



|                |         |                  |
|----------------|---------|------------------|
| FILE NO:       | COMPANY | WPX ENERGY       |
| CH106693       | WELL    | FEDERAL RU 413-6 |
| API NO:        | FIELD   | RULISON          |
| 05045226020000 | COUNTY  | GARFIELD         |
|                | STATE   | CO               |

|             |                           |                |
|-------------|---------------------------|----------------|
| Ver. 4.06   | LOCATION:                 | OTHER SERVICES |
| S6 TTS R93W | SHL: 1936' FSL & 521' FWL | BOND LOG       |
| RU 13-6 PAD | BHL: 703' FSL & 1268' FWL |                |
| H&P 318     | SEC 6                     | TWP 7S         |
|             |                           | RGE 93W        |

|                   |    |           |            |    |             |
|-------------------|----|-----------|------------|----|-------------|
| PERMANENT DATUM   | GL | ELEVATION | 6985 FT    | KB | ELEVATIONS: |
| LOG MEASURED FROM | KB | 24 FT     | ABOVE P.D. | DF | 7009 FT     |
| DRILL. MEAS. FROM | KB |           |            | GL | 6895 FT     |

|                        |                        |
|------------------------|------------------------|
| DATE                   | 17-APR-2016            |
| RUN                    | 1                      |
| SERVICE ORDER          | US106693               |
| DEPTH DRILLER          | 9257 FT                |
| DEPTH LOGGER           | 9194 FT                |
| BOTTOM LOGGED INTERVAL | 9178 FT                |
| TOP LOGGED INTERVAL    | 1124 FT                |
| TIME STARTED           | 8:00                   |
| TIME FINISHED          | 17:30                  |
| OPERATOR RIG TIME      | 9.5 HOURS              |
| TYPE OF FLUID IN HOLE  | WATER                  |
| FLUID DENSITY          | NA                     |
| FLUID SALINITY         | NA                     |
| FLUID LEVEL            | 53 FT                  |
| LOGGED CEMENT TOP      | NA                     |
| WELLHEAD PRESSURE      | 0 PSI                  |
| MAXIMUM HOLE DEVIATION | NA                     |
| NOMINAL LOGGING SPEED  | 10 FMIN                |
| MAX. RECORDED TEMP.    | 247 DEGF               |
| REFERENCE LOG          | BAKER HUGHES OPEN HOLE |
| REFERENCE LOG DATE     | 20-Mar-2016            |
| EQUIP. NO.             | HL-6670                |
| LOCATION               | GRAND JCT.             |
| RECORDED BY            | P. EDWARDS             |
| WITNESSED BY           | B. CADY                |

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         | 24 FT   | 1124 FT |
| 9.625 IN        | 1124 FT | 9257 FT |

| CASING RECORD |           |       |       |         |
|---------------|-----------|-------|-------|---------|
| SIZE          | WEIGHT    | GRADE | FROM  | TO      |
| 9.625 IN      | 32.3 LB/F |       | 24 FT | 1124 FT |
| 4.5 IN        | 11.6 LB/F | I-80  | 24 FT | 9257 FT |

## REMARKS

RUN 1 TRIP 1: ALL DATA ON THIS LOG IS SHIFTED AND DEPTH MATCHED USING THE GAMMA-RAY CURVE TO THE BAKER HUGHES OPEN HOLE LOG DATED 20-Mar-2016 AT THE CLIENT'S REQUEST.

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

THE AMOUNT OF LINEAR SHIFT IS 10.5 FEET

LOGGED WITH ZERO PSI AT WELLHEAD

BHT = 247 degF

SJ = 5522' - 5545'

THANK YOU FOR CHOOSING BAKER HUGHES WIRLINE SERVICES

## EQUIPMENT DATA

| RUN | TRIP | TOOL       | SERIES NO. | SERIAL NO. | POSITION |
|-----|------|------------|------------|------------|----------|
| 1   | 1    | PCM        | 8250EA     | Z166326    | FREE     |
| 1   | 1    | PCM / CCL  | 8248ED     | 10387150   | FREE     |
| 1   | 1    | GAMMA RAY  | 2812LA     | 11701636   | FREE     |
| 1   | 1    | RPM ELEC.  | 8281EA     | 10169250   | FREE     |
| 1   | 1    | RPM SOURCE | 8283PA     | 10160383   | FREE     |
| 1   | 1    | RPM TNSMTR | 8281FA     | 10307727   | FREE     |
| 1   | 1    | TEMP       | 8255XA     | Z166341    | FREE     |

## MAIN SECTION PNC-3D MODE

ECLIPS 6.2i ECLIPS General Release Rel 6.2i Wed Jun 12 12:21:40 CDT 2013

Updates: 1 Patches: 9

Plotted: Sun Apr 17 17:15:21 2016

## PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/CH106693/n354h02.prm  
 LOGGING MODE: DEPTH DIRECTION: UP  
 TOP DEPTH: 1119.250 ft BOTTOM DEPTH: 9196.250 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     | 8.75       | in    | " "           |
|                  | CASING SIZE       | 4.50       | in    | " "           |
|                  | MATRIX            | SANDSTONE  |       | " "           |
|                  | CORRECTION BUFFER | 11         |       | " "           |

## CURVE DESCRIPTION REPORT

| CURVE NAME | CREATION DATE        | CURVE DESCRIPTION   |
|------------|----------------------|---|
| F1:CCL     | Apr 17 08:46:59 2016 | CASING COLLAR LOCATOR                                       |
| F1:GR      | Apr 17 08:46:59 2016 | GAMMA RAY   |
| F1:ISS     | Apr 17 08:46:59 2016 | INELASTIC SHORT SPACE COUNT RATE                            |
| F1:LS      | Apr 17 08:46:59 2016 | LONG SPACE COUNT RATE                                       |
| F1:RATO    | Apr 17 08:46:59 2016 | SHORT/LONG SPACE COUNT RATE RATIO                           |
| F1:RICS    | Apr 17 08:46:59 2016 | SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS) |
| F1:SGFC    | Apr 17 08:46:59 2016 | CORRECTED FORMATION SIGMA                                   |
| F1:SS      | Apr 17 08:46:59 2016 | SHORT SPACE COUNT RATE                                      |

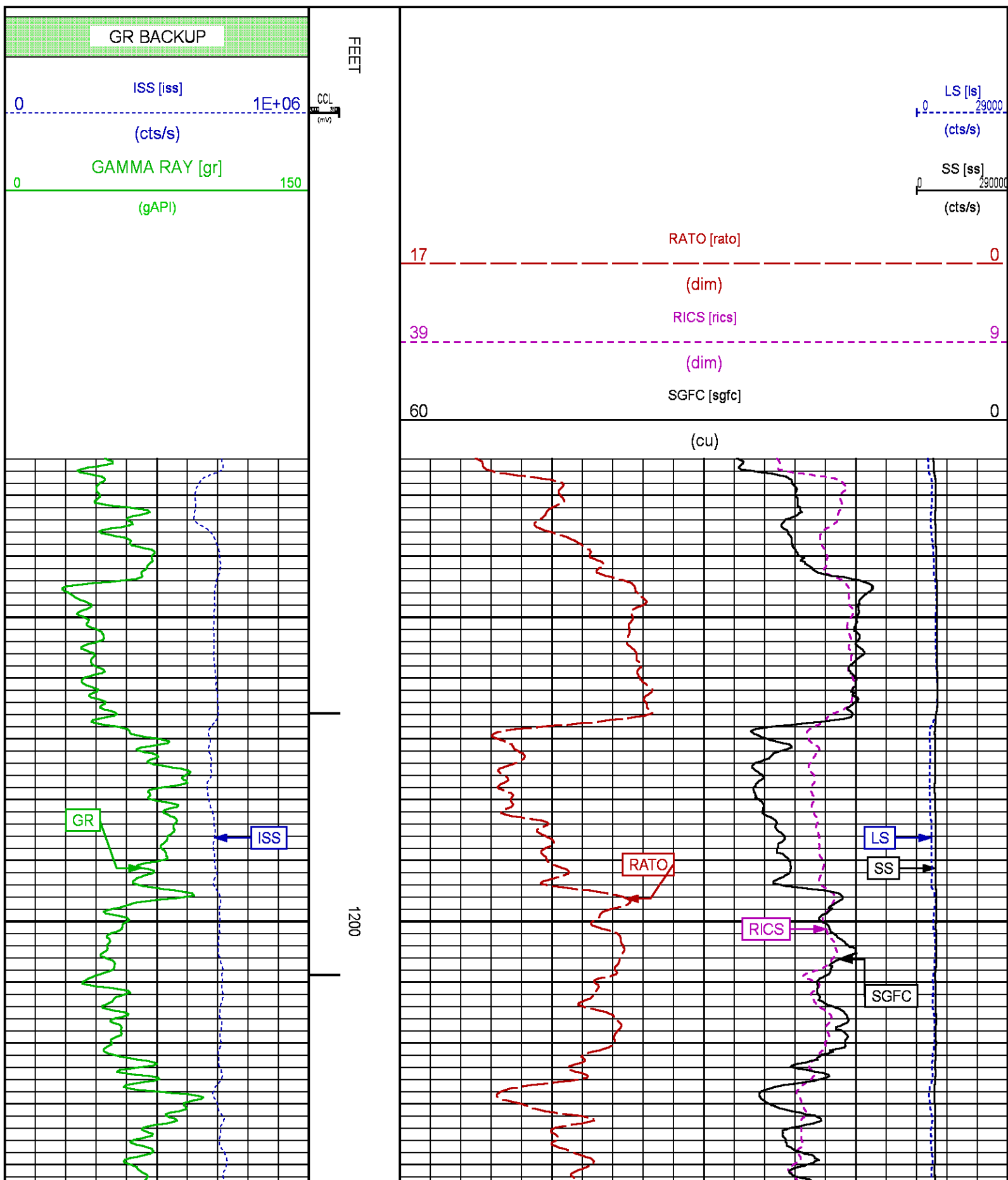
## CURVE MEASURE POINT OFFSET

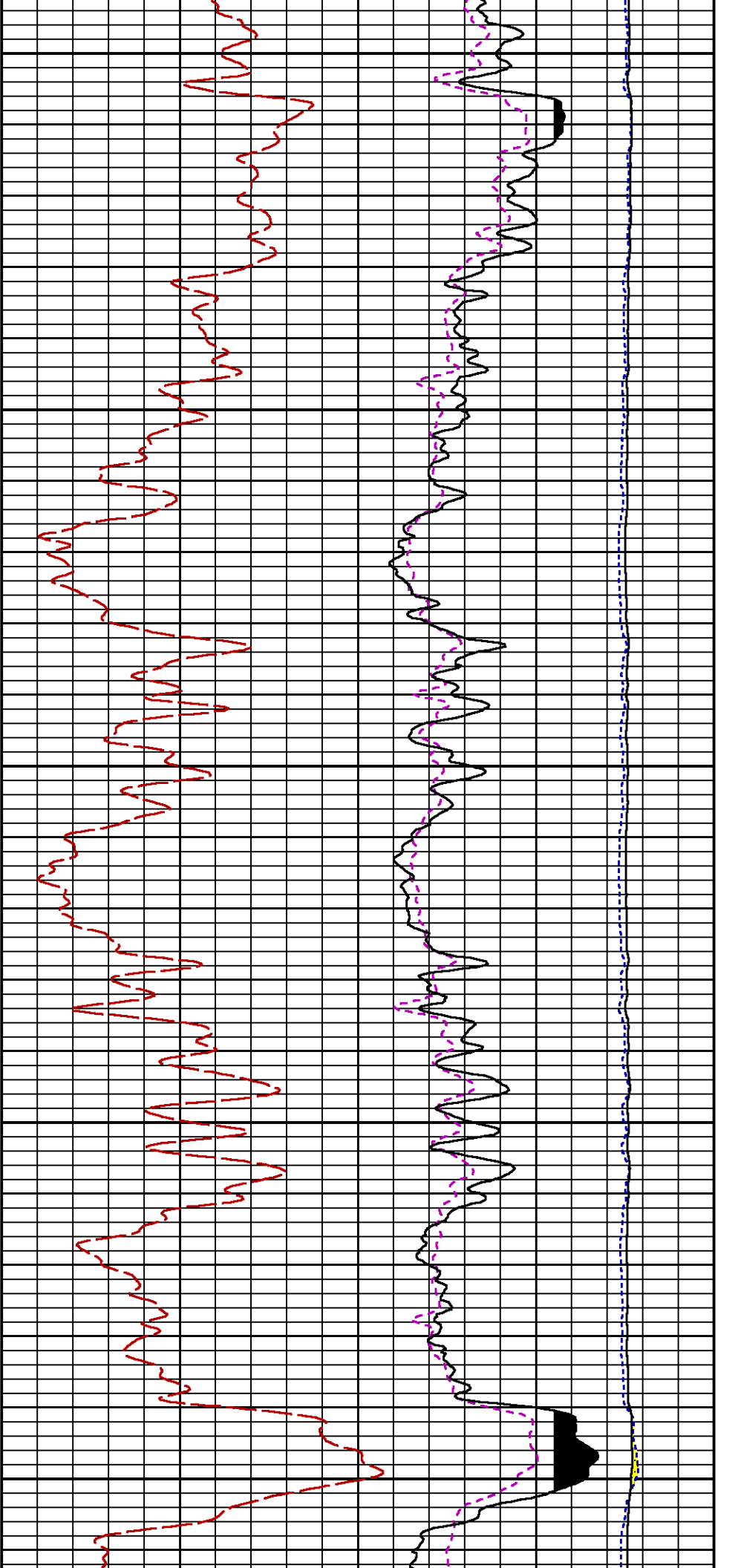
| CURVE | OFFSET (ft) | CURVE | OFFSET (ft) | CURVE | OFFSET (ft) | CURVE | OFFSET (ft) |
|-------|-------------|-------|-------------|-------|-------------|-------|-------------|
| CCL   | 25.00       | ISS   | 12.75       | RATO  | 12.75       | SGFC  | 12.75       |
| GR    | 22.75       | LS    |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

Presentation : cpu100:/dat1a/CH106693/413RPM\_MAIN.fvpdf [5"/100' Scale]

Plot Interval : 1124 - 9199 Feet

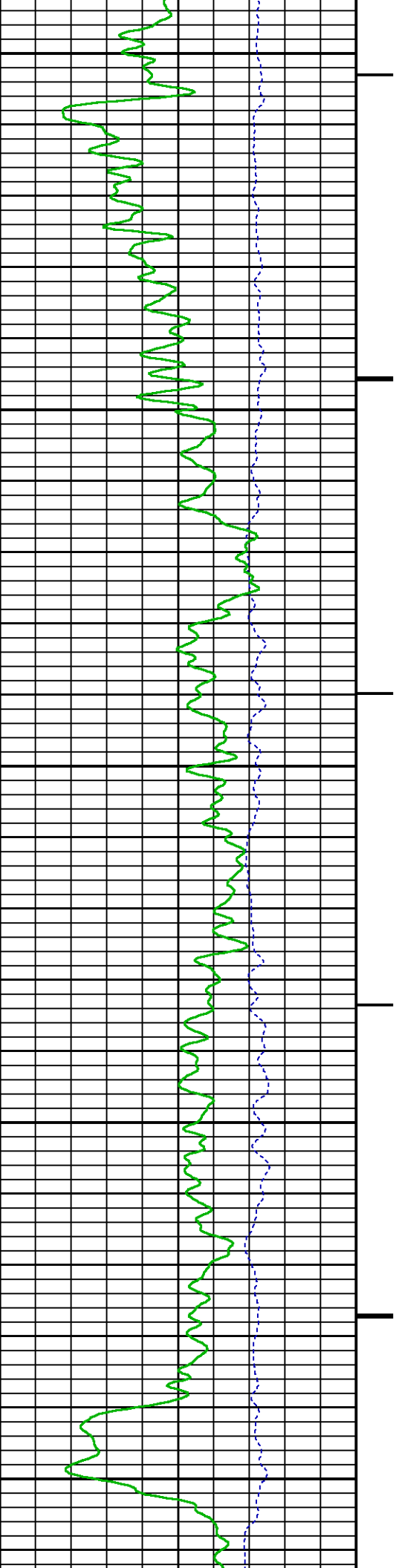
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Created On : Apr 17 08:46:59 2016  
Company : WPX ENERGY  
Well : FEDERAL RU 413-6  
Field : RULISON  
File Interval : 15 - 9197 Feet  
OCT : n354h

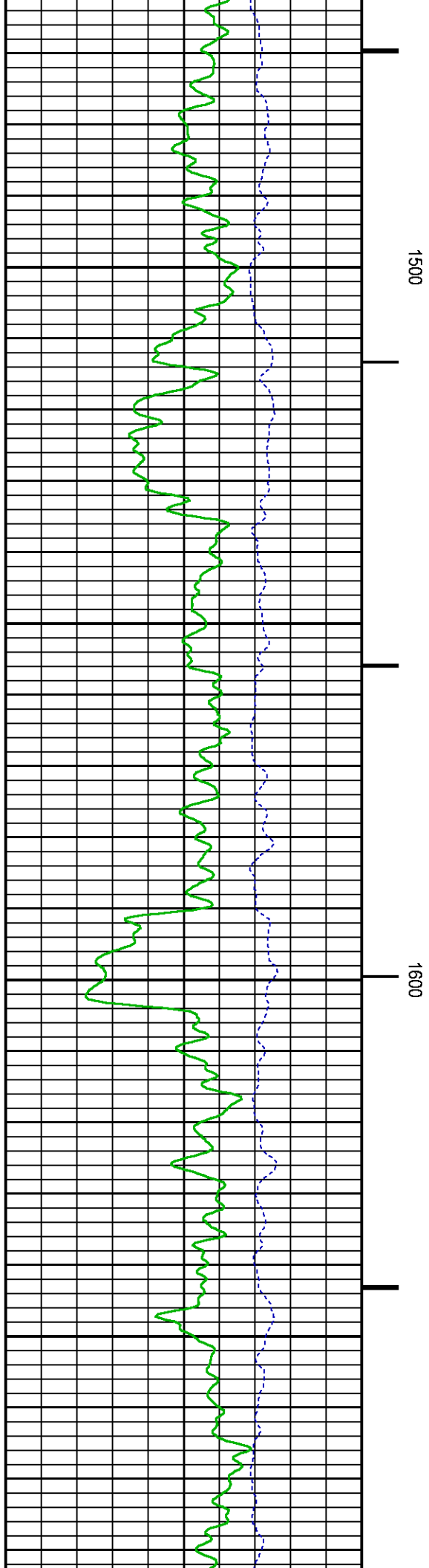
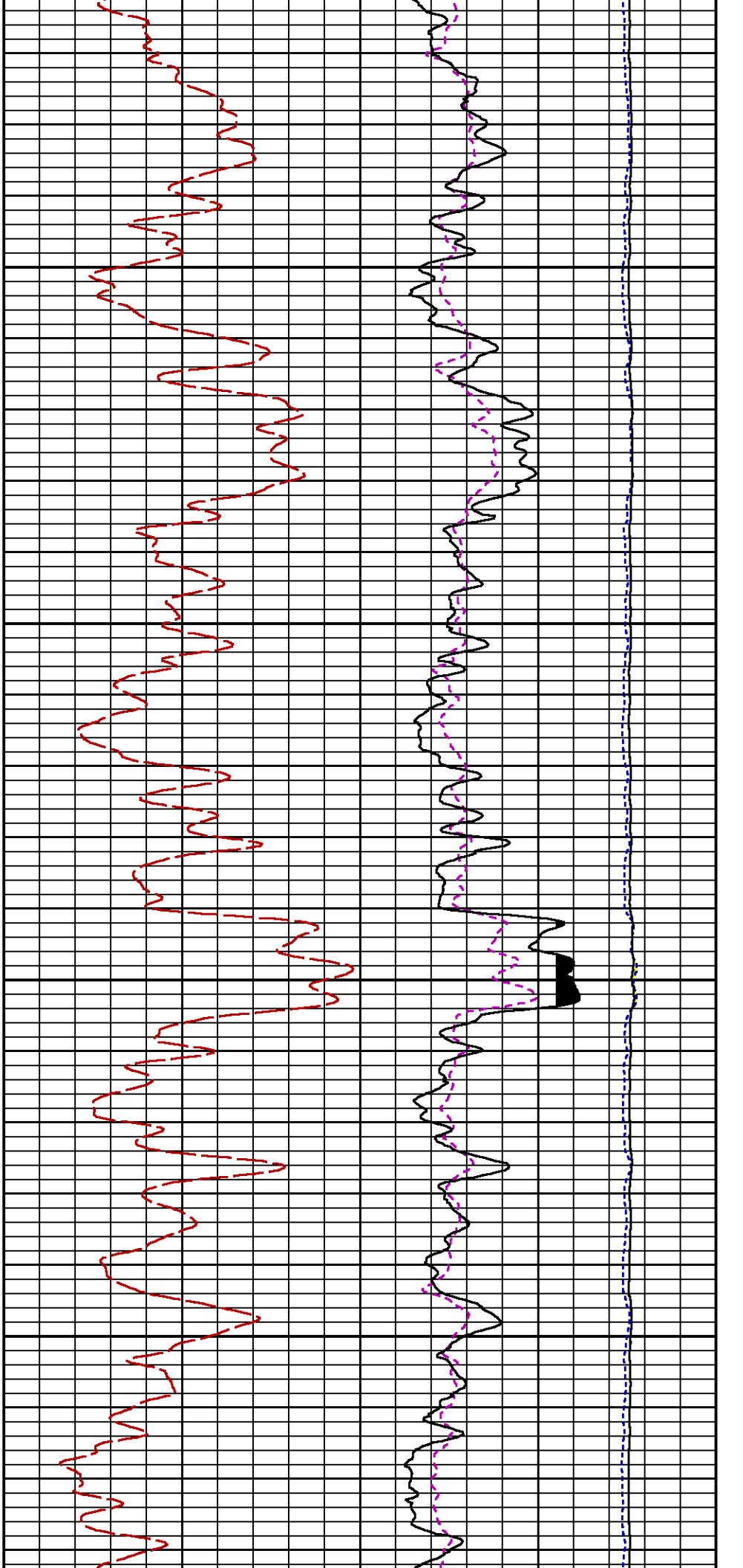


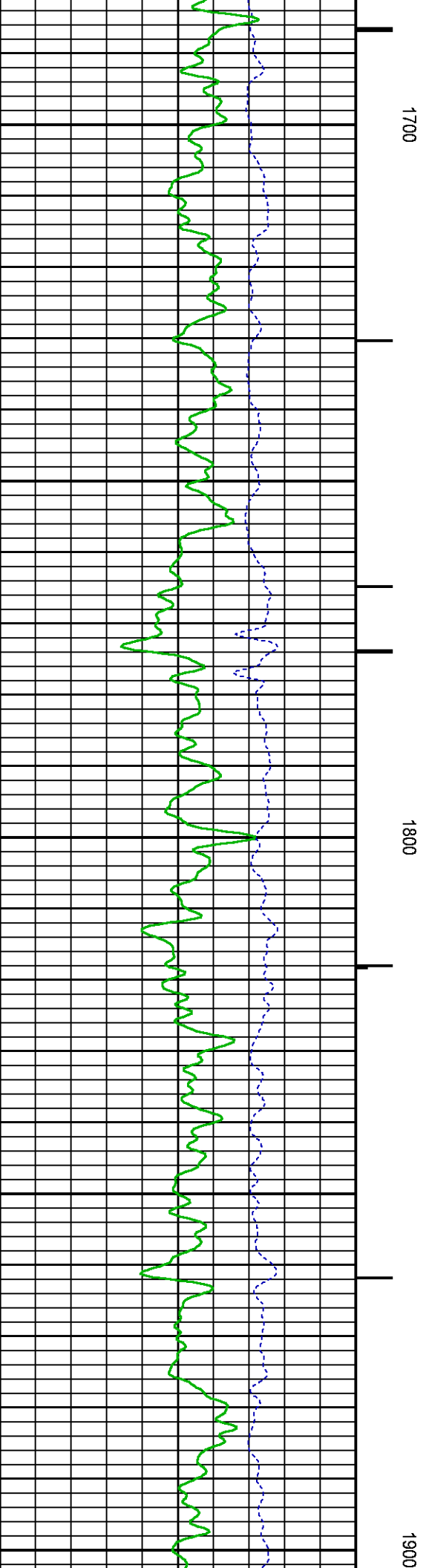
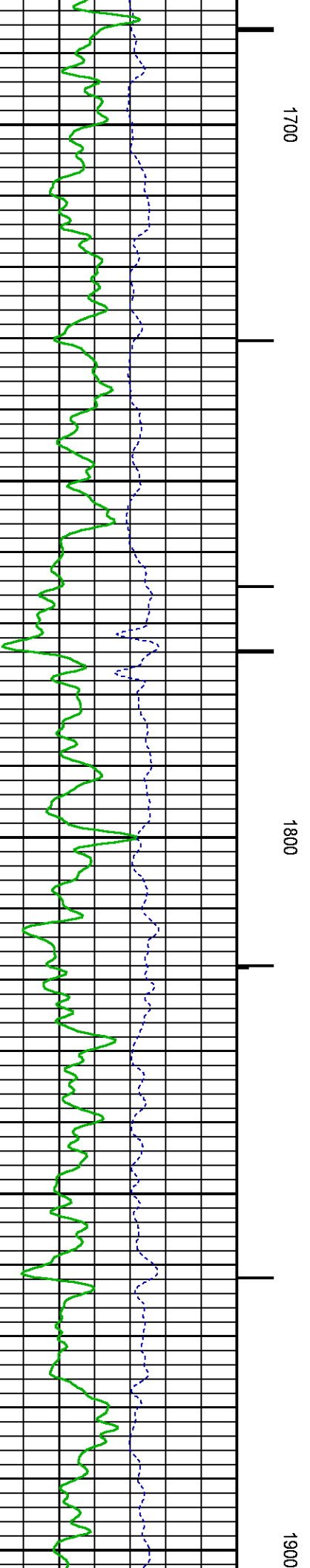
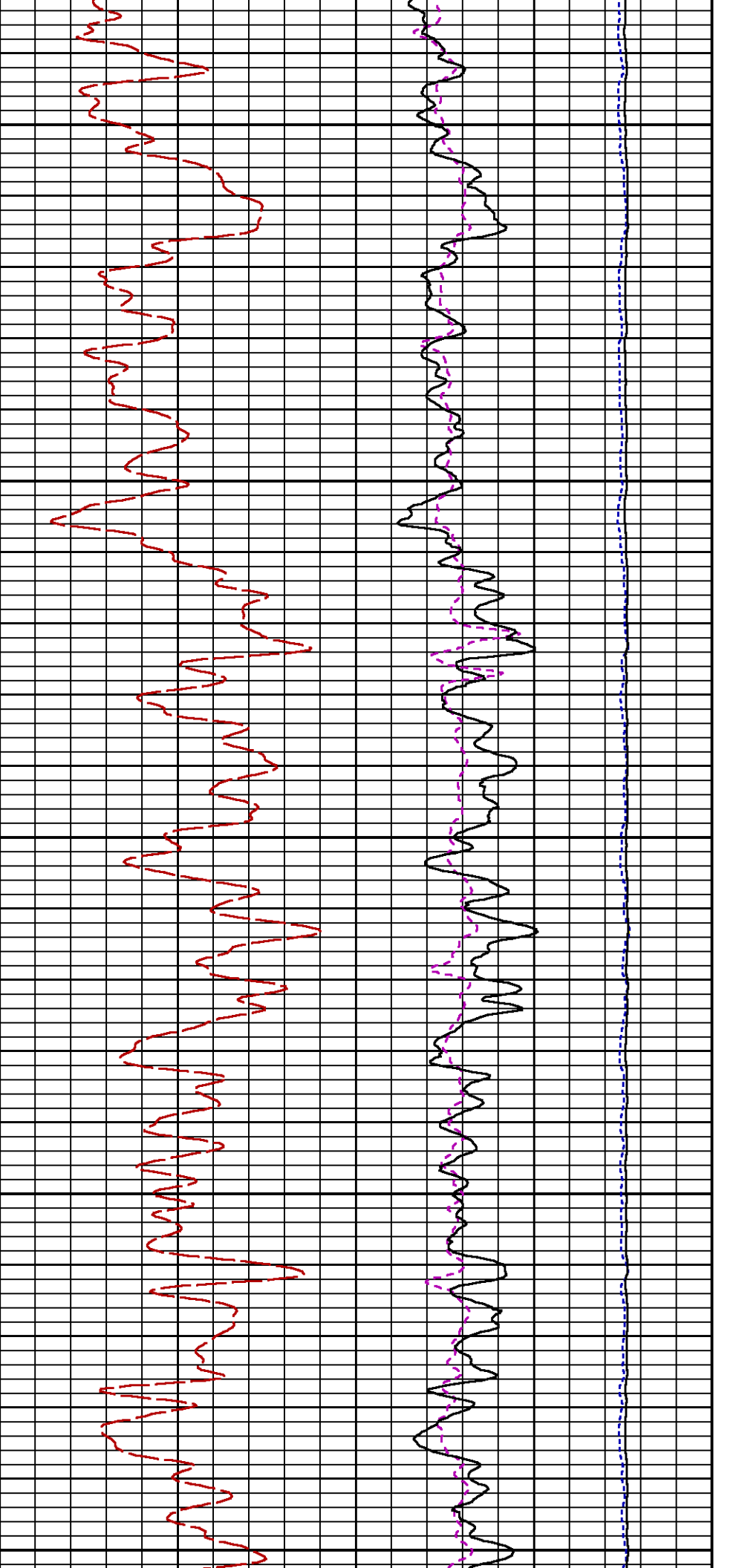


