



FILE NO:

COMPANY

LARAMIE ENERGY LLC

WELL

BRUTON 30-06E

API NO:

FIELD

VEGA

05077104510000

COUNTY

MESA

STATE COLORADO

Version

LOCATION:

SHL 39.252644444 N; 107.814275000W  
BHL 39.252169000N; 107.806920000W

OTHER SERVICES

SEC 30 TWP 9S RGE 93W

RAL

PERMANENT DATUM

GL

ELEVATION

7512 FT

LOG MEASURED FROM

KB

30 FT

ABOVE P.D.

DRILL. MEAS. FROM

KB

ELEVATIONS:

KB 7542 FT

DF 7541 FT

GL 7512 FT

DATE

20-Nov-2017

RUN

TRIP

1

2

SERVICE ORDER

US130061

DEPTH DRILLER

8070 FT

DEPTH LOGGER

7998 FT

BOTTOM LOGGED INTERVAL

7998 FT

TOP LOGGED INTERVAL

2500 FT

TIME STARTED

11:00

TIME FINISHED

18:30

OPERATOR RIG TIME

7.5 HRS

TYPE OF FLUID IN HOLE

FRESHWATER

FLUID DENSITY

NA

FLUID SALINITY

NA

FLUID LEVEL

55 FT

LOGGED CEMENT TOP

1214 FT

WELLHEAD PRESSURE

0 PSI

MAXIMUM HOLE DEVIATION

NA

NOMINAL LOGGING SPEED

15 FMIN

MAX. RECORDED TEMP.

230 DEGF

REFERENCE LOG

NA

REFERENCE LOG DATE

NA

EQUIP. NO.

6670

LOCATION

WOODWARD

RECORDED BY

C.COFFELT

WITNESSED BY

N/A

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.

## REMARKS

RUN 1 TRIP 2: \*2 OPERATIONS IN WELLBORE\*

\*\*OPERATION 2: RPM/GR/CCL RUN IN COMBINATION\*\*

SJ: 7245' - 7267'

SJ: 6120' - 6142'

CREW: M. MENTZER, C. GOLBY

## EQUIPMENT DATA

| RUN | TRIP | TOOL      | SERIES NO.       | SERIAL NO.        | POSITION |
|-----|------|-----------|------------------|-------------------|----------|
| 1   | 2    | TELEMETRY | 8250 EA/ 8248 ED | 10185091/1032348  | FREE     |
| 1   | 2    | GR        | 8262 XA          | 10192900          | FREE     |
| 1   | 2    | RPM ELE   | 8281 EA          | 1088726           | FREE     |
| 1   | 2    | RPM       | 8283 PA/8281 FA  | 10184883/10315572 | FREE     |

# RPM MAIN PASS GRAND SANDS

ECLIPS 7.0w PC-ECLIPS General Release Rel 7.0w Fri Jun 09 11:02:06 Central Daylight Time 2017  
Patches: 2

Plotted: Tue Nov 21 11:44:08 2017

## PARAMETER AND FILTER SUMMARY REPORT

FILE: C:\dat1a\LARAMIE\_BRUTON\_30\_05E\p353h03.prm  
LOGGING MODE: DEPTH DIRECTION: UP  
TOP DEPTH: 2495.750 ft BOTTOM DEPTH: 3175.750 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     | 8.50       | in    | " "           |
|                  | LARGEST CASING OD | 7.00       | in    | " "           |
|                  | MATRIX            | SANDSTONE  |       | " "           |

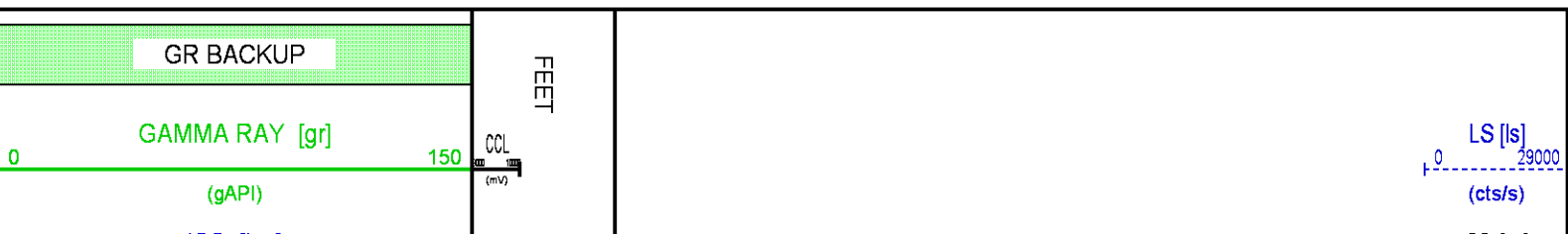
## CURVE DESCRIPTION REPORT

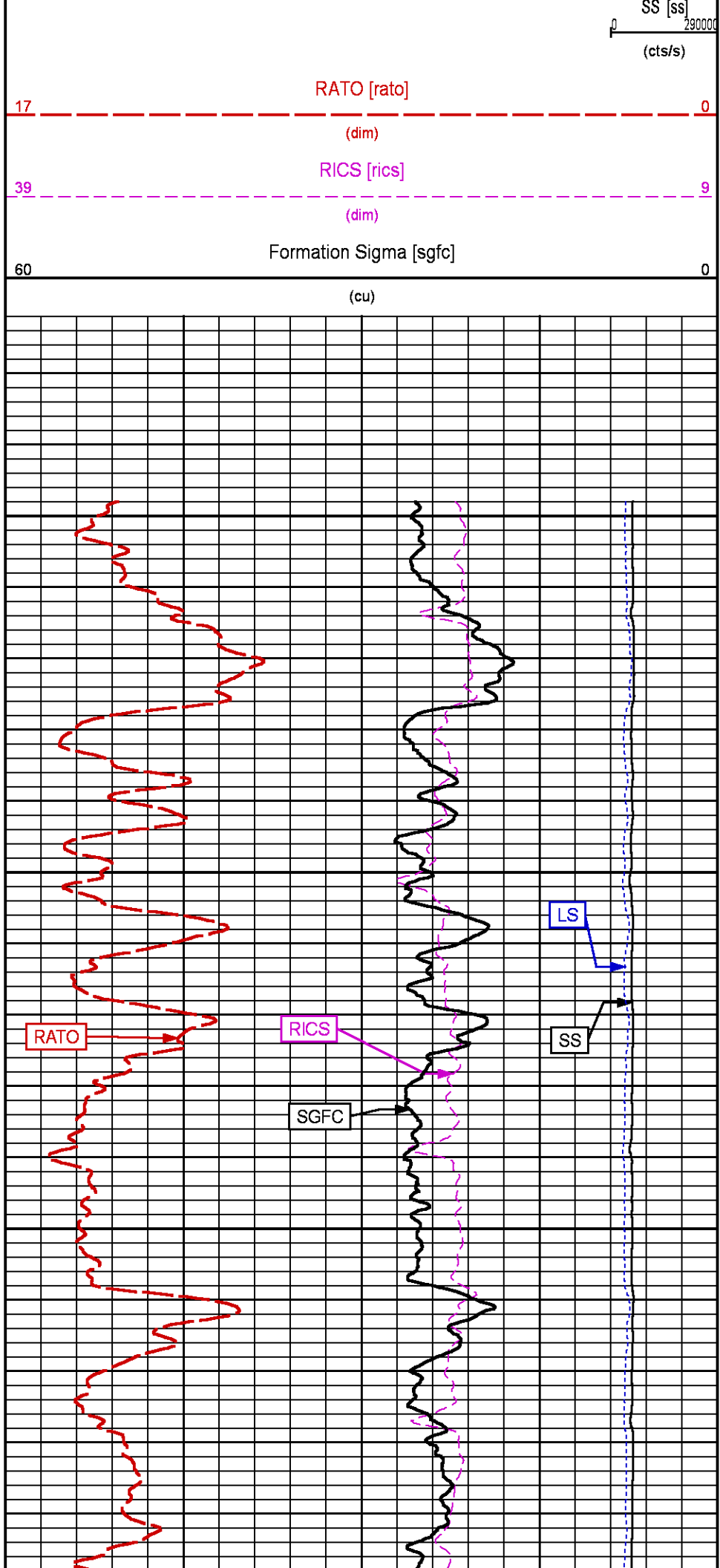
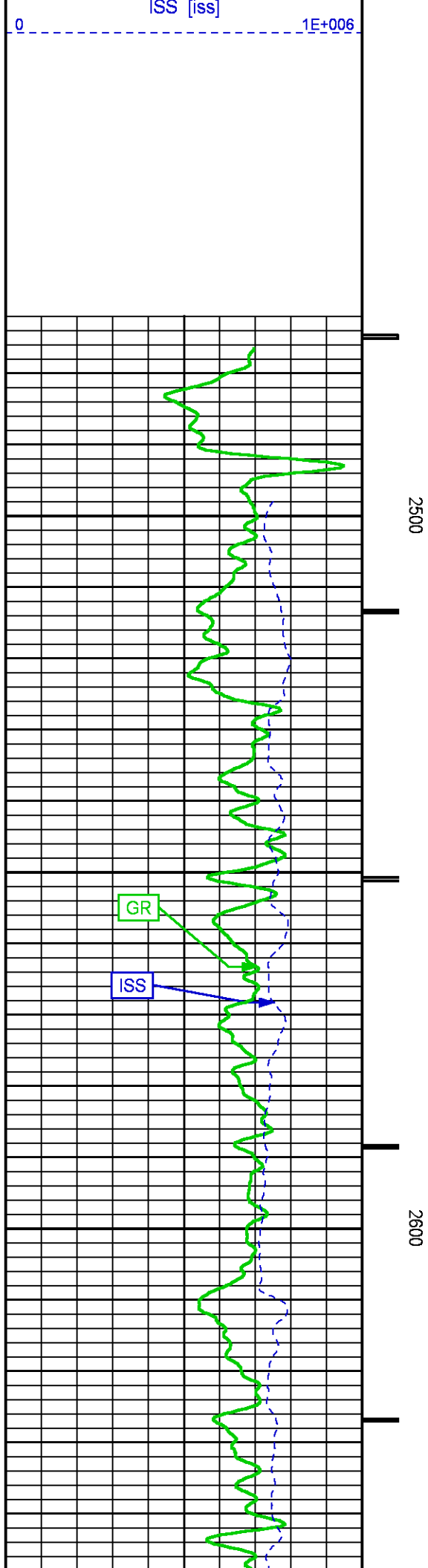
| CURVE NAME | CREATION DATE | CURVE DESCRIPTION   |
|------------|---------------|---|
| F1:CCL     | N/A           | CASING COLLAR LOCATOR                                       |
| F1:GR      | N/A           | GAMMA RAY   |
| F1:ISS     | N/A           | INELASTIC SHORT SPACE COUNT RATE                            |
| F1:LS      | N/A           | LONG SPACE COUNT RATE                                       |
| F1:RATO    | N/A           | SHORT/LONG SPACE COUNT RATE RATIO                           |
| F1:RICS    | N/A           | SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS) |
| F1:SGFC    | N/A           | BOREHOLE AND DIFFUSION CORRECTED SIGMA                      |
| F1:SS      | N/A           | SHORT SPACE COUNT RATE                                      |

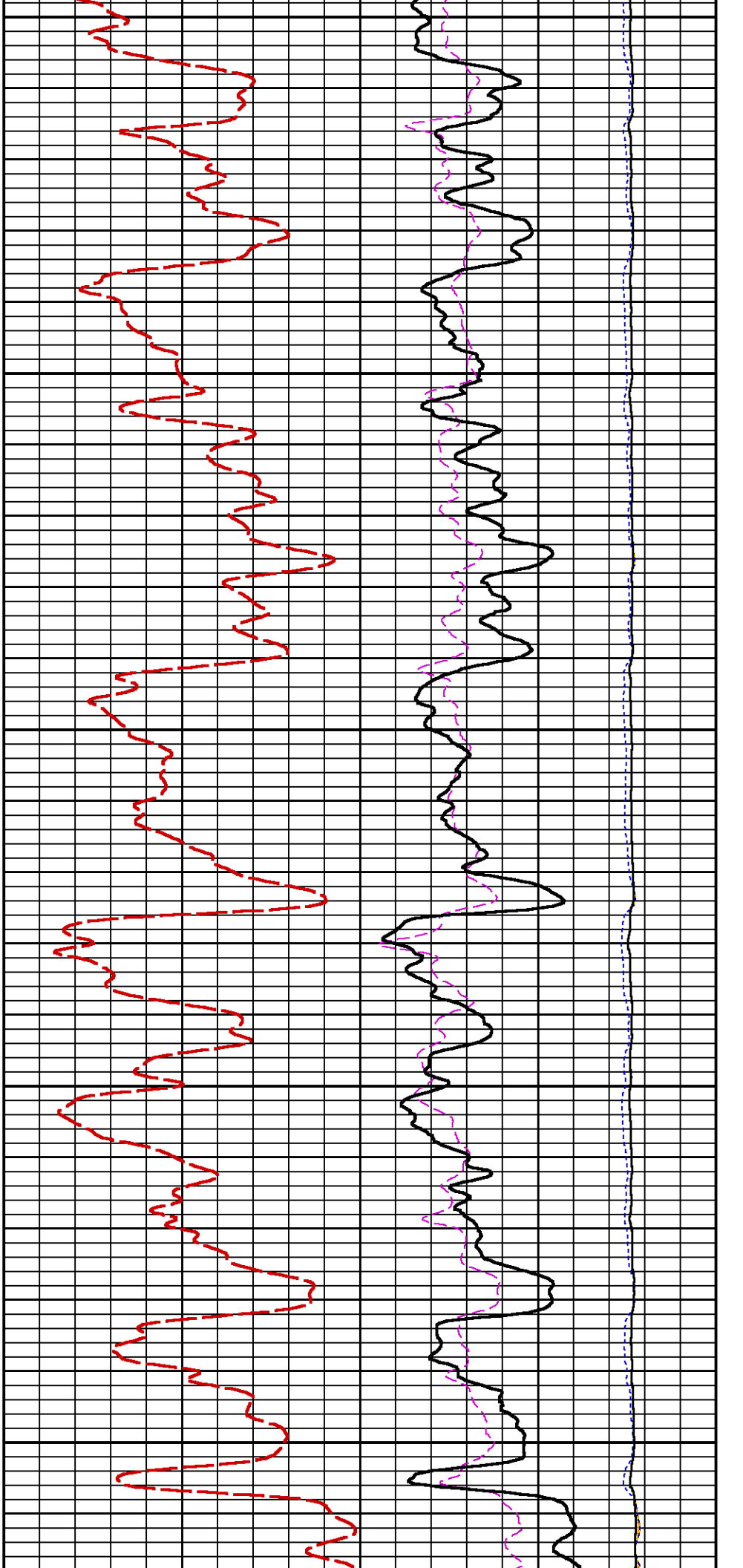
## CURVE MEASURE POINT OFFSET

| CURVE | OFFSET (ft) | CURVE | OFFSET (ft) | CURVE | OFFSET (ft) | CURVE | OFFSET (ft) |
|-------|-------------|-------|-------------|-------|-------------|-------|-------------|
| CCL   | -22.50      | ISS   | -9.50       | RATO  | -9.50       | SGFC  | -9.50       |
| GR    | -19.50      | LS    | -9.50       | RICS  | -9.50       | SS    | -9.50       |

**Presentation** : BHIH2LZZF2:C:\dat1a\LARAMIE\_BRUTON\_30\_05E\LARAMIE\_RPM\_PNC3D+RPM\_MN\_GS\_05E.fvp.pdf [5"/100' Scale]  
**Plot Interval** : 2472.25 - 3168 Feet  
**Data File 1** : F1 : BHIH2LZZF2:C:\dat1a\LARAMIE\_BRUTON\_30\_05E\RPM\_MN\_GS\_05E.xtf  
**Created On** : N/A  
**Company** : LARAMIE ENERGY LLC  
**Well** : BRUTON 30-05E  
**Field** : VEGA  
**File Interval** : 2471.5 - 3175.75 Feet  
**OCT** : p353h

