



# RESERVOIR PERFORMANCE MONITOR

Baker Atlas

File No: CH082898

Company Well WPX ENERGY FEDERAL PA 541 -21

API No: Field PARACHUTE

05045220410000 County GARFIELD State COLORADO

Location

21 6S 95W SHL: 2600' FNL & 1448' FWL

PA 22-21 PAD BHL: 1269' FNL & 271' FEL (NENE)

NABORS 673 SEC 21 TWP 6S RGE 95W

Other Services

BOND LOG

Permanent Datum GL Elevation 6030 ft

Log Measured From KB 26 ft Above P. D.

Drill Measured From KELLY BUSHING

Elevations

KB 6056 ft

DF

GL 6030 ft

|                              |                       |  |
|------------------------------|-----------------------|--|
| Date                         | 28/FEB/14             |  |
| Run                          | ONE                   |  |
| Service Order                | US625296              |  |
| Depth Driller                | 9969 ft               |  |
| Depth Logger                 | 9921 ft               |  |
| Bottom Logged Interval       | 9911 ft               |  |
| Top Logged Interval          | 6104 ft               |  |
| Time Started                 | 1430                  |  |
| Time Finished                | 2030                  |  |
| Operator Rig Time            | 6 HRS                 |  |
| Type of Fluid in Hole        | WATER                 |  |
| Fluid Density                | NA                    |  |
| Salinity                     | NA                    |  |
| Fluid Level                  | 77 ft                 |  |
| Logged Cement Top            | NA                    |  |
| Wellhead Pressure            | 0 psi                 |  |
| Maximum Hole Deviation       | NA                    |  |
| Nominal Logging Speed        | 10 fpm                |  |
| Maximum Recorded Temperature | 247 degF              |  |
| Reference Log Date           | BAKER HUGHES BOND LOG |  |
| Equipment No.                | 27/MAR/14             |  |
| Recorded By                  | 4271 GRAND UCT        |  |
| Witnessed By                 | FLOYD RENEAU          |  |
|                              | COLLEAPLEGATE         |  |

- 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         | 26 ft   | 1650 ft |
| 8.75 in         | 1650 ft | 9959 ft |

| Casing Record |             |       |       |         |
|---------------|-------------|-------|-------|---------|
| Size          | Weight      | Grade | From  | To      |
| 9.625 in      |             |       | 26 ft | 1650 ft |
| 4.5 in        | 11.6 lbm/ft | I-80  | 26 ft | 9959 ft |

| Remarks   |
|---|
| All data on this log is shifted and depth matched using the Gamma Ray curve to the Baker Hughes bond log dated 2/27/2014 at the client's request. |
| The amount of linear shift is 12 feet.  |
| Logged in PNC-3D mode.  |
| BHT = 247 °F  |
| SJ = 6570'-6594'  |

| Equipment Data |      |         |               |               |          |
|----------------|------|---------|---------------|---------------|----------|
| Run            | Trip | Tool    | Series Number | Serial Number | Position |
| 1              | 1    | TEMP    | 8255XA        | 11774568      | FREE     |
| 1              | 1    | RPM     | 8281FA        | 10191667      | FREE     |
| 1              | 1    | RPM     | 8281PA        | 10414345      | FREE     |
| 1              | 1    | RPM     | 8281EA        | 10190984      | FREE     |
| 1              | 1    | GR      | 2812LA        | 10274385      | 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          |       | 6089.750 | 8971.000 |
| PNC Porosity     | Borehole Size            | 8.750          | inch  | 6089.750 | 8971.000 |
| PNC Porosity     | Casing Size              | 4.500          | inch  | 6089.750 | 8971.000 |
| PNC Porosity     | Gas Filled               | Non Gas Filled |       | 6089.750 | 8971.000 |
| PNC Porosity     | Matrix                   | Sandstone      |       | 6089.750 | 8971.000 |
| TPS Pressure     | Temperature Corr. Source | Fixed (72.00)  | degF  | 6089.750 | 8971.000 |

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 |

8281XA

-12.291

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

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 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 RONE 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

Created by : RPM9, v5.3.1.0

Plotted by : PlotMgr, v5.4.504

Company : WPX ENERGY

Well : FEDERAL PA 541-21

File Name : d:\welldata\wp\pa 541-21\541rpm\mainsplice.xtf

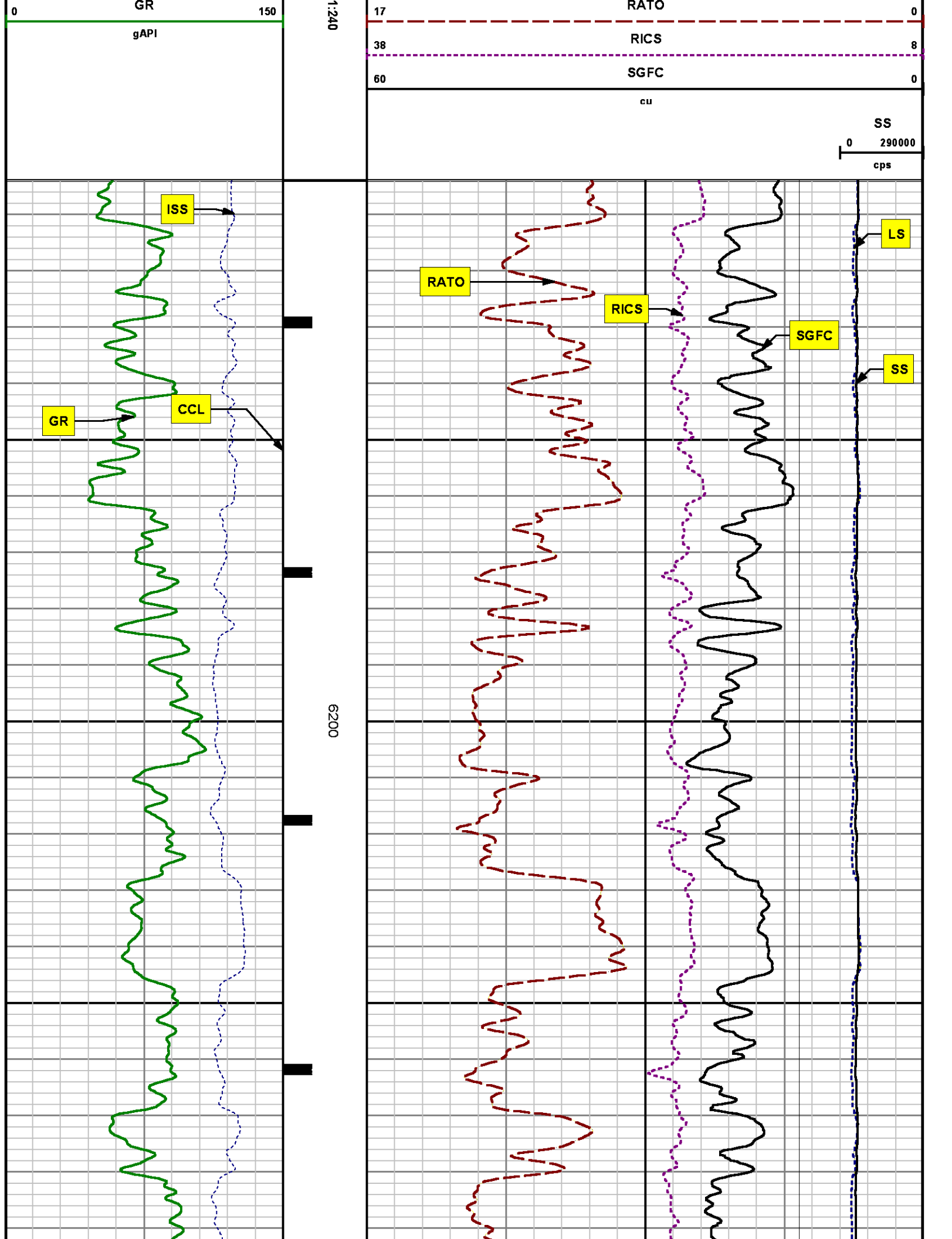
Mode : PlotMgr 5.4.504

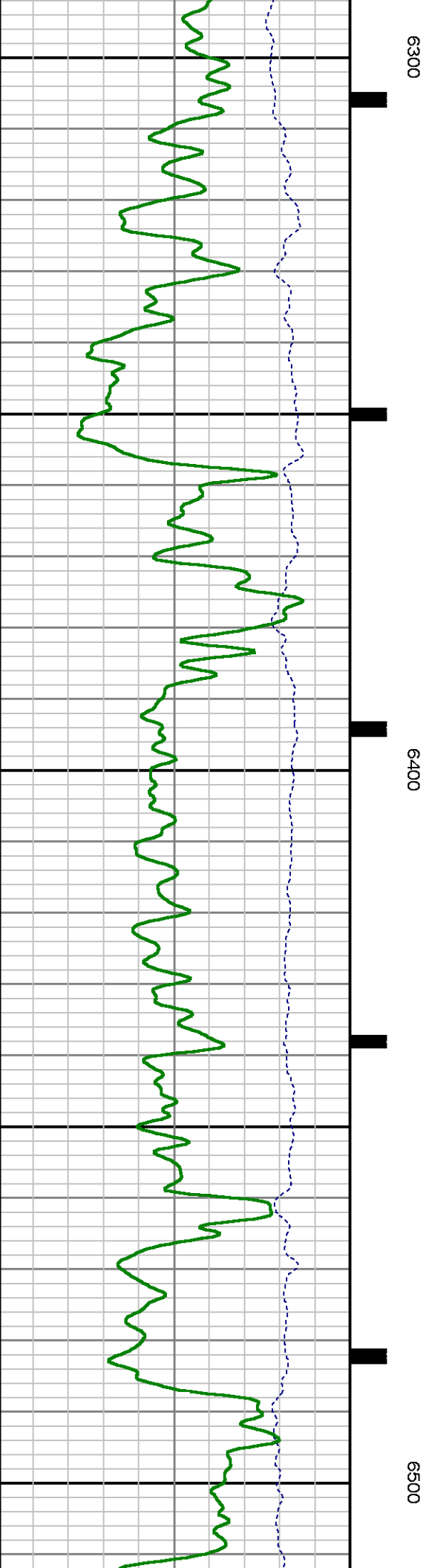
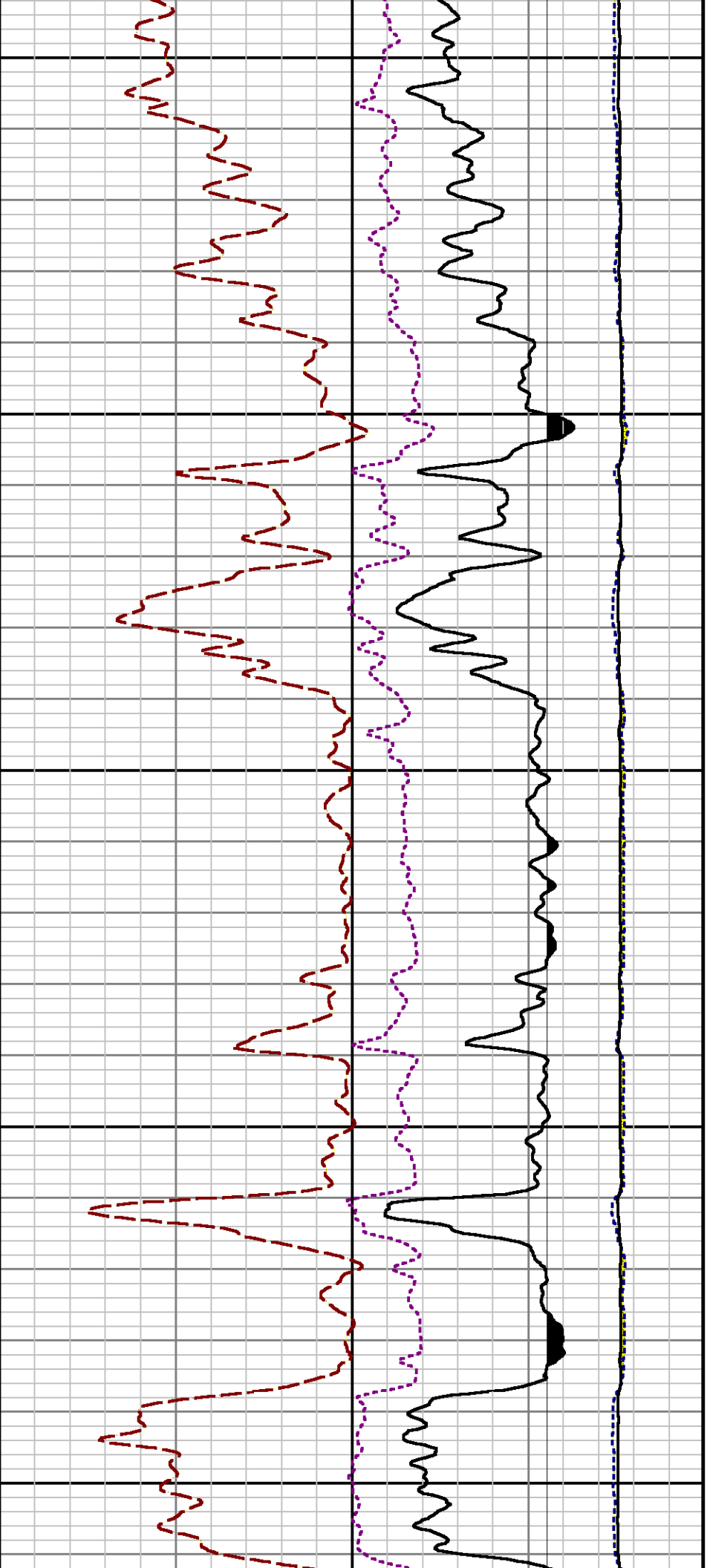
Interval : 6104.00 - 9924.00 feet UP

