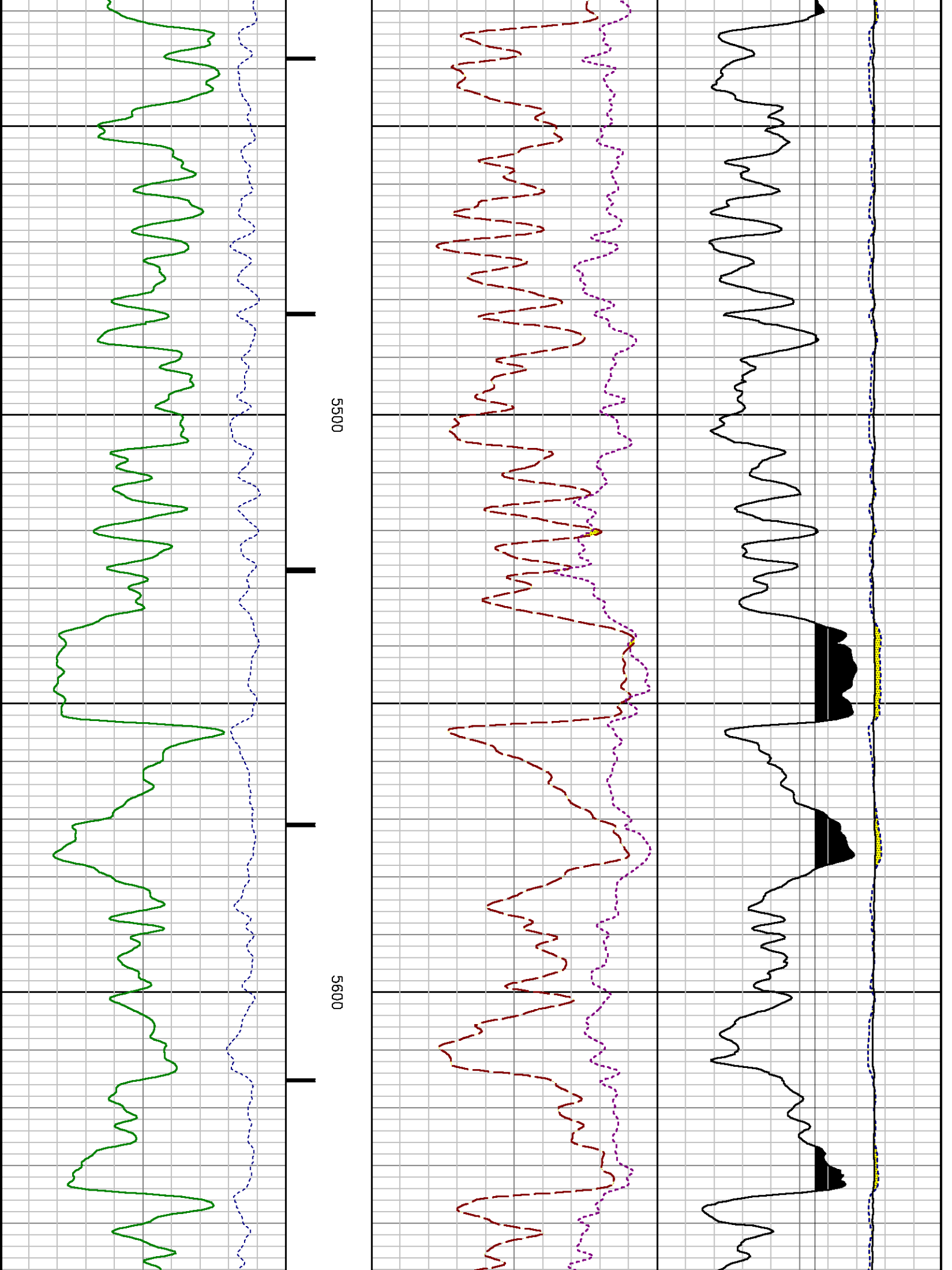
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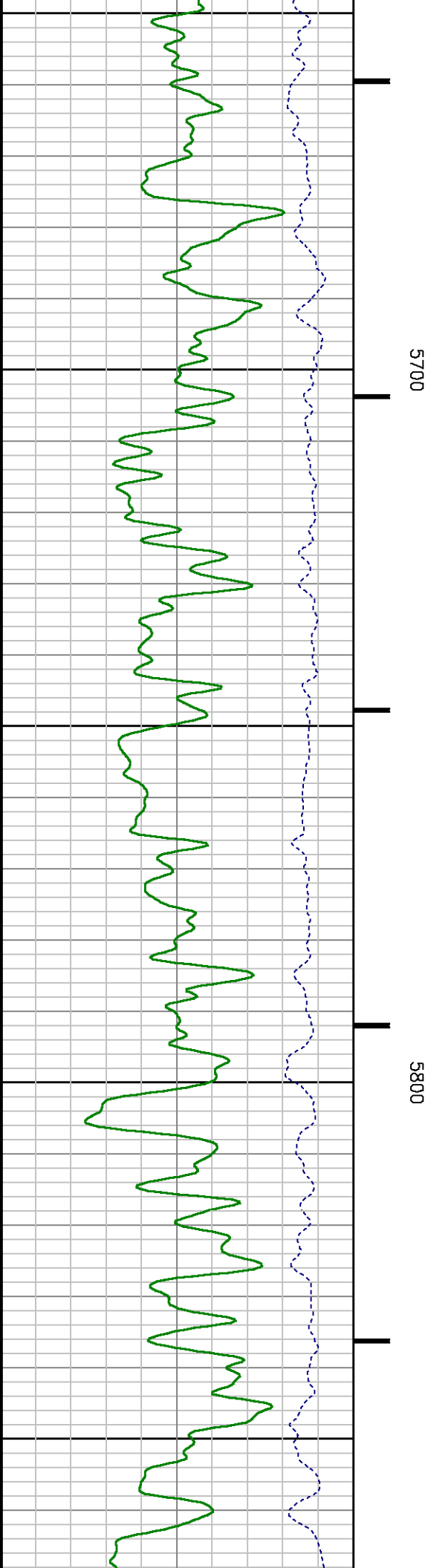
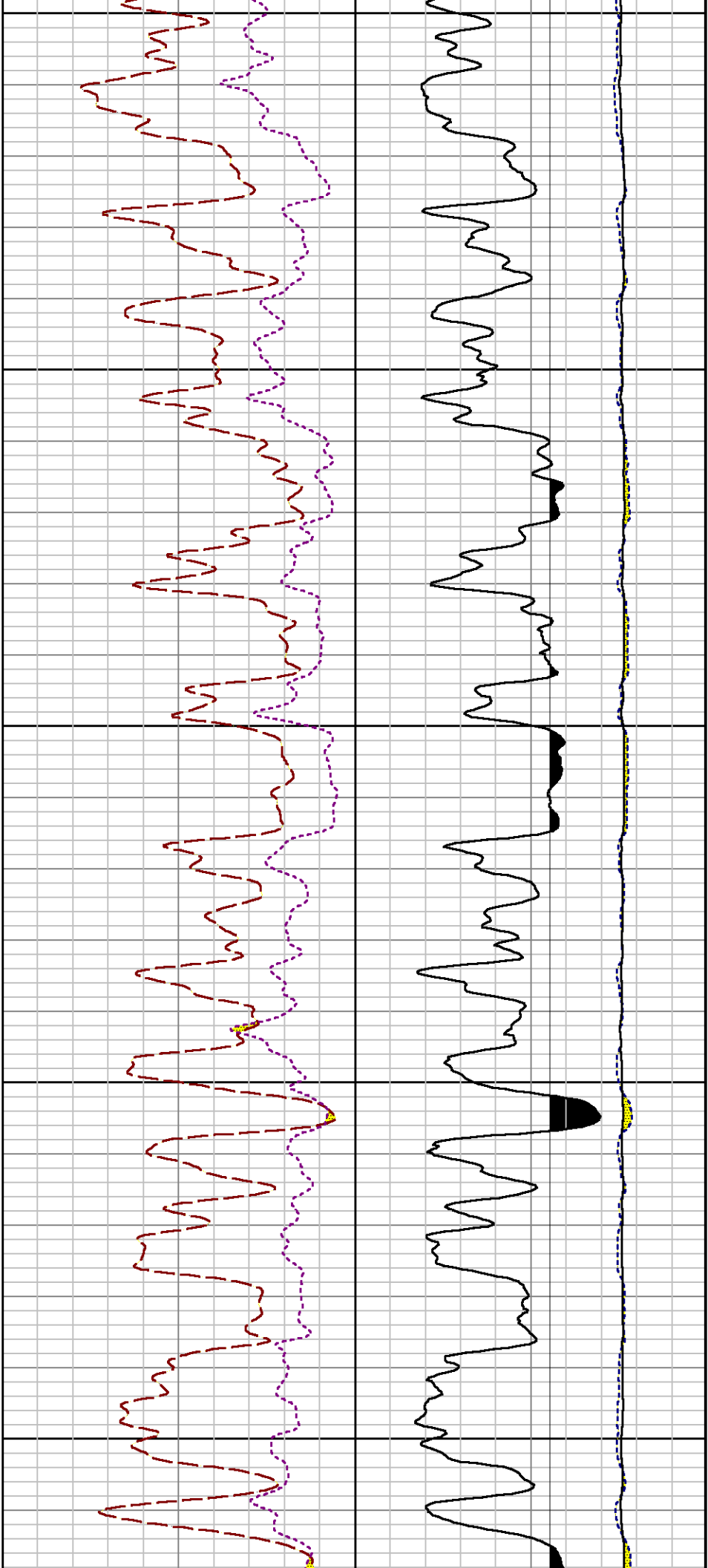
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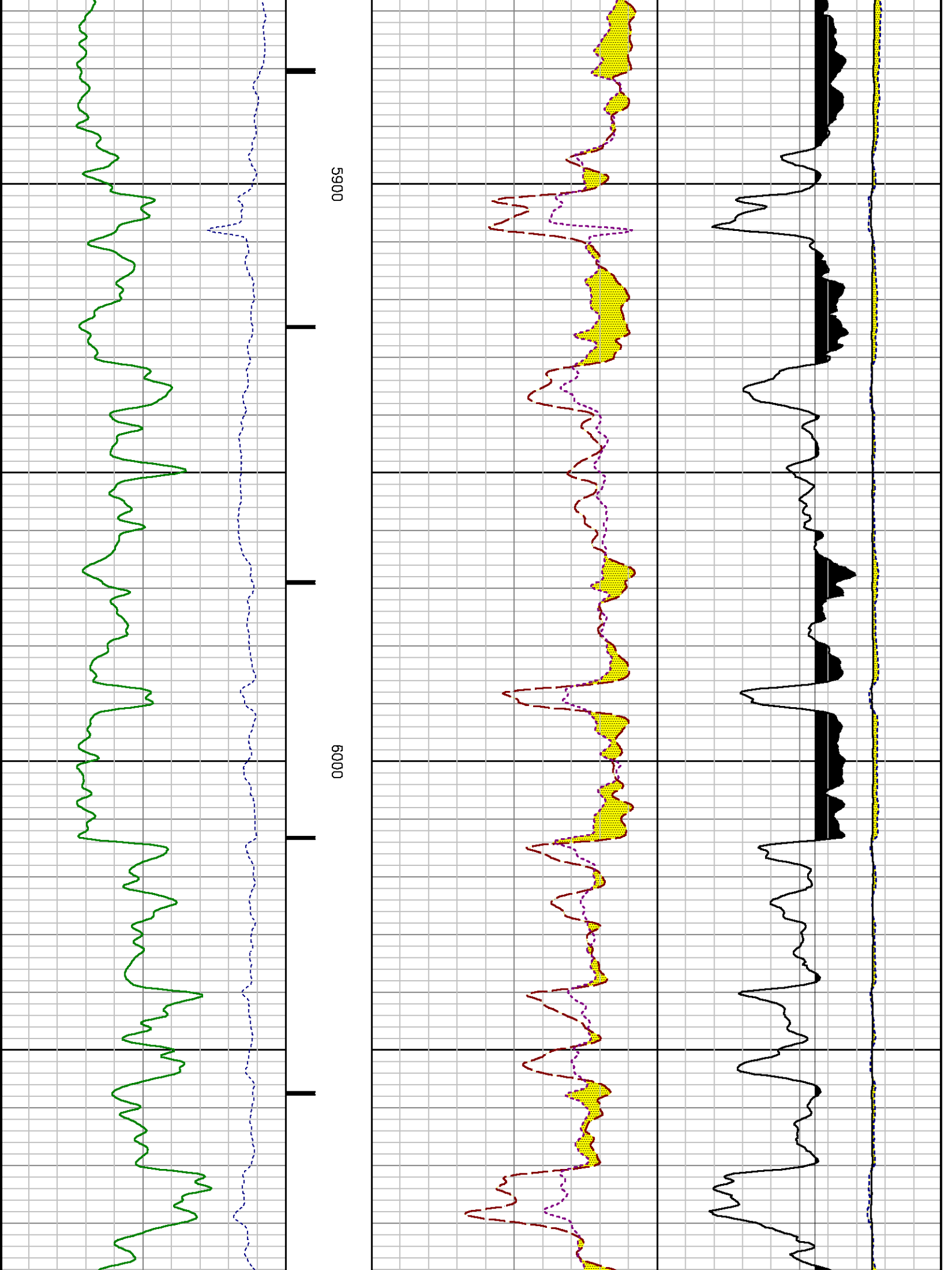