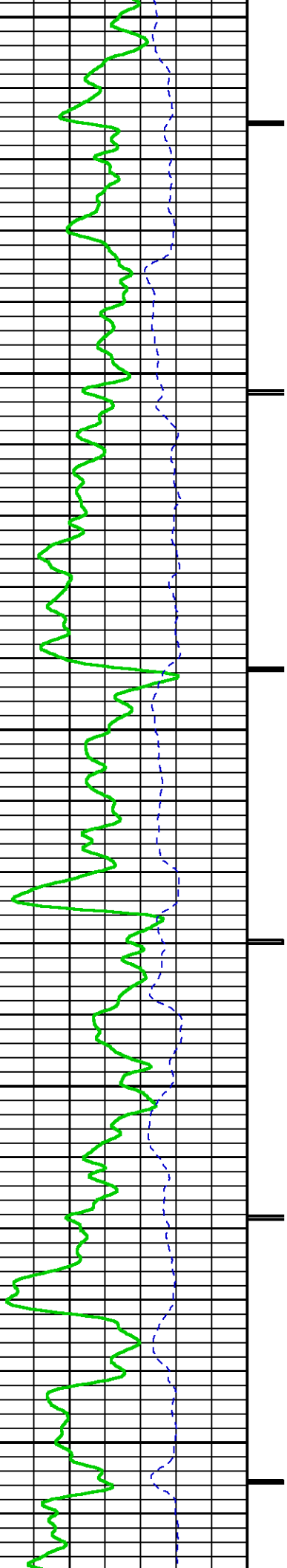


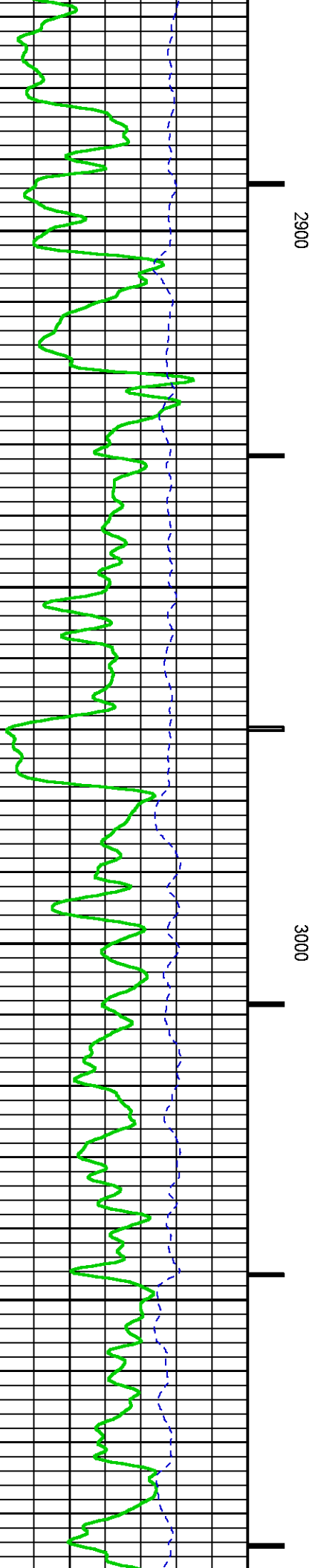
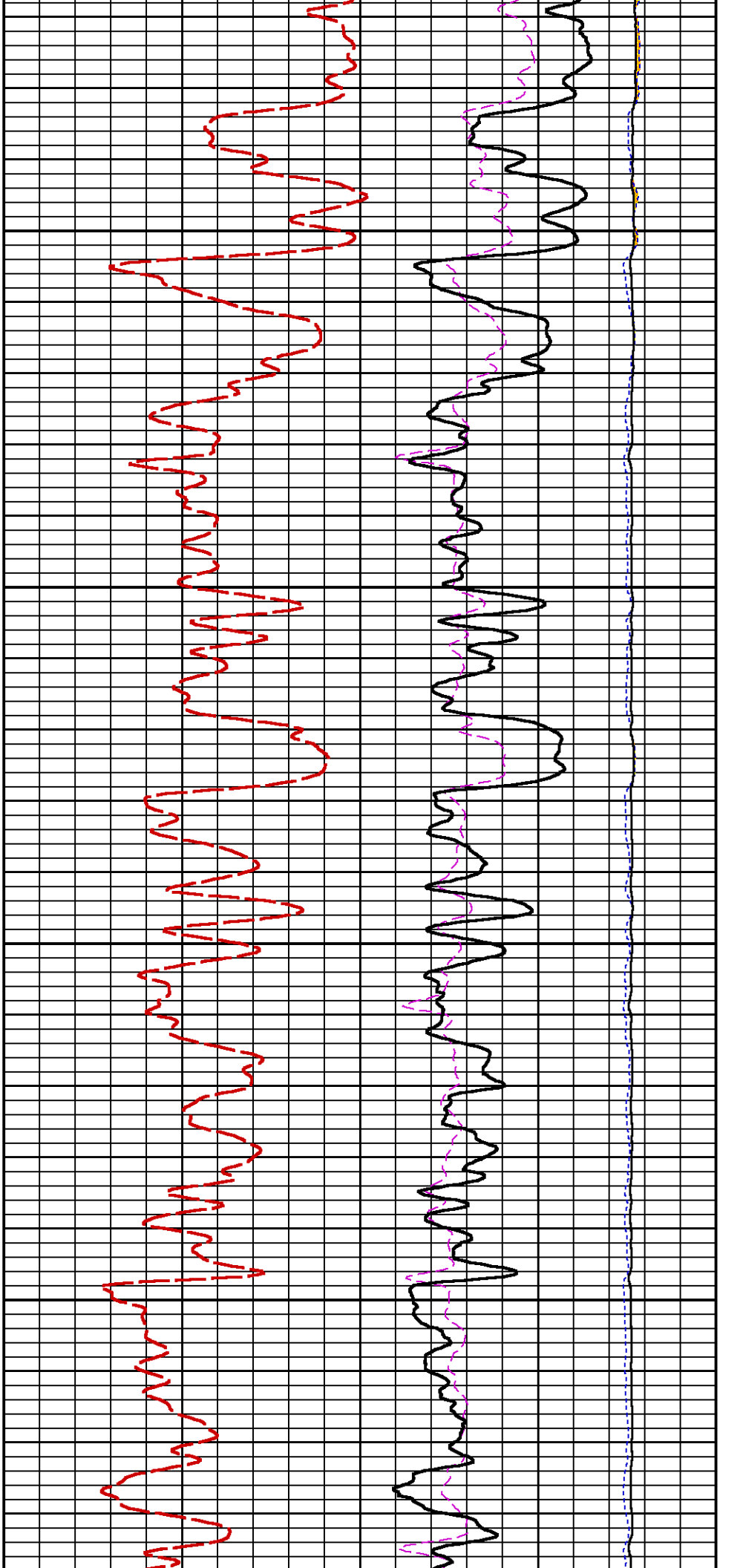


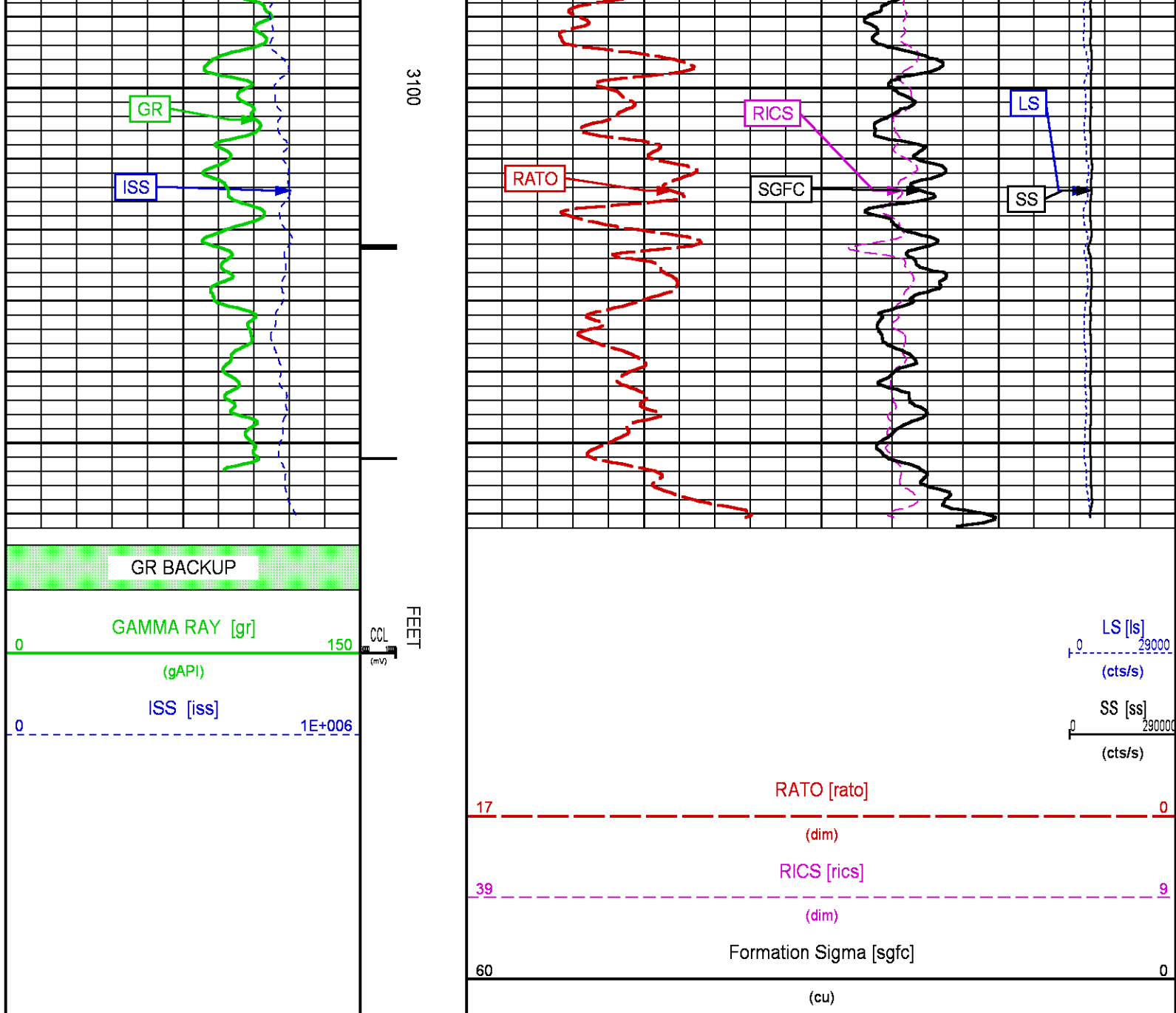


2700

2800







## MAIN LOG WILLIAMS FORK

ECLIPS 7.0w PC-ECLIPS General Release Rel 7.0w Fri Jun 09 11:02:06 Central Daylight Time 2017  
Patches: 2

Plotted: Mon Nov 20 17:51:38 2017

### PARAMETER AND FILTER SUMMARY REPORT

FILE: C:\dat1a\LARAMIE\_BRUTON\_30\_05Eip353h02.prm  
LOGGING MODE: DEPTH DIRECTION: UP  
TOP DEPTH: 4346.000 ft BOTTOM DEPTH: 7995.250 ft

### SYMMETRIC FILTER

| MEASUREMENT TYPE | PARAMETER | VALUE | UNITS | INTERVAL (ft) |
|------------------|-----------|-------|-------|---------------|
|------------------|-----------|-------|-------|---------------|

| 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     | 8.50       | in    | "             | "      |
|                  | LARGEST CASING OD | 7.00       | in    | "             | "      |
|                  | MATRIX            | SANDSTONE  |       | "             | "      |

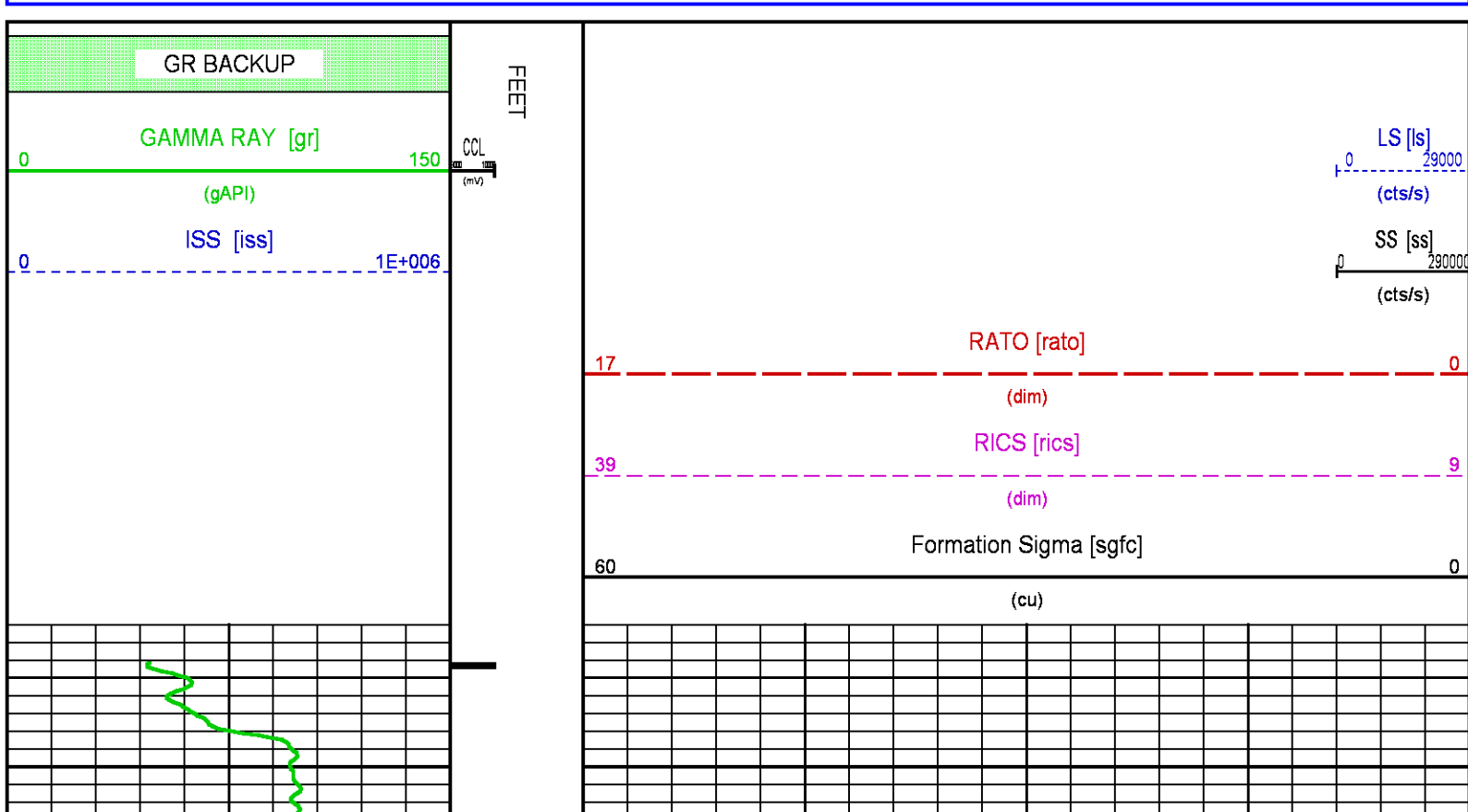
## CURVE DESCRIPTION REPORT

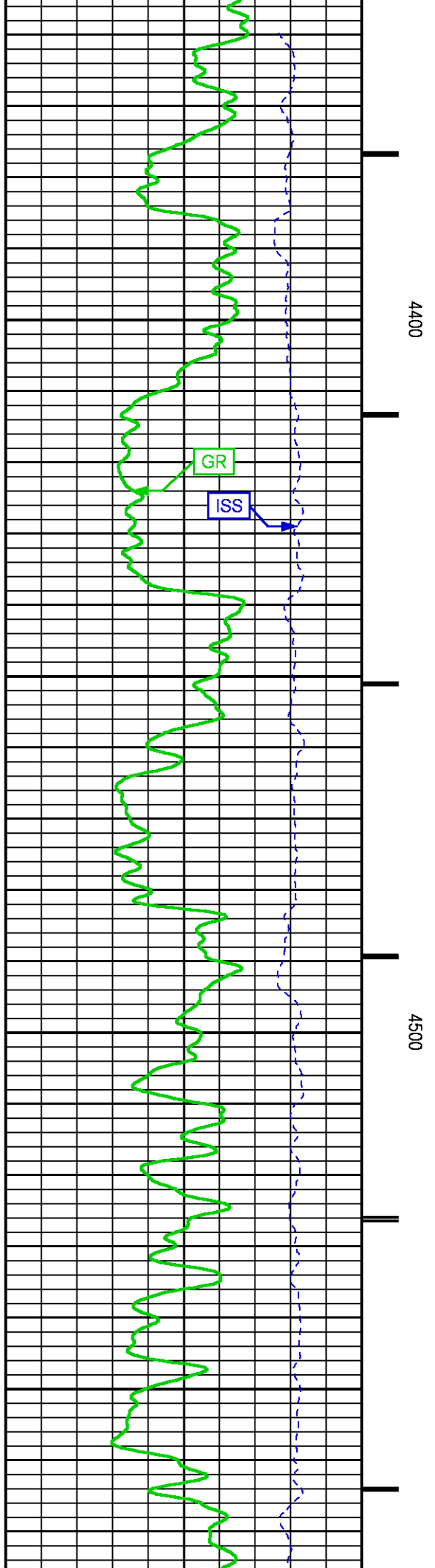
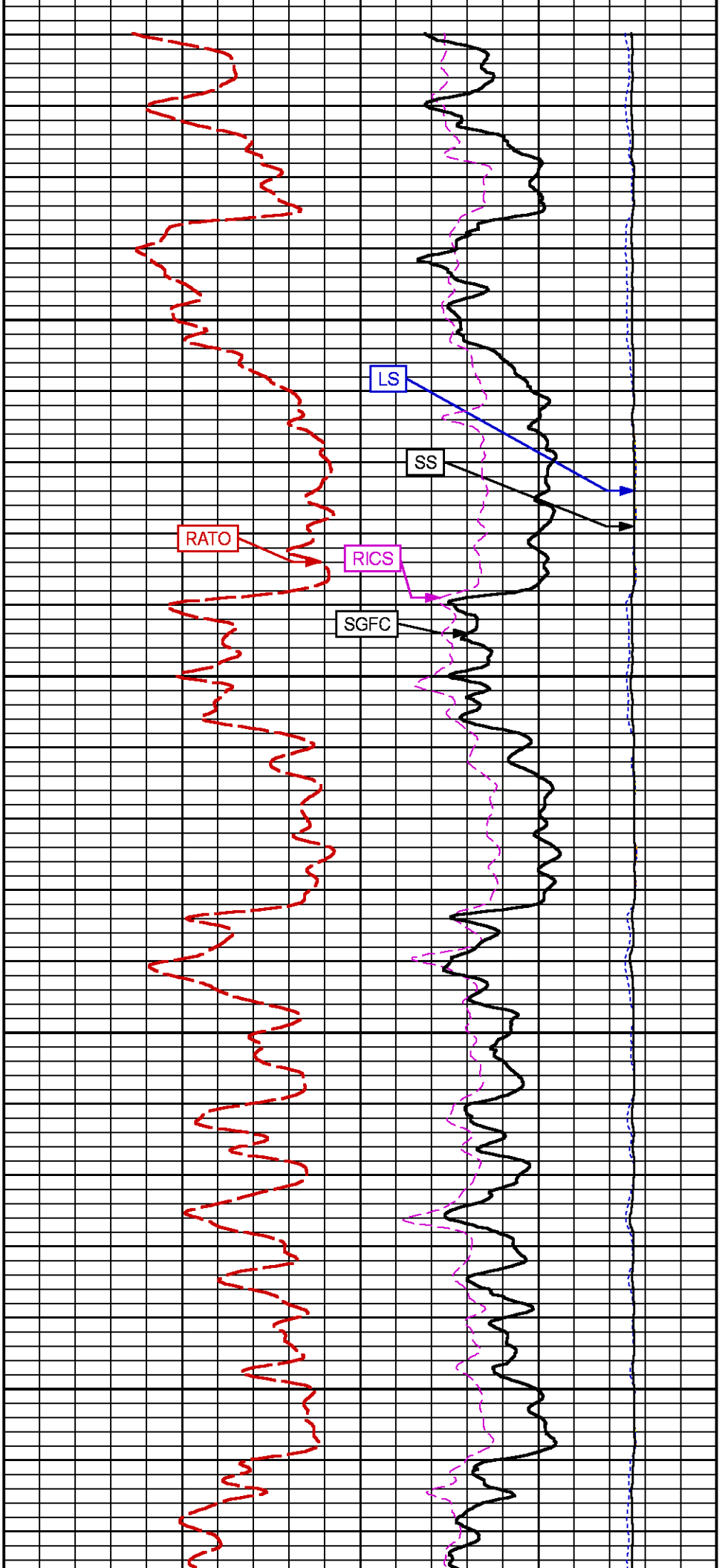
| CURVE NAME | CREATION DATE | CURVE DESCRIPTION   |
|------------|---------------|---|
| F1:CCL     | N/A           | CASING COLLAR LOCATOR                                       |
| F1:GR      | N/A           | GAMMA RAY   |
| F1:ISS     | N/A           | INELASTIC SHORT SPACE COUNT RATE                            |
| F1:LS      | N/A           | LONG SPACE COUNT RATE                                       |
| F1:RATO    | N/A           | SHORT/LONG SPACE COUNT RATE RATIO                           |
| F1:RICS    | N/A           | SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS) |
| F1:SGFC    | N/A           | BOREHOLE AND DIFFUSION CORRECTED SIGMA                      |
| F1:SS      | N/A           | SHORT SPACE COUNT RATE                                      |