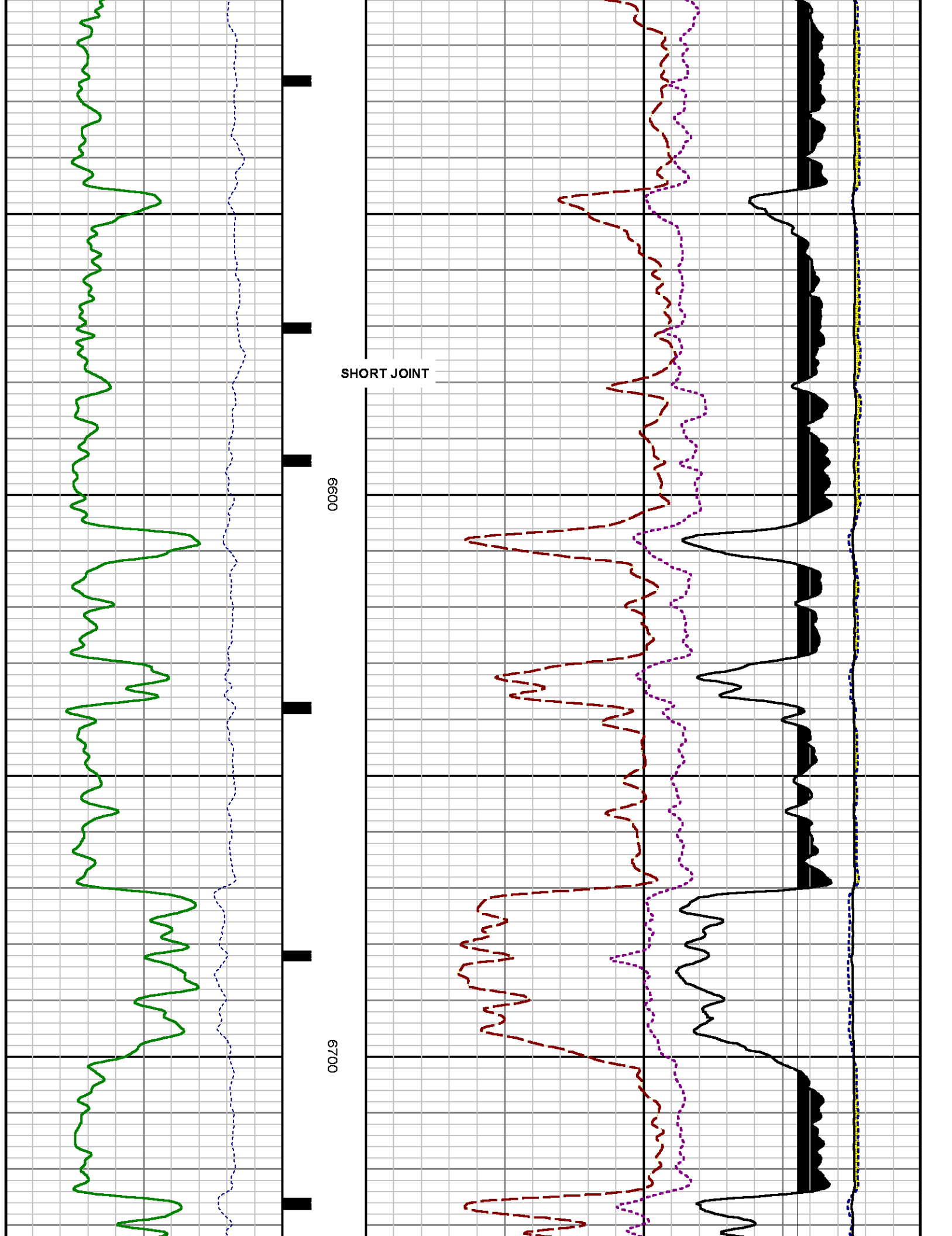
Created : 2/28/2014 4:57:37 PM

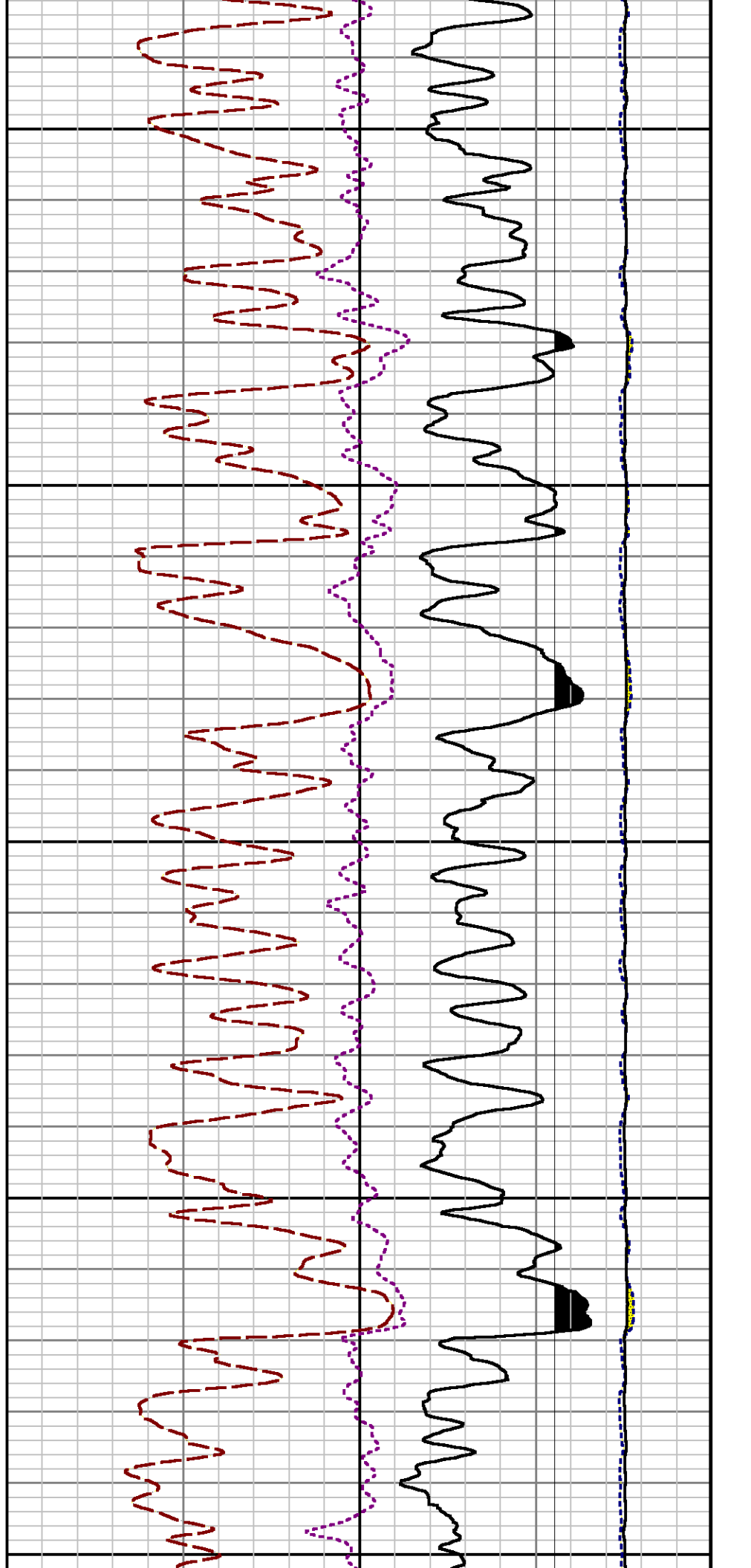
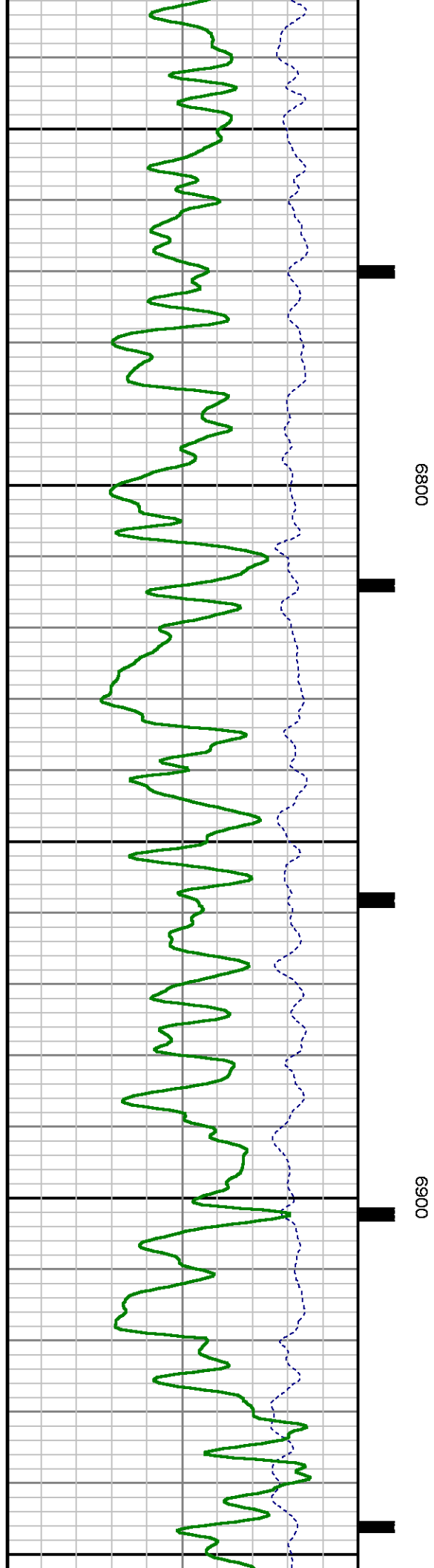
0 ISS 1e+006 CCL MD feet  
cps

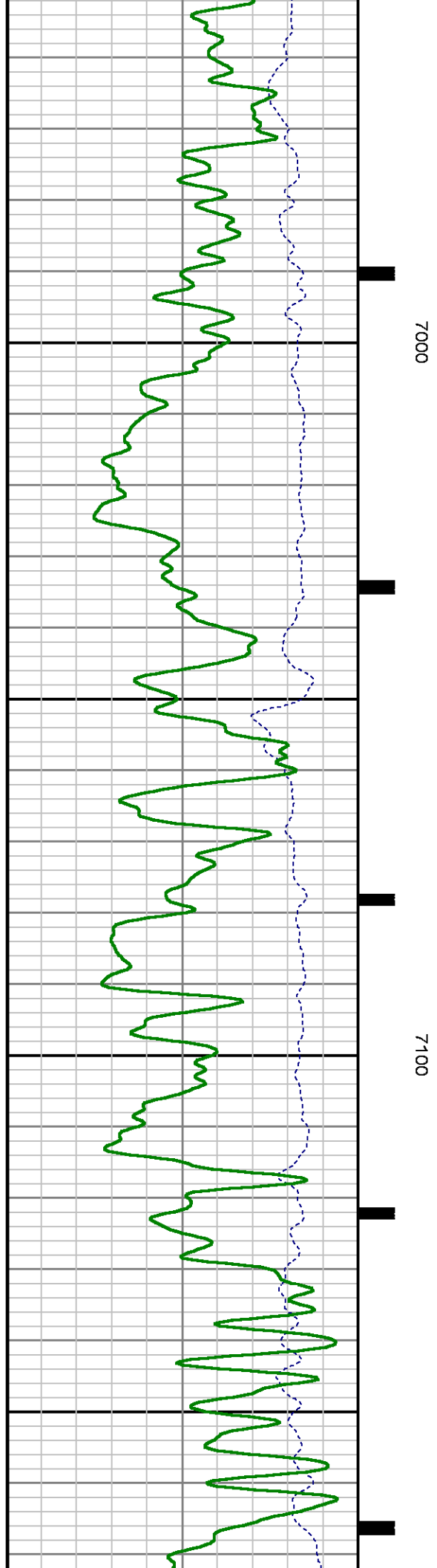
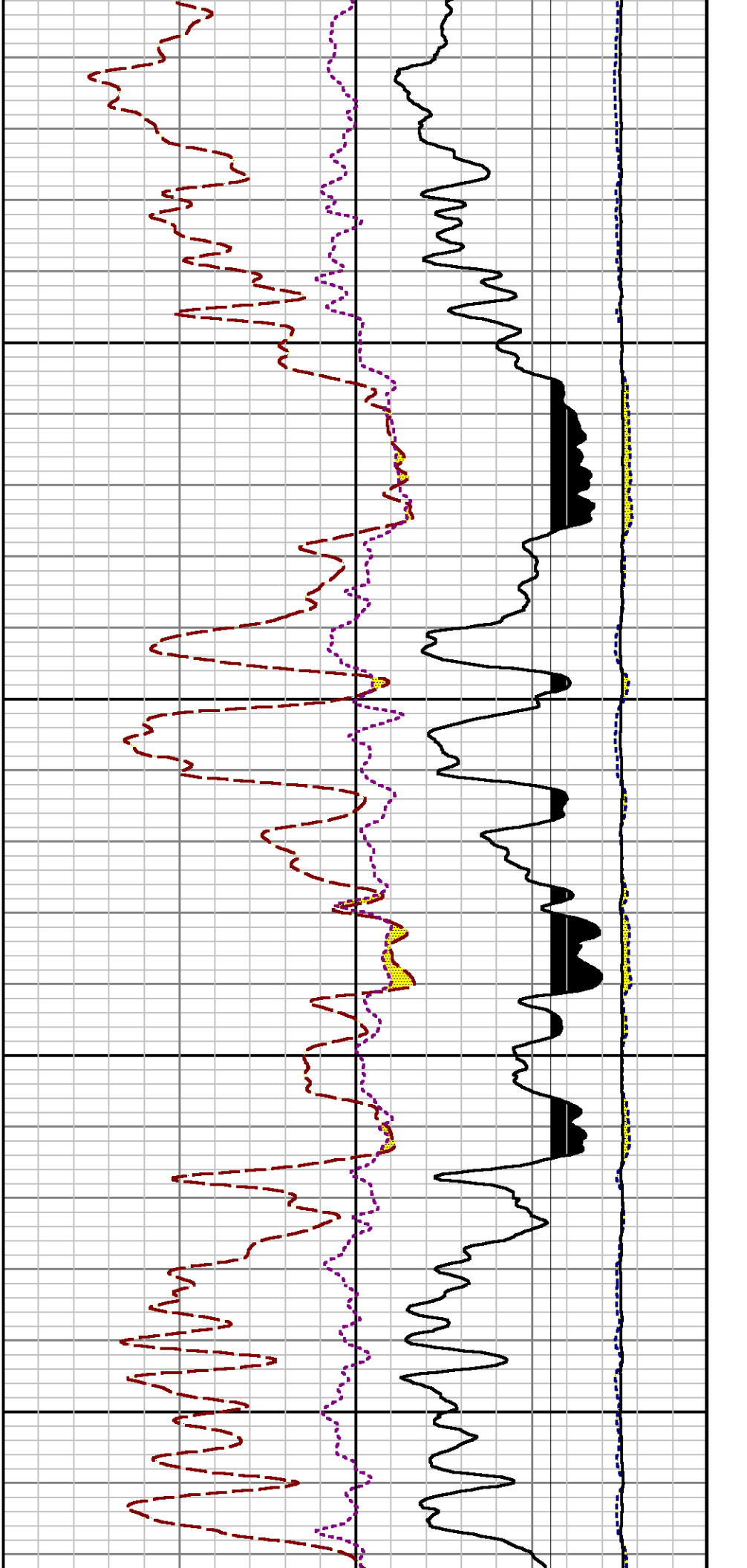
0 LS 29000  
cps



