



| | | |
|-------------------|--------------------------------------|---|
| FILE NO: | COMPANY | LARAMIE ENERGY |
| | WELL | BRUTON 19-17W |
| API NO: | FIELD | VEGA |
| 05077103790000 | COUNTY | MESA |
| | | STATE COLORADO |
| Ver. 4.06 | LOCATION: | OTHER SERVICES |
| | SHL: LAT:39.255232N;LONG:107.806537W | RPM |
| | BHL: LAT:39.258541N;LONG:107.816061W | |
| | SEC 19 TWP 9S RGE 93W | |
| PERMANENT DATUM | GL | ELEVATION 7425 FT |
| LOG MEASURED FROM | KB | 24 FT ABOVE P.D. |
| DRILL. MEAS. FROM | KB | |
| | | ELEVATIONS: KB 7449 FT DF 7448 FT GL 7425 FT |

| | | | | | |
|------------------------|----------|-------------------|----------|--|--|
| DATE | | 22-AUG-2017 | | | |
| RUN | TRIP | 2 | 1 | | |
| SERVICE ORDER | | US126722 | | | |
| DEPTH DRILLER | | 8419 FT | | | |
| DEPTH LOGGER | | 8386 FT | | | |
| BOTTOM LOGGED INTERVAL | | 8386 FT | | | |
| TOP LOGGED INTERVAL | | 2645 FT | | | |
| TIME STARTED | | 13:00 | | | |
| TIME FINISHED | | 19:00 | | | |
| OPERATOR RIG TIME | | 6 HOURS | | | |
| TYPE OF FLUID IN HOLE | | WATER | | | |
| FLUID DENSITY | | NA | | | |
| FLUID SALINITY | | NA | | | |
| FLUID LEVEL | | 50 FT | | | |
| LOGGED CEMENT TOP | | 2980 FT | | | |
| WELLHEAD PRESSURE | | 0 PSI | | | |
| MAXIMUM HOLE DEVIATION | | NA | | | |
| NOMINAL LOGGING SPEED | | 15 F/MN | | | |
| MAX. RECORDED TEMP. | | 237 DEGF | | | |
| REFERENCE LOG | | BAKER GR/RAL | | | |
| REFERENCE LOG DATE | | 21-AUG-2017 | | | |
| EQUIP. NO. | LOCATION | HL-6670 | WOODWARD | | |
| RECORDED BY | | S. YASSA | | | |
| WITNESSED BY | | MR. CHUCK MALLARY | | | |

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 2 TRIP 1: *2 OPERATIONS IN WELL* |
| **OPERATION 2: RPM/GR/CCL ** |
| LOGGED WITH 0 PSI ON WELLHEAD |
| SJ: 6506' - 6524' |
| SJ: 7500' - 7518' |
| CREW: D.HUTCHINSON, J.PENA |

| EQUIPMENT DATA | | | | | |
|----------------|------|-----------|---------------|-------------------|----------|
| RUN | TRIP | TOOL | SERIES NO. | SERIAL NO. | POSITION |
| 2 | 1 | TELEMETRY | 8250EA/8248EA | 10185091/10323398 | FREE |
| 2 | 1 | GAMMA RAY | 8262XA | 10485470 | FREE |
| 2 | 1 | RPM | 8281EA | 10387162 | FREE |
| 2 | 1 | RPM | 8283PA | 10184883 | FREE |
| 2 | 1 | RPM | 8281FA | 10315572 | FREE |
| 2 | 1 | TEMP | 8255XA | 120516 | FREE |

G-SAND 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: Tue Aug 22 19:32:26 2017

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_BRUTON_19_17W/RPM3D03.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 2638.750 ft BOTTOM DEPTH: 3287.250 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 | 7.88 | in | " | " |
| | CASING SIZE | 4.50 | in | " | " |
| | MATRIX | SANDSTONE | | " | " |
| | CORRECTION BUFFER | 11 | | " | " |

CURVE DESCRIPTION REPORT

| CURVE NAME | CREATION DATE | CURVE DESCRIPTION |
|------------|----------------------|---|
| F1:CCL | Aug 22 18:47:06 2017 | CASING COLLAR LOCATOR |
| F1:GR | Aug 22 18:47:06 2017 | GAMMA RAY |
| F1:ISS | Aug 22 18:47:06 2017 | INELASTIC SHORT SPACE COUNT RATE |
| F1:LS | Aug 22 18:47:06 2017 | LONG SPACE COUNT RATE |
| F1:RATO | Aug 22 18:47:06 2017 | SHORT/LONG SPACE COUNT RATE RATIO |
| F1:RICS | Aug 22 18:47:06 2017 | SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS) |
| F1:SGFC | Aug 22 18:47:06 2017 | CORRECTED FORMATION SIGMA |
| F1:SS | Aug 22 18:47:06 2017 | SHORT SPACE COUNT RATE |

CURVE MEASURE POINT OFFSET

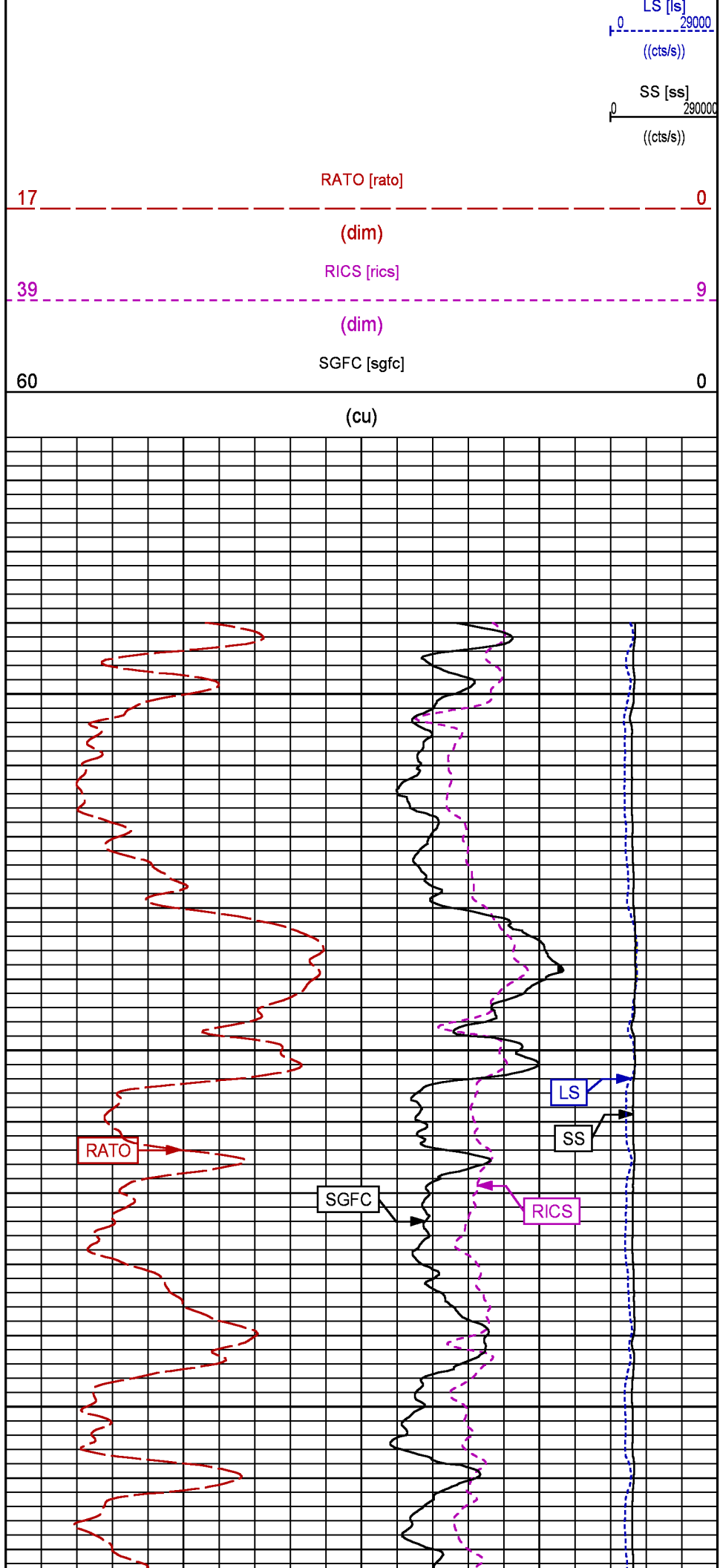
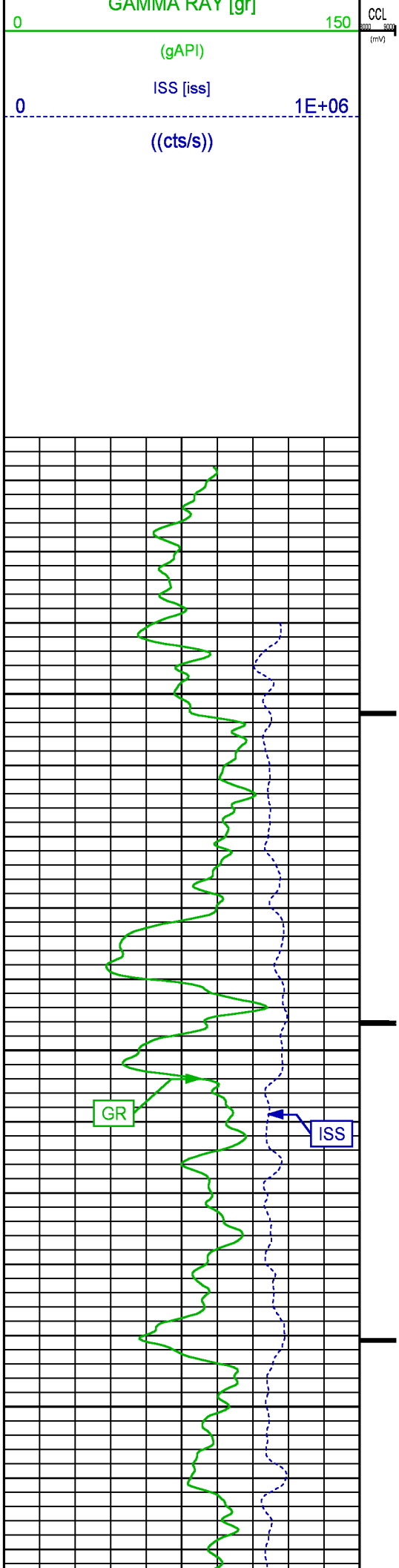
| CURVE | OFFSET (ft) | CURVE | OFFSET (ft) | CURVE | OFFSET (ft) | CURVE | OFFSET (ft) |
|-------|-------------|-------|-------------|-------|-------------|-------|-------------|
| CCL | 26.00 | ISS | 12.75 | RATO | 12.75 | SGFC | 12.75 |
| GR | 23.00 | LS | 12.75 | RICS | 12.75 | SS | 12.75 |

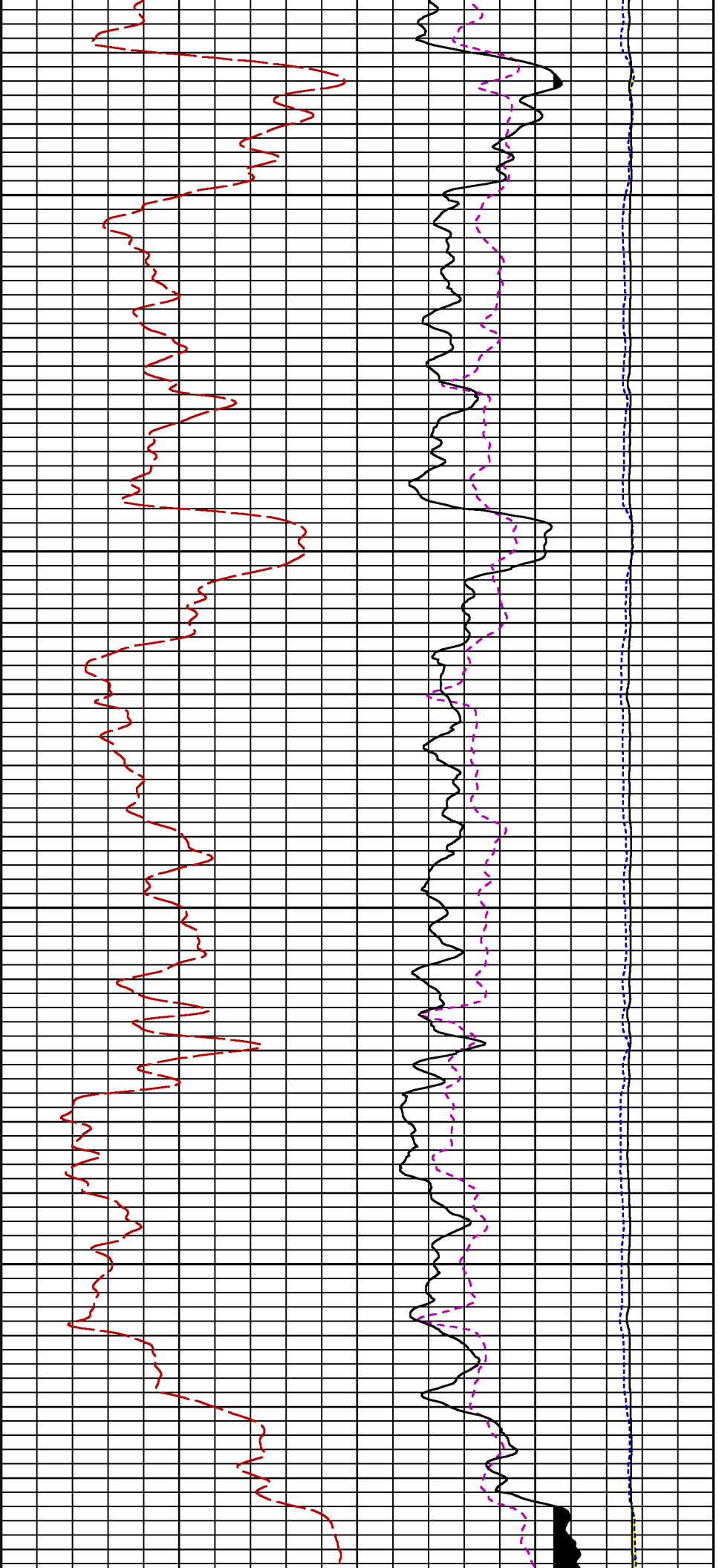
Presentation : cpu100:BRUTON_19_17W_RPM_GSAND.fvpdf [5"/100' Scale]
Plot Interval : 2614 - 3278.5 Feet

Data File 1 : F1 : cpu100:/dat1a/LARAMIE_BRUTON_19_17W/BRUTON_19_17W_RPM_GSAND.xtf
Created On : Aug 22 18:47:06 2017
Company : LARAMIE ENERGY
Well : BRUTON 19-17W
Field : MESA
File Interval : 2613.25 - 3287.25 Feet
OCT : RPM3D