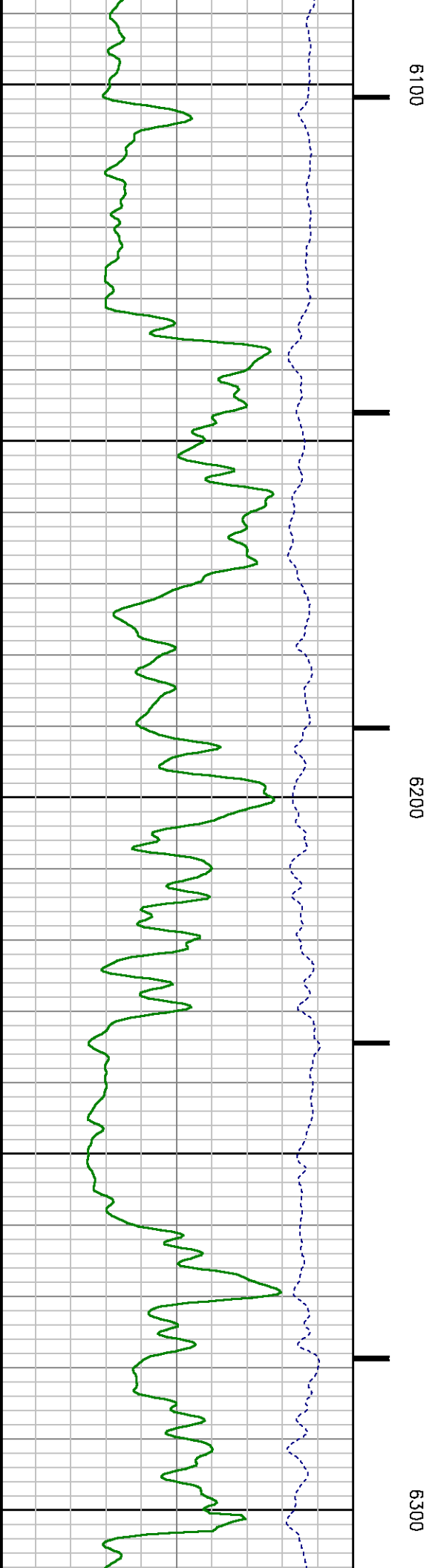
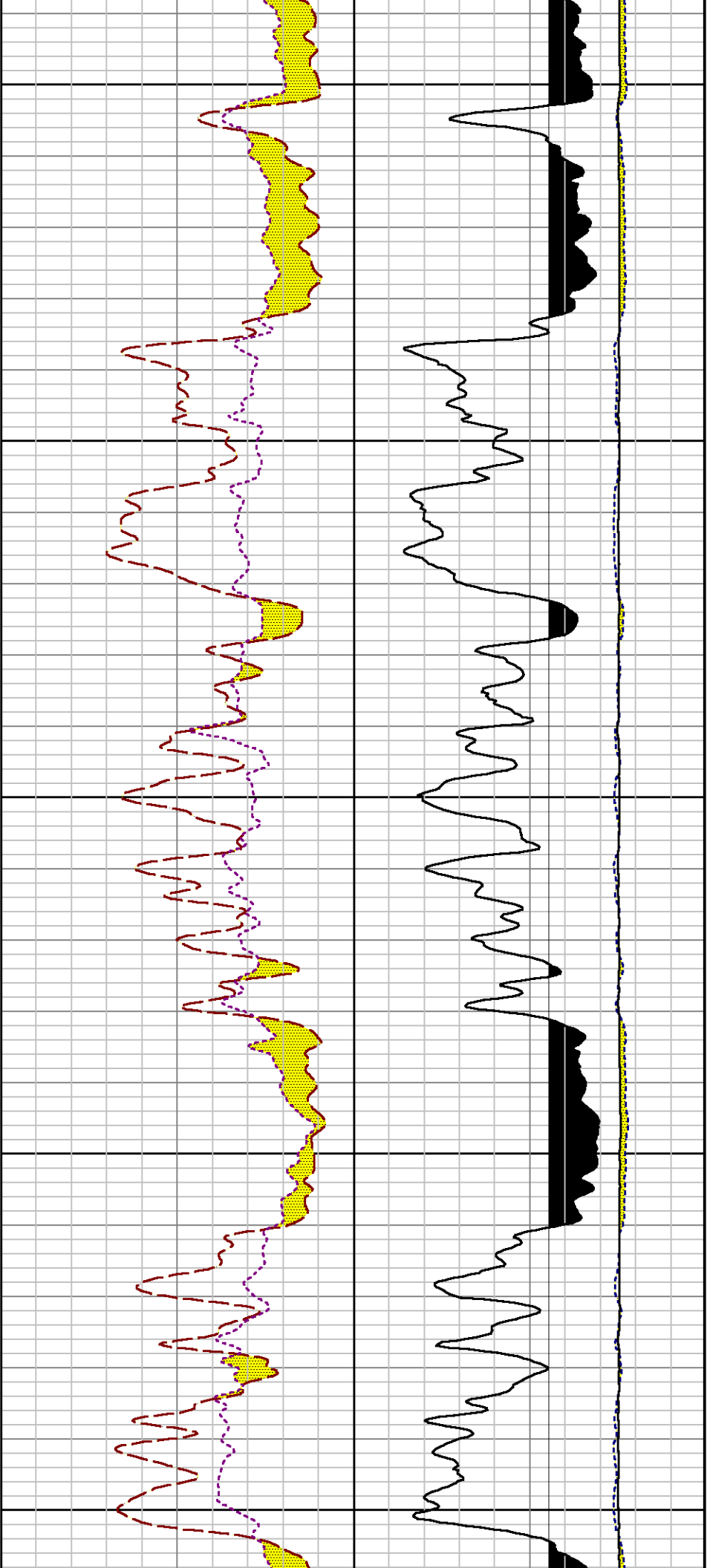