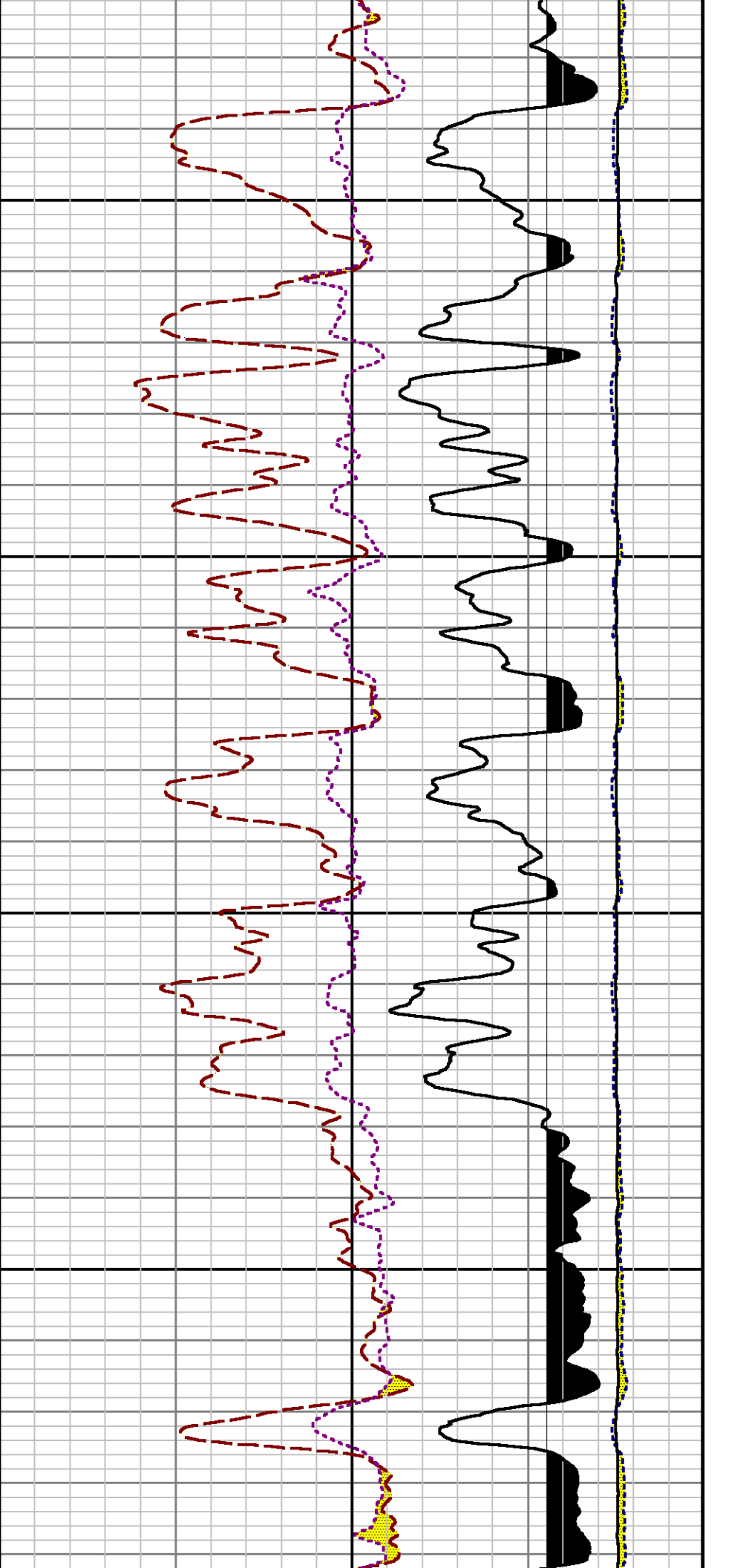






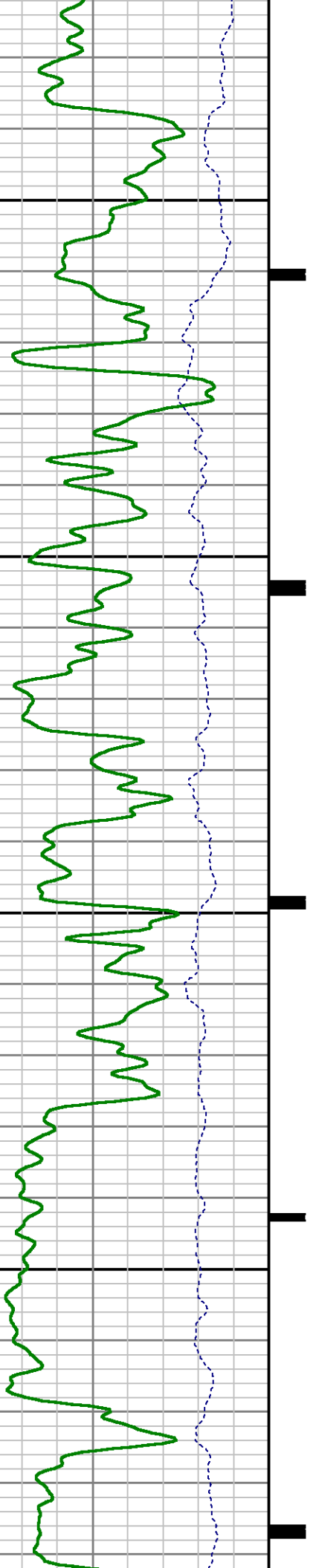


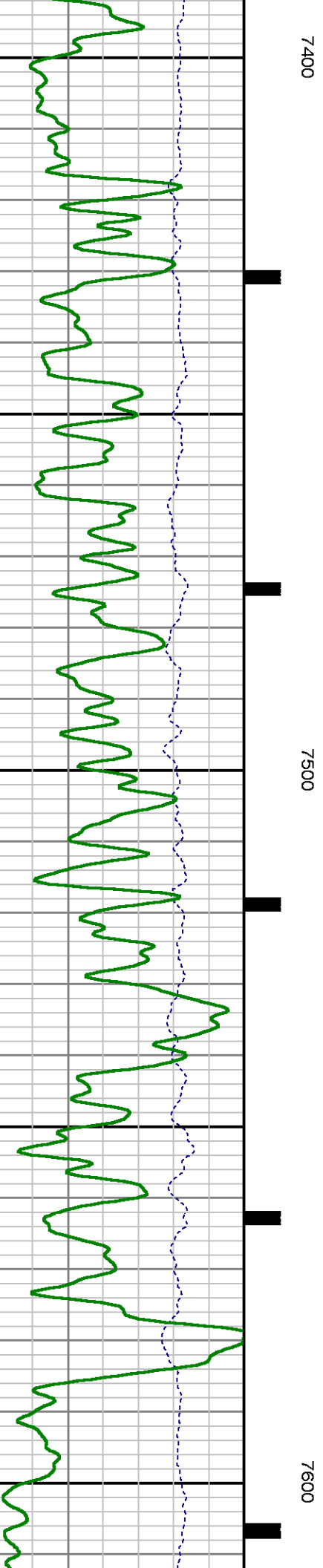
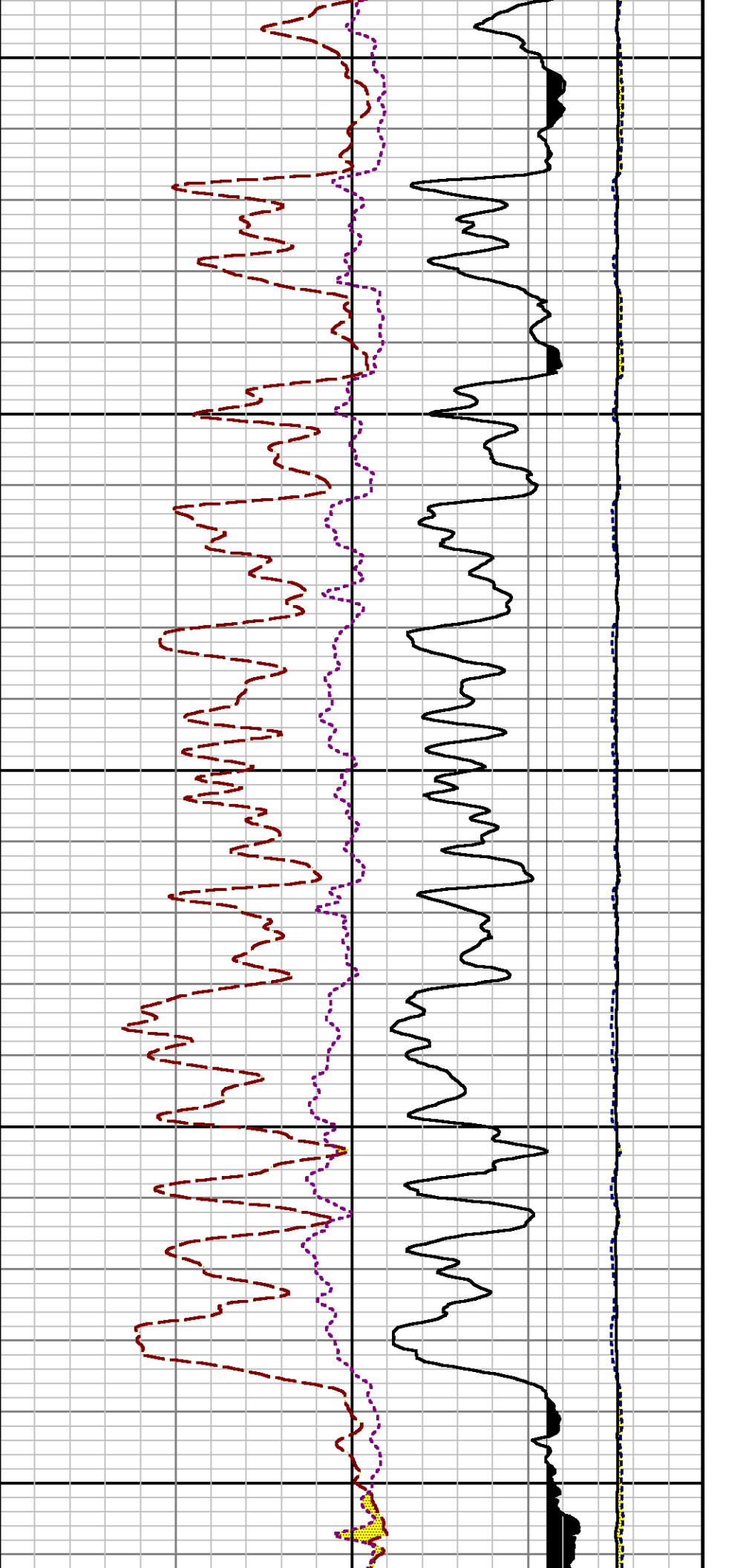


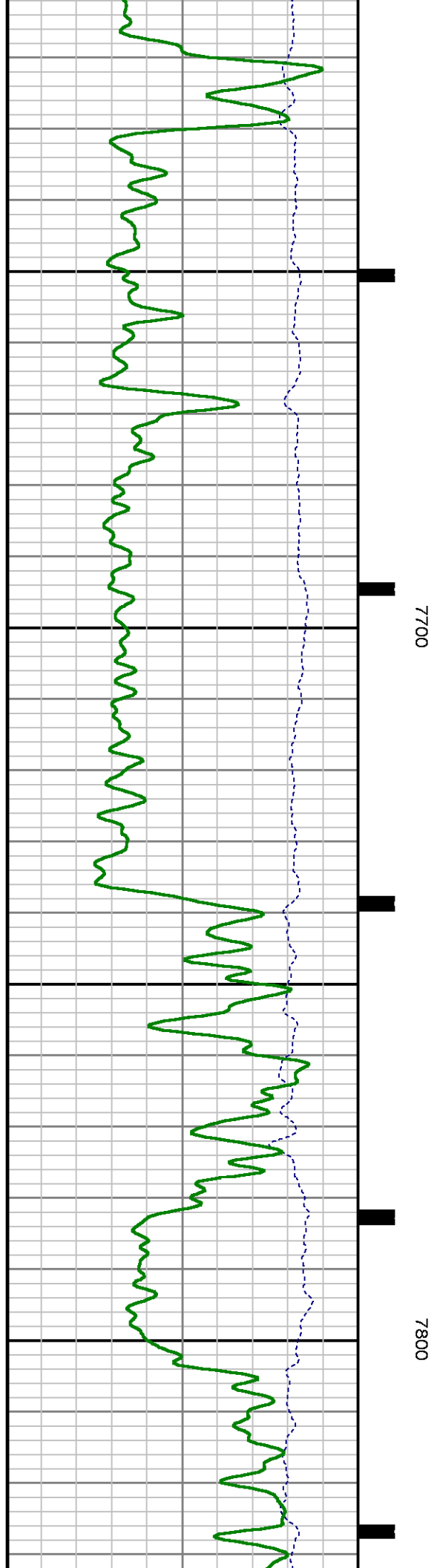
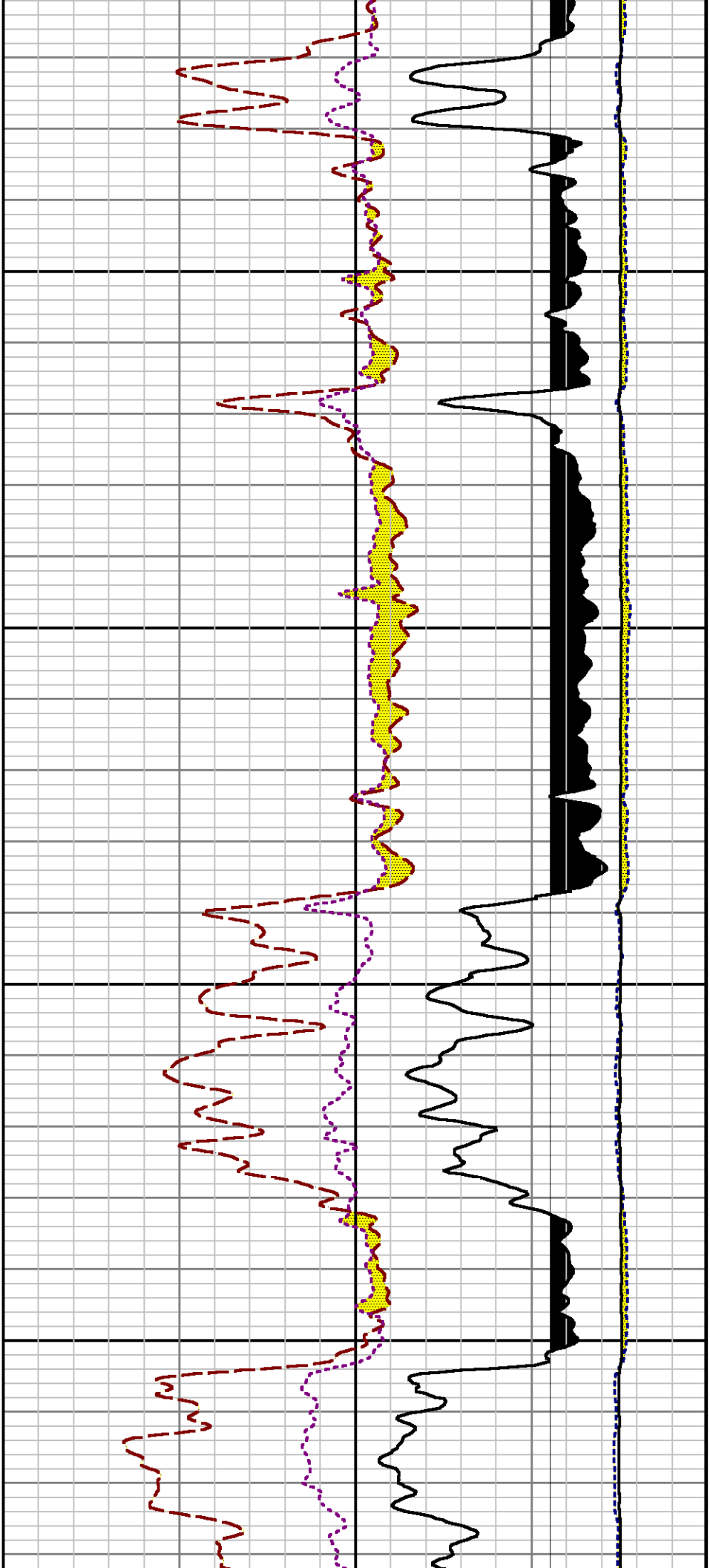


