



| | | |
|----------------|---------|----------------|
| FILE NO: | COMPANY | LARAMIE ENERGY |
| API NO: | WELL | BRUTON 19-16E |
| 05077103800000 | FIELD | VEGA |
| | COUNTY | MESA |
| | STATE | COLORADO |

| | | |
|-----------|---------------------------------------|----------------|
| Ver. 4.06 | LOCATION: | OTHER SERVICES |
| | SHL: LAT:39.255232N; LONG:107.806537W | RAL |
| | BHL: LAT:39.259203N; LONG:107.807021W | |
| | 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 | 23-AUG-2017 |
| RUN | 2 |
| TRIP | 1 |
| SERVICE ORDER | US126727 |
| DEPTH DRILLER | 7827 FT |
| DEPTH LOGGER | 7765 FT |
| BOTTOM LOGGED INTERVAL | 7765 FT |
| TOP LOGGED INTERVAL | 2400 FT |
| TIME STARTED | 10:00 |
| TIME FINISHED | 16:00 |
| OPERATOR RIG TIME | 6 HOURS |
| TYPE OF FLUID IN HOLE | WATER |
| FLUID DENSITY | NA |
| FLUID SALINITY | NA |
| FLUID LEVEL | 49 FT |
| LOGGED CEMENT TOP | 1448 FT |
| WELLHEAD PRESSURE | 0 PSI |
| MAXIMUM HOLE DEVIATION | NA |
| NOMINAL LOGGING SPEED | 15 FMN |
| MAX. RECORDED TEMP. | 239 DEGF |
| REFERENCE LOG | BAKER RALGR |
| REFERENCE LOG DATE | 23-AUG-2017 |
| EQUIP. NO. | HL-6670 |
| LOCATION | 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 1: RAL/GR/CCL RUN CENTRALIZED

LOGGED WITH 0 PSI ON WELLHEAD

SJ: 5896' - 5918'
SJ: 6902' - 7924'

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 | 103098716 | 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: Wed Aug 23 16:05:26 2017

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_BRUTON_19_16E/RPM3D03.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 2392.000 ft BOTTOM DEPTH: 3057.750 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 | 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 23 15:13:24 2017 | CASING COLLAR LOCATOR |
| F1:GR | Aug 23 15:13:24 2017 | GAMMA RAY |
| F1:ISS | Aug 23 15:13:24 2017 | INELASTIC SHORT SPACE COUNT RATE |
| F1:LS | Aug 23 15:13:24 2017 | LONG SPACE COUNT RATE |
| F1:RATO | Aug 23 15:13:24 2017 | SHORT/LONG SPACE COUNT RATE RATIO |
| F1:RICS | Aug 23 15:13:24 2017 | SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS) |
| F1:SGFC | Aug 23 15:13:24 2017 | CORRECTED FORMATION SIGMA |
| F1:SS | Aug 23 15:13:24 2017 | SHORT SPACE COUNT RATE |

CURVE MEASURE POINT OFFSET

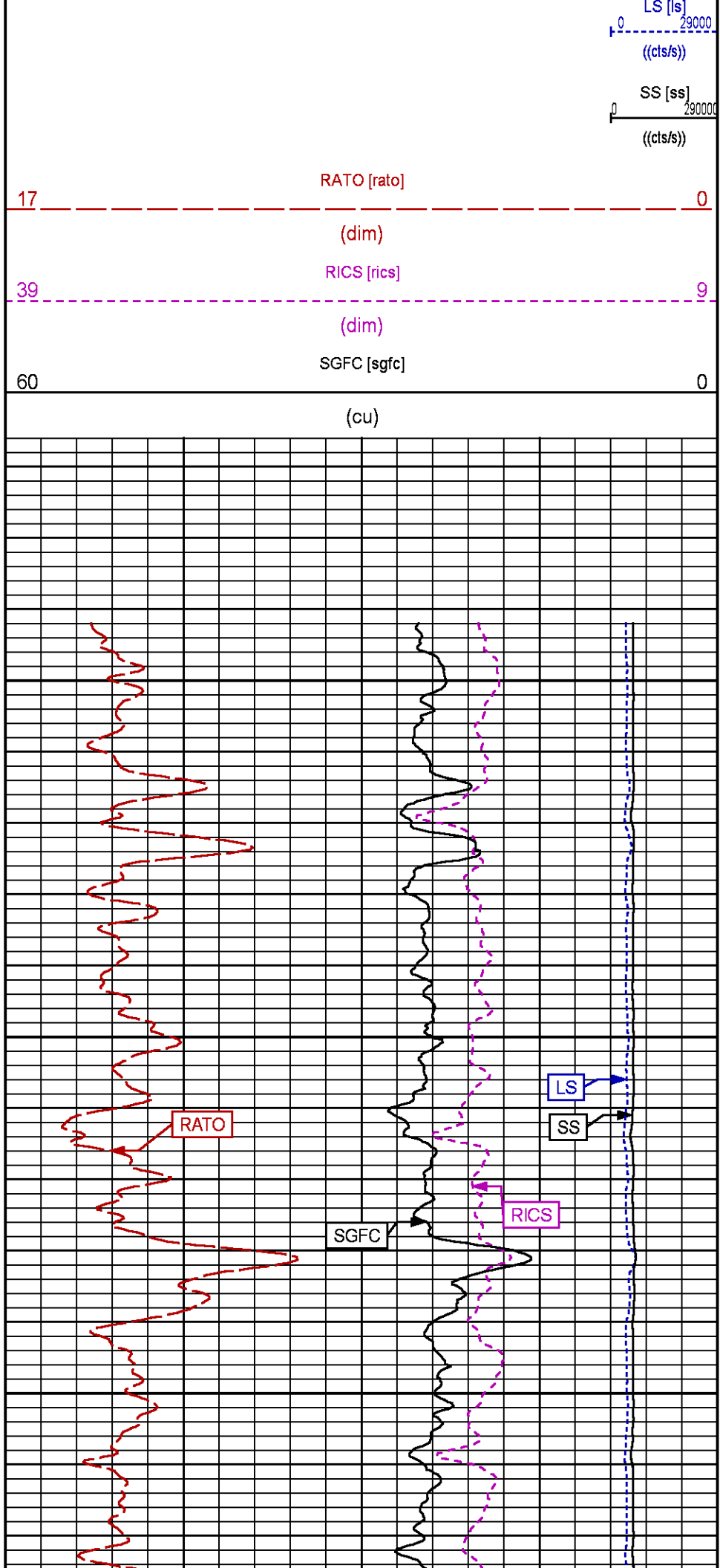
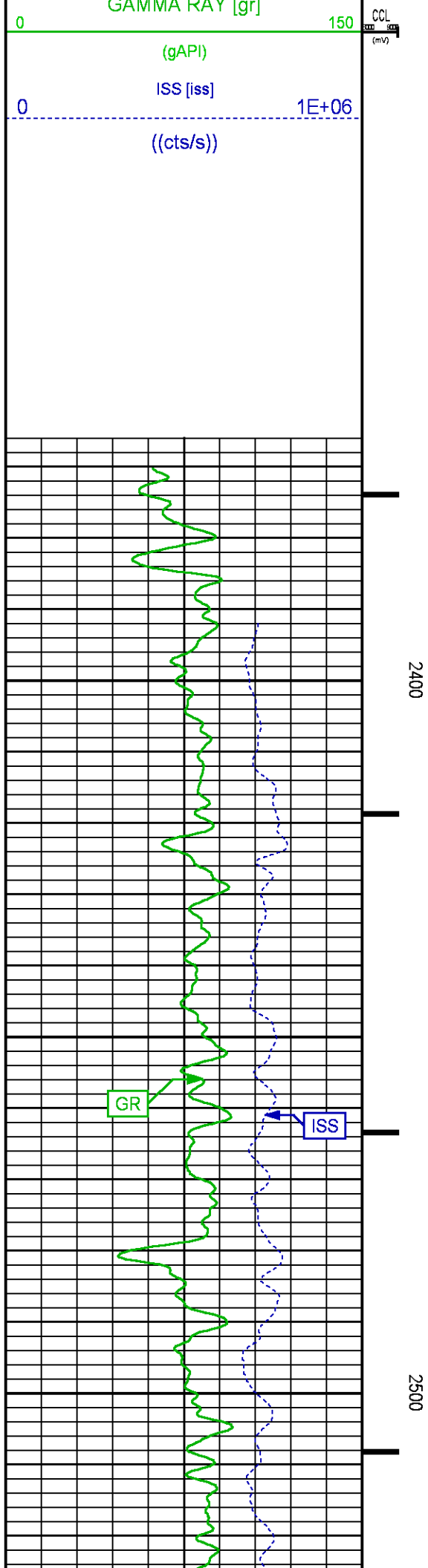
| CURVE | OFFSET (ft) | CURVE | OFFSET (ft) | CURVE | OFFSET (ft) | CURVE | OFFSET (ft) |
|-------|-------------|-------|-------------|-------|-------------|-------|-------------|
| CCL | 26.00 | ISS | 12.75 | RATO | 12.75 | SGFC | 12.75 |
| GR | 23.00 | LS | 12.75 | RICS | 12.75 | SS | 12.75 |

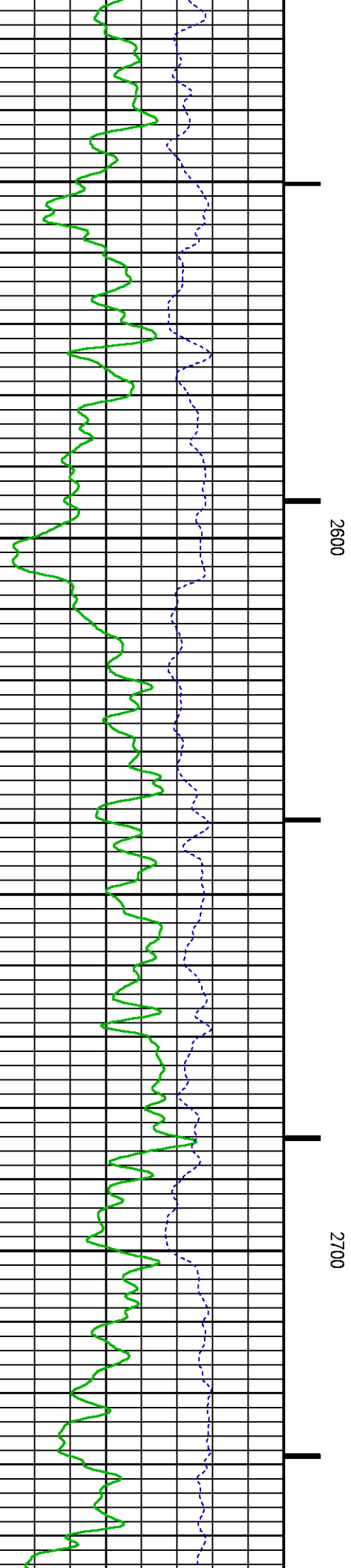
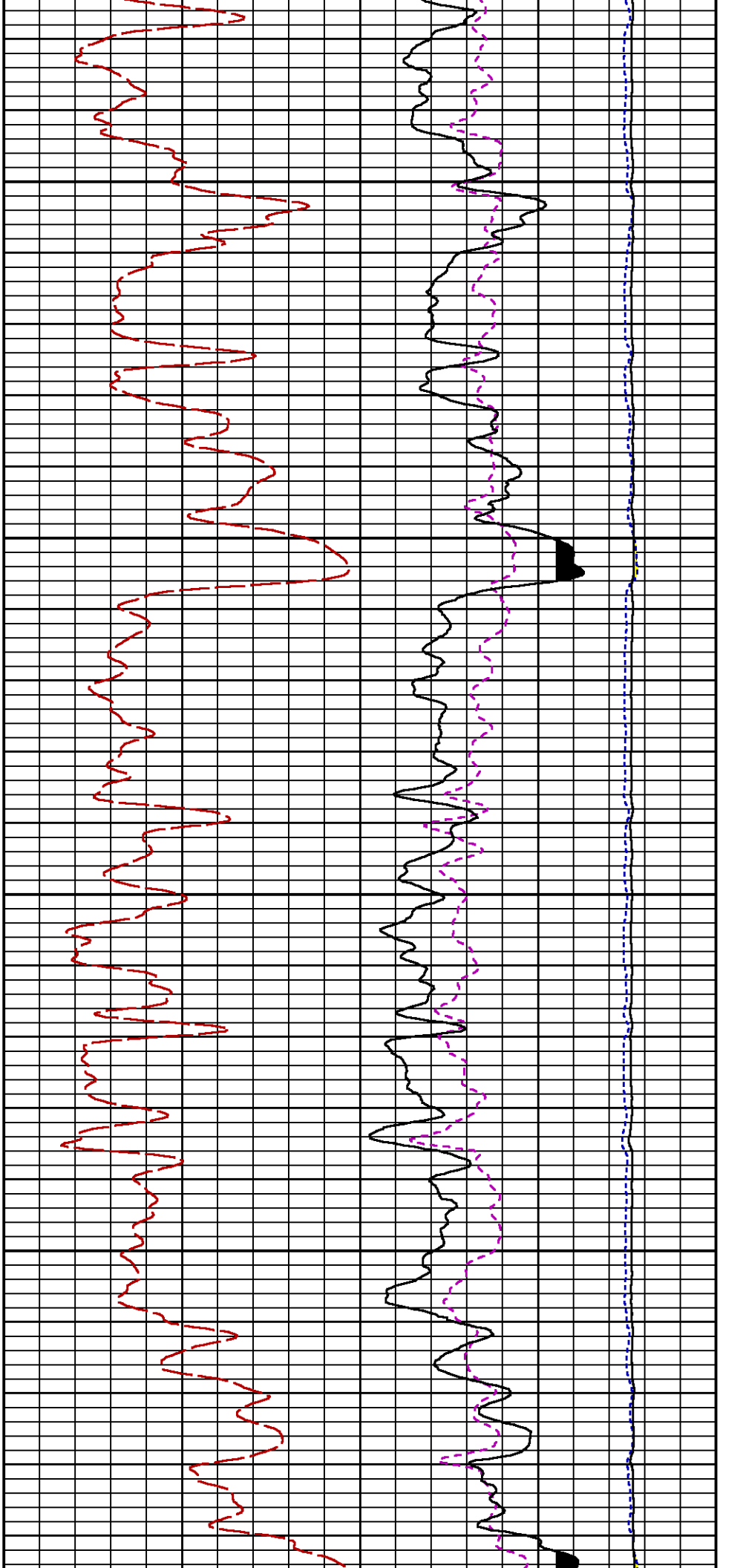
Presentation : cpu100:/dat1a/LARAMIE_BRUTON_19_16E/BRUTON_19_16E_RPM_GSAND.fvpdf [5"/100' Scale]
 Plot Interval : 2366 - 3047.75 Feet

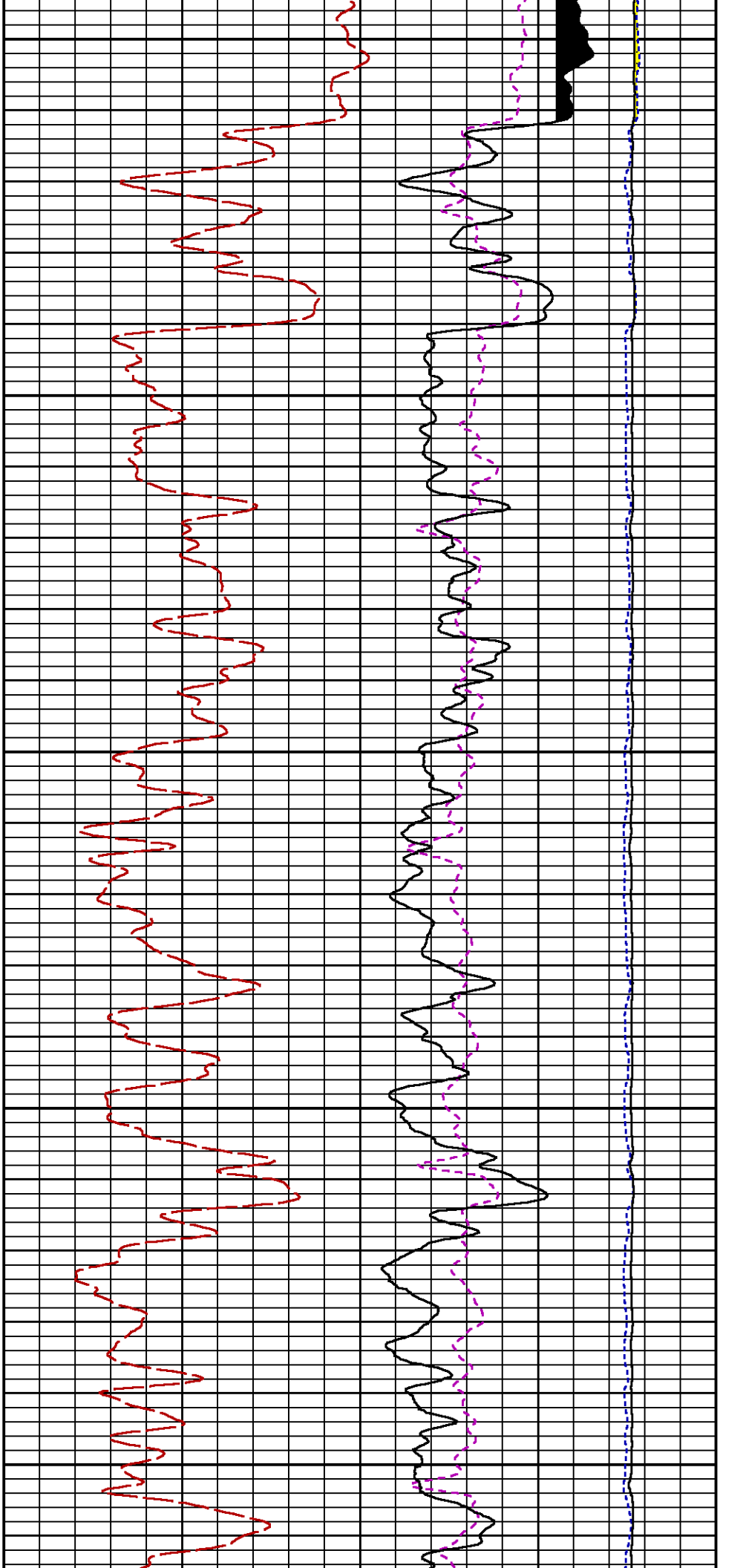
Data File 1 : F1 : cpu100:/dat1a/LARAMIE_BRUTON_19_16E/BRUTON_19_16E_RPM_GSAND.xtf
 Created On : Aug 23 15:13:24 2017
 Company : LARAMIE ENERGY
 Well : BRUTON 19-16E
 Field : MESA
 File Interval : 2365.25 - 3057.75 Feet
 OCT : RPM3D