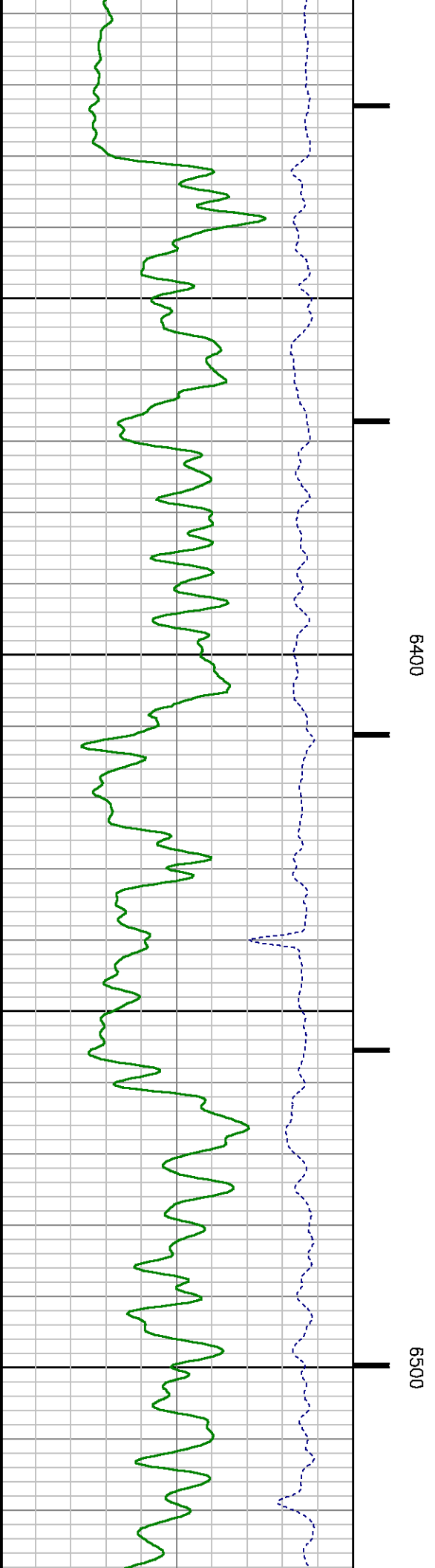
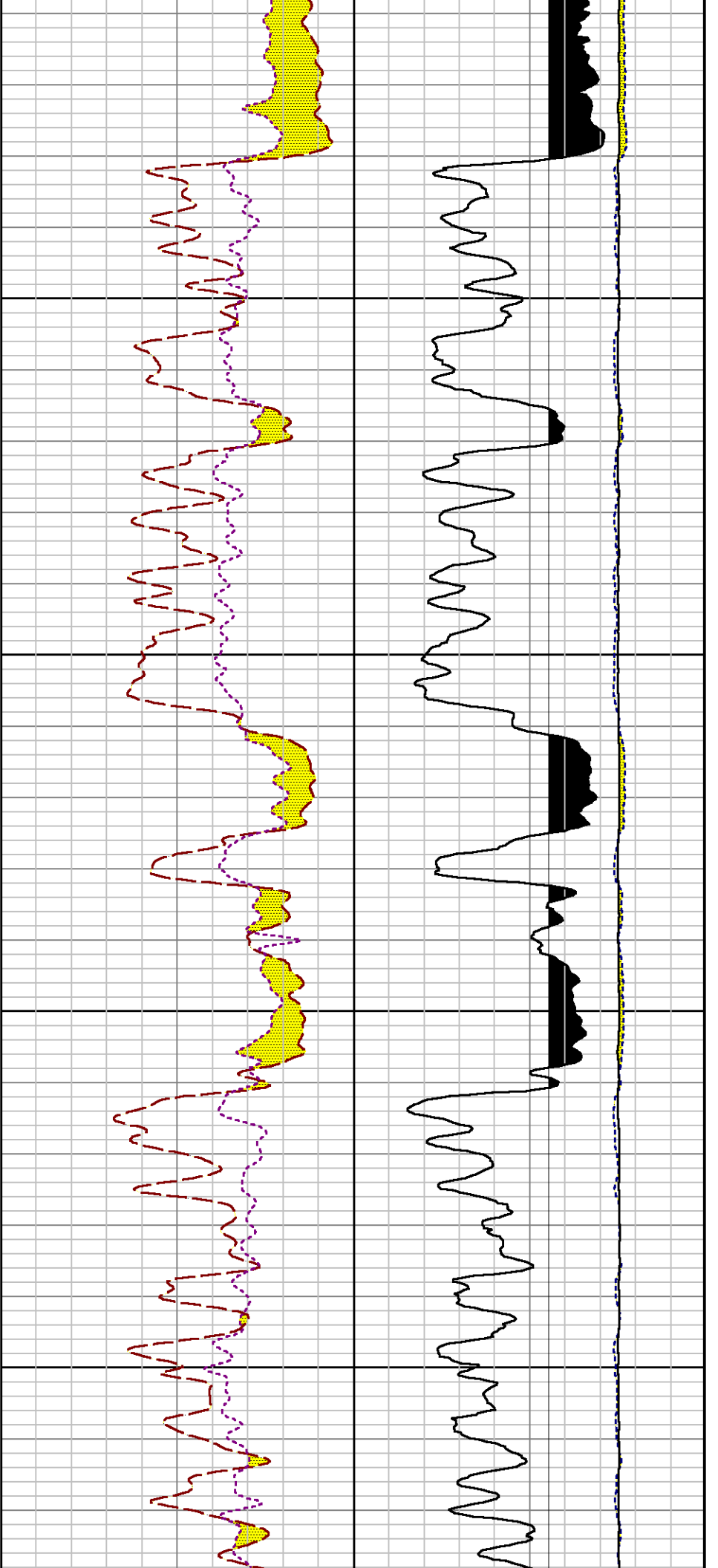