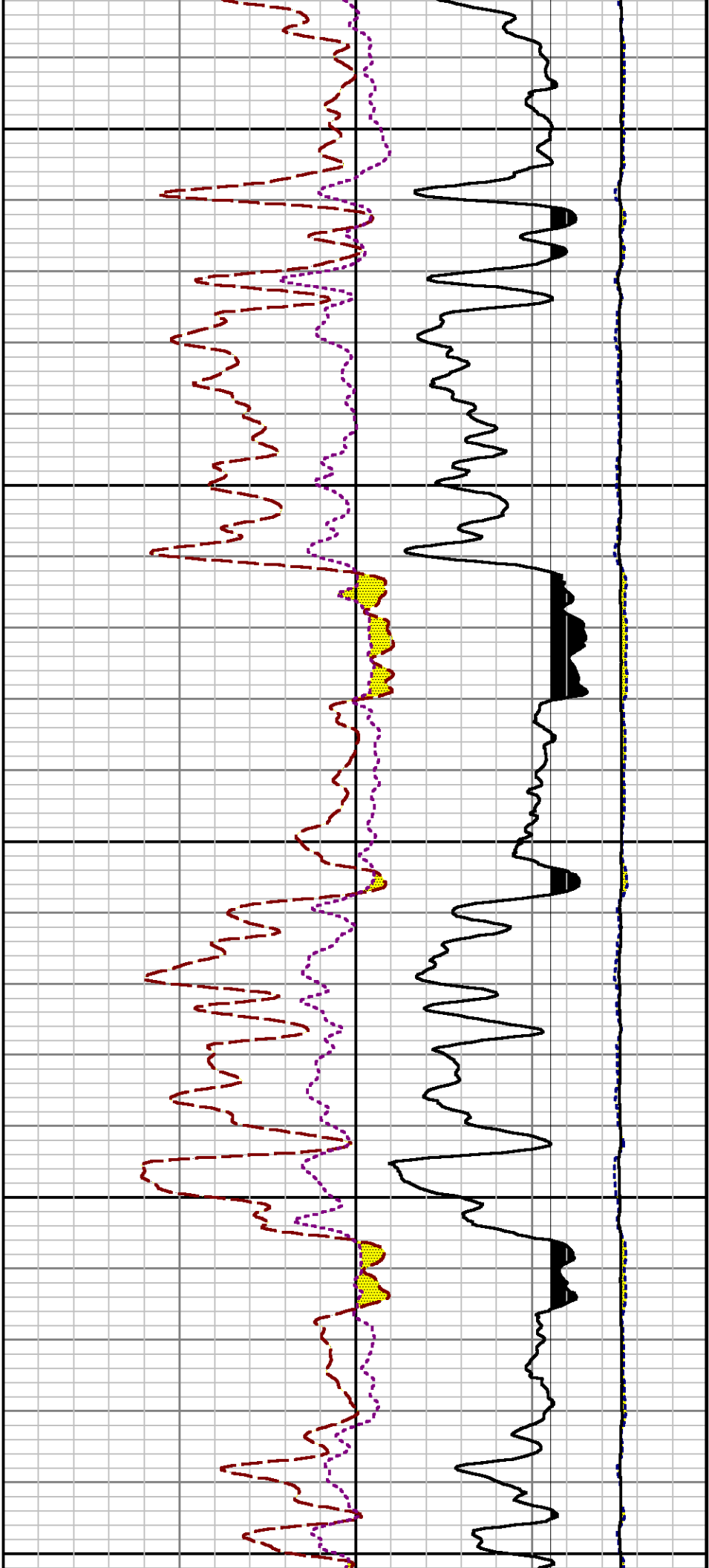
7200

7300



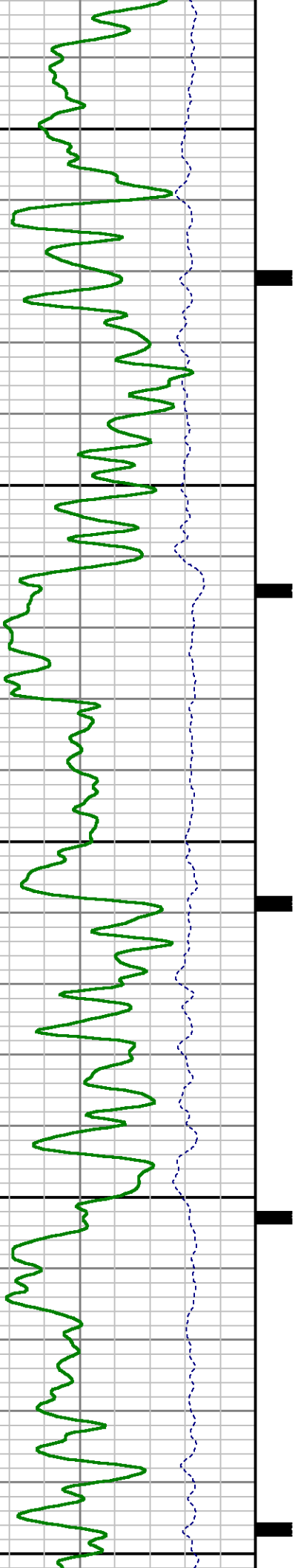


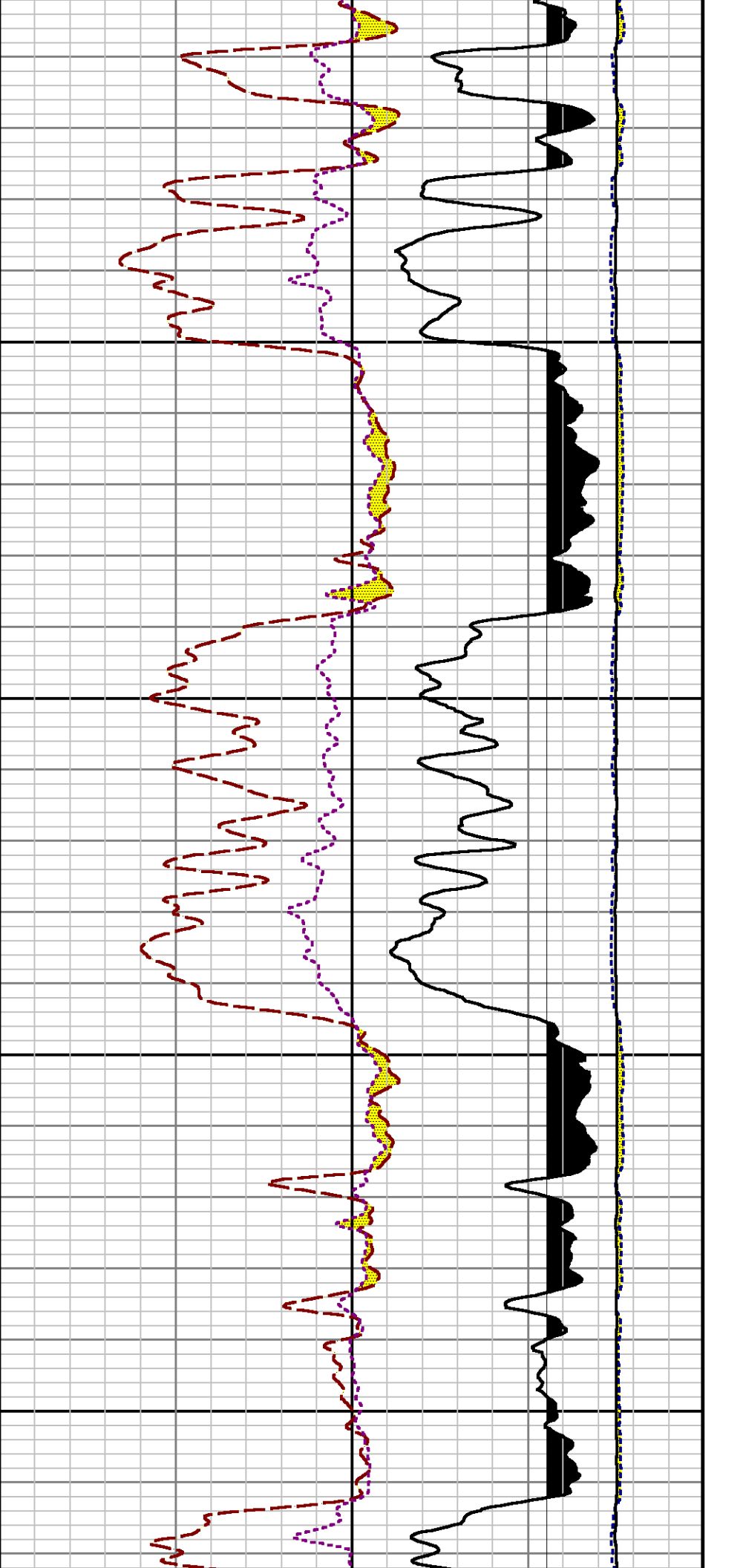




7900

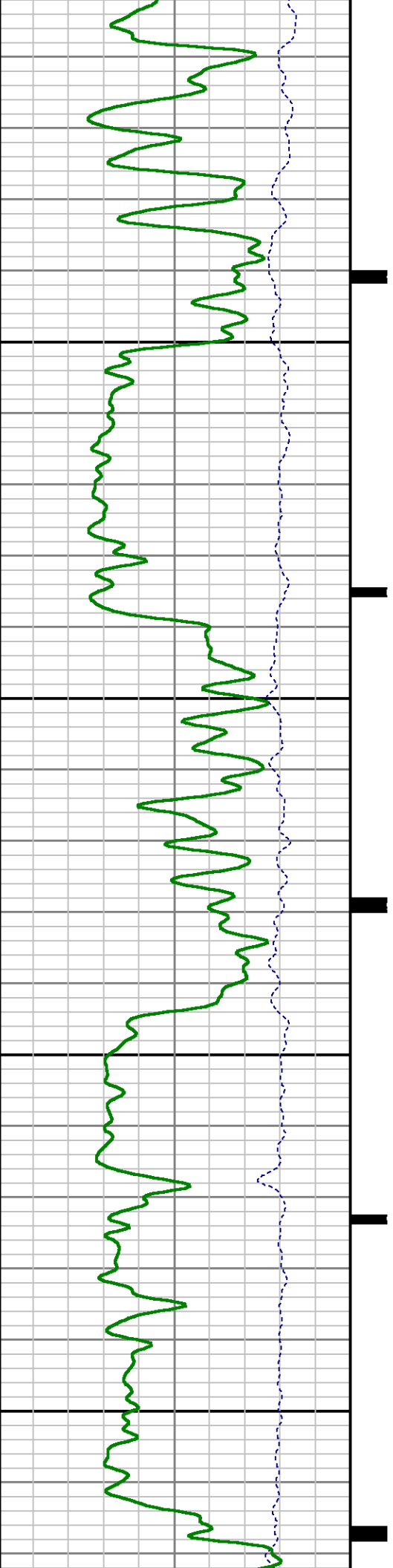
8000

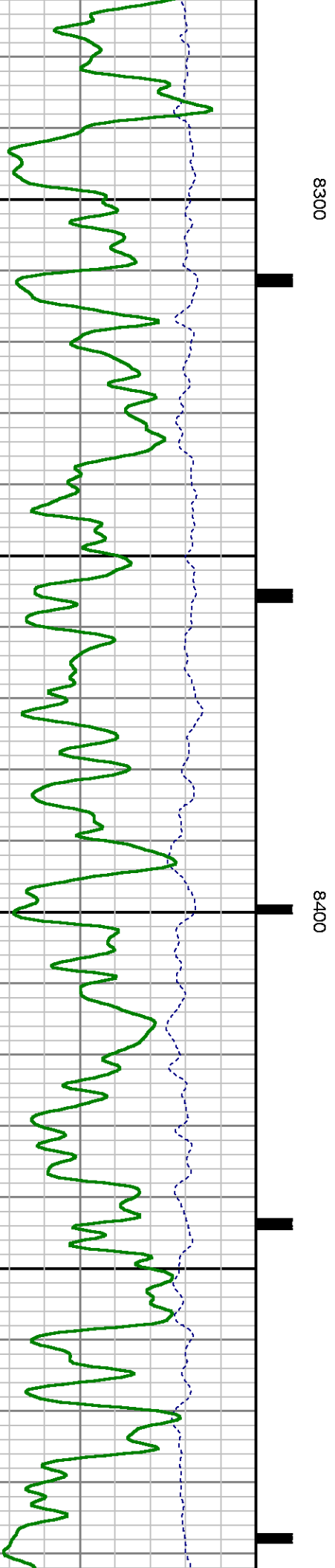