GR BACKUP

FEET

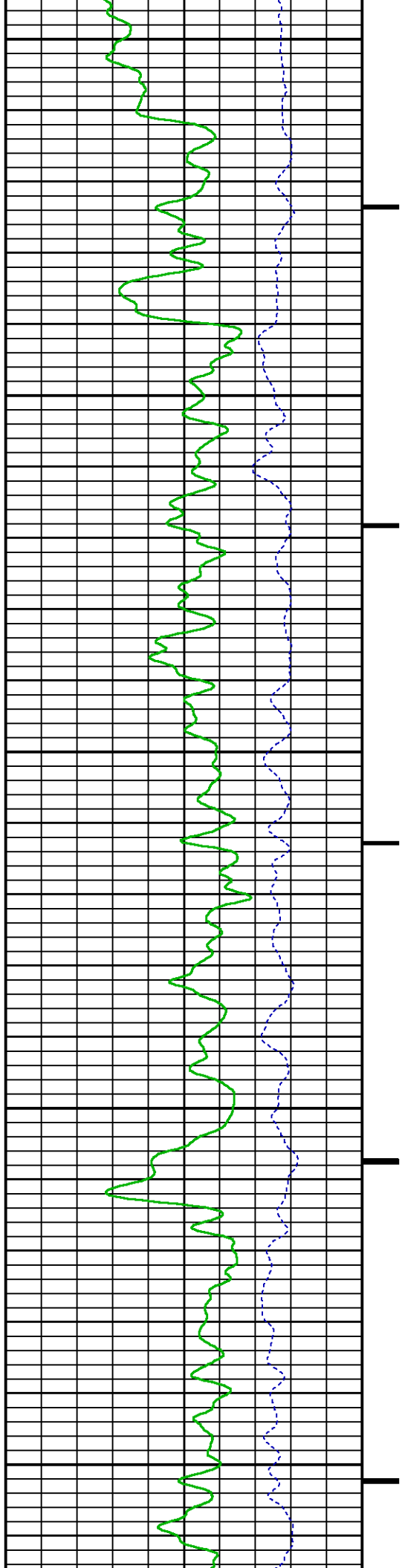


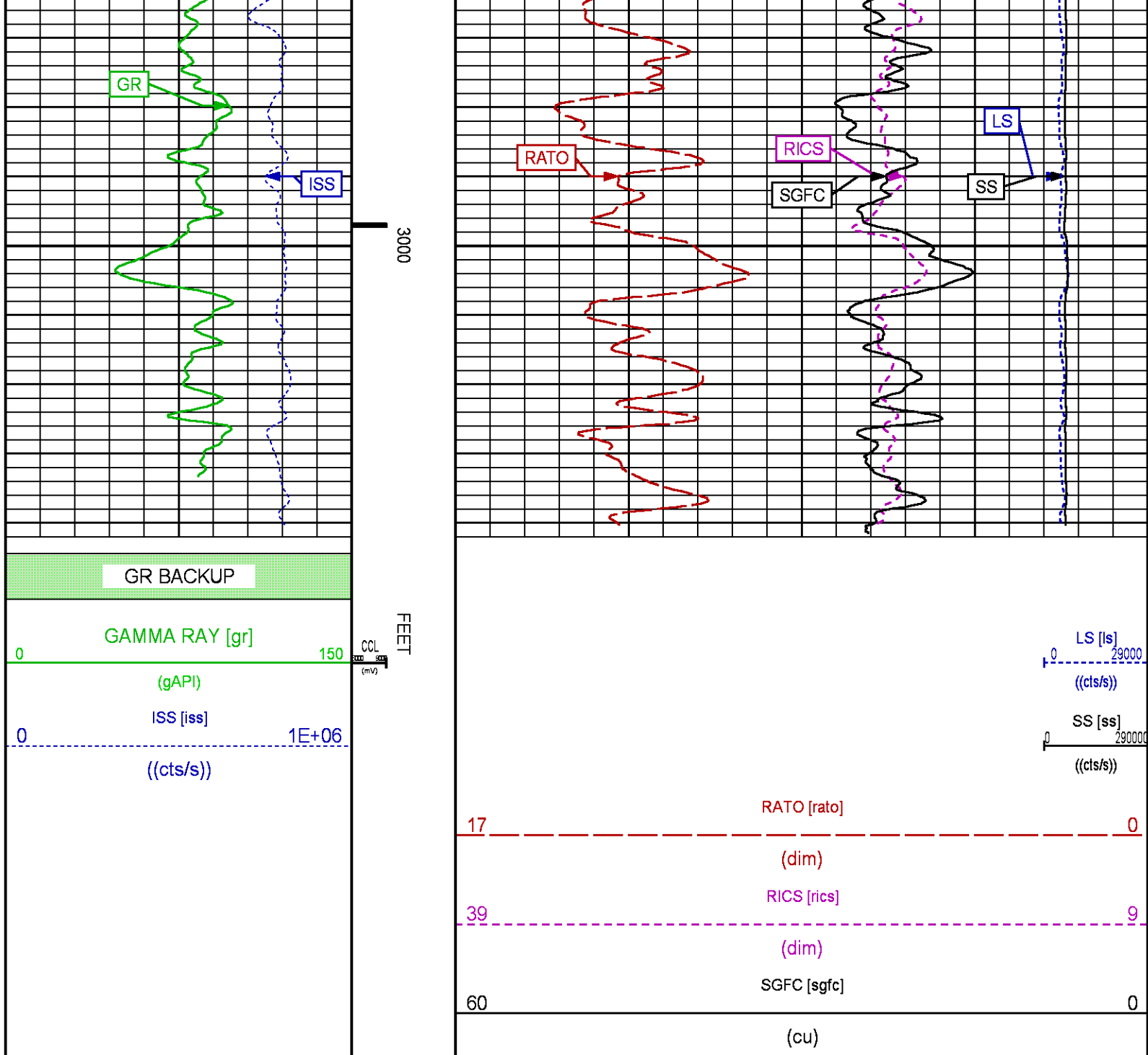




2800

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: Wed Aug 23 15:18:29 2017

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_BRUTON_19_16E/RPM3D02.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 4135.000 ft BOTTOM DEPTH: 7799.979 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 |

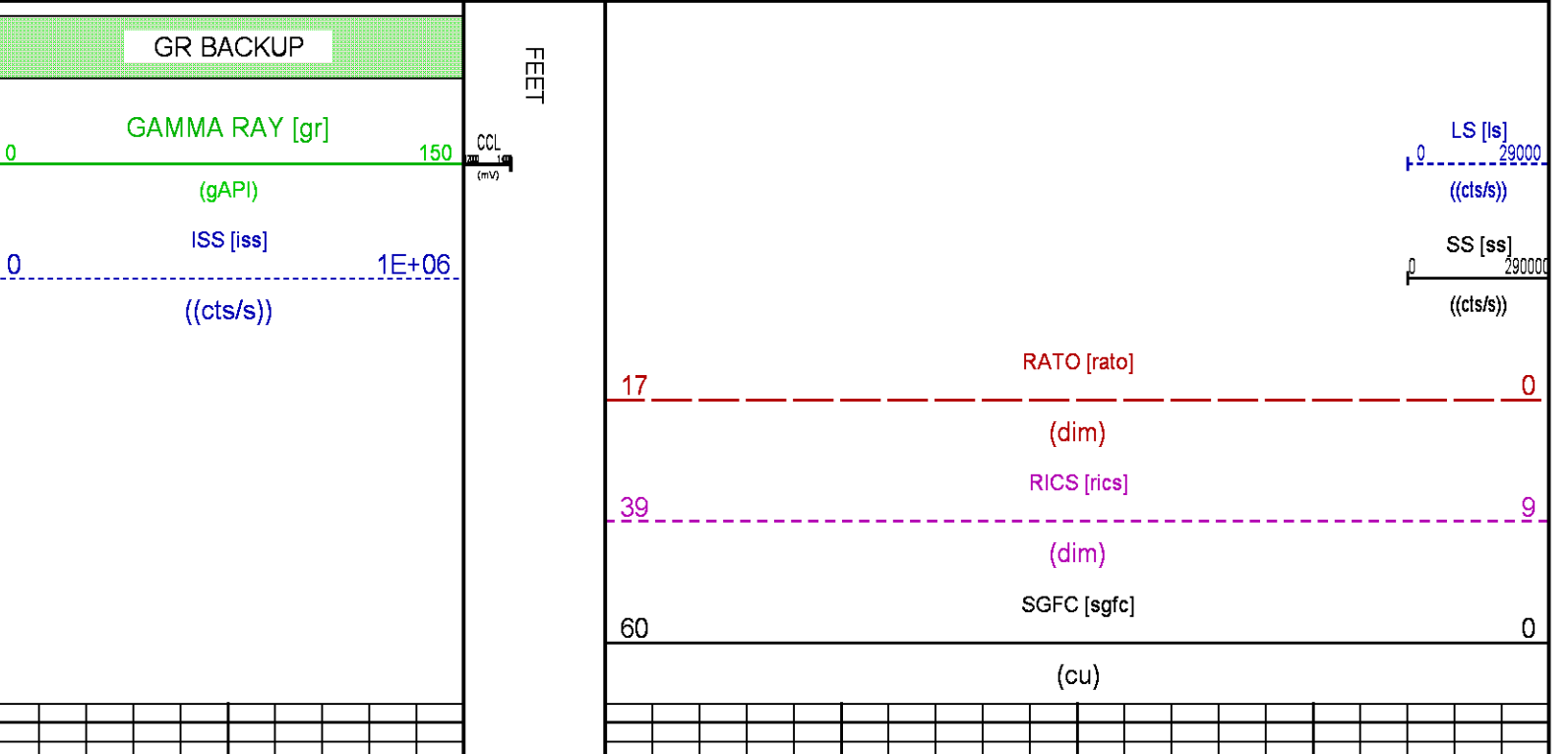
| | | |
|---------|----------------------|---|
| F1:CCL | Aug 23 11:14:26 2017 | CASING COLLAR LOCATOR |
| F1:GR | Aug 23 11:14:26 2017 | GAMMA RAY |
| F1:ISS | Aug 23 11:14:26 2017 | INELASTIC SHORT SPACE COUNT RATE |
| F1:LS | Aug 23 11:14:26 2017 | LONG SPACE COUNT RATE |
| F1:RATO | Aug 23 11:14:26 2017 | SHORT/LONG SPACE COUNT RATE RATIO |
| F1:RICS | Aug 23 11:14:26 2017 | SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS) |
| F1:SGFC | Aug 23 11:14:26 2017 | CORRECTED FORMATION SIGMA |
| F1:SS | Aug 23 11:14:26 2017 | SHORT SPACE COUNT RATE |

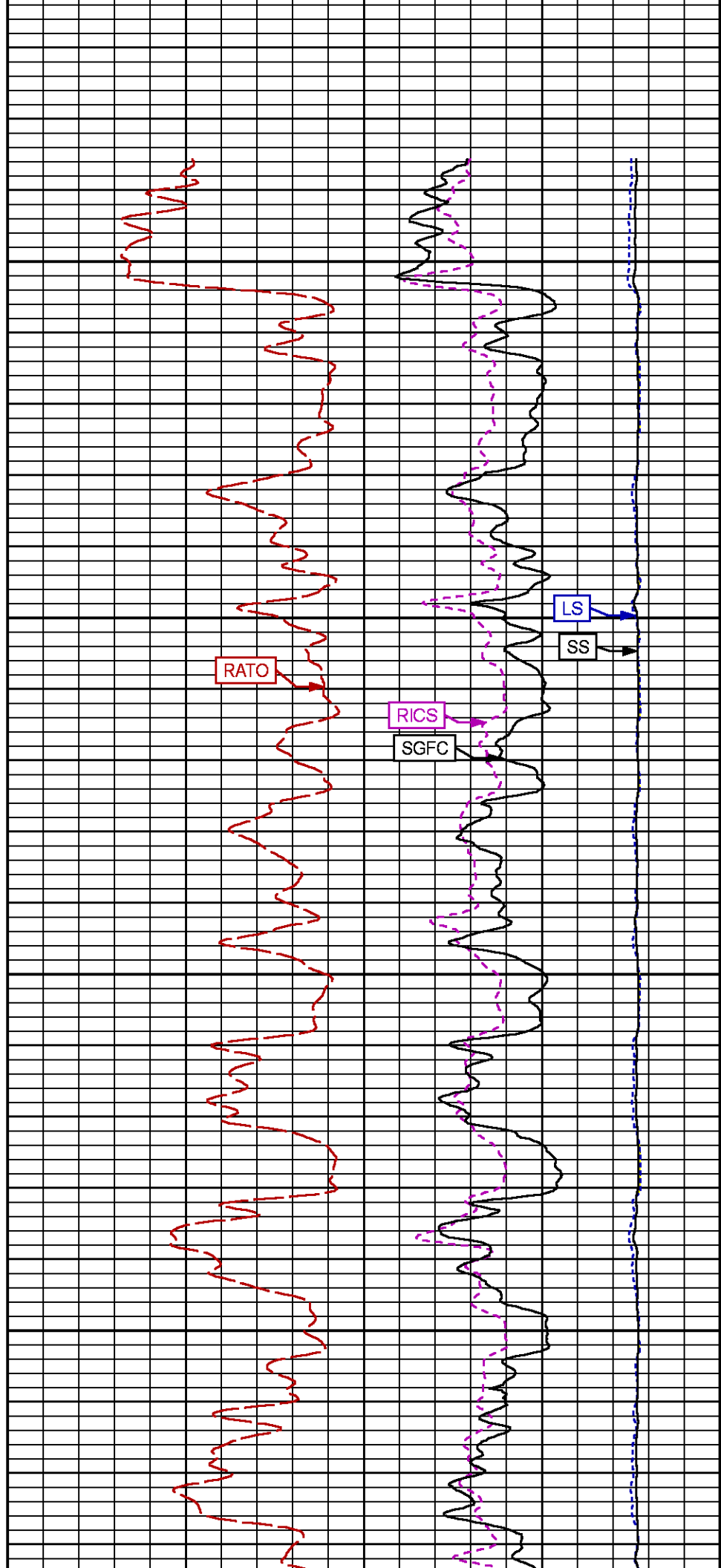
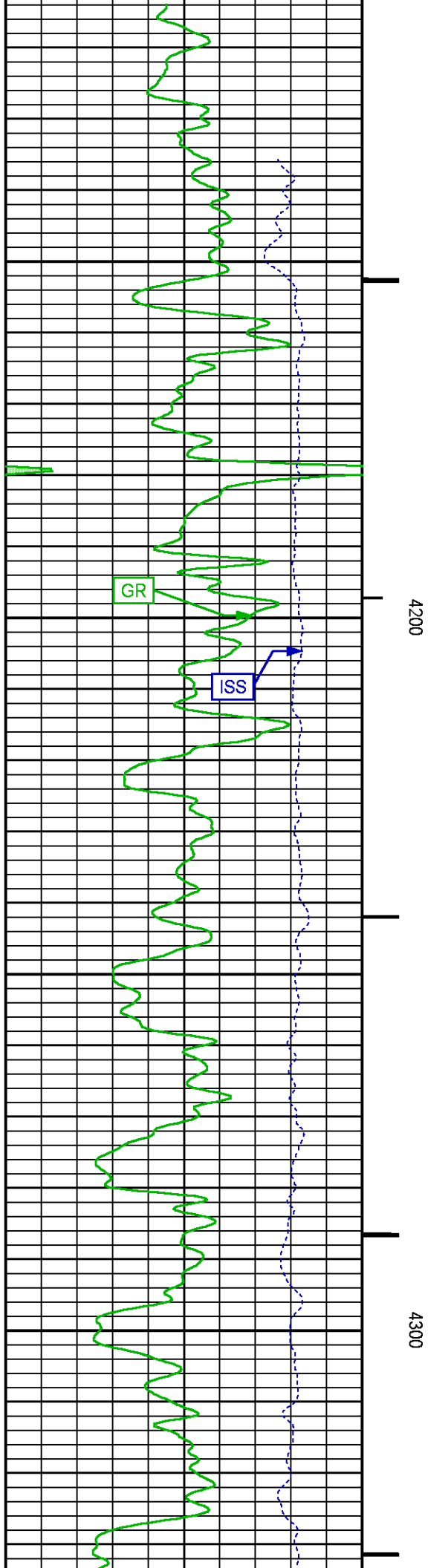
| CURVE MEASURE POINT OFFSET | | | | | | | |
|----------------------------|-------------|-------|-------------|-------|-------------|-------|-------------|
| CURVE | OFFSET (ft) | CURVE | OFFSET (ft) | CURVE | OFFSET (ft) | CURVE | OFFSET (ft) |