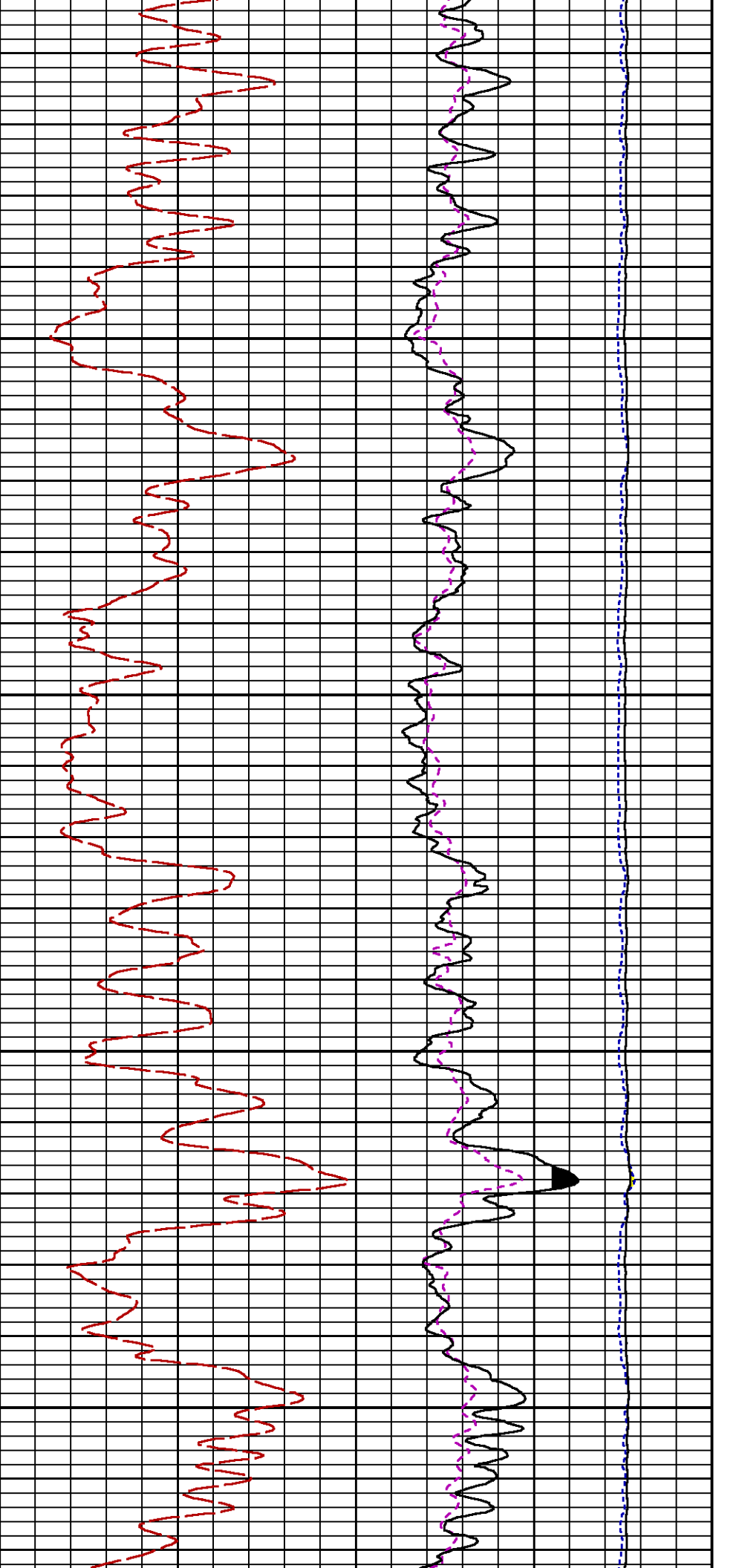
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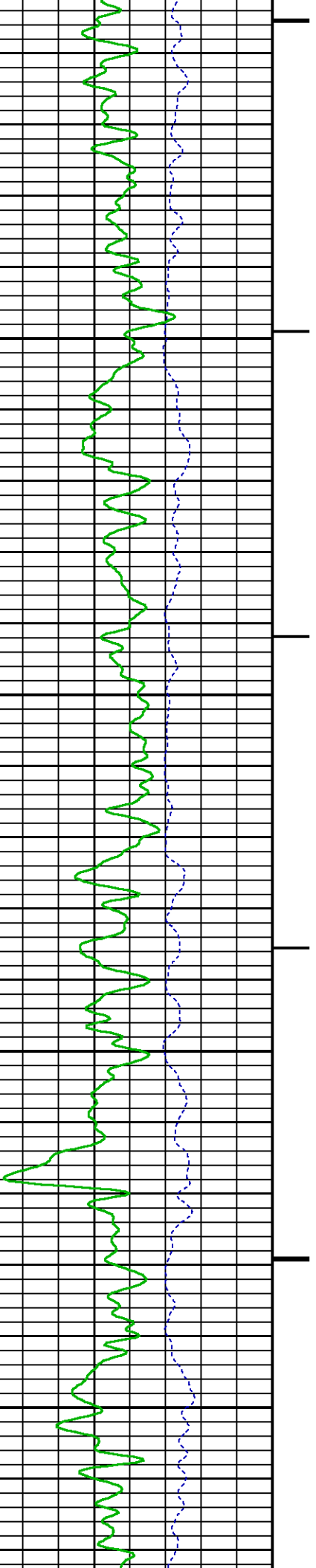


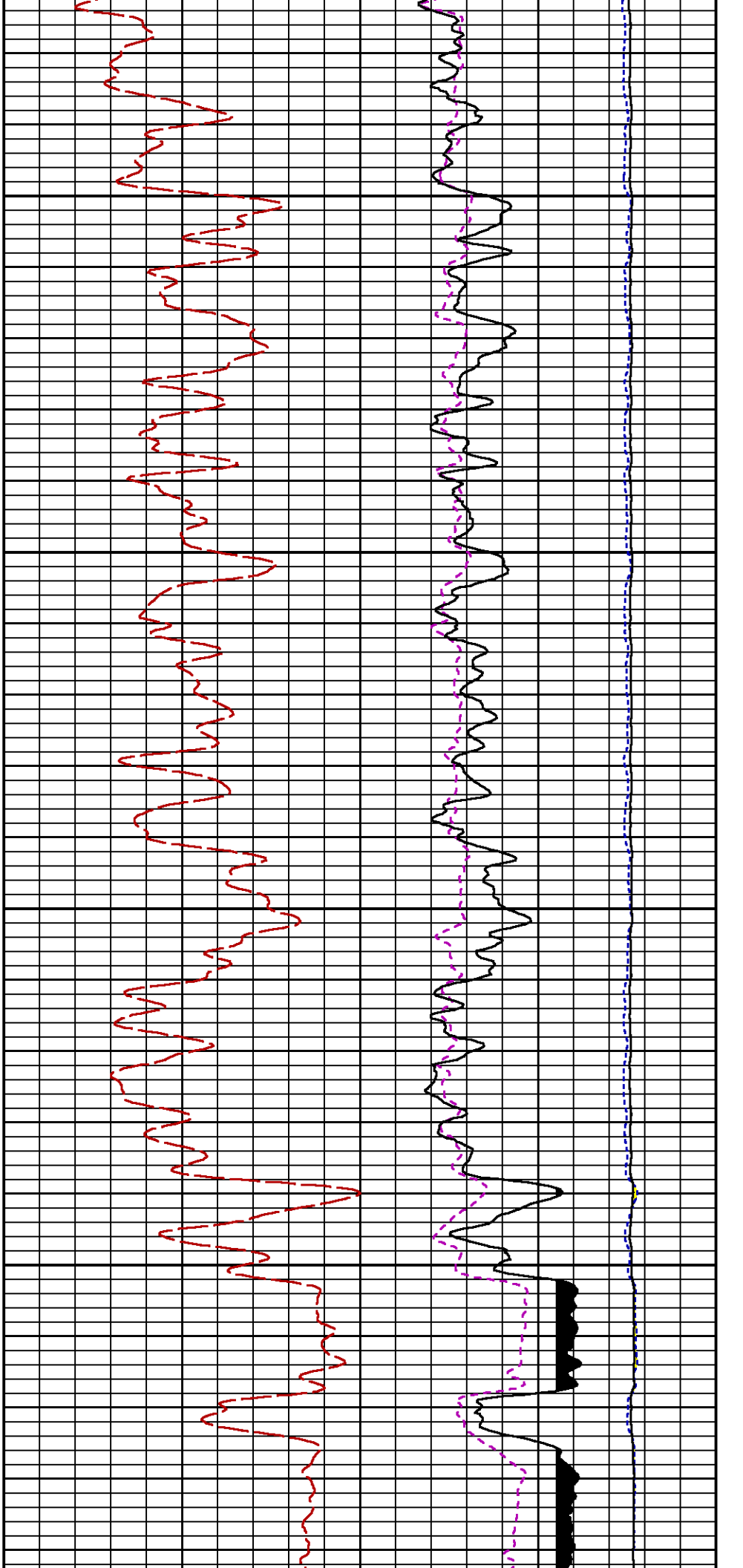




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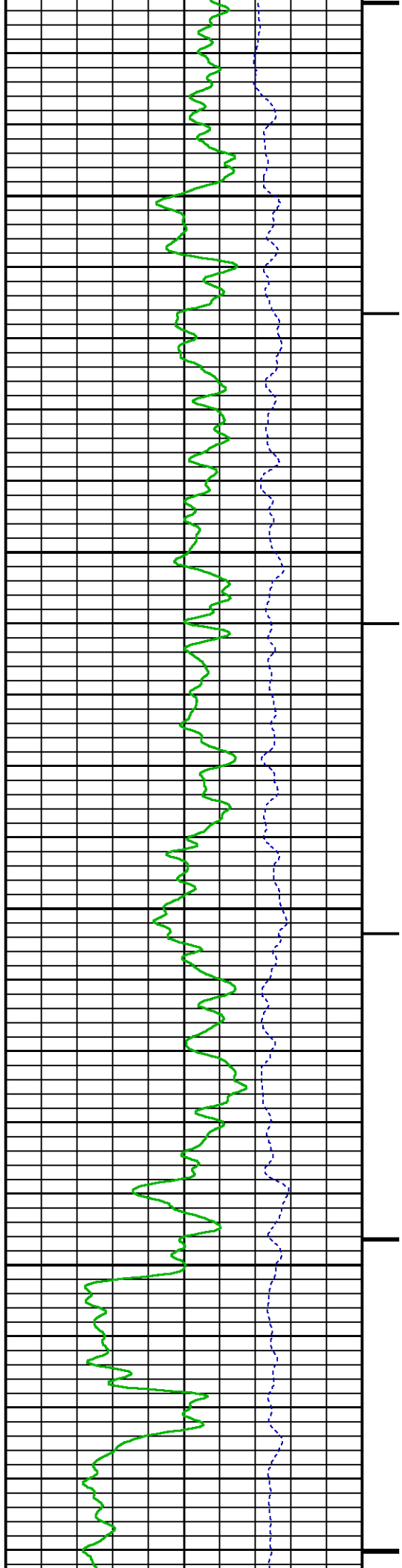
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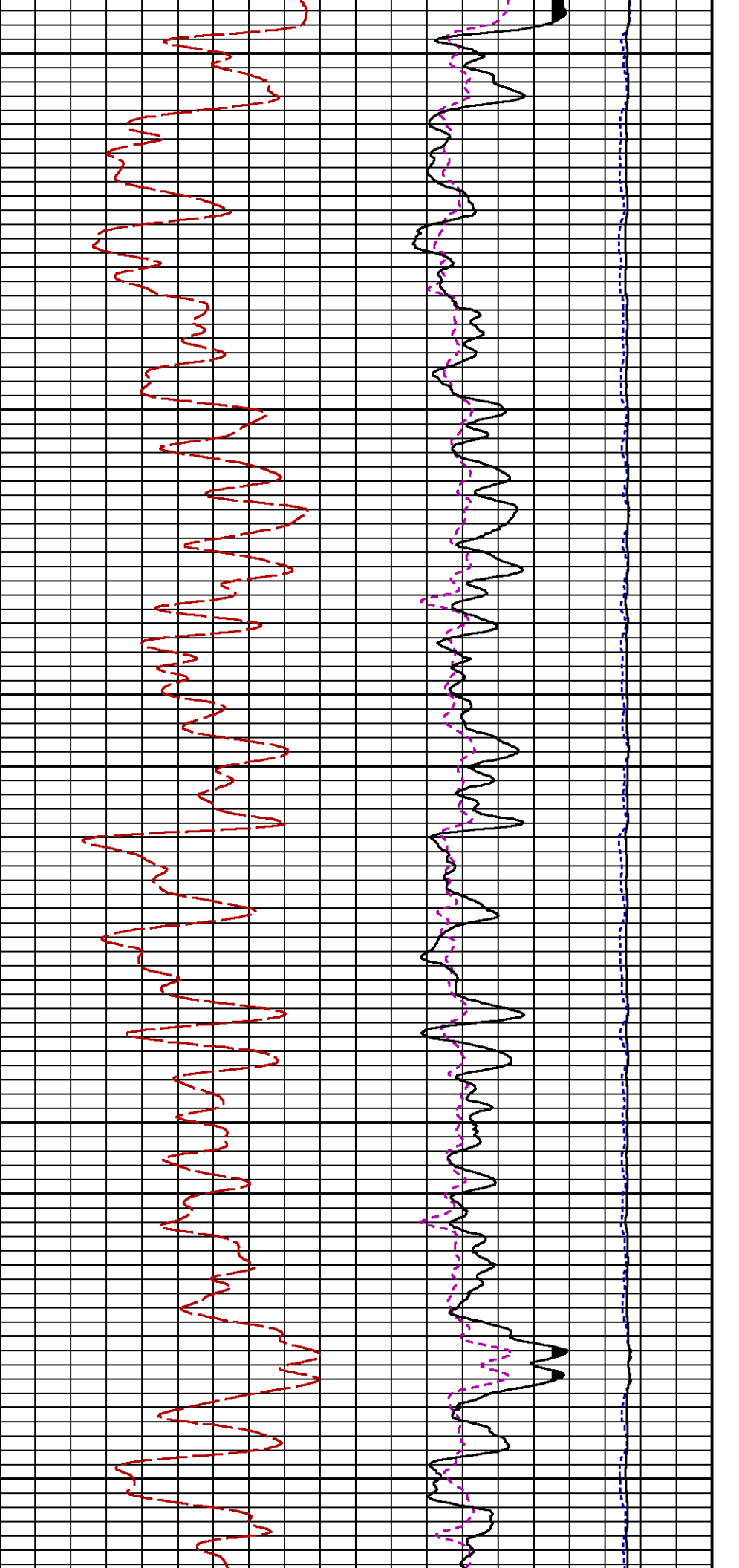


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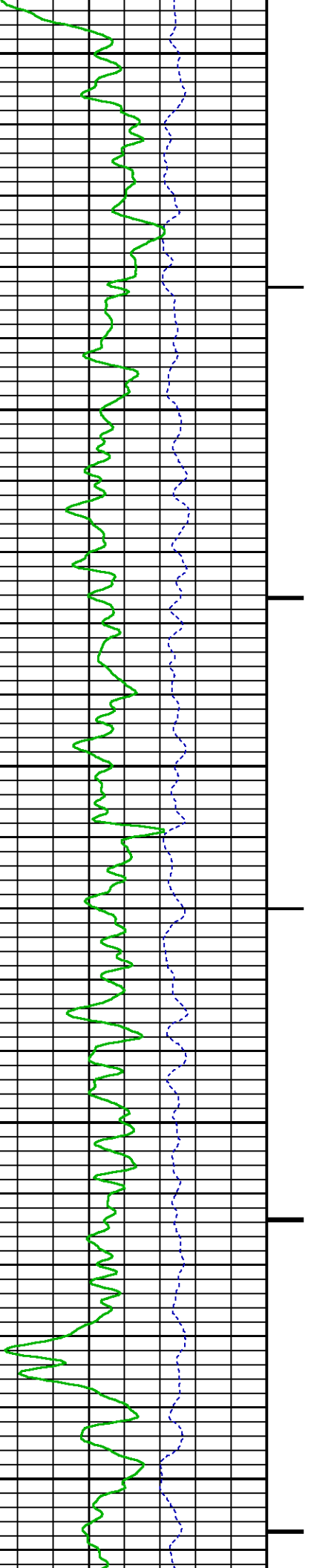


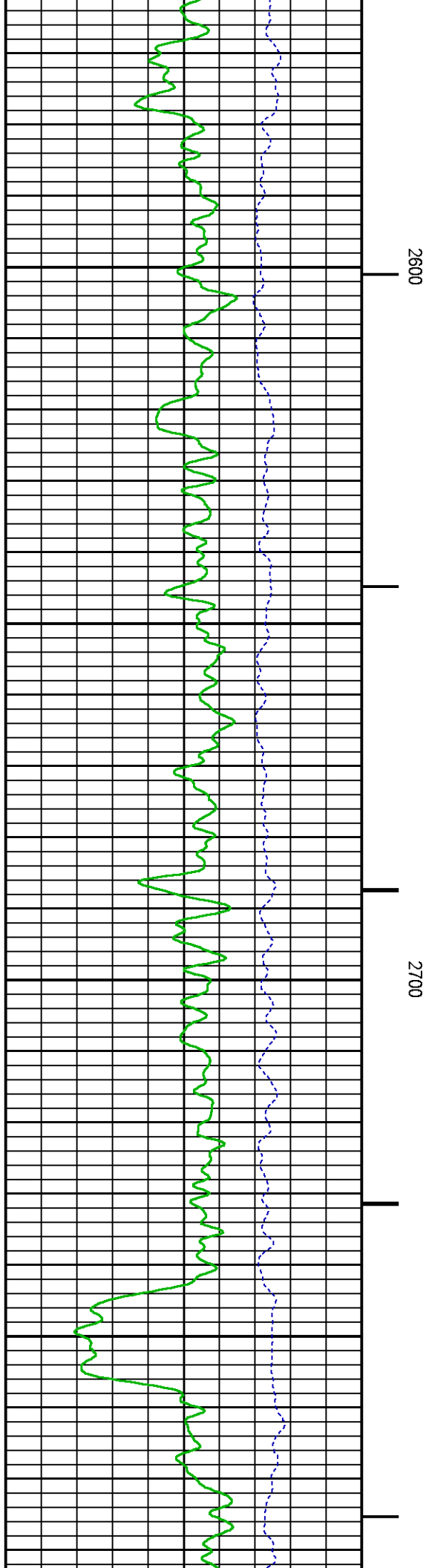
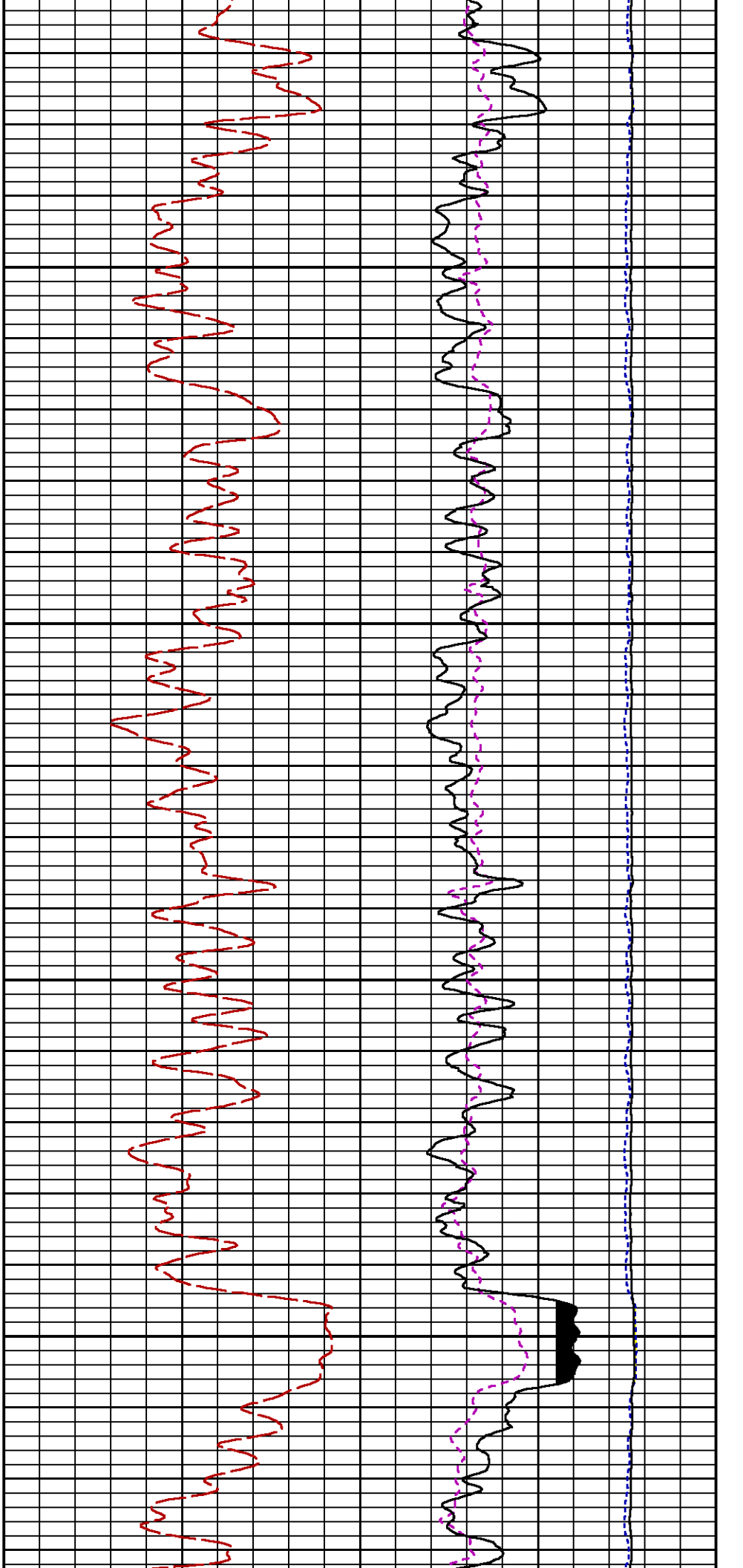


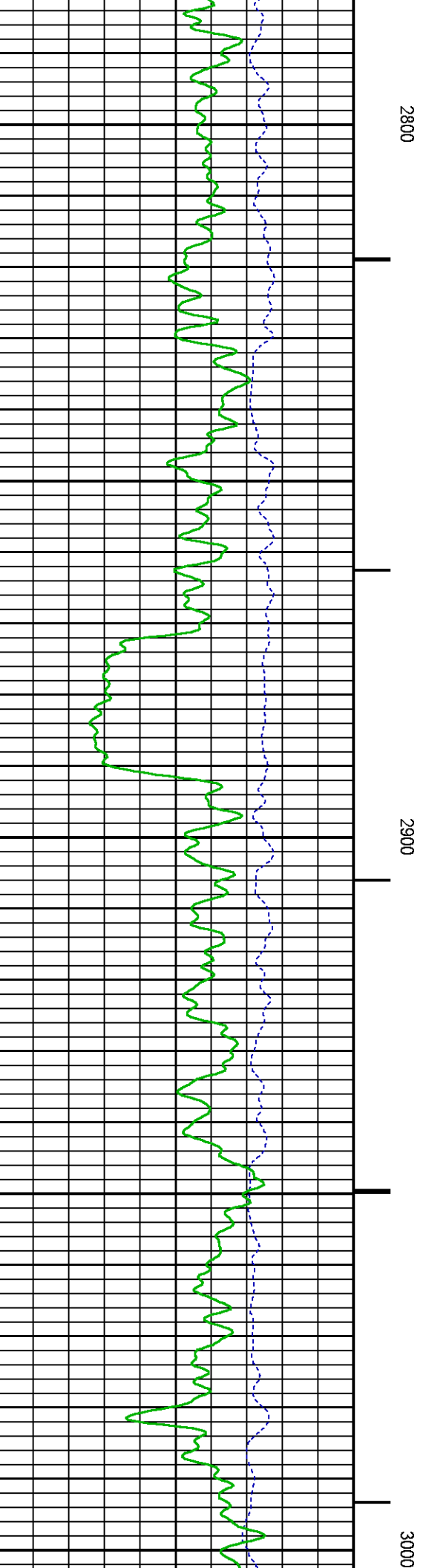
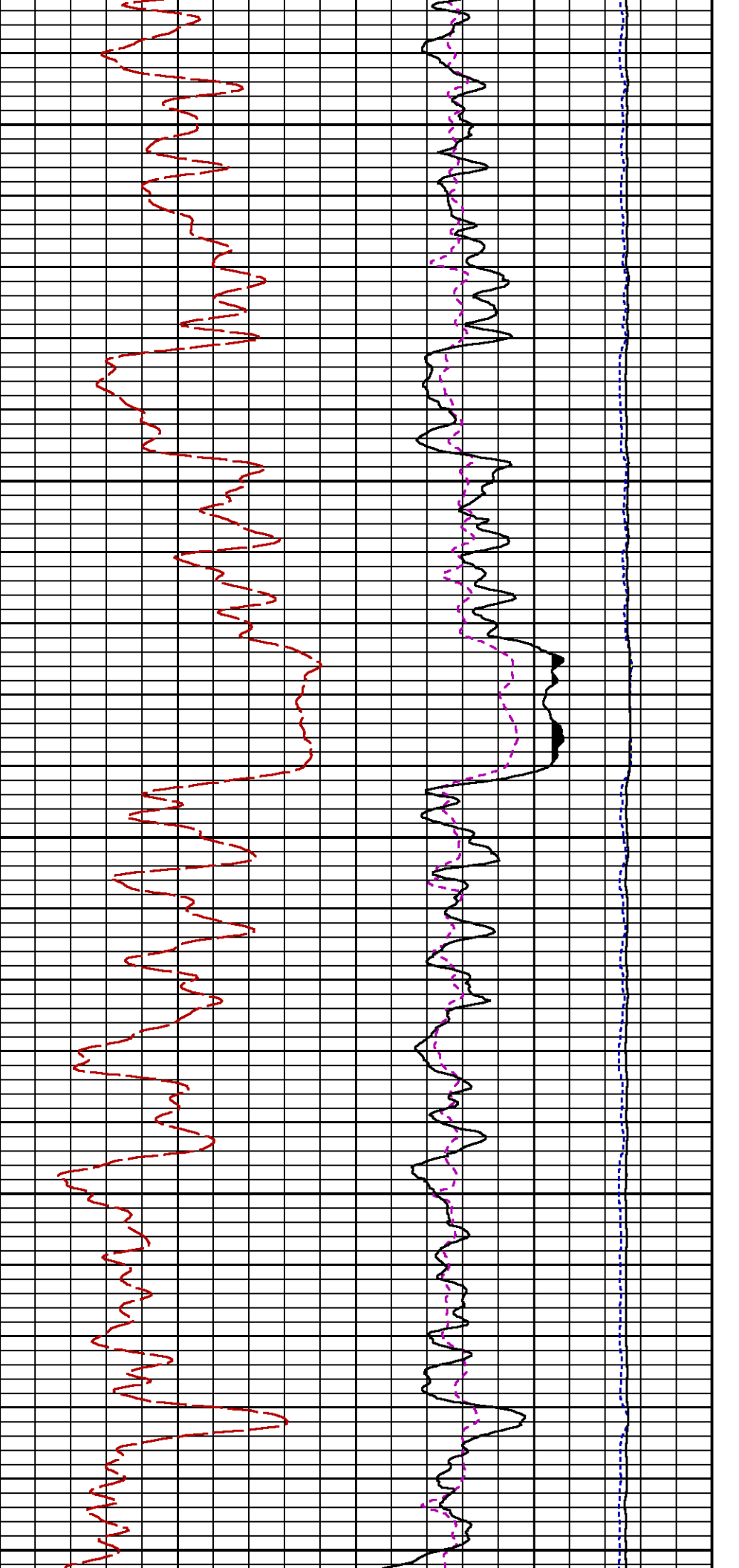