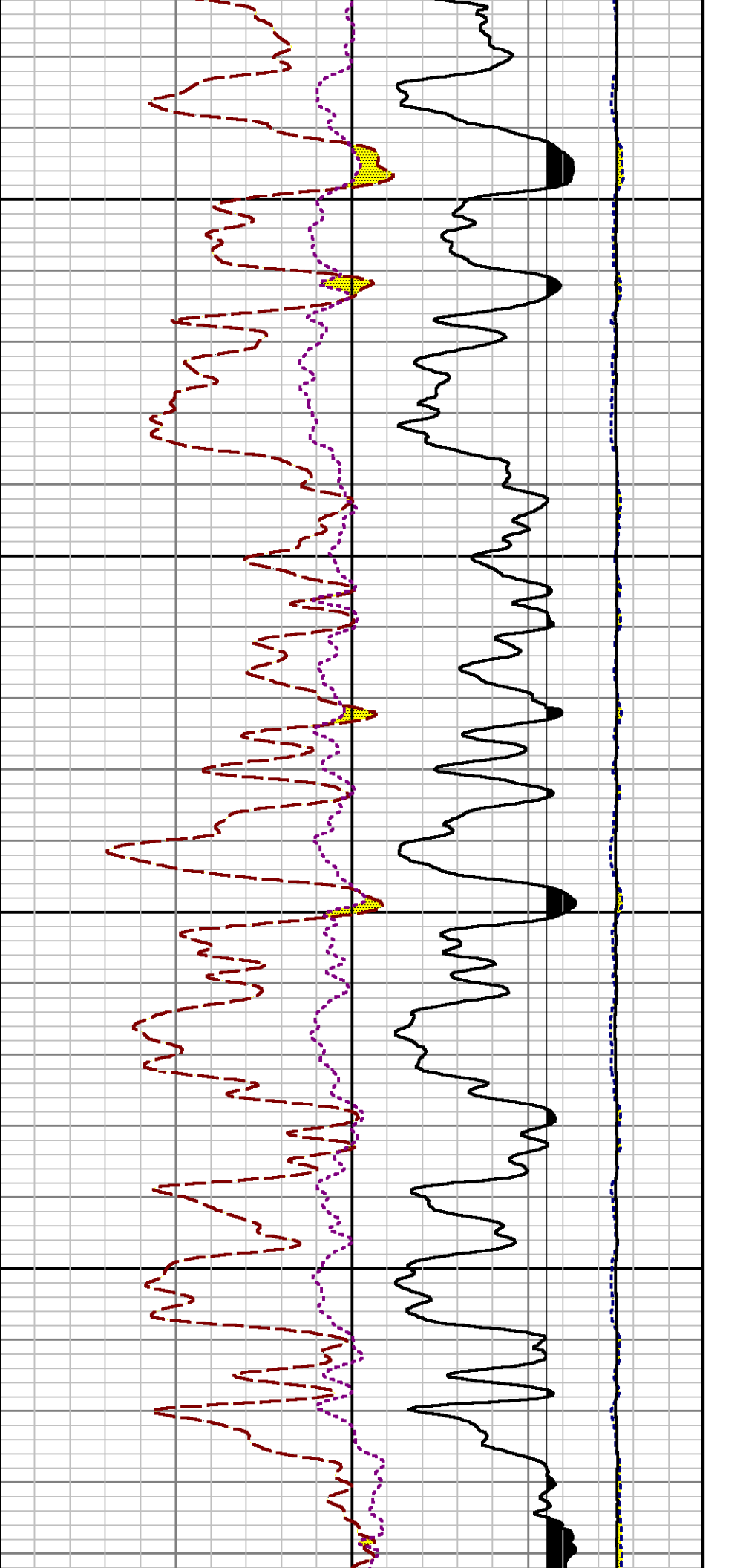


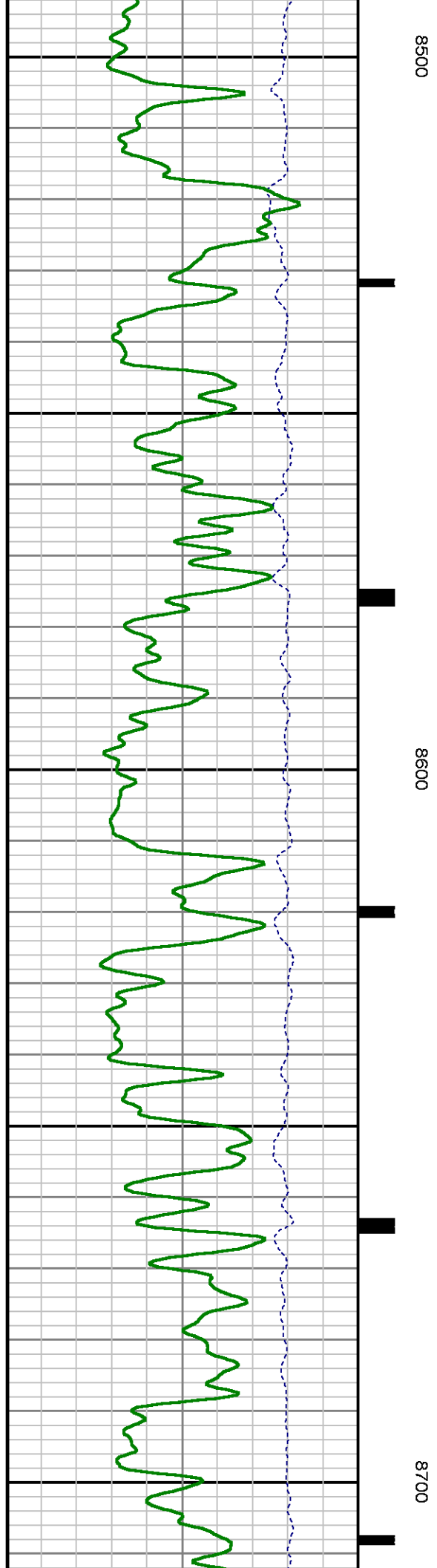
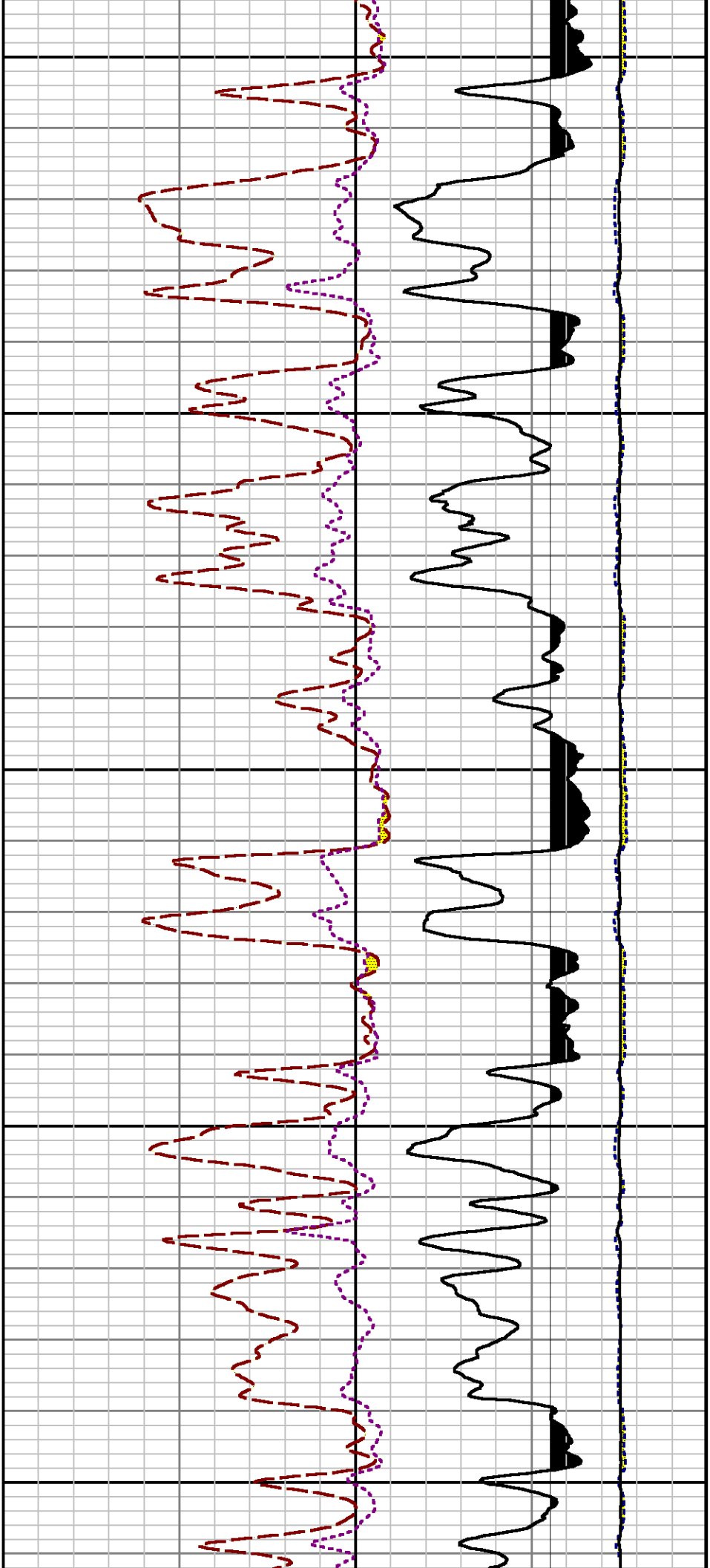


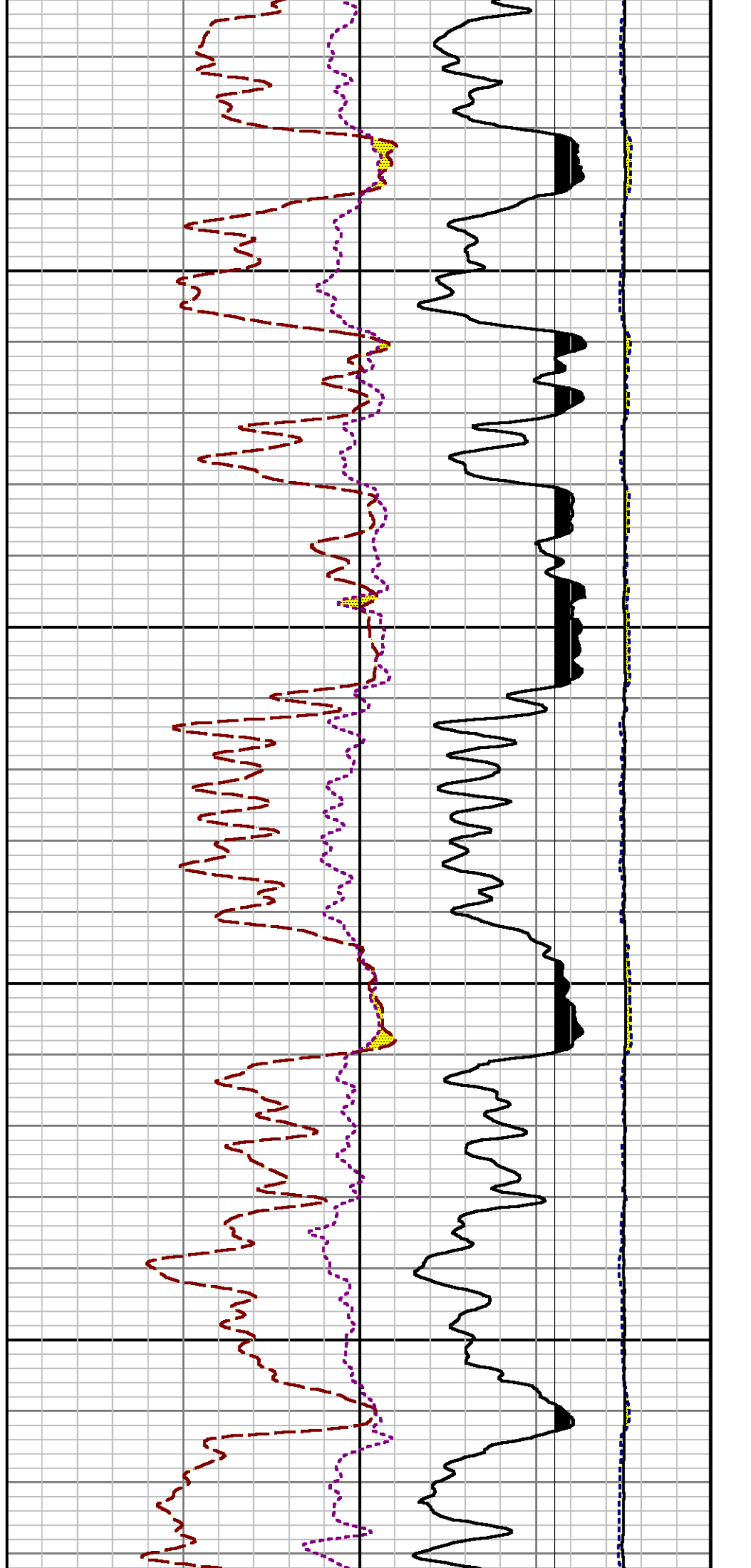
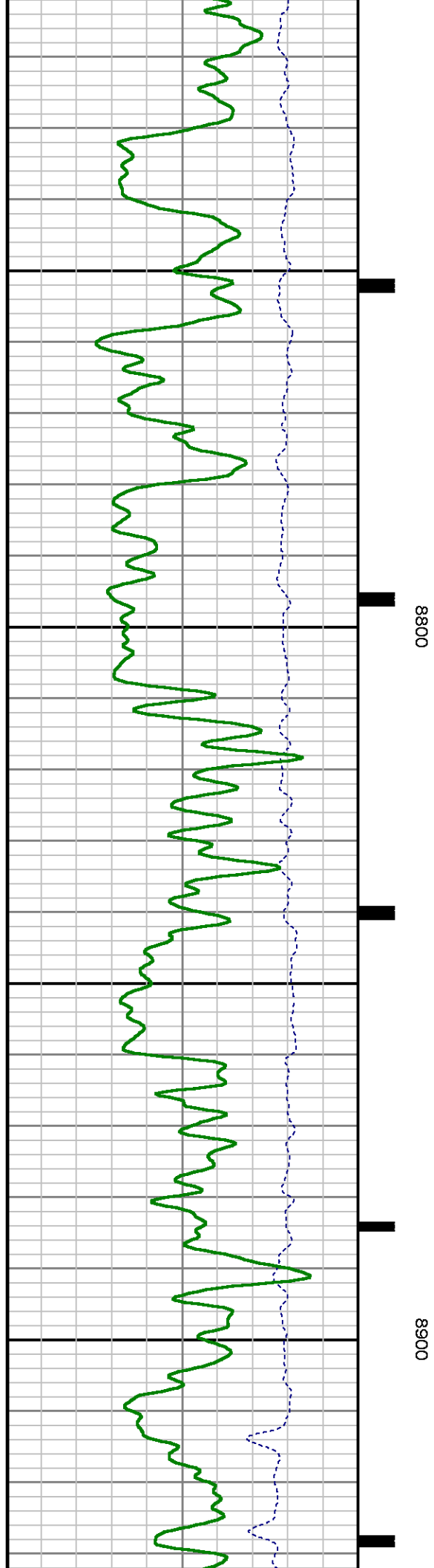
8100