GR BACKUP

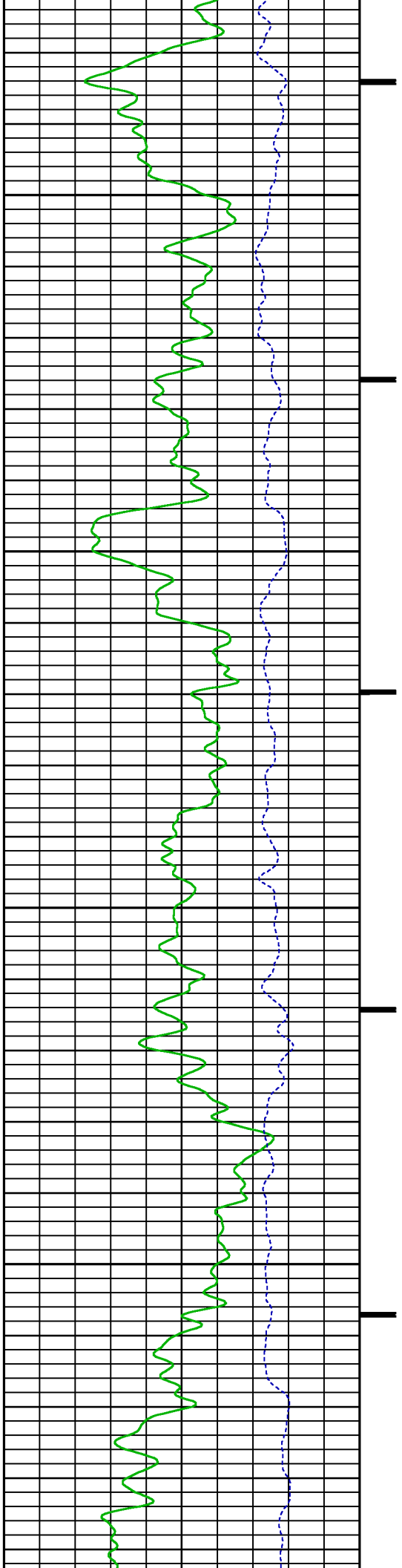
FEET

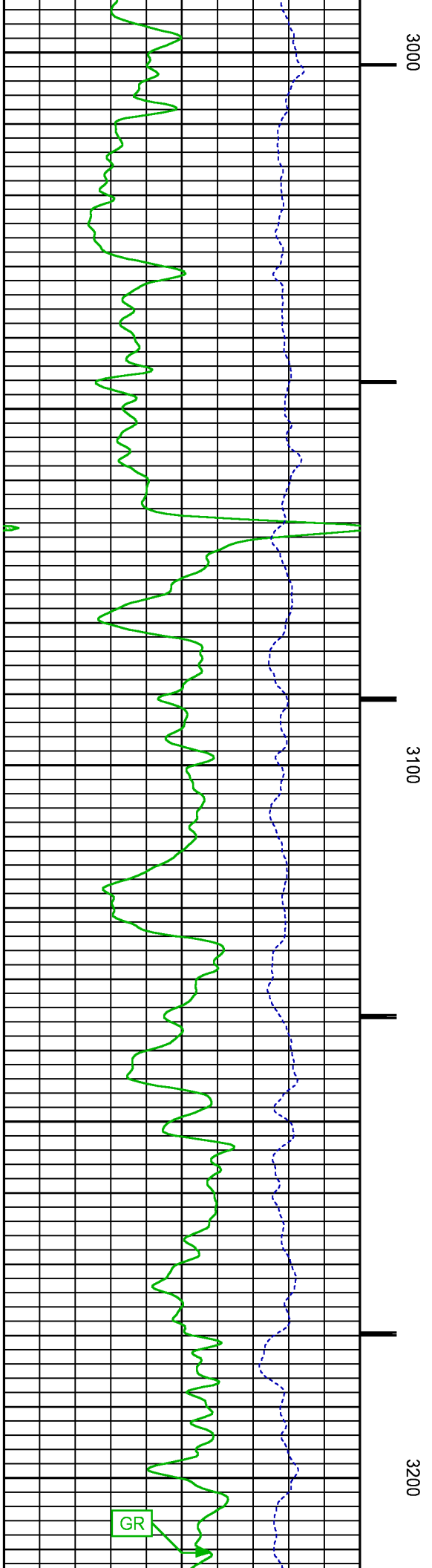
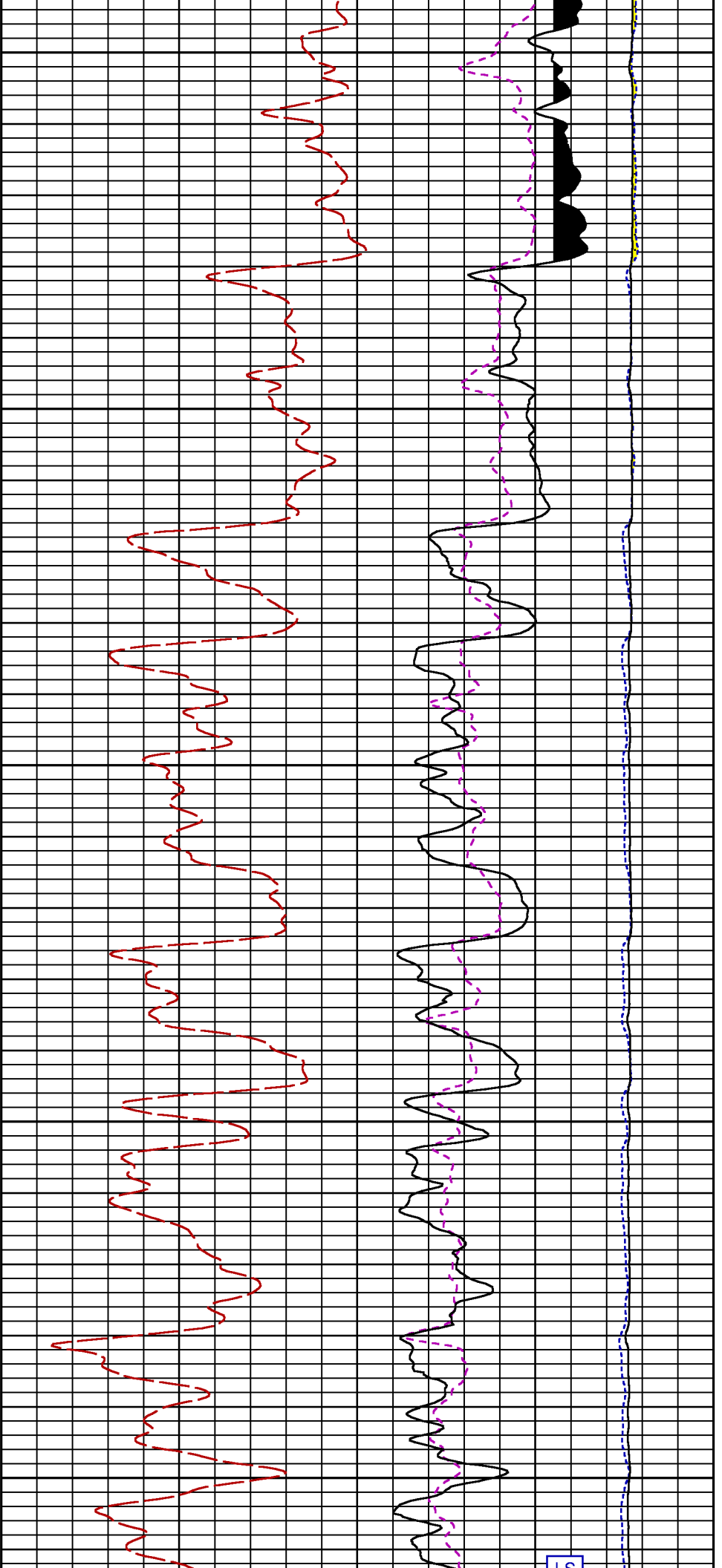


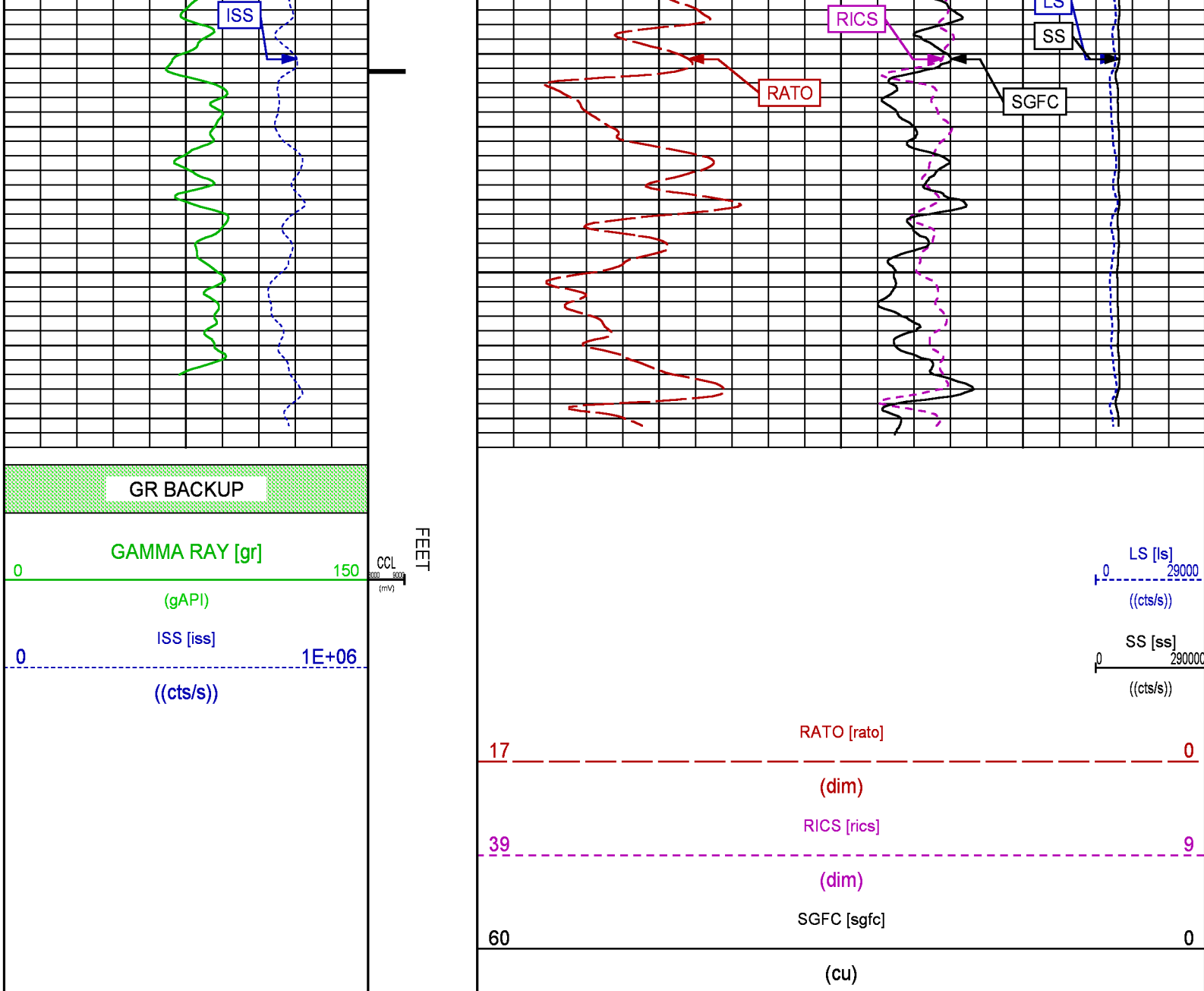


2800

2900







MAIN PASS PNC-3D MODE

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

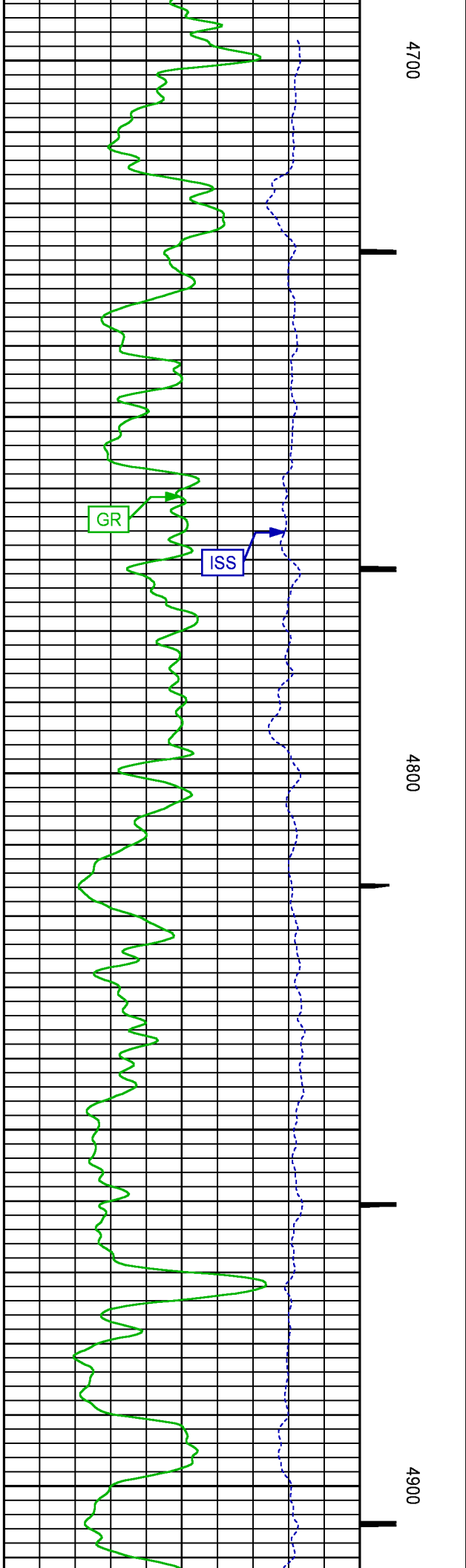
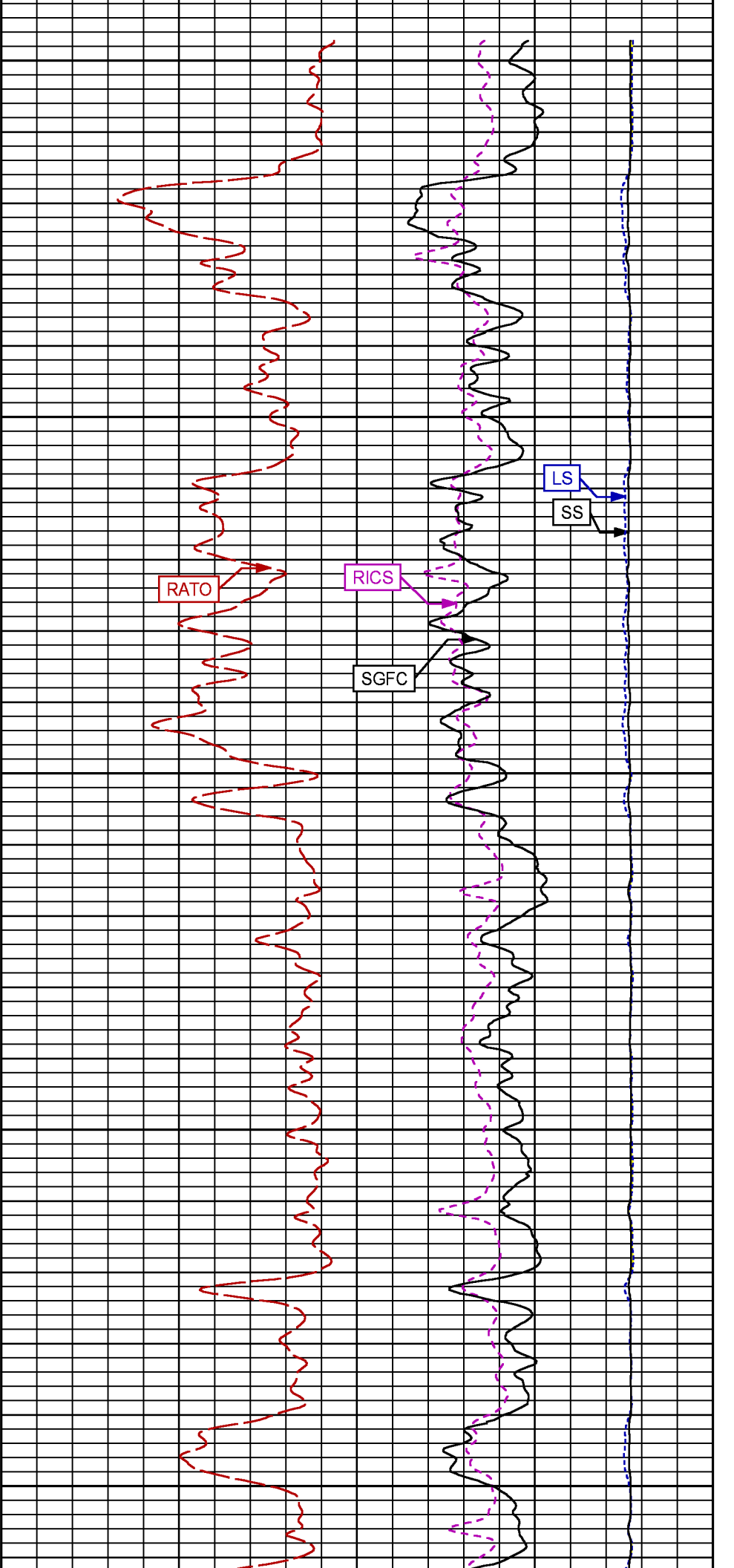
Plotted: Tue Aug 22 18:49:56 2017