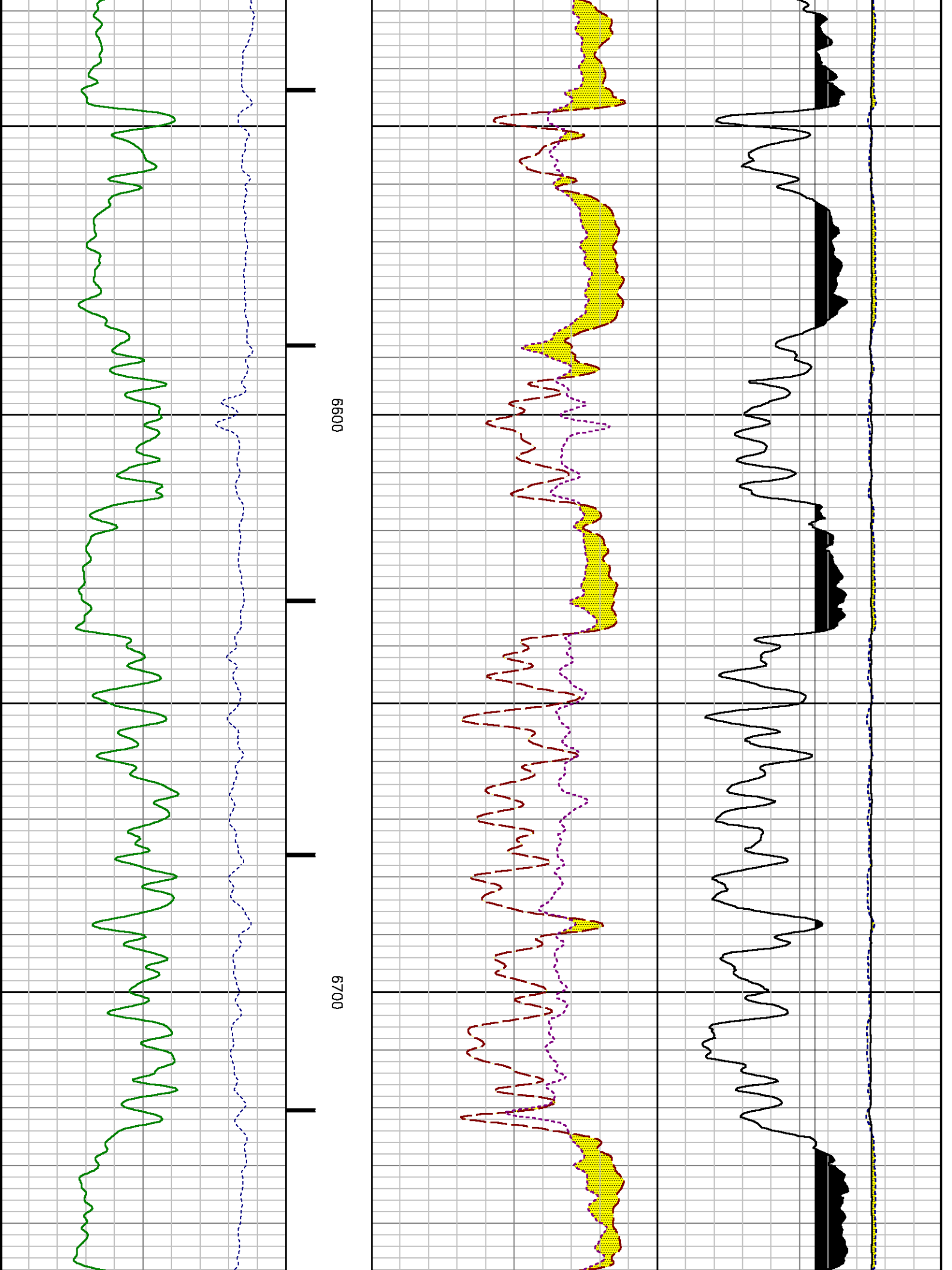


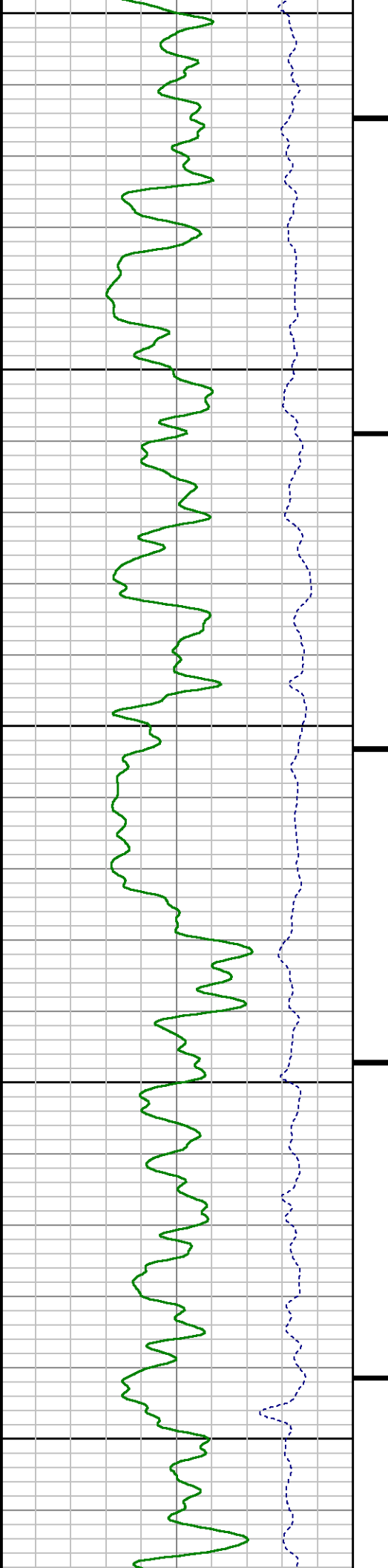






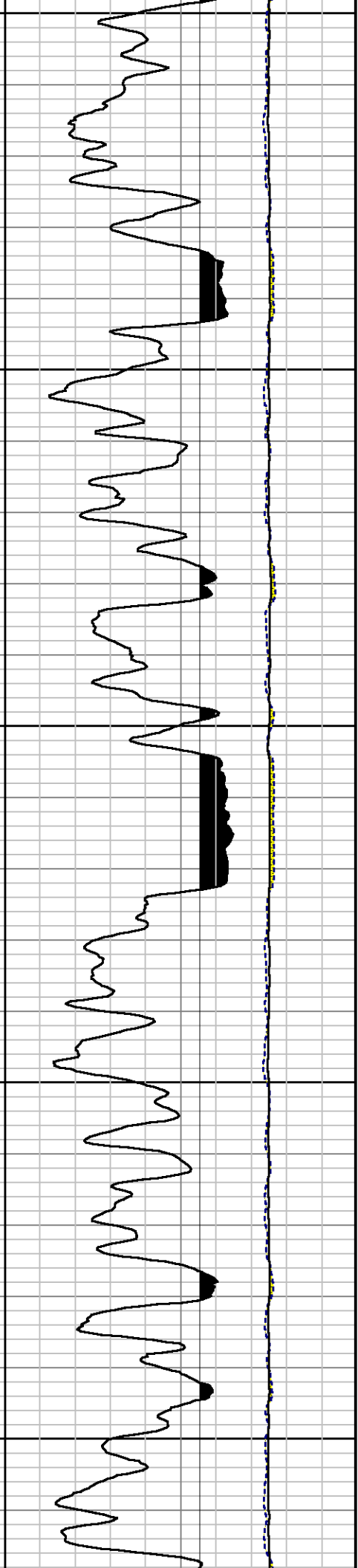
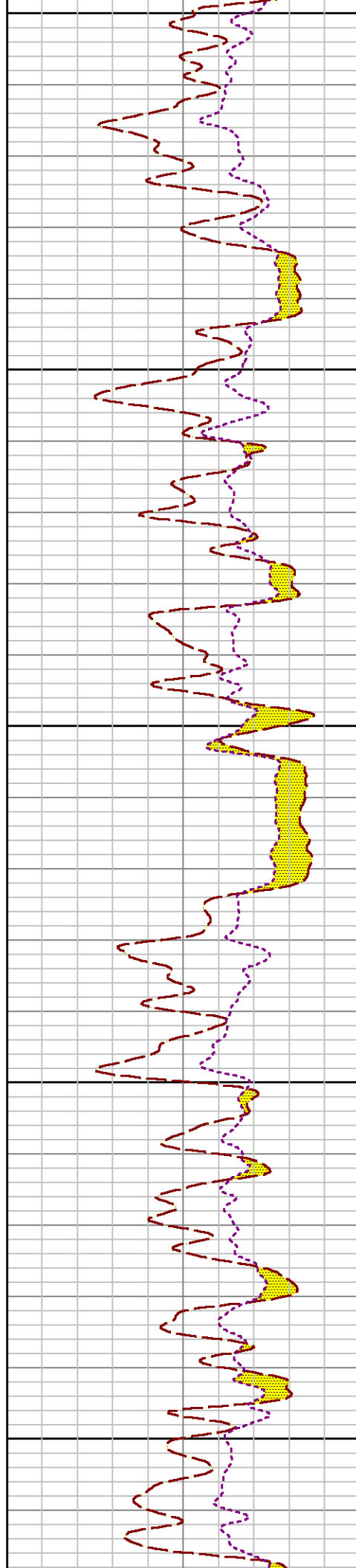


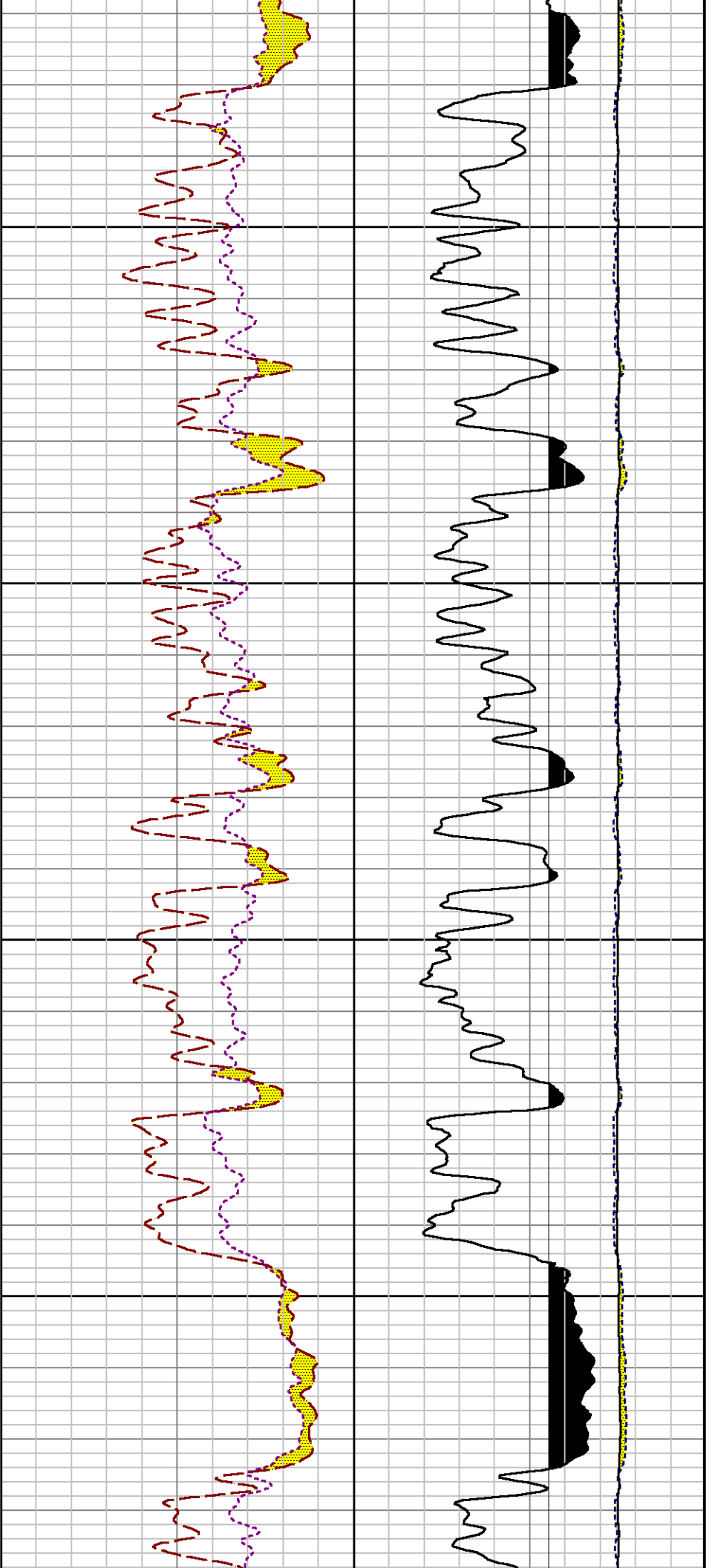