## CURVE MEASURE POINT OFFSET

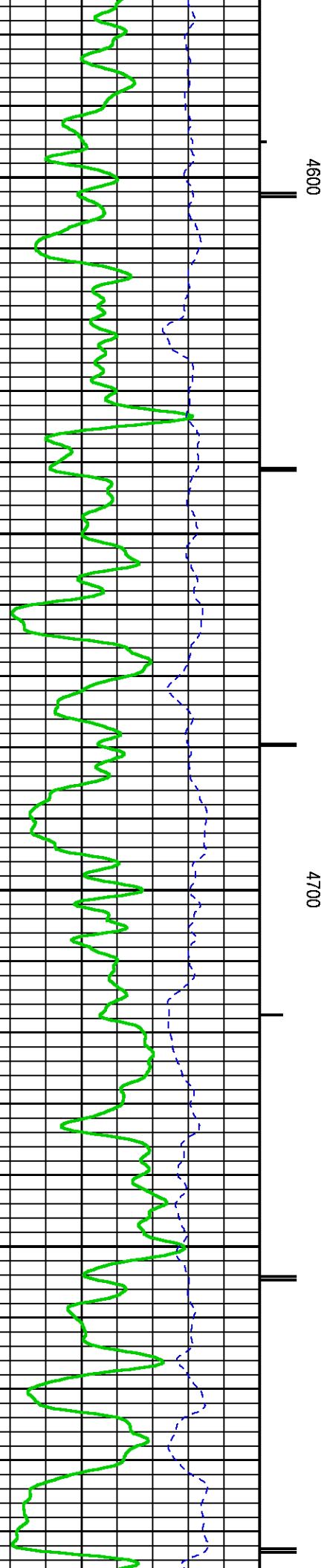
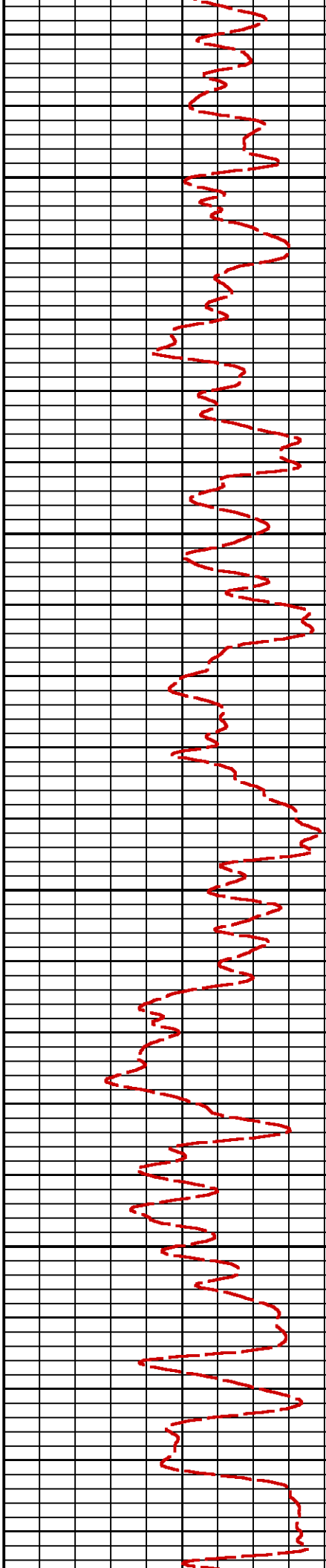
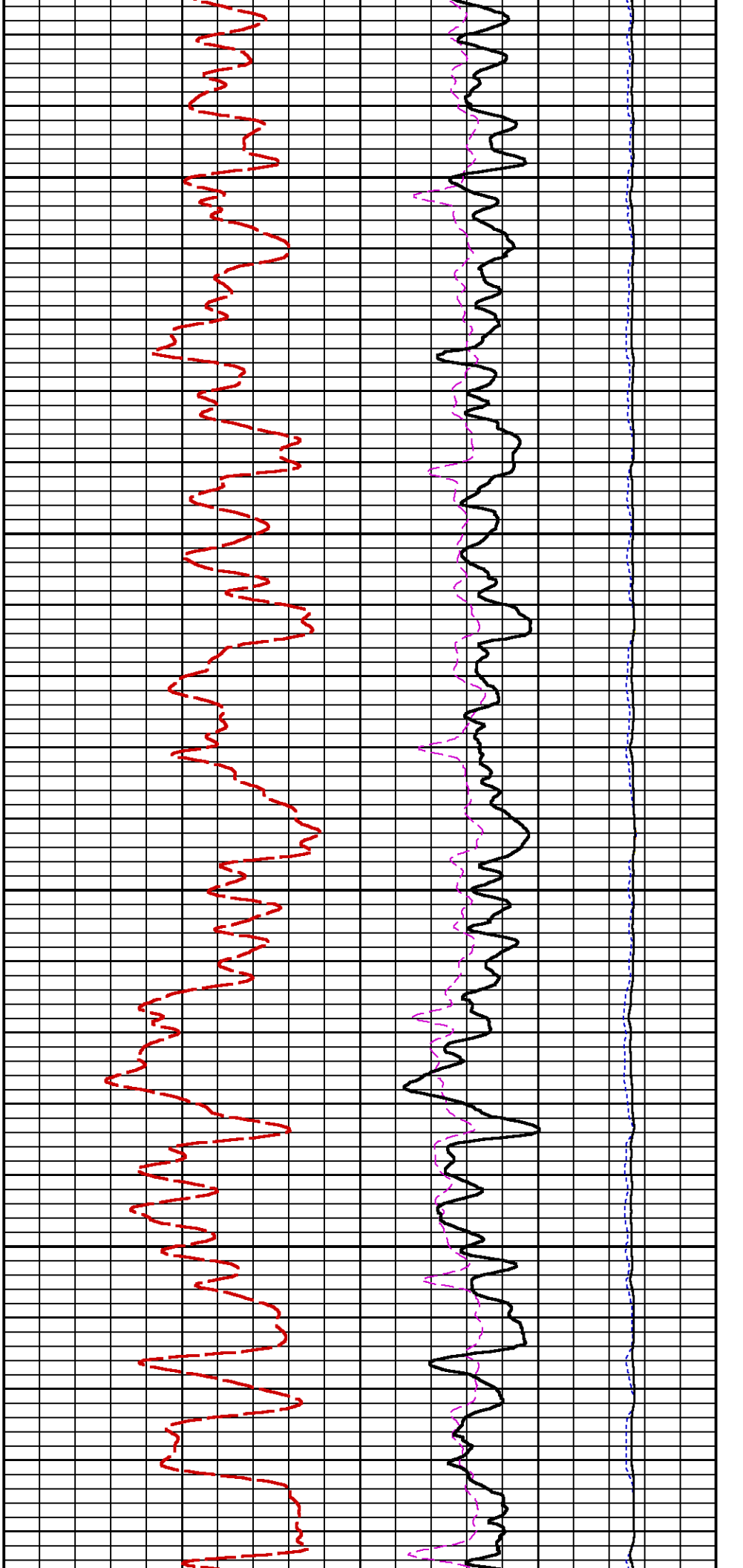
| CURVE | OFFSET (ft) | CURVE | OFFSET (ft) | CURVE | OFFSET (ft) | CURVE | OFFSET (ft) |
|-------|-------------|-------|-------------|-------|-------------|-------|-------------|
| CCL   | -22.50      | ISS   | -9.50       | RATO  | -9.50       | SGFC  | -9.50       |
| GR    | -19.50      | LS    | -9.50       | RICS  | -9.50       | SS    | -9.50       |

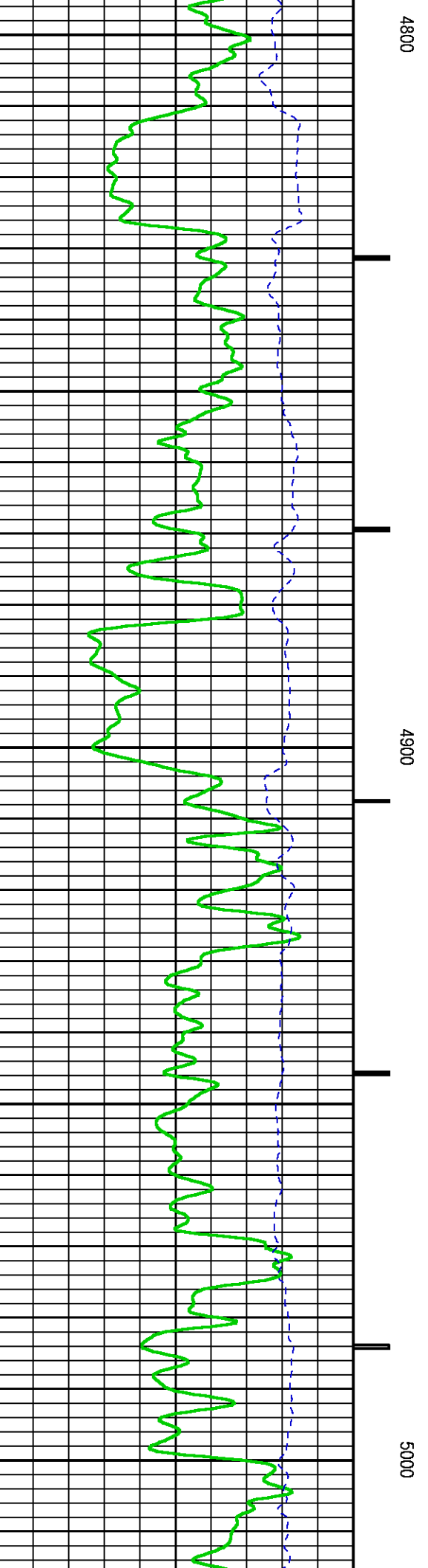
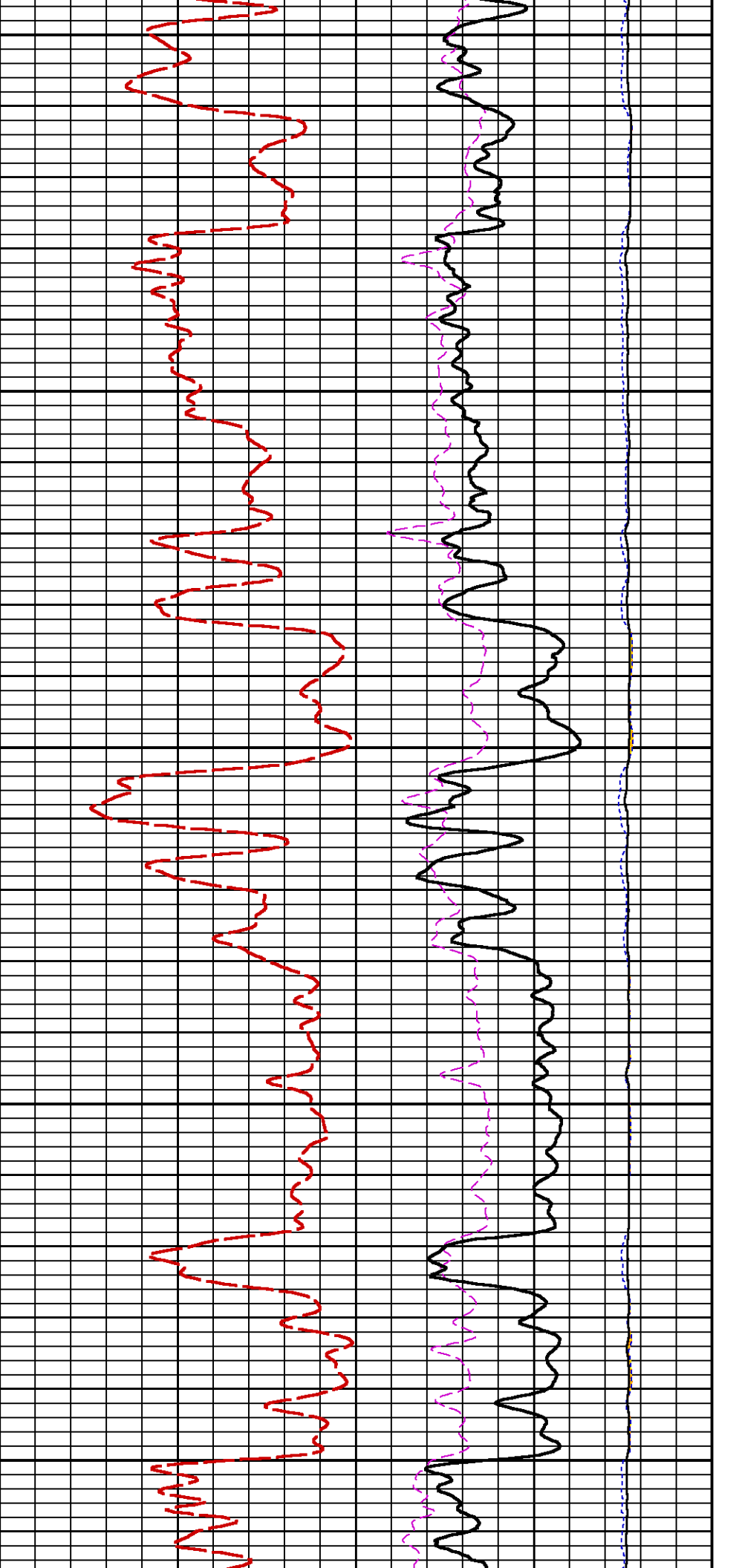
|               |  |
|---------------|--|
| Presentation  | : BHIH2LZZF2:C:\dat1a\LARAMIE_BRUTON_30_05E\ LARAMIE_RPM_PNC3D+RPM_MN_WF_05E.fvpdf [5"/100' Scale] |
| Plot Interval | : 4334 - 7999 Feet   |
| Data File 1   | : F1 : BHIH2LZZF2:C:\dat1a\LARAMIE_BRUTON_30_05E\RPM_MN_WF_05E.xtf                                 |
| Created On    | : N/A  |
| Company       | : LARAMIE ENERGY LLC   |
| Well          | : BRUTON 30-05E  |
| Field         | : VEGA   |
| File Interval | : 4333.25 - 8004.5 Feet  |
| OCT           | : p353h  |