8200

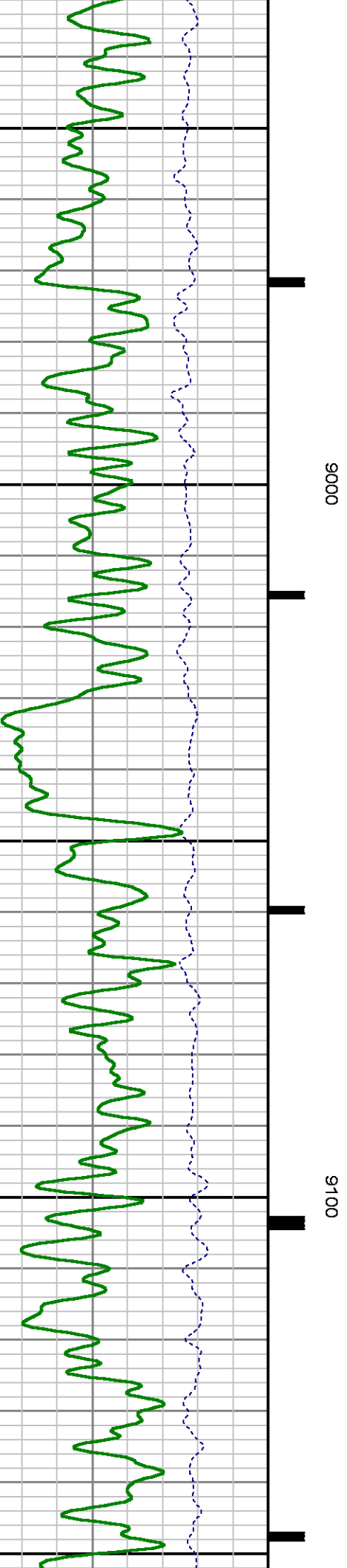
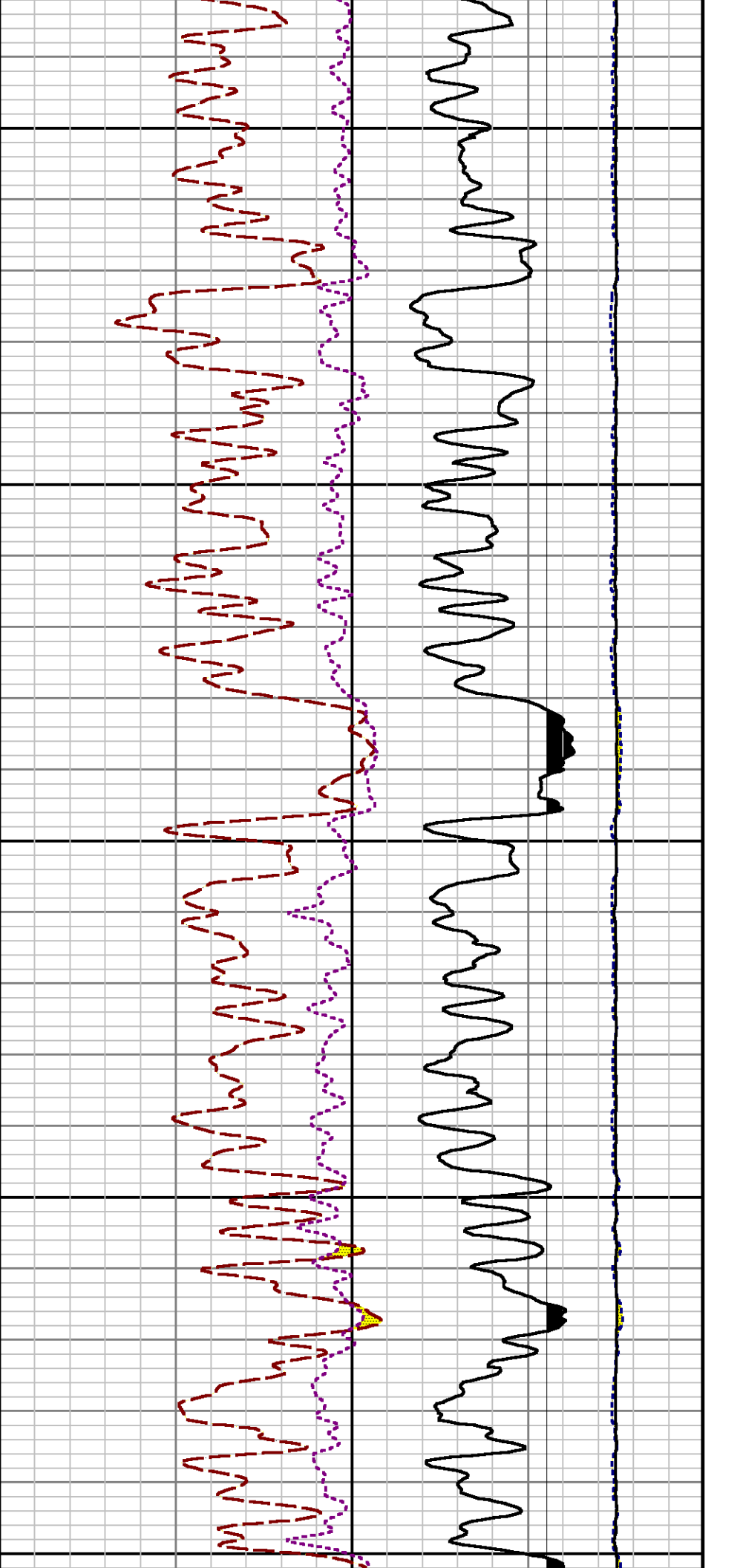