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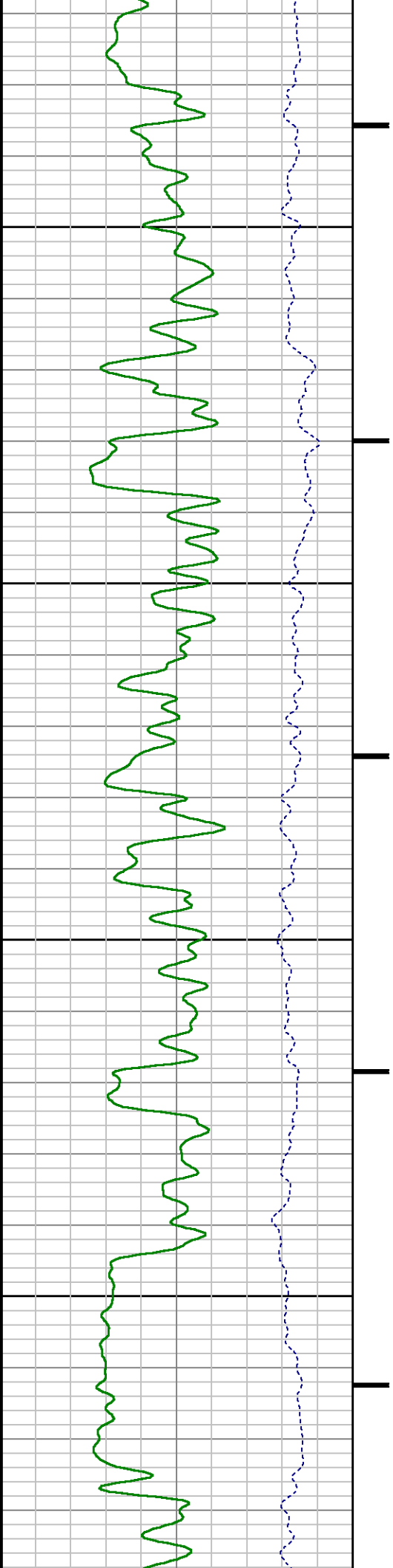
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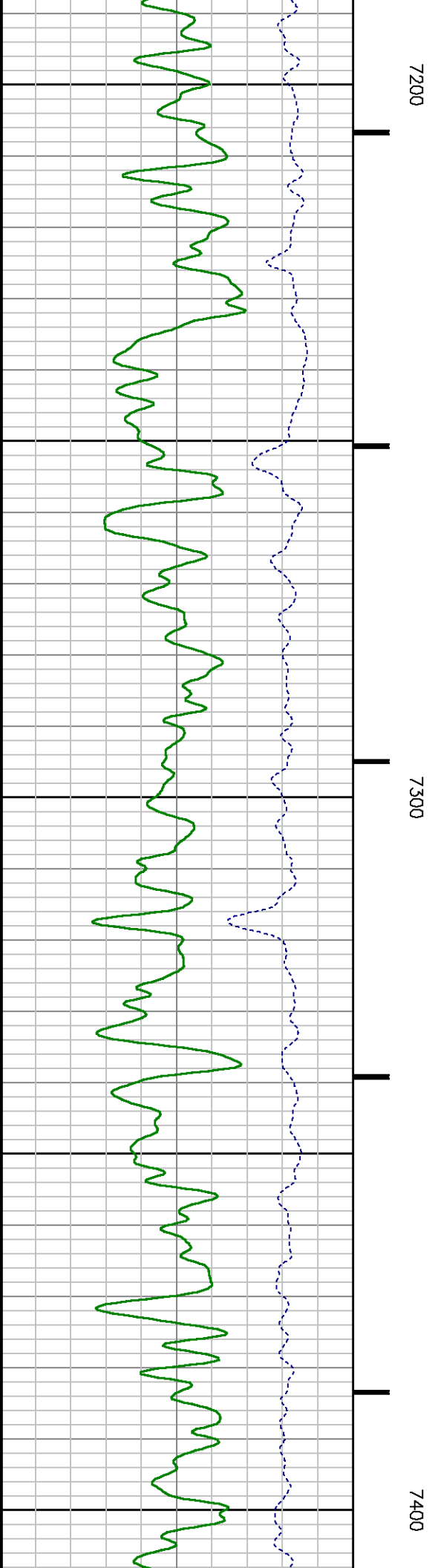
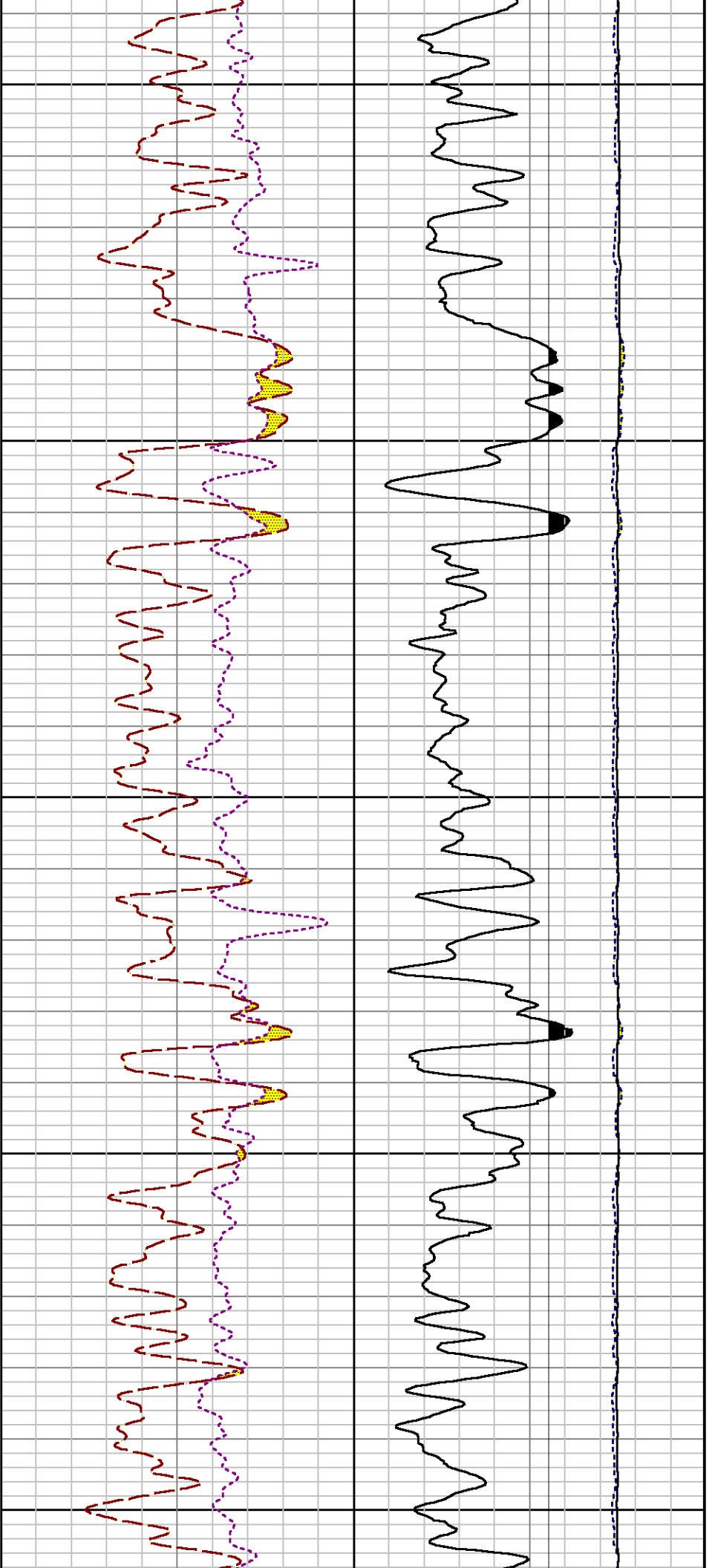