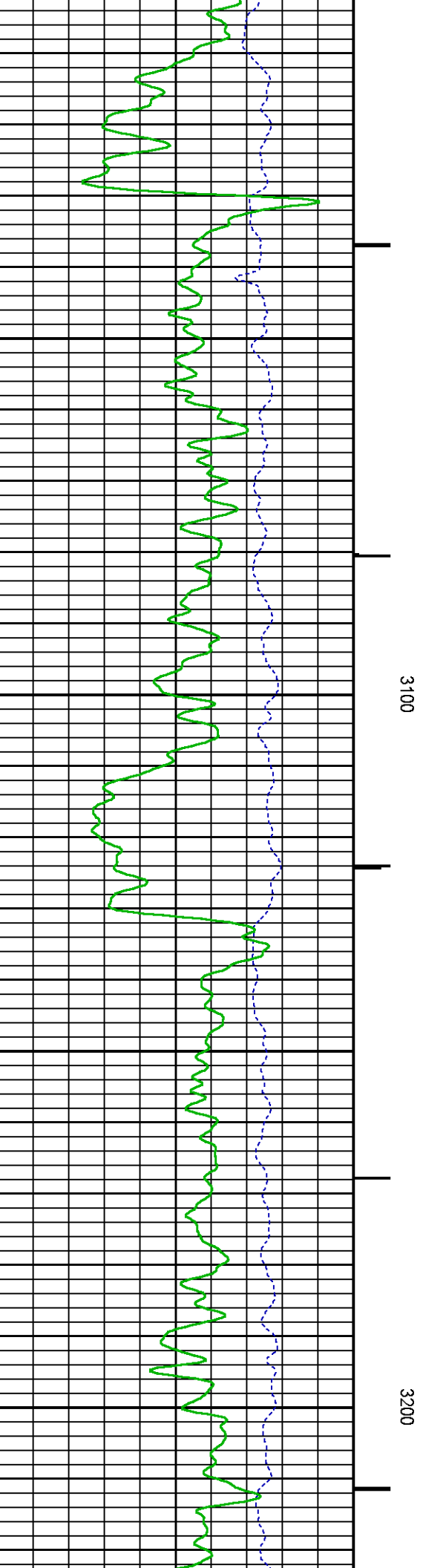
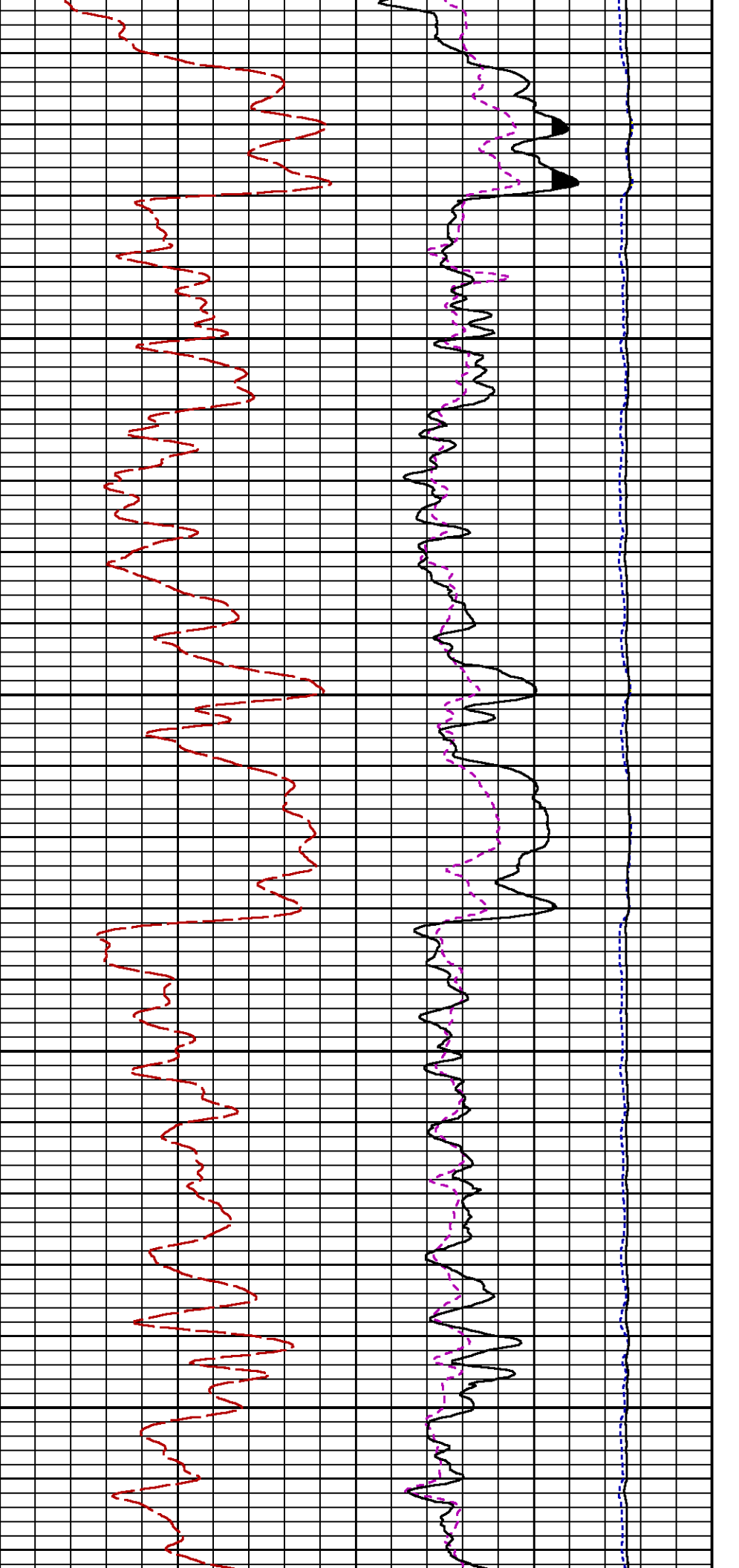
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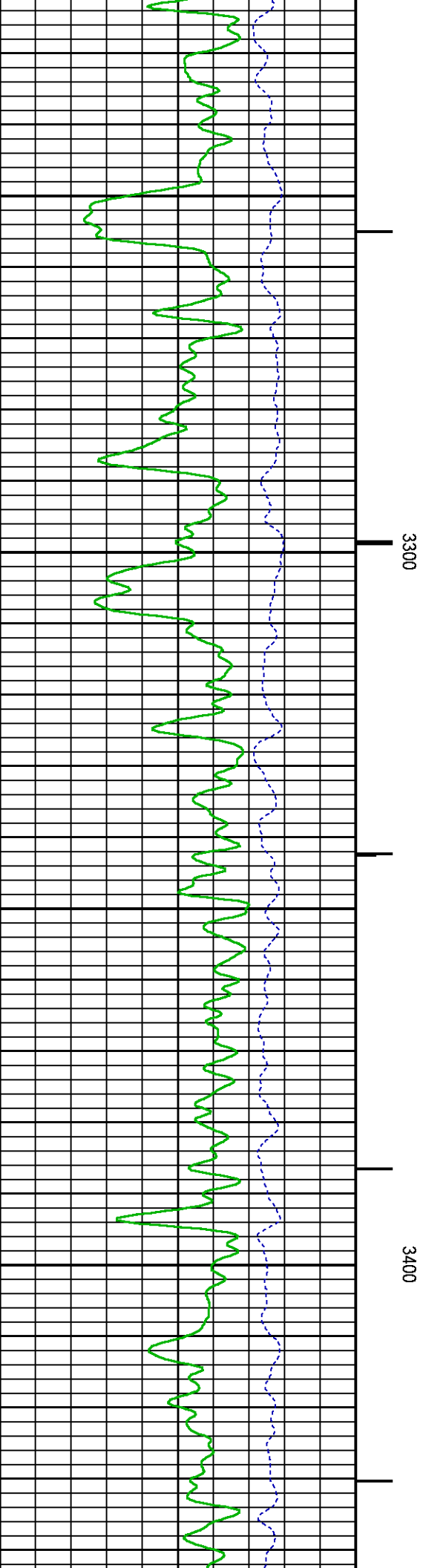
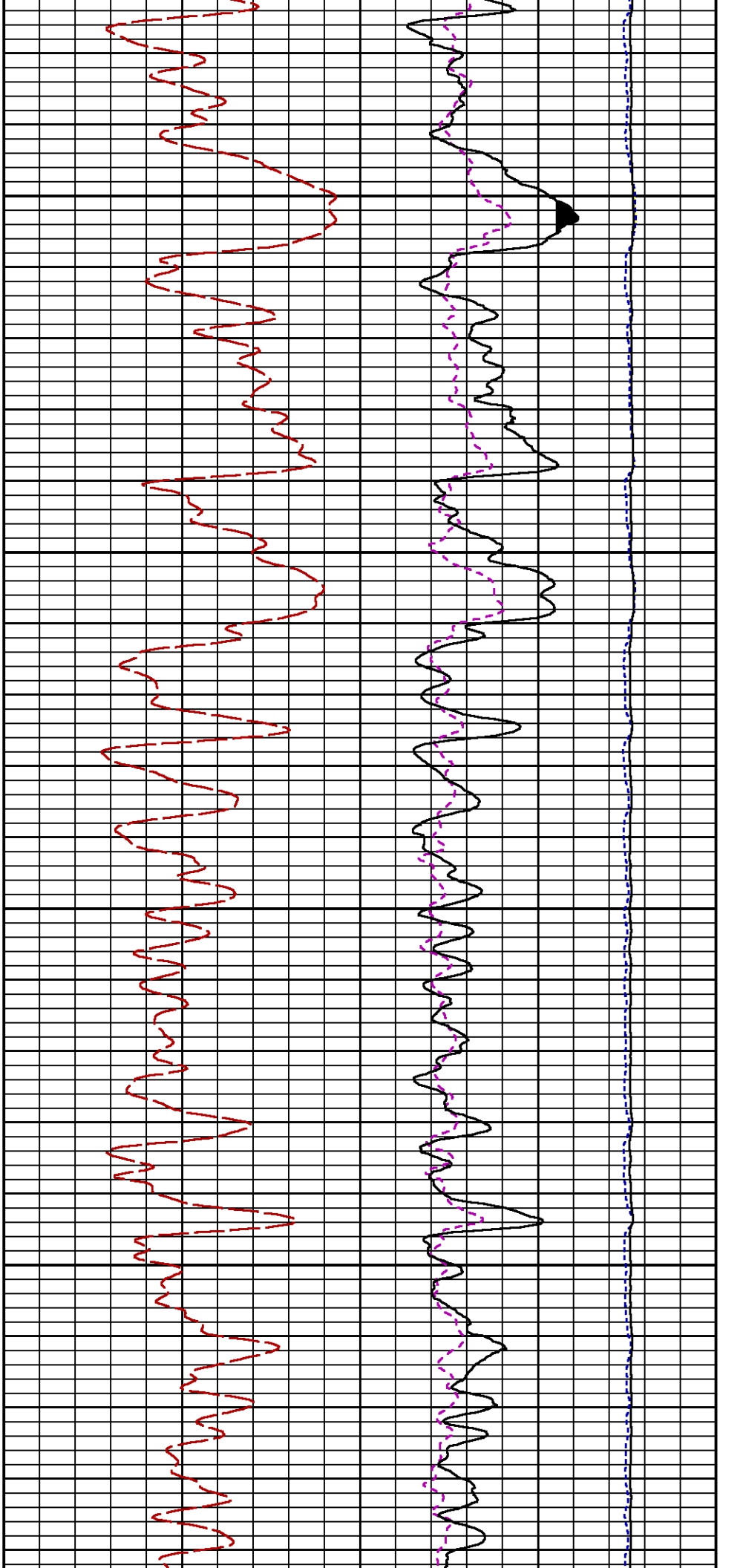
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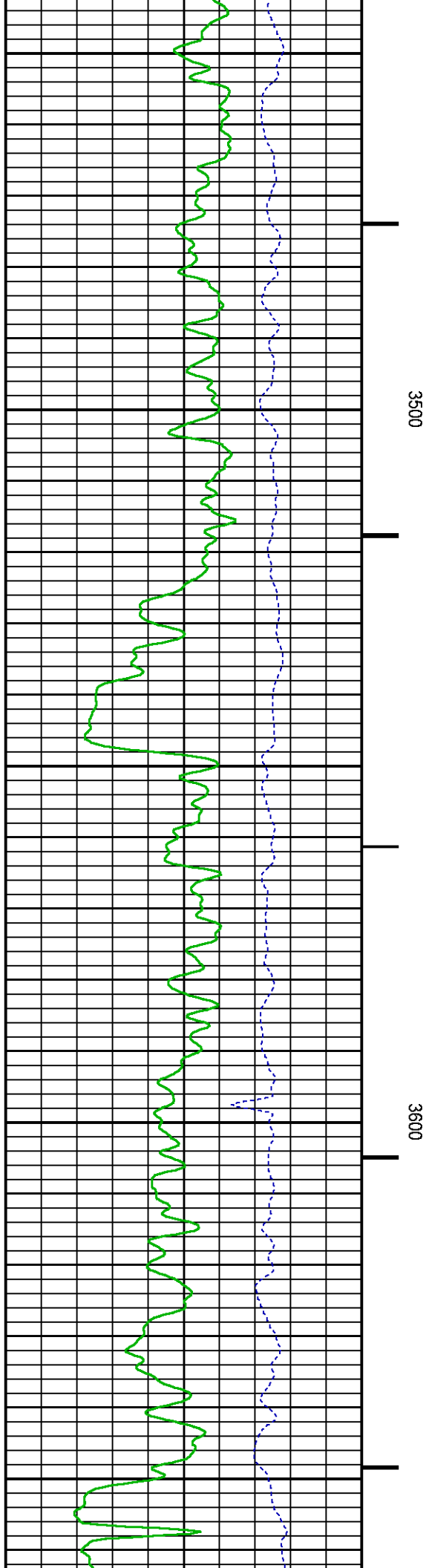
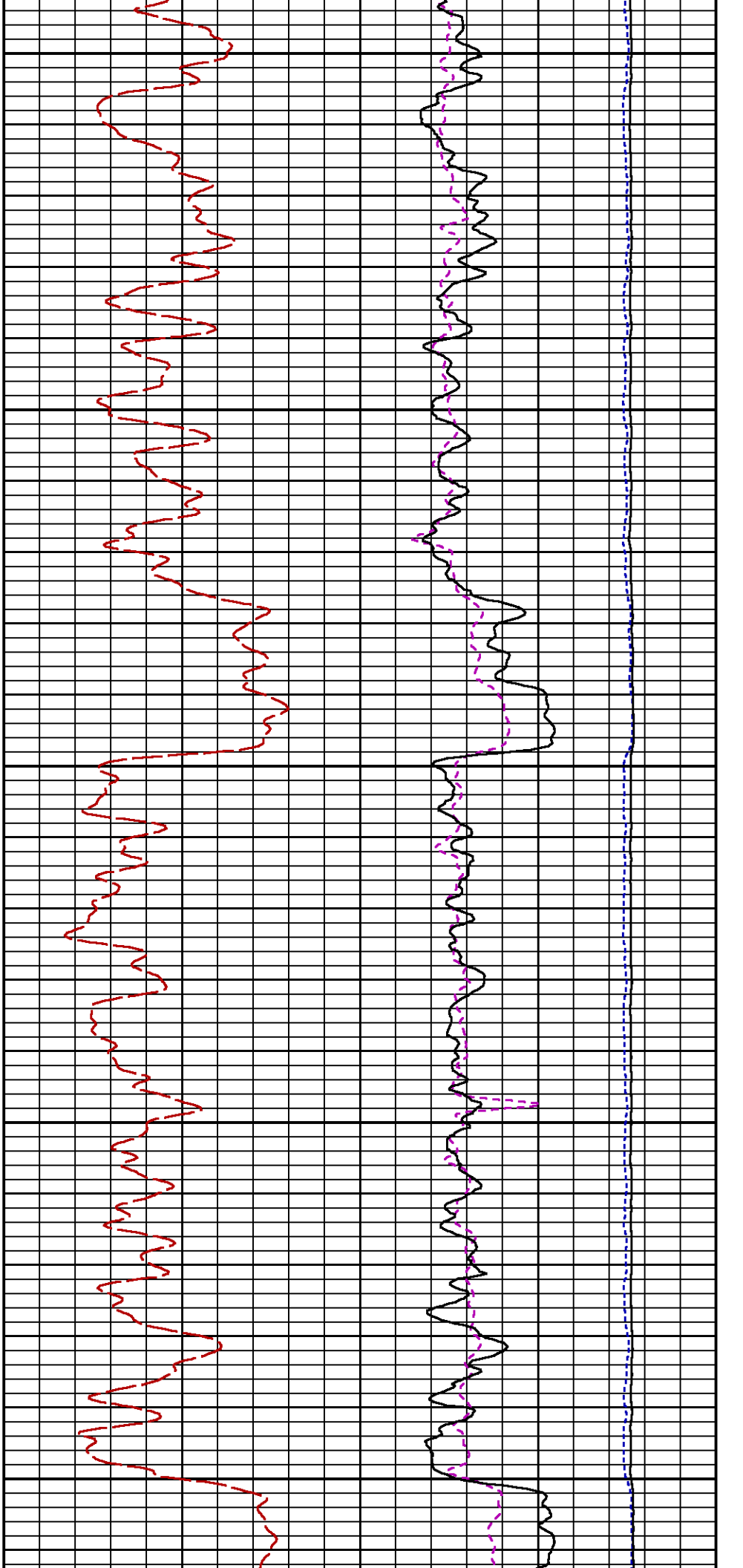


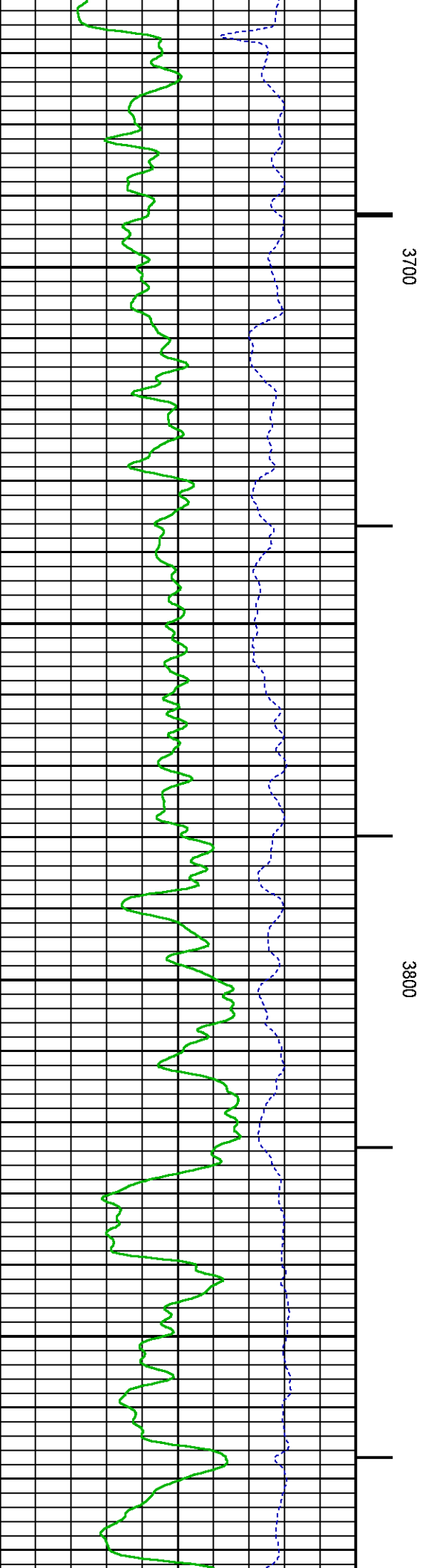
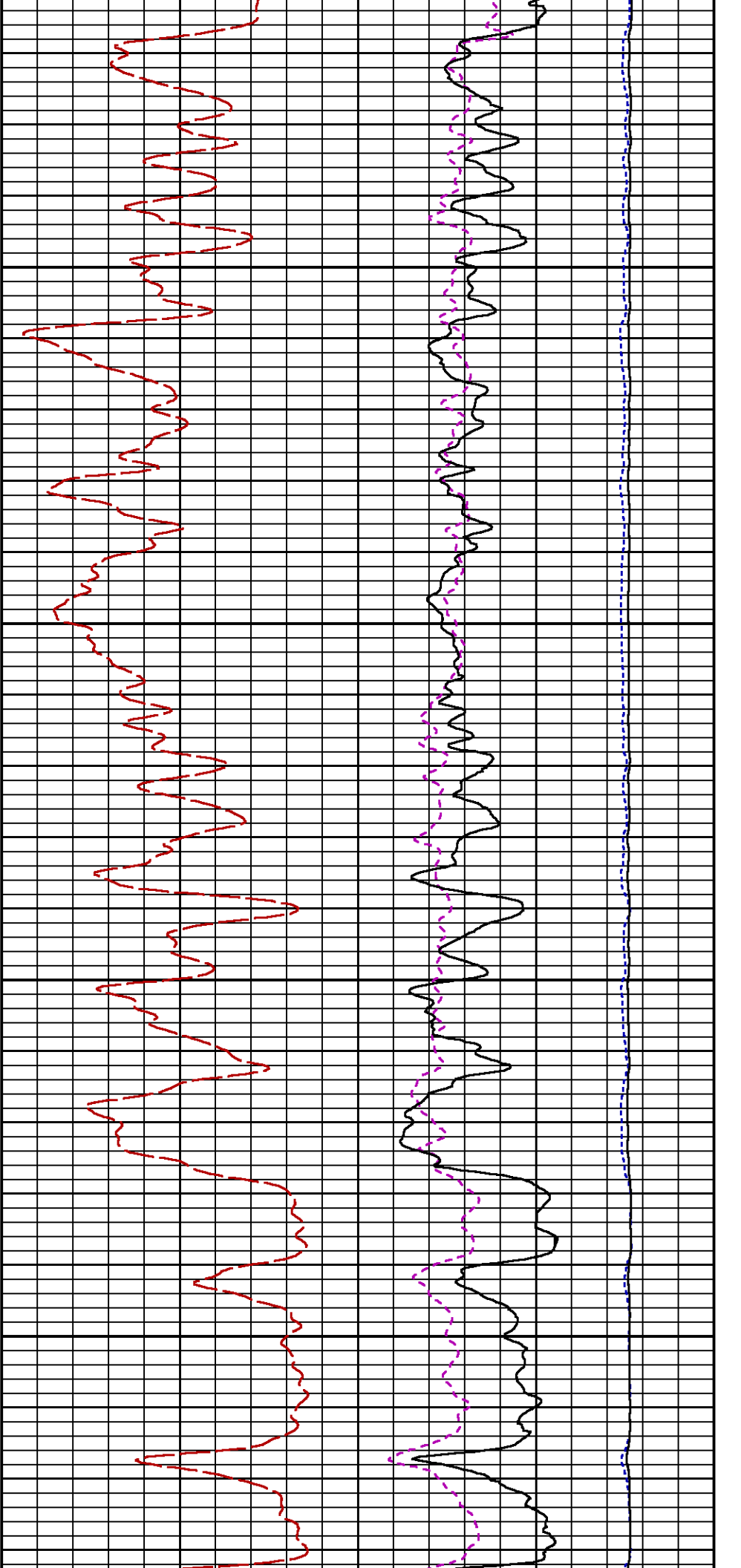


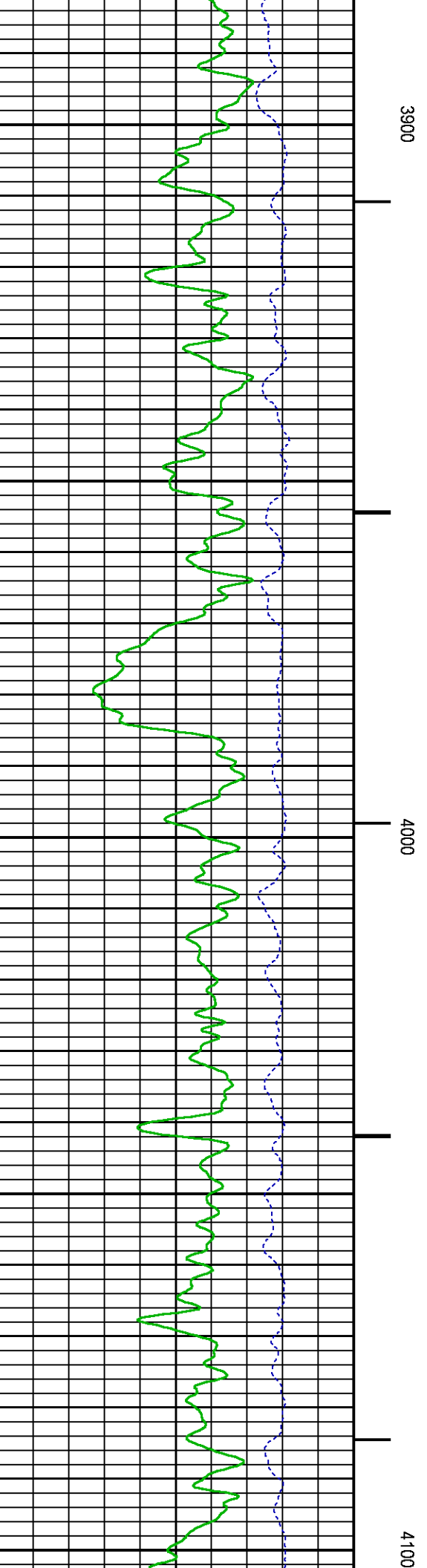
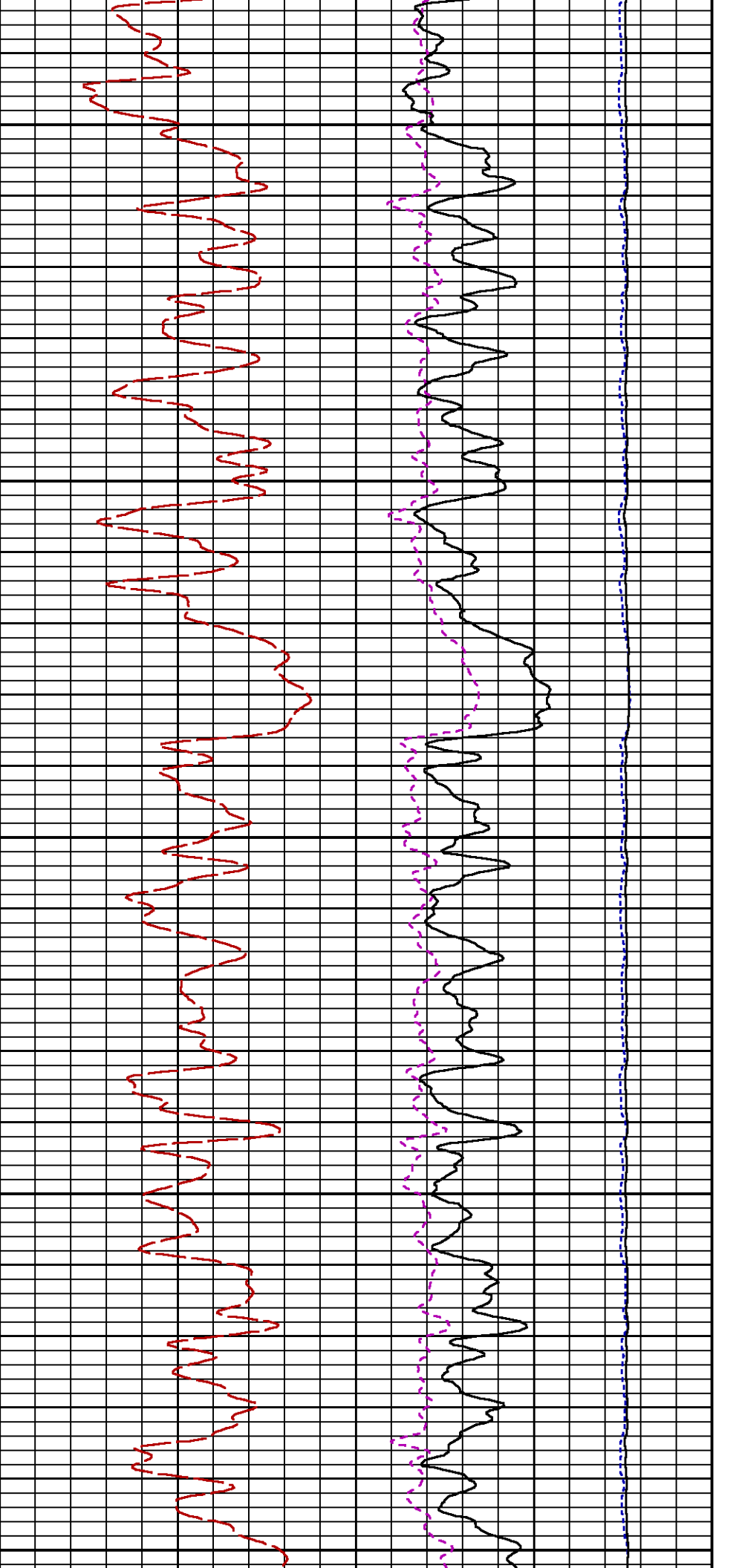