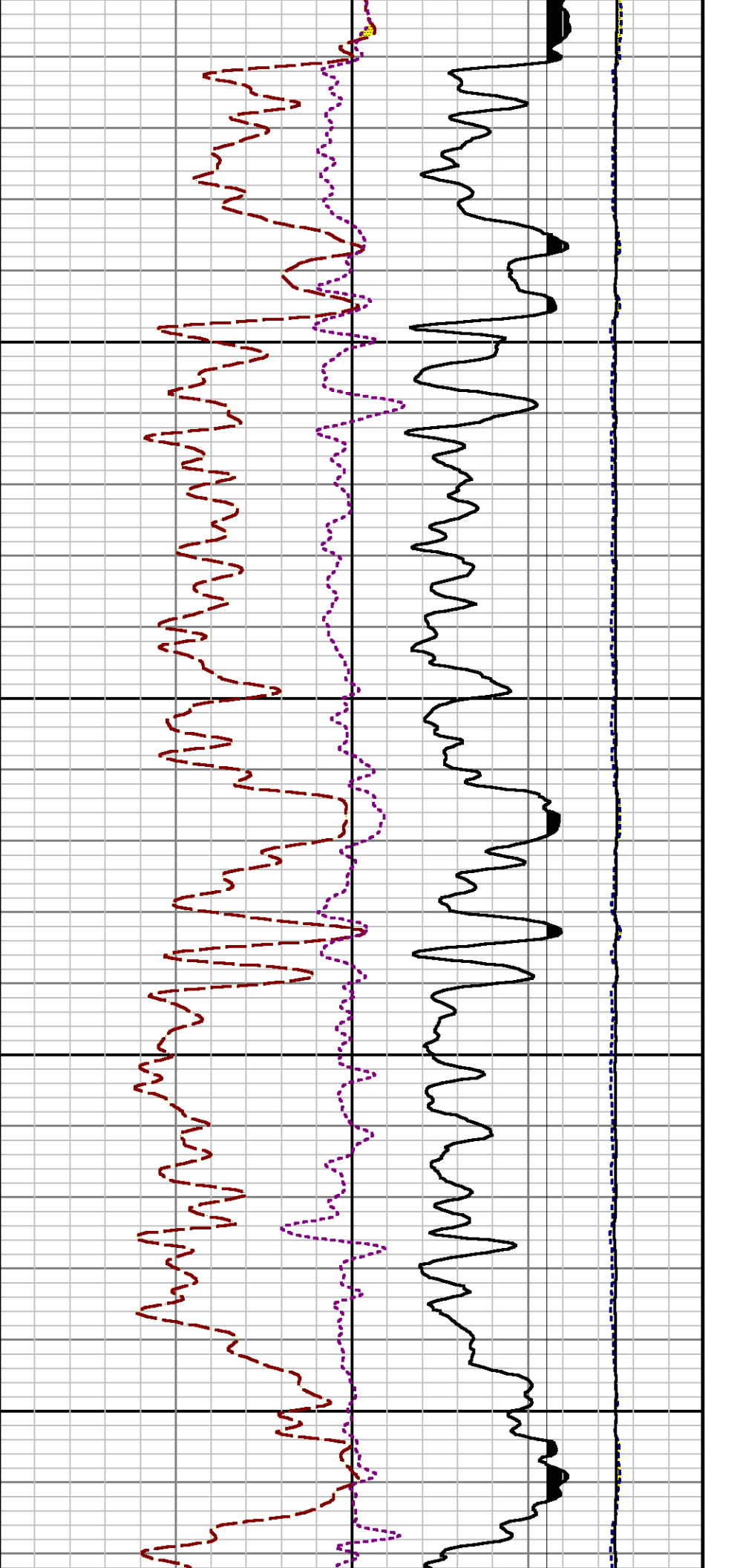






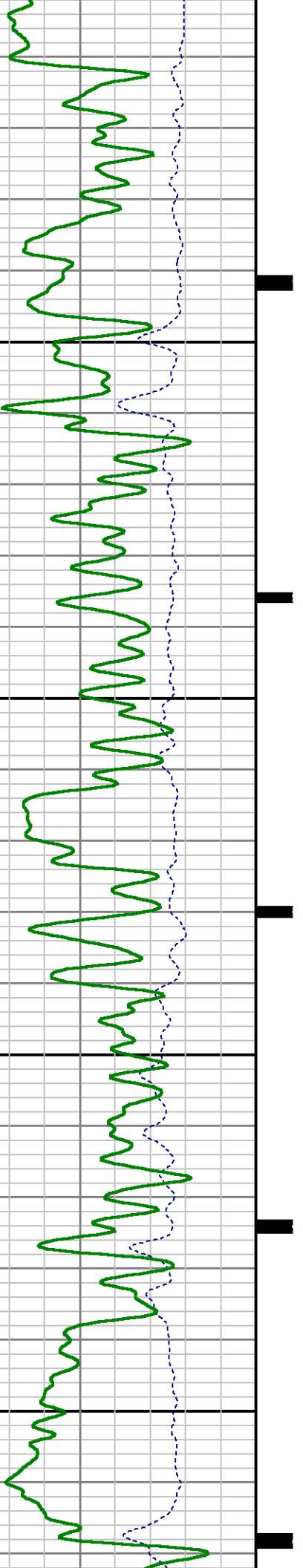


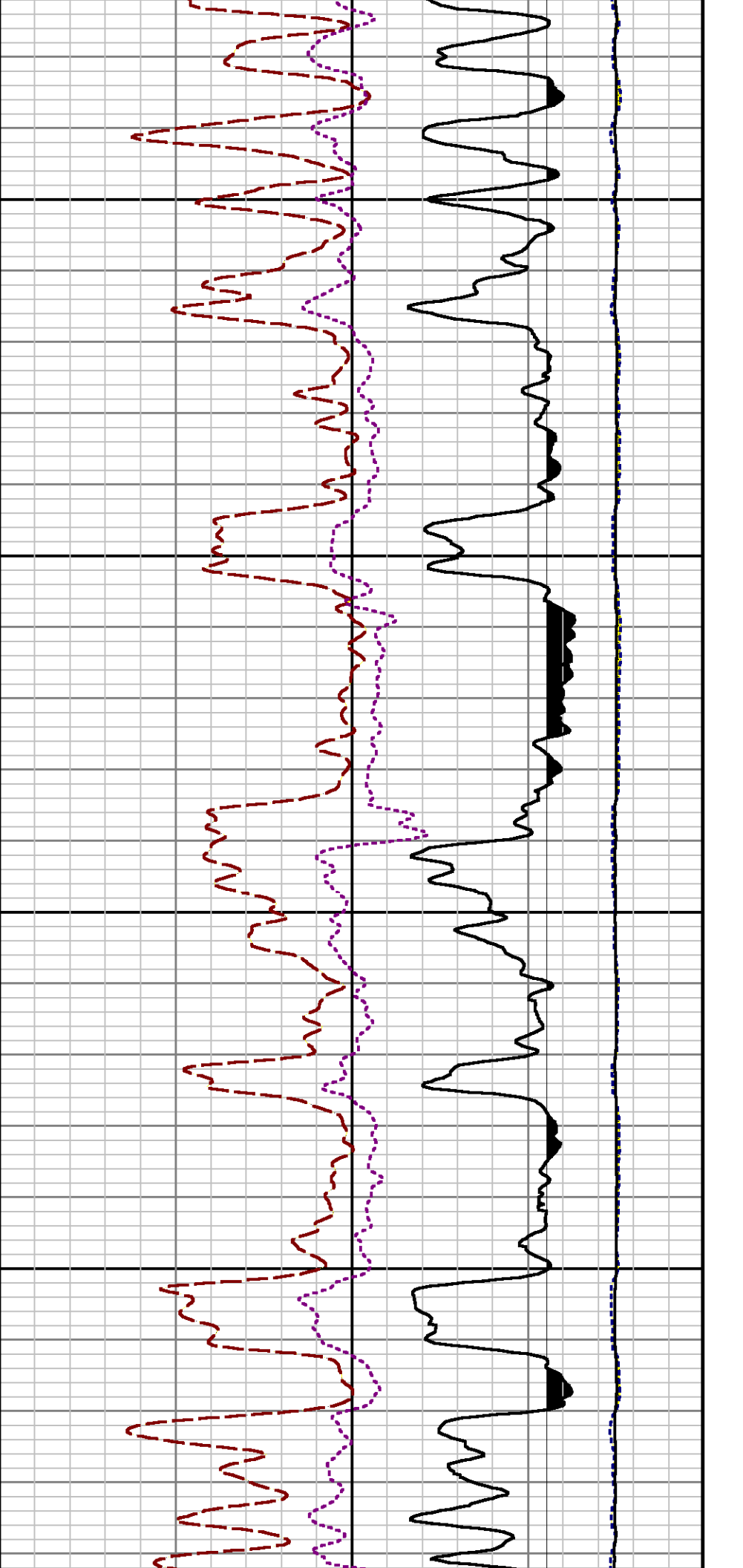




9200

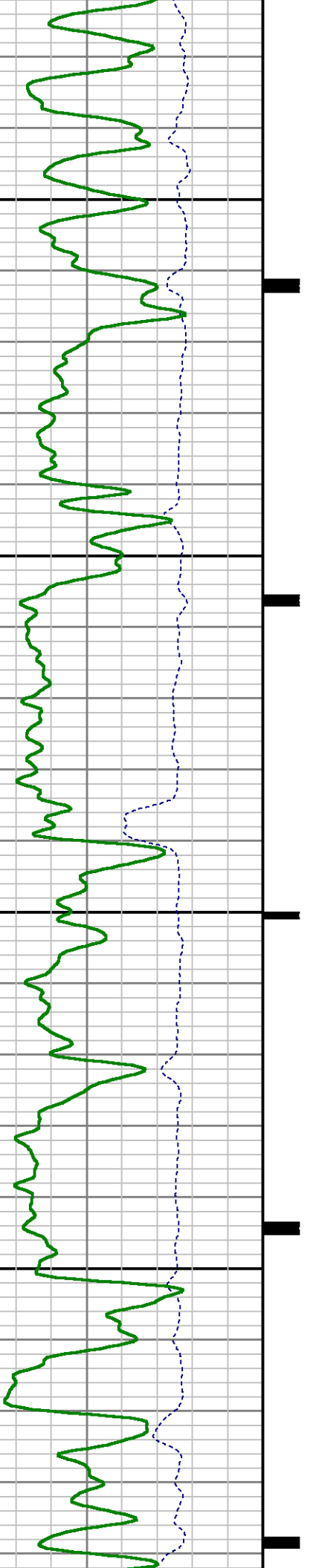
9300

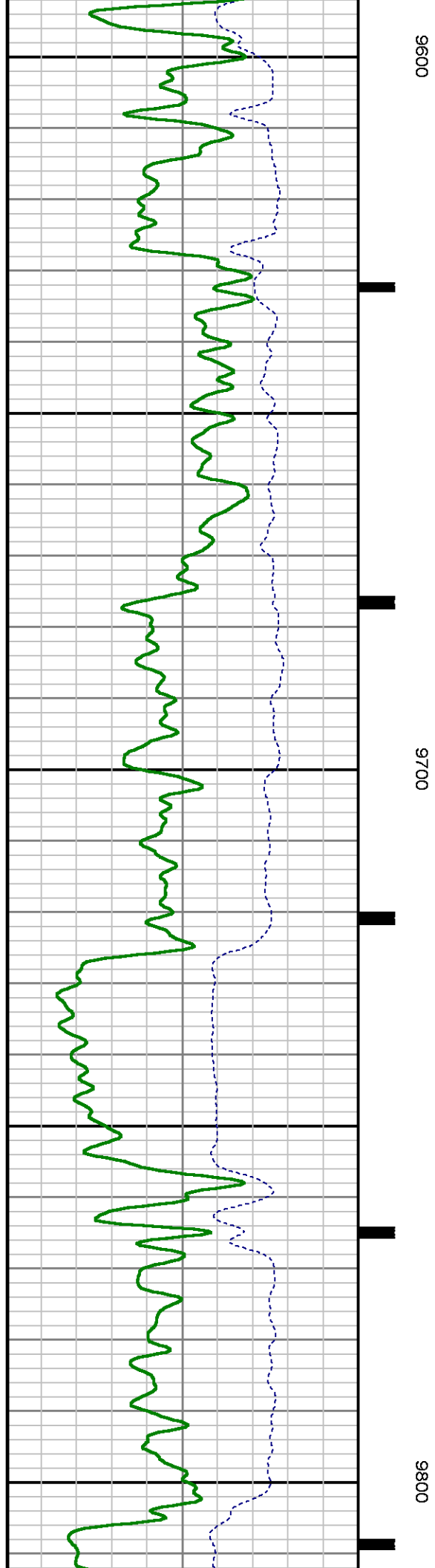
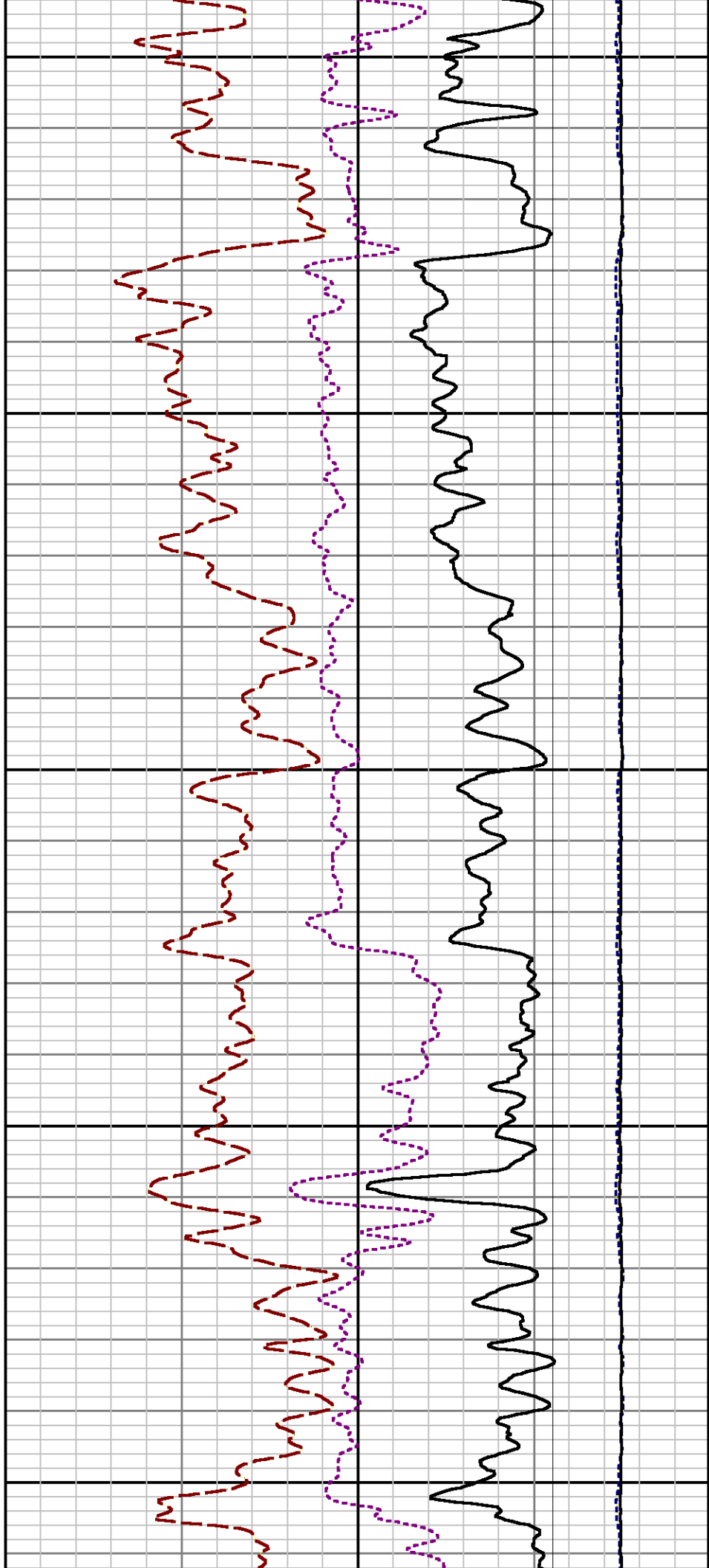


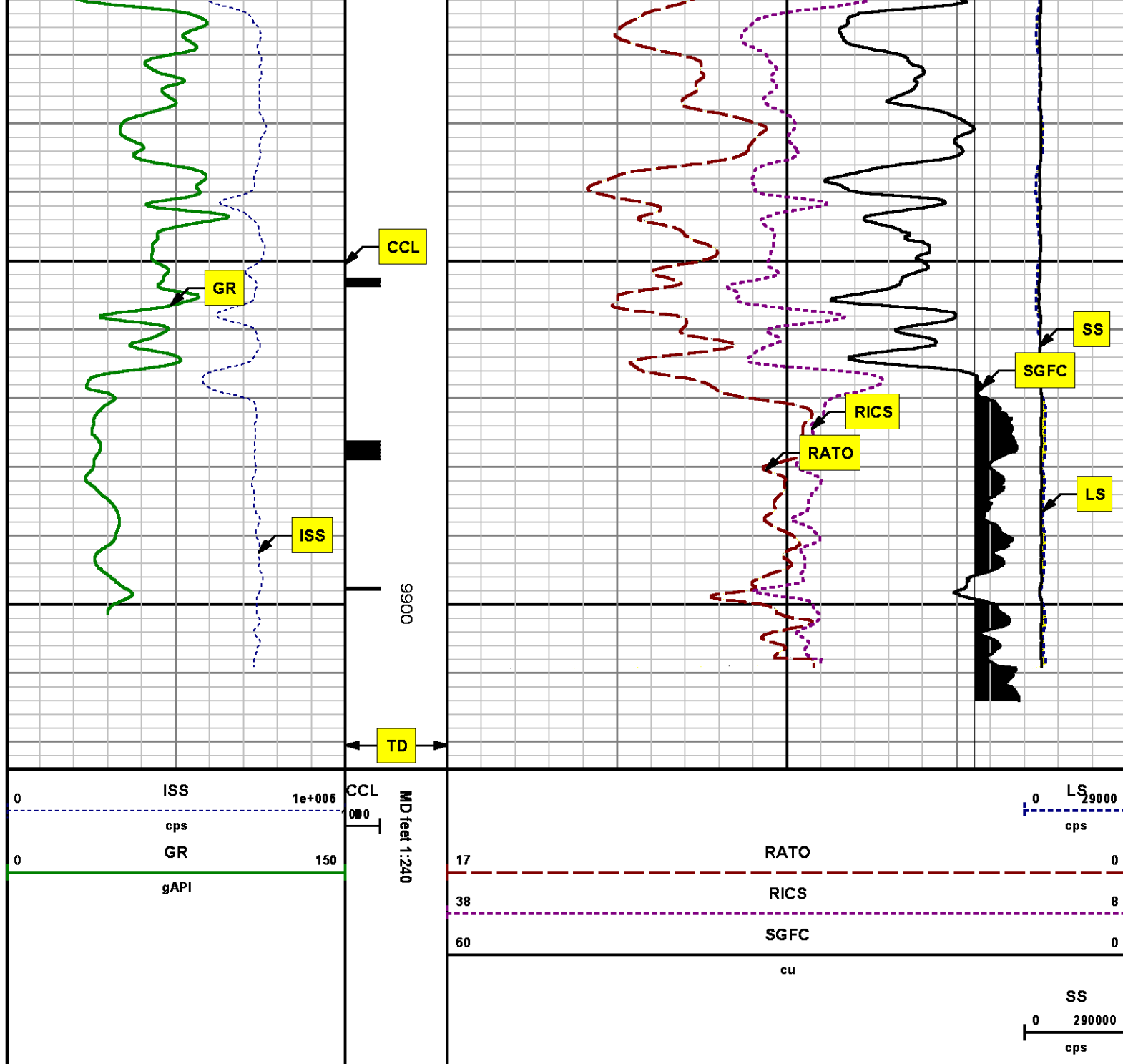


9400

9500







REPEAT SECTION  
PNC 3-D MODE

# SPL PROCESSING

| MEASUREMENT TYPE | PARAMETER                | VALUE          | UNITS | TOP      | BOTTOM   |
|------------------|--------------------------|----------------|-------|----------|----------|
| PNC Porosity     | Borehole                 | Cased          |       | 9140.830 | 9455.768 |
| PNC Porosity     | Borehole Size            | 8.750          | inch  | 9140.830 | 9455.768 |
| PNC Porosity     | Casing Size              | 4.500          | inch  | 9140.830 | 9455.768 |
| PNC Porosity     | Gas Filled               | Non Gas Filled |       | 9140.830 | 9455.768 |
| PNC Porosity     | Matrix                   | Sandstone      |       | 9140.830 | 9455.768 |
| TPS Pressure     | Temperature Corr. Source | Fixed (72.00)  | degF  | 9140.830 | 9455.768 |

## 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<br>CPT3Q0 CPT3Q2 CPT3Q3 CPT3Q4 ET3 IXS<br>MCS3 MCS3Q0 QCAL3 RGN3 RICX SDA3<br>SDL3 SGA3 SGL3 STA3 XS ASPEC3<br>AMB3 AMF3 CHF3 IXSC IXSN RATO23<br>RICXC RIN13C RIN23 RIN23C SD3D SG3D<br>SGB3 SGF3 WDT3 CXSR IXSR XSR<br>RICXR   |
| 8281XA | -12.291      | HVC2Q0 SEQ2 AMA2 AMB2 AMF2 AML2<br>BKL CHF2 CLS CPT2Q0 CPT2Q2 CPT2Q3<br>CPT2Q4 ET2 ILS LS MCS2 MCS2Q0<br>QCAL2 RGN2 RICL RONE23 RTWO23 SDA2<br>SDL2 SGA2 SGB2 SGF2 SGK2 SGL2<br>STA2 ASPEC2 ILSC ILSN WDT2 RICLC<br>CLSR ILSR LSR RICLR  |
| 8281XA | -12.041      | CPRS HVC1Q0 MV SEQ SEQ1 AMA1<br>AMB1 AME1 AMF1 AML1 BKS CHF1<br>CSS CORB CORF CPT1Q0 CPT1Q2 CPT1Q2A<br>CPT1Q2B CPT1Q2C CPT1Q3 CPT1Q4 CPT1Q5 ET1<br>G1 G2 GE1S GE2S ISS MCS1<br>MCS1Q0 QA1 QCAL1 QM1 RATO RATO13<br>RBOR RGN1 RICS RIN RONE RPOR<br>RTWO RIN13 RONE13 RTWO13 SALB SC1<br>SDA1 SDL1 SGA1 SGB1 SGBC SGE1<br>SGF1 SGFC SGK1 SGL1 SS SS2<br>STA1 PD1S PD2S PD3S MD1S MD2S<br>MD3S DG1S DG2S DG3S PD1M PD2M<br>PD3M MD1M MD2M MD3M DG1M DG2M<br>DG3M MVS MA MVM FILV IAM<br>TA PVM PVS IAS SSTAT QPD1<br>QPD2 QPD3 QMD1 QMD2 QMD3 QDG1<br>QDG2 QDG3 QMA QTA QFILV QMV<br>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