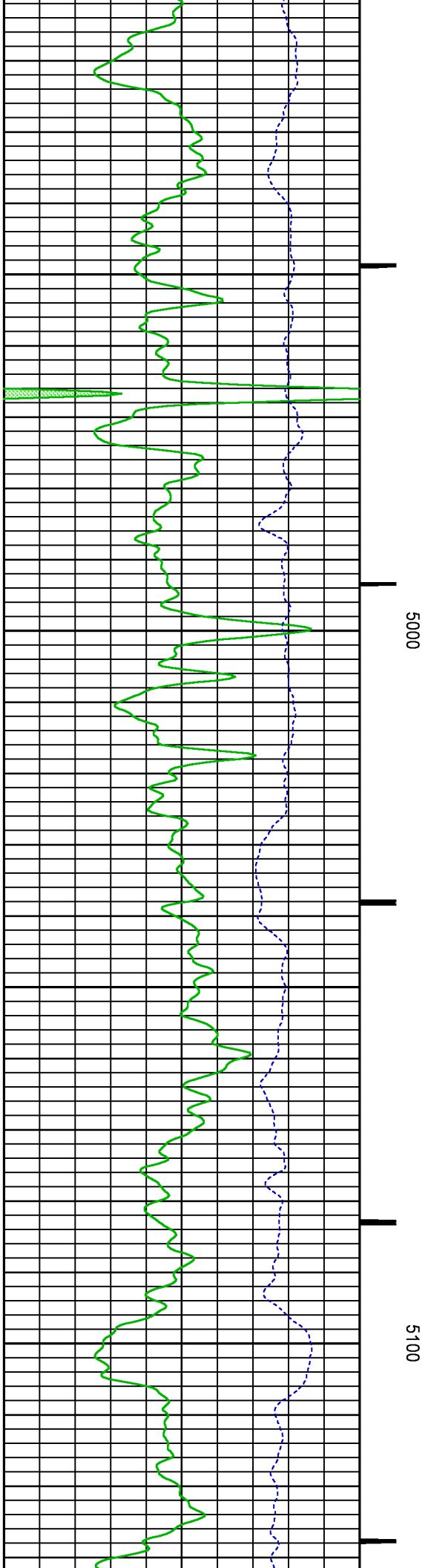
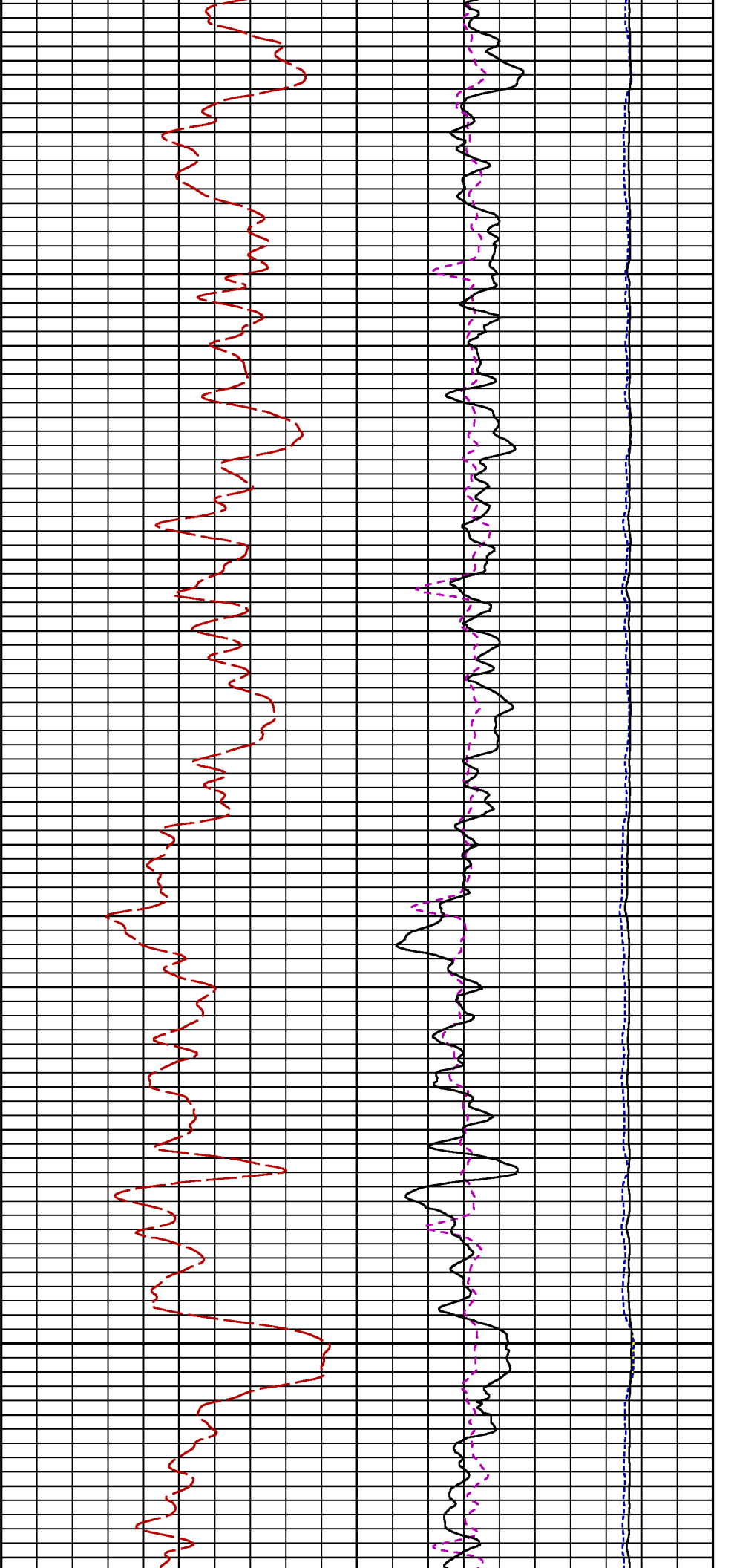
PARAMETER AND FILTER SUMMARY REPORT

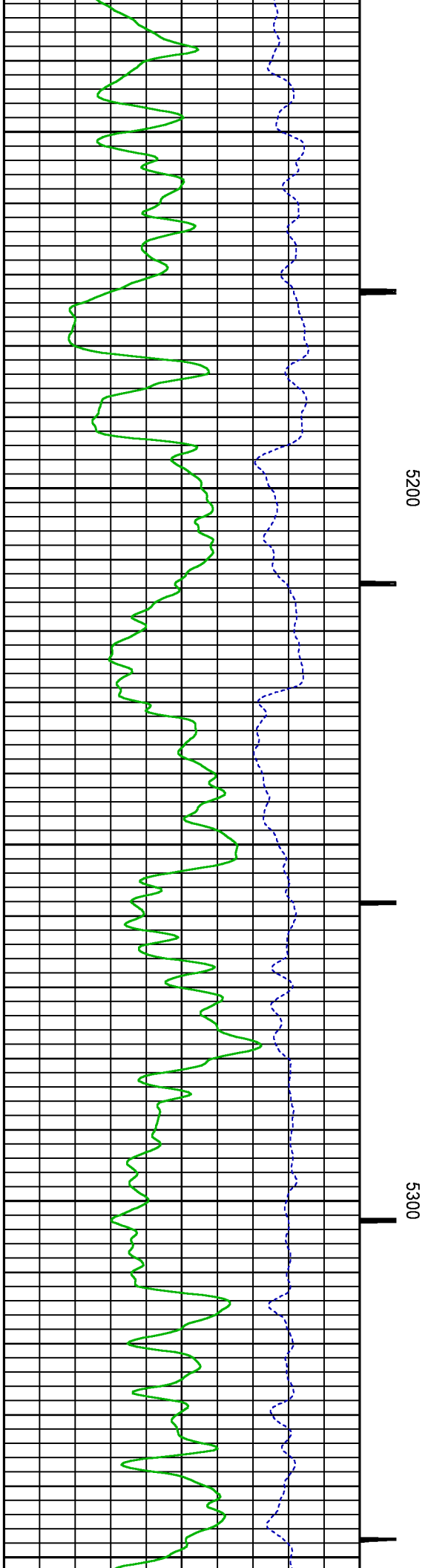
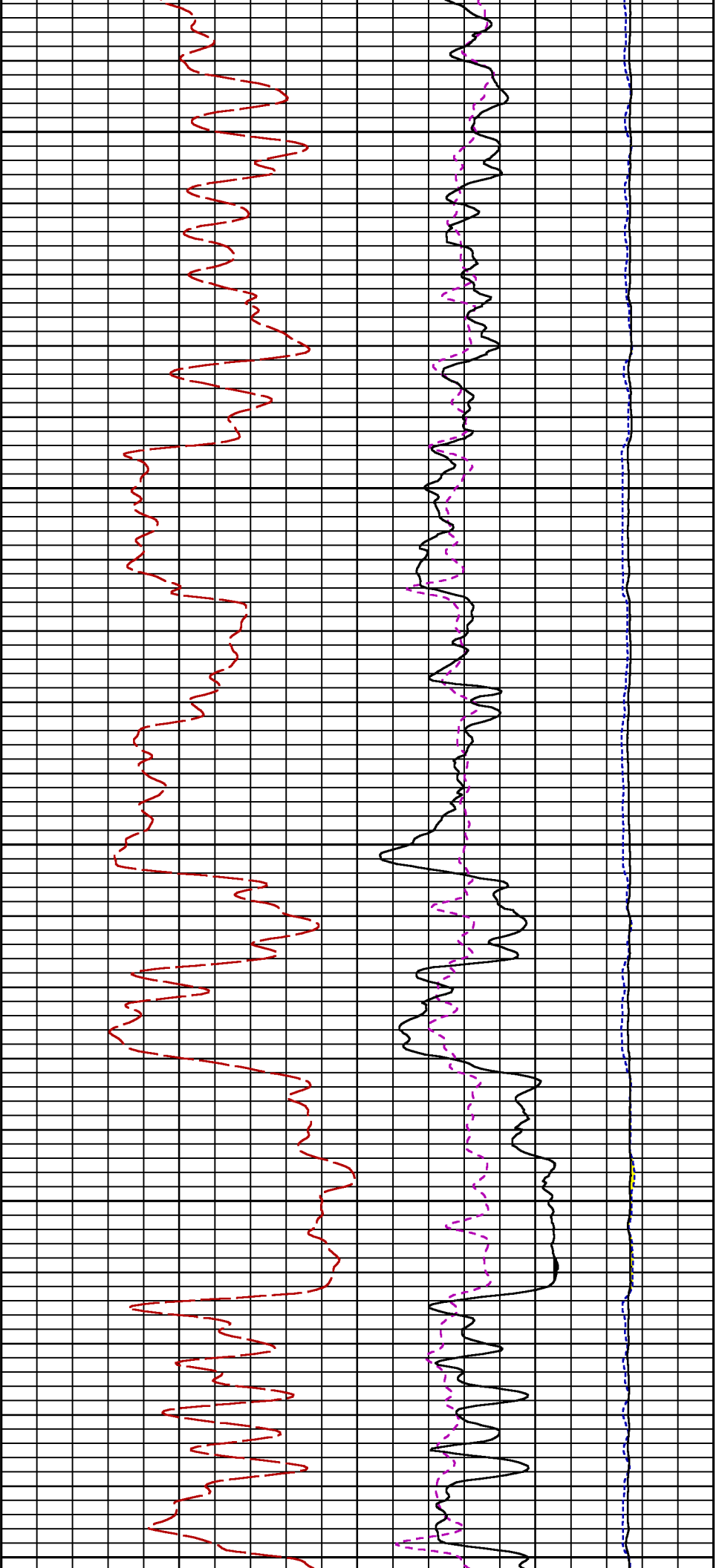
FILE: /dat1a/LARAMIE_BRUTON_19_17W/RPM3D02.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 4696.500 ft BOTTOM DEPTH: 8395.500 ft

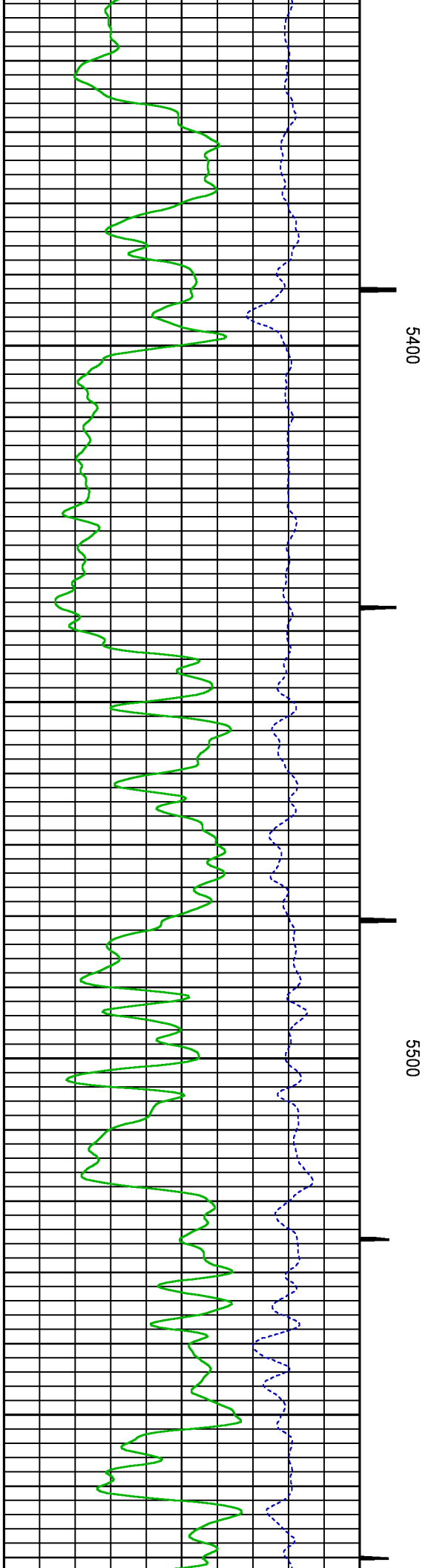
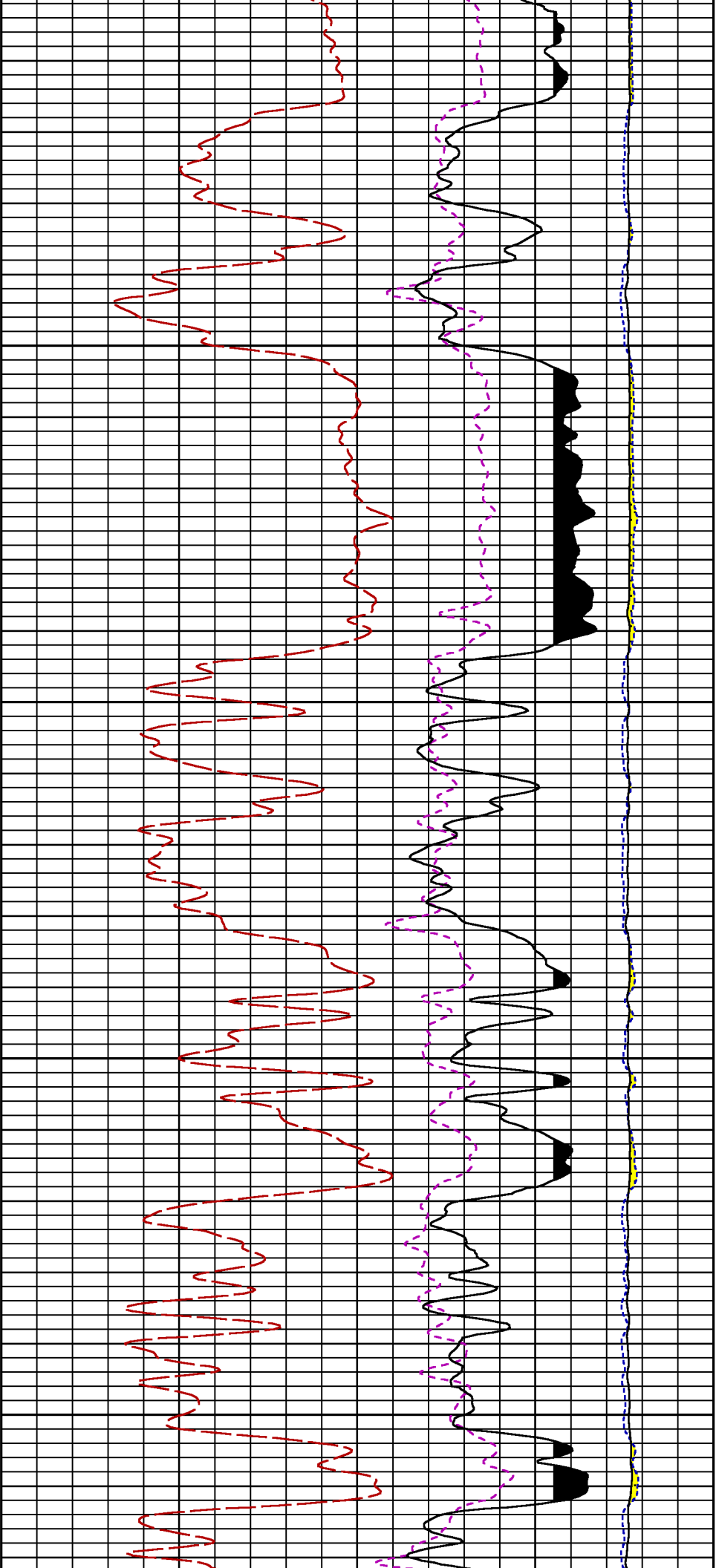
SYMMETRIC FILTER