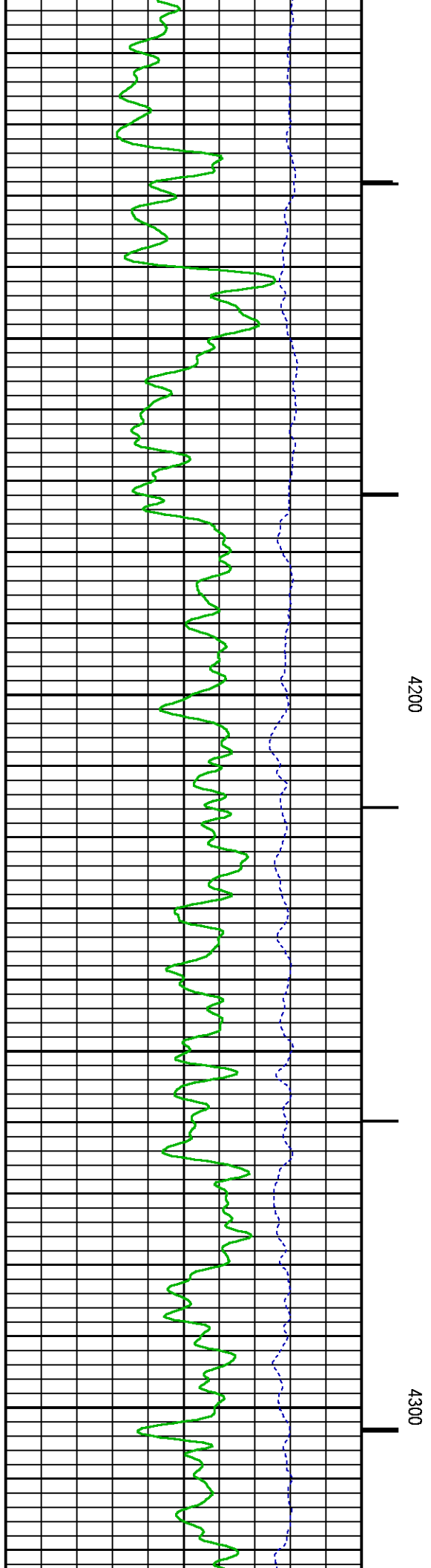
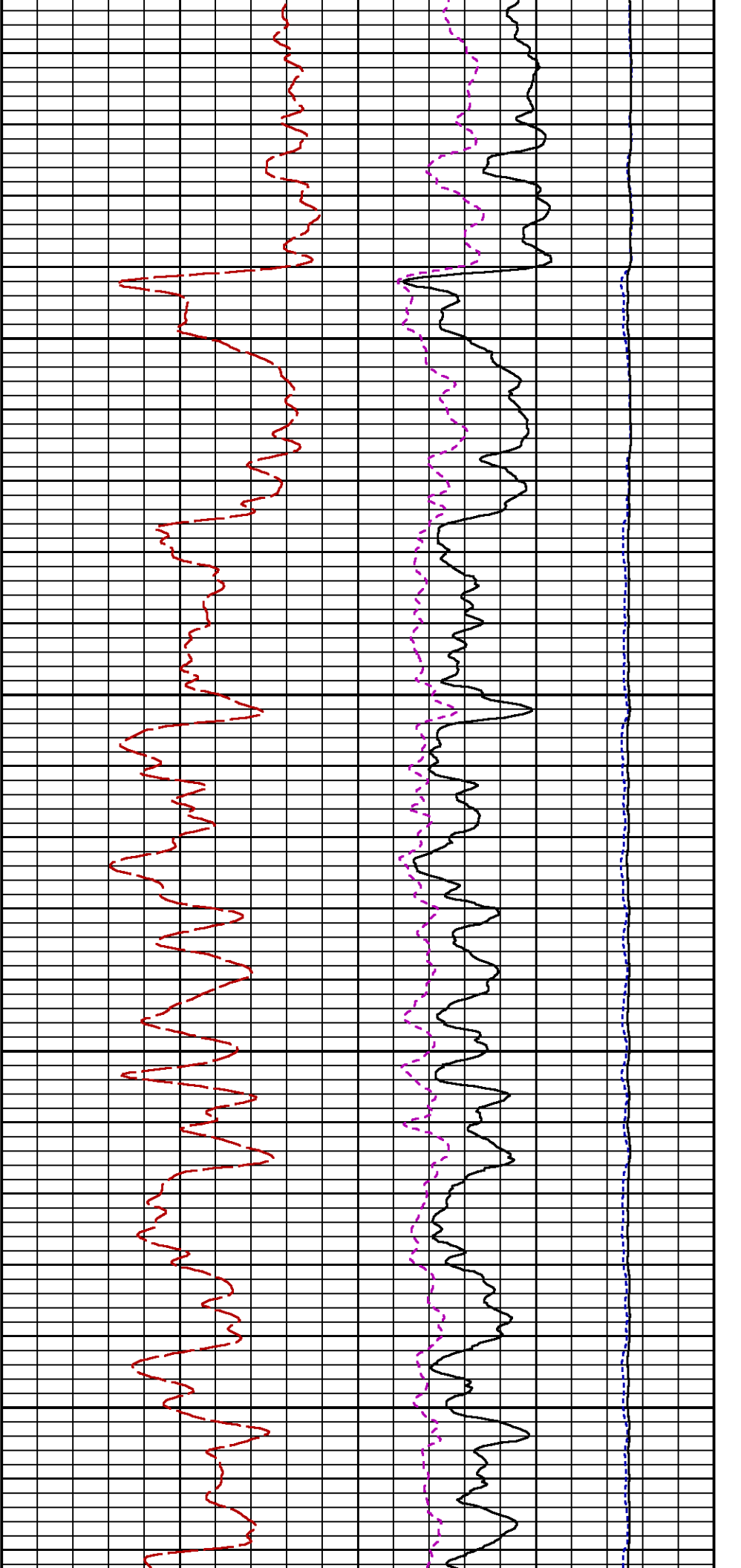


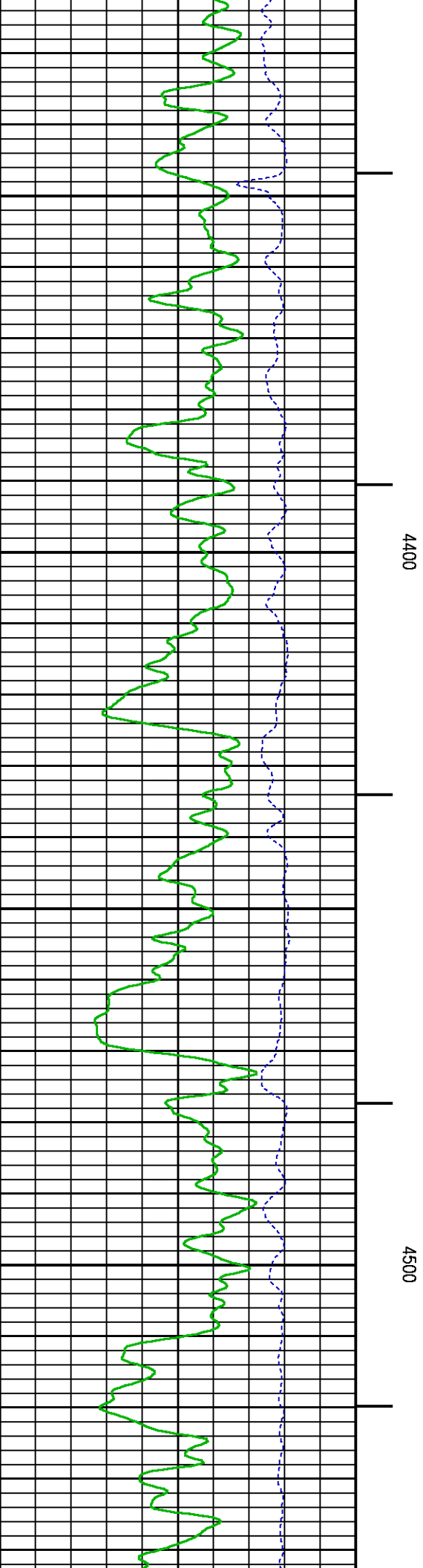
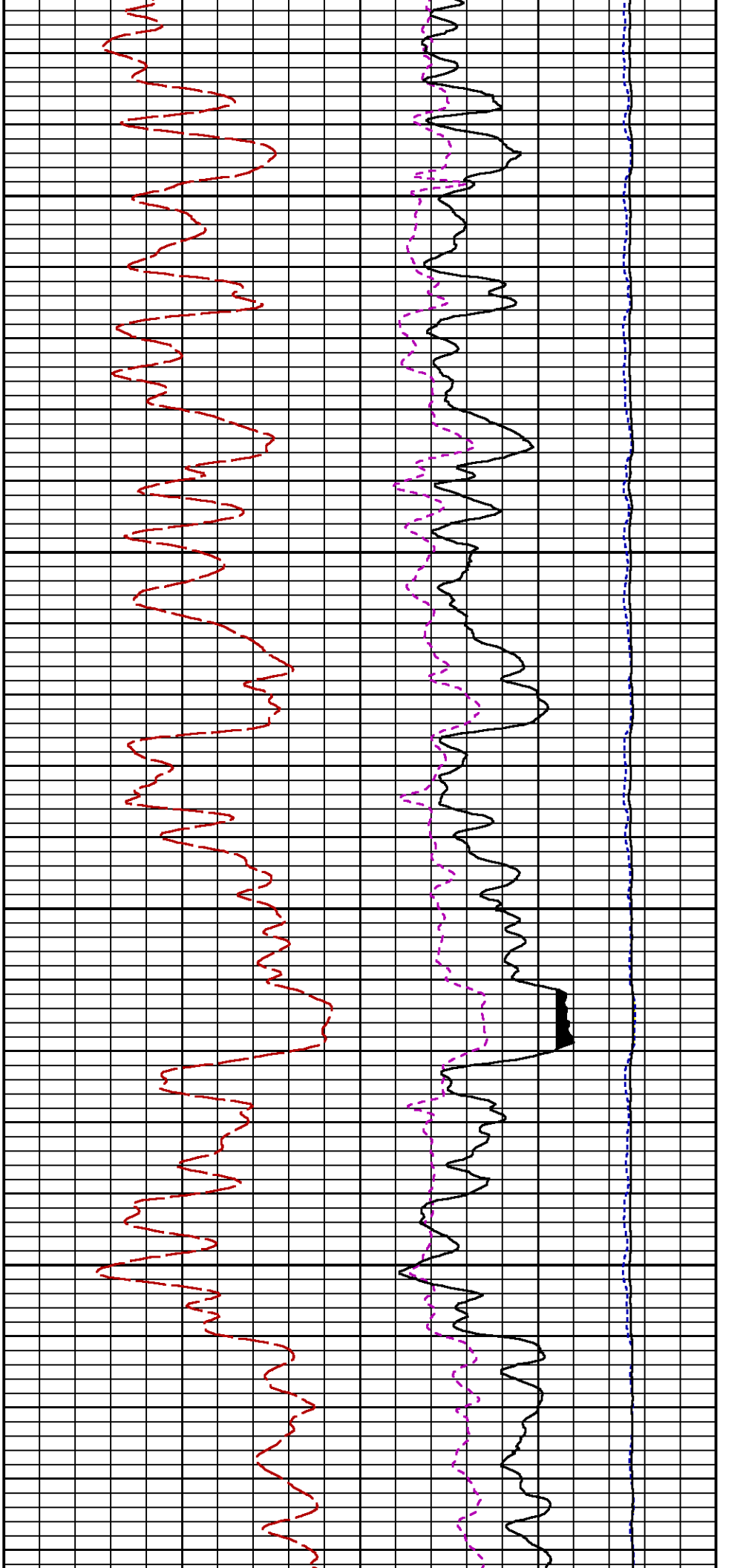


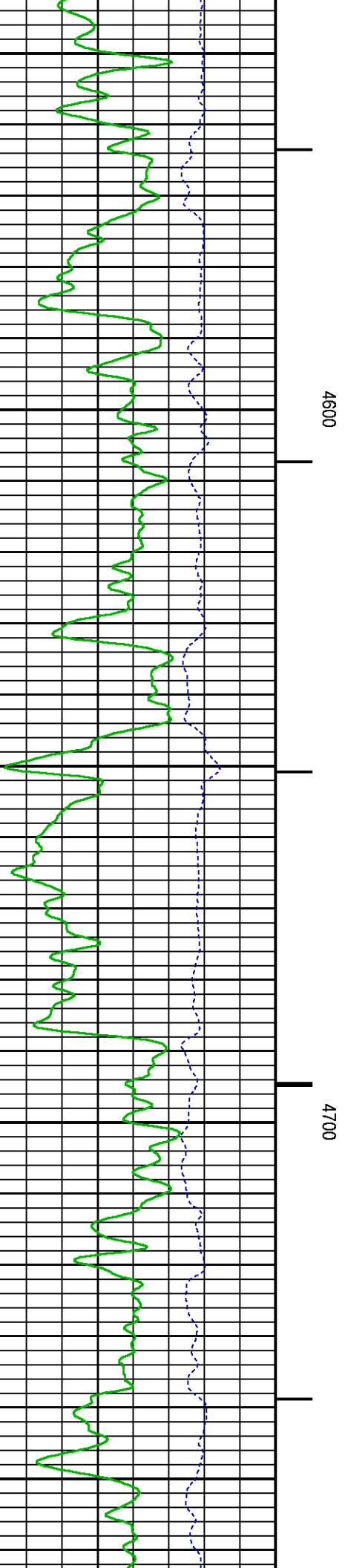
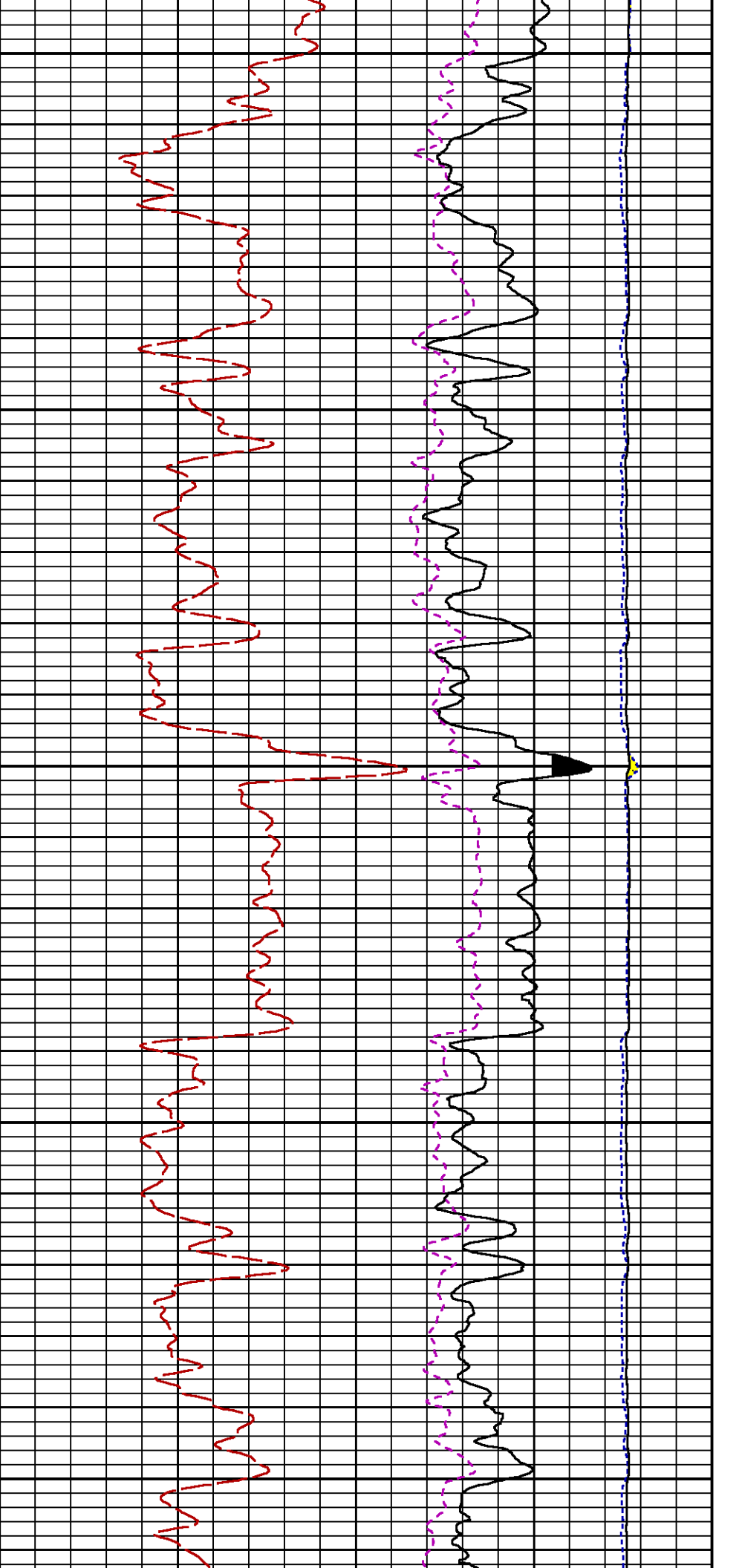


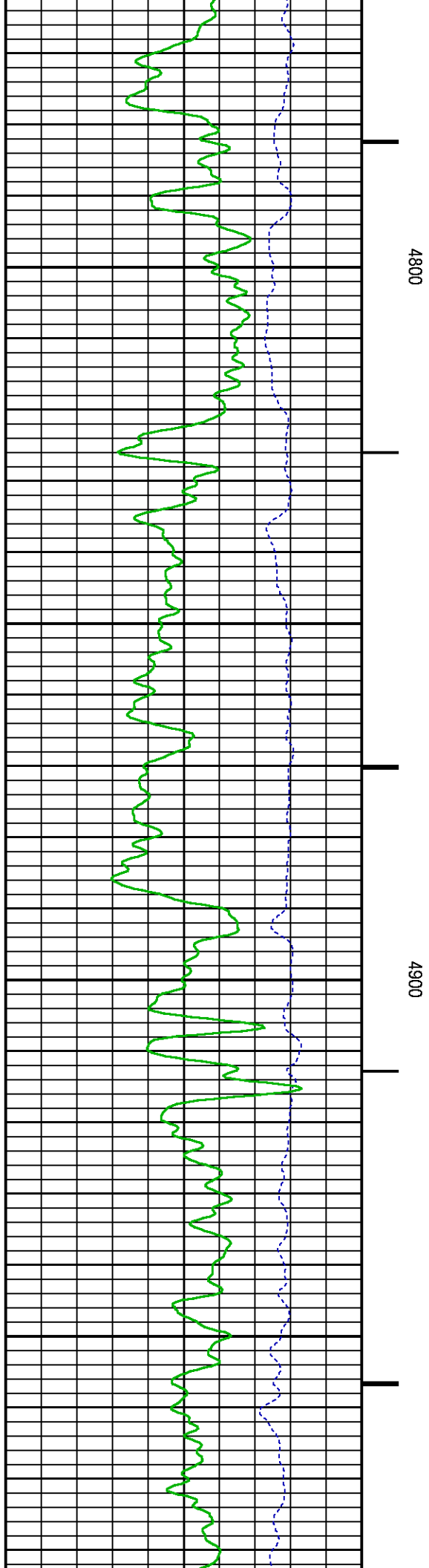
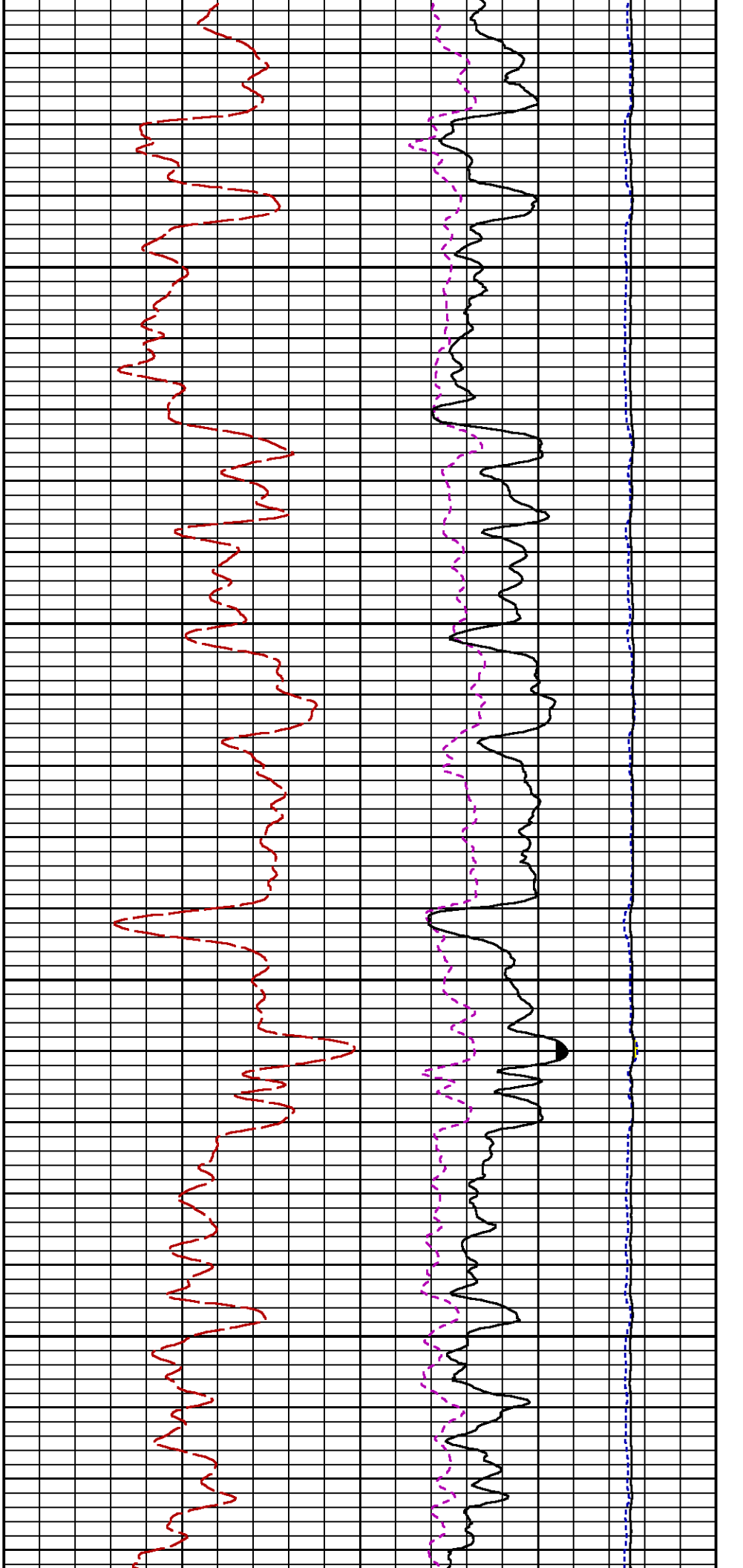


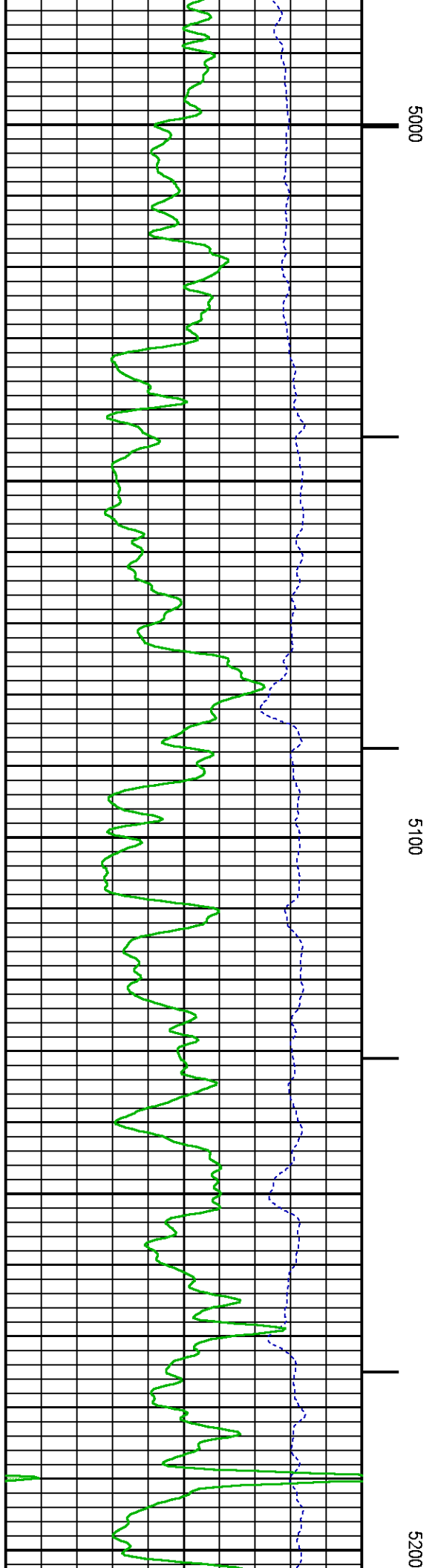
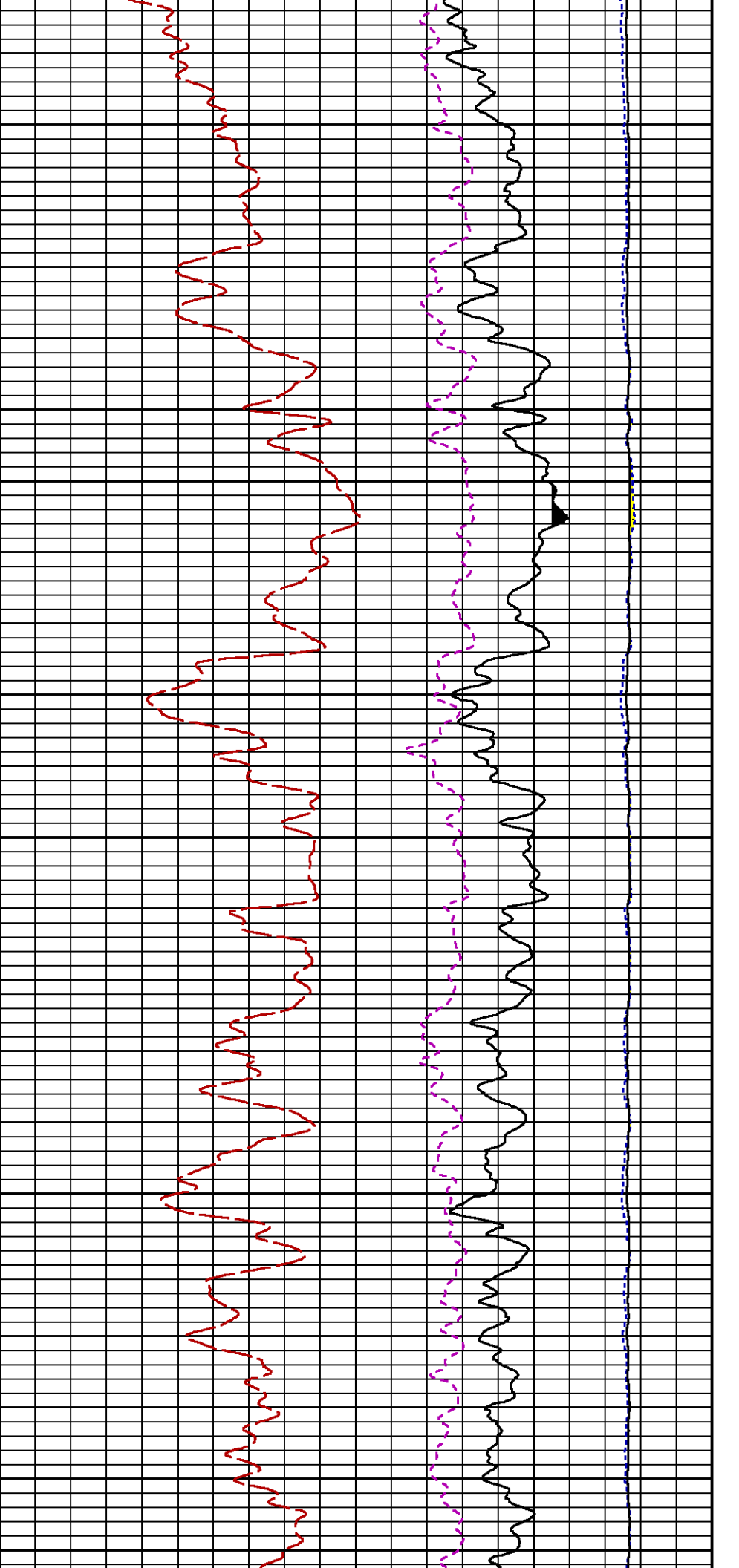


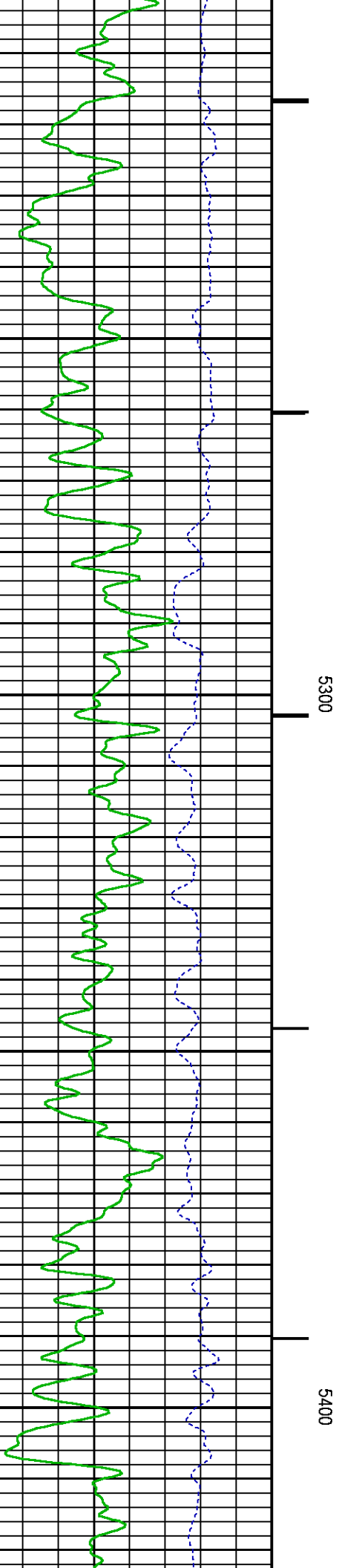
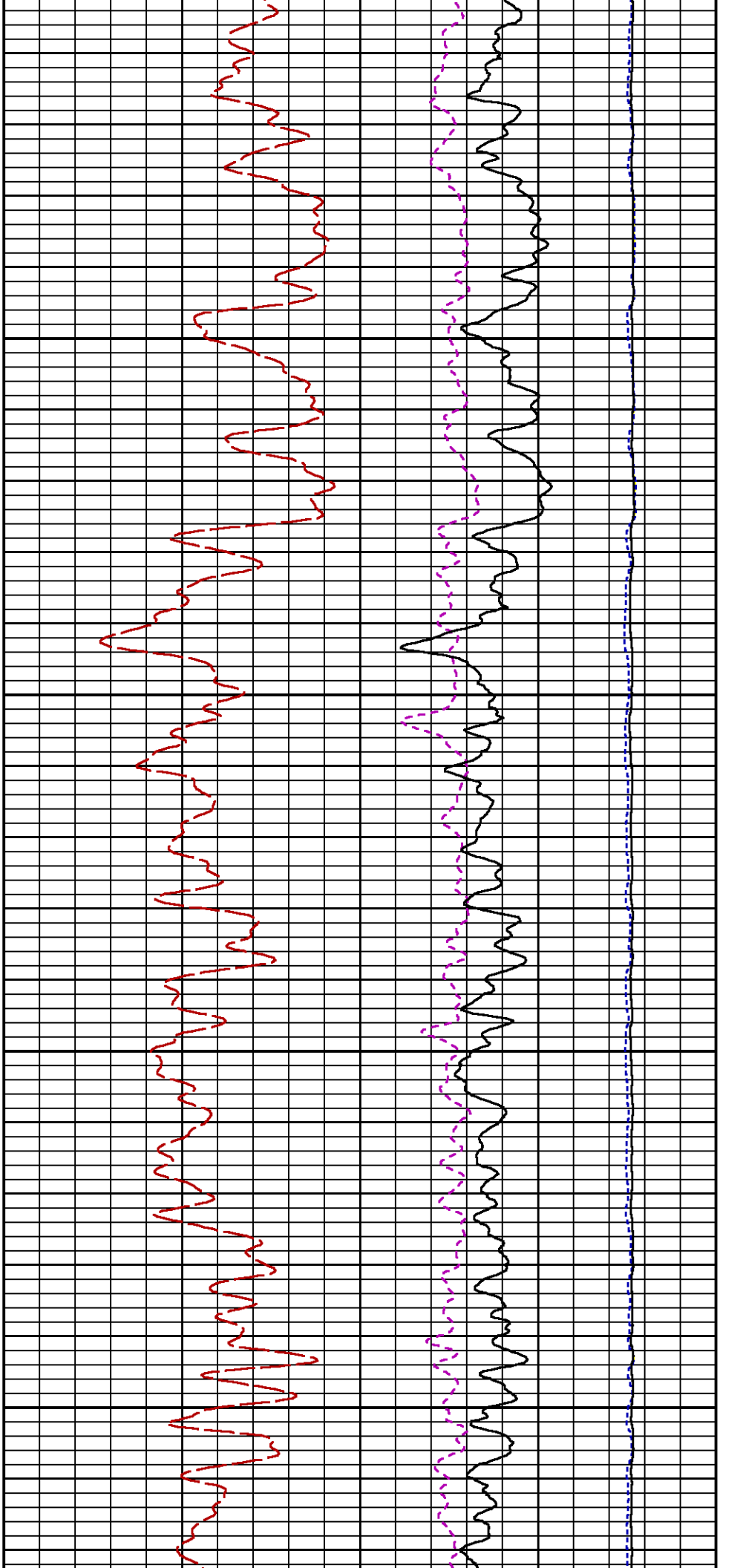