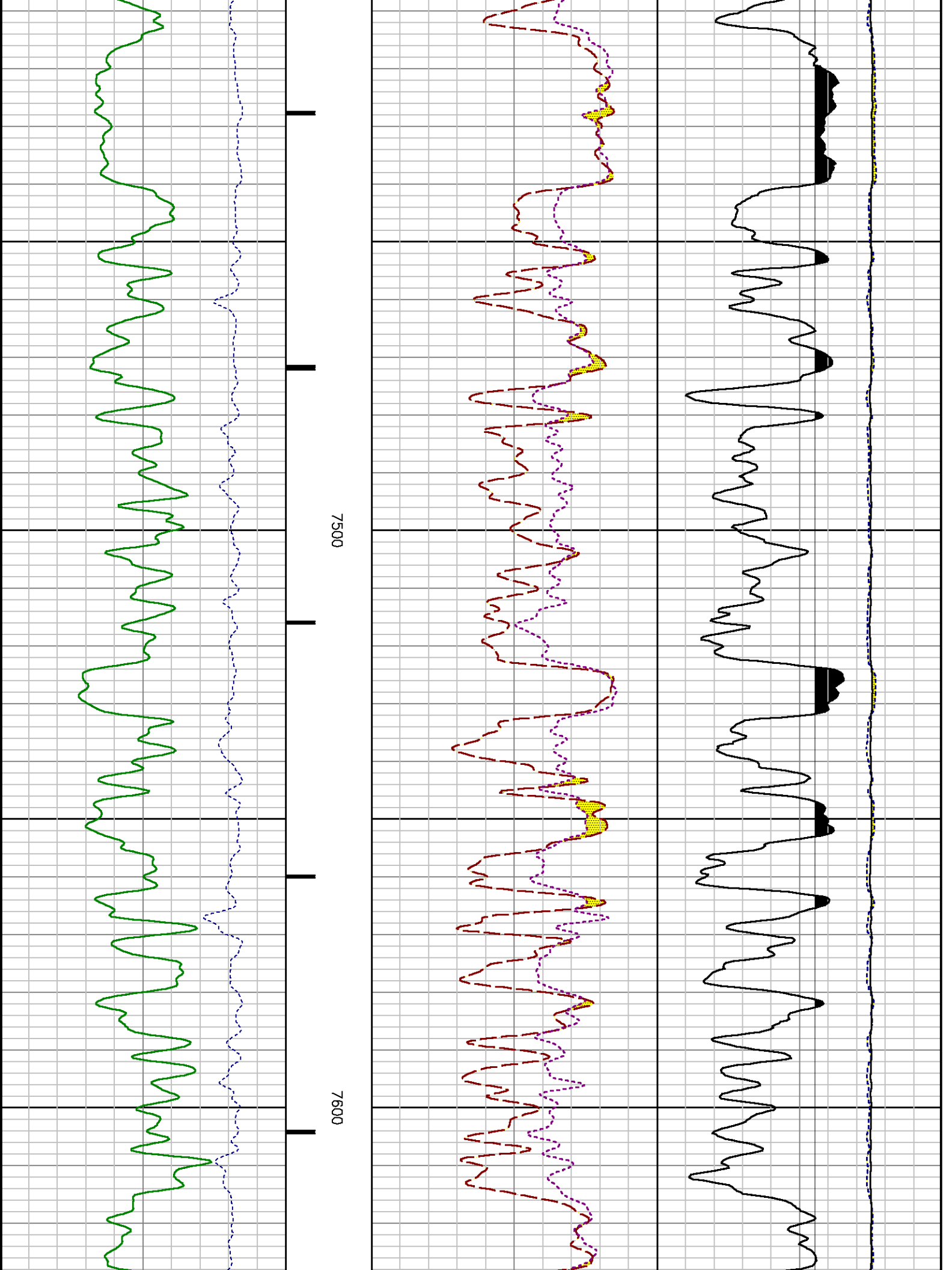
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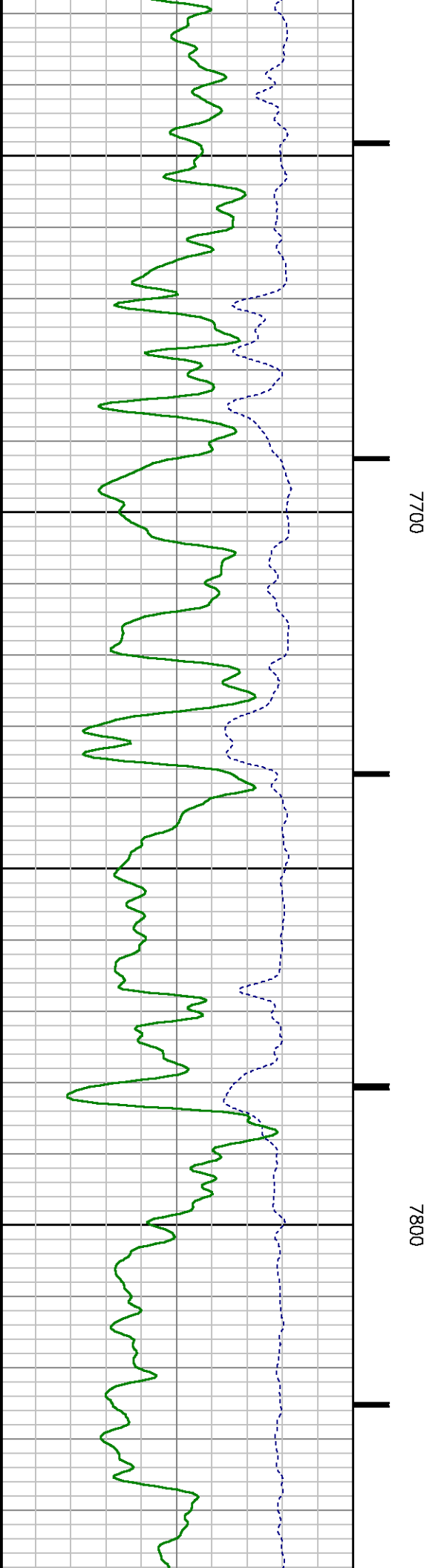
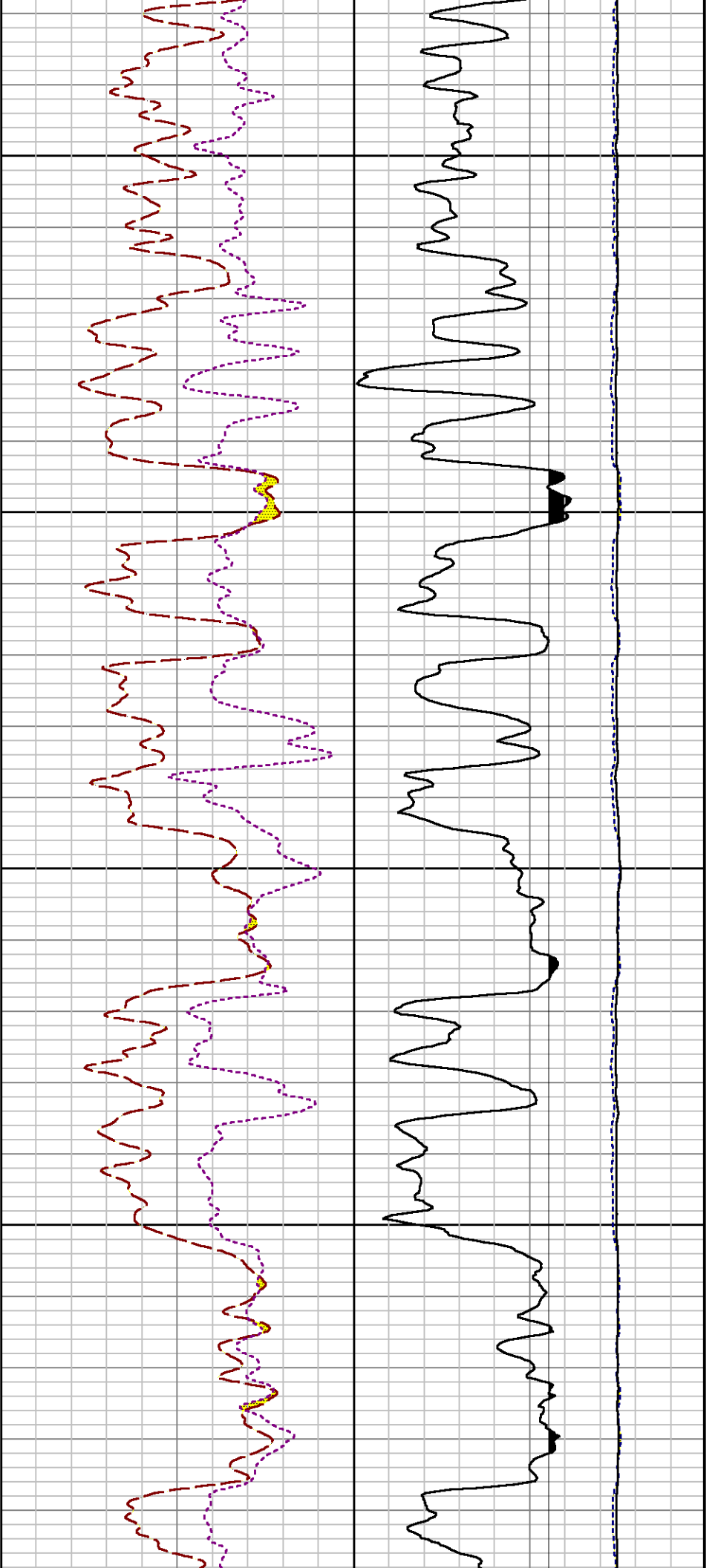
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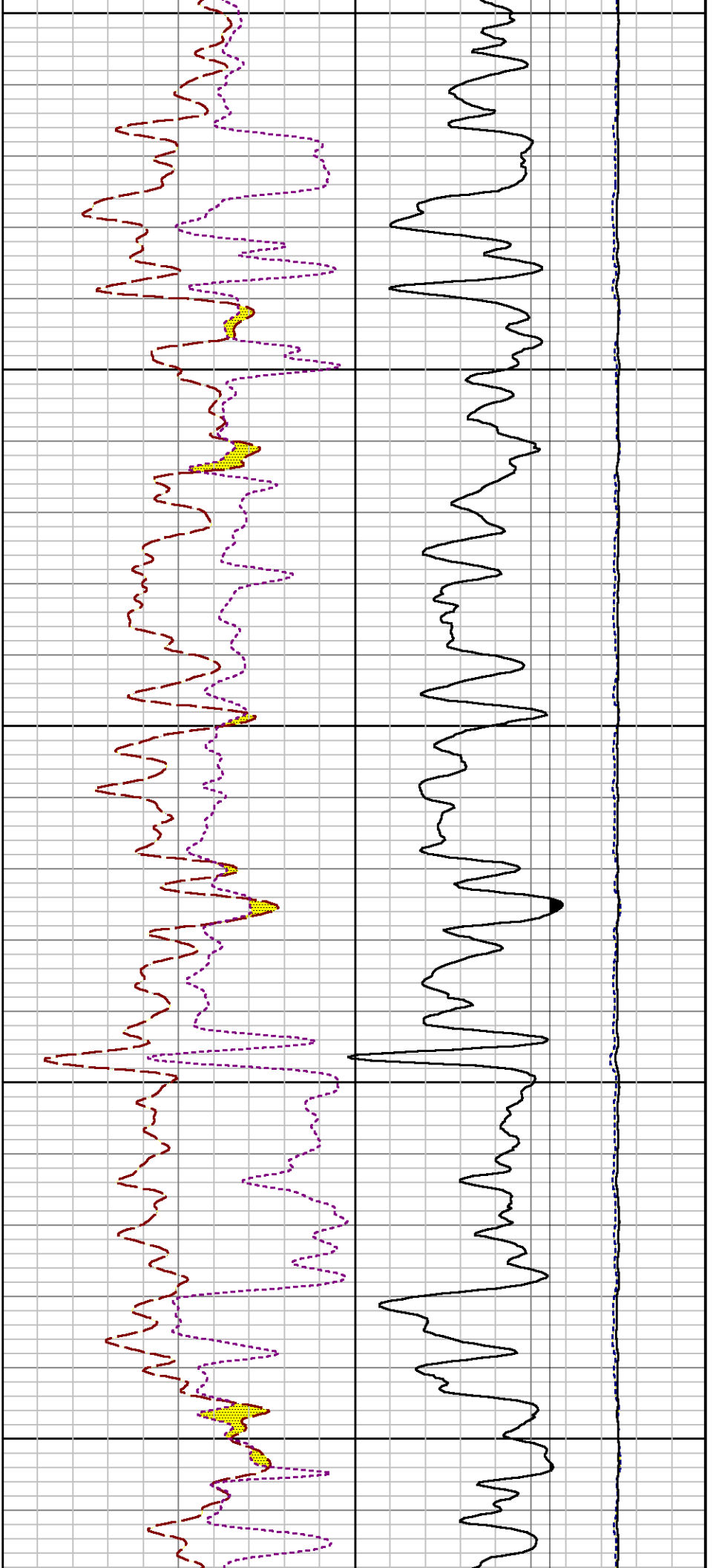