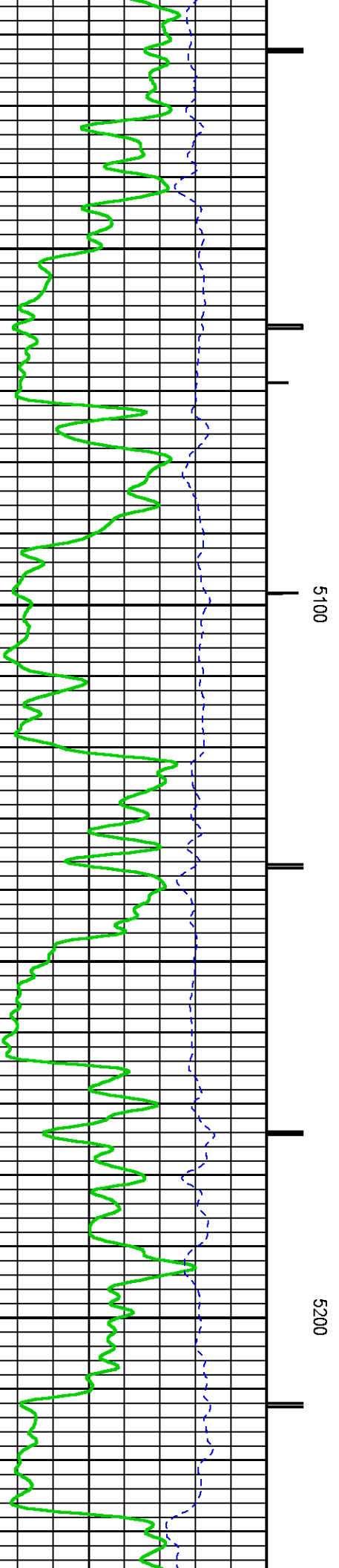
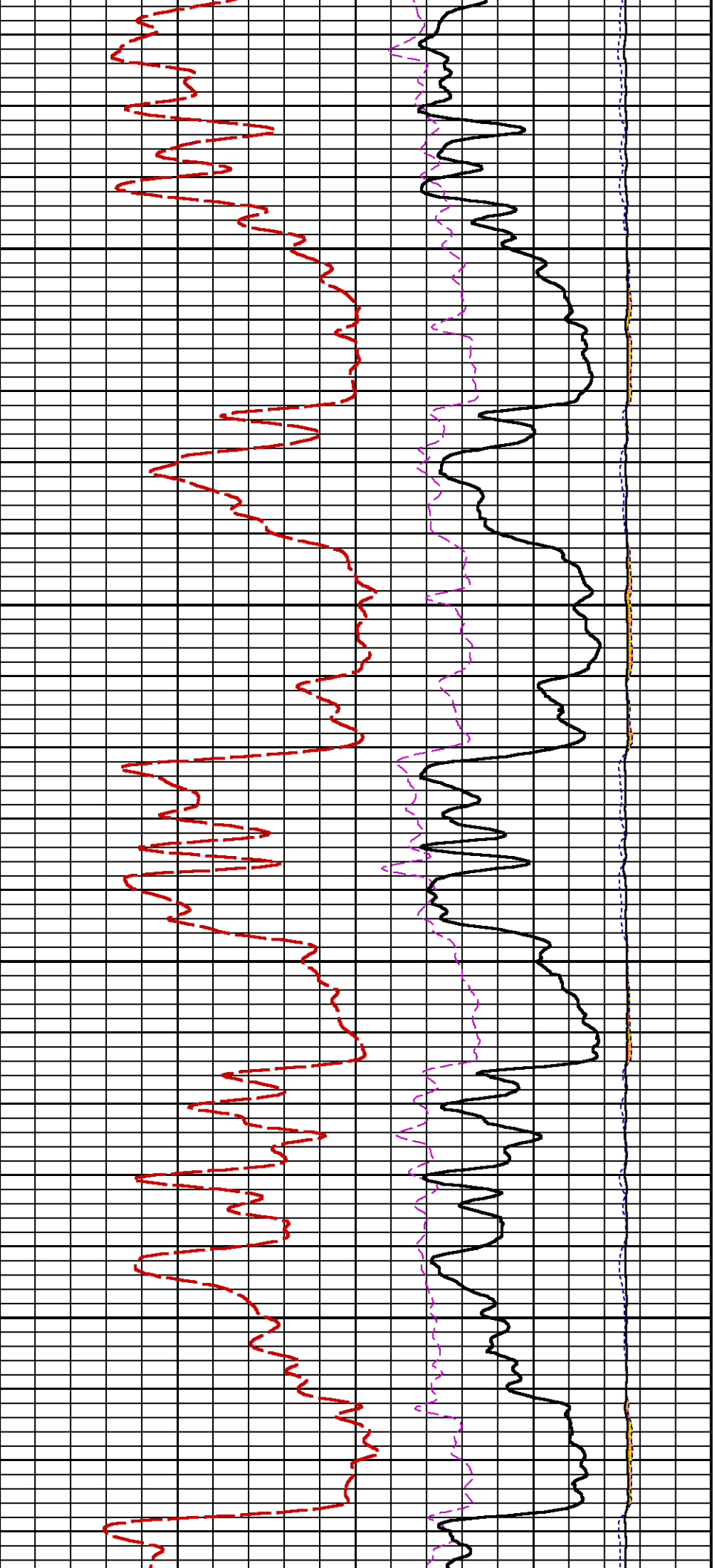


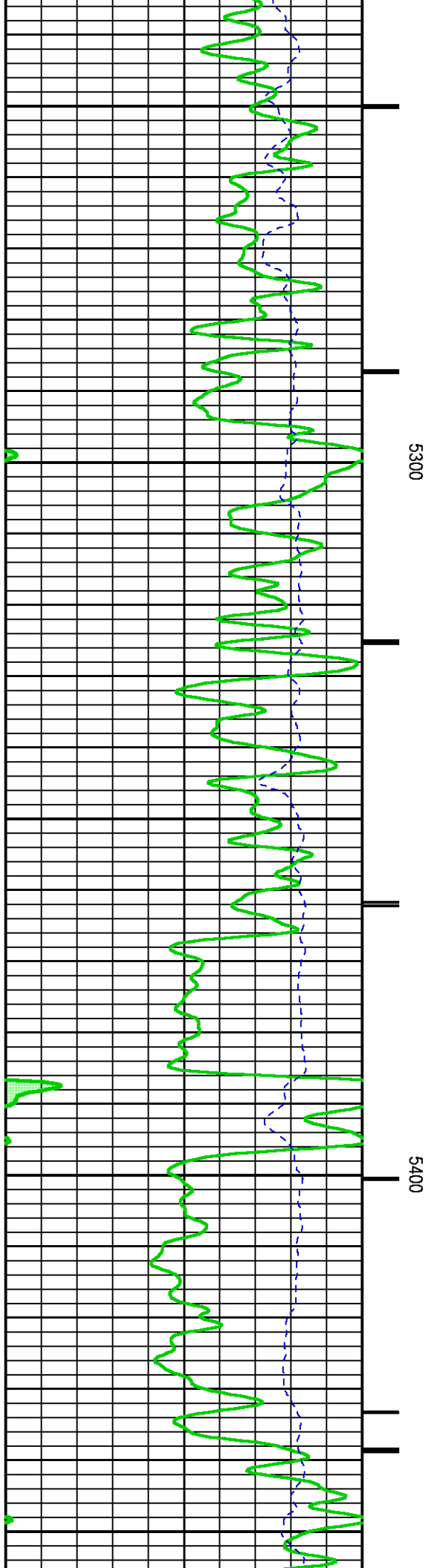
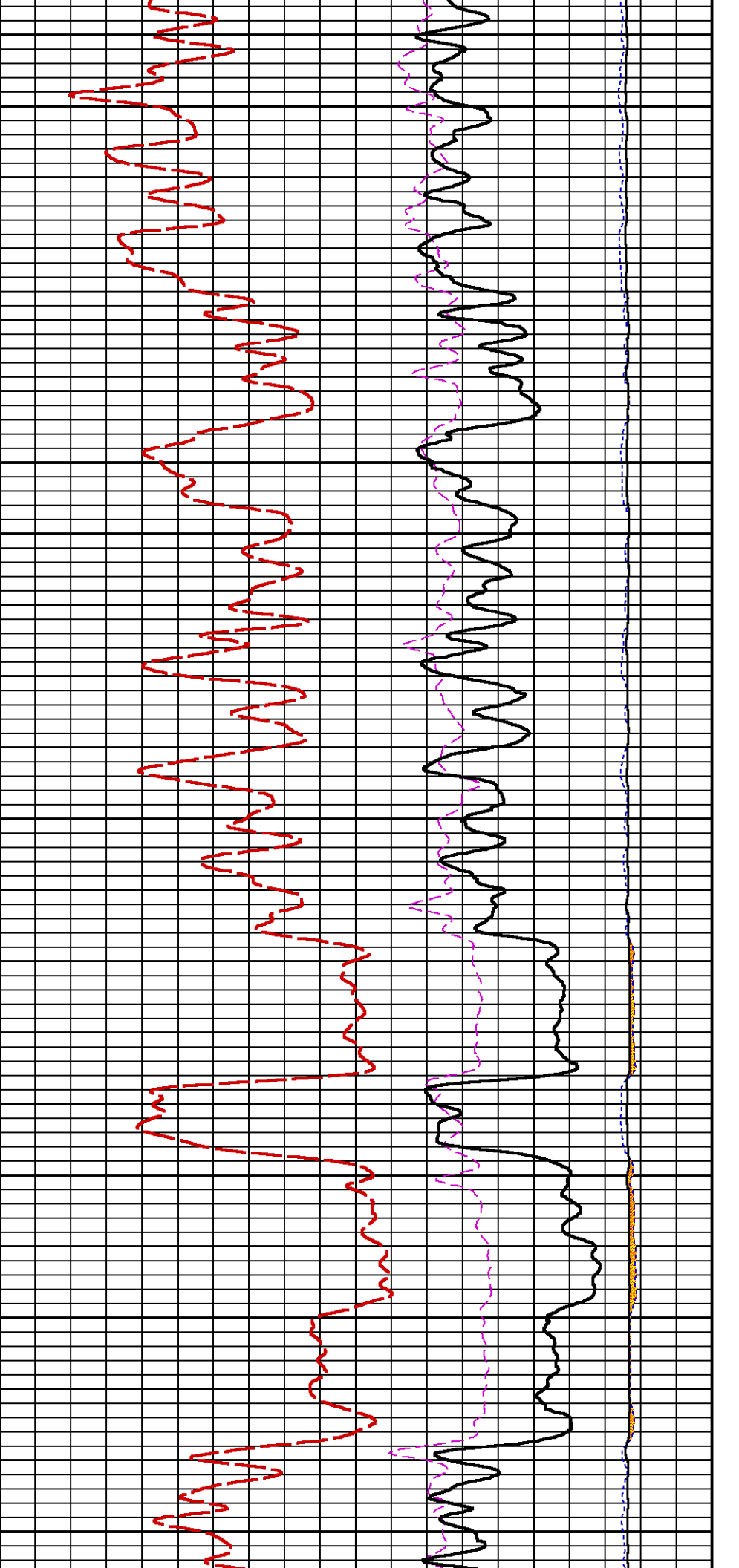