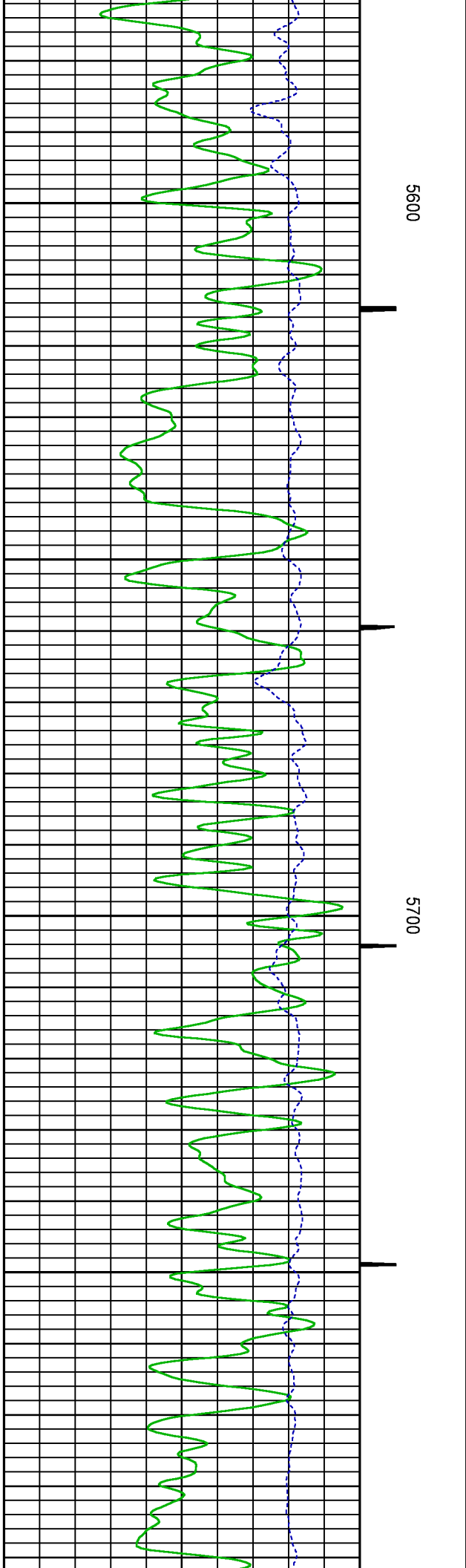
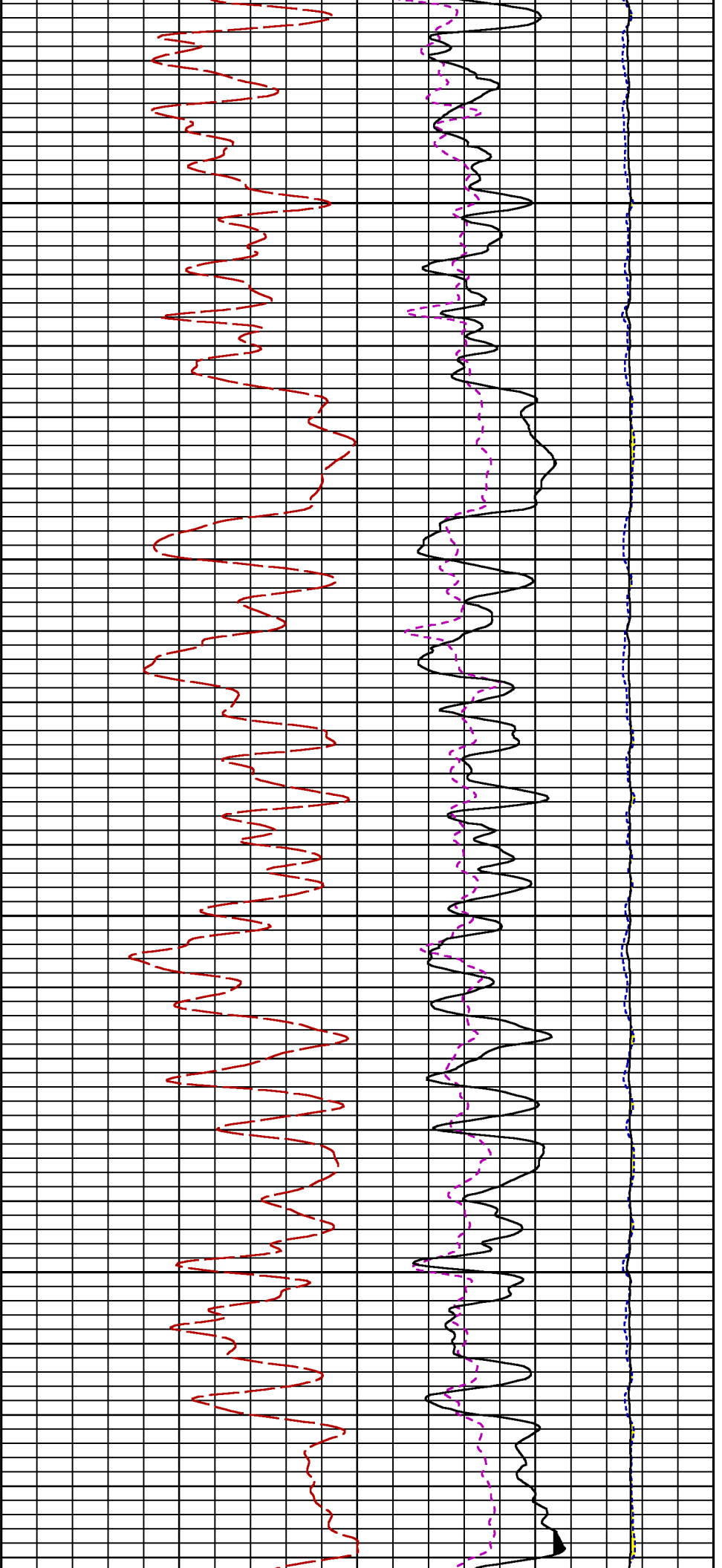
| MEASUREMENT TYPE | PARAMETER | VALUE | UNITS | INTERVAL (ft) |
|------------------|-----------|------------|-------|---------------|
| GR | FILTER () | medium (1) | | TOP BOTTOM |

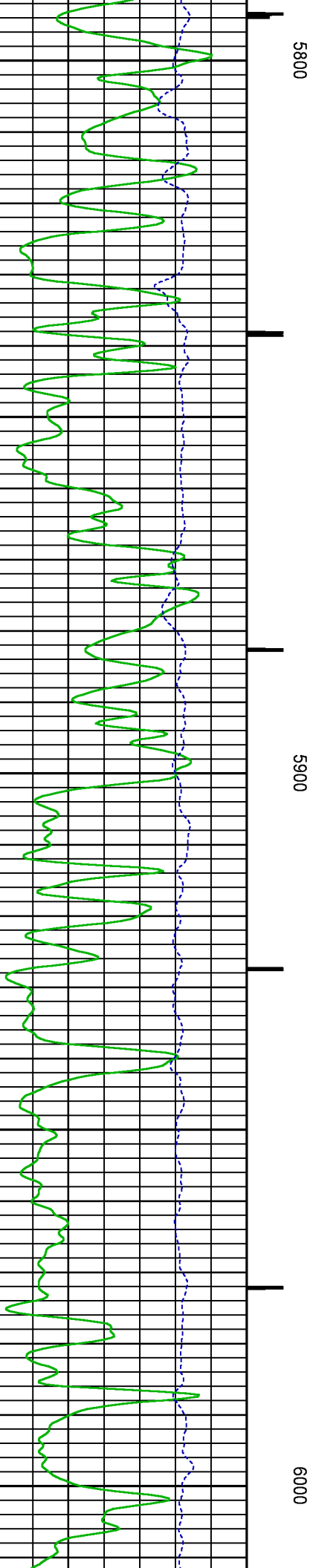
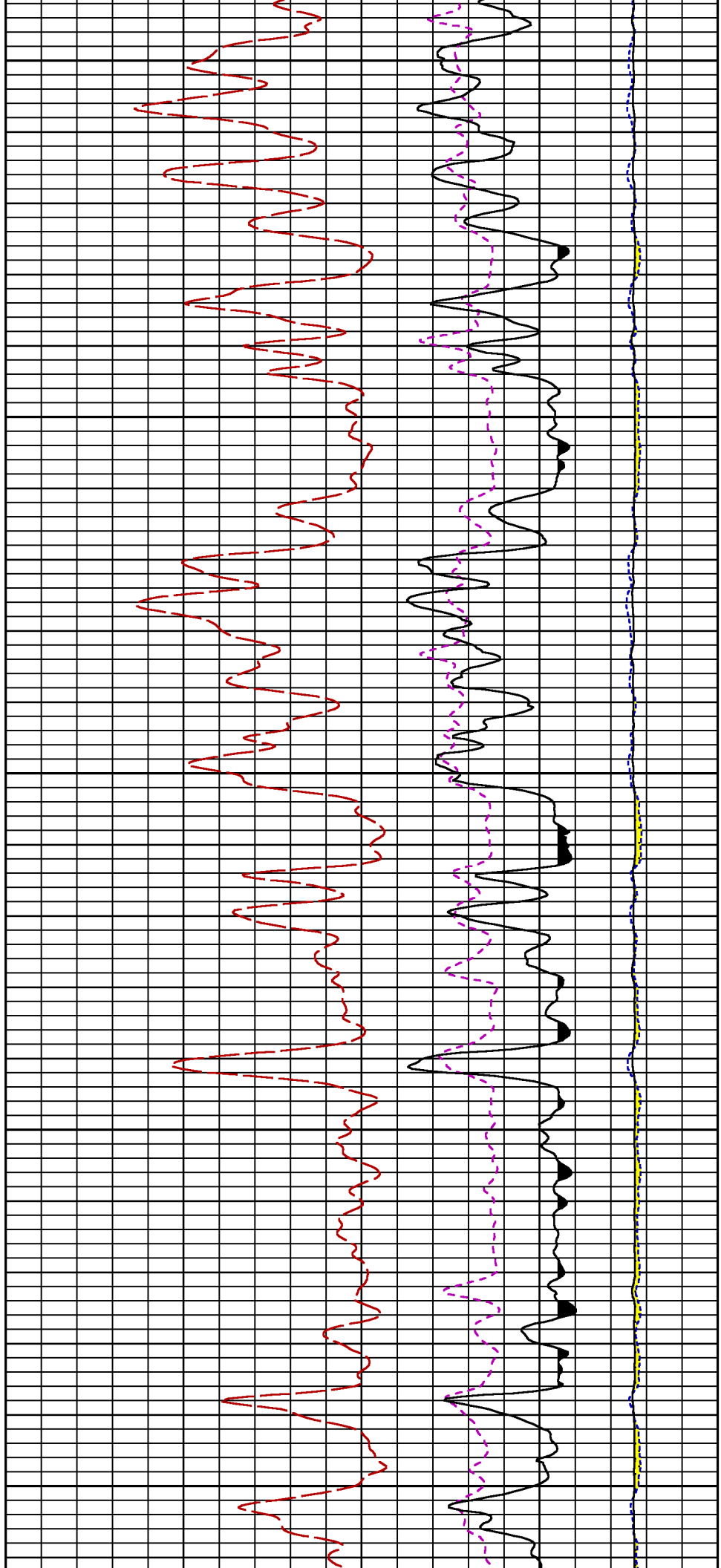


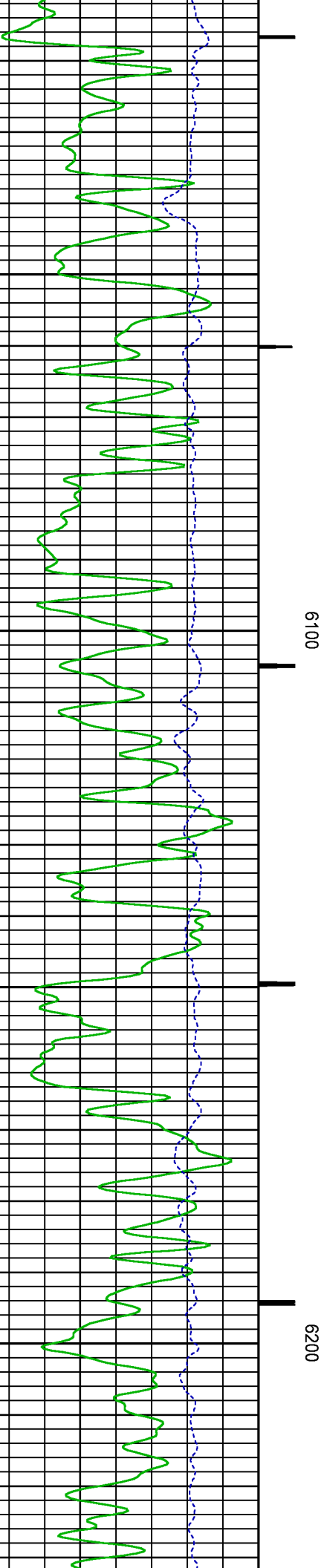
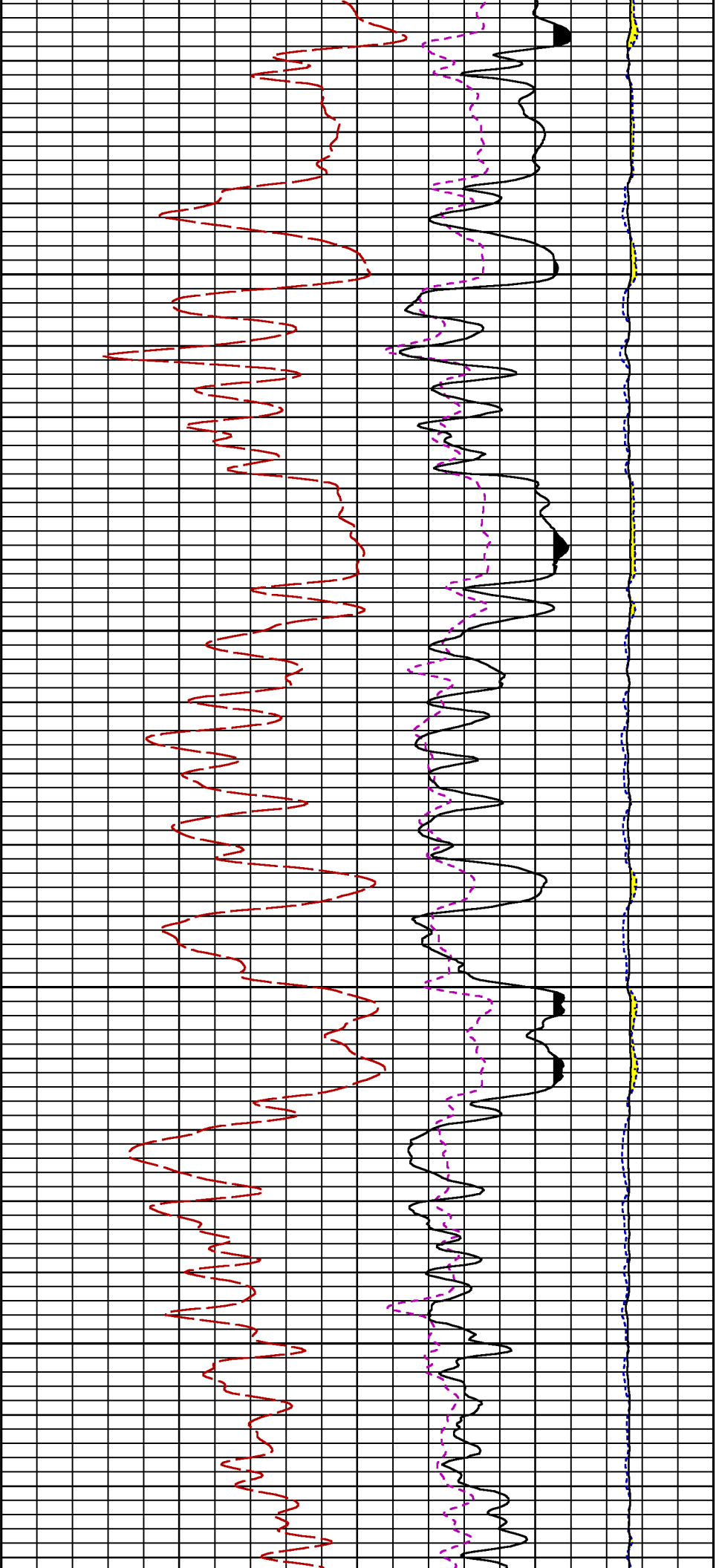


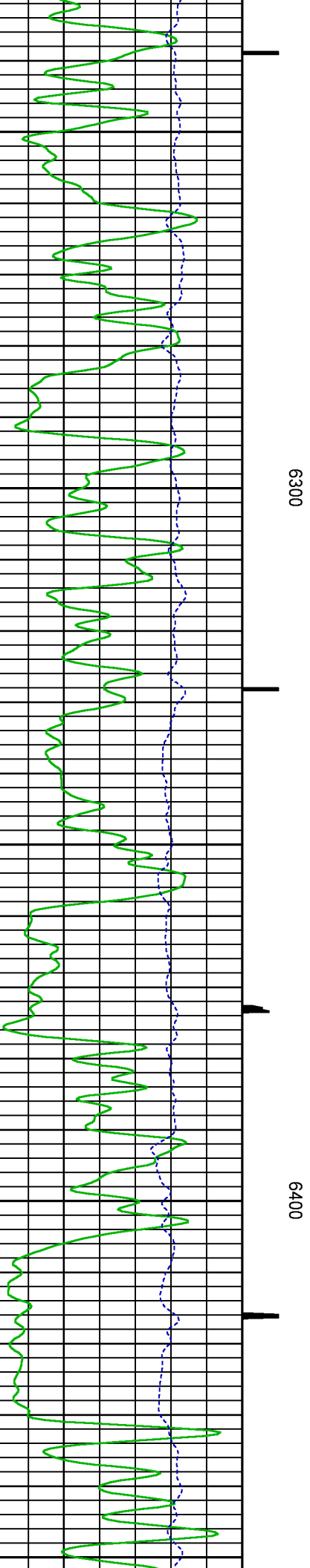
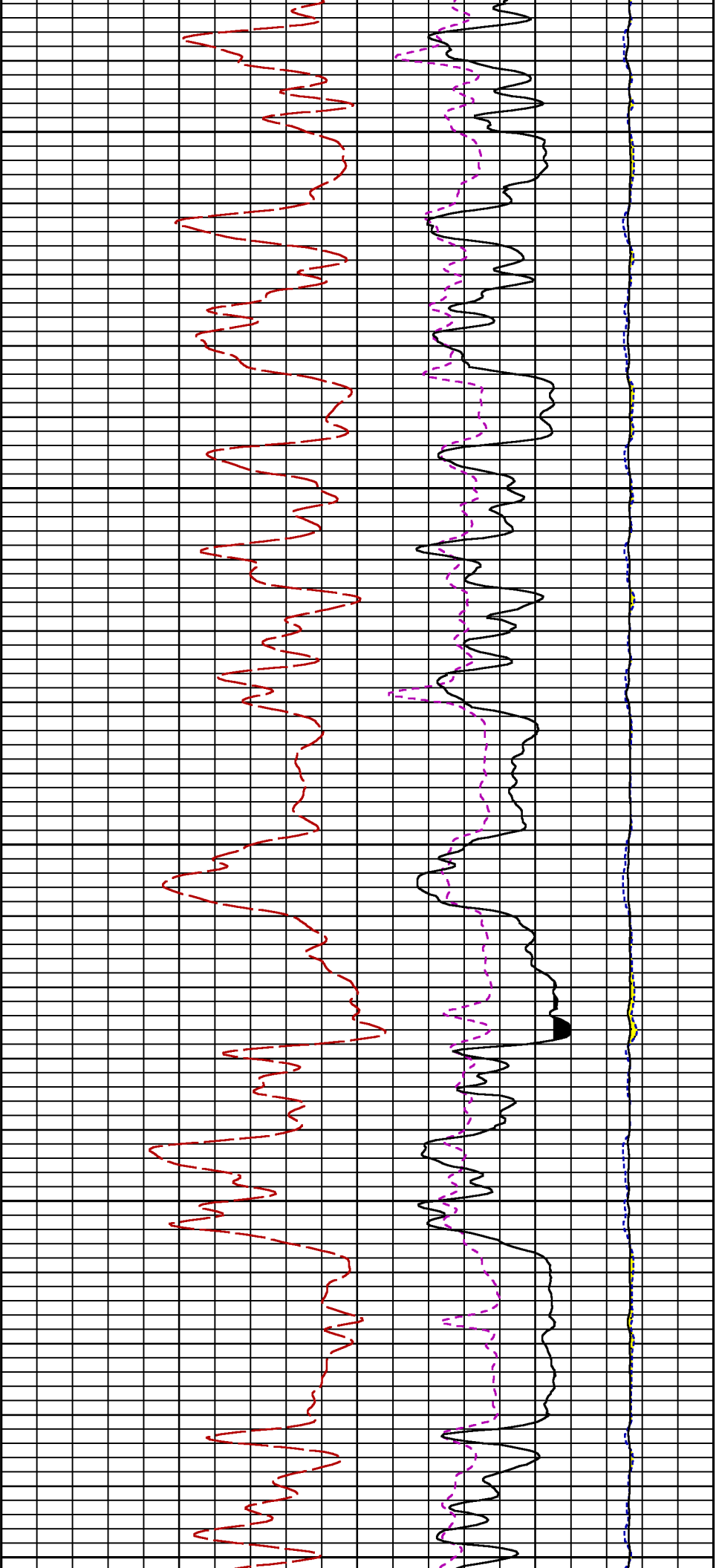