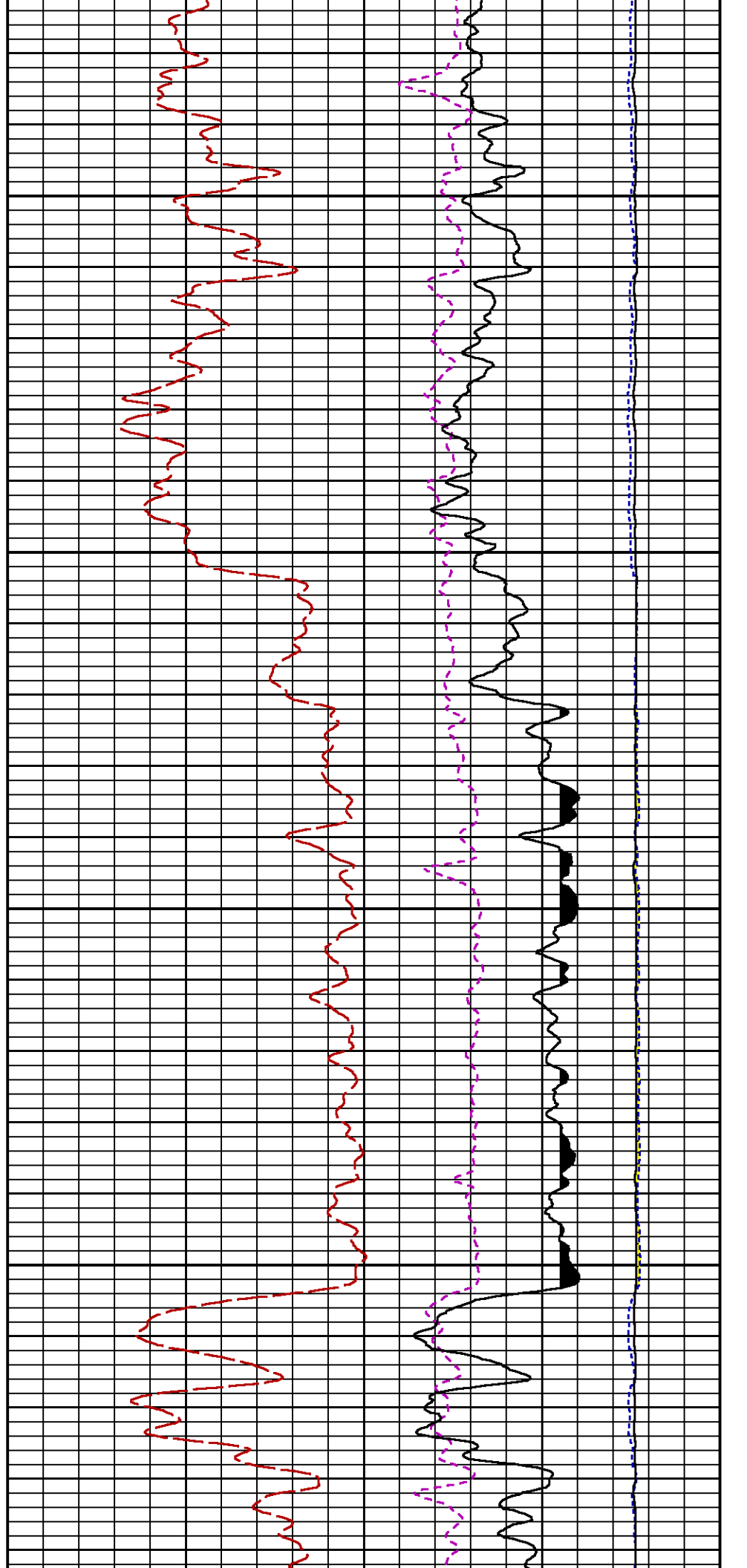
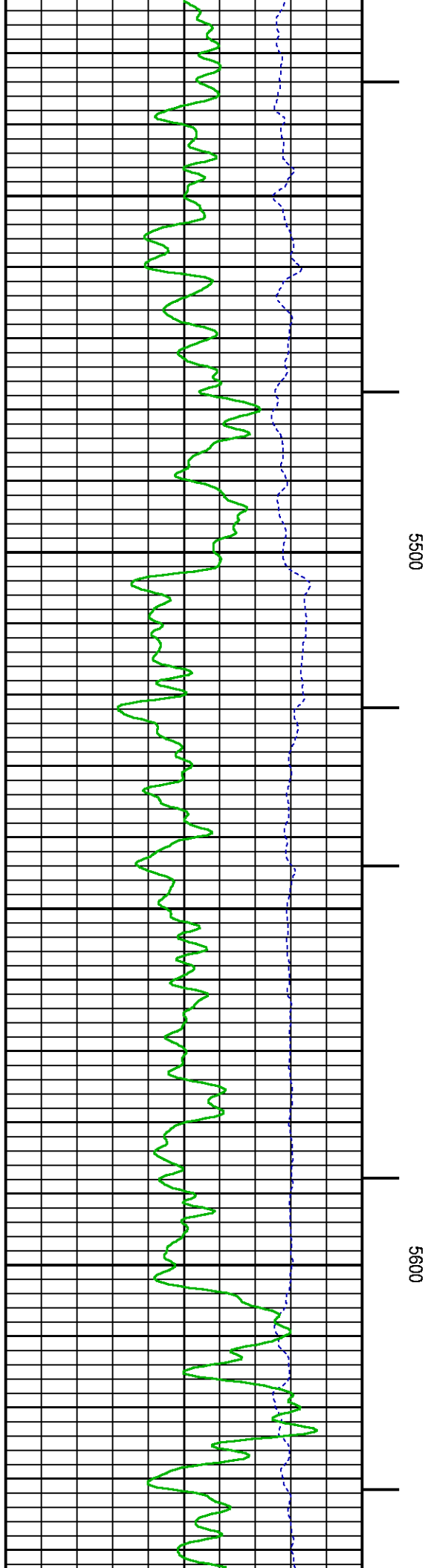






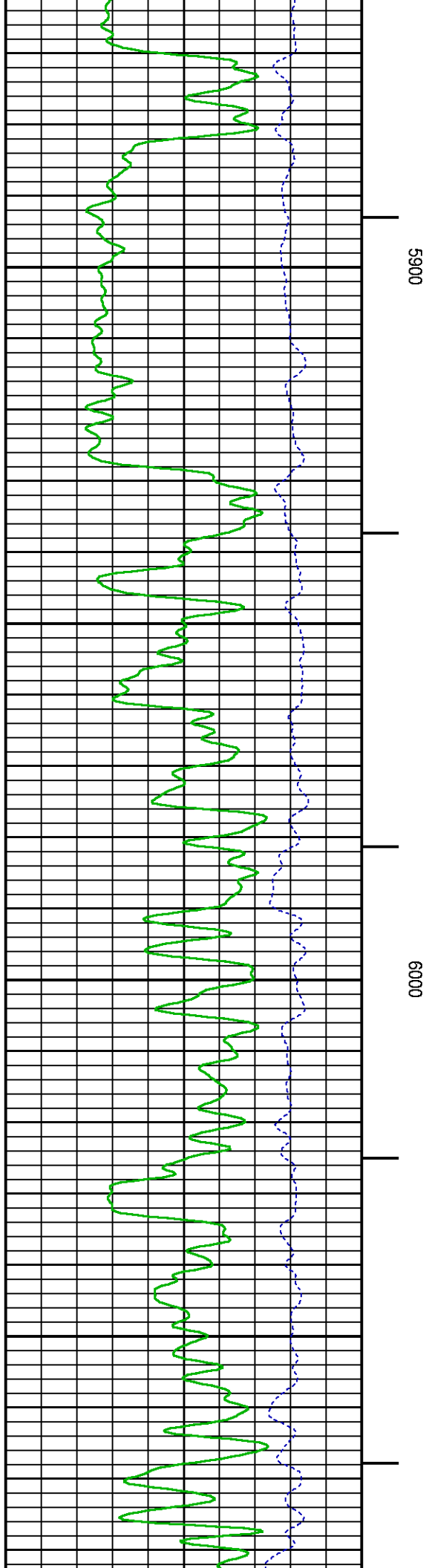
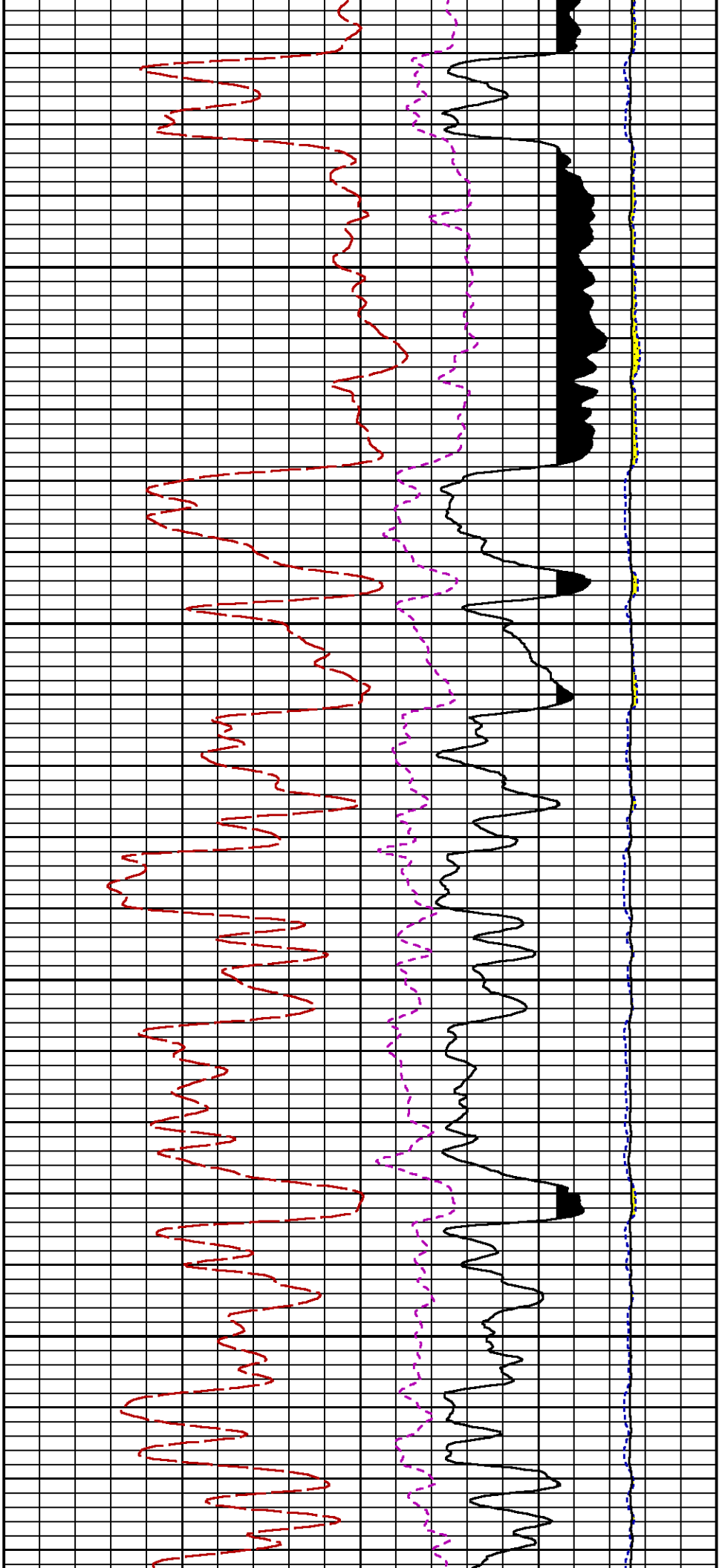


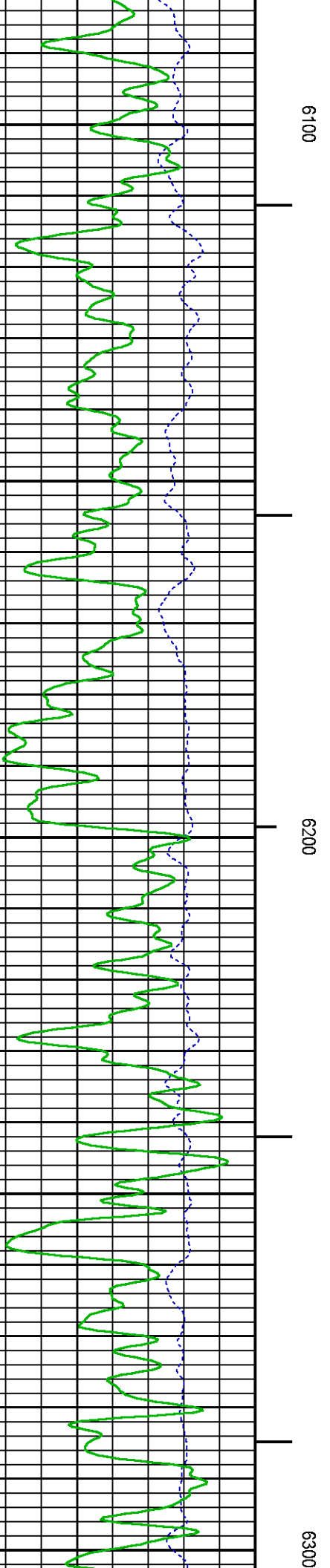
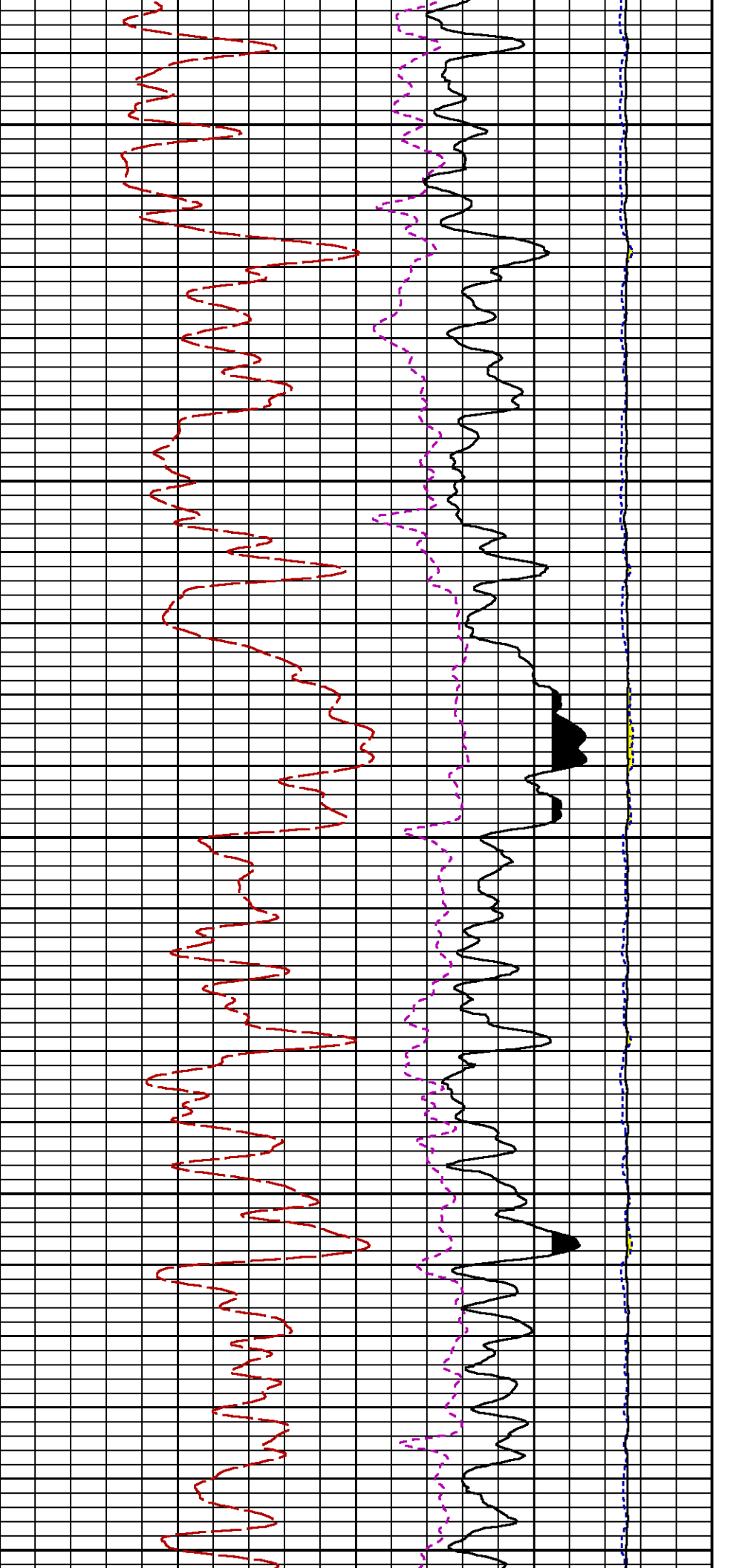


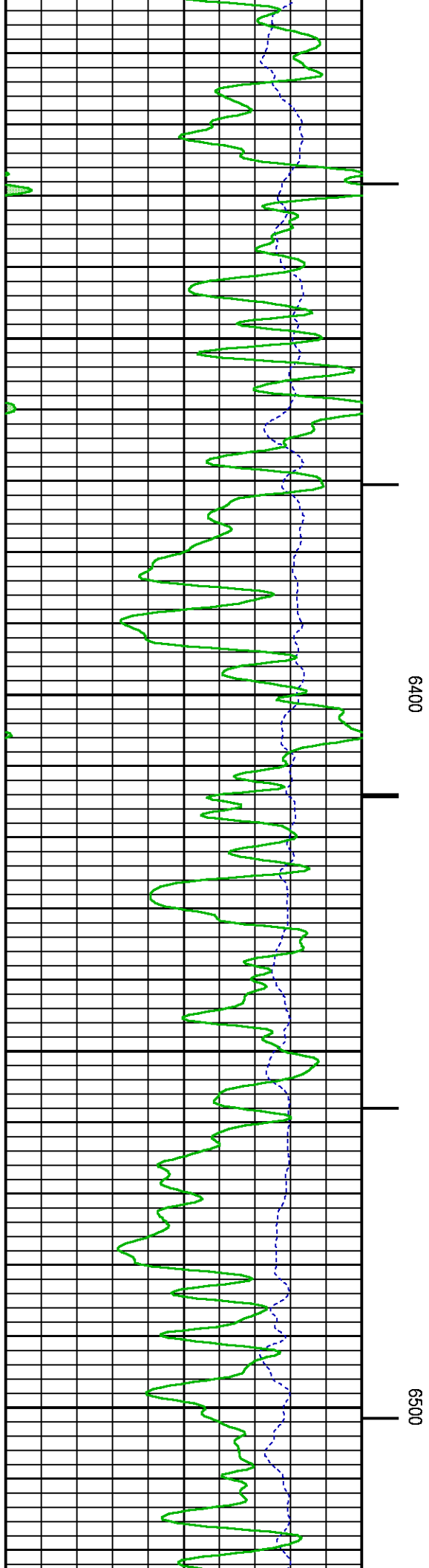
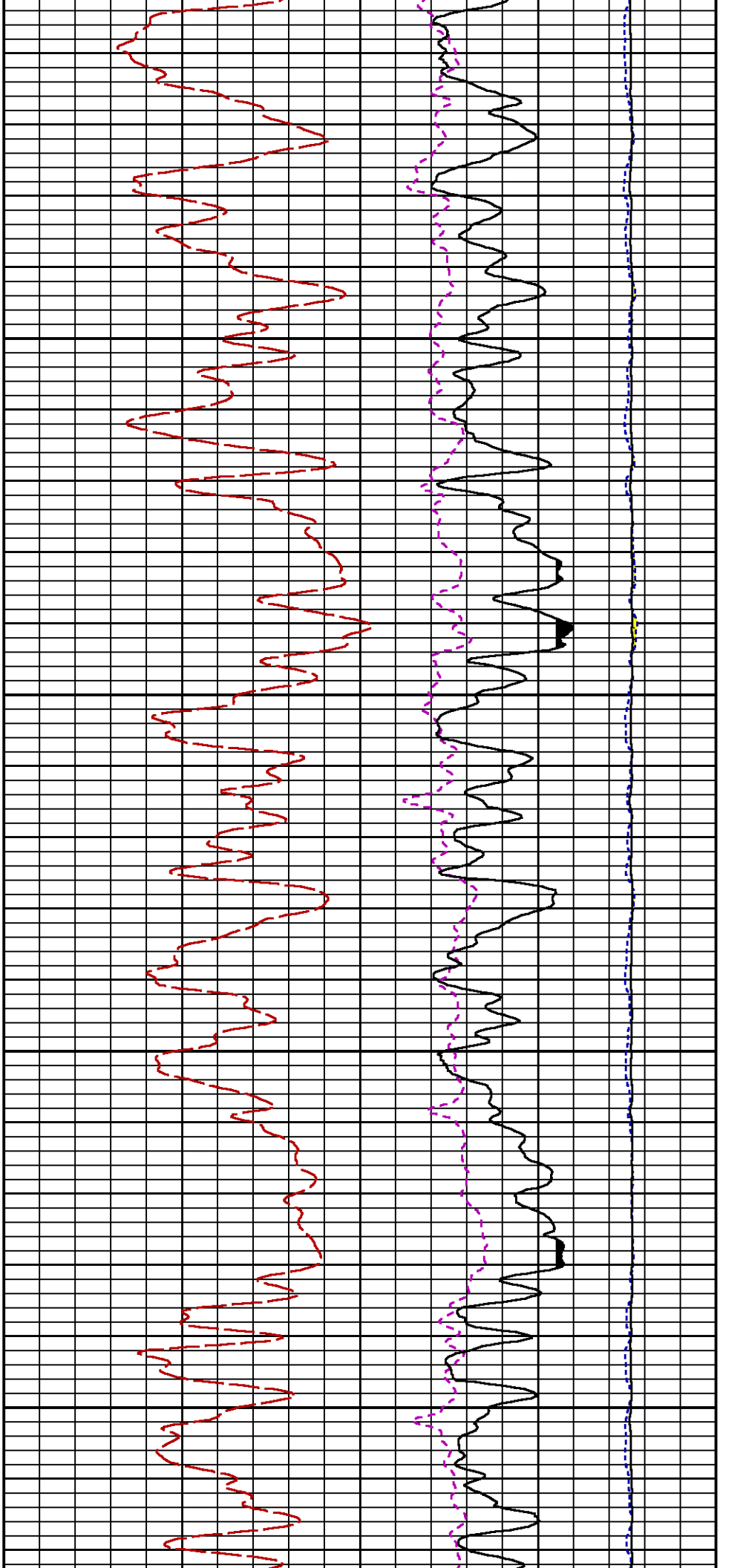


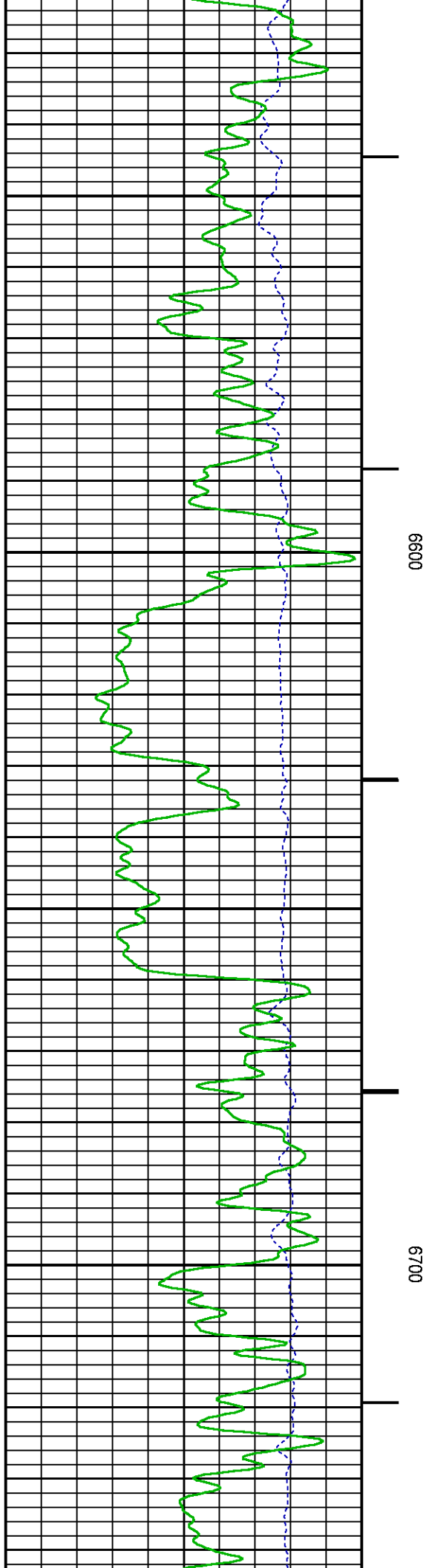
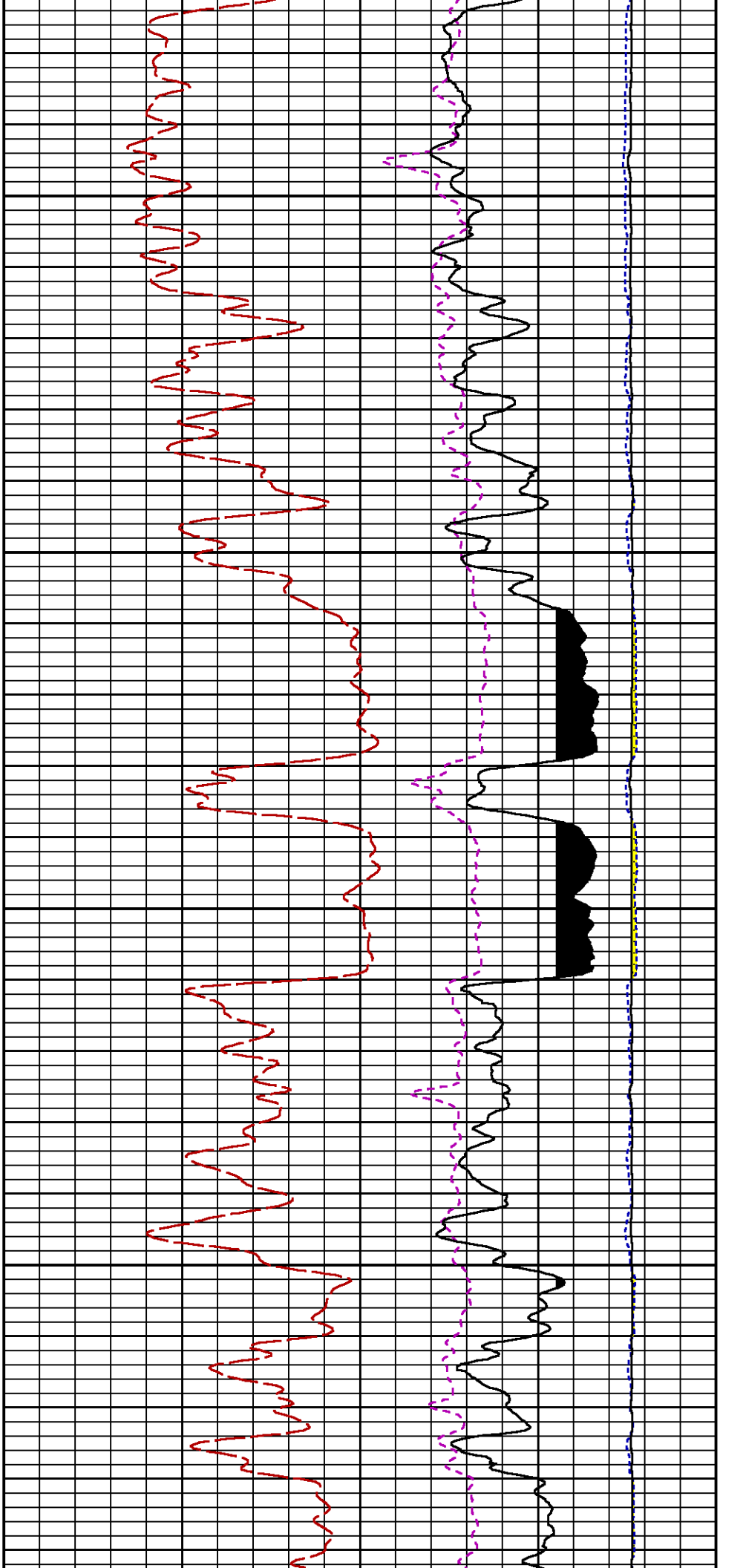