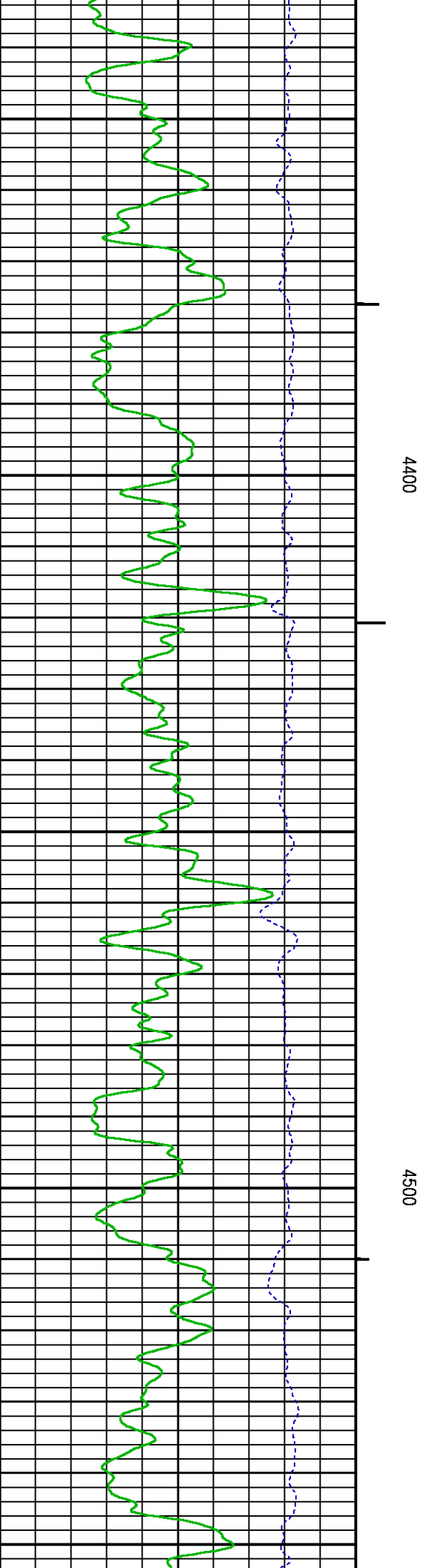
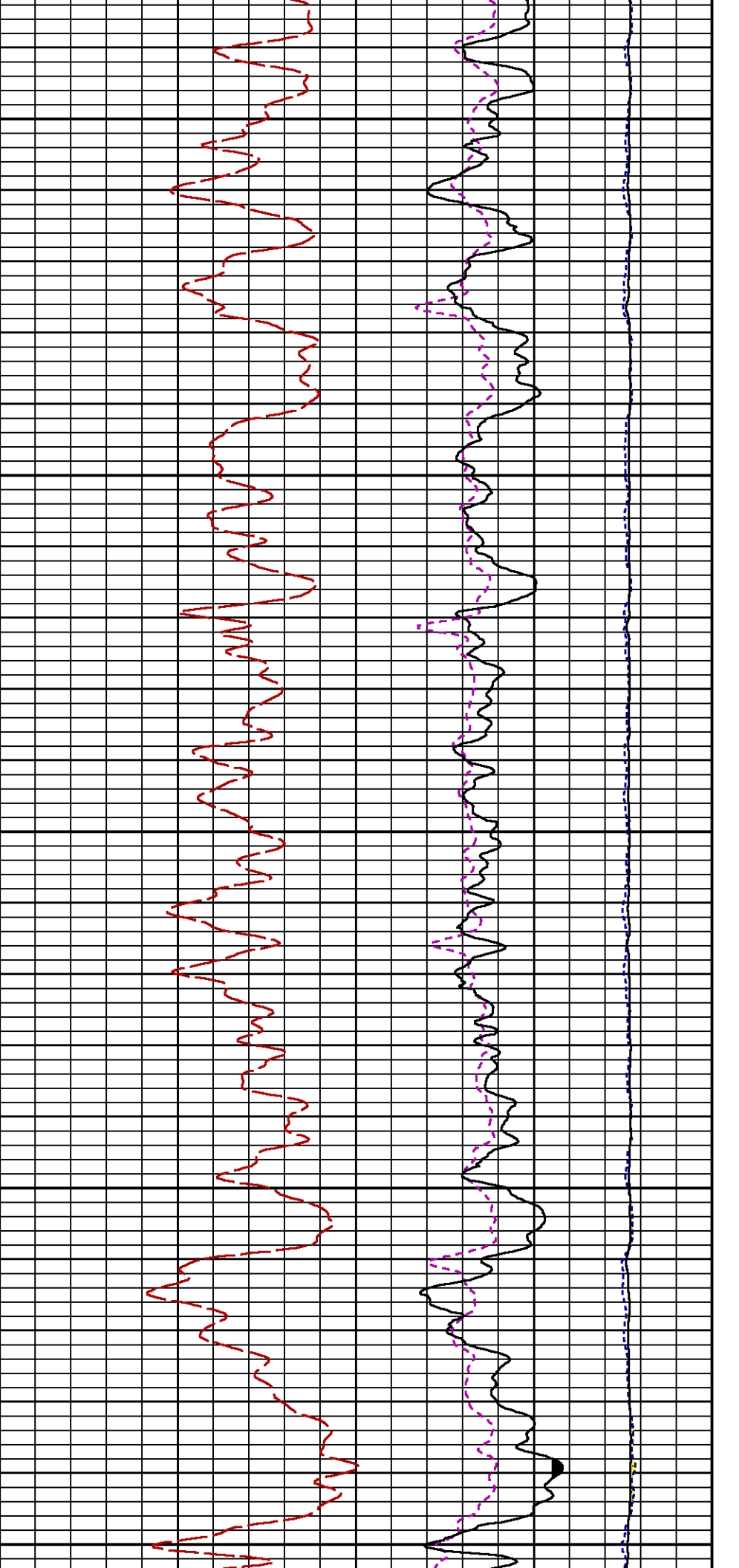
| | | | | | | | |
|-----|-------|-----|-------|------|-------|------|-------|
| CCL | 26.00 | ISS | 12.75 | RATO | 12.75 | SGFC | 12.75 |
| GR | 23.00 | LS | 12.75 | RICS | 12.75 | SS | 12.75 |

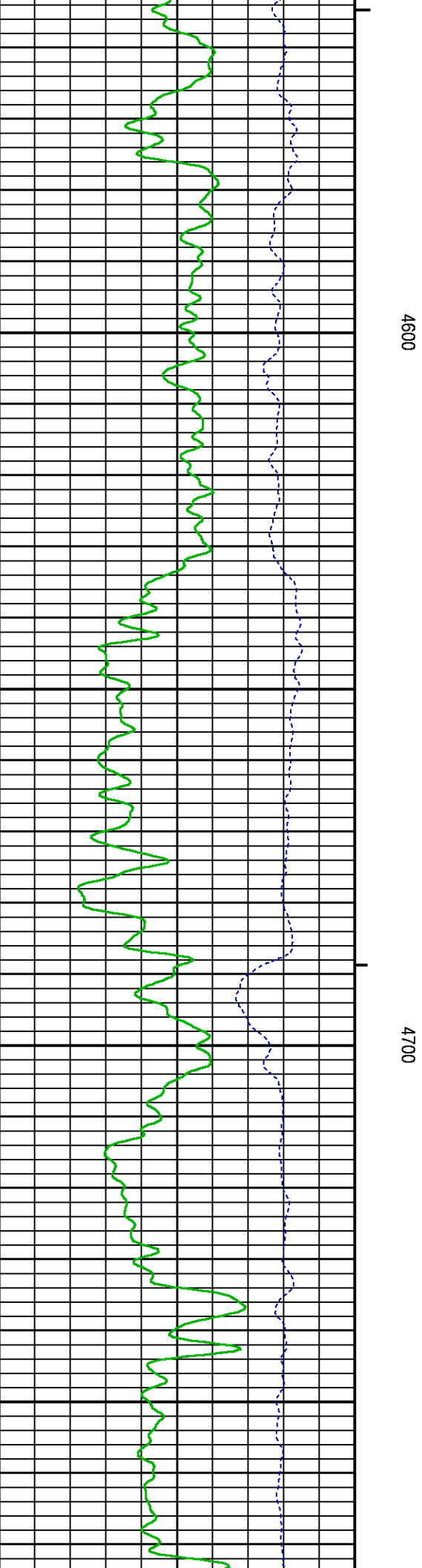
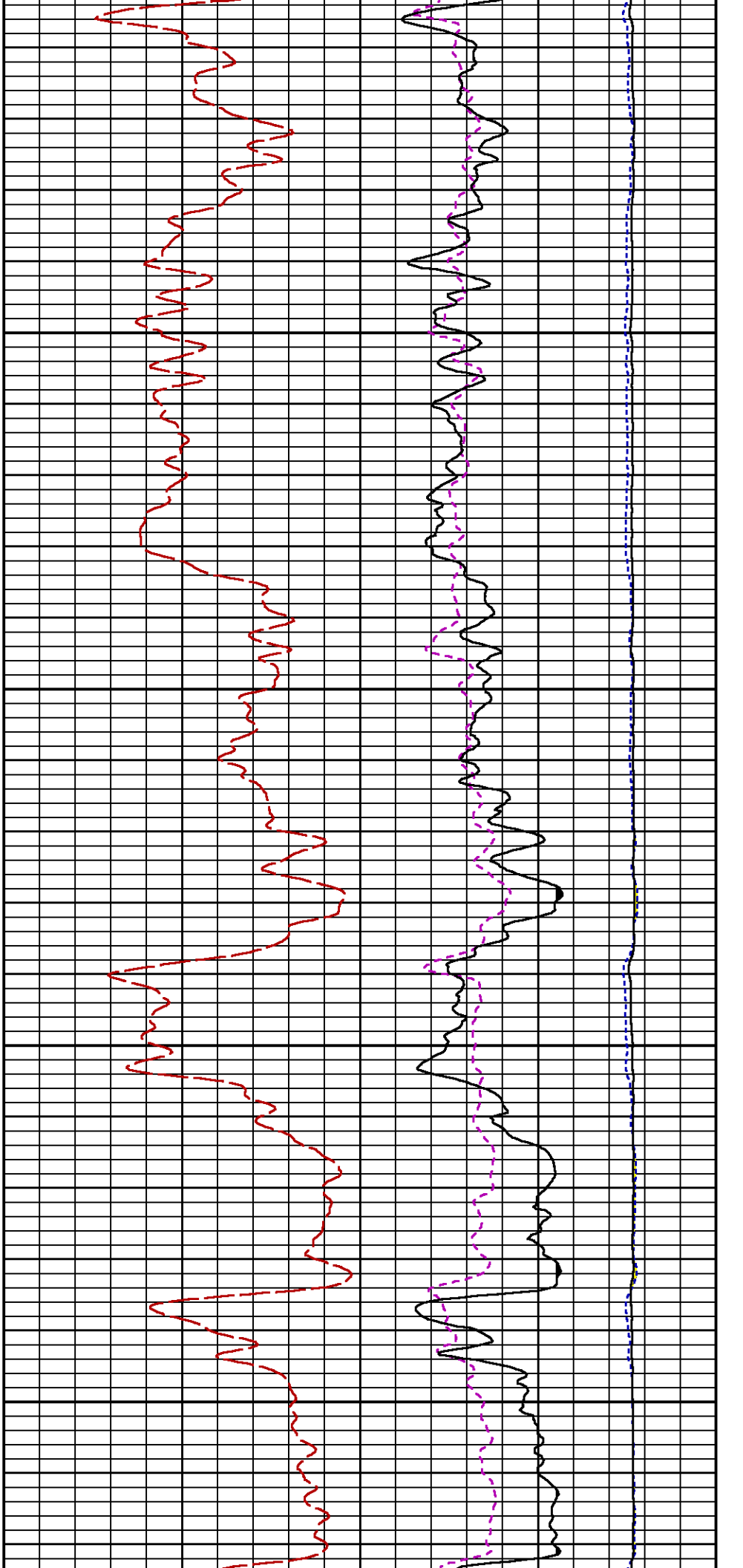
Presentation : cpu100:BRUTON_19_16E_RPM_MAIN.fvpdf [5"/100' Scale]
Plot Interval : 4109.75 - 7793.5 Feet

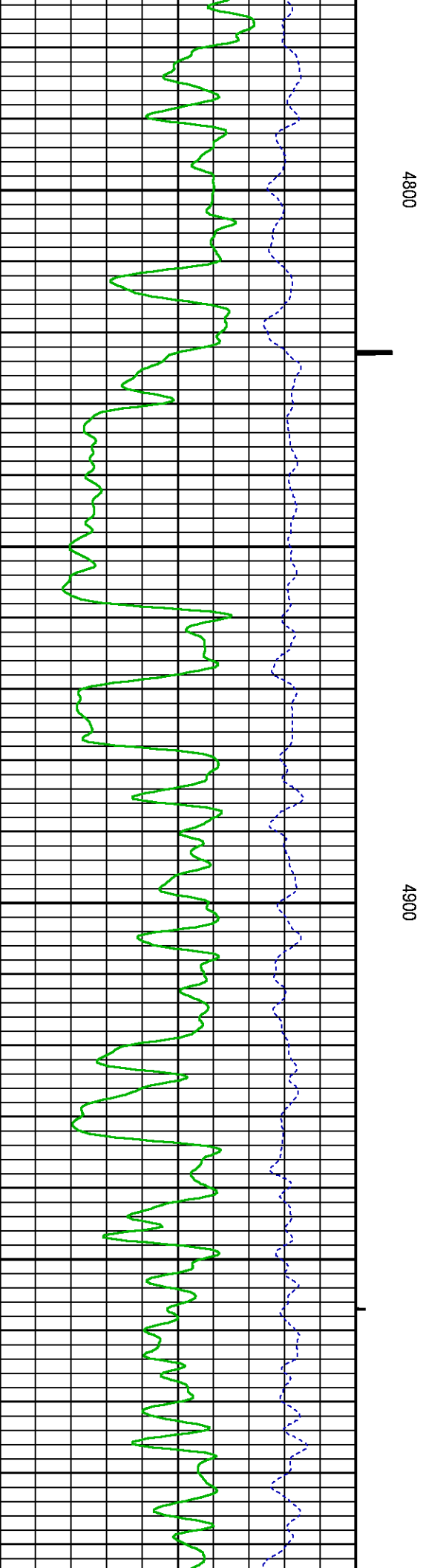
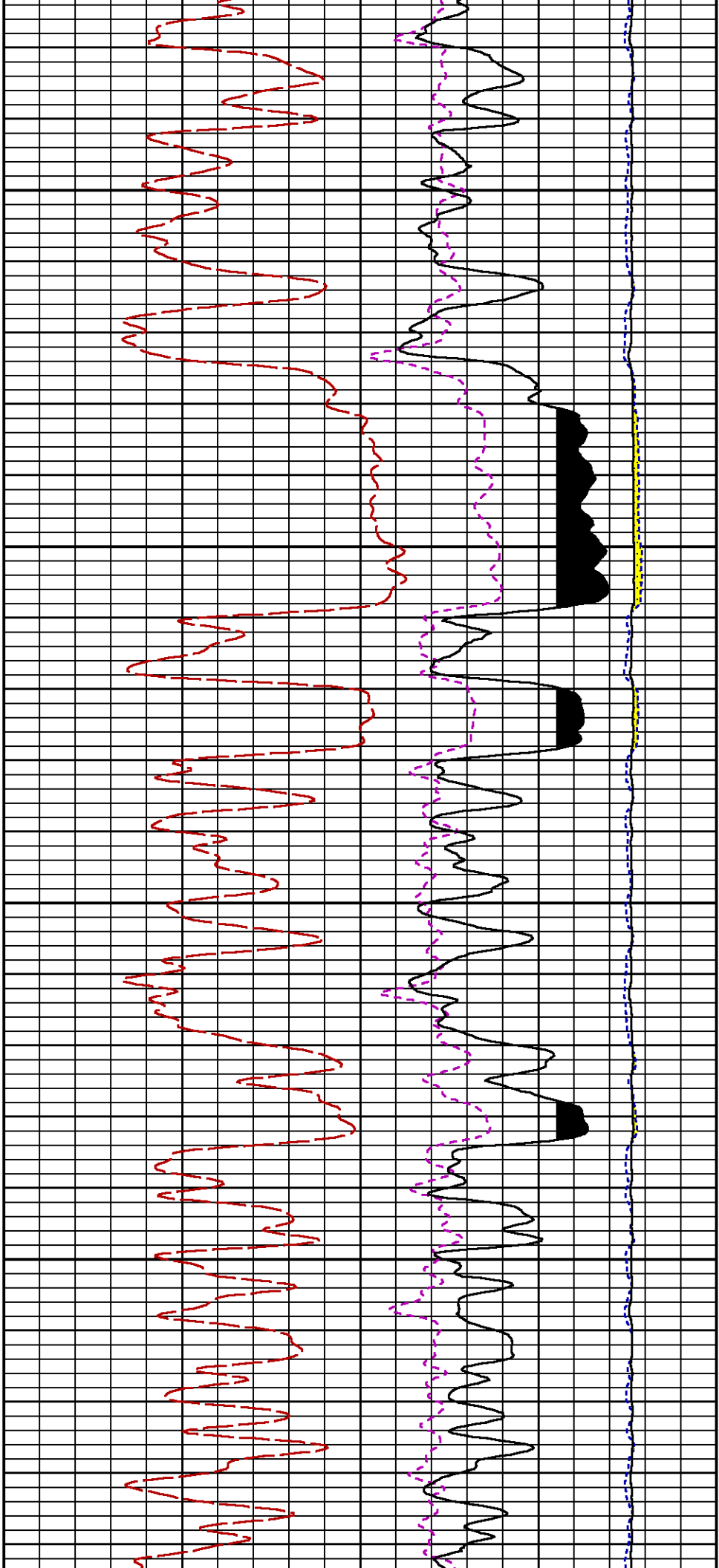
Data File 1 : F1 : cpu100:/dat1a/LARAMIE_BRUTON_19_16E/BRUTON_19_16E_RPM_MAIN.xtf
Created On : Aug 23 11:14:26 2017
Company : LARAMIE ENERGY
Well : BRUTON 19-16E
Field : MESA
File Interval : 4109 - 7802.25 Feet
OCT : RPM3D