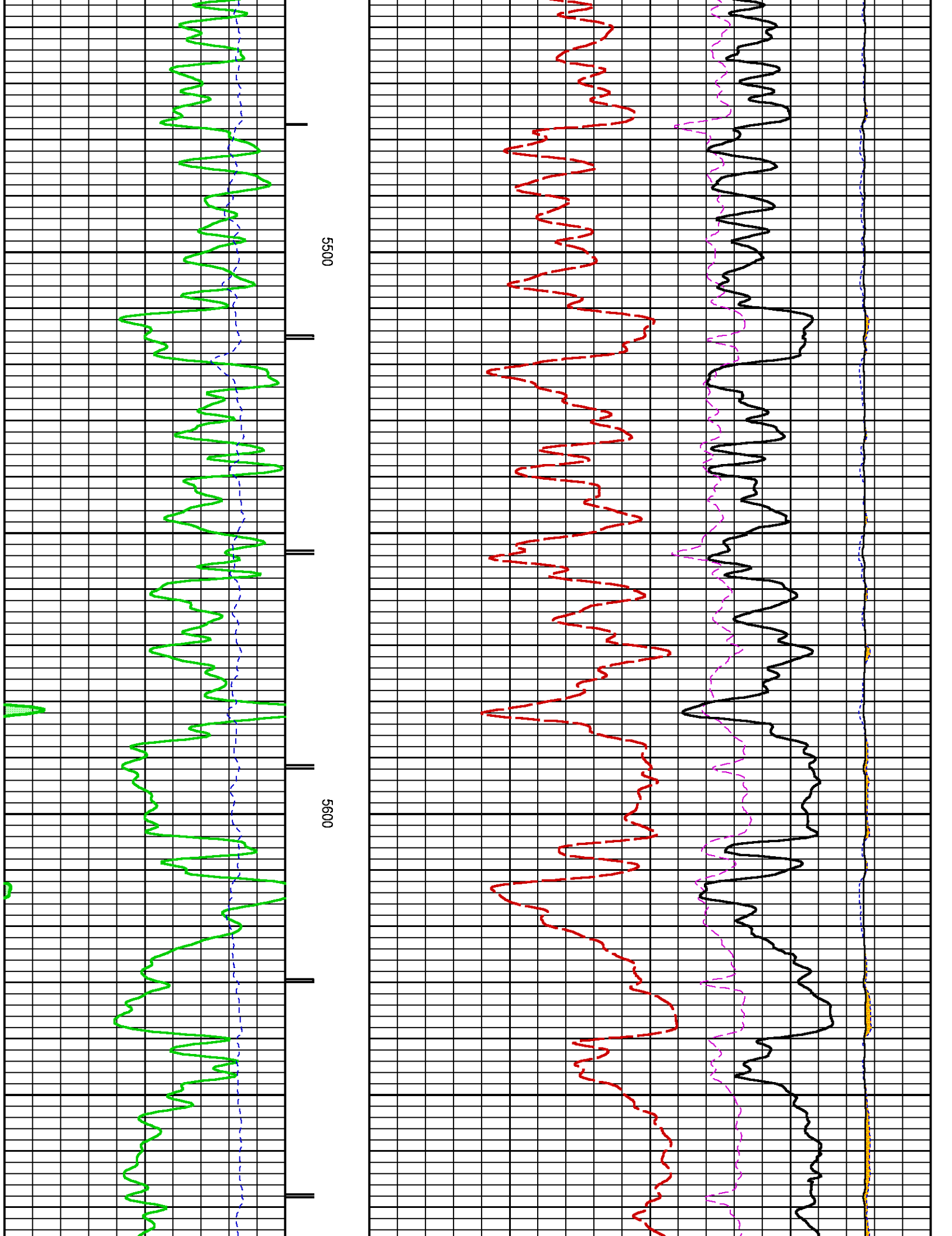


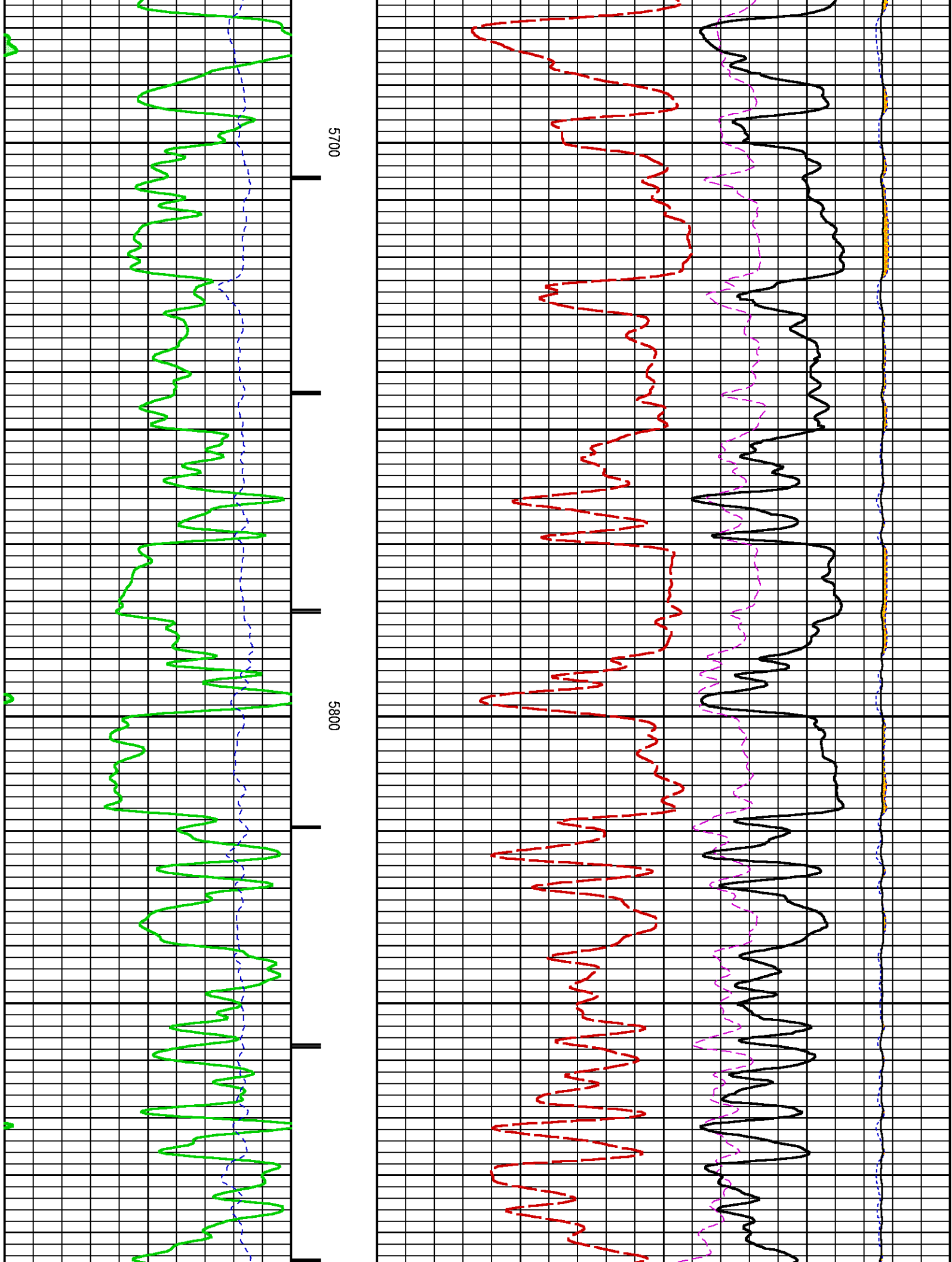


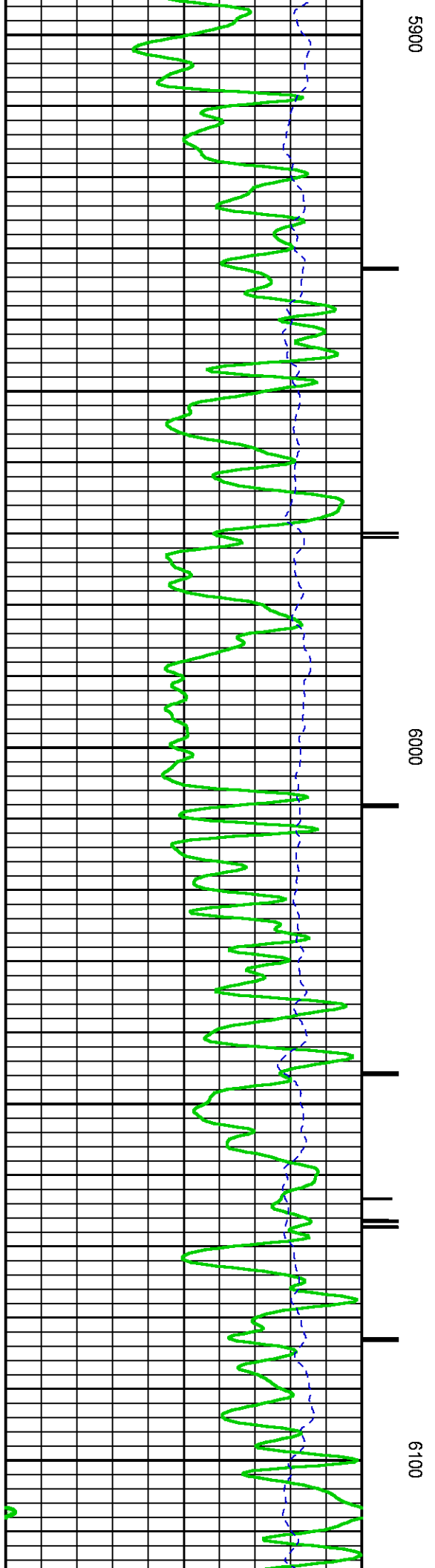
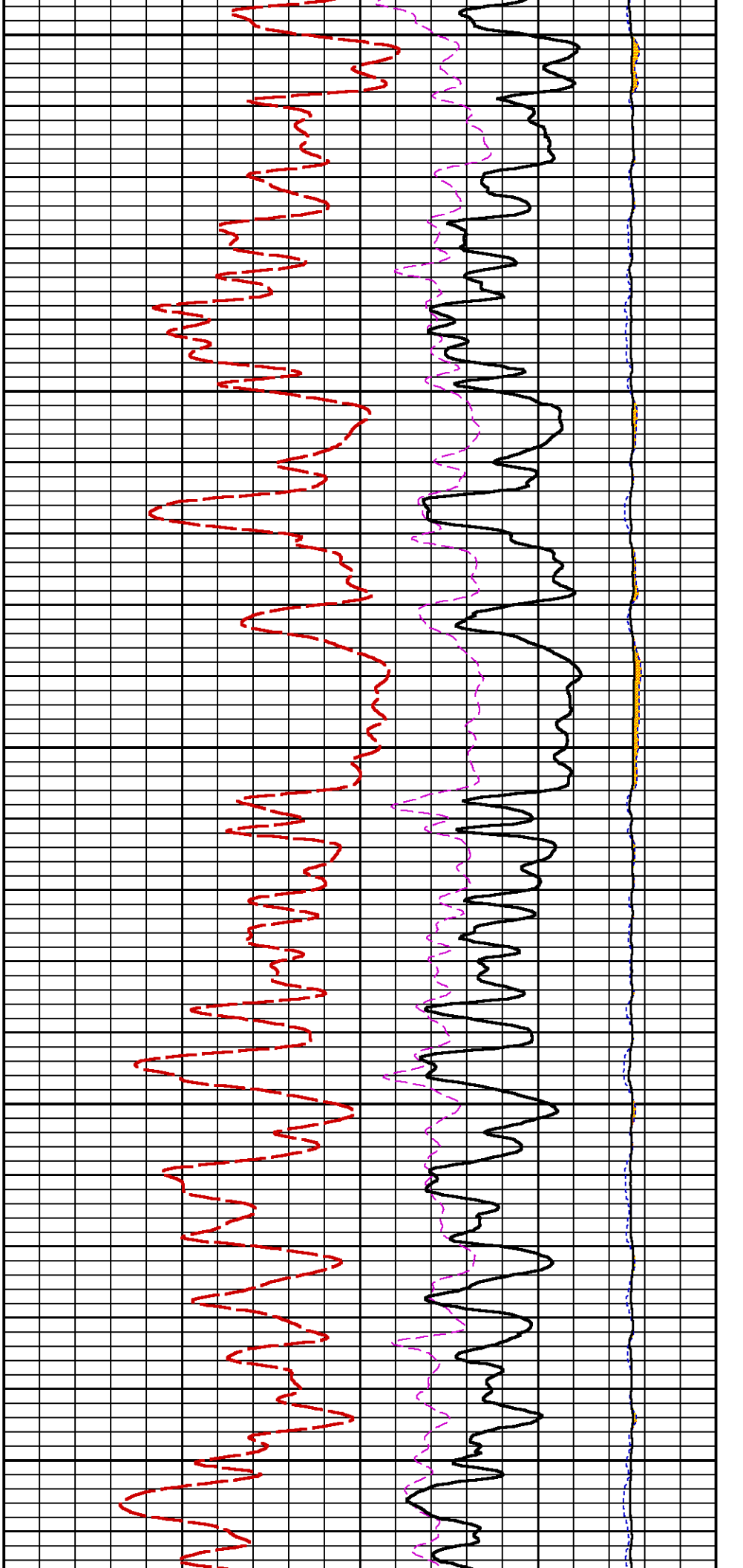


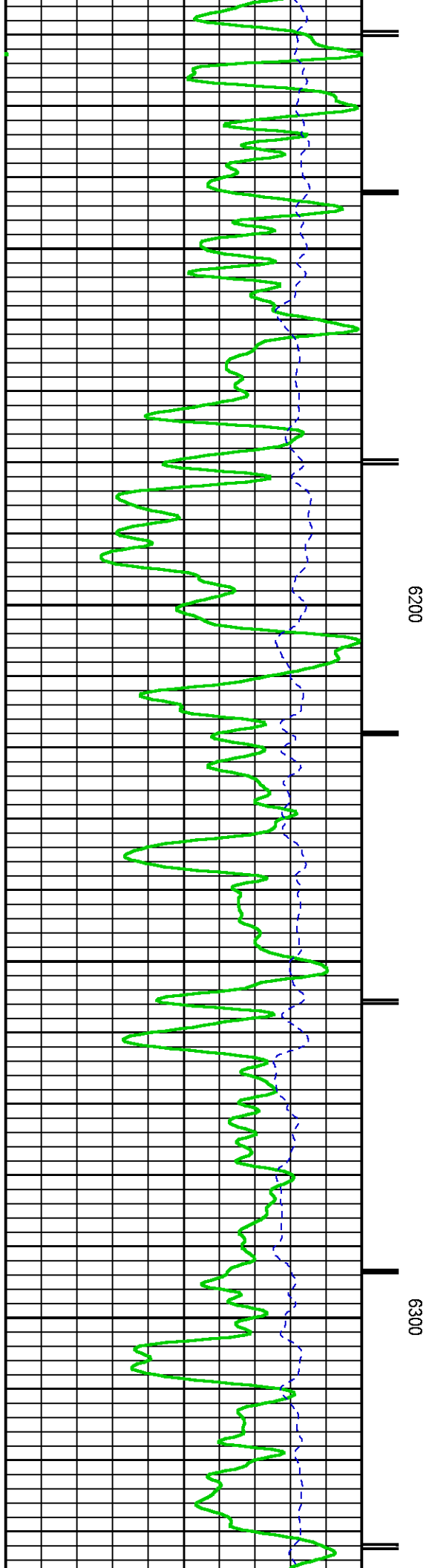
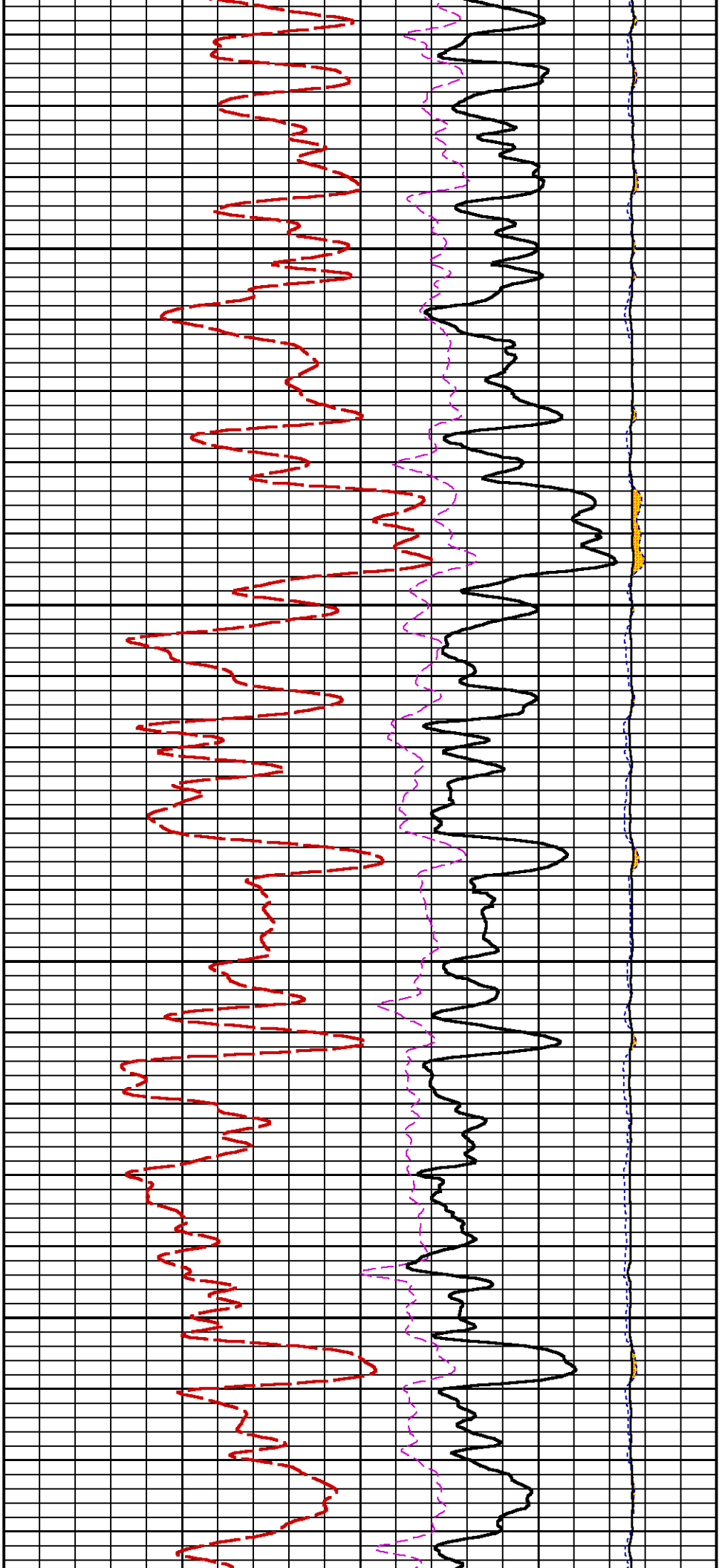




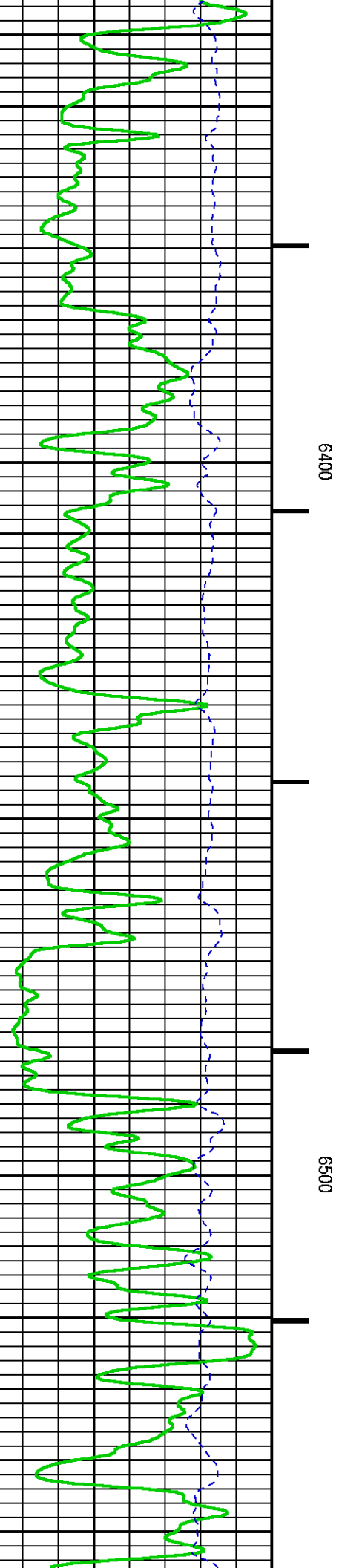
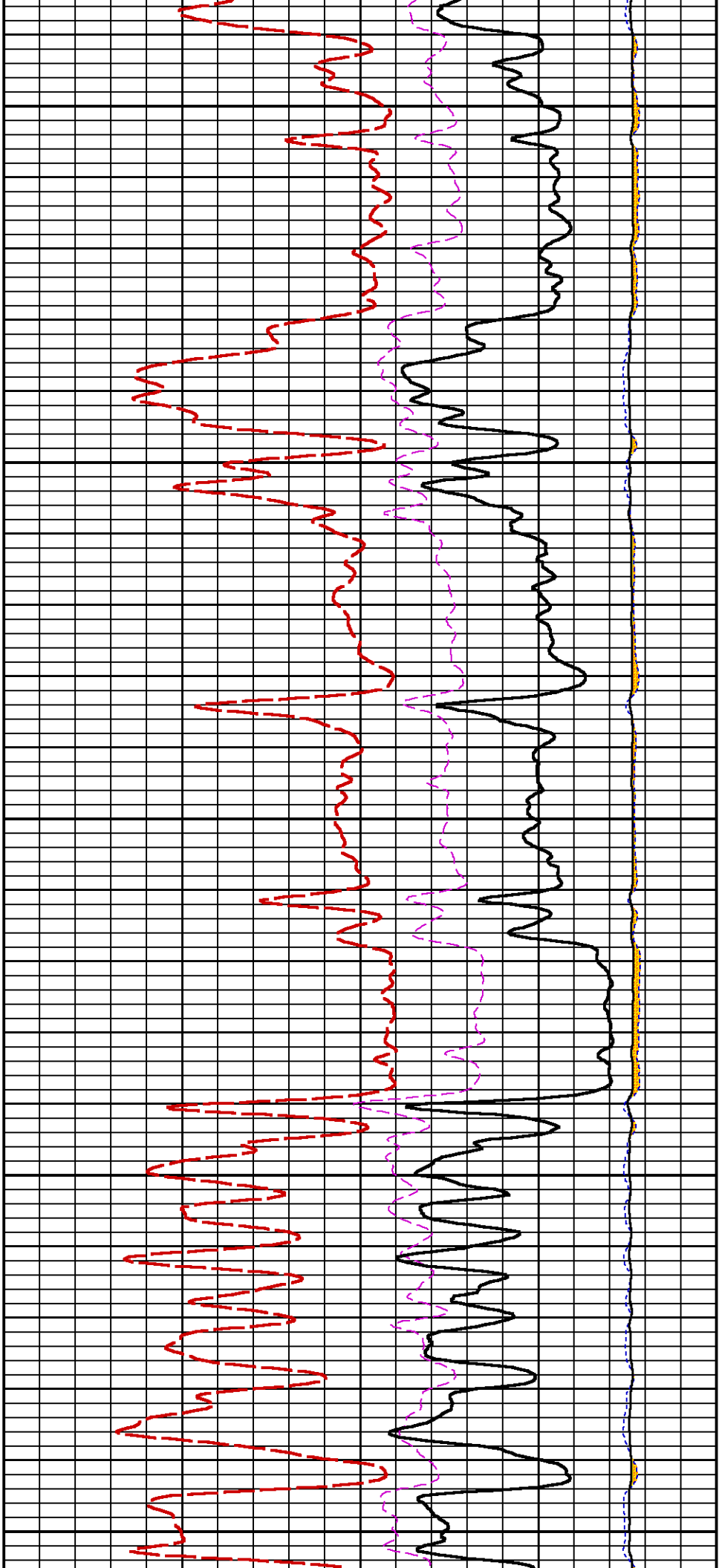


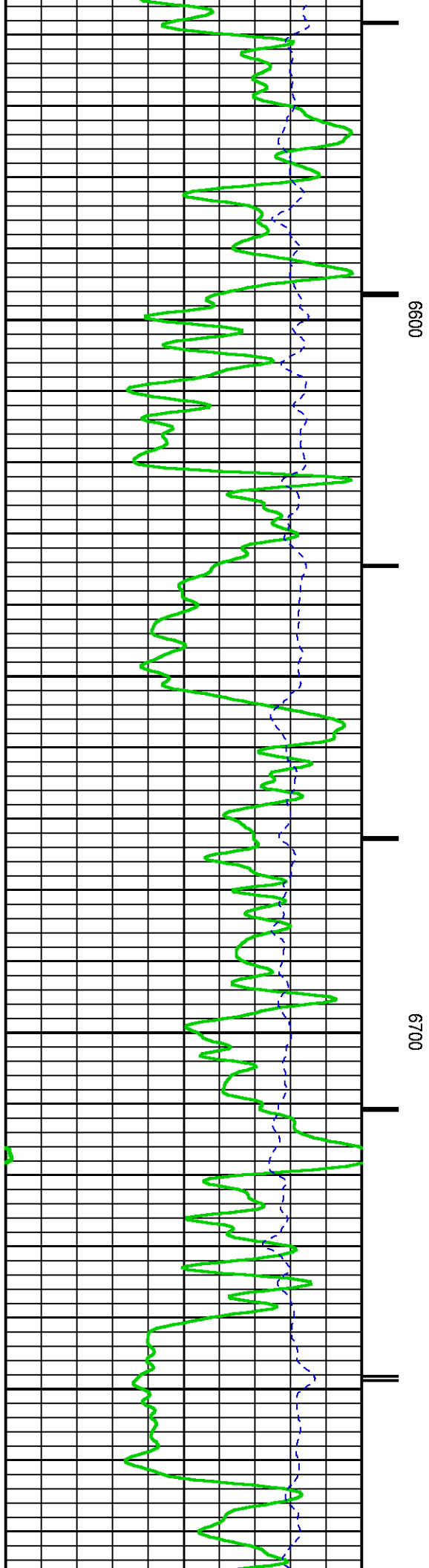
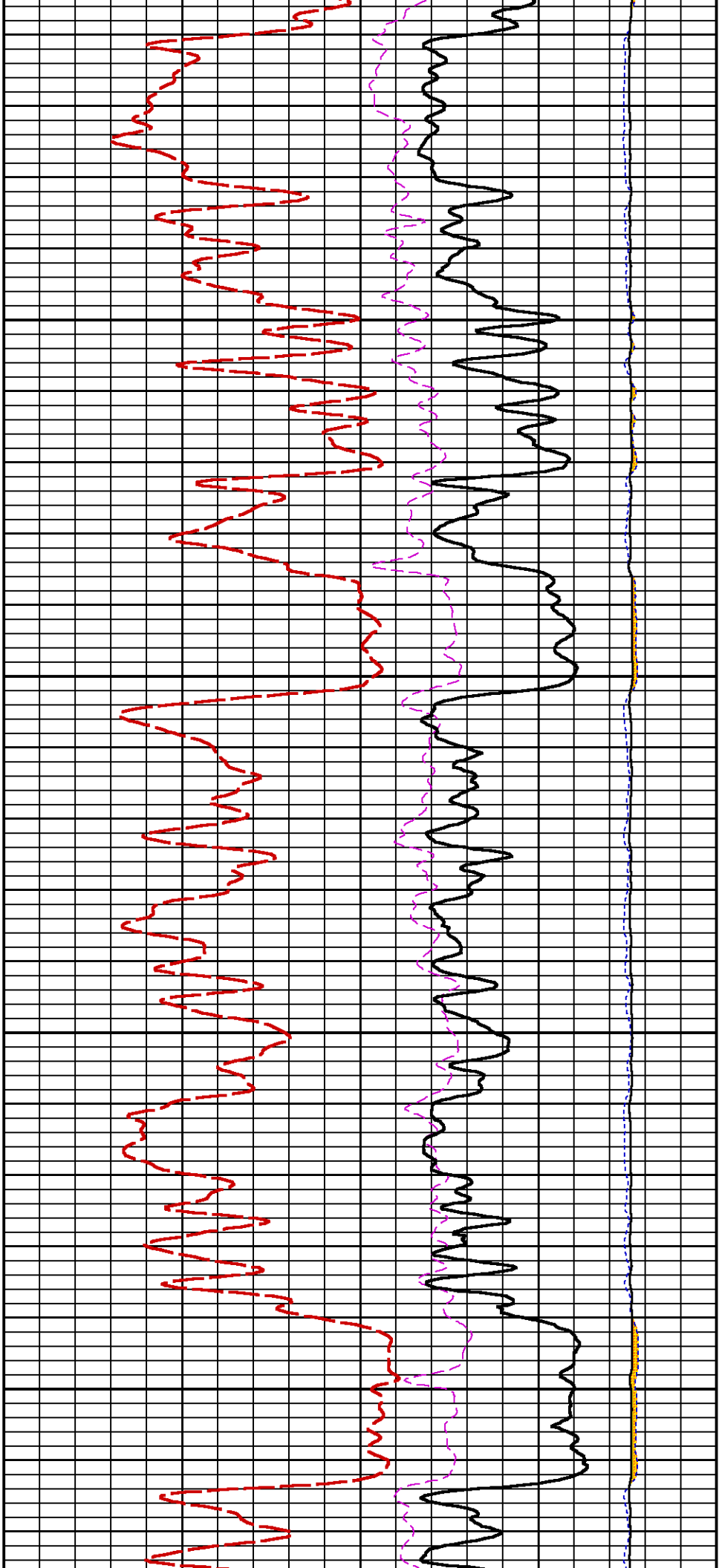