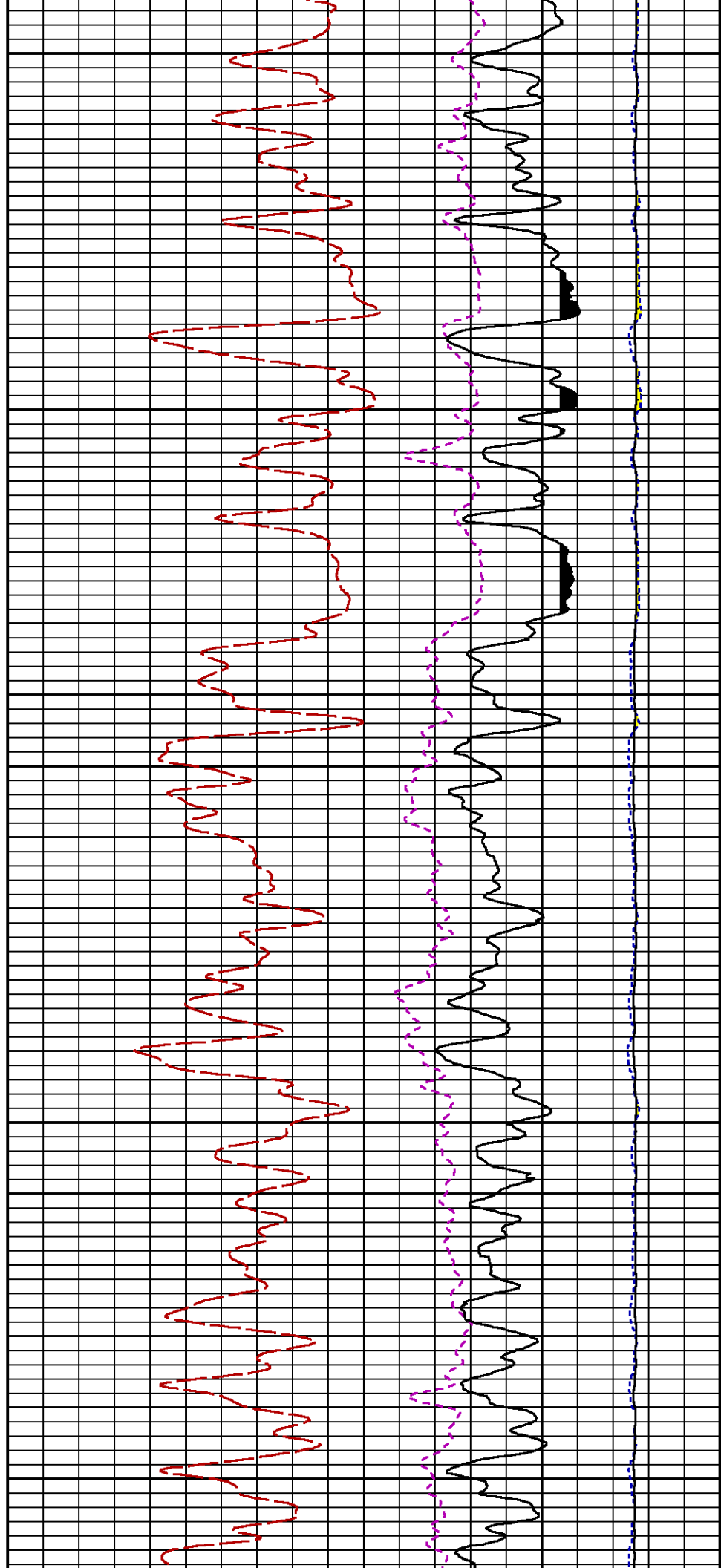
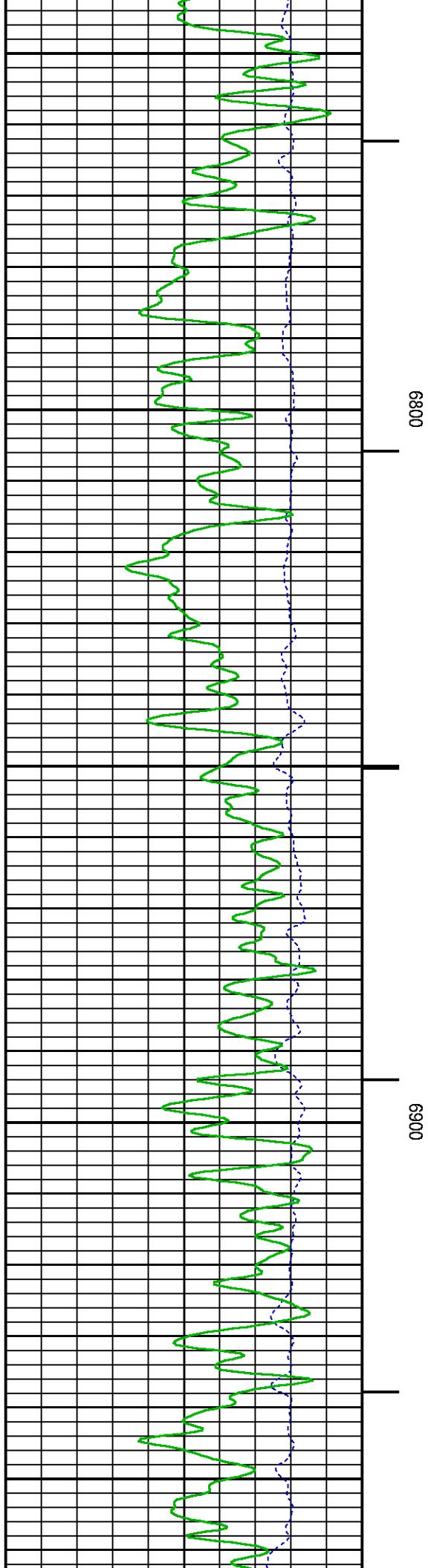


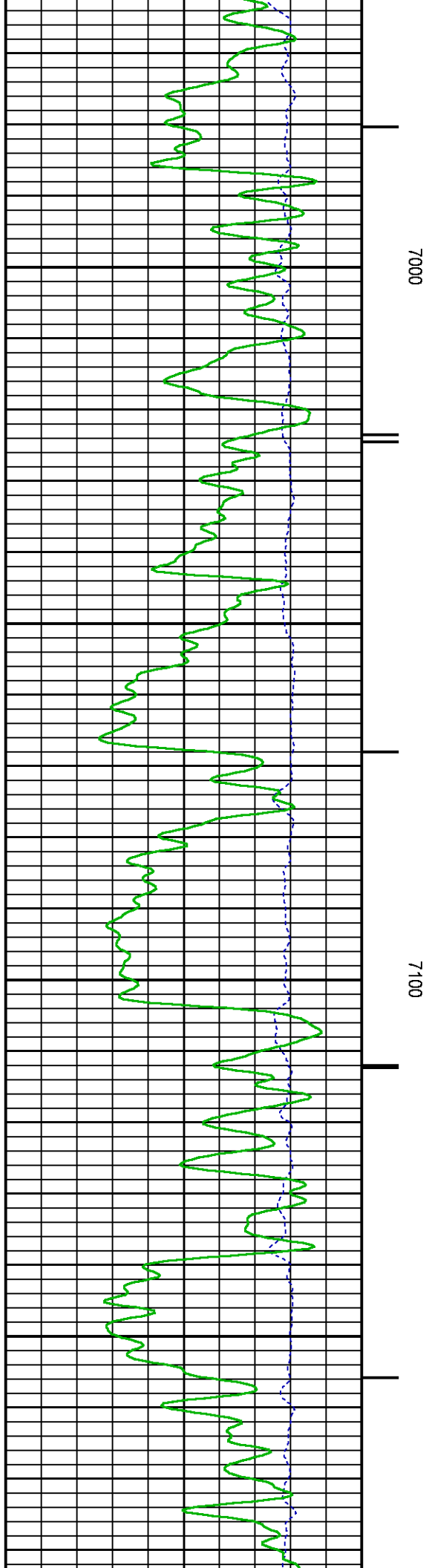
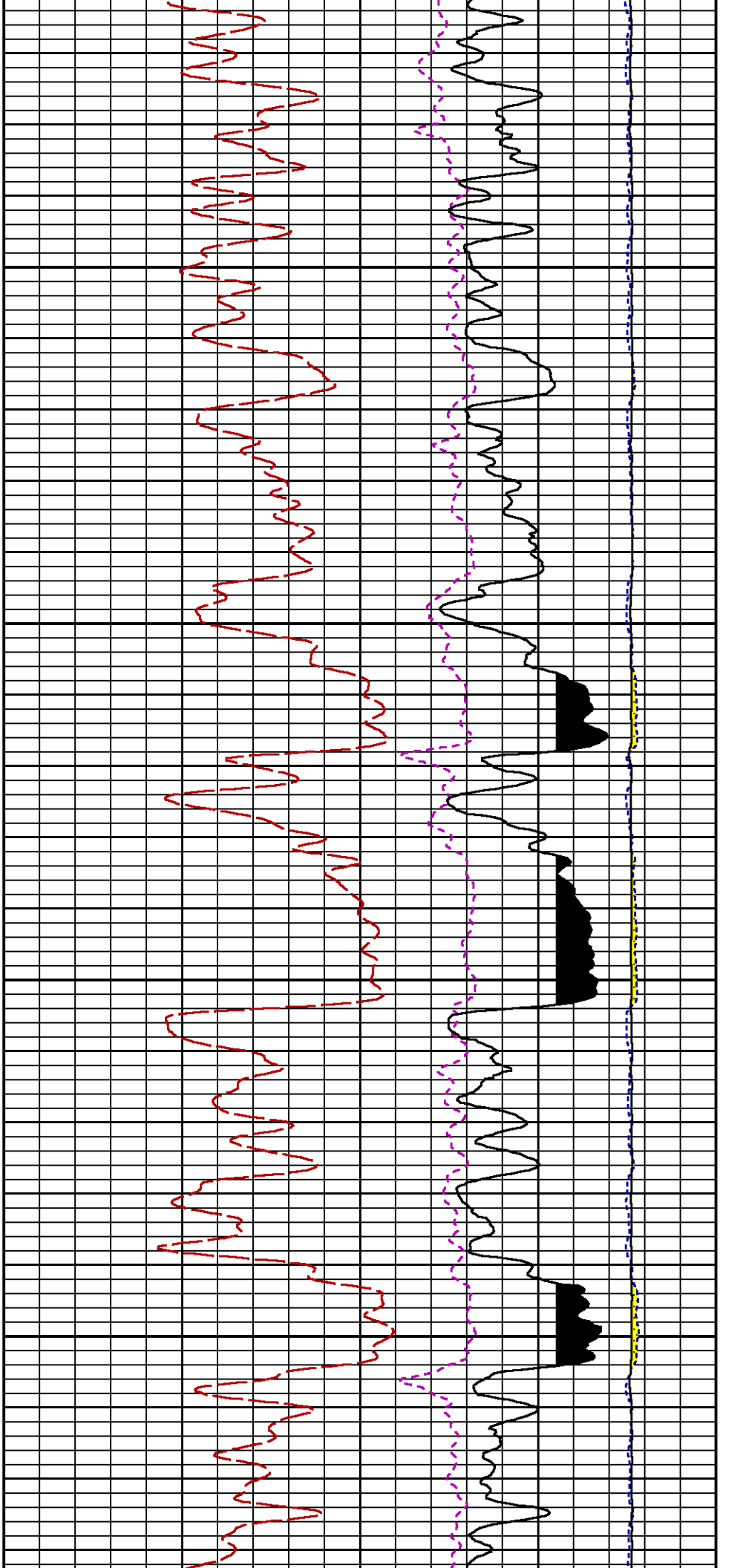


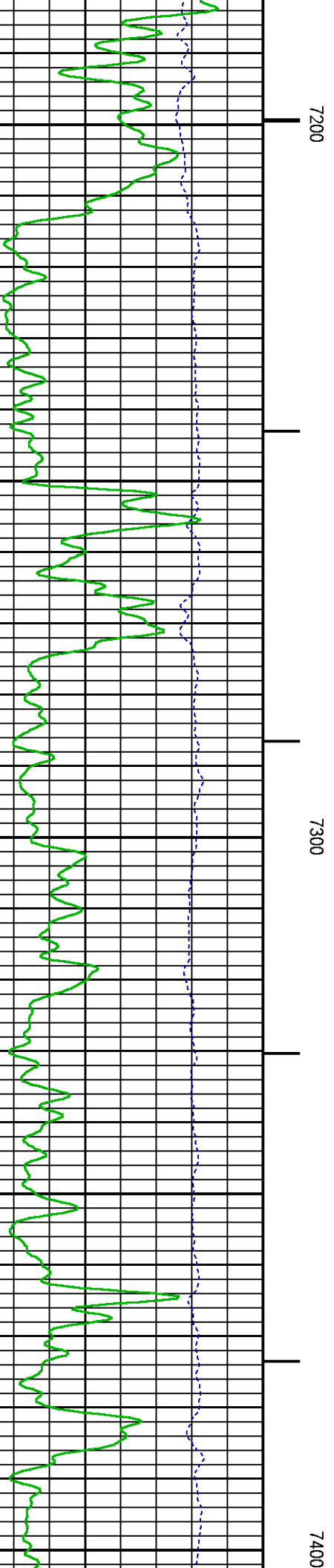
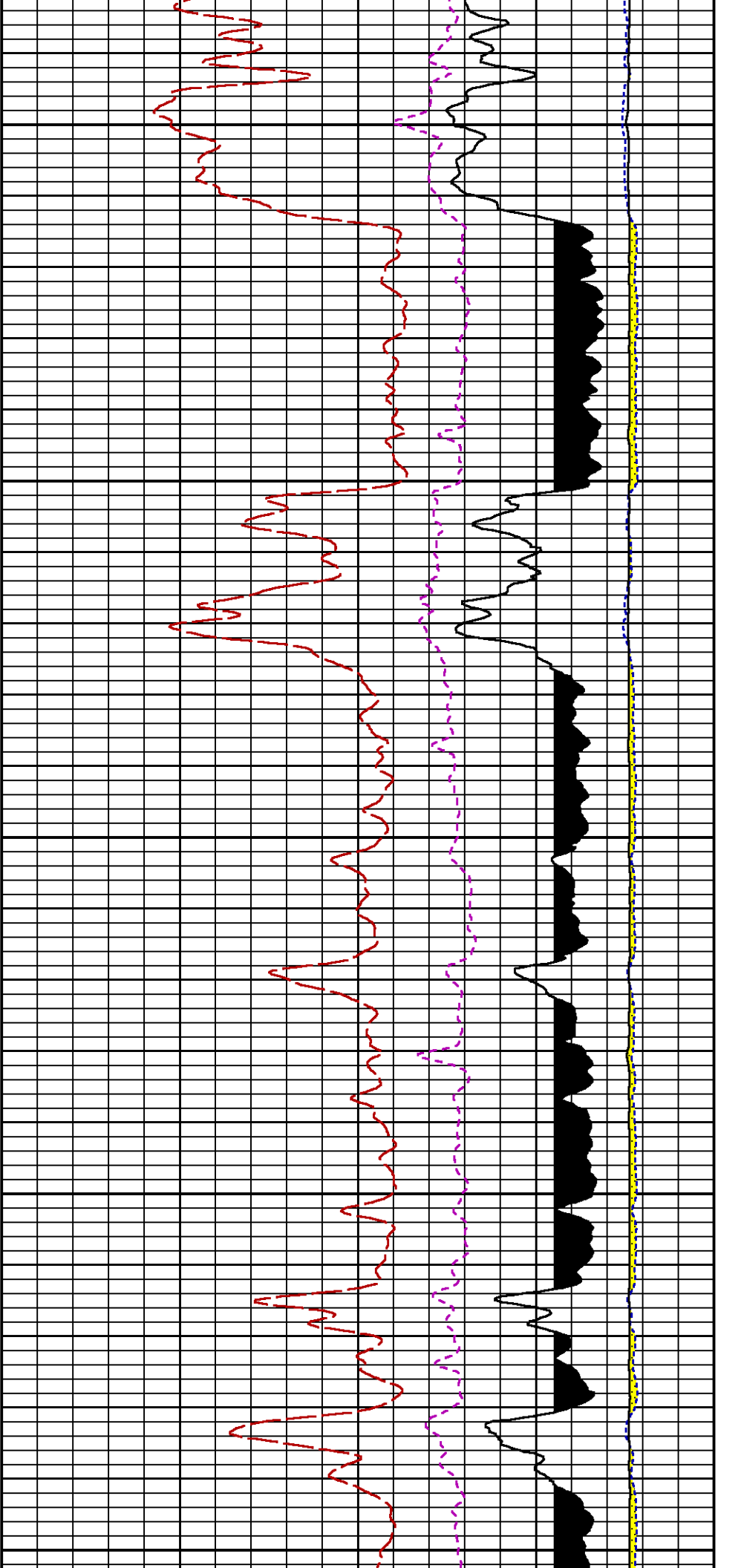


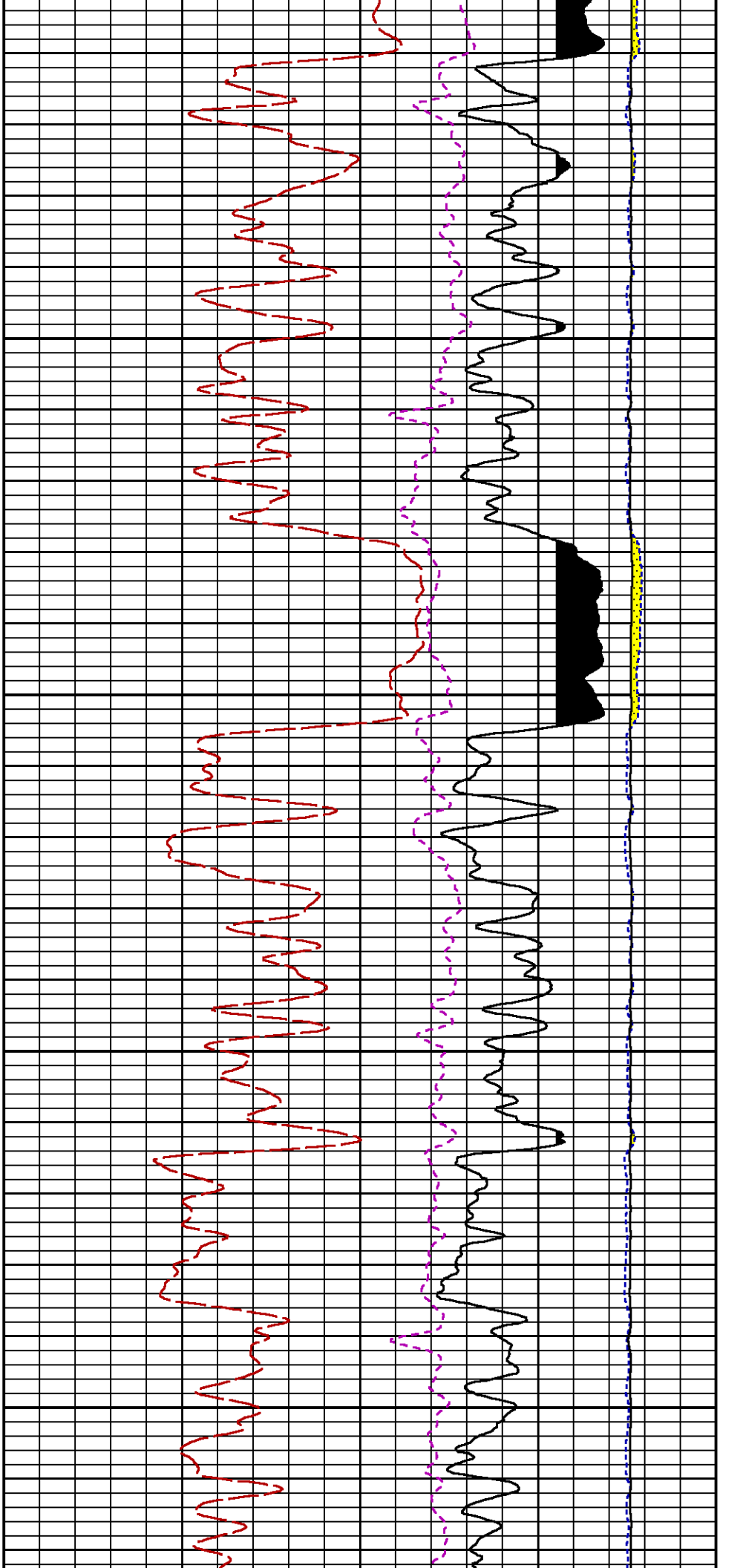






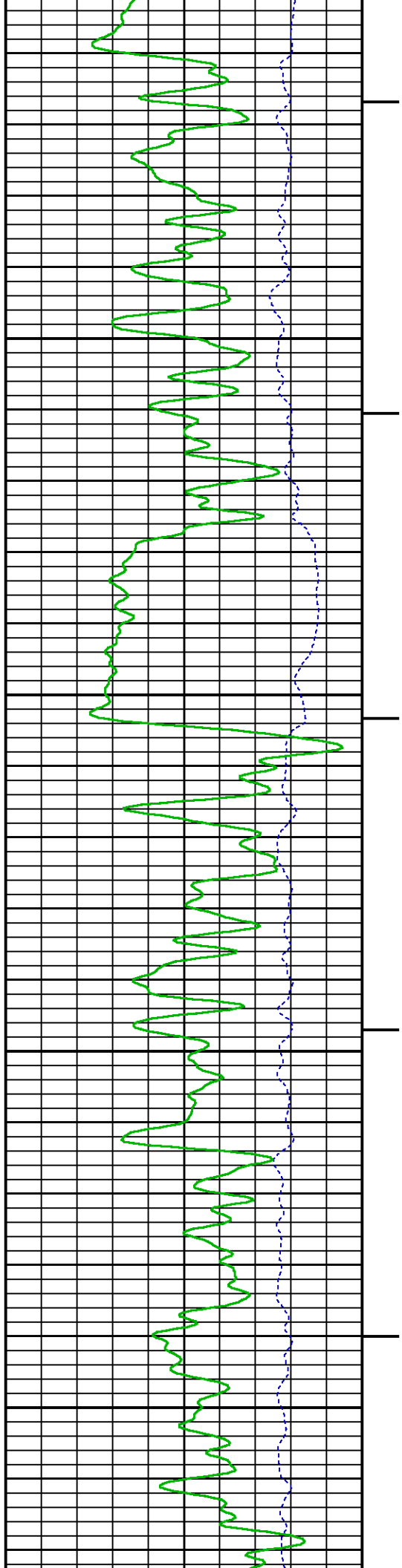




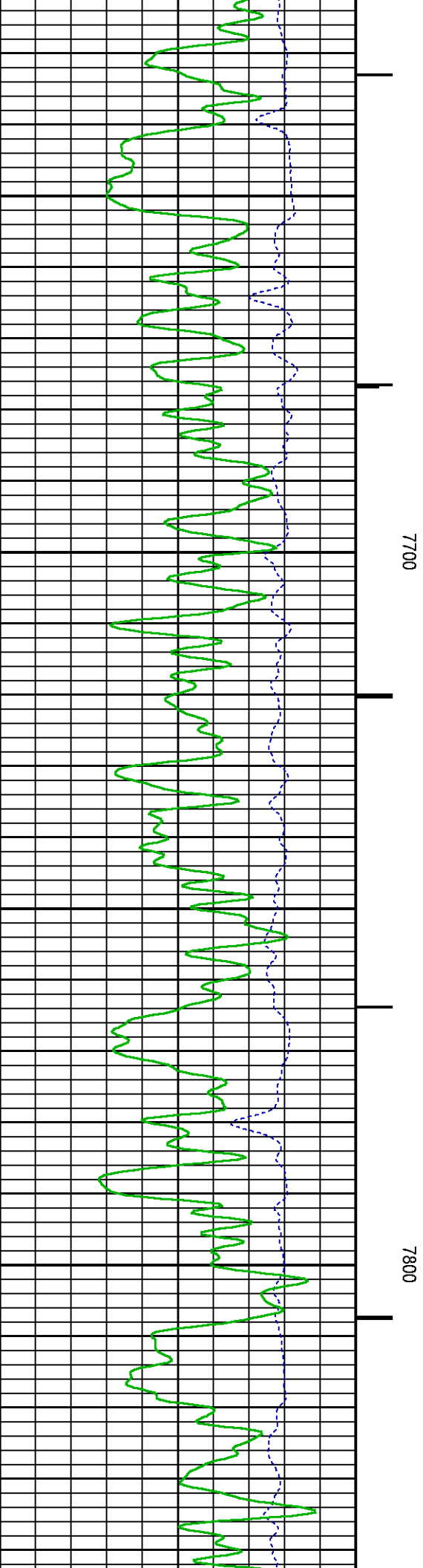
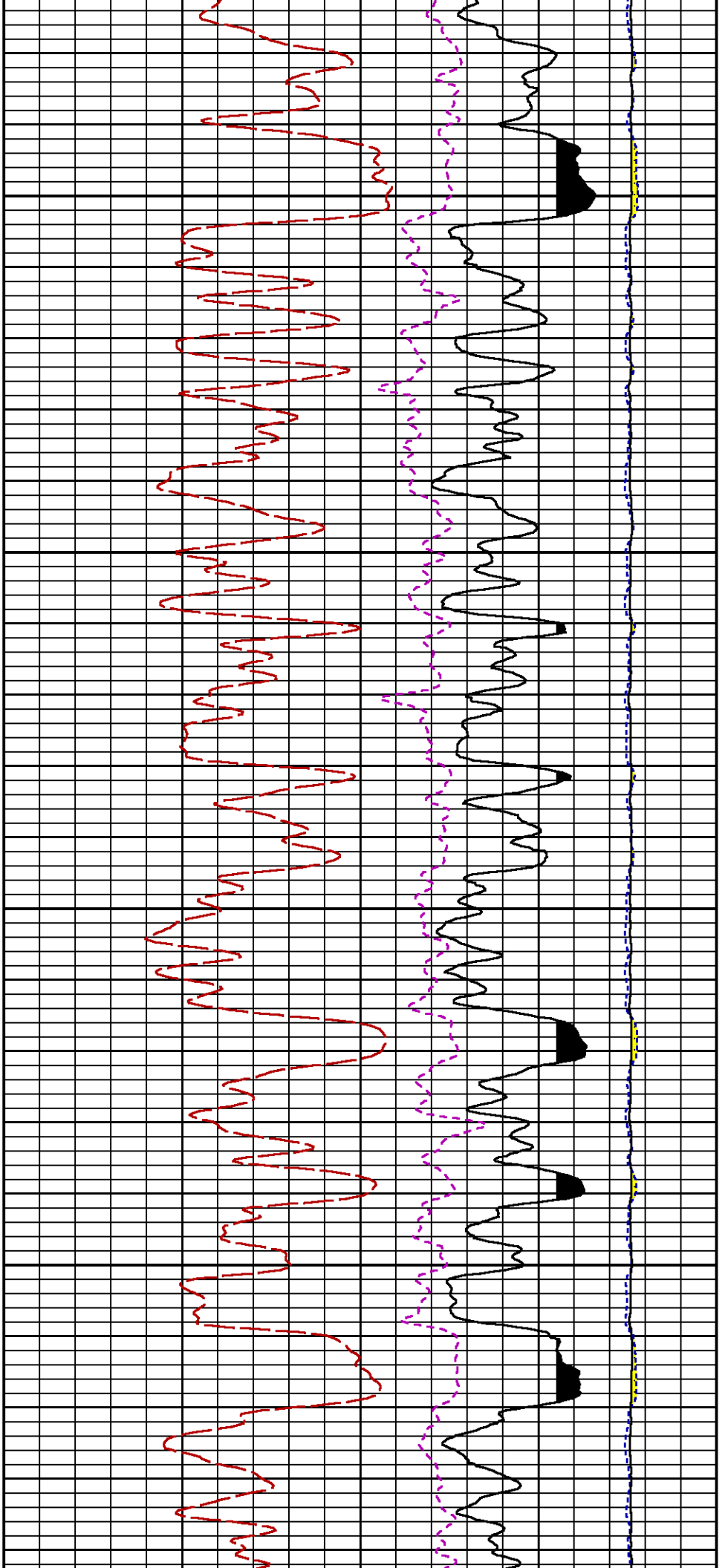