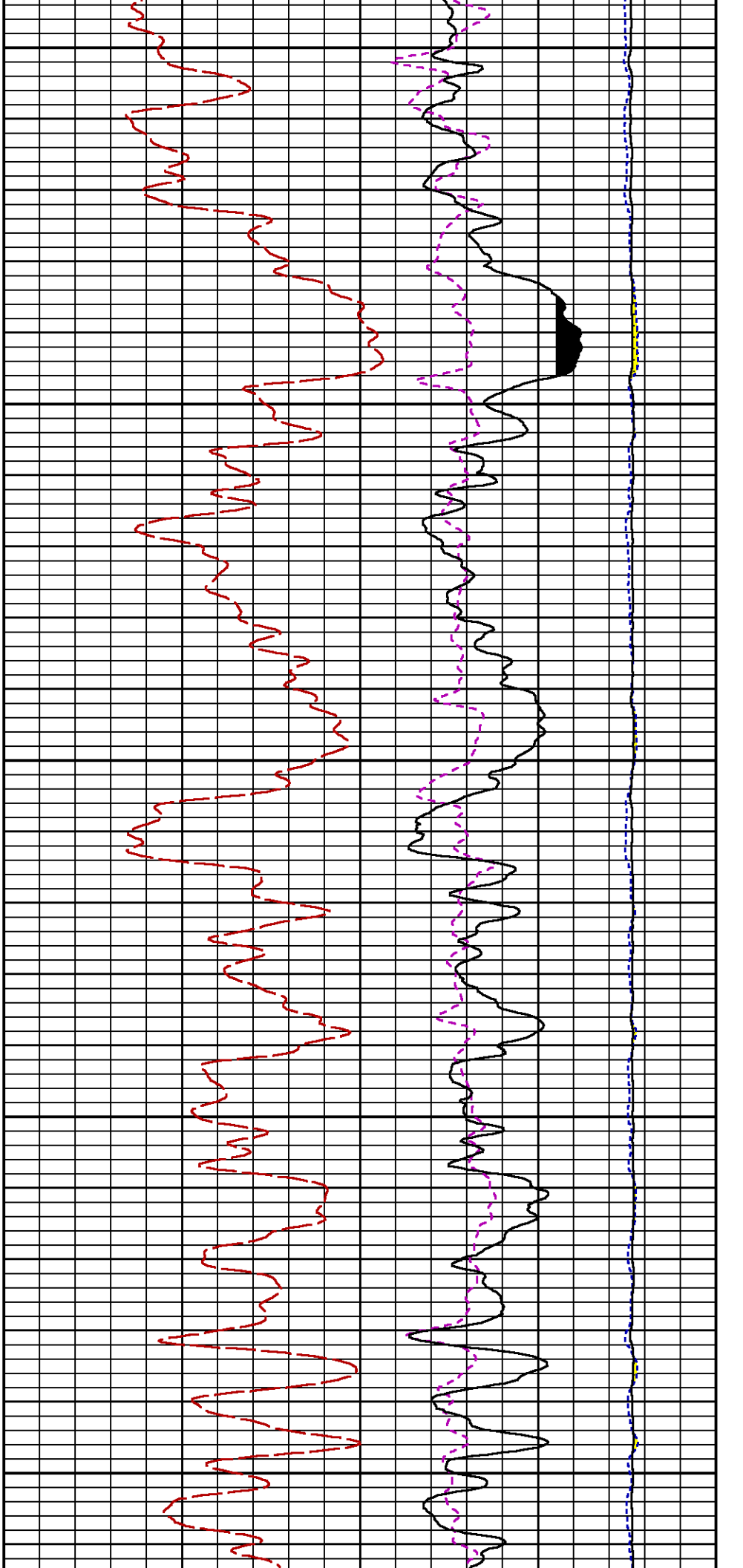








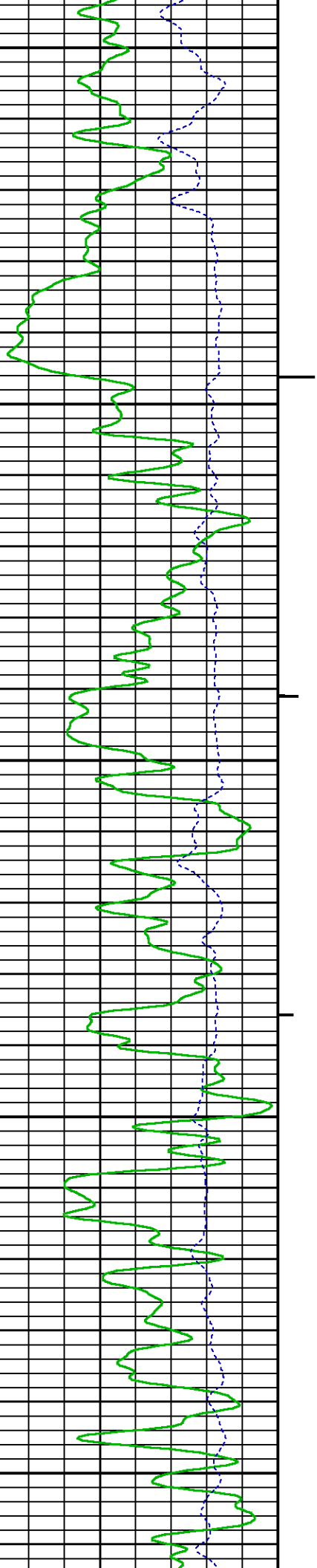


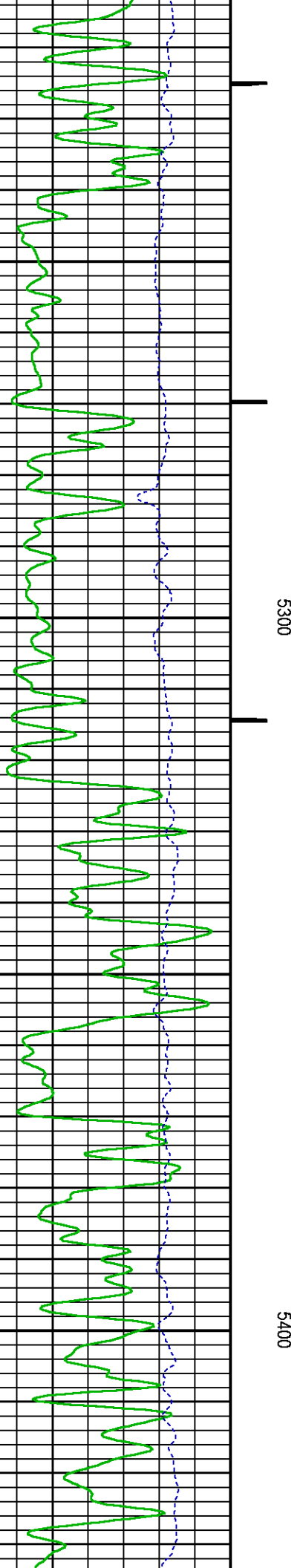
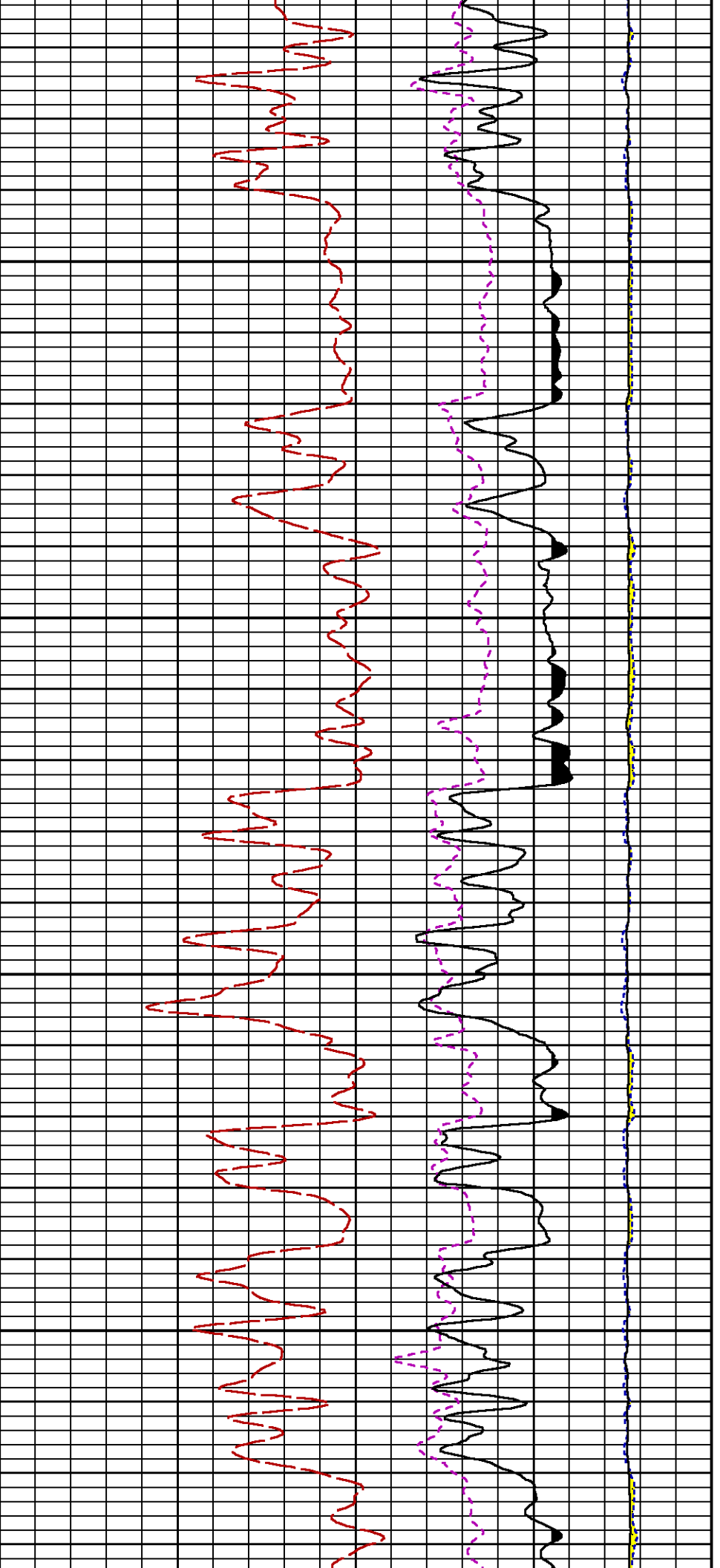


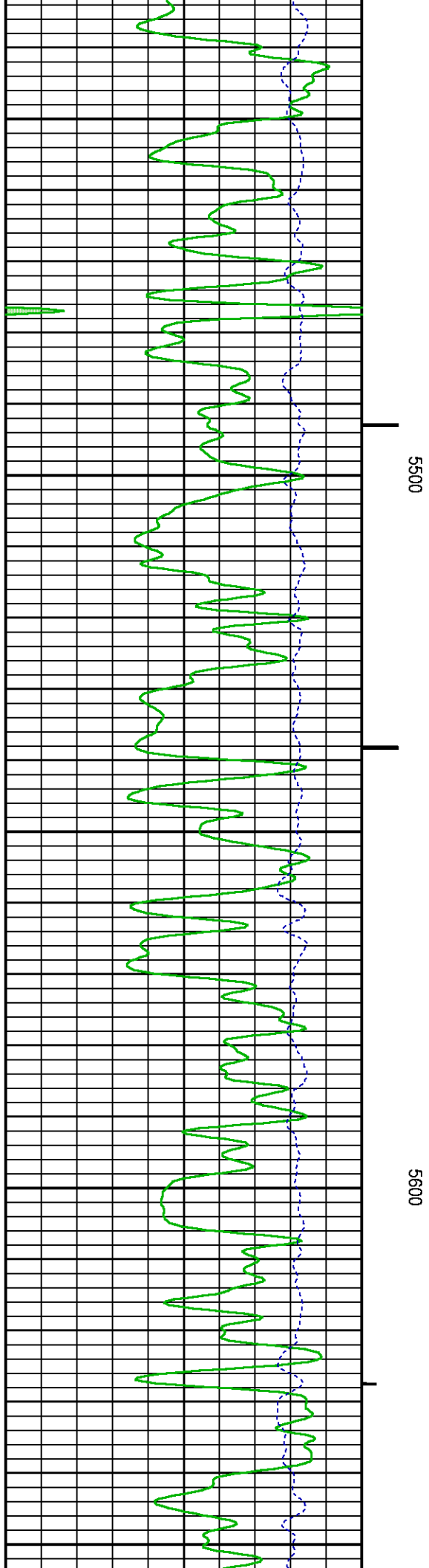
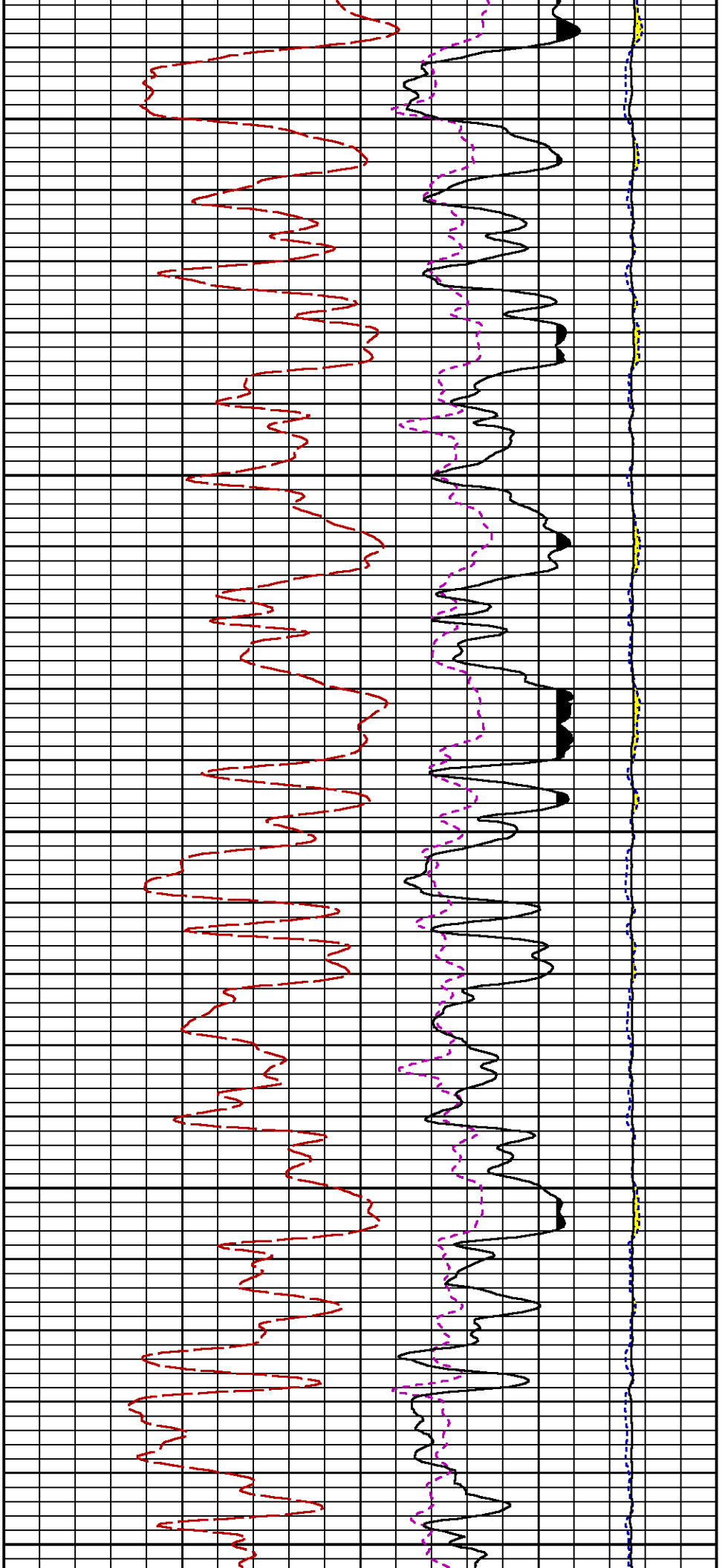
5000