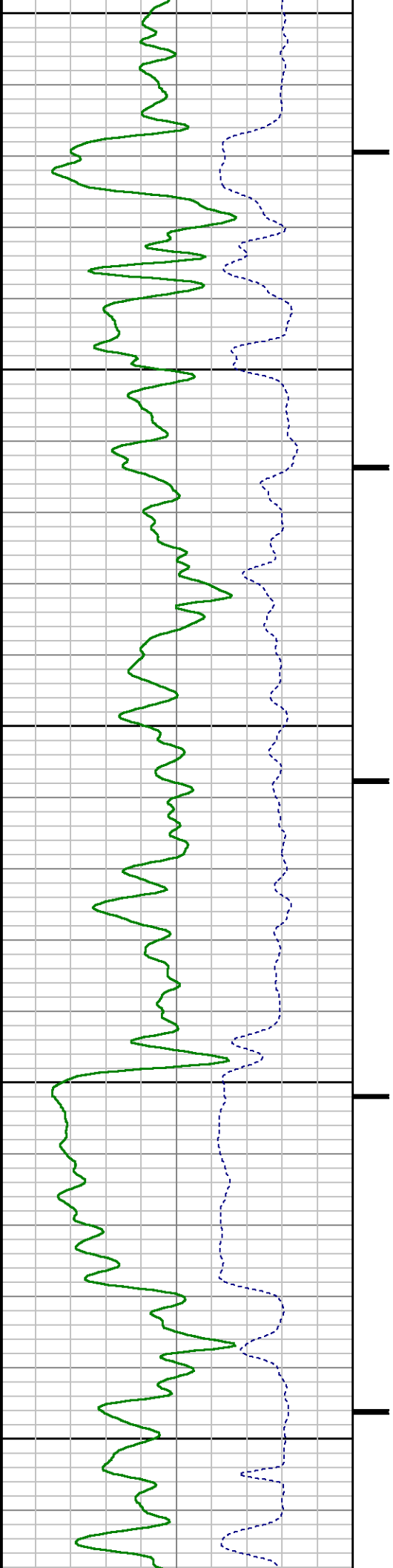


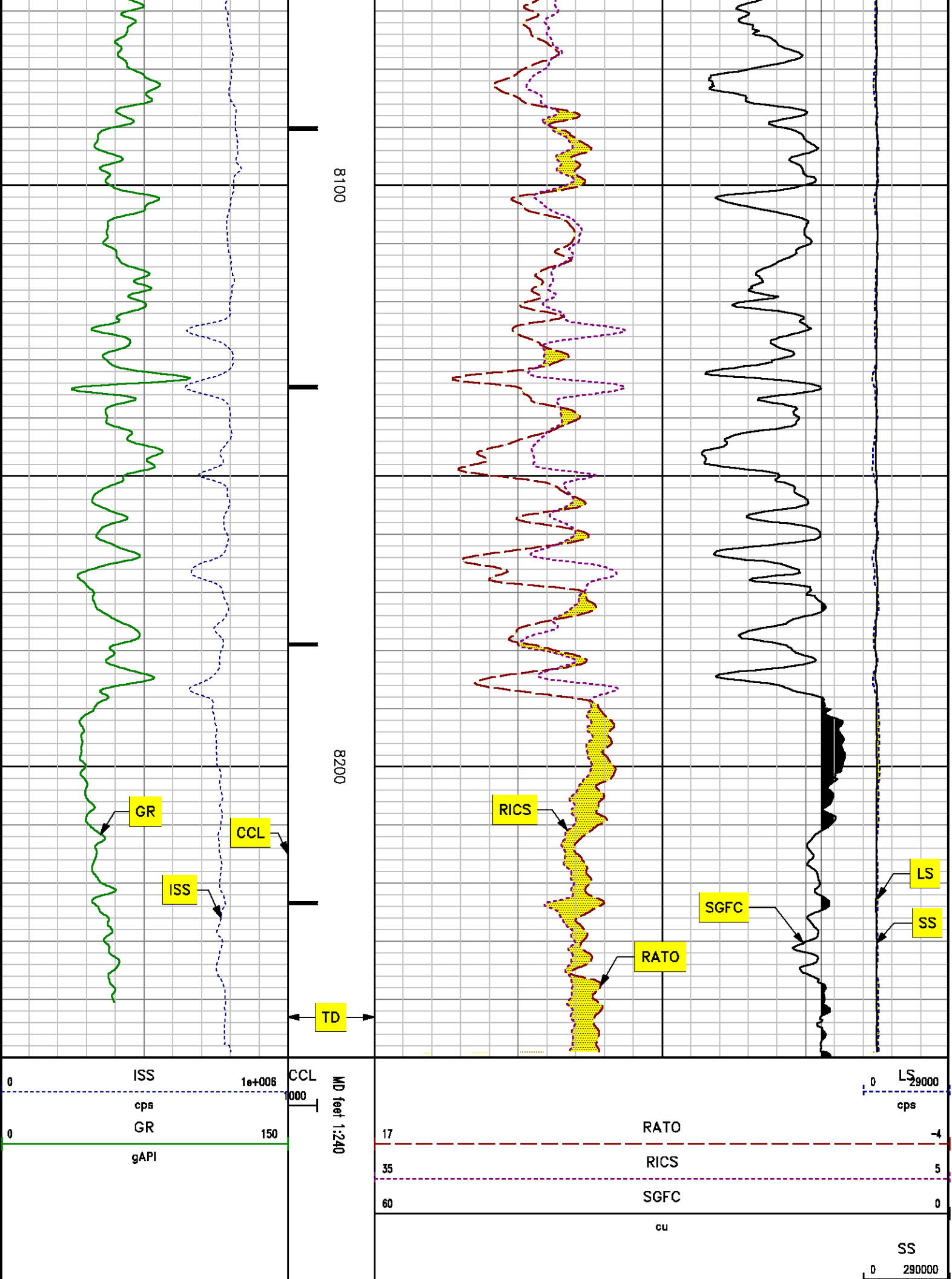




7900

8000





# *REPEAT LOG*

## *PNC 3D MODE*

### SPL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
PNC Porosity	Borehole	Cased		7399.750	7735.000
PNC Porosity	Borehole Size	8.750	inch	7399.750	7735.000
PNC Porosity	Casing Size	4.500	inch	7399.750	7735.000
PNC Porosity	Gas Filled	Non Gas Filled		7399.750	7735.000
PNC Porosity	Matrix	Sandstone		7399.750	7735.000