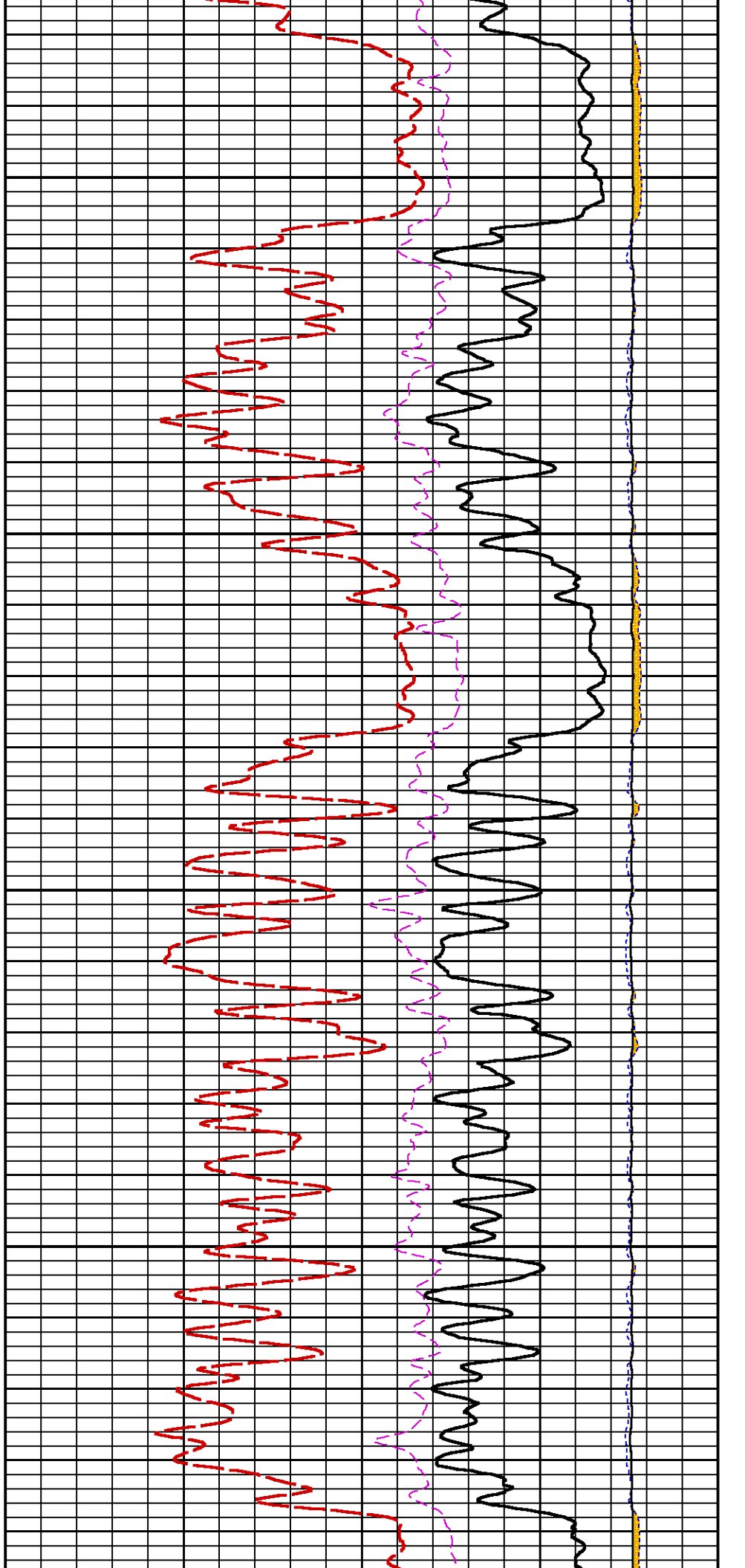
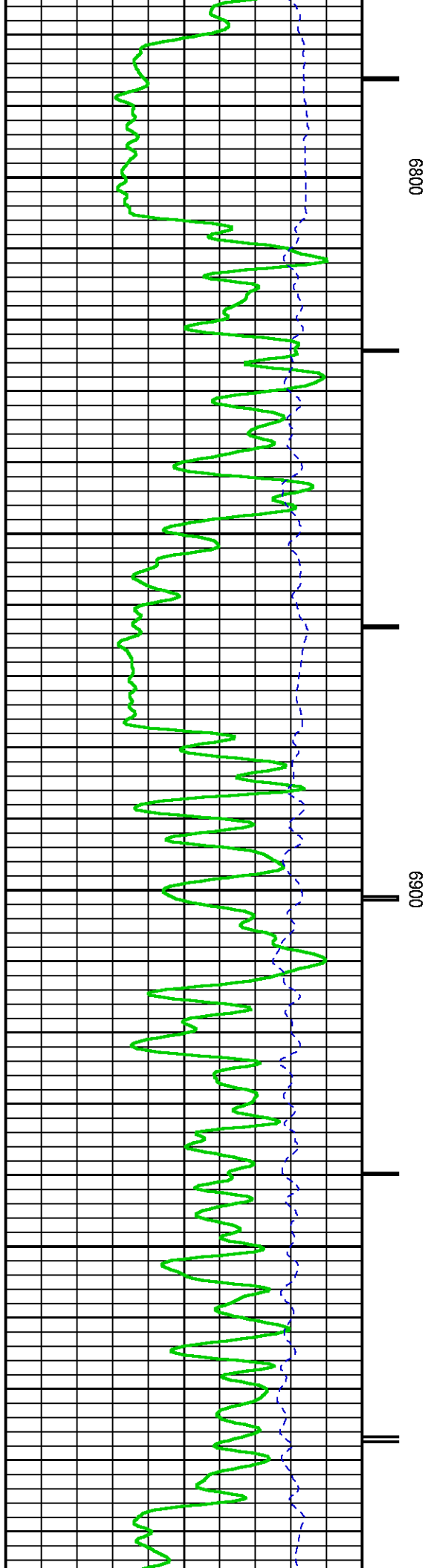


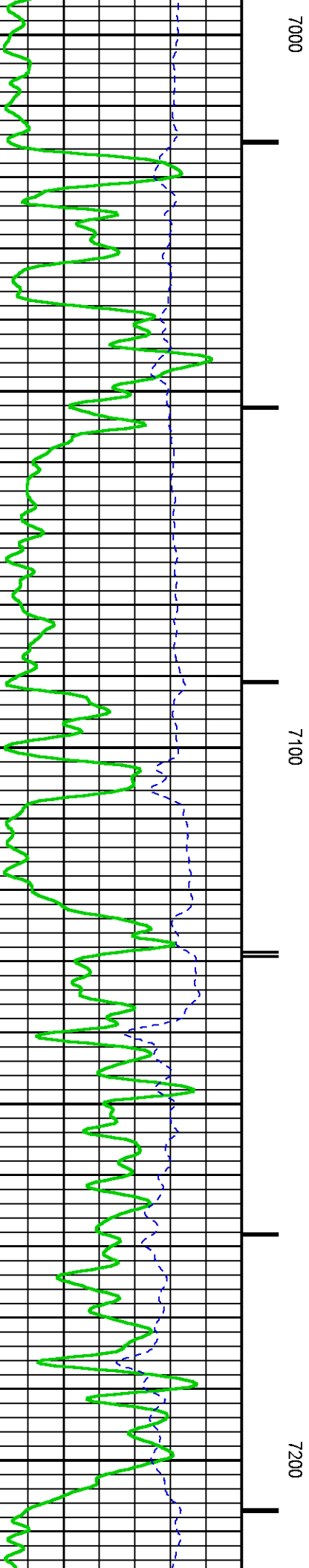
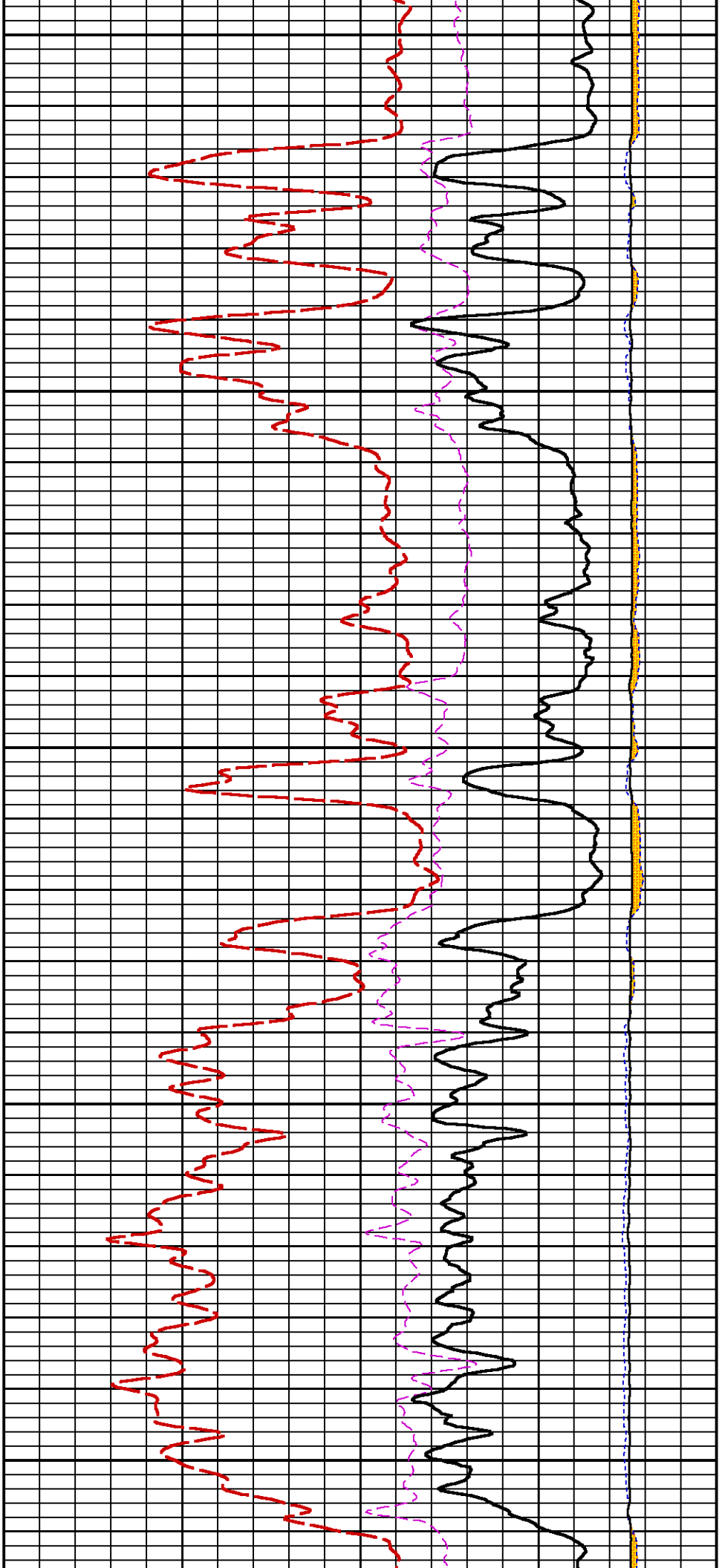