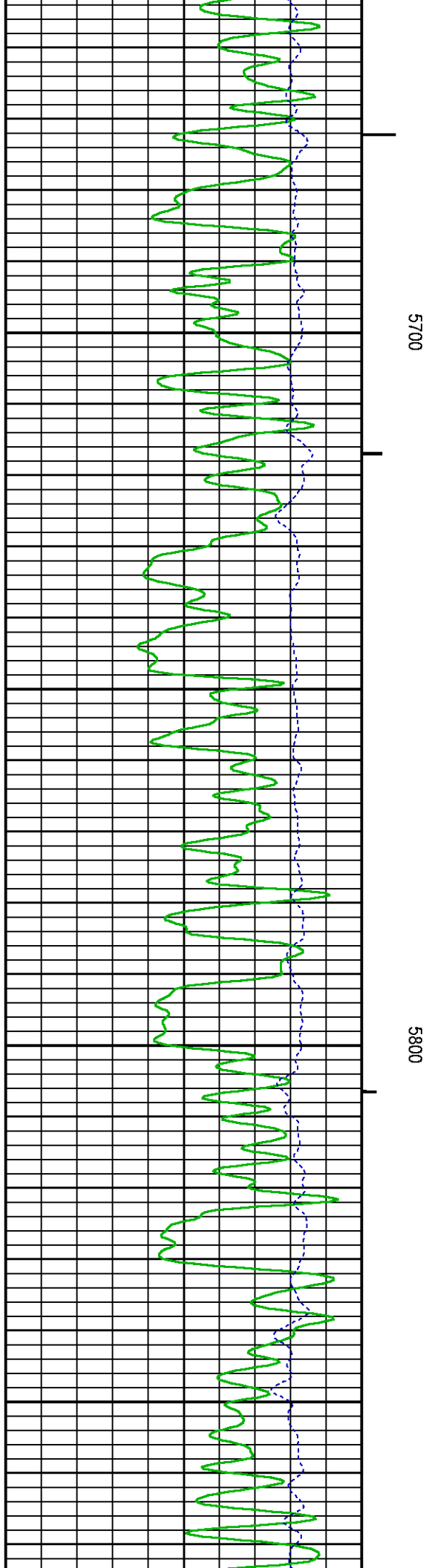
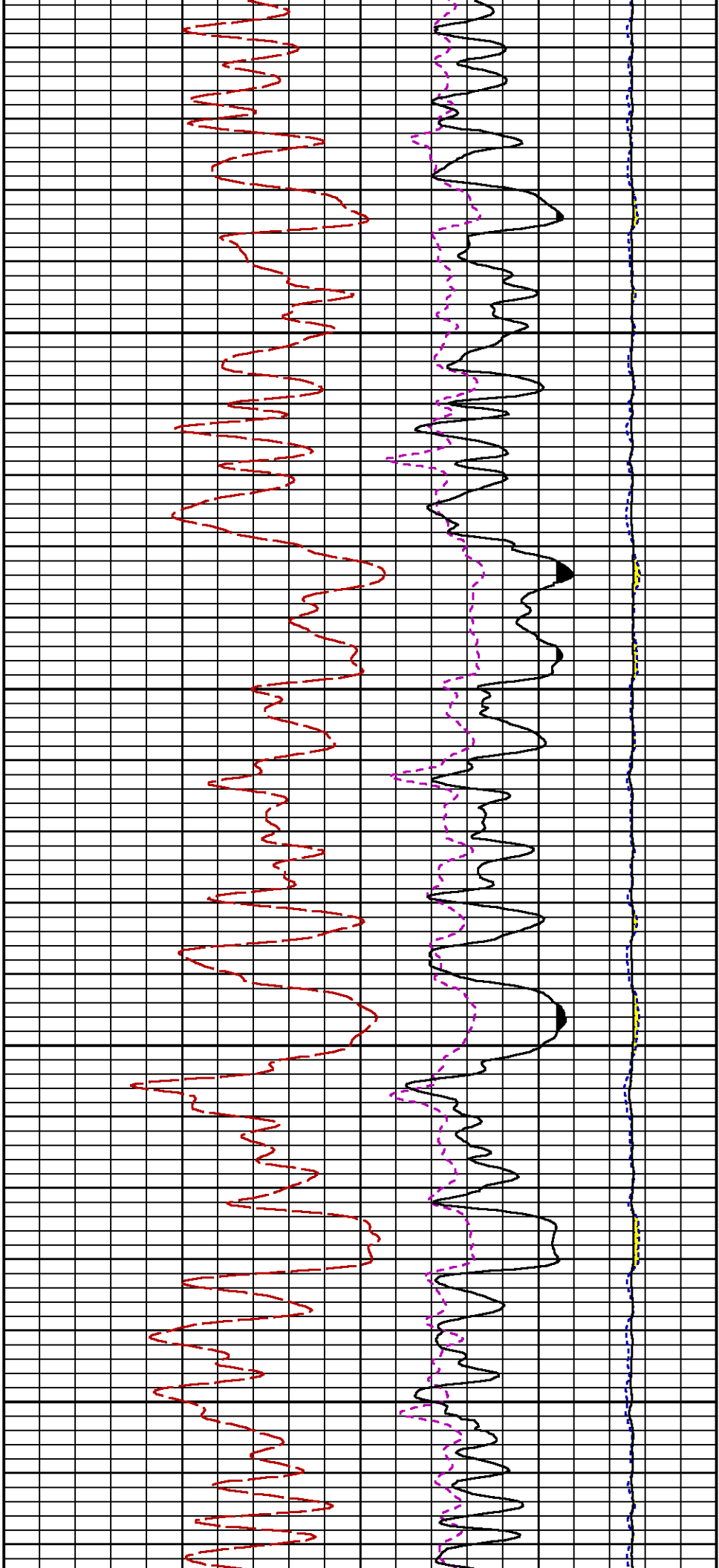
5100

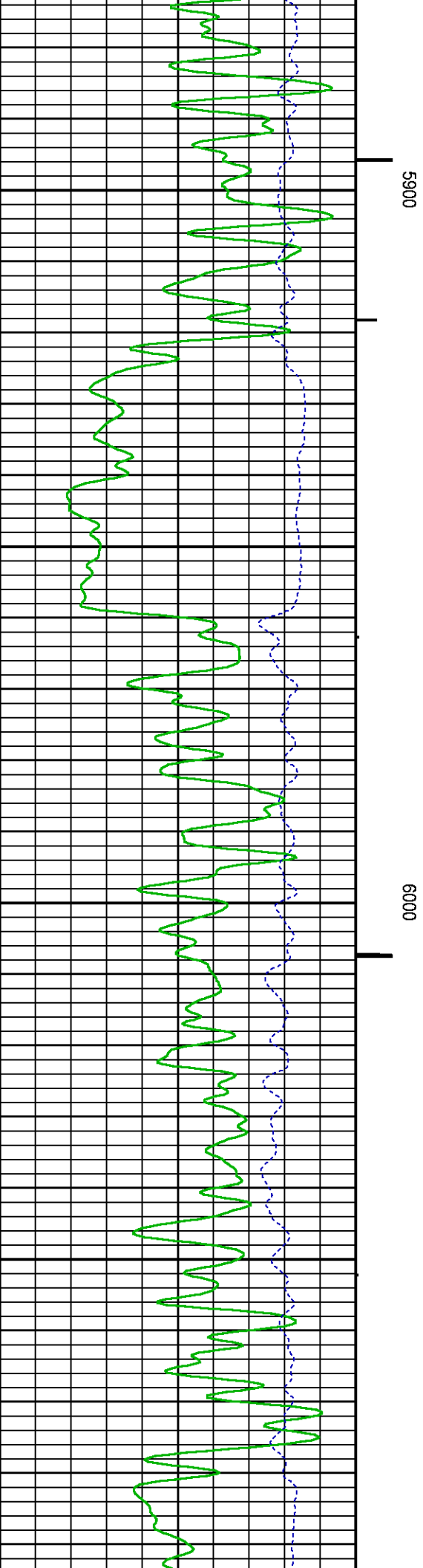
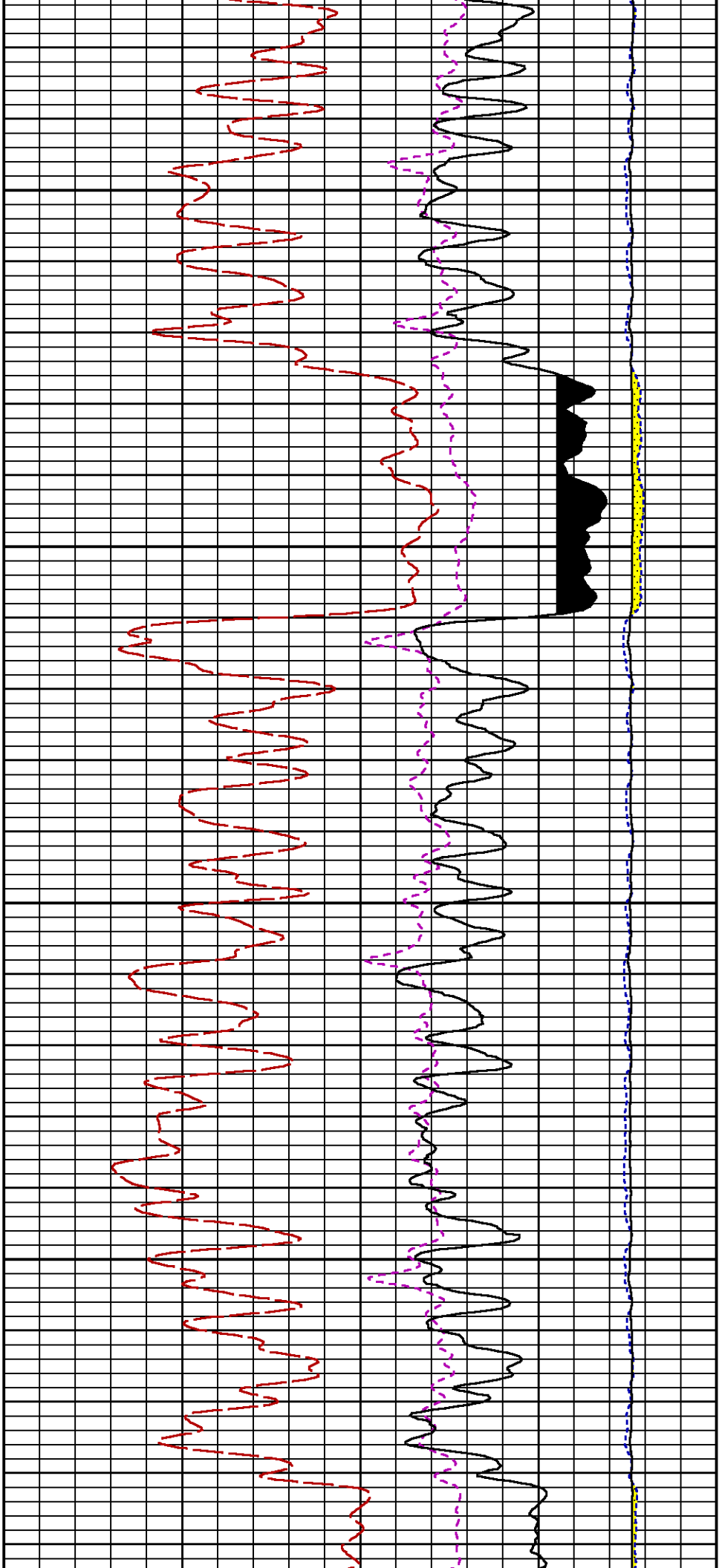
5200