### DEPTH OFFSETS

(for Acquired Curves)

SERIES	DEPTH OFFSET	ACQUIRED CURVES					
8248EA	-15.320	FLTM					
8248EA	-13.320	CCL	CHV				
8262XA	-10.189	GR					
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	RAT023
		RICXC	RIN13C	RIN23	RIN23C	SD3D	SG3D
		SGB3	SGF3	WDTH3	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	RTW023	SDA2
		SDL2	SGA2	SGB2	SGF2	SGK2	SGL2
		STA2	ASPEC2	ILSC	ILSN	WDTH2	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	RAT0	RAT013
RBOR	RGN1	RICS	RIN	RONE	RPOR
RTW0	RIN13	RONE13	RTW013	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	HOC	FE2XC	ISSC	RINC
ISSN	RDEN	WDTH1	RICSC	CSSR	G1R
G2R	ISSR	SSR	SS2R	RATOR	RAT013R
RBORR	RICSR	RINR	RIN13R	RONER	RPORR
RTWOR					
SYSTEM	0.000	TEN	TTEN		

Created by : RPM9, v5.3.1.0

Plotted by : PlotMgr, v5.4.504

Company : WPX ENERGY

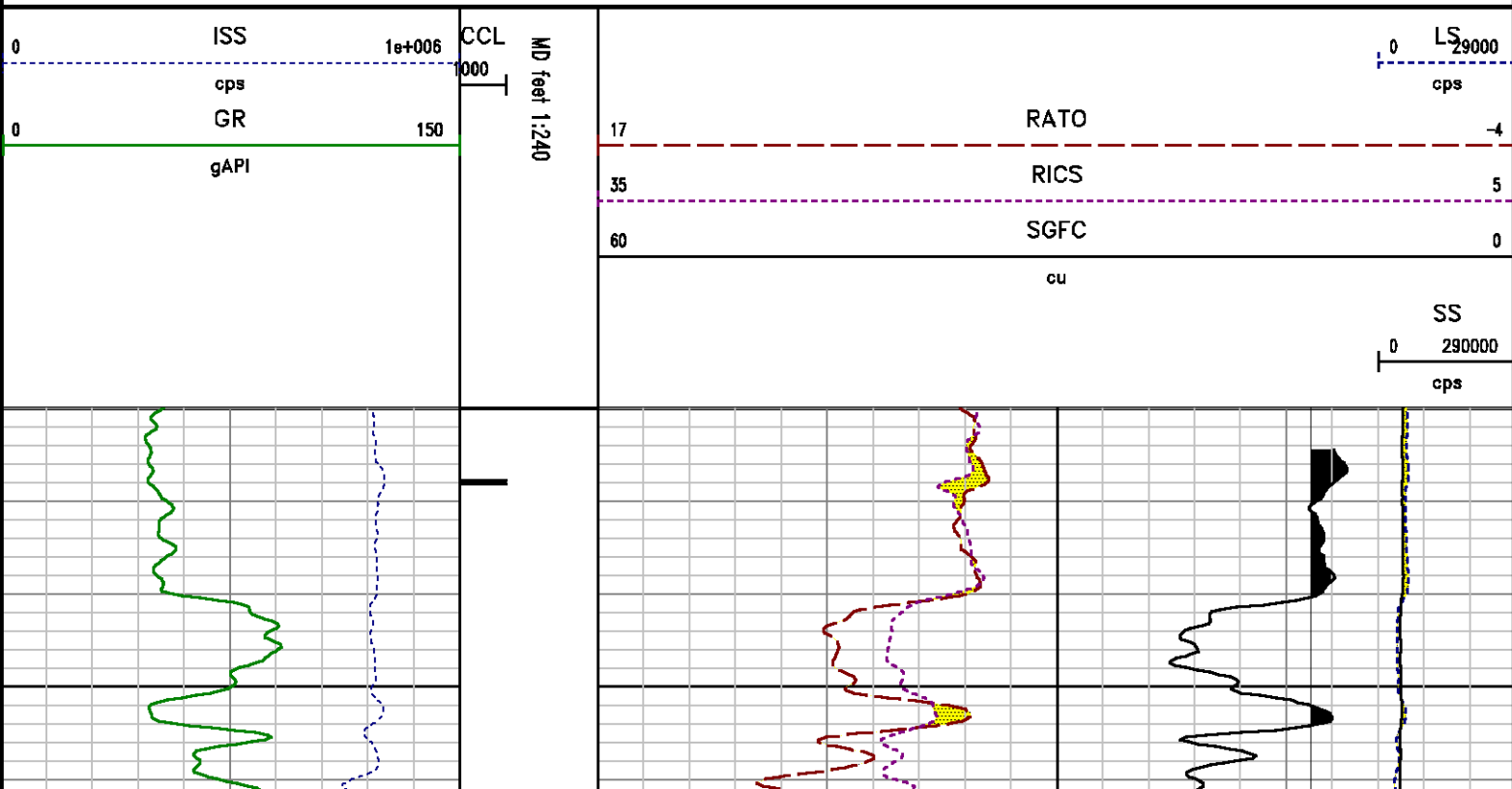
Well : DUGGAN RWF 513-29

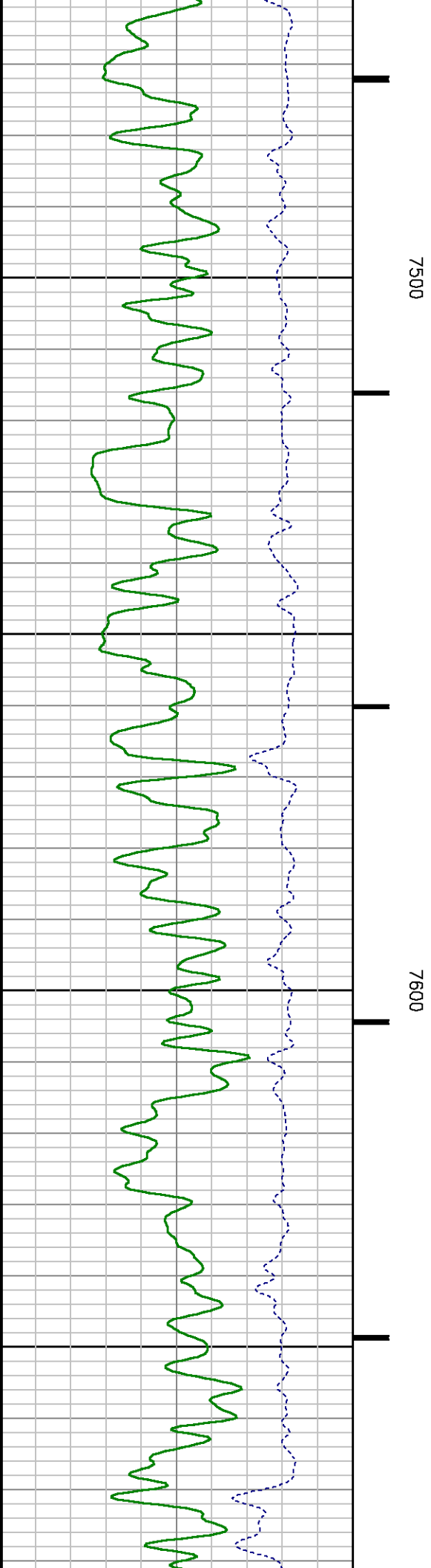
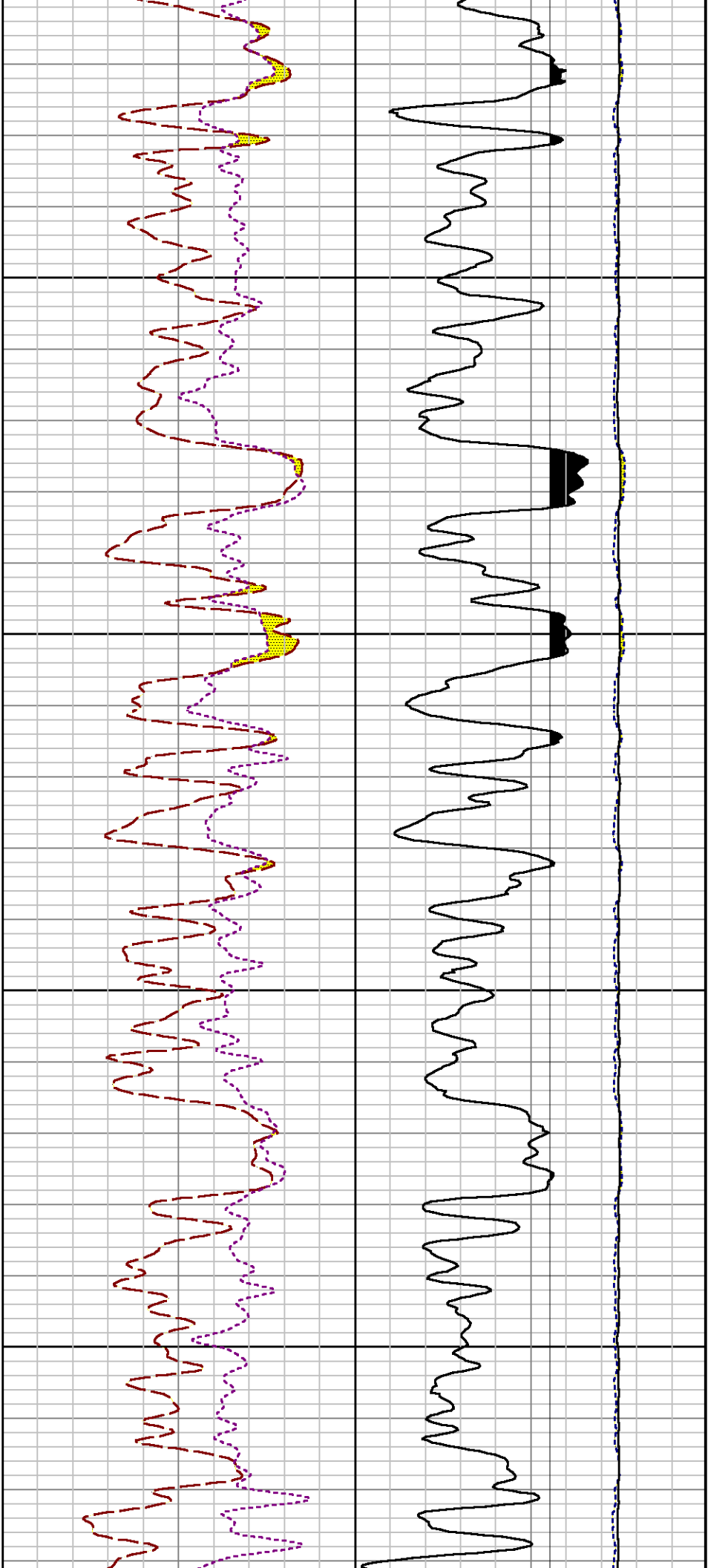
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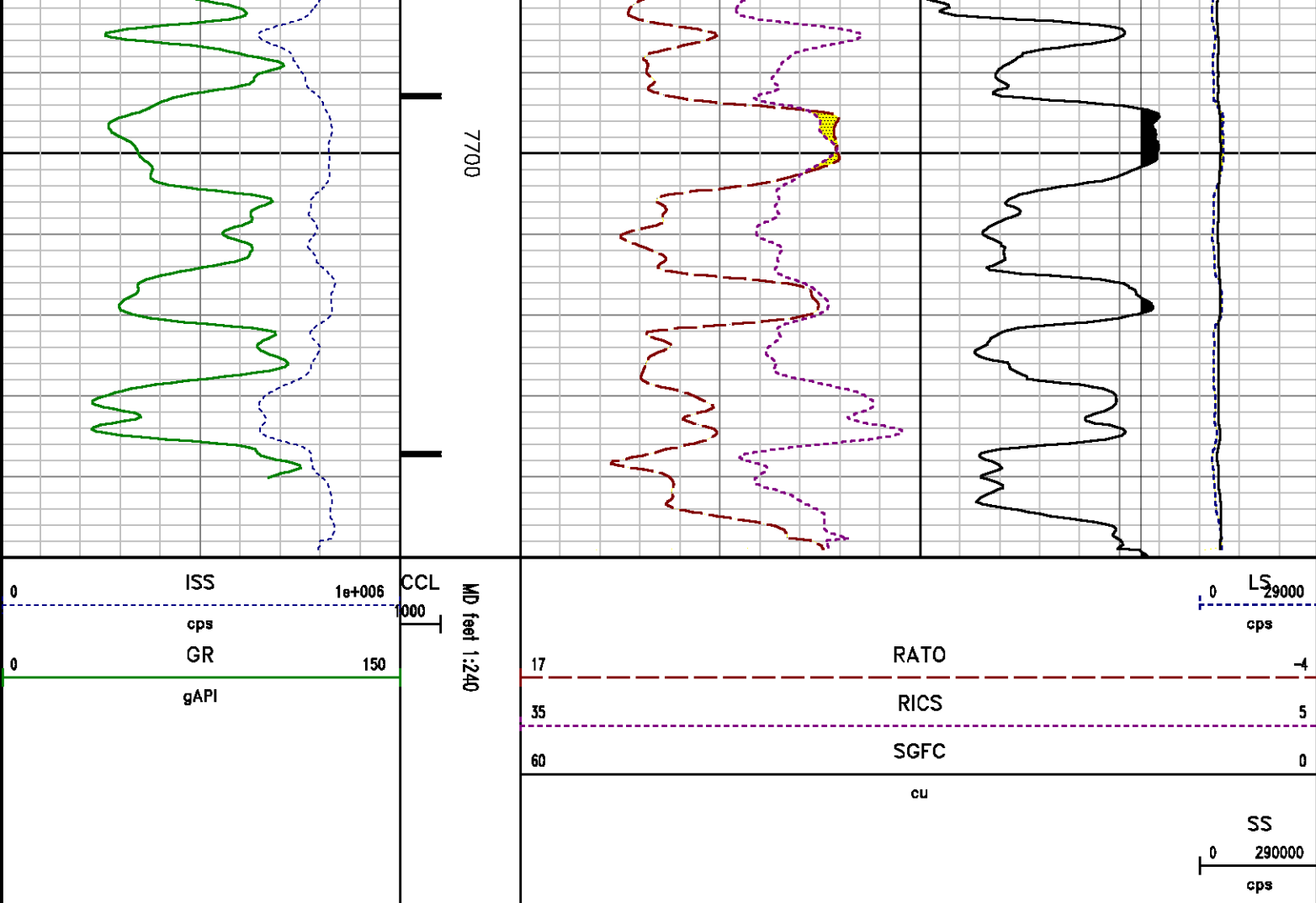
Interval : 7420.00 - 7750.00 feet UP

Created : 4/20/2013 8:46:58 AM









## CALIBRATION SUMMARY

PNC

Calibration File: C:\case\calver\PNC\231M2.cal

### PNC 3D CALIBRATION SUMMARY

DATE/TIME PERFORMED: Fri Mar 22 10:48:29 2013 TOOL SERIES: 8281XA ASSET: 231 SEQ: M2

Calibrator #

SHOP BARREL

Source #

8281AA 11803641

	ISS	Mtr VIts (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	826383	124.00	2249.00	2274.00	2286.00	104.54	7.00	0.9830
Interpolated	1300000	145.57	2232.56	2267.68	2281.45			

Interpolated

	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	826383	7094.60	1107.08	154.93	25.82	0.14	24.28	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	826383	179986.97	27945.22	93909.05	33462.17	8727.88	56763.43	13961.05
Fit Quality %		0.77	0.73	0.82	0.82	0.68	0.77	0.78

	ISS	RBOR	RIN ISS/ILS	RIN13 ISS/IXS	RICS ISS/CSS	RATO SS/LS	RTWO SS2/LS	RONE CSS/CLS
Raw Data	826383	1.43	4.59	29.57	14.56	10.76	3.83	4.07
		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 %		0.07	0.16	0.28	0.18	0.17	0.19	0.18
Reduced	1394640	1.43	4.63	29.89	14.69	10.73	3.82	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

## GAMMA RAY

Calibration File: C:\case\calver\GR\470A9.cal

### CALIBRATION SUMMARY

DATE/TIME PERFORMED:	Tue Apr 09 11:37:16 2013	TOOL SERIES:	8262XA	ASSET:	470	SEQ:	A9
Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]	
SHOP JIG	100.96	407.00	0.588	59.38	239.38	180.00	

Verification File: C:\case\calver\GR\470A9.VP

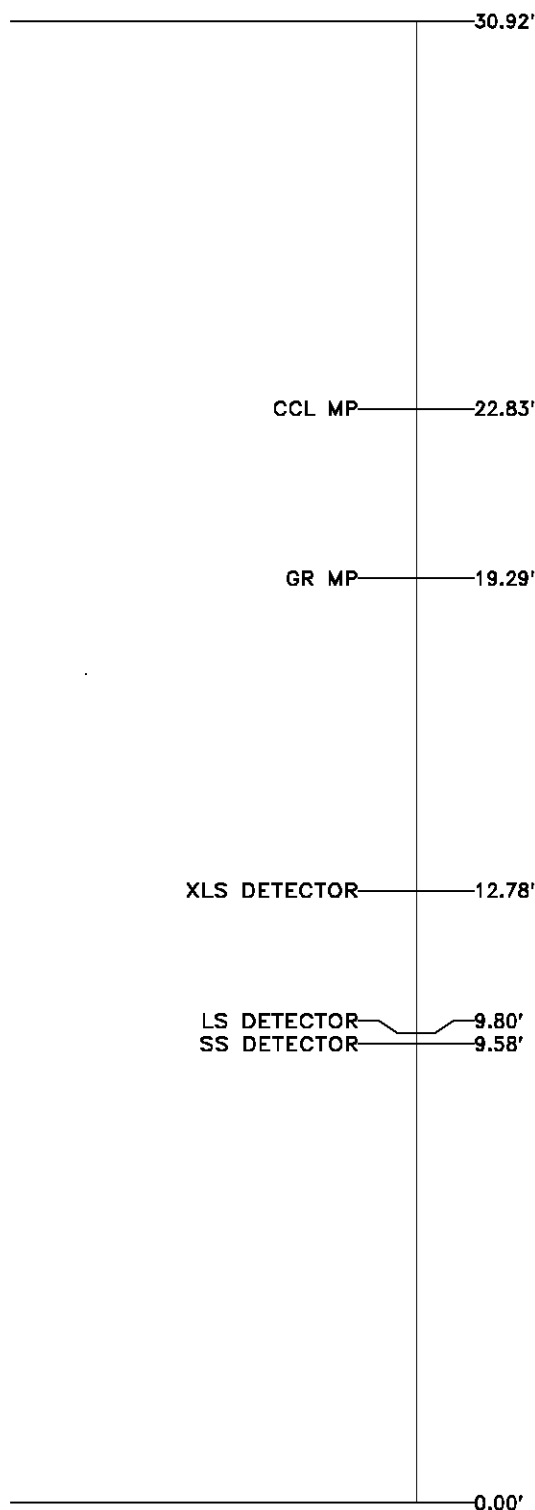
### PRIMARY VERIFICATION

DATE/TIME PERFORMED:	Tue Apr 09 11:41:01 2013	TOOL SERIES:	8262XA	ASSET:	470	SEQ:	A9
Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]	
SHOP JIG	100.09	406.36	0.588	58.87	239.00	180.13	

## TOOL DIAGRAM

<b>OTA SHORT CABLE HEAD</b>	
<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>GAMMA RAY</b>	
Series	8262XA
Mnemonic	GR
Diameter	1.70"
Weight	15.00 lb
Length	3.17'

<b>RESERVOIR PERFORMANCE MONITOR</b>	
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



Total Length: 30.92'  
Total Weight: Not Available  
Max Diameter: 0' 1.70"

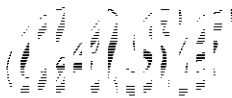


Company  
Well  
Field  
County

WPX ENERGY  
DUGGAN RWF 513-29  
RULISON  
GARFIELD

State COLORADO

File No:  
CH070854  
API No:  
05045216520000



Location

SHL: 579' FSL & 582' FWL  
BHL: 2481' FSL & 734' FWL

SEC 29 TWP 6S RGE 94W

Elevations

KB 5445.2 ft  
DF  
GL 5419.2 ft

29 6S 94W  
RWF 14-29  
NABORS SSD 573