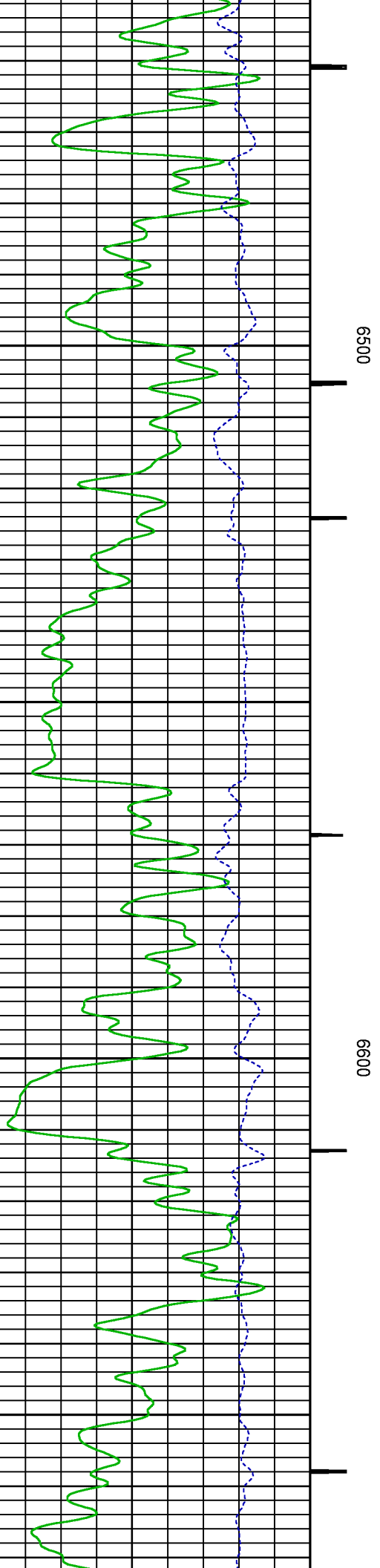
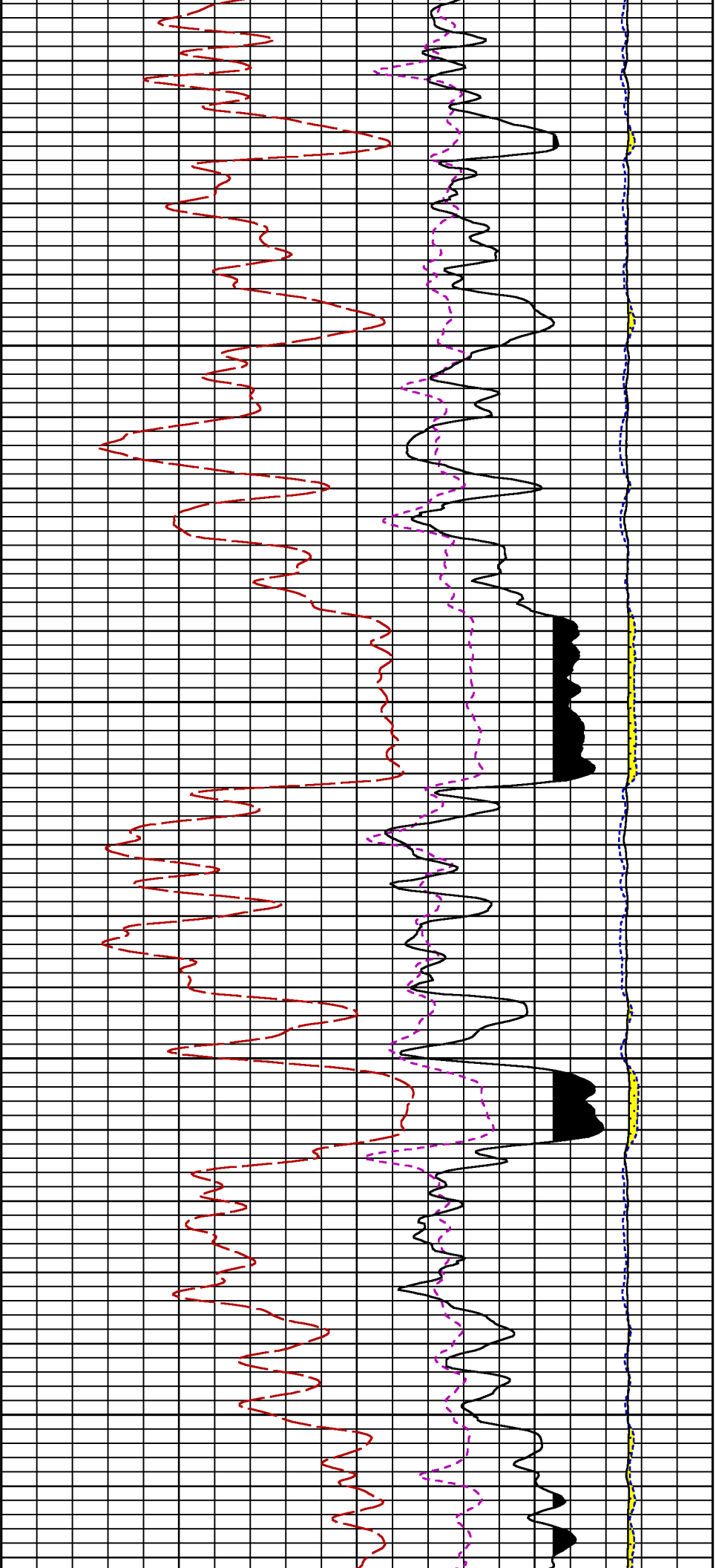


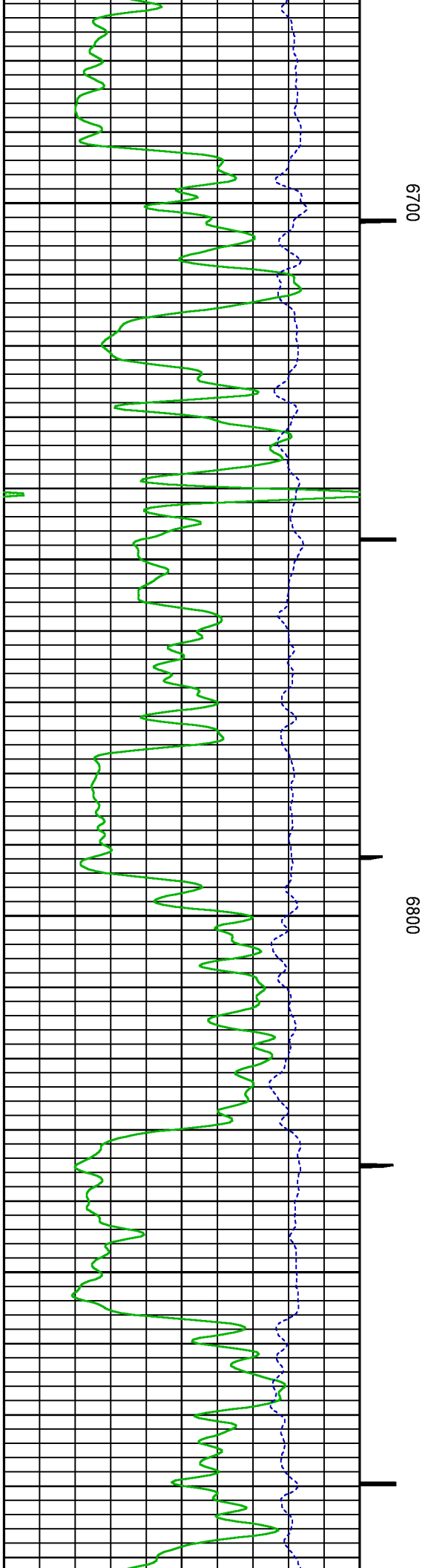
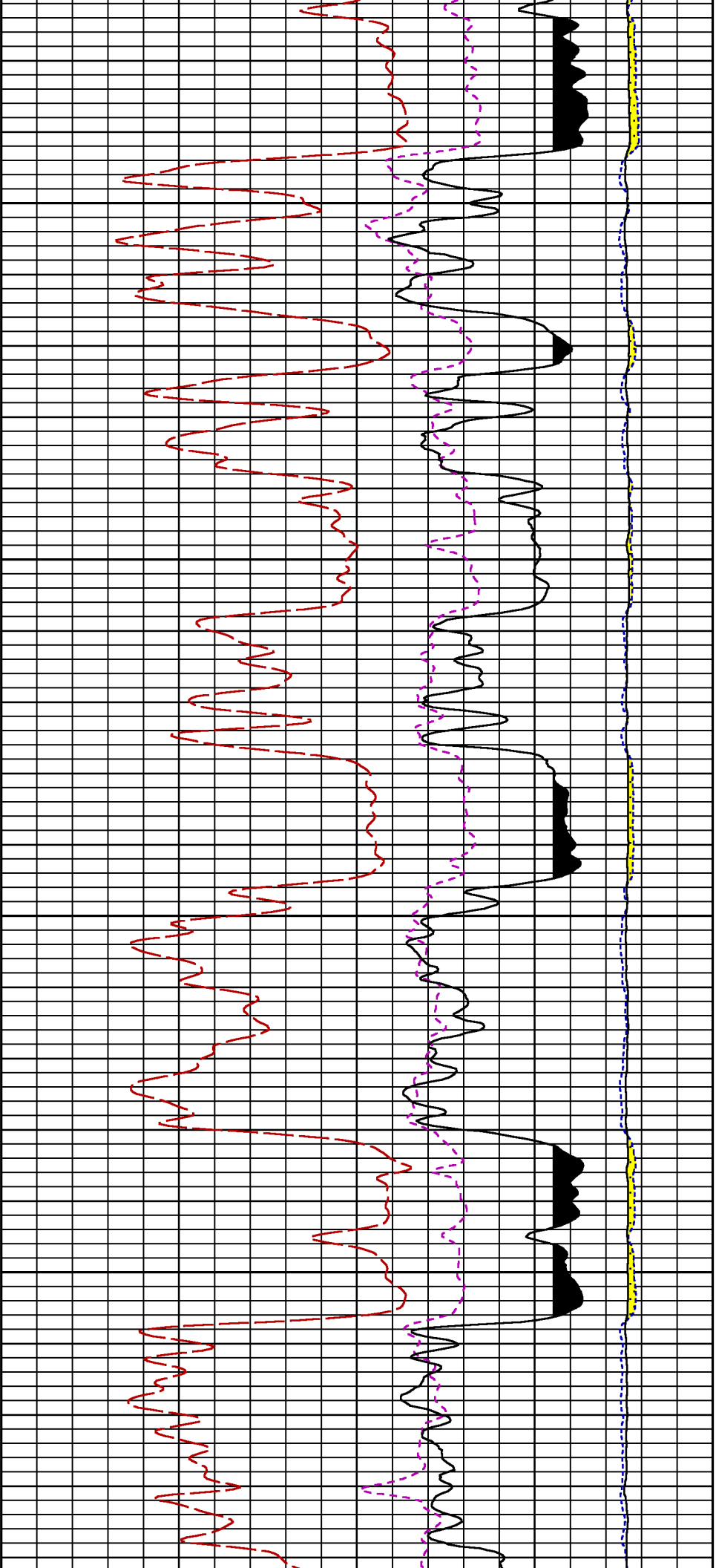


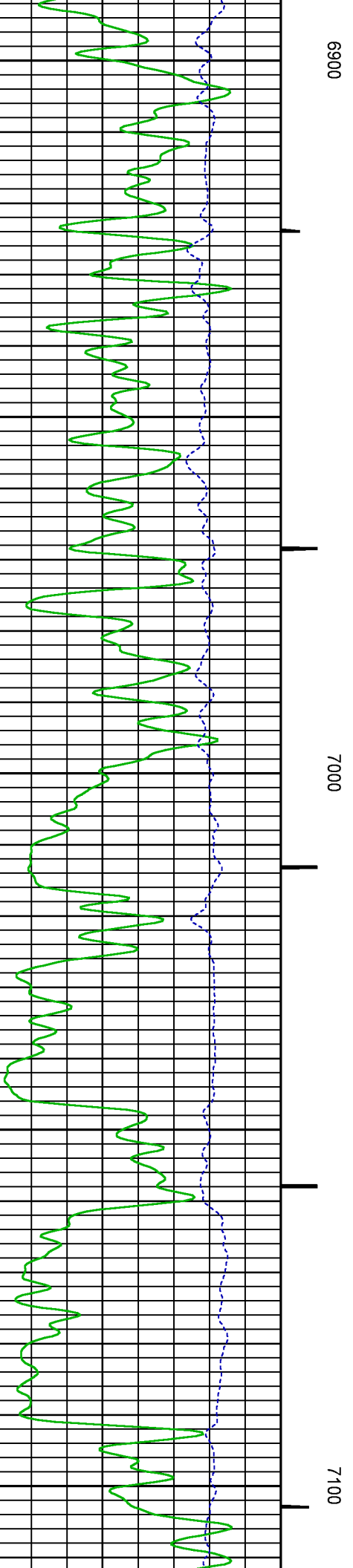
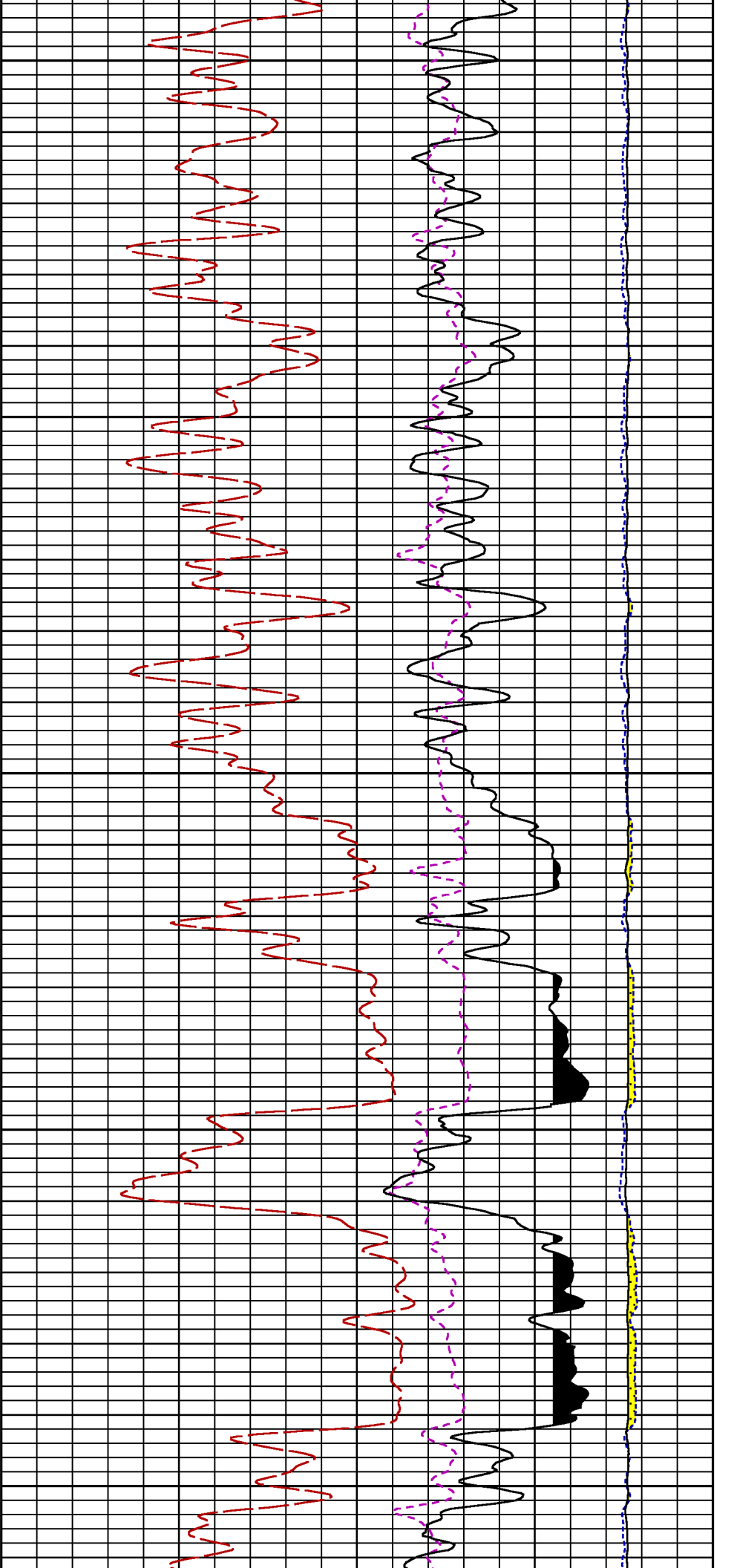