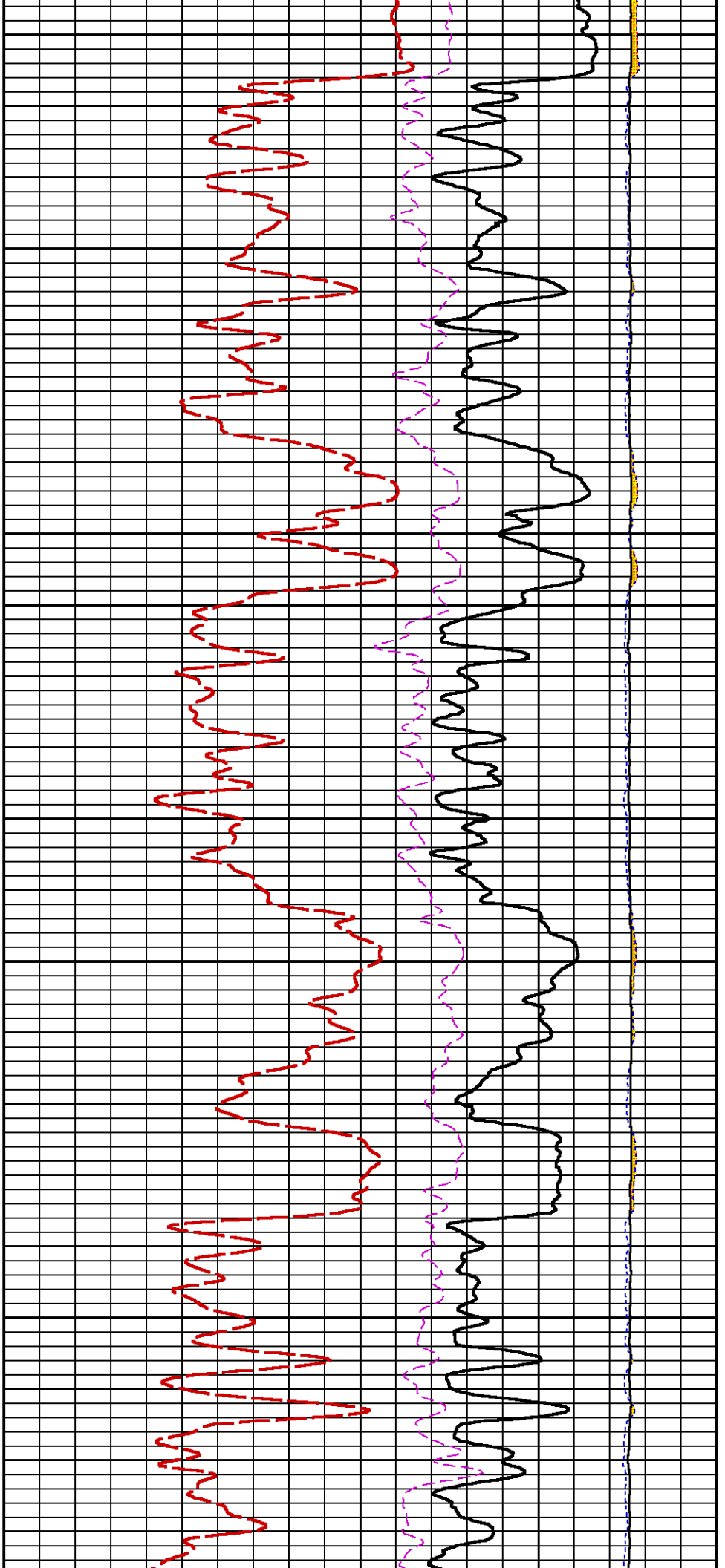






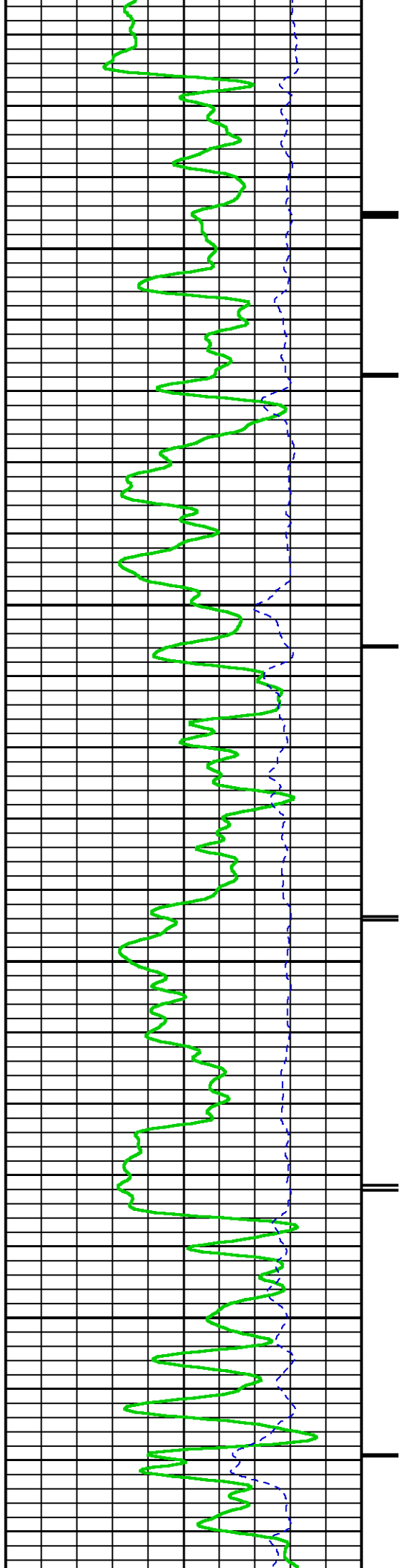


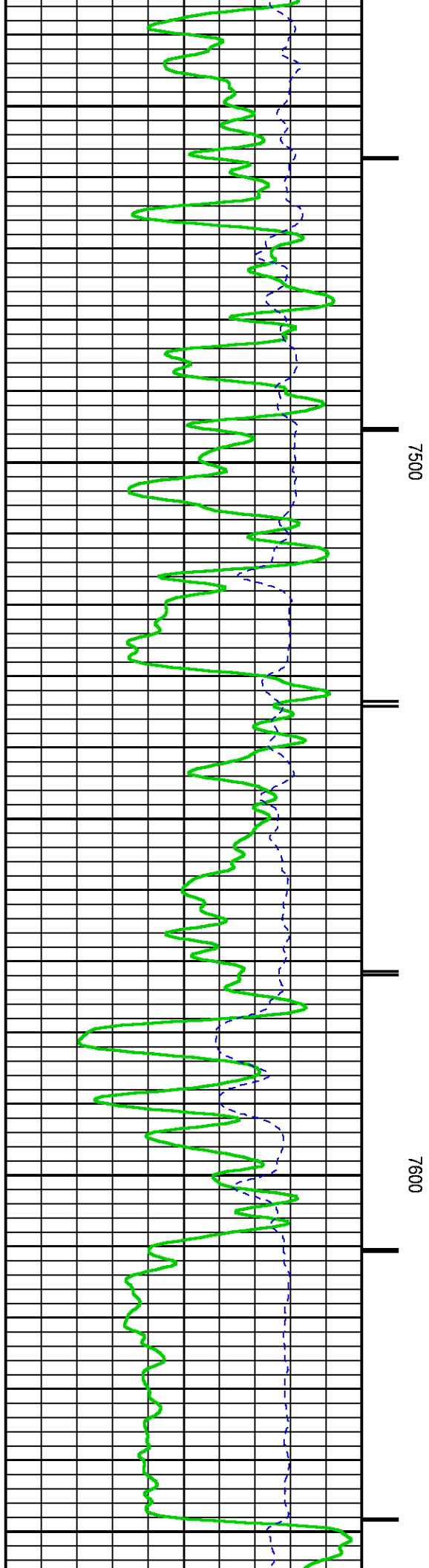
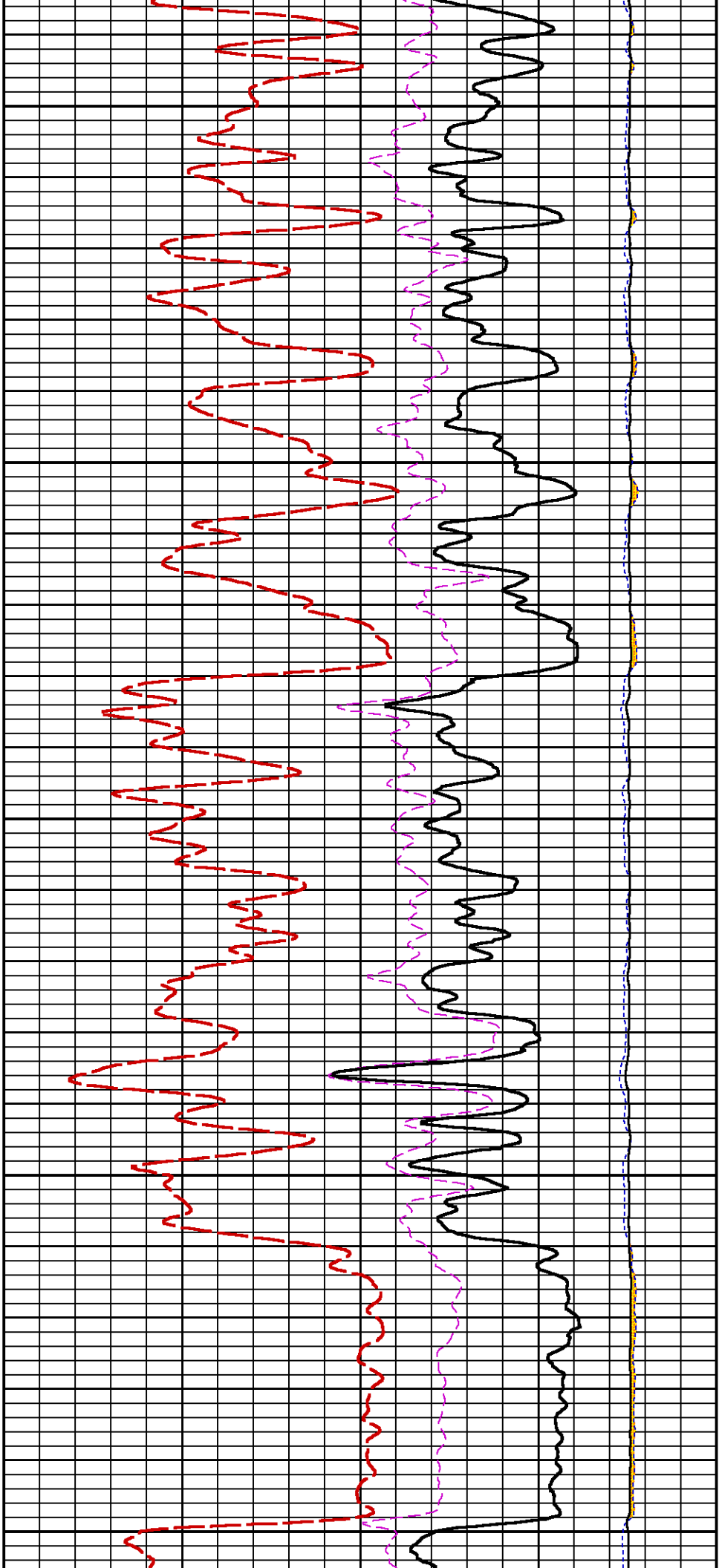


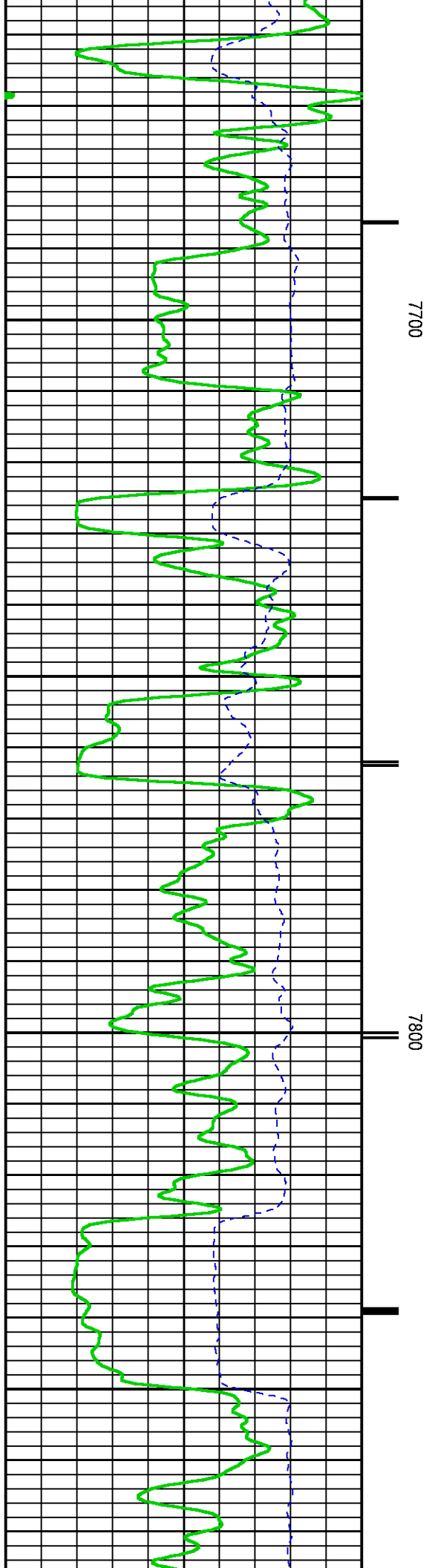
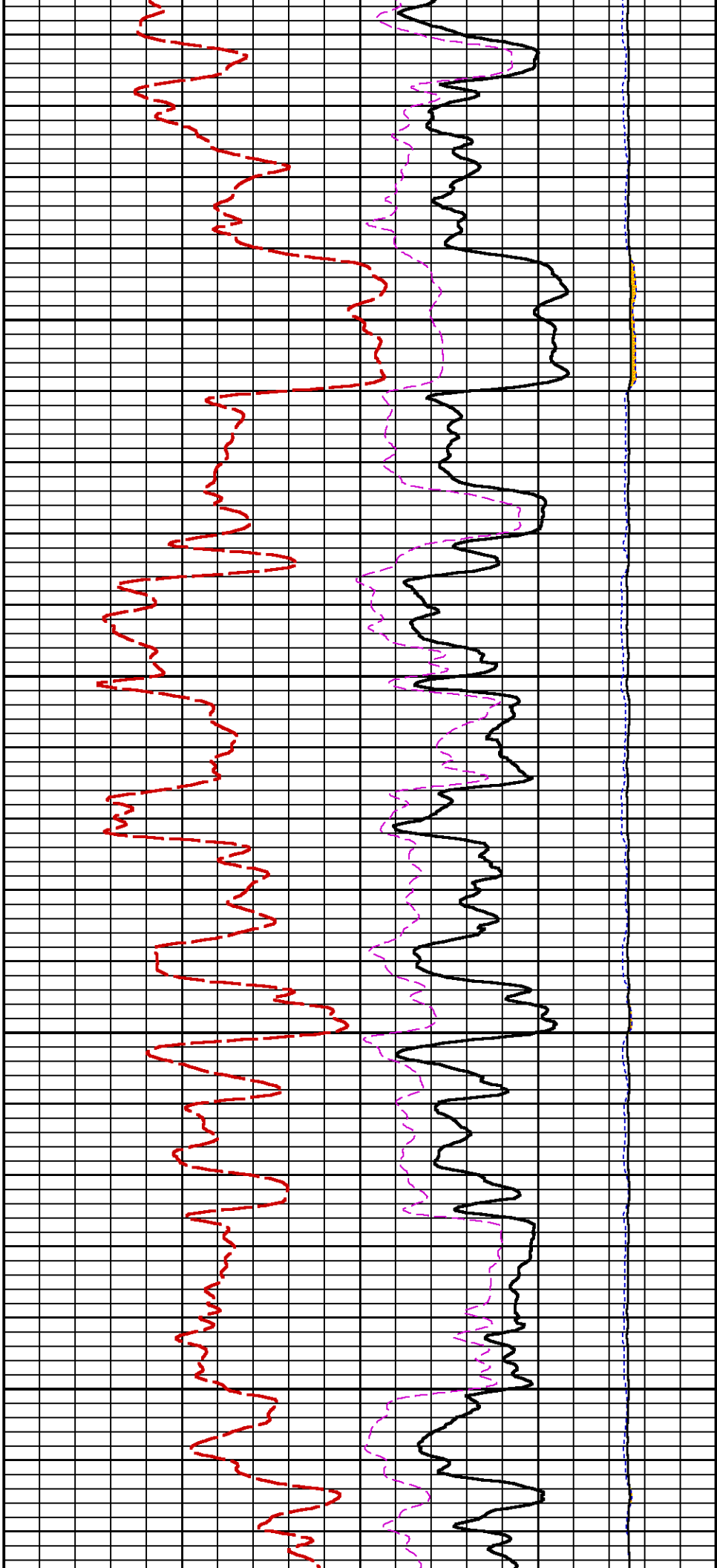


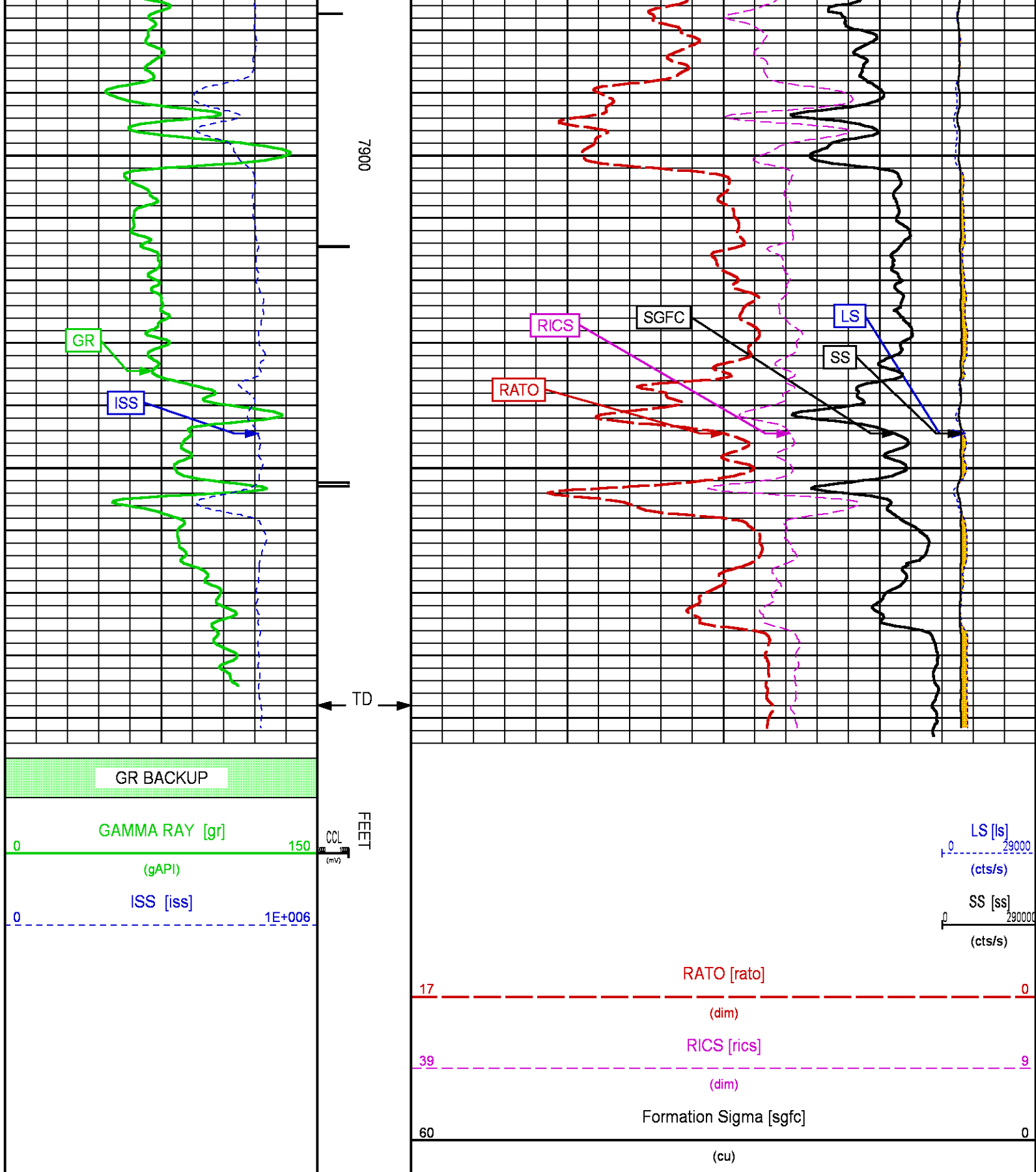
7300

7400









REPEAT LOG



Plotted: Mon Nov 20 13:54:20 2017

PARAMETER AND FILTER SUMMARY REPORT

|               |  |               |             |  |
|---------------|--|---------------|-------------|--|
| FILE:         | C:\dat1a\LARAMIE_BRUTON_30_05E\p353h01.prm |               |             |  |
| LOGGING MODE: | DEPTH                                      | DIRECTION:    | UP          |  |
| TOP DEPTH:    | 5174.750 ft                                | BOTTOM DEPTH: | 5397.000 ft |  |

| SYMMETRIC FILTER |            |            |       |               |
|------------------|------------|------------|-------|---------------|
| MEASUREMENT TYPE | PARAMETER  | VALUE      | UNITS | INTERVAL (ft) |
| GR               | FILTER ( ) | medium (1) |       | TOP<br>BOTTOM |

| RPM PROCESSING   |                   |            |       |               |
|------------------|-------------------|------------|-------|---------------|
| MEASUREMENT TYPE | PARAMETER         | VALUE      | UNITS | INTERVAL (ft) |
| PNC Parameters   | BOREHOLE CONTENTS | FLUID      |       | TOP<br>BOTTOM |
|                  | OPEN/CASED HOLE   | CASED HOLE |       | "<br>"        |
|                  | BOREHOLE SIZE     | 8.50       | in    | "<br>"        |
|                  | LARGEST CASING OD | 7.00       | in    | "<br>"        |
|                  | MATRIX            | SANDSTONE  |       | "<br>"        |