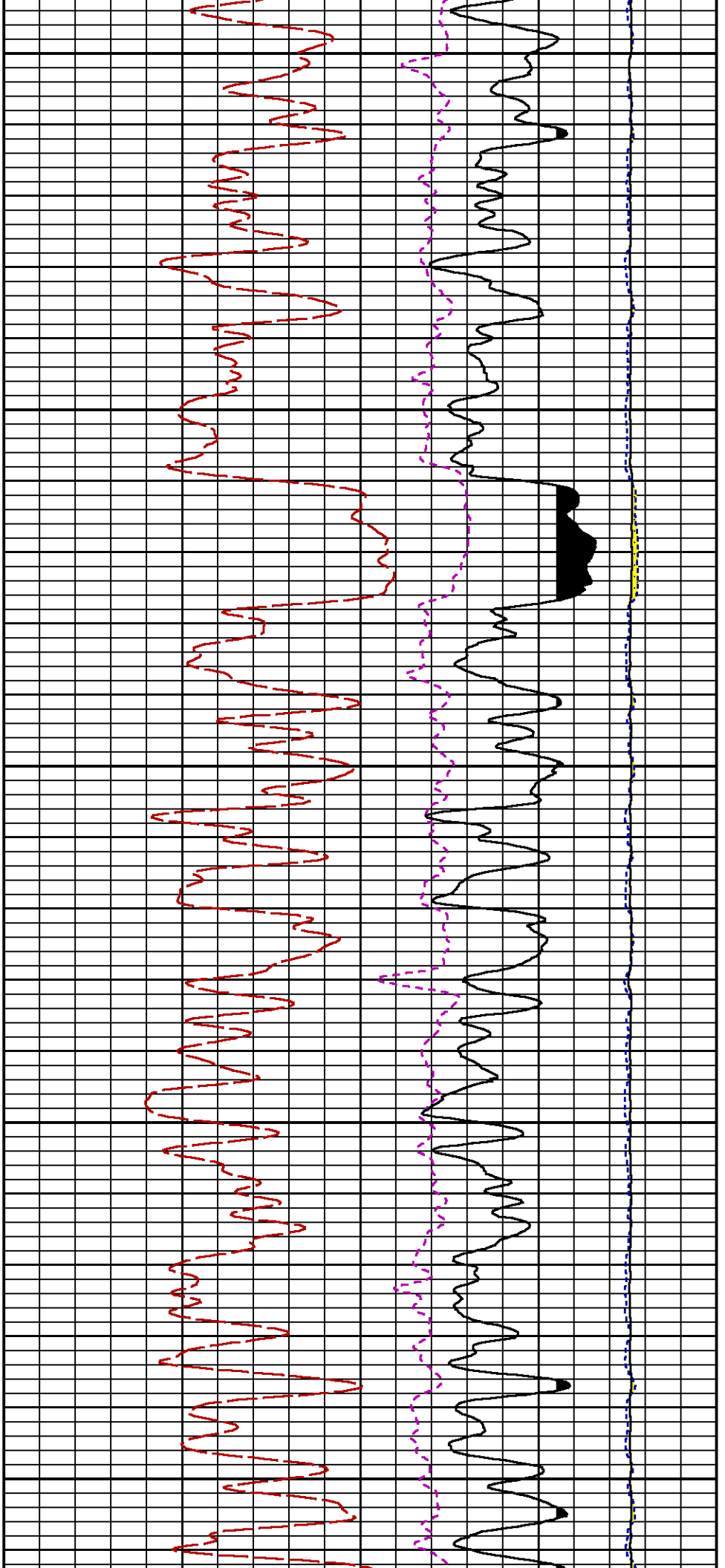
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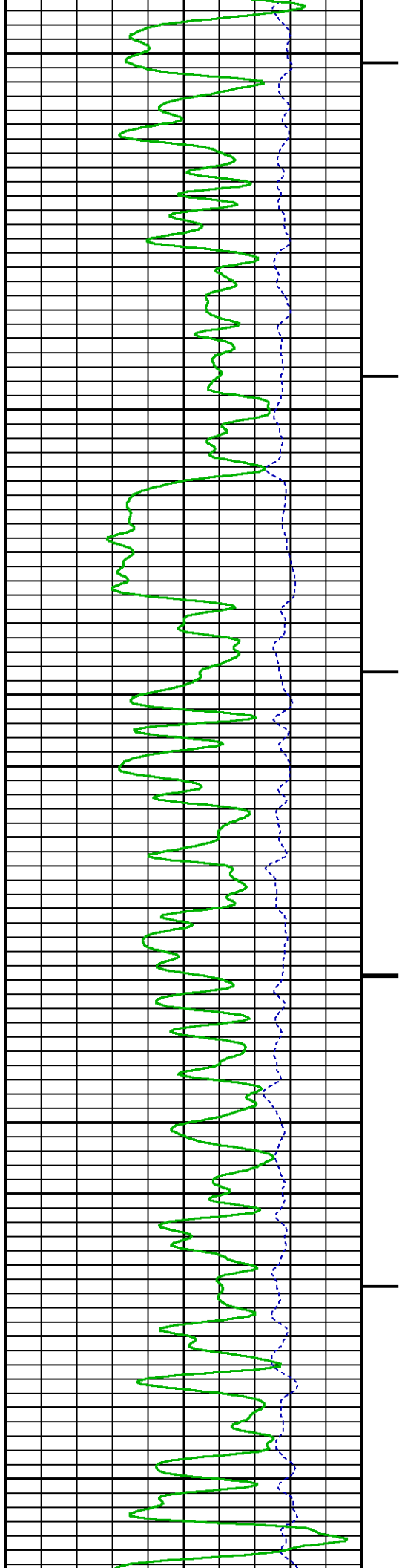


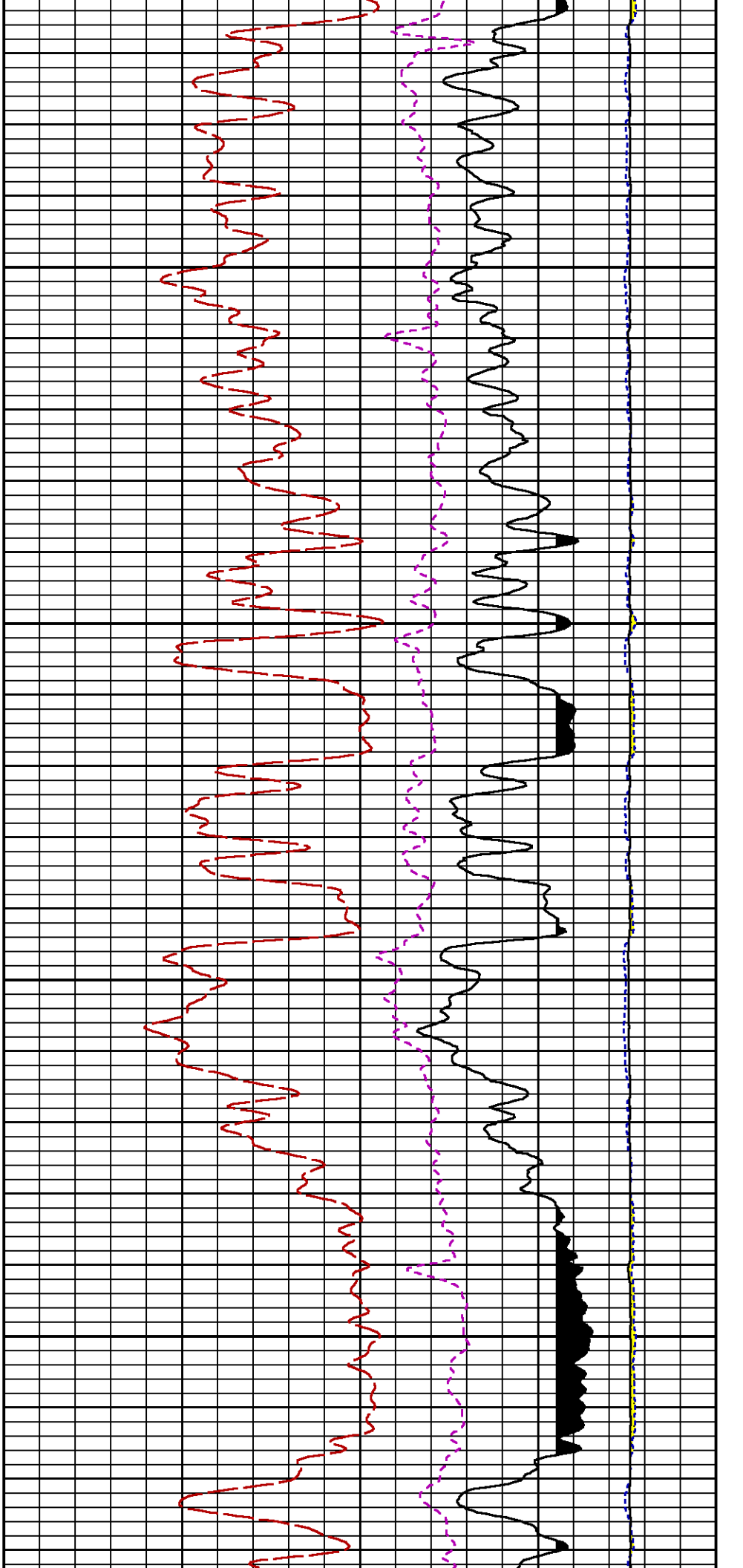




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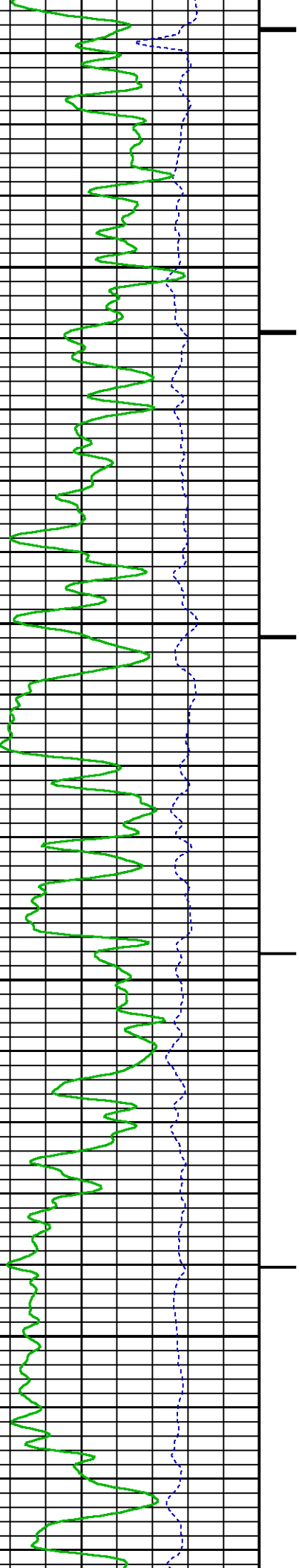
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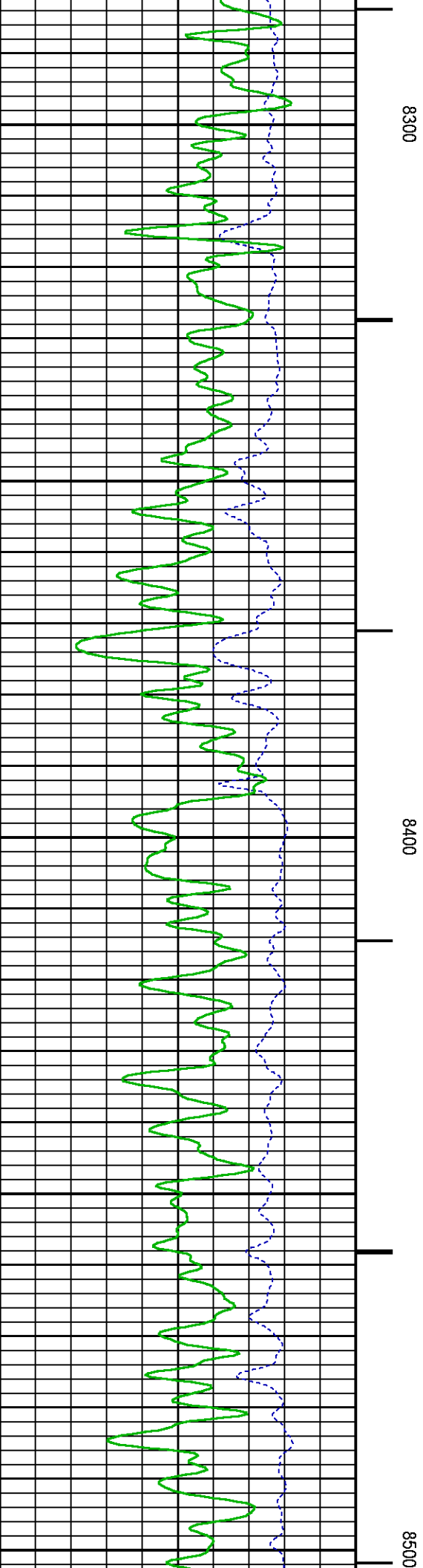
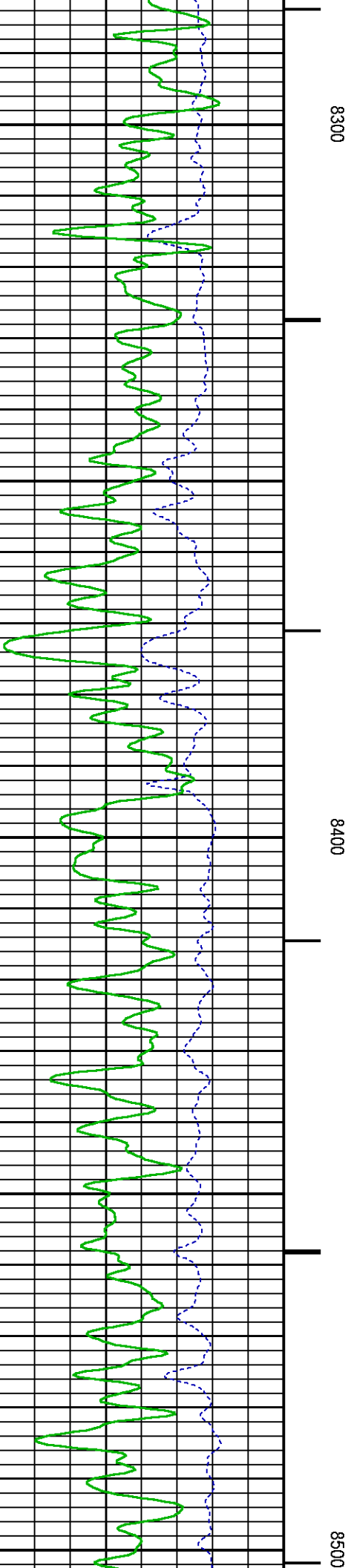
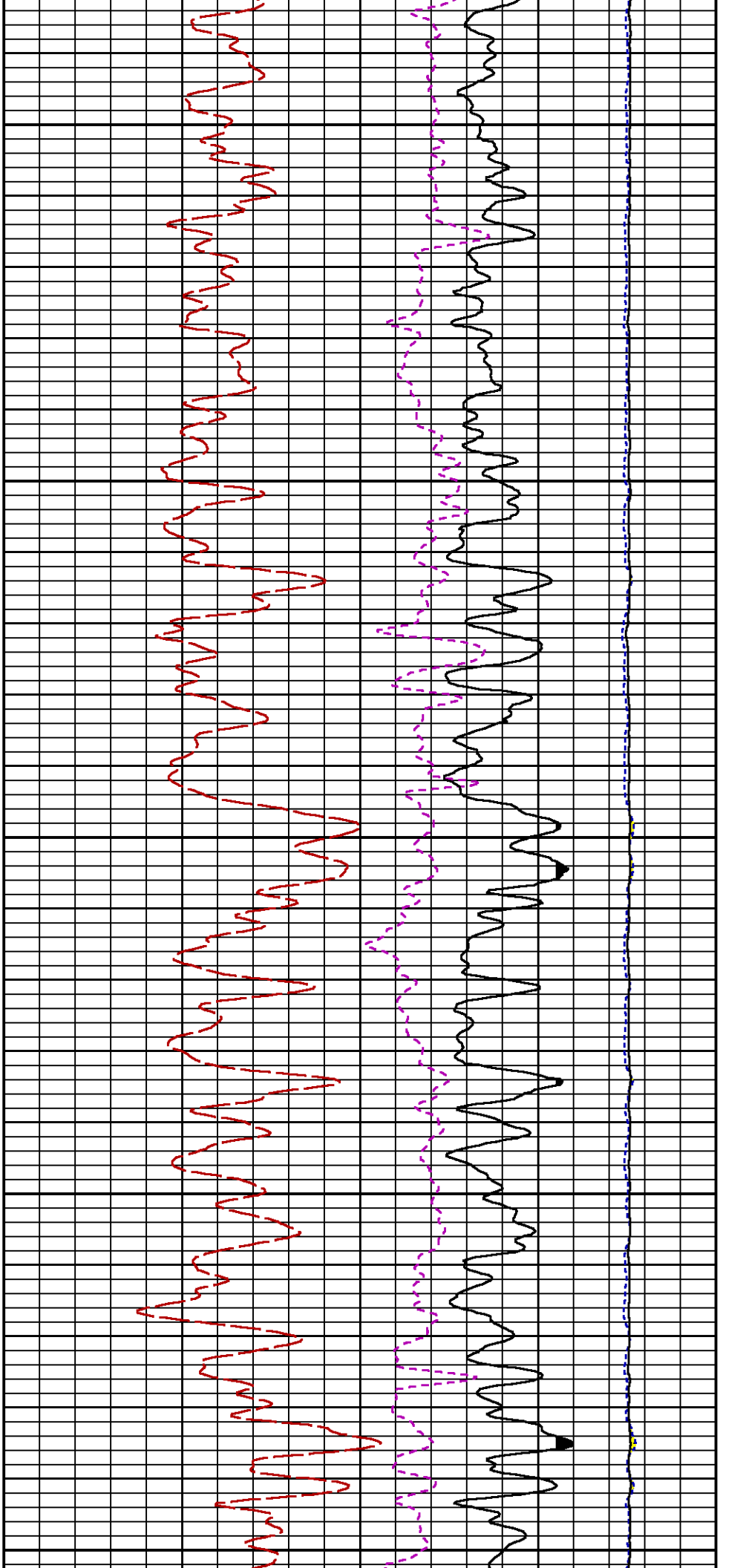


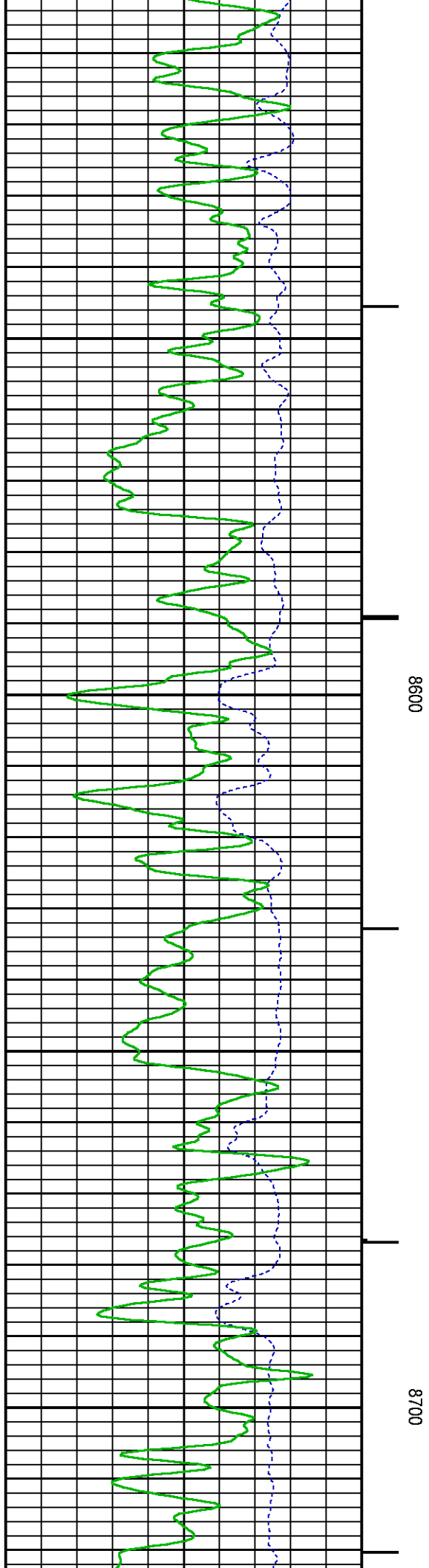
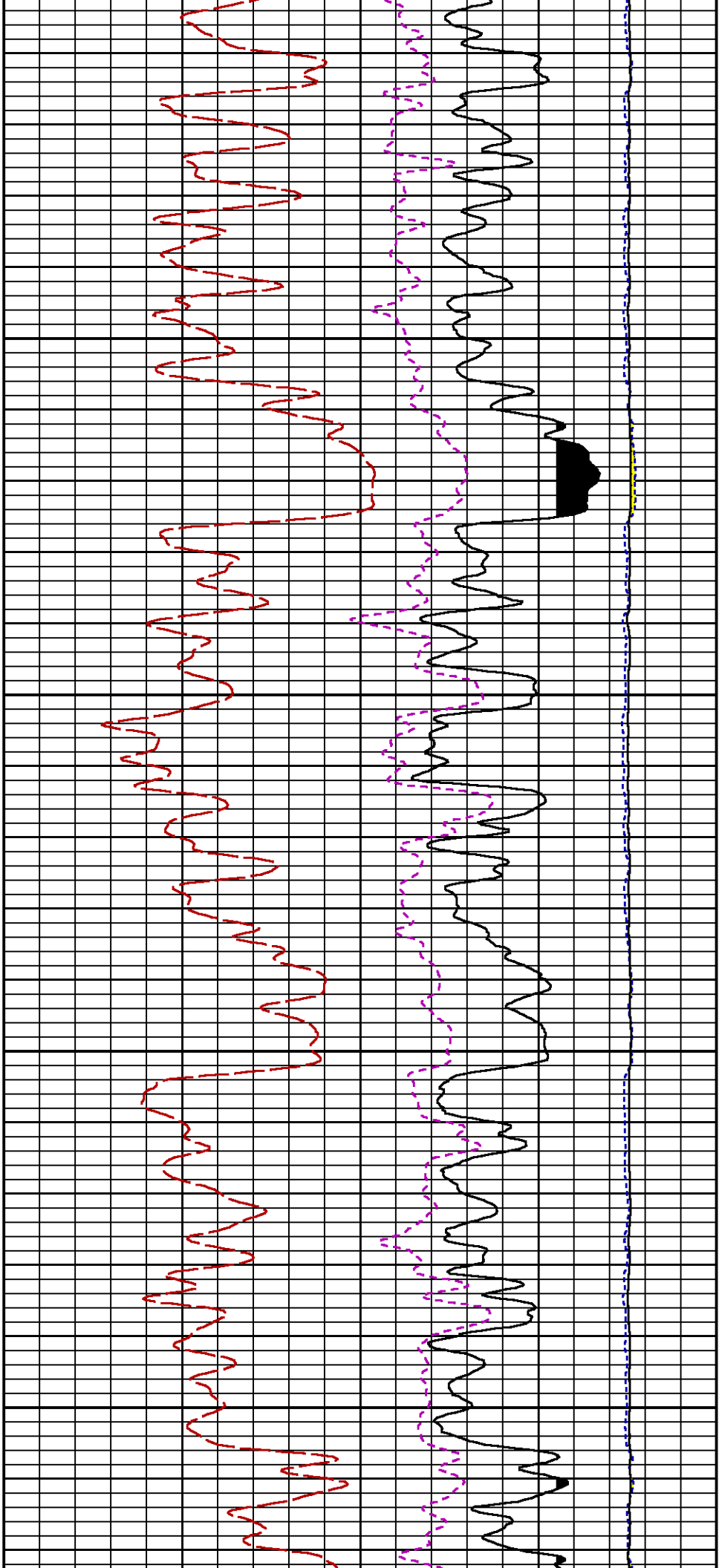


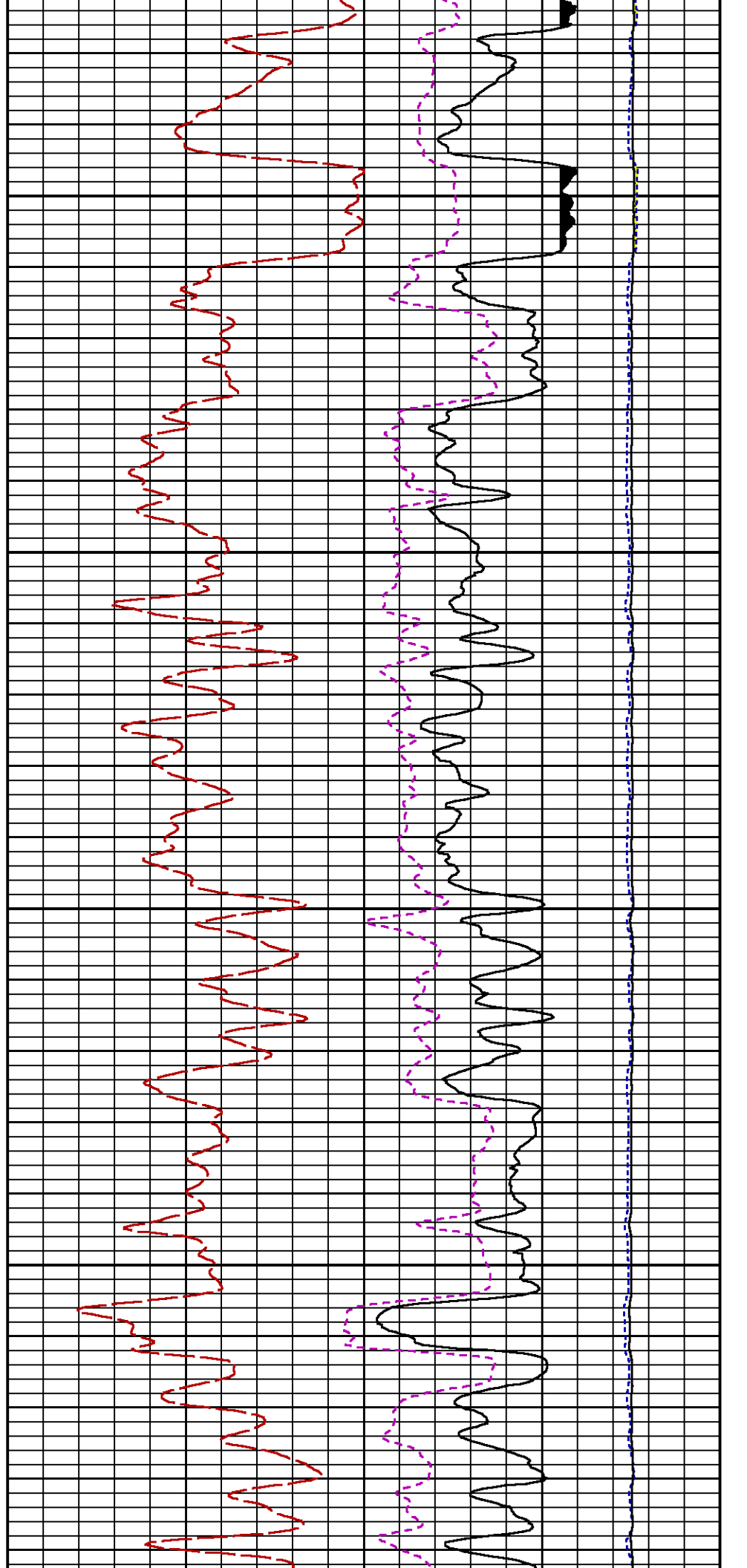
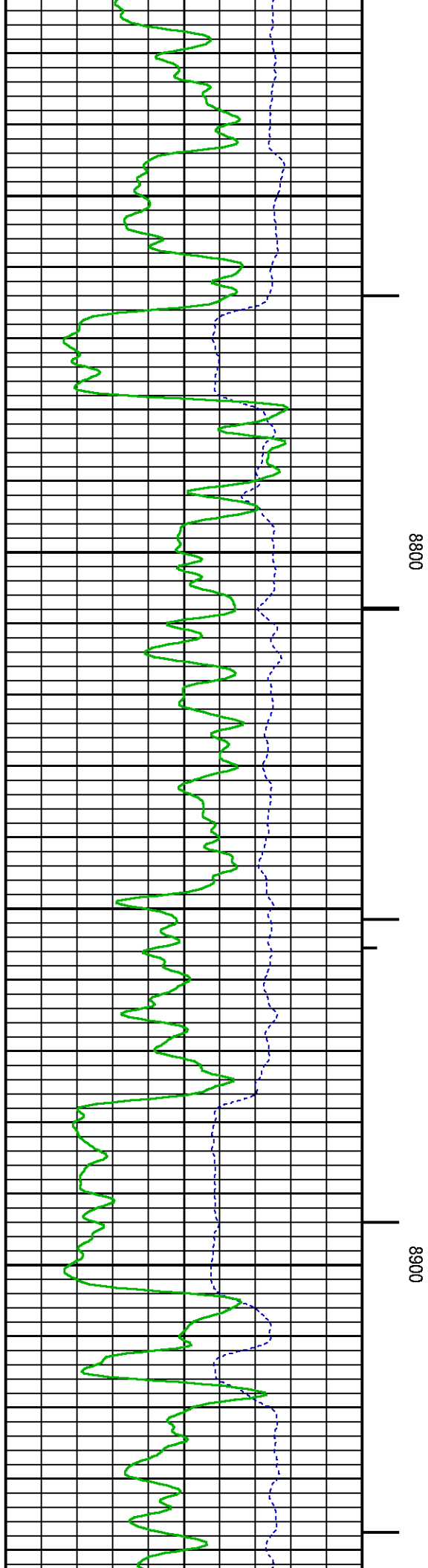
8100