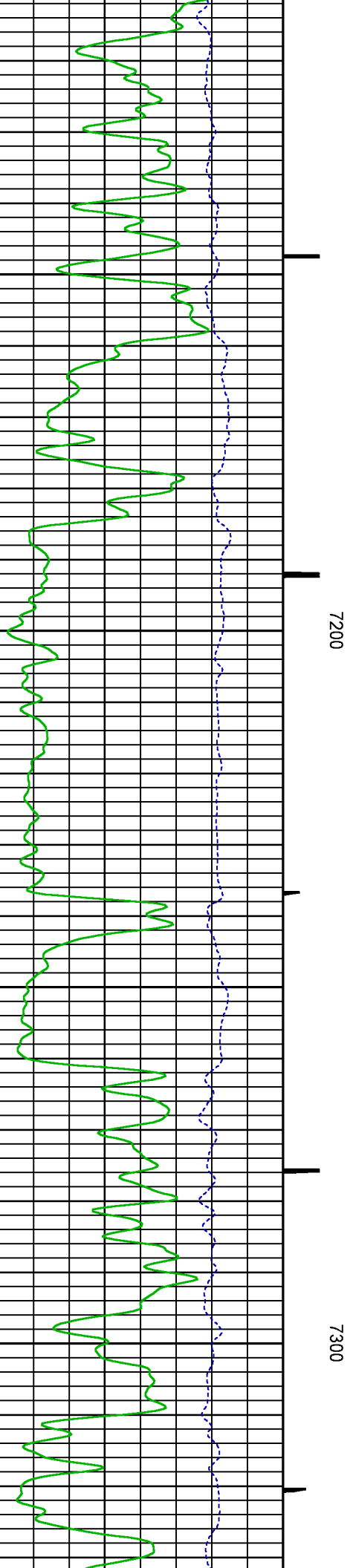
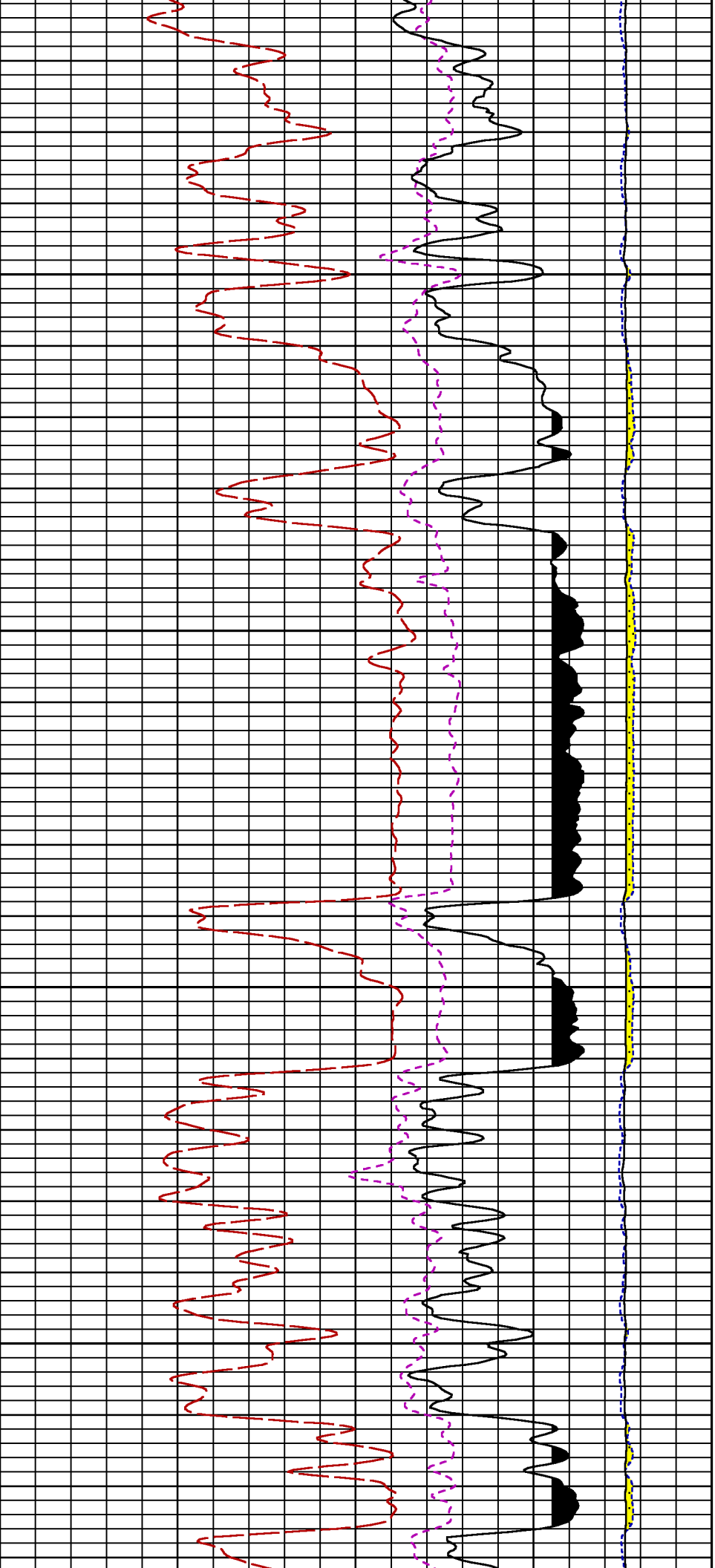


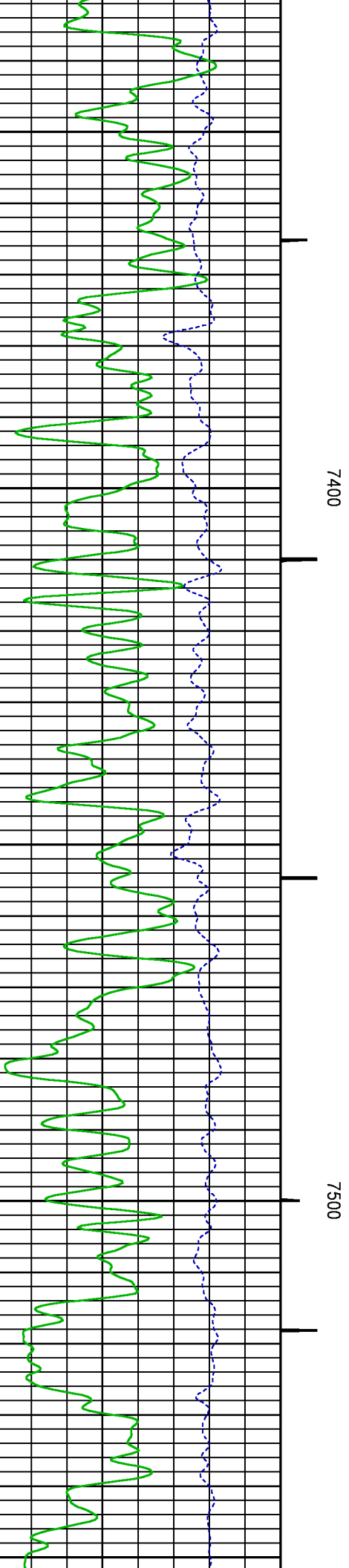
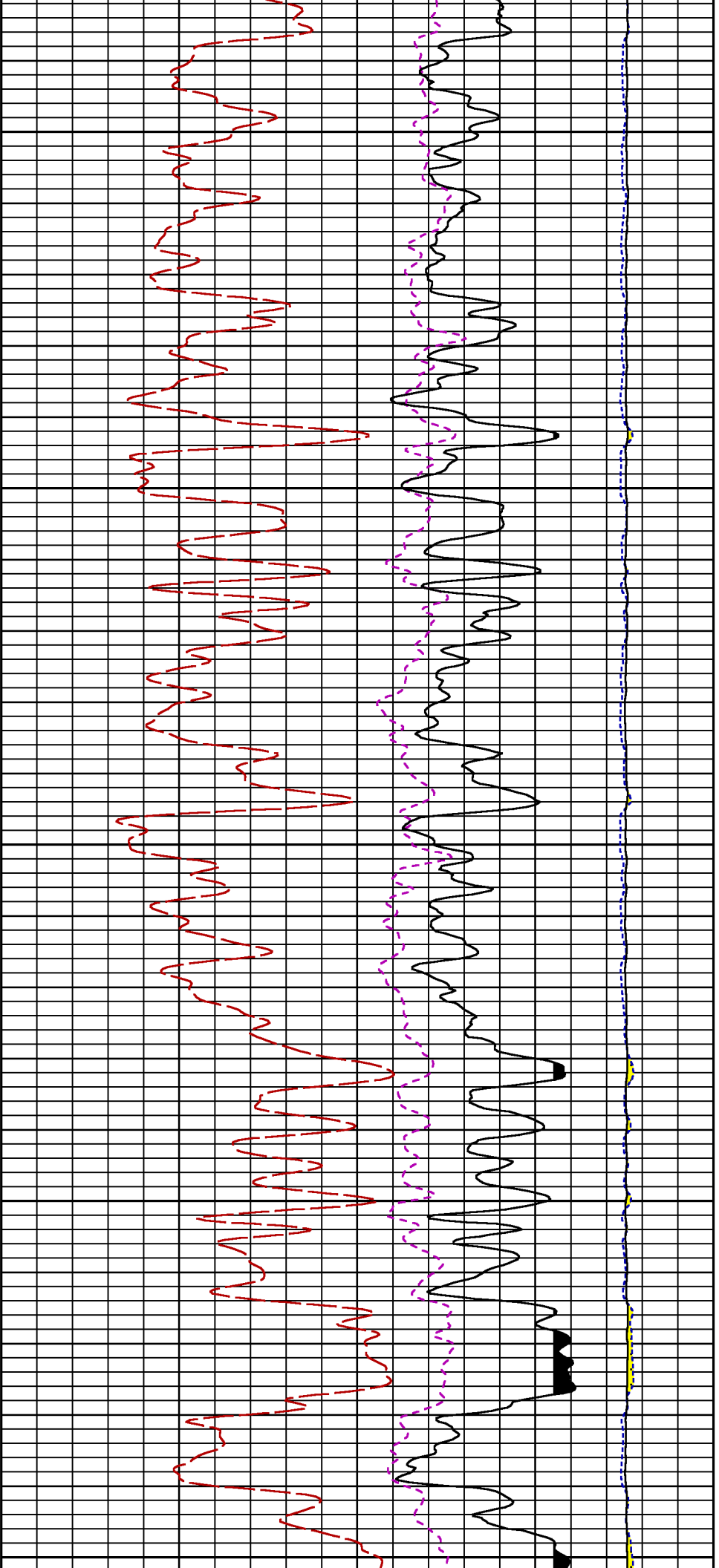


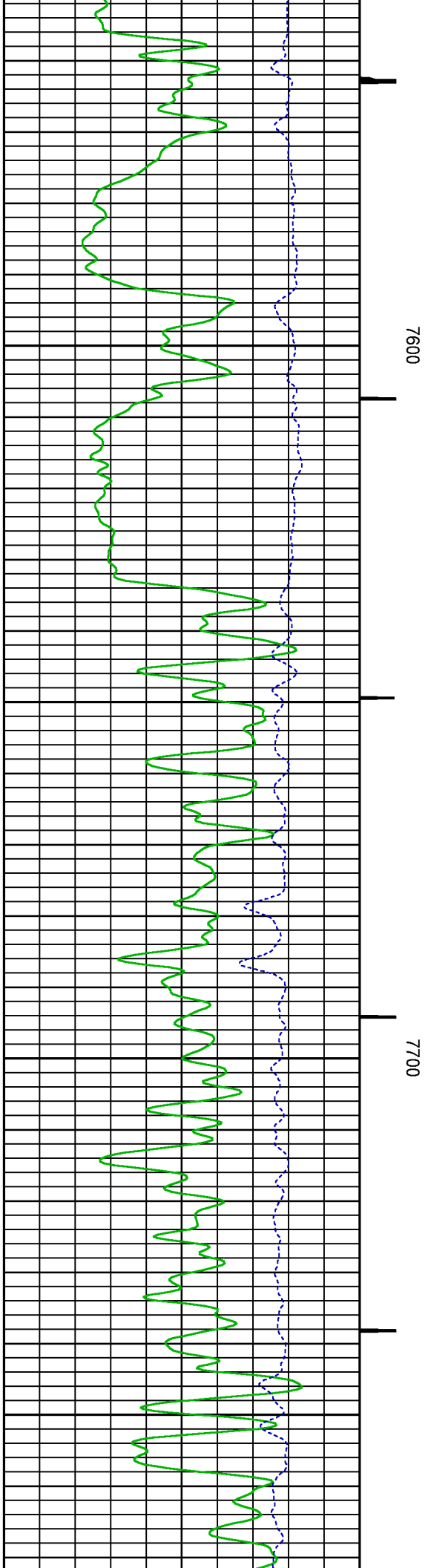
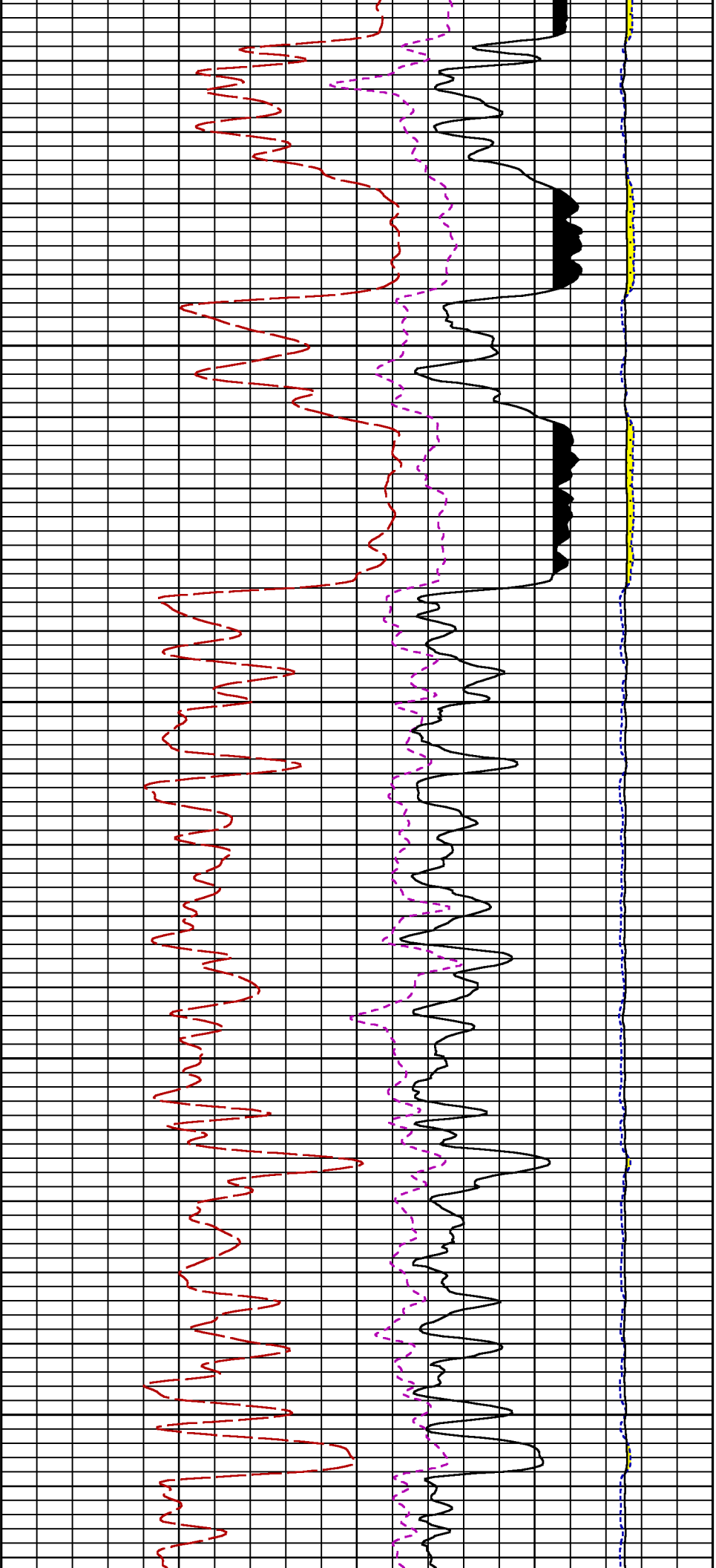