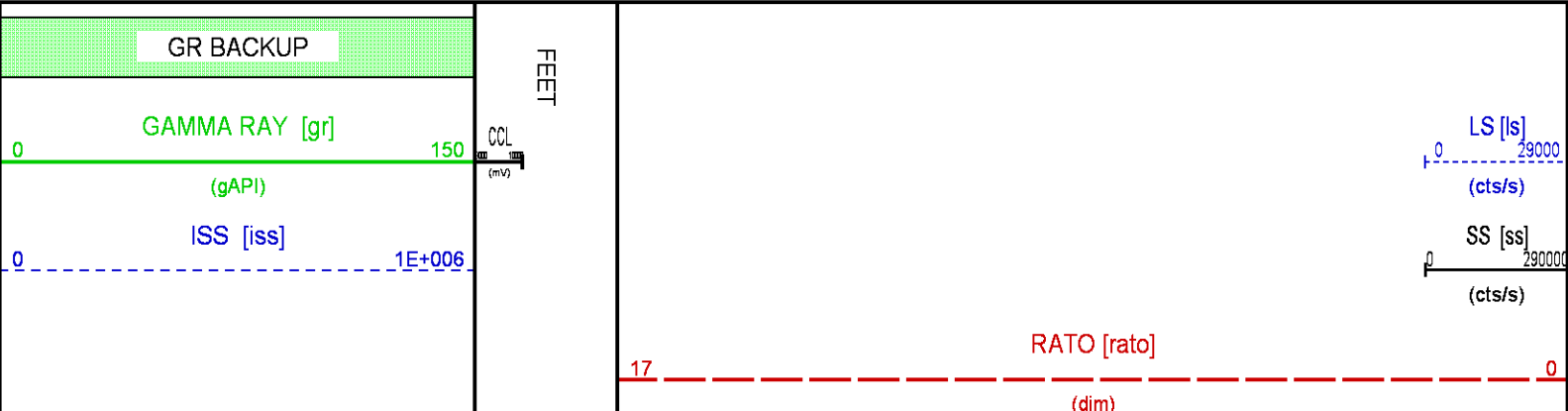
CURVE DESCRIPTION REPORT

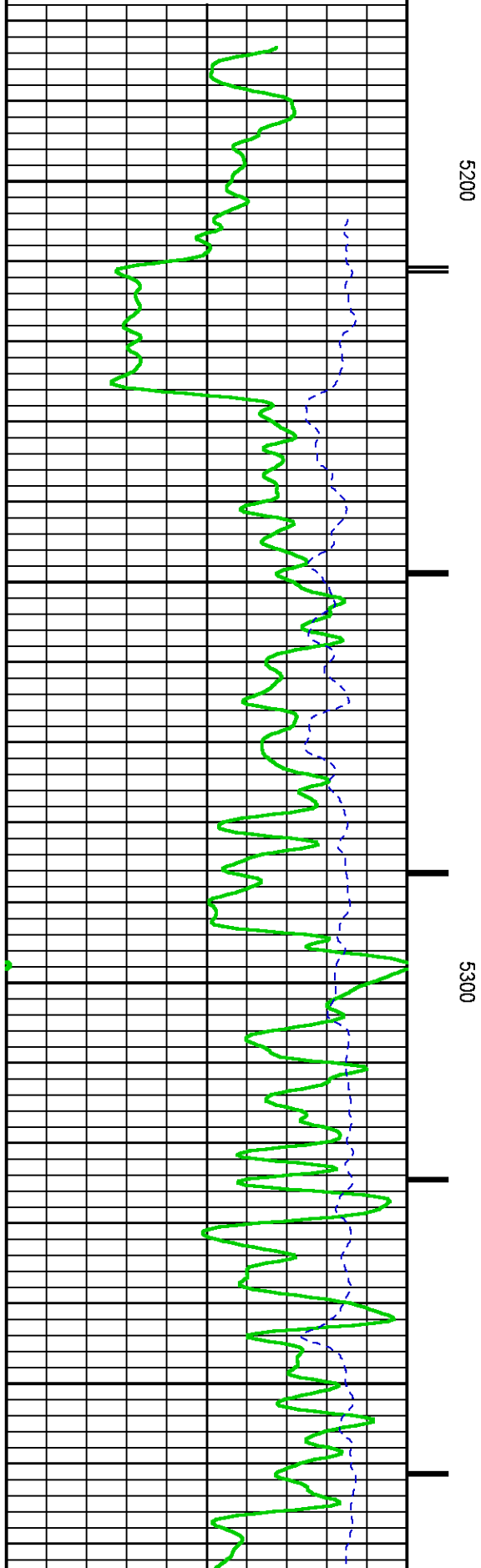
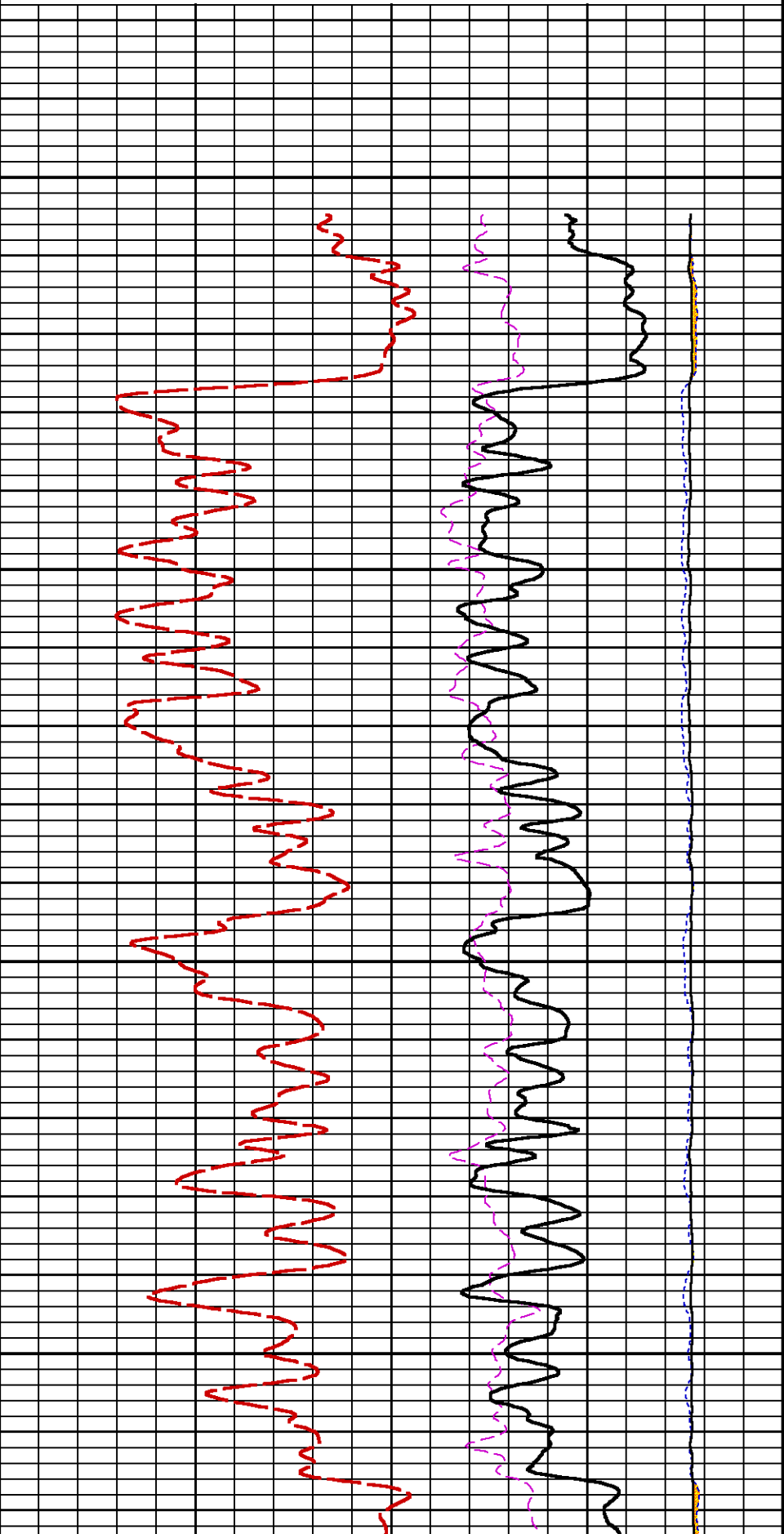
| CURVE NAME | CREATION DATE | CURVE DESCRIPTION   |
|------------|---------------|---|
| F1:CCL     | N/A           | CASING COLLAR LOCATOR                                       |
| F1:GR      | N/A           | GAMMA RAY   |
| F1:ISS     | N/A           | INELASTIC SHORT SPACE COUNT RATE                            |
| F1:LS      | N/A           | LONG SPACE COUNT RATE                                       |
| F1:RATO    | N/A           | SHORT/LONG SPACE COUNT RATE RATIO                           |
| F1:RICS    | N/A           | SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS) |
| F1:SGFC    | N/A           | BOREHOLE AND DIFFUSION CORRECTED SIGMA                      |
| F1:SS      | N/A           | SHORT SPACE COUNT RATE                                      |

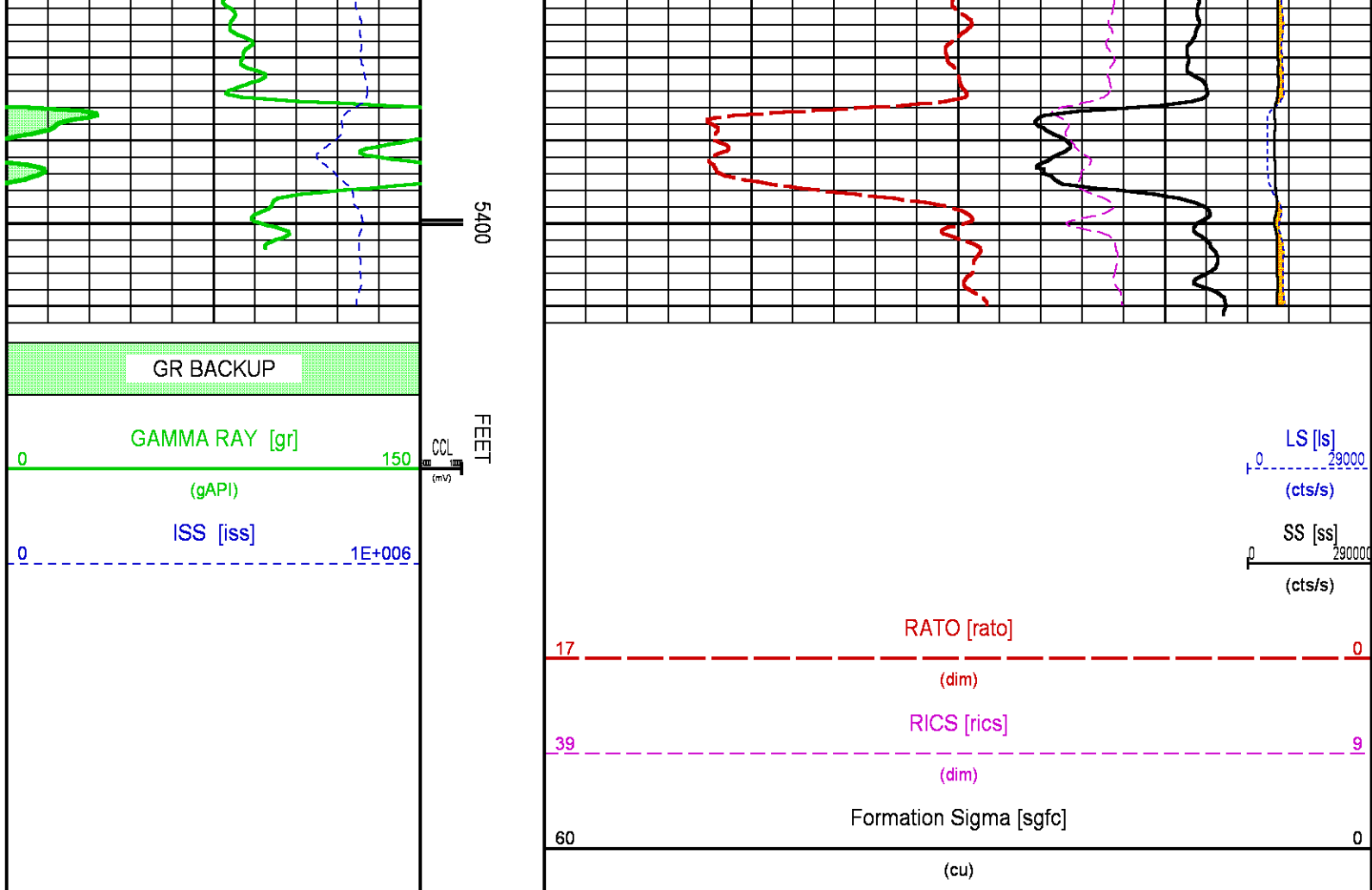
CURVE MEASURE POINT OFFSET

| CURVE | OFFSET (ft) | CURVE | OFFSET (ft) | CURVE | OFFSET (ft) | CURVE | OFFSET (ft) |
|-------|-------------|-------|-------------|-------|-------------|-------|-------------|
| CCL   | -22.50      | ISS   | -9.50       | RATO  | -9.50       | SGFC  | -9.50       |
| GR    | -19.50      | LS    | -9.50       | RICS  | -9.50       | SS    | -9.50       |

|               |   |
|---------------|---|
| Presentation  | : BHIH2LZZF2:C:\dat1a\LARAMIE_BRUTON_30_05E\LARAMIE_RPM_PNC3D+RPM_RPT_05E.fvpdf [5"/100' Scale] |
| Plot Interval | : 5179 - 5417.25 Feet   |
| Data File 1   | : F1 : BHIH2LZZF2:C:\dat1a\LARAMIE_BRUTON_30_05E\RPM_RPT_05E.xtf                                |
| Created On    | : N/A   |
| Company       | : LARAMIE ENERGY LLC  |
| Well          | : BRUTON 30-05E   |
| Field         | : VEGA  |
| File Interval | : 5174.5 - 5422.75 Feet   |
| OCT           | : p353h   |







## CALIBRATION / VERIFICATION SUMMARY

Source File: C:\dat1a\LARAMIE\_BRUTON\_30\_05E\p353h.tp1

### GR PRIMARY CALIBRATION SUMMARY

TOOL #: 8262XA 10192900

DATE/TIME PERFORMED: Fri Nov 17 16:53:45 2017

UNIT #: 3882TD HL6728

CALB JIG #: 4702NK DA\_228

|    | 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 | 80.16                 | 396.07                | 315.9              | 0.586 | 46.94                | 231.94               | 185               |

### GR PRIMARY VERIFICATION SUMMARY

TOOL #: 8262XA 10192900

DATE/TIME PERFORMED: Fri Nov 17 16:56:41 2017

UNIT #: 3882TD HL6728

VERI JIG #: 4702NK DA\_228

|    | BACKGROUND<br>(cts/s) | CALBRTR ON<br>(cts/s) | MULT  | BACKGROUND<br>(gAPI) | CALBRTR ON<br>(gAPI) | DIFF.<br>(gAPI) |
|----|-----------------------|-----------------------|-------|----------------------|----------------------|-----------------|
| GR | 80.20                 | 403.47                | 0.586 | 46.97                | 236.27               | 189.31          |
|    |                       |                       |       |                      |                      | 175.00 195.00   |

## RPM\_PNC\_3D PRIMARY CALIBRATION SUMMARY

TOOL: 8283PA 10184883

DATE/TIME PERFORMED: Thu Jul 13 15:06:49 2017

UNIT: 3882TD HL6728

CALIBRATOR: 2437XB 120057

SOURCE: 8281AA 10160595

HOURS: 8281AA 228

|          | ISS    | Mtr Vlts<br>(V) | SS Gain | LS Gain | XLS Gain | EA Temp<br>(degF) | Sync Delay<br>(usec) | RCAL   |
|----------|--------|-----------------|---------|---------|----------|-------------------|----------------------|--------|
| Raw Data | 807240 | 123             | 2232    | 2259    | 2285     | 137               | 9.0                  | 0.9874 |

|              |         |     |      |      |      |
|--------------|---------|-----|------|------|------|
| Interpolated | 1300000 | 146 | 2216 | 2251 | 2283 |
|--------------|---------|-----|------|------|------|

|          | ISS    | BKS  | BKL  | BKX | SGA1        | SDA1      | SGA2        | SDA2      |
|----------|--------|------|------|-----|-------------|-----------|-------------|-----------|
| Raw Data | 807240 | 6543 | 1352 | 236 | 25.88       | 0.15      | 24.03       | 0.34      |
|          |        |      |      |     | 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      | 807240 | 164687 | 25336 | 86104 | 30690 | 8086  | 52299 | 12945 |
| Fit Quality % |        | 0.492  | 0.443 | 0.487 | 0.490 | 0.506 | 0.462 | 0.494 |

|               | 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      | 807240  | 1.44      | 4.90           | 31.88            | 15.44           | 10.65         | 3.80           | 4.04            |
|               |         | 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 % |         | 0.052     | 0.128          | 0.117            | 0.144           | 0.021         | 0.011          | 0.031           |
| Reduced       | 1232261 | 1.44      | 4.91           | 31.91            | 15.45           | 10.65         | 3.80           | 4.04            |
|               |         | 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       |

## INSTRUMENT CONFIGURATION

A3 CABLEHEAD  
Diameter : 1.37"

PCM POWER SUPPLY  
Diameter : 1.70"  
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

GAMMA RAY  
Diameter : 1.70"  
Length : 3.02'  
Weight : 15 lbs  
Series : 8262XA  
Mnemonic : GR  
Measure Point: 0.89': GR MP

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: 5.45': XLS DETECTOR  
Measure Point: 5.04': LS DETECTOR  
Measure Point: 4.79': SS DETECTOR

30.78'

CCL MP 22.73'

GR MP 19.59'

XLS DETECTOR 10.27'  
LS DETECTOR 9.86'  
SS DETECTOR 9.61'

## RPM SOURCE SECTION

Diameter : 1.70"  
Length : 4.70'  
Weight : 18 lbs  
Series : 8281FA  
Mnemonic : RPM

BULL PLUG 1 11/16

0.00'

TOTAL LENGTH: 30.78'  
TOTAL WEIGHT: 131 lbs  
MAX DIAMETER: 0'1.70"

**BAKER  
HUGHES**  
a GE company



**ECLIPS**

COMPANY LARAMIE ENERGY LLCWELL BRUTON 30-05EFIELD VEGACOUNTY MESA STATE COLORADO

FILE NO:

API NO:

05077104510000

LOCATION:

SHL 39.252644444 N; 107.814275000W  
BHL 39.252169000N; 107.806920000W

ELEVATIONS:

KB 7542 FTDF 7541 FTGL 7512 FTSEC 30 TWP 9S RGE 93WDATE 20-Nov-2017