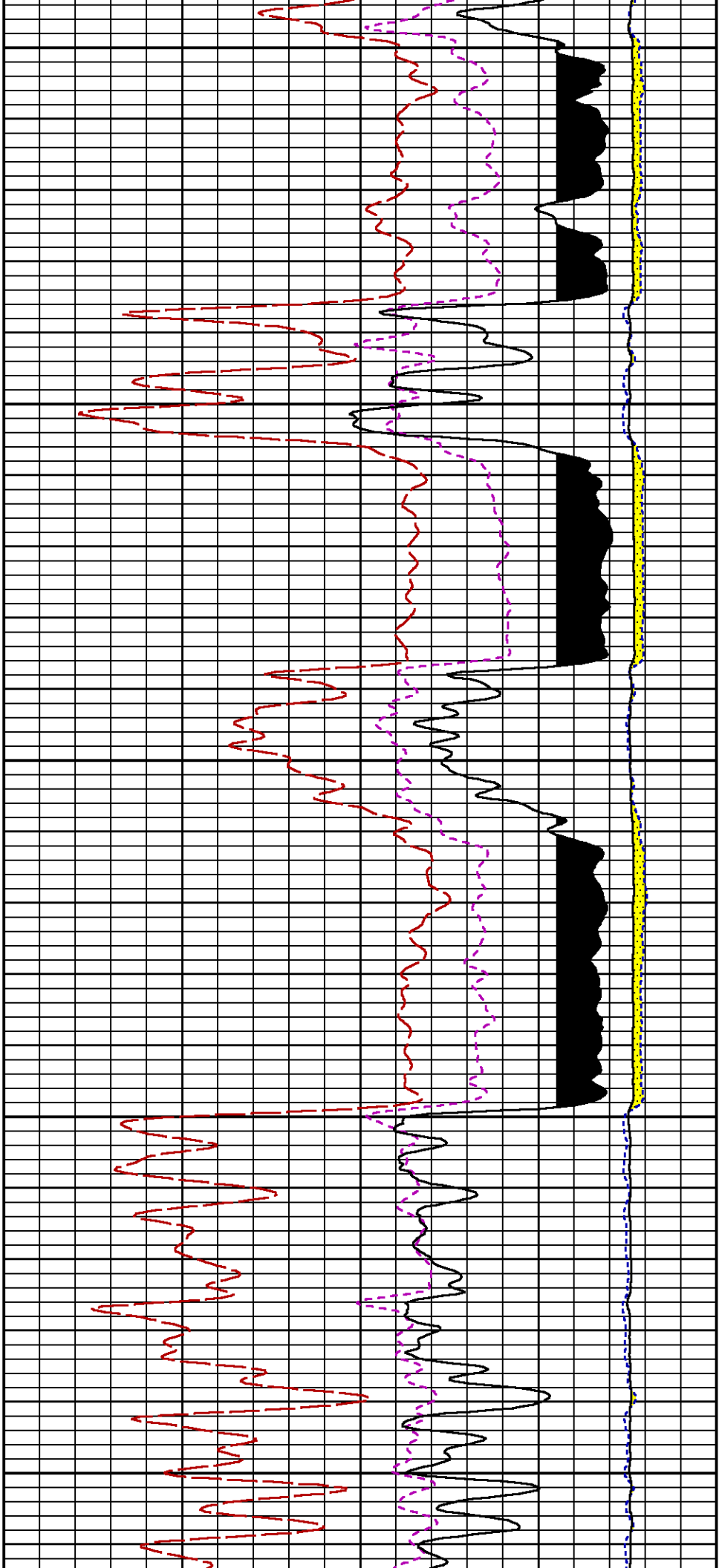








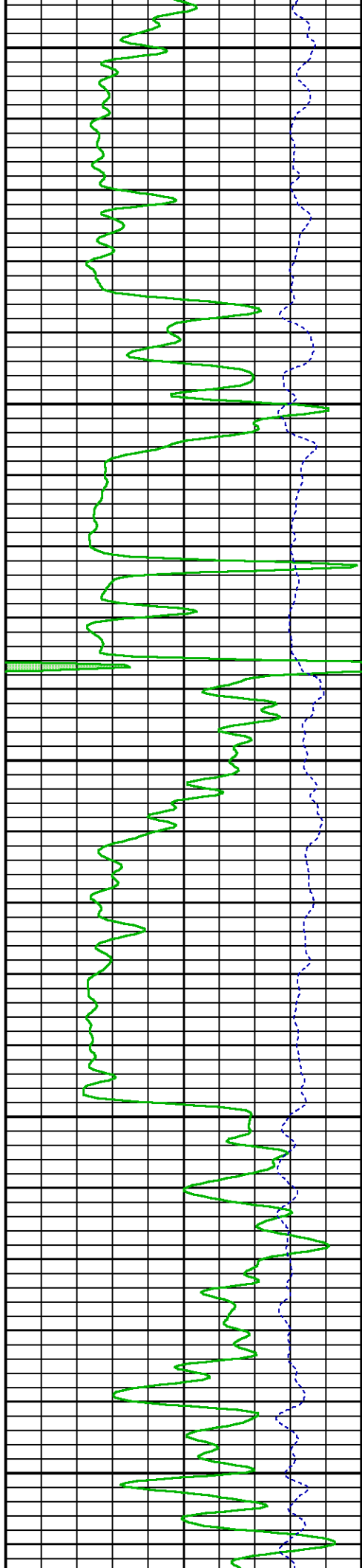


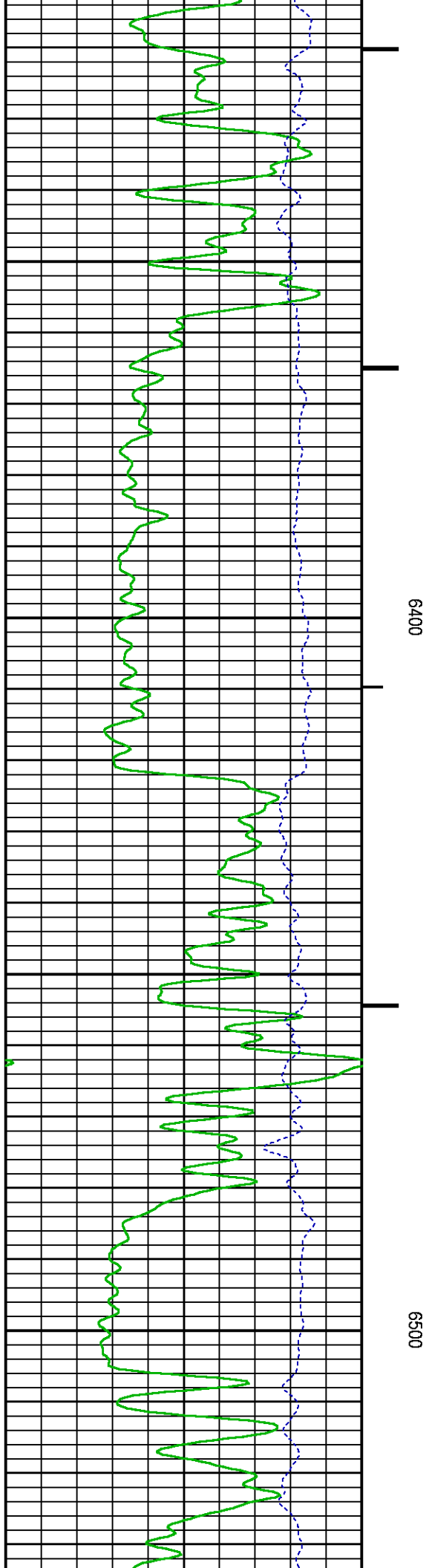
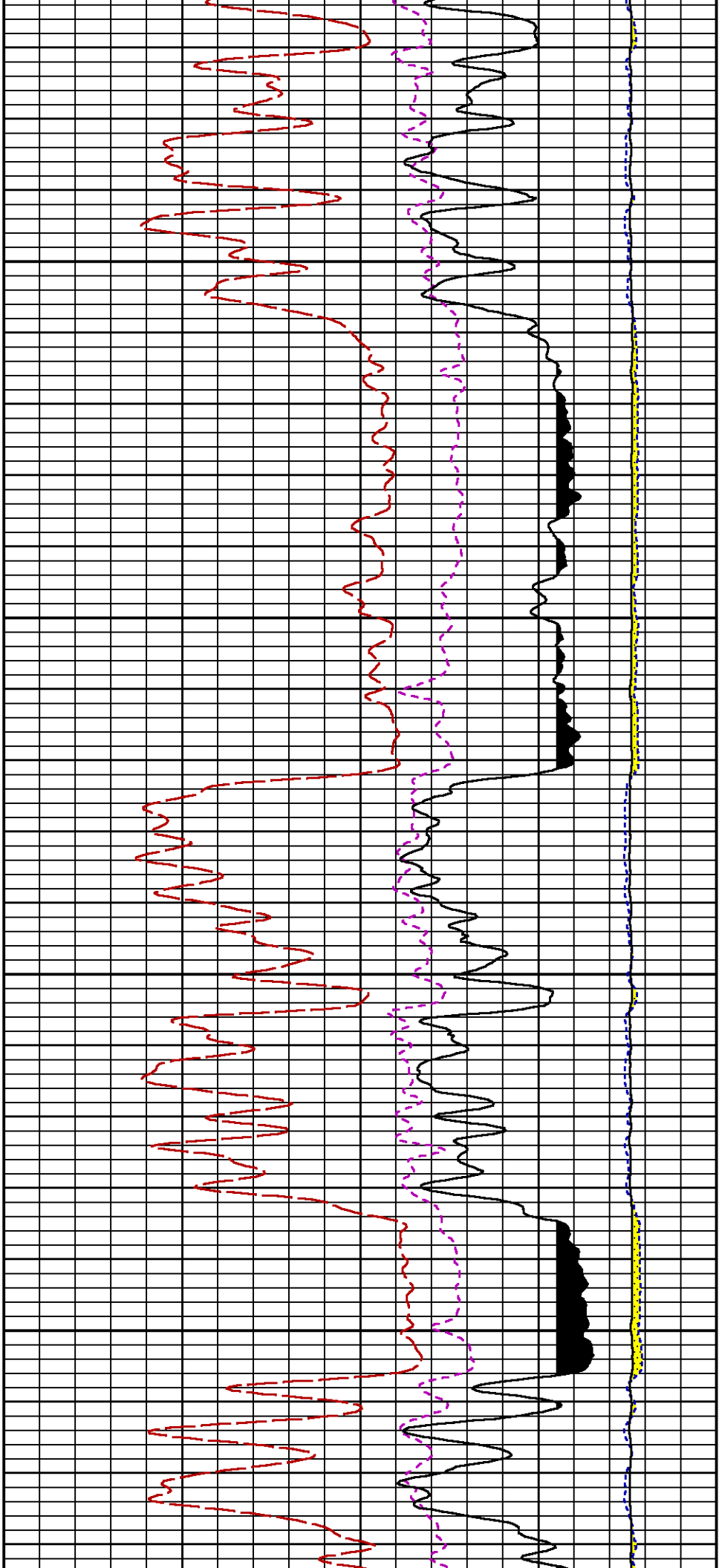


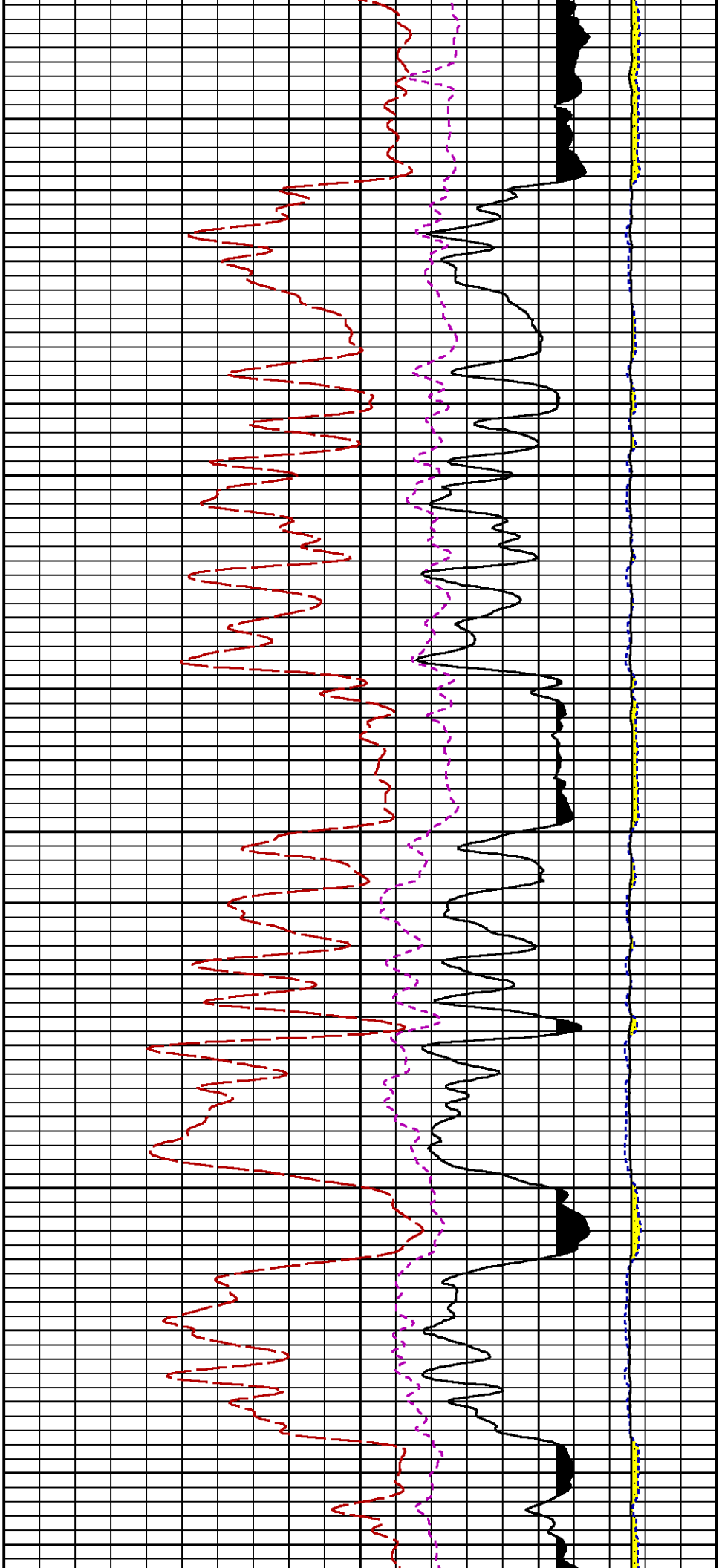
6100

6200

6300

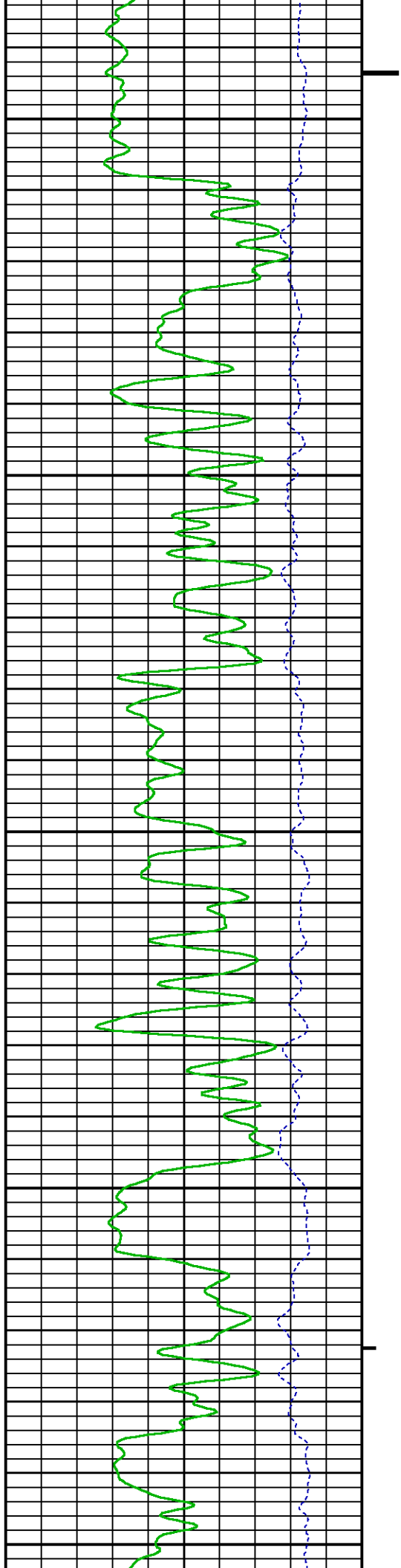


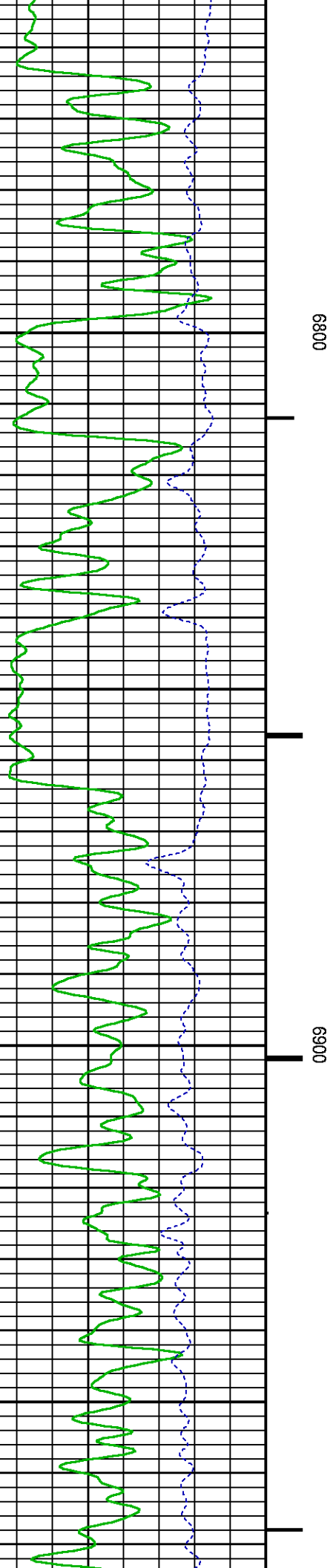
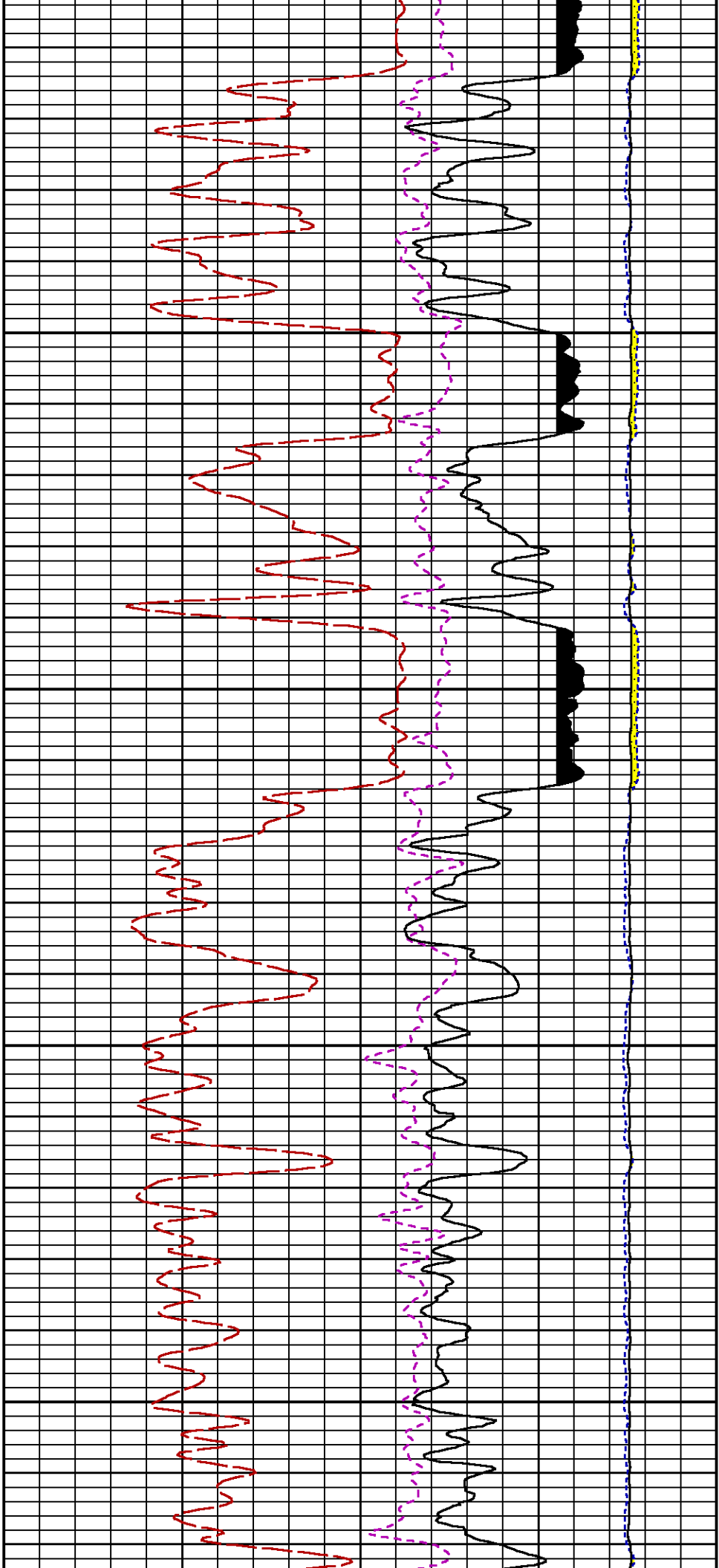


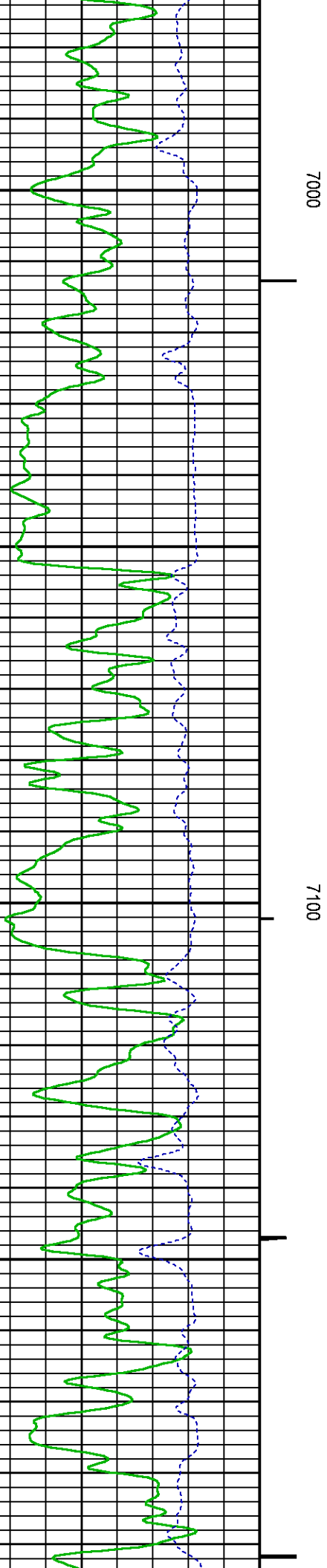
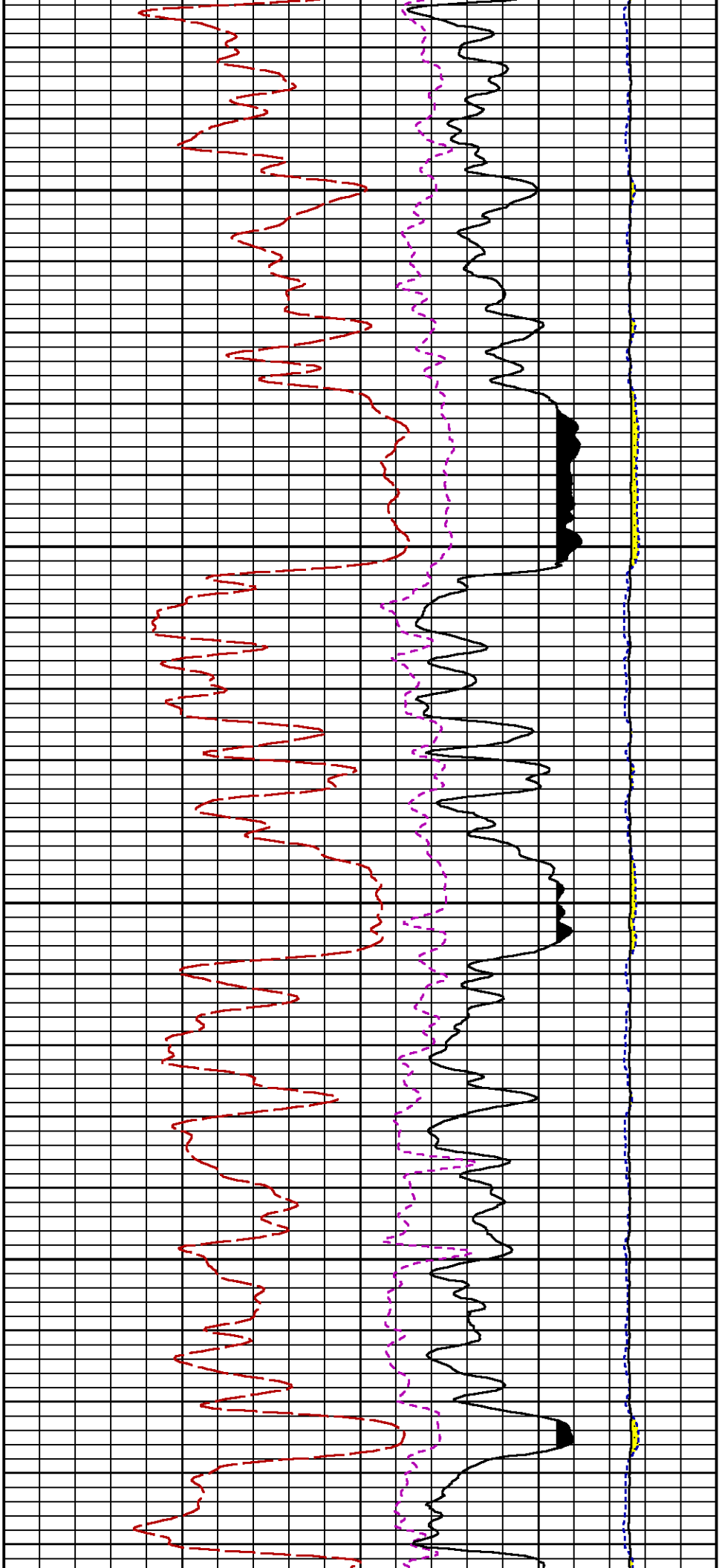