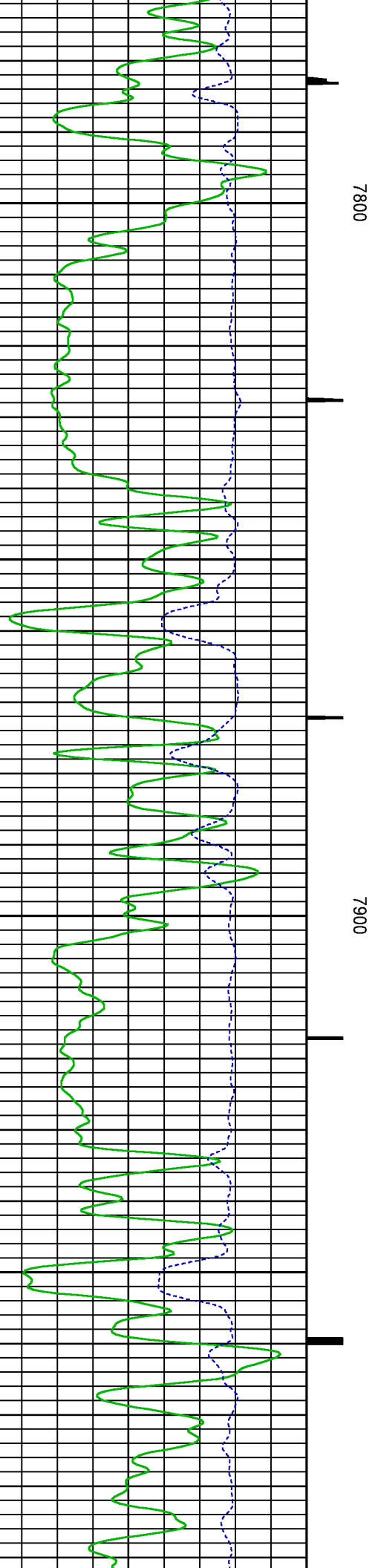
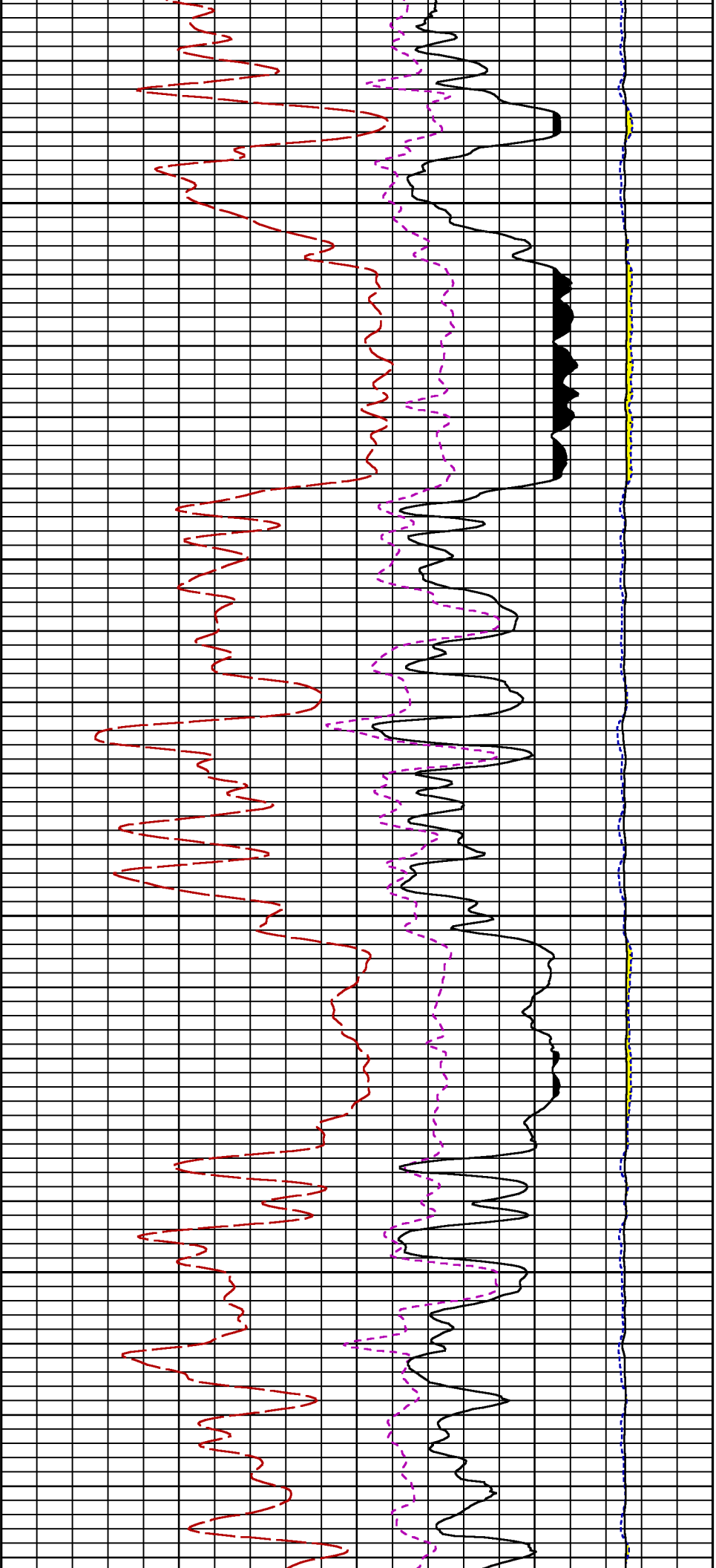


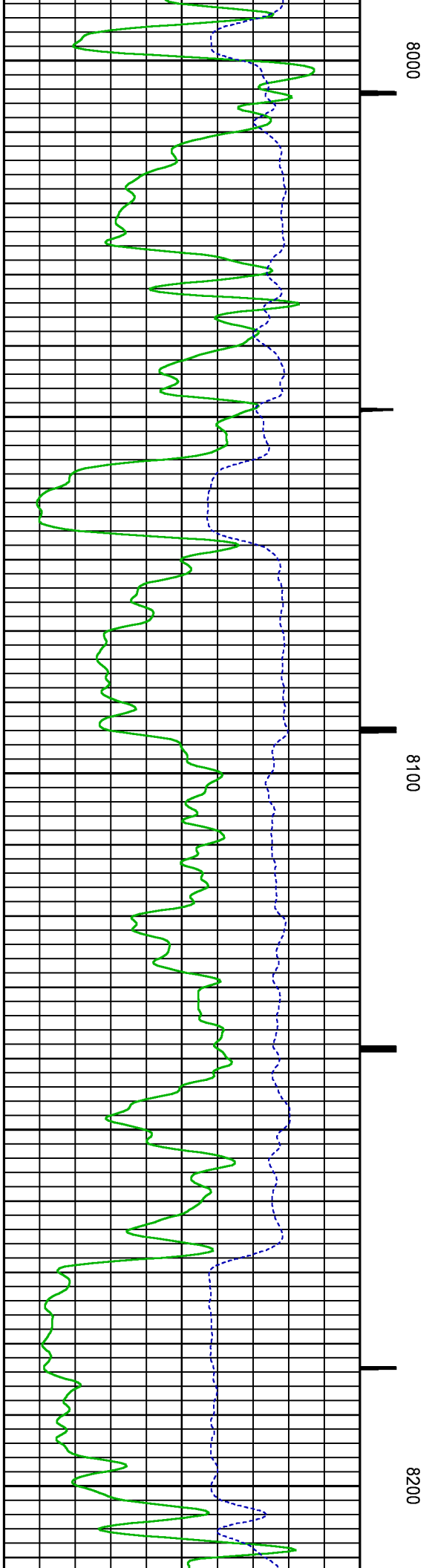
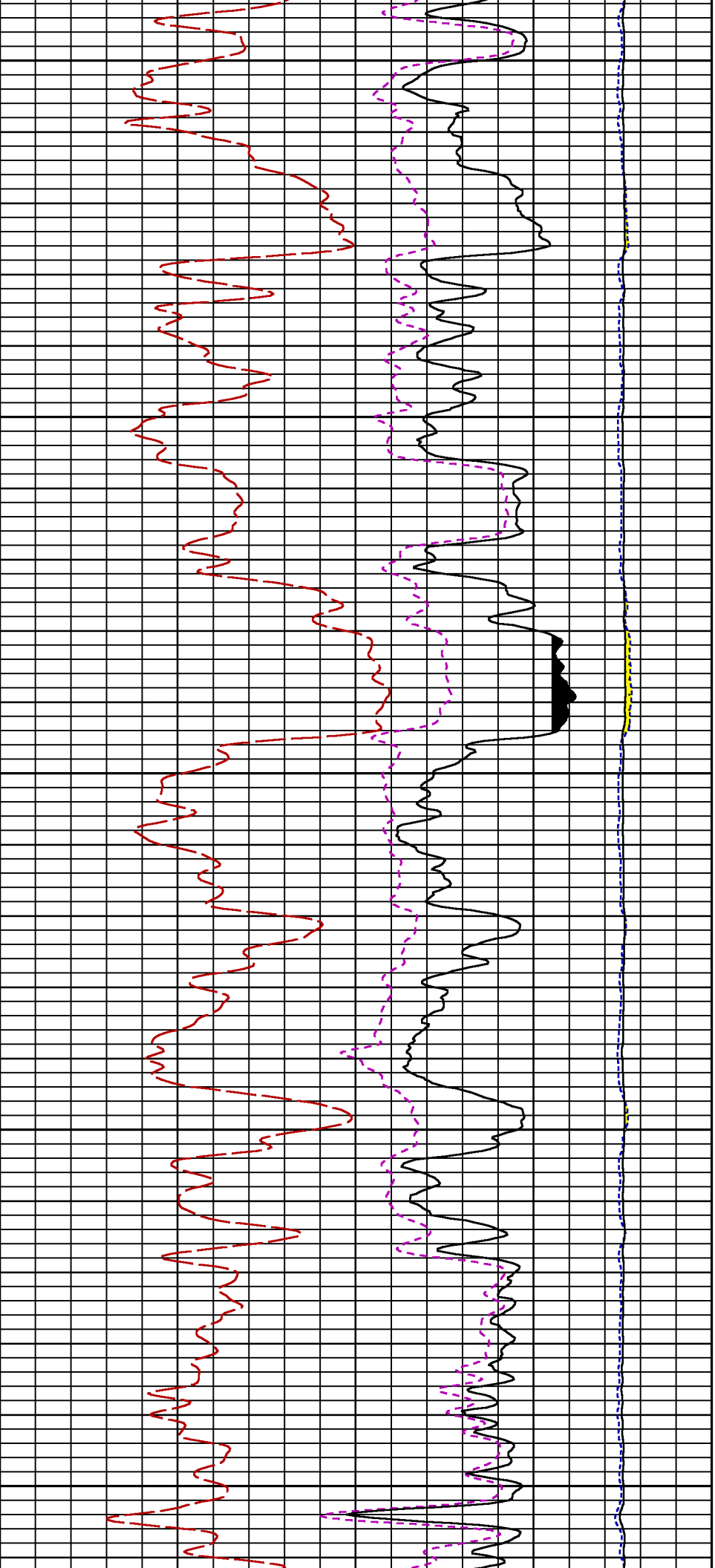


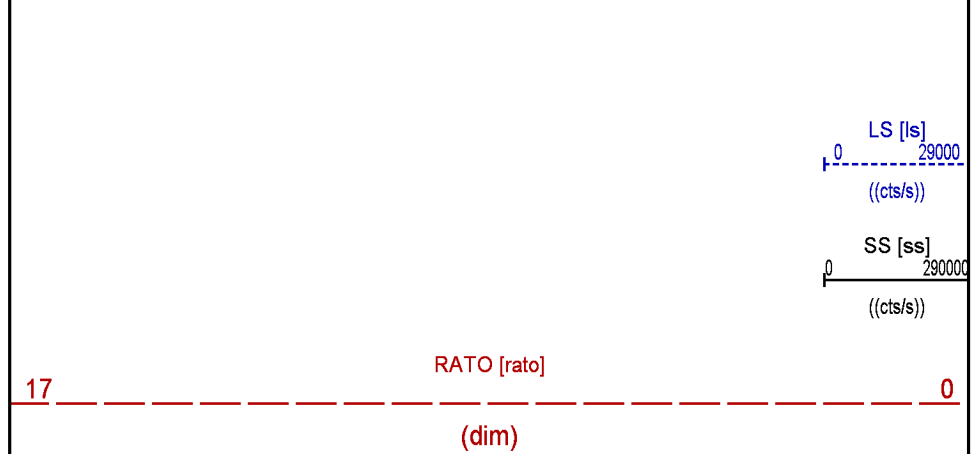
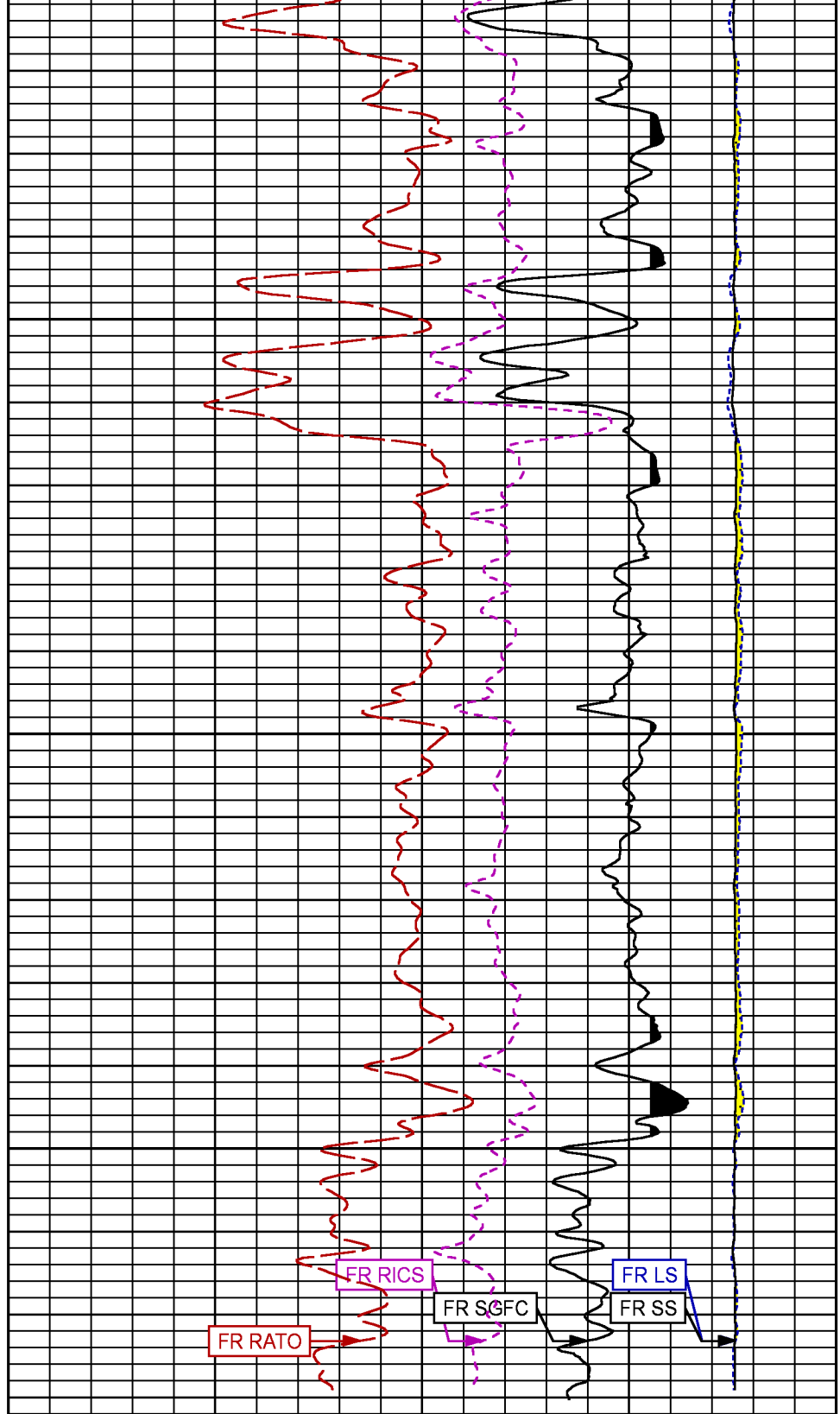
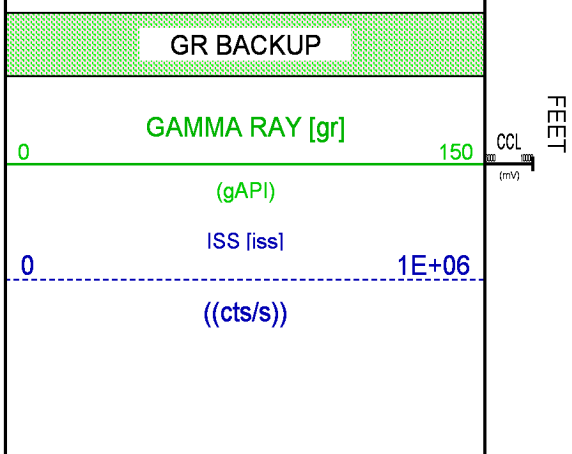
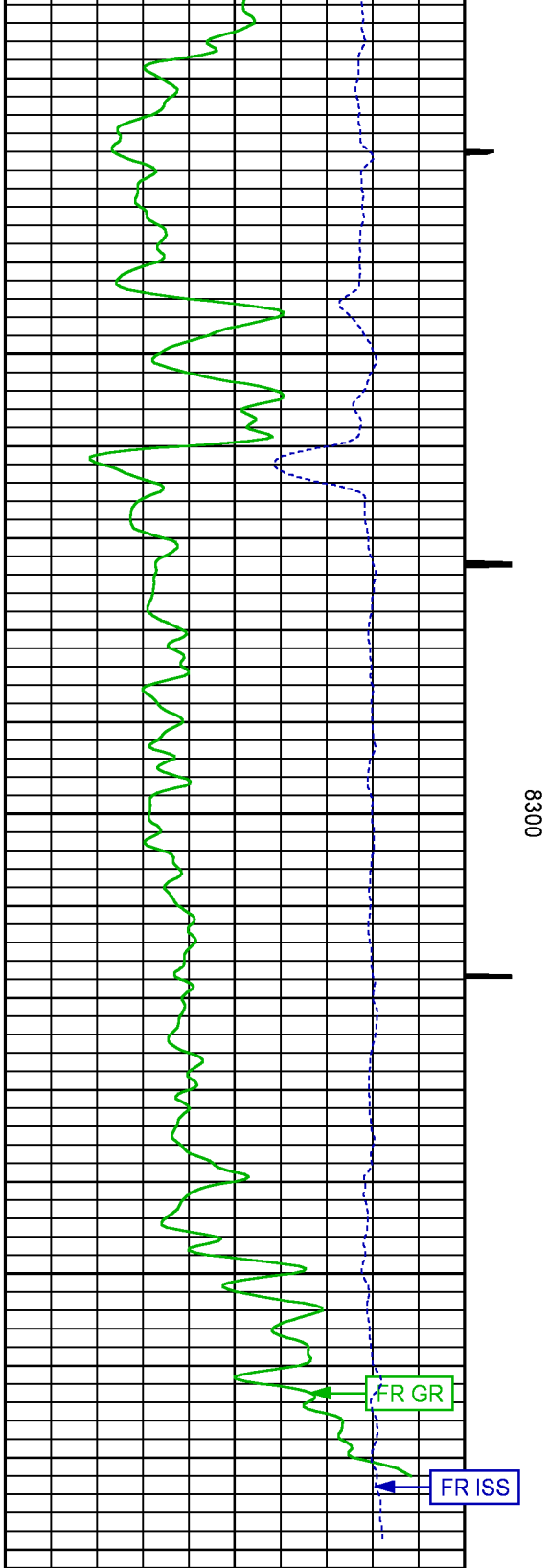