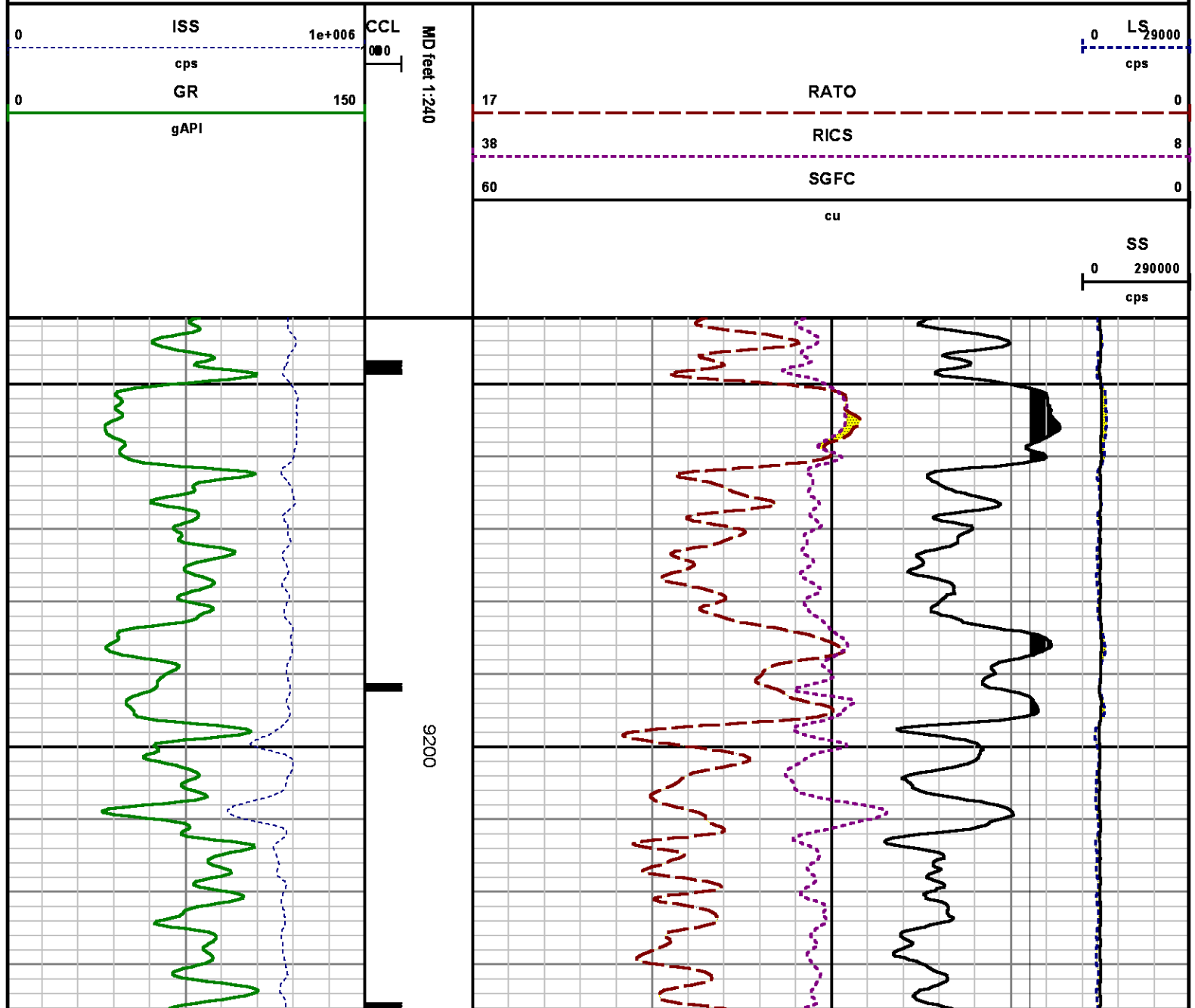
Well : FEDERAL PA 541-21

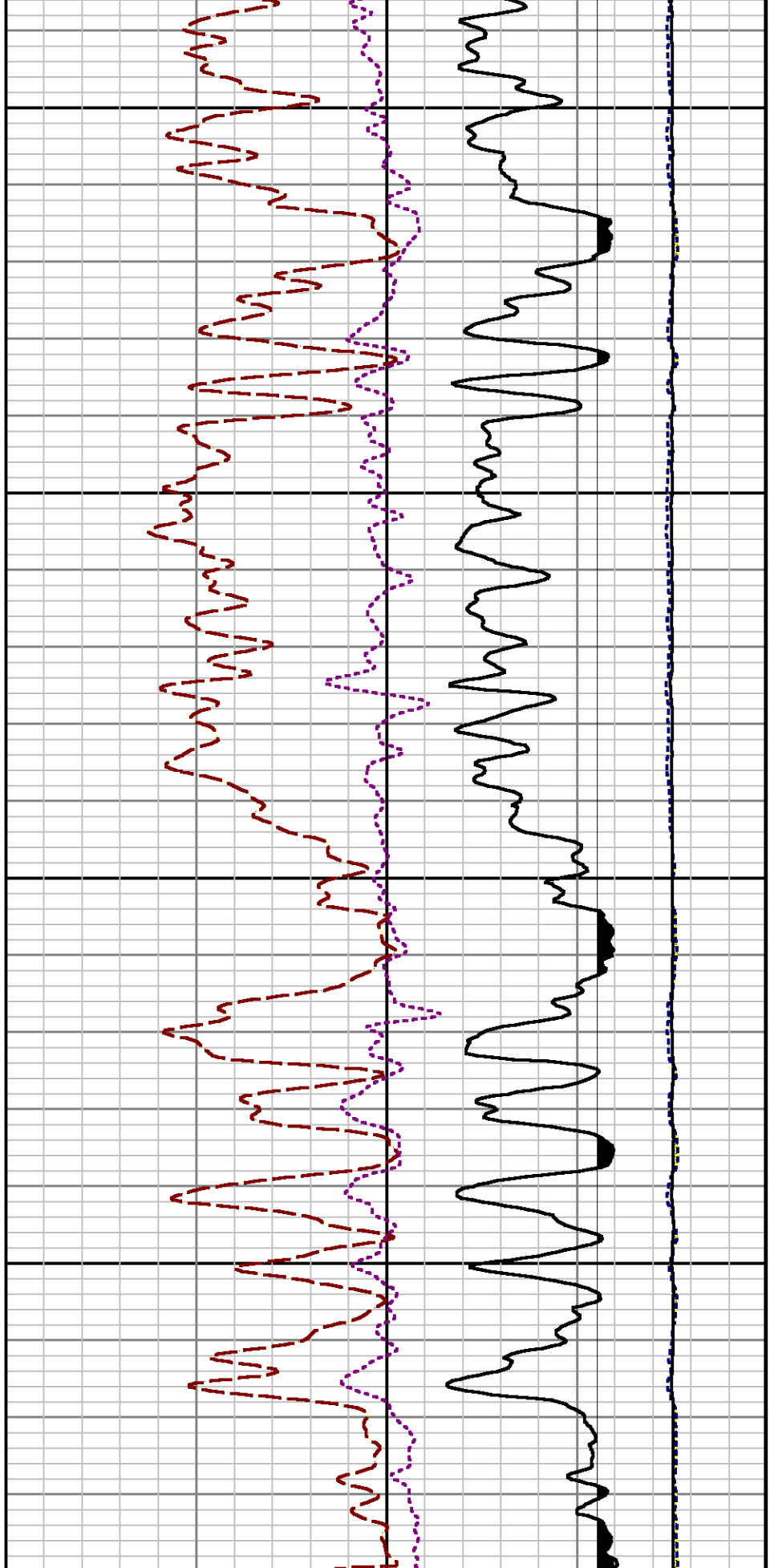
File Name : d:\welldata\wpx\pa 541-21\541rpm\repeat.xtf

Mode : PlotMgr 5.4.504

Interval : 9140.83 - 9440.00 feet UP

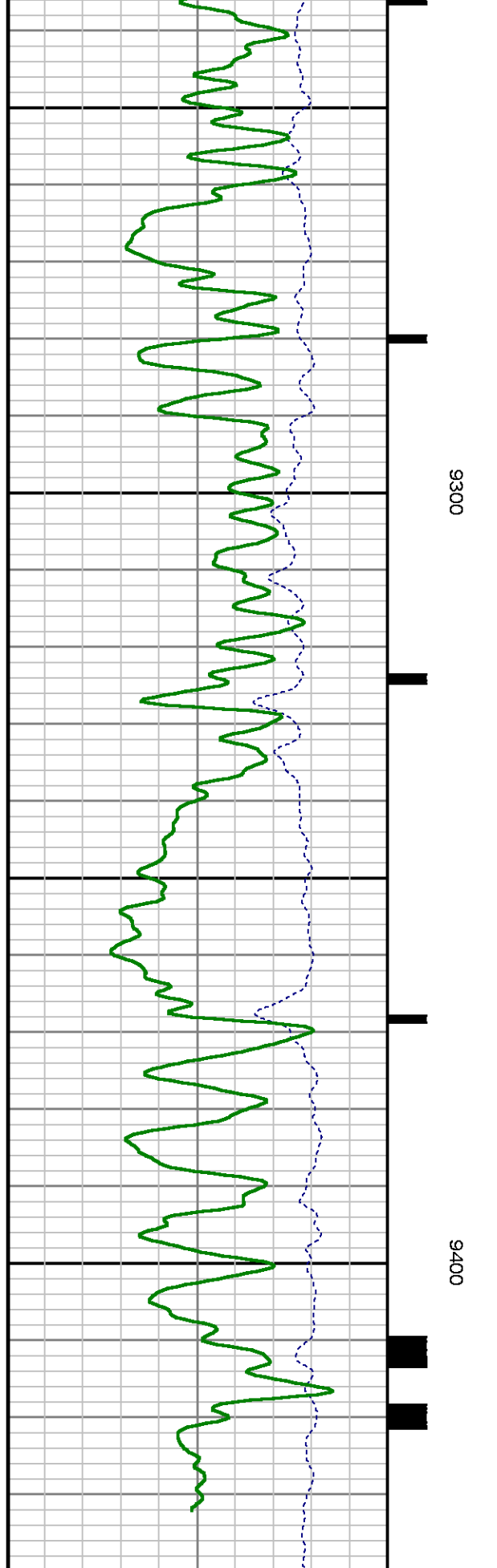
Created : 3/1/2014 6:01:58 PM





0  $1e+006$  **LS**  
 cps  
 0

17 **RATO**



0 **ISS**  
 cps  
 0

0 **GR** 150

CCL  
 MD feet 1:240



gAPI

38

RICS

8

60

SGFC

0

cu

SS

0 290000

cps

## CALIBRATION SUMMARY

## GAMMA RAY

Calibration File: C:\case\calver\GR\385TN.cal

## CALIBRATION SUMMARY

DATE/TIME PERFORMED: Wed Feb 12 17:24:19 2014 TOOL SERIES: 2812LA ASSET: 385 SEQ: TN

| Calibrator # | Background<br>[cps] | Calibrator On<br>[cps] | Multiplicative | Background<br>[api] | Calibrator On<br>[api] | Differential<br>[api] |
|--------------|---------------------|------------------------|----------------|---------------------|------------------------|-----------------------|
| S2K WA-612   | 27.64               | 256.80                 | 0.916          | 25.33               | 235.33                 | 210.00                |

Verification File: C:\case\calver\GR\385TN.VP

## PRIMARY VERIFICATION

DATE/TIME PERFORMED: Wed Feb 12 17:29:20 2014 TOOL SERIES: 2812LA ASSET: 385 SEQ: TN

| Calibrator # | Background<br>[cps] | Calibrator On<br>[cps] | Multiplicative | Background<br>[api] | Calibrator On<br>[api] | Differential<br>[api] |
|--------------|---------------------|------------------------|----------------|---------------------|------------------------|-----------------------|
| S2K WA-612   | 28.29               | 252.82                 | 0.916          | 25.92               | 231.69                 | 205.76                |

## TEMPERATURE

Calibration File: C:\case\calver\TEMP\77456813.cal

## CALIBRATION SUMMARY

DATE/TIME PERFORMED: FEB 13 2014 TOOL SERIES: 8255XA ASSET: 774568 SEQ: 13

|              | T(0)           | T(1)          | T(2)          | T(3)           | T(4)          | T(5)          |
|--------------|----------------|---------------|---------------|----------------|---------------|---------------|
| Coefficients | -9.274653e+000 | 1.055639e-001 | 2.143764e-006 | -2.782846e-010 | 0.000000e+000 | 0.000000e+000 |

Calibration File: C:\case\calver\PNC\34517.cal

PNC 3D CALIBRATION SUMMARY

DATE/TIME PERFORMED: Mon Feb 17 17:46:16 2014 TOOL SERIES: 8281XA ASSET: 345 SEQ: 17

Calibrator #

2437xb 112674

Source #

8281AA 10148476

|              | ISS     | Mtr VIts<br>(V) | SS Gain | LS Gain | XLS Gain | EA Temp<br>(degF) | Sync Delay<br>(usec) | RCAL   |
|--------------|---------|-----------------|---------|---------|----------|-------------------|----------------------|--------|
| Raw Data     | 820334  | 120.00          | 2285.00 | 2268.00 | 2260.29  | 101.75            | 7.00                 | 0.9795 |
| Interpolated | 1300000 | 139.11          | 2268.55 | 2260.32 | 2260.45  |                   |                      |        |

|          | ISS    | BKS     | BKL     | BKX    | SGA1        | SDA1      | SGA2        | SDA2      |
|----------|--------|---------|---------|--------|-------------|-----------|-------------|-----------|
| Raw Data | 820334 | 6396.99 | 1005.70 | 137.84 | 25.78       | 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      | 820334 | 172554.98 | 26624.86 | 90657.22 | 32281.71 | 8422.19 | 54854.50 | 13466.67 |
| Fit Quality % |        | 0.58      | 0.67     | 0.54     | 0.53     | 0.54    | 0.50     | 0.57     |

|               | ISS     | RBOR      | RIN<br>ISS/ILS | RIN13<br>ISS/IXS | RICS<br>ISS/CSS | RATO<br>SS/LS | RTWO<br>SS2/LS | RONE<br>CSS/CLS |
|---------------|---------|-----------|----------------|------------------|-----------------|---------------|----------------|-----------------|
| Raw Data      | 820334  | 1.43      | 4.75           | 30.81            | 14.95           | 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 % |         | 0.08      | 0.27           | 0.26             | 0.24            | 0.04          | 0.04           | 0.08            |
| Reduced       | 1397428 | 1.43      | 4.79           | 31.02            | 15.04           | 10.76         | 3.83           | 4.08            |
|               |         | 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

33.24'

|             |           |
|-------------|-----------|
| 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 |

**SONDEX GAMMA RAY**

|          |        |
|----------|--------|
| 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        |

**TEMPERATURE / PRESSURE**

|          |          |
|----------|----------|
| Series   | 8255XA   |
| Mnemonic | SRPL     |
| Diameter | 1.70"    |
| Weight   | 13.00 lb |
| Length   | 3.30'    |

CCL MP — 25.15'

MP — 22.70'

XLS DETECTOR — 16.08'

LS DETECTOR — 13.10'  
SS DETECTOR — 12.88'

PRES MP — 1.61'

0.00'

**Total Length: 33.24'**  
**Total Weight: Not Available**  
**Max Diameter: 0' 1.70"**



Baker Atlas

CASE

|         |                   |
|---------|-------------------|
| Company | WPX ENERGY        |
| Well    | FEDERAL PA 541-21 |
| Field   | PARACHUTE         |
| County  | GARFIELD          |
| State   | COLORADO          |

**Location**

SHL: 2600' FNL & 1448' FWL  
BHL: 1269' FNL & 271' FEL (NENE)

**Elevations**

KB 6056 ft  
DF

|          |                |
|----------|----------------|
| File No: | CH082898       |
| API No:  | 05045220410000 |

21 6S 95W  
PA 22-21 PAD

CHIEF

SEC 21 TWP 6S RGE 95W

GL 6030 ft

NABORS 573