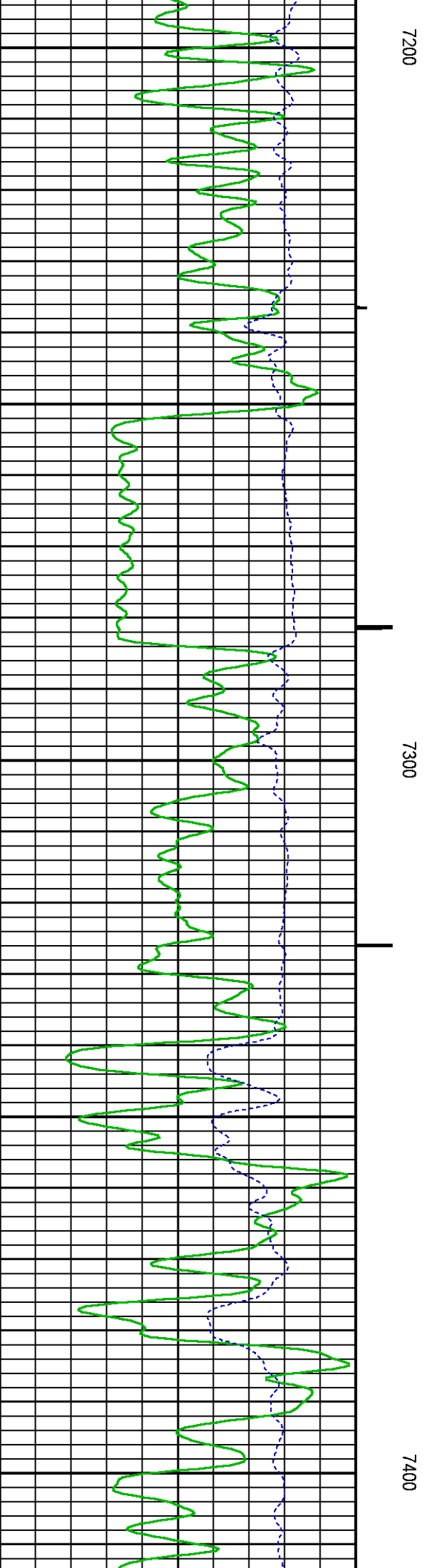
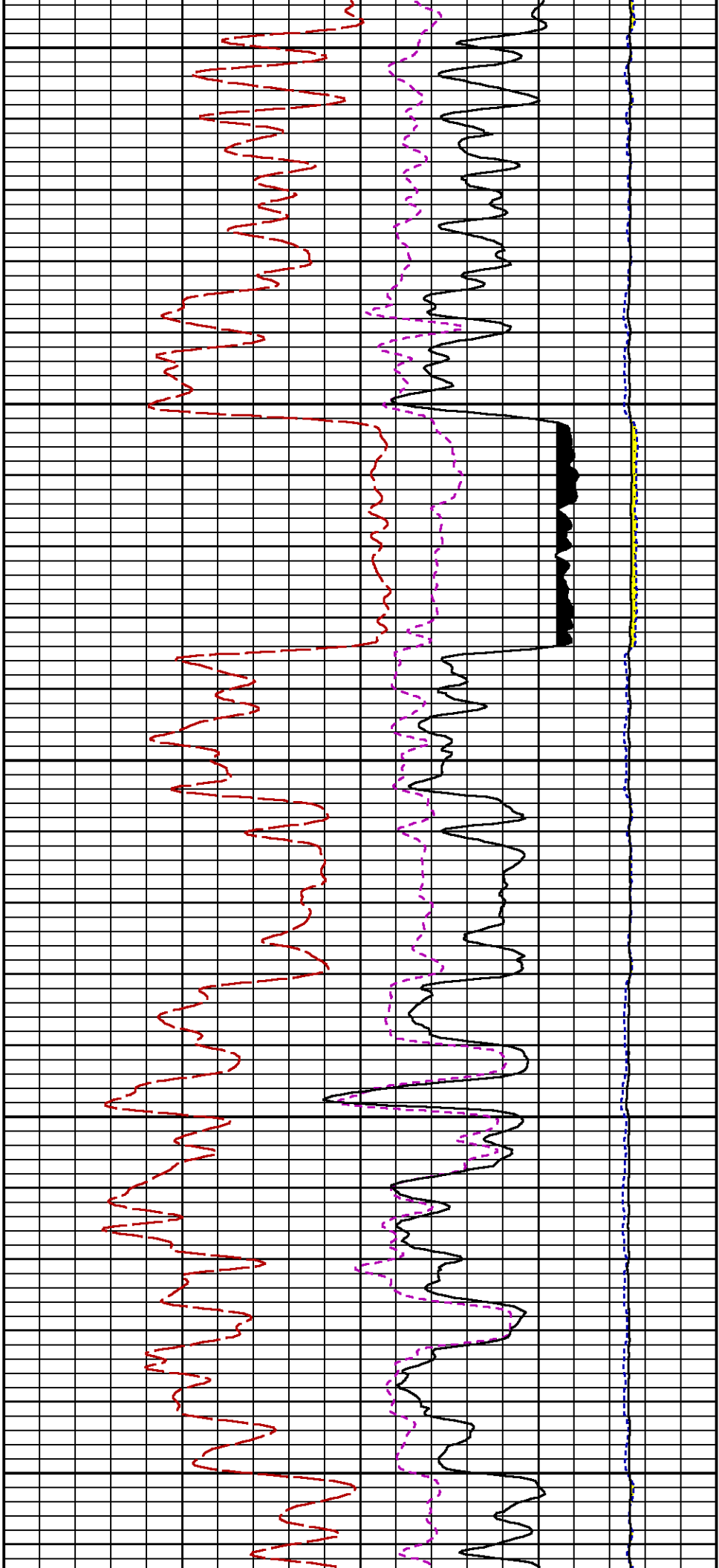
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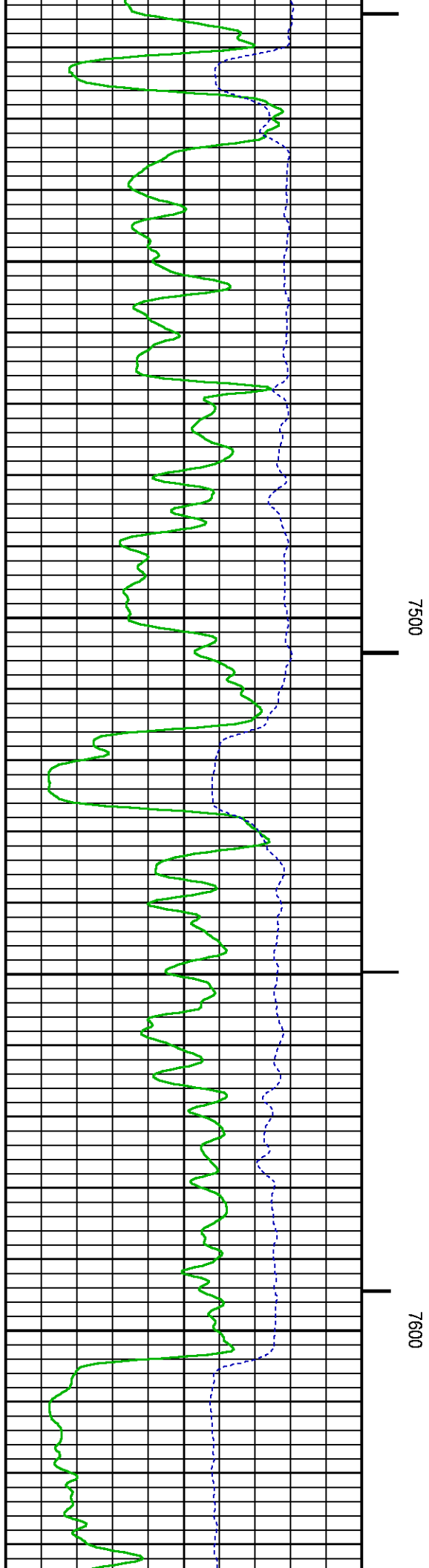
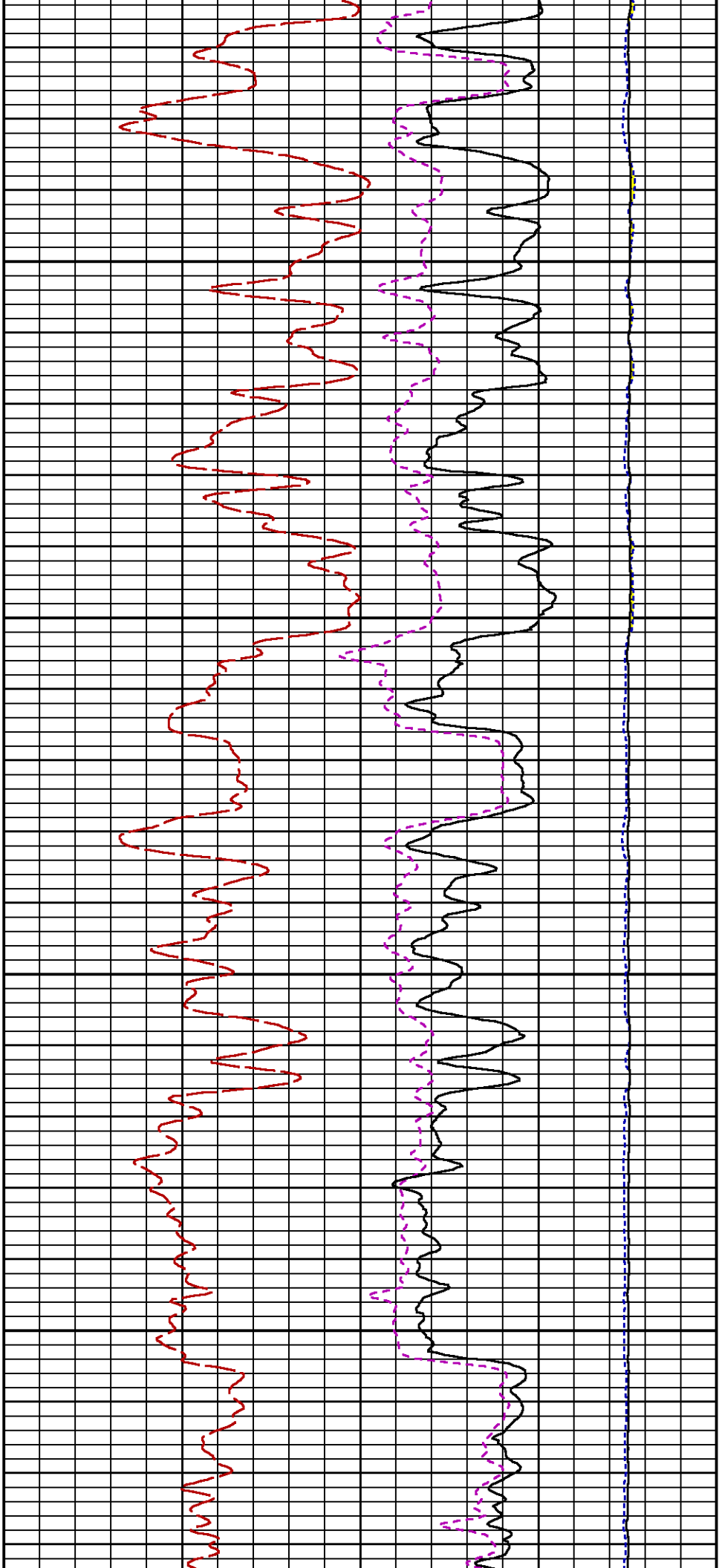
6700