| | | | |
|--|----|-------------|---|
| | | RICS [rics] | 9 |
| | | (dim) | |
| | 60 | SGFC [sgfc] | 0 |
| | | (cu) | |

REPEAT PASS 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: Tue Aug 22 14:47:45 2017

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_BRUTON_19_17W/RPM3D01.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 7788.500 ft BOTTOM DEPTH: 8008.500 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 | 7.88 | in | " " |
| | CASING SIZE | 4.50 | in | " " |
| | MATRIX | SANDSTONE | | " " |
| | CORRECTION BUFFER | 11 | | " " |

CURVE DESCRIPTION REPORT

| CURVE NAME | CREATION DATE | CURVE DESCRIPTION |
|------------|----------------------|---|
| F1:CCL | Aug 22 14:30:50 2017 | CASING COLLAR LOCATOR |
| F1:GR | Aug 22 14:30:50 2017 | GAMMA RAY |
| F1:ISS | Aug 22 14:30:50 2017 | INELASTIC SHORT SPACE COUNT RATE |
| F1:LS | Aug 22 14:30:50 2017 | LONG SPACE COUNT RATE |
| F1:RATO | Aug 22 14:30:50 2017 | SHORT/LONG SPACE COUNT RATE RATIO |
| F1:RICS | Aug 22 14:30:50 2017 | SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS) |
| F1:SGFC | Aug 22 14:30:50 2017 | CORRECTED FORMATION SIGMA |
| F1:SS | Aug 22 14:30:50 2017 | SHORT SPACE COUNT RATE |

CURVE MEASURE POINT OFFSET

| CURVE | OFFSET (ft) | CURVE | OFFSET (ft) | CURVE | OFFSET (ft) | CURVE | OFFSET (ft) |
|-------|-------------|-------|-------------|-------|-------------|-------|-------------|
| CCL | 26.00 | ISS | 12.75 | RATO | 12.75 | SGFC | 12.75 |
| GR | 23.00 | LS | 12.75 | RICS | 12.75 | SS | 12.75 |

Presentation : cpu100:BRUTON_19_17W_RPM_REPEAT.fvpdf [5"/100' Scale]
Plot Interval : 7776.5 - 8012.5 Feet

Data File 1 : F1 : cpu100:/dat1a/LARAMIE_BRUTON_19_17W/BRUTON_19_17W_RPM_RPT.xtf
Created On : Aug 22 14:30:50 2017
Company : LARAMIE ENERGY
Well : BRUTON_19_17W

Well : BROOKTON 15-17W
Field : MESA
File Interval : 7775.75 - 8021.25 Feet
OCT : RPM3D

GR BACKUP

GAMMA RAY [gr]

(gAPI)

ISS [iss]

((cts/s))

FEET

CCL
(m/s)

7800

7900

LS [ls]

((cts/s))

SS [ss]

((cts/s))

RATO [rato]

(dim)

RICS [rics]

(dim)

SGFC [sgfc]

(cu)

17

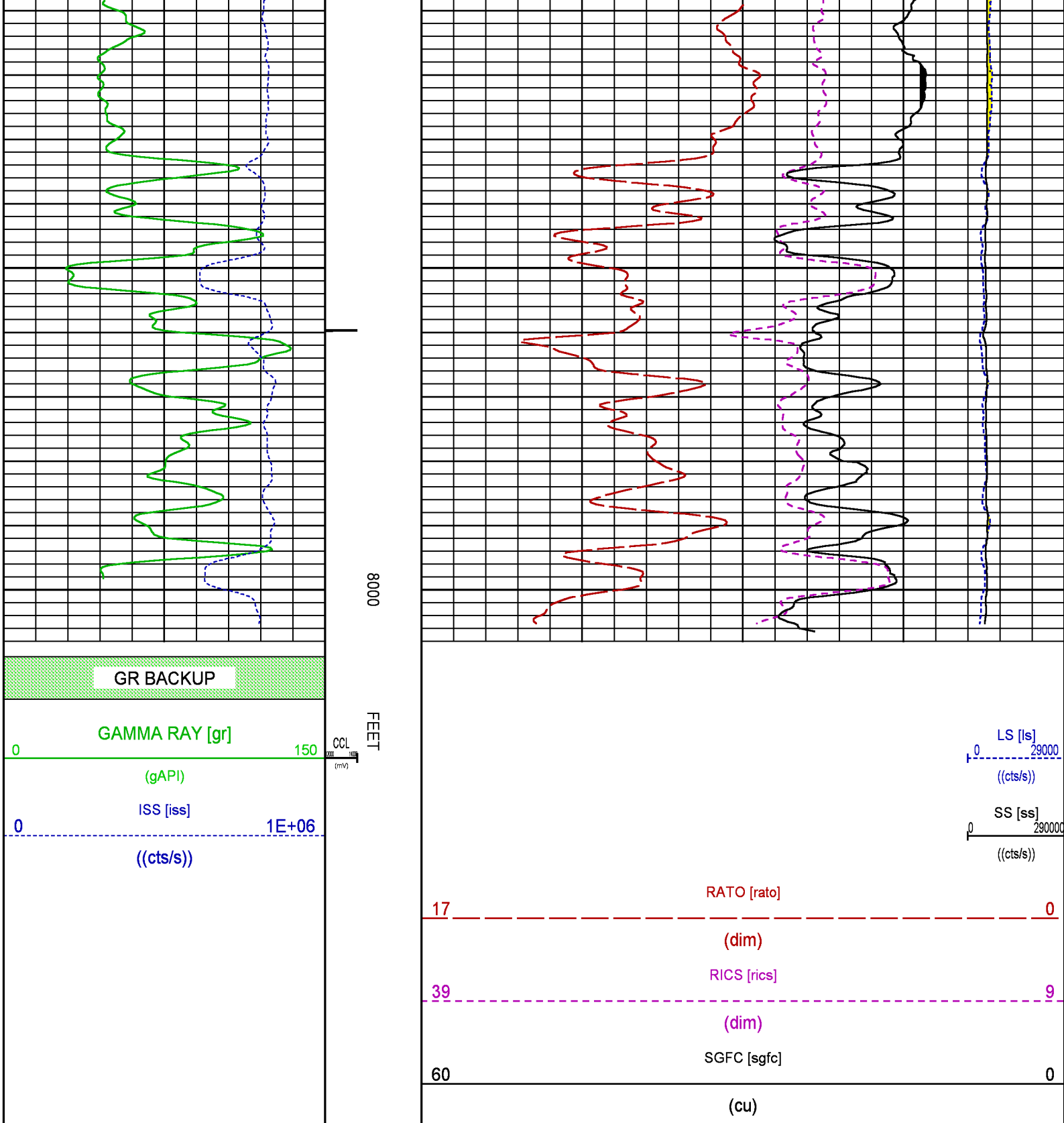
0

39

9

60

0



CALIBRATION / VERIFICATION SUMMARY

Source File: /data/LARAMIE_BRUTON_19_17W/RPM3D.tp1

GR PRIMARY CALIBRATION SUMMARY

TOOL #: 8262XA 10485470

DATE/TIME PERFORMED: Tue Jan 17 13:32:11 2017

UNIT #: 3882ML ML4352

CALB JIG #: 4702NK DA_228

BACKGROUND CALBRTR ONCR DIFFMULTBACKGROUND CALBRTR ONCALBRTR

(cls/s)(cls/s)(cls/s)(gAPI)(gAPI)(gAPI)

GR63.76399.13335.40.55235.17220.17185

GR PRIMARY VERIFICATION SUMMARY

TOOL #:8262XA 10485470

DATE/TIME PERFORMED:Tue Jan 17 13:34:45 2017

UNIT #:3882ML ML4352

VERI JIG #:4702NK DA_228

BACKGROUND CALBRTR ONMULTBACKGROUND CALBRTR ONDIFF.

(cls/s)(cls/s)(gAPI)(gAPI)(gAPI)

GR63.44394.180.55235.00217.44182.44

175.00195.00

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

ISSMtr VltSS GainLS GainXLS GainEA TempSync DelayRCAL

(V)(degF)(usec)

Raw Data8072401232232225922851379.00.9874

Interpolated1300000146221622512283

ISSBKS BKL BKXSGA1SDA1SGA2SDA2

Raw Data8072406543135223625.880.1524.030.34

25.3526.400.000.2073.6074.800.000.40

ISSILS IXSSSS2LS CSSCLS

Raw Data80724016468725336861043069080865229912945

Fit Quality %0.4920.4430.4870.4900.5060.4620.494

ISSRBORRINRIN13RICSRTWORTRONE

ISS/ILSISS/XSSI/CSSSS/LSSS2/LSCSS/CLS

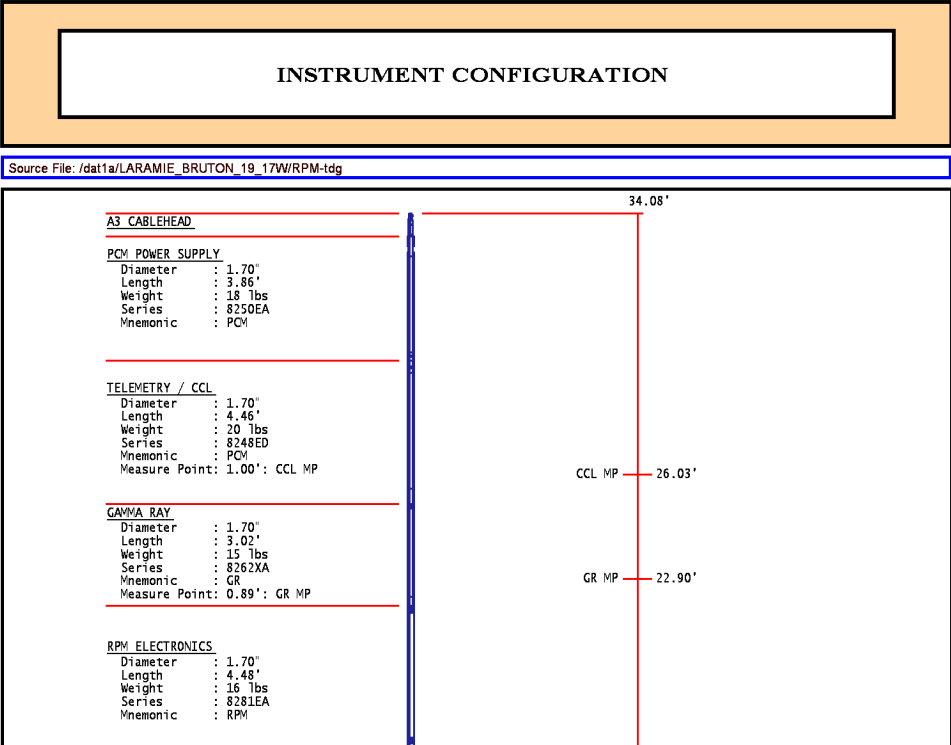
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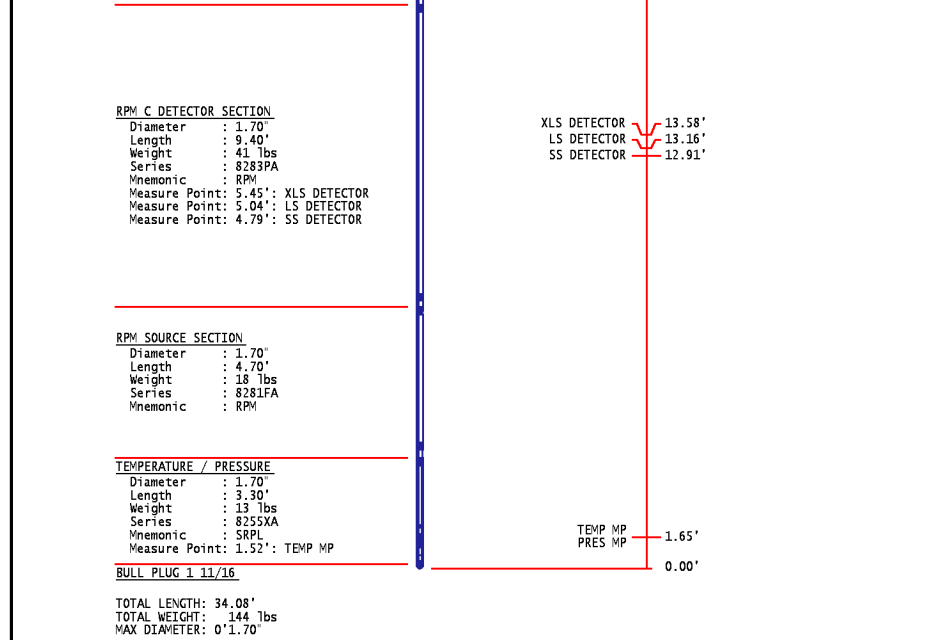
1.421.453.555.5222.2032.7010.9916.3410.0611.103.573.953.764.22


Fit Quality %0.0520.1280.1170.1440.0210.0110.031

Reduced12322601.444.9131.9115.4510.653.804.04

1.421.454.335.5227.6032.7013.7016.3410.0611.103.573.953.764.22





| | | | |
|--|--------------------------------------|--|--------------------------------------|
|  | COMPANY <u>LARAMIE ENERGY</u> | | FILE NO: _____ |
| | WELL <u>BRUTON 19-17W</u> | | API NO: _____ |
| | FIELD <u>VEGA</u> | | API NO: <u>05077103790000</u> |
| | COUNTY <u>MESA</u> | STATE <u>COLORADO</u> | |
| LOCATION: SHL: LAT:39.255232N;LONG:107.806537W BHL: LAT:39.258541N;LONG:107.816061W SEC <u>19</u> TWP <u>9S</u> RGE <u>93W</u> | | ELEVATIONS: KB 7449 FT DF 7448 FT GL 7425 FT | |
| | | DATE <u>22-AUG-2017</u> | |