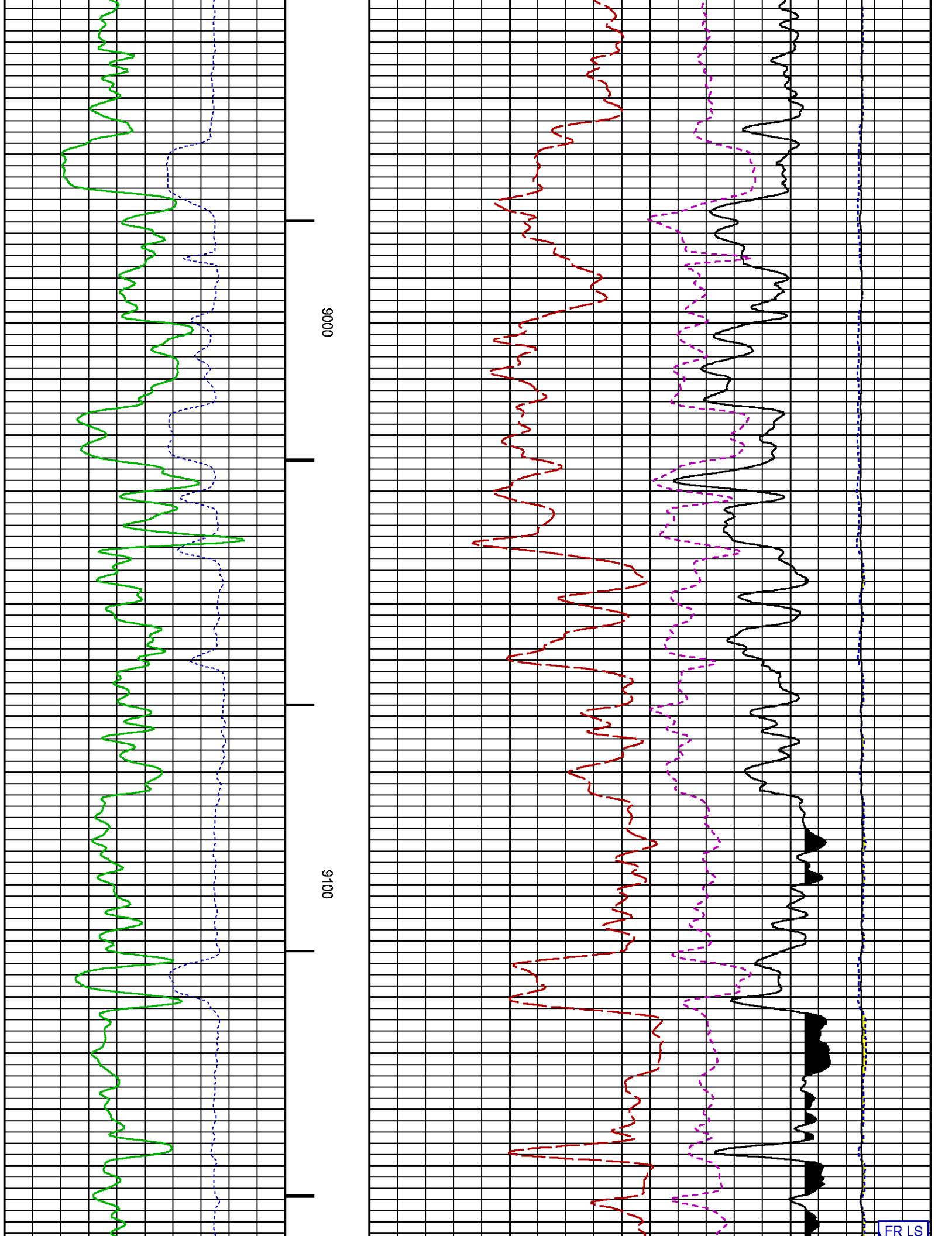
8200

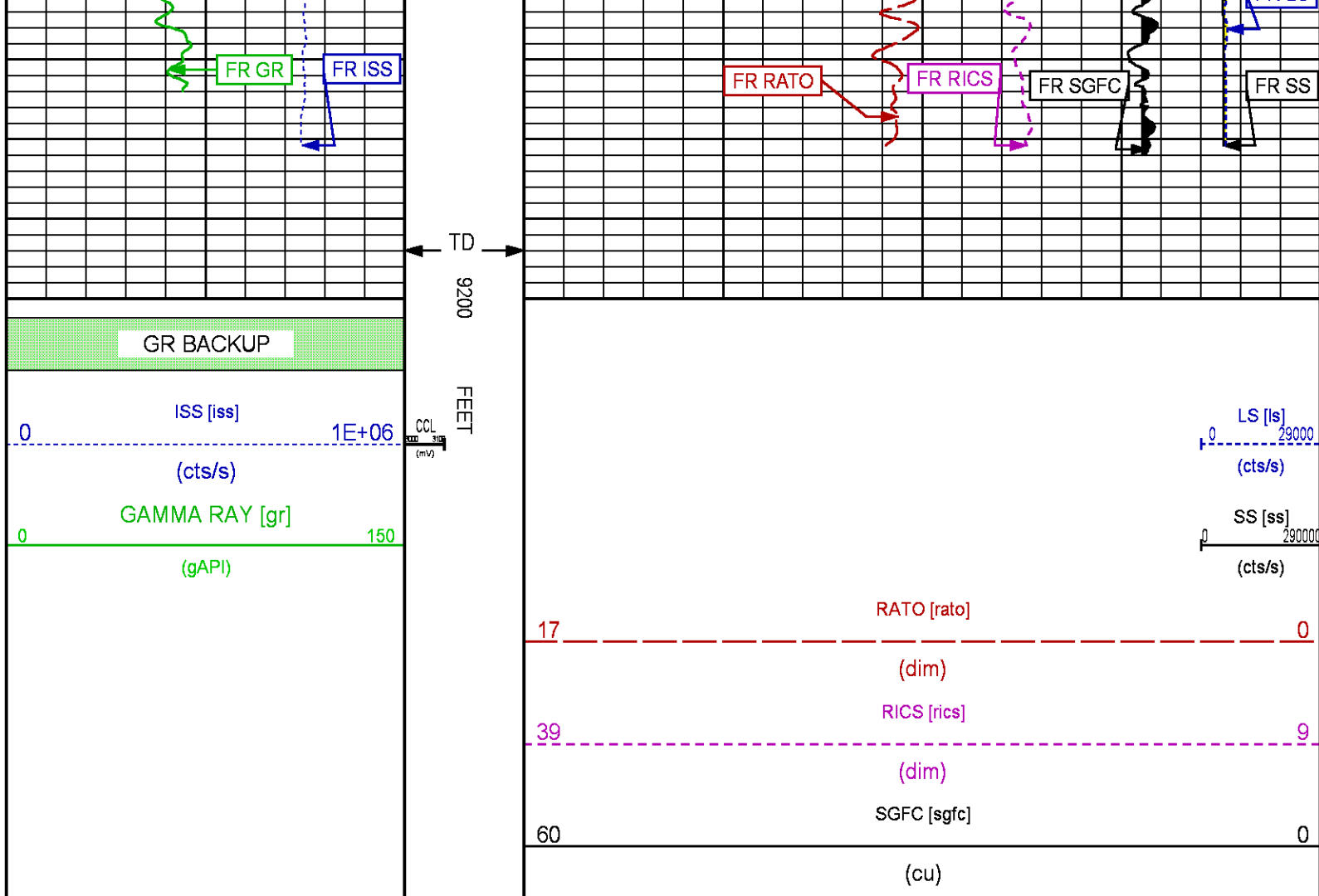












REPEAT SECTION PNC-3D MODE

ECLIPS 6.2i ECLIPS General Release Rel 6.2i Wed Jun 12 12:21:40 CDT 2013  
Updates: 1 Patches: 9

Plotted: Sun Apr 17 10:13:25 2016

## PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/CH106693/n354h01.prm  
LOGGING MODE: DEPTH DIRECTION: UP  
TOP DEPTH: 8260.500 ft BOTTOM DEPTH: 8579.250 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     | 8.75       | in    | " "           |
|                  | CASING SIZE       | 4.50       | in    | " "           |



## CURVE DESCRIPTION REPORT

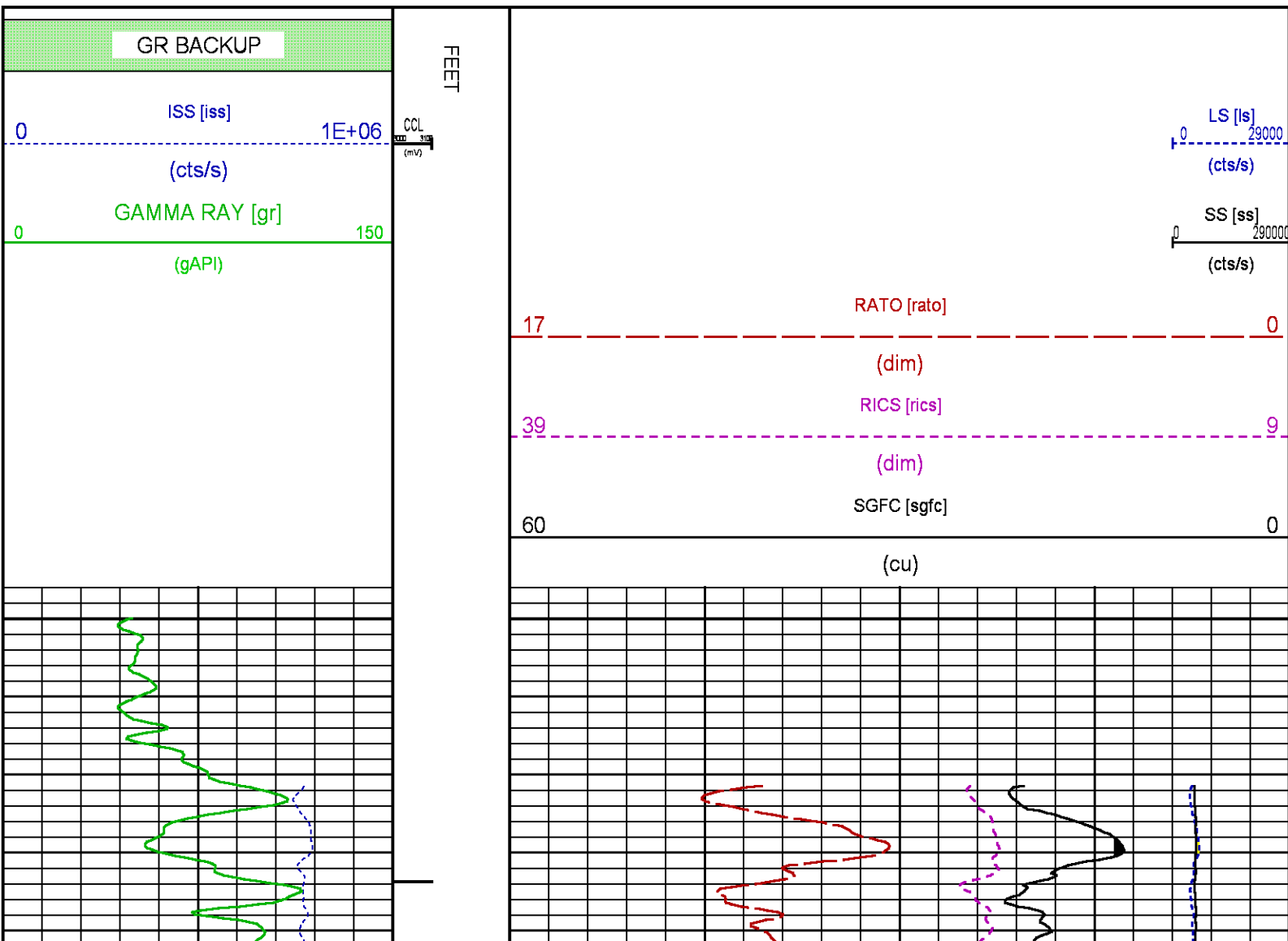
| CURVE NAME | CREATION DATE        | CURVE DESCRIPTION   |
|------------|----------------------|---|
| F1:CCL     | Apr 17 08:18:54 2016 | CASING COLLAR LOCATOR                                       |
| F1:GR      | Apr 17 08:18:54 2016 | GAMMA RAY   |
| F1:ISS     | Apr 17 08:18:54 2016 | INELASTIC SHORT SPACE COUNT RATE                            |
| F1:LS      | Apr 17 08:18:54 2016 | LONG SPACE COUNT RATE                                       |
| F1:RATO    | Apr 17 08:18:54 2016 | SHORT/LONG SPACE COUNT RATE RATIO                           |
| F1:RICS    | Apr 17 08:18:54 2016 | SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS) |
| F1:SGFC    | Apr 17 08:18:54 2016 | CORRECTED FORMATION SIGMA                                   |
| F1:SS      | Apr 17 08:18:54 2016 | SHORT SPACE COUNT RATE                                      |

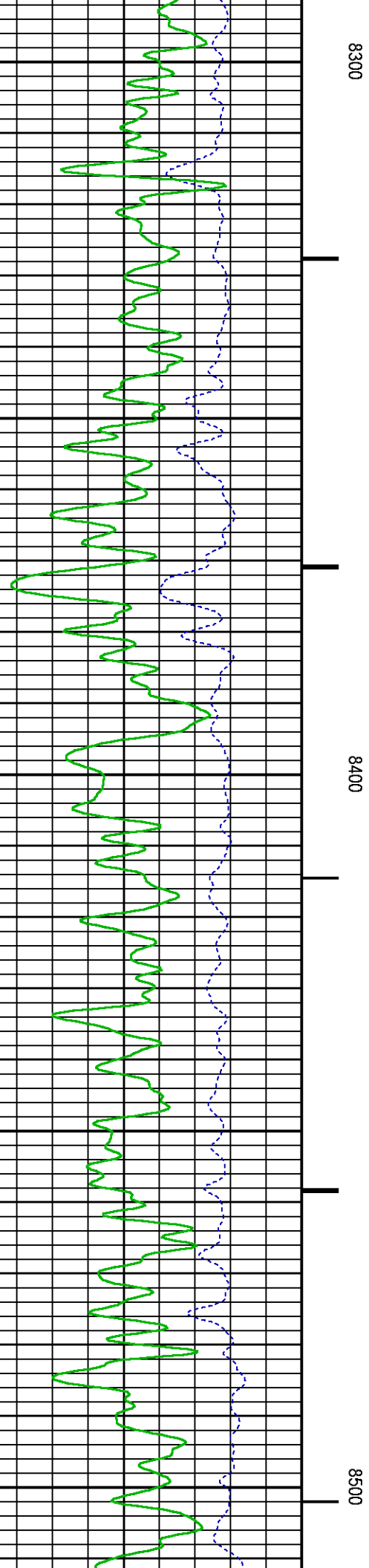
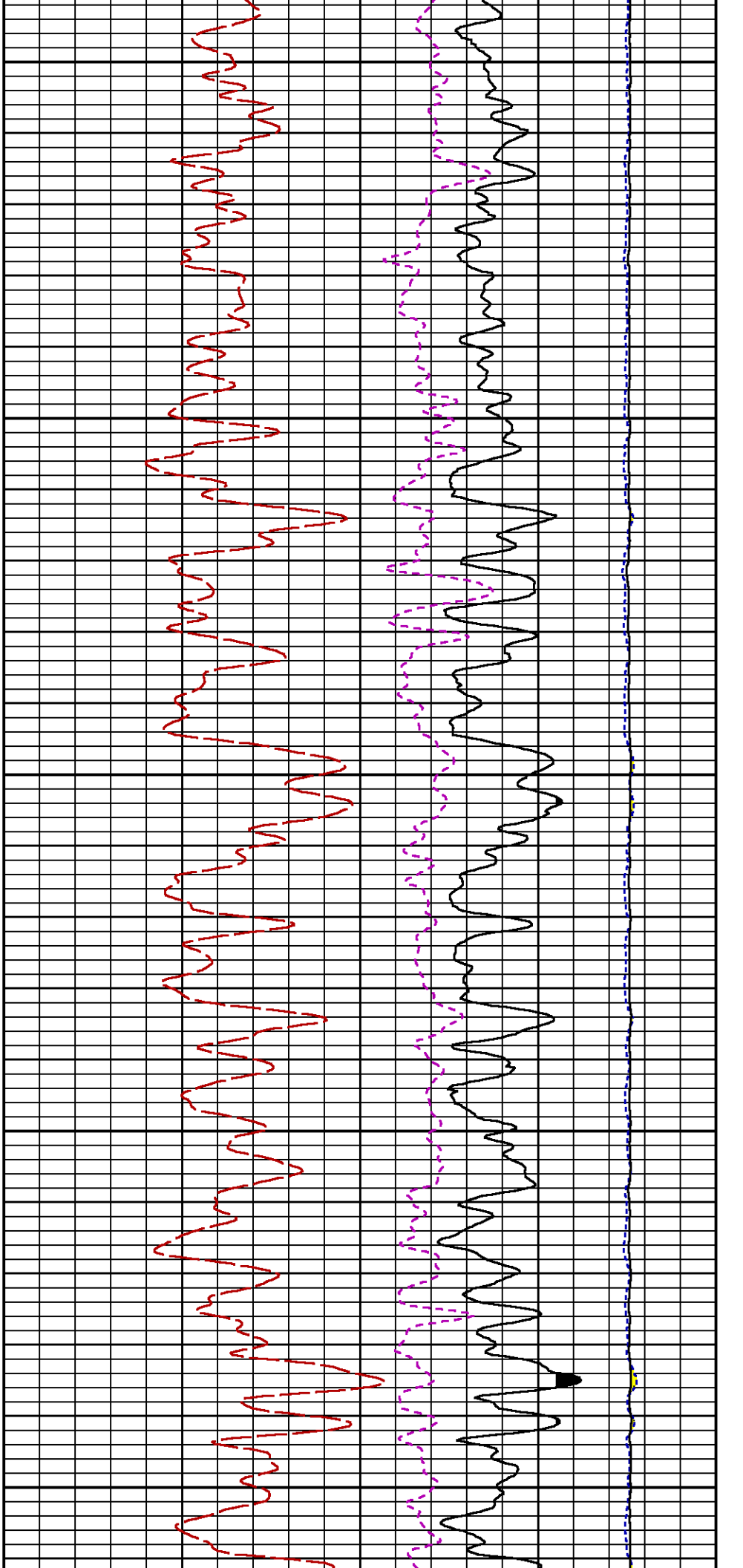
## CURVE MEASURE POINT OFFSET

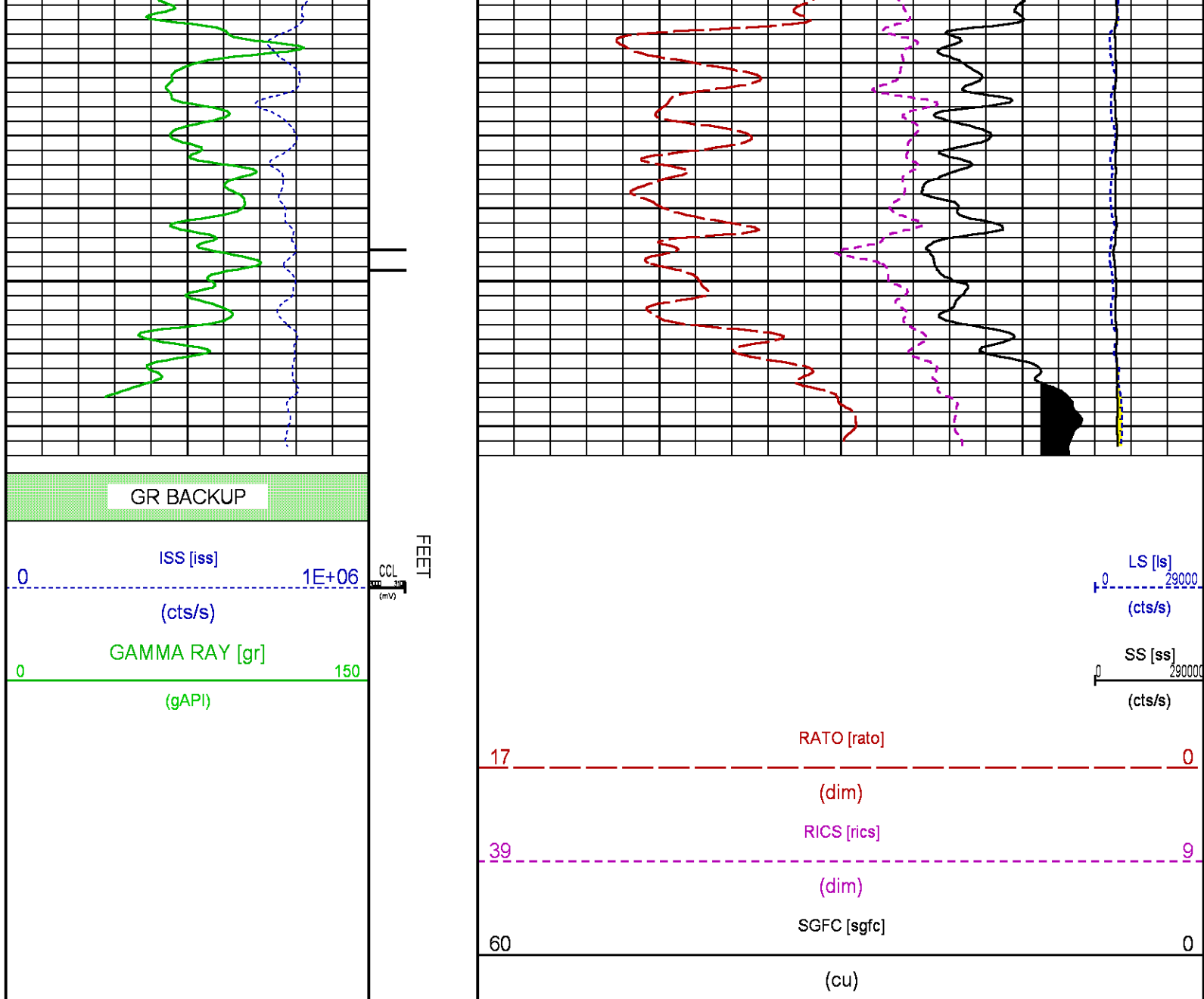
| CURVE | OFFSET (ft) | CURVE | OFFSET (ft) | CURVE | OFFSET (ft) | CURVE | OFFSET (ft) |
|-------|-------------|-------|-------------|-------|-------------|-------|-------------|
| CCL   | 25.00       | ISS   | 12.75       | RATO  | 12.75       | SGFC  | 12.75       |
| GR    | 22.75       | LS    |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

**Presentation** : cpu100:/dat1a/CH106693/413RPM\_RPT.fvpdf [5"/100' Scale]  
**Plot Interval** : 8246.5 - 8574 Feet

**Data File 1** : F1 : cpu100:/dat1a/CH106693/n354h01REPEAT413.xtf  
**Created On** : Apr 17 08:18:54 2016  
**Company** : WPX ENERGY  
**Well** : FEDERAL RU 413-6  
**Field** : RULISON  
**File Interval** : 8245.75 - 8589 Feet  
**OCT** : n354h







## CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/CH106693/n354h.tp1

### GR PRIMARY CALIBRATION SUMMARY

TOOL #: 2812LA 10004393

DATE/TIME PERFORMED: Tue Apr 12 10:35:00 2016

UNIT #: 3880TA HL6670

CALB JIG #: 4702NK WA-612

|    | BACKGROUND<br>(cts/s) | CALBRTR ON<br>(cts/s) | CR DIFF<br>(cts/s) | MULT  | BACKGROUND<br>(gAPI) | CALBRTR ON<br>(gAPI) | CALBRTR<br>(gAPI) |
|----|-----------------------|-----------------------|--------------------|-------|----------------------|----------------------|-------------------|
| GR | 61.16                 | 273.20                | 212.0              | 0.990 | 60.57                | 270.57               | 210               |

### GR PRIMARY VERIFICATION SUMMARY

TOOL #: 2812LA 10004393

DATE/TIME PERFORMED: Tue Apr 12 10:37:00 2016

UNIT #: 3880TA HL6670 VERI JIG #: 4702NK WA-612

|    | BACKGROUND<br>(cts/s) | CALBRTR ON<br>(cts/s) | MULT  | BACKGROUND<br>(gAPI) | CALBRTR ON<br>(gAPI) | DIFF.<br>(gAPI) |
|----|-----------------------|-----------------------|-------|----------------------|----------------------|-----------------|
| GR | 60.02                 | 274.27                | 0.990 | 59.44                | 271.62               | 212.18          |
|    |                       |                       |       |                      |                      | 200.00 220.00   |

## RPM\_PNC\_3D PRIMARY CALIBRATION SUMMARY

TOOL: 8283PA 10160383

DATE/TIME PERFORMED: Thu Apr 7 13:09:51 2016

UNIT: 3880TA HL6670

CALIBRATOR: 2437XB 112674

SOURCE: 8281AA 10148476

HOURS: 8281AA 532

|              | ISS     | Mtr Vits<br>(V) | SS Gain | LS Gain | XLS Gain | EA Temp<br>(degF) | Sync Delay<br>(usec) | RCAL   |
|--------------|---------|-----------------|---------|---------|----------|-------------------|----------------------|--------|
| Raw Data     | 811651  | 123             | 2324    | 2262    | 2226     | 111               | 7.0                  | 0.9795 |
| Interpolated | 1300000 | 144             | 2307    | 2257    | 2224     |                   |                      |        |

|          | ISS    | BKS  | BKL  | BKX | SGA1        | SDA1      | SGA2        | SDA2      |
|----------|--------|------|------|-----|-------------|-----------|-------------|-----------|
| Raw Data | 811651 | 7763 | 1217 | 156 | 26.06       | 0.15      | 24.08       | 0.33      |
|          |        |      |      |     | 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      | 811651 | 172199 | 26230 | 90354 | 32118 | 8357  | 54618 | 13410 |
| Fit Quality % |        | 0.667  | 0.802 | 0.628 | 0.597 | 0.635 | 0.552 | 0.644 |

|               | 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      | 811651  | 1.43      | 4.71           | 30.96            | 14.86           | 10.82         | 3.84           | 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 % |         | 0.110     | 0.060          | 0.148            | 0.115           | 0.027         | 0.048          | 0.089           |
| Reduced       | 1394113 | 1.43      | 4.73           | 31.12            | 14.91           | 10.82         | 3.85           | 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       |

## TPSETEMP PRIMARY CALIBRATION SUMMARY

TOOL #: 8255XA Z166341

DATE/TIME PERFORMED: Wed Oct 21 14:25:56 2015

UNIT #: 3885TC 6685

|                     | T(0)          | T(1)         | T(2)         | T(3)          |
|---------------------|---------------|--------------|--------------|---------------|
| Corr Coeff for Temp | -1.828341E+01 | 9.988427E-02 | 8.122243E-07 | -3.138442E-11 |

## INSTRUMENT CONFIGURATION

33.24'

A3 CABLEHEAD

PCM POWER SUPPLY

Diameter : 1.70"

Source File: /dat1a/CH106693/RPM-tdg

Length : 3.86'  
Weight : 18 lbs  
Series : 8250EA  
Mnemonic : PCM

#### TELEMETRY / CCL

Diameter : 1.70"  
Length : 4.46'  
Weight : 20 lbs  
Series : 8248ED  
Mnemonic : PCM  
Measure Point: 1.00': CCL MP

CCL MP — 25.19'

#### SONDEX GAMMA RAY

Diameter : 1.69"  
Length : 2.17'  
Weight : 10 lbs  
Series : 2812LA

GR MP — 22.64'

#### RPM ELECTRONICS

Diameter : 1.70"  
Length : 4.48'  
Weight : 16 lbs  
Series : 8281EA  
Mnemonic : RPM

#### RPM C DETECTOR SECTION

Diameter : 1.70"  
Length : 9.40'  
Weight : 41 lbs  
Series : 8283PA  
Mnemonic : RPM  
Measure Point: 7.07': XLS DETECTOR  
Measure Point: 6.32': LS DETECTOR  
Measure Point: 5.57': SS DETECTOR

XLS DETECTOR — 15.20'

LS DETECTOR — 14.45'

SS DETECTOR — 13.70'

#### 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

TEMP MP — 1.65'  
PRES MP —

0.00'

#### BULL PLUG 1 11/16

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



COMPANY  
WELL  
FIELD  
COUNTY

WPX ENERGY  
FEDERAL RU 413-6  
RULISON  
GARFIELD

STATE CO

LOCATION:

ELEVATIONS:

FILE NO:

CH106693

API NO:

05045226020000

S6 T7S R93W



SHL: 1936' FSL & 521' FWL  
BHL: 703' FSL & 1268' FWL

|            |         |             |
|------------|---------|-------------|
| ELEVATION: |         | RU 13-6 PAD |
| KB         | 7009 FT | H&P 318     |
| DF         |         |             |
| GL         | 6895 FT |             |
| DATE       |         | 17-APR-2016 |

SEC 6 TWP 7S RGE 93W