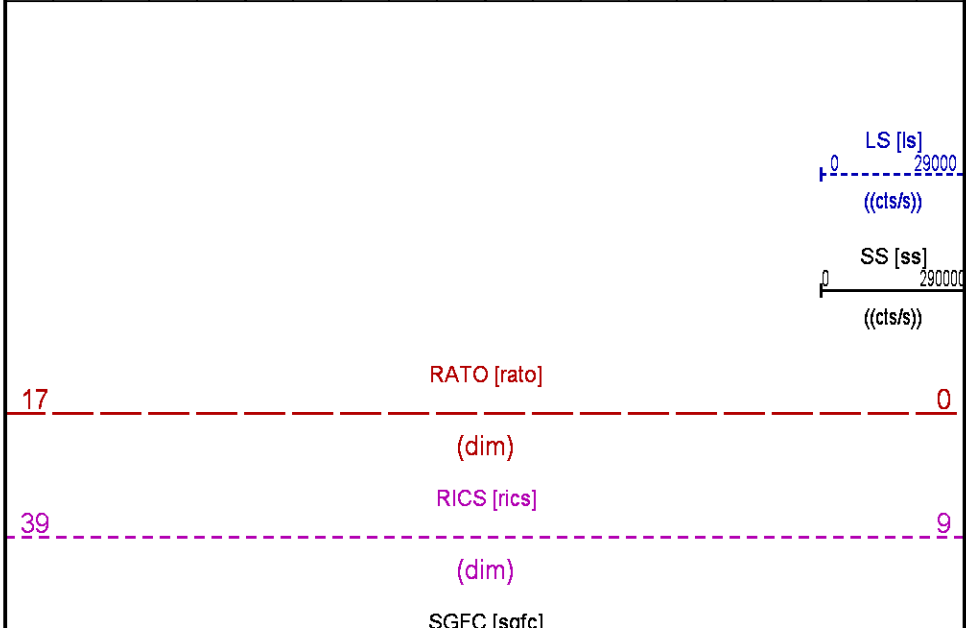
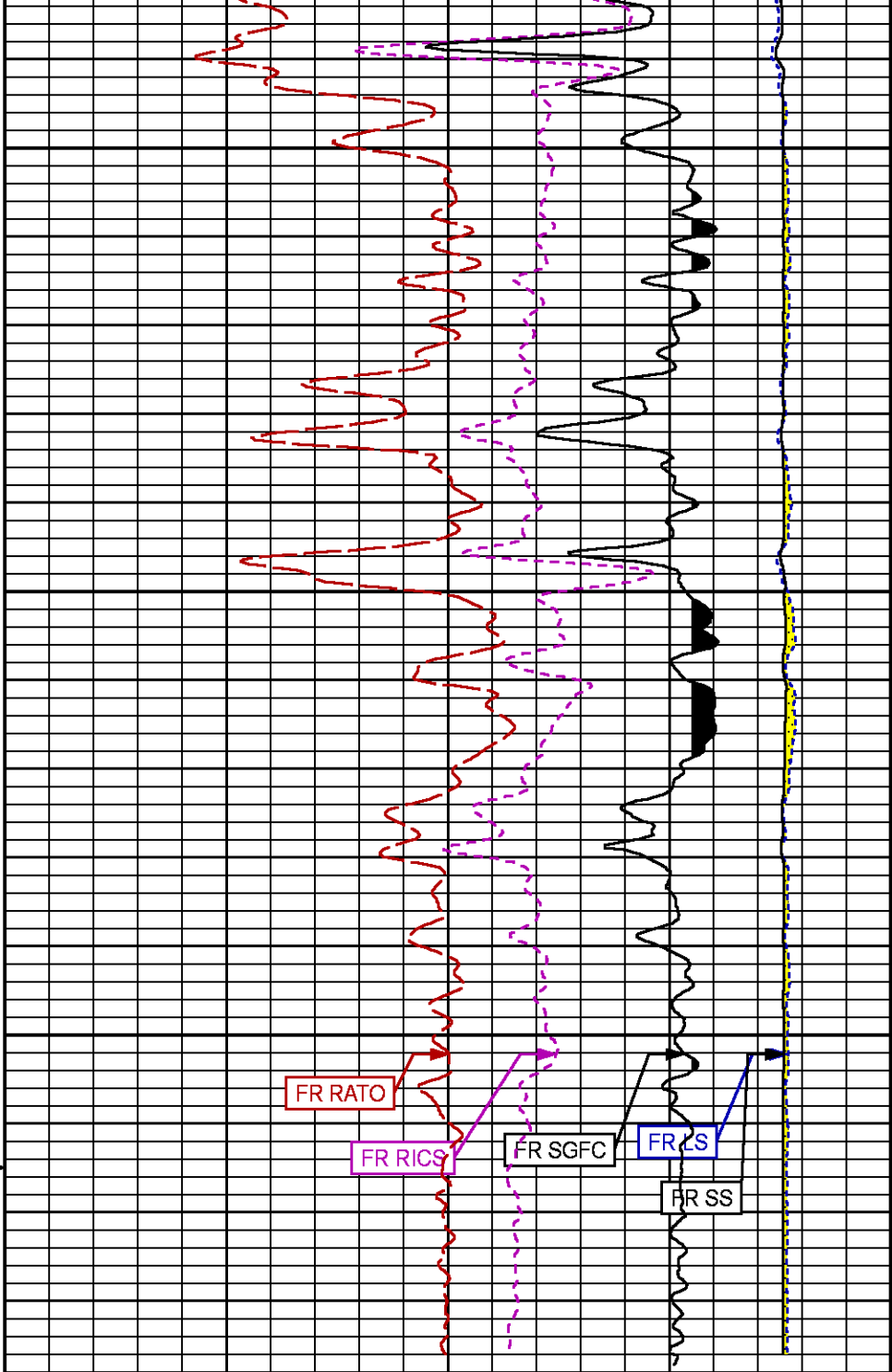
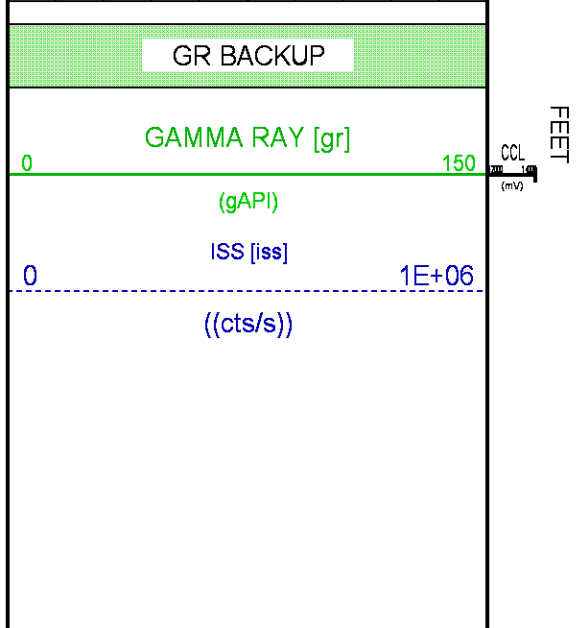
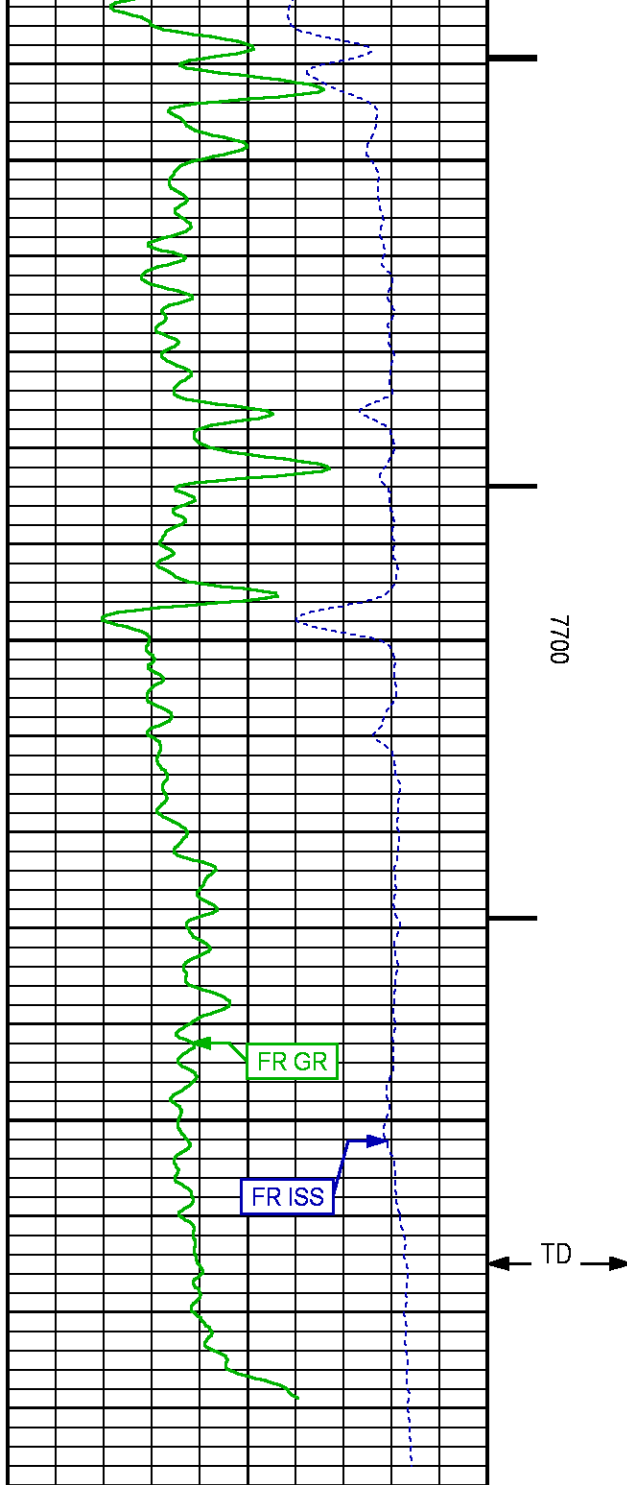












REPEAT PASS PNC-3D MODE

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

Updates: 1 Patches: 9

Plotted: Wed Aug 23 11:17:41 2017

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_BRUTON_19_16E/RPM3D01.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 7139.250 ft BOTTOM DEPTH: 7383.174 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 23 10:55:39 2017 | CASING COLLAR LOCATOR |
| F1:GR | Aug 23 10:55:39 2017 | GAMMA RAY |
| F1:ISS | Aug 23 10:55:39 2017 | INELASTIC SHORT SPACE COUNT RATE |
| F1:LS | Aug 23 10:55:39 2017 | LONG SPACE COUNT RATE |
| F1:RATO | Aug 23 10:55:39 2017 | SHORT/LONG SPACE COUNT RATE RATIO |
| F1:RICS | Aug 23 10:55:39 2017 | SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS) |
| F1:SGFC | Aug 23 10:55:39 2017 | CORRECTED FORMATION SIGMA |
| F1:SS | Aug 23 10:55:39 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_116E_RPM_REPEAT.fvpdf [5"/100' Scale]
 Plot Interval : 7117.25 - 7375.75 Feet

Data File 1 : F1 : cpu100:/dat1a/LARAMIE_BRUTON_19_16E/BRUTON_19_16E_RPM_RPT.xtf
 Created On : Aug 23 10:55:39 2017
 Company : LARAMIE ENERGY
 Well : BRUTON 19-16E
 Field : MESA
 File Interval : 7116.5 - 7384.5 Feet
 OCT : RPM3D

GR BACKUP

GAMMA RAY [gr]

(gAPI)

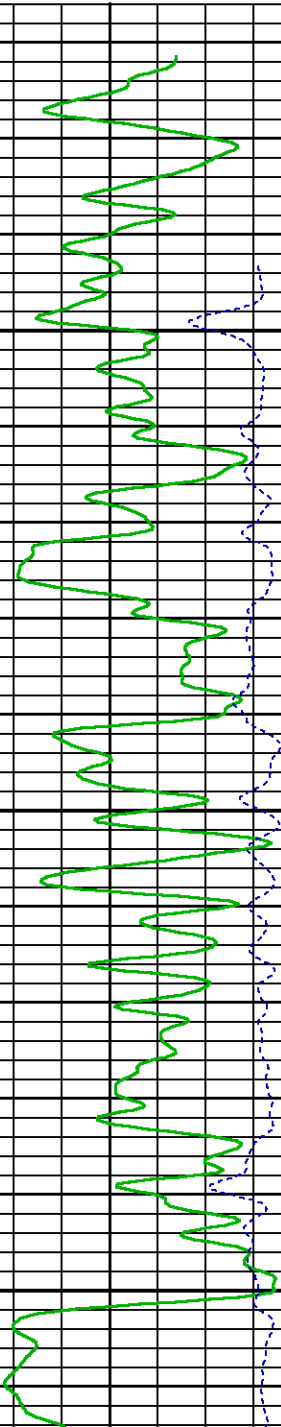
ISS [iss]

((cts/s))

FEET

CCL
(mV)

7200



LS [ls]

((cts/s))

SS [ss]

((cts/s))

RATO [rato]

(dim)

RICS [rics]

(dim)

SGFC [sgfc]

(cu)

17

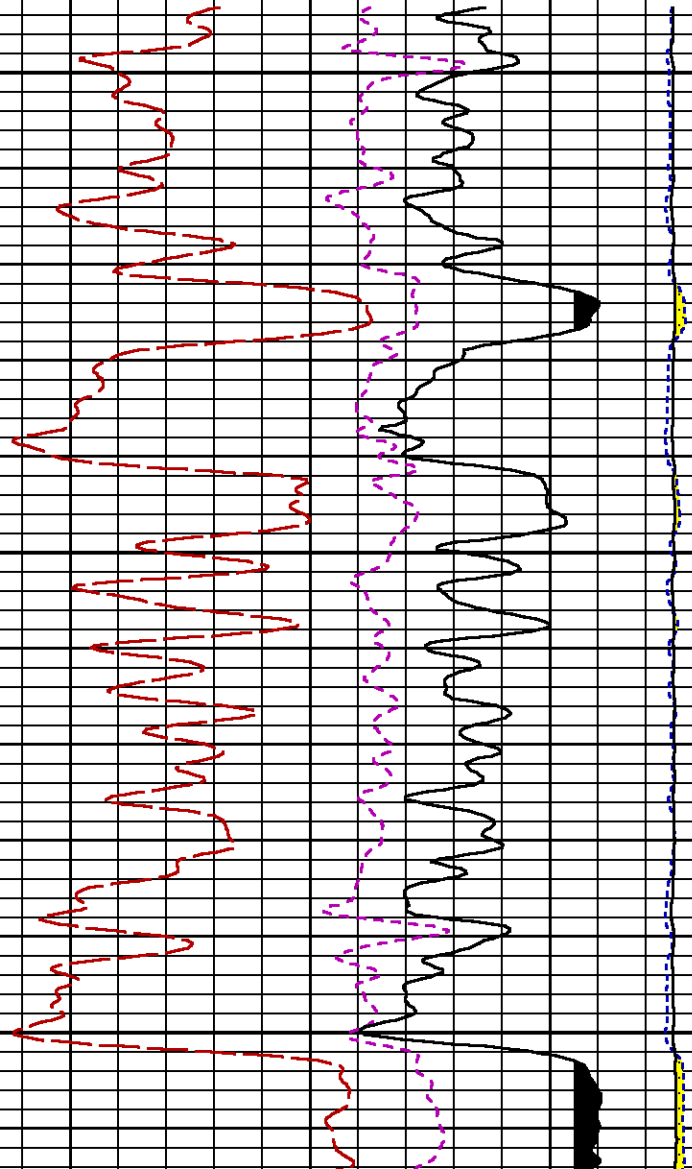
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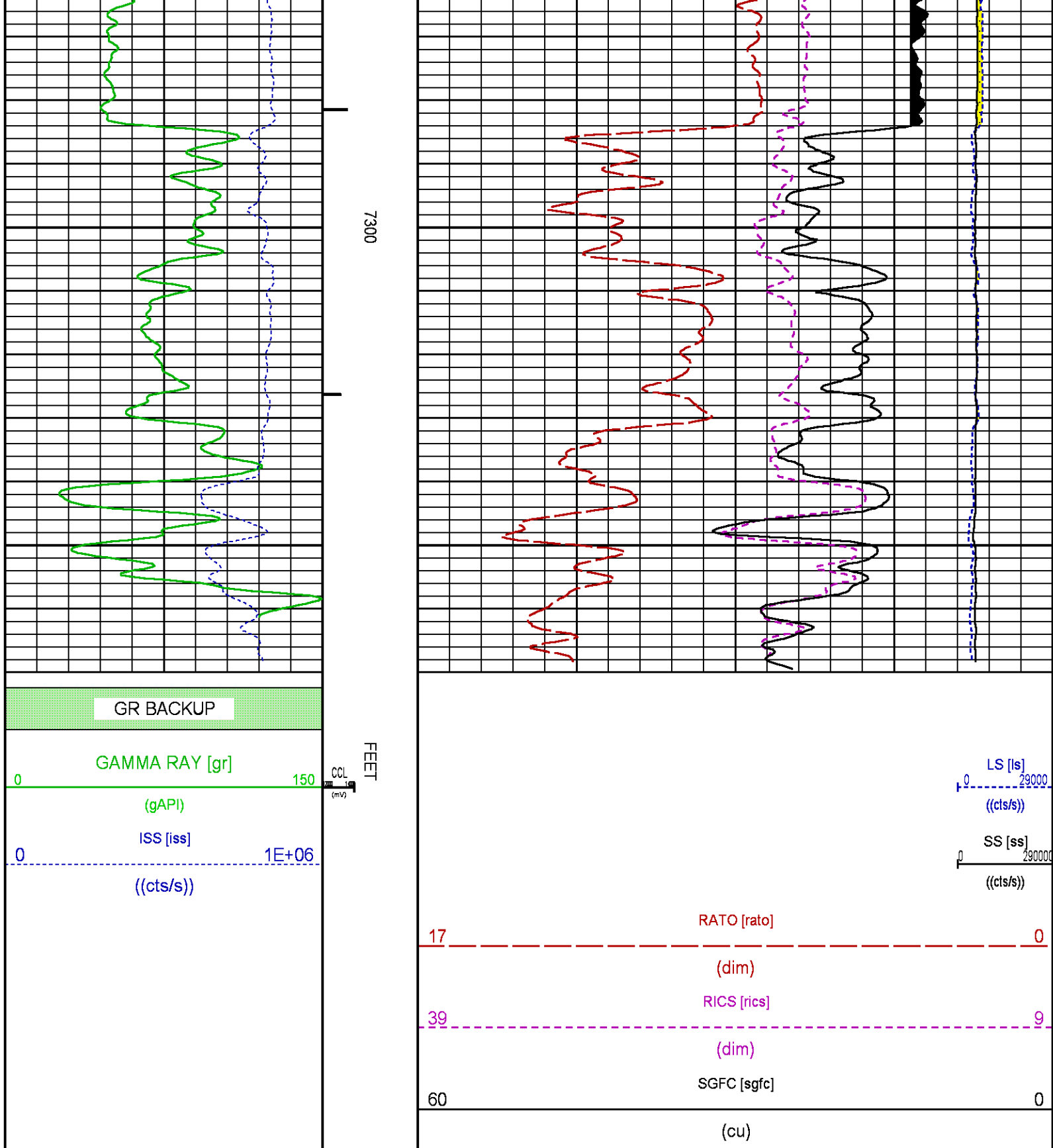
39

9

60

0





CALIBRATION / VERIFICATION SUMMARY

Source File: datt1aLARAMIE_BRUTON_19_16ERPM301p1

| GR PRIMARY CALIBRATION SUMMARY | | | |
|--------------------------------|----------------|----------------------|--------------------------|
| TOOL #: | 8262XA10485470 | DATE/TIME PERFORMED: | Tue Jan 17 13:32:11 2017 |
| UNIT #: | 3882ML ML4352 | CALB JIG #: | 4702NKA DA_228 |

| | | | | | | | |
|----|------------|------------|---------|-------|------------|------------|---------|
| | BACKGROUND | CALBRTR ON | GR DIFF | MULT | BACKGROUND | CALBRTR ON | CALBRTR |
| | (cts/s) | (cts/s) | (cts/s) | | (gAPI) | (gAPI) | (gAPI) |
| GR | 63.76 | 399.13 | 335.4 | 0.552 | 35.17 | 220.17 | 185 |

GR PRIMARY VERIFICATION SUMMARY

| | | | |
|---------|----------------|----------------------|--------------------------|
| TOOL #: | 8262XA10485470 | DATE/TIME PERFORMED: | Tue Jan 17 13:34:45 2017 |
| UNIT #: | 3882ML ML4352 | VERI JIG #: | 4702NK DA_228 |

| | | | | | | |
|----|------------|------------|-------|------------|------------|---------------|
| | BACKGROUND | CALBRTR ON | MULT | BACKGROUND | CALBRTR ON | DIFF. |
| | (cts/s) | (cts/s) | | (gAPI) | (gAPI) | (gAPI) |
| GR | 63.44 | 394.18 | 0.552 | 35.00 | 217.44 | 182.44 |
| | | | | | | 195.00 196.00 |

RPM_PNC_3D PRIMARY CALIBRATION SUMMARY

| | | | | | | | |
|-------|----------------|----------------------|--------------------------|---------|----------------|--------|-----------|
| TOOL: | 8283PA10184883 | DATE/TIME PERFORMED: | Thu Jul 13 15:06:49 2017 | | | | |
| UNIT: | 3882TD HL6728 | CALIBRATOR: | 2437XB120057 | SOURCE: | 8281AA10160595 | HOURS: | 8281AA228 |

| | | | | | | | | |
|--------------|---------|----------|---------|---------|----------|---------|------------|--------|
| | ISS | Mtr Vits | SS Gain | LS Gain | XLS Gain | EA Temp | Sync Delay | RCAL |
| | | (V) | | | | (degF) | (usac) | |
| Raw Data | 807240 | 123 | 2232 | 2259 | 2285 | 137 | 9.0 | 0.9874 |
| Interpolated | 1300000 | 146 | 2216 | 2251 | 2283 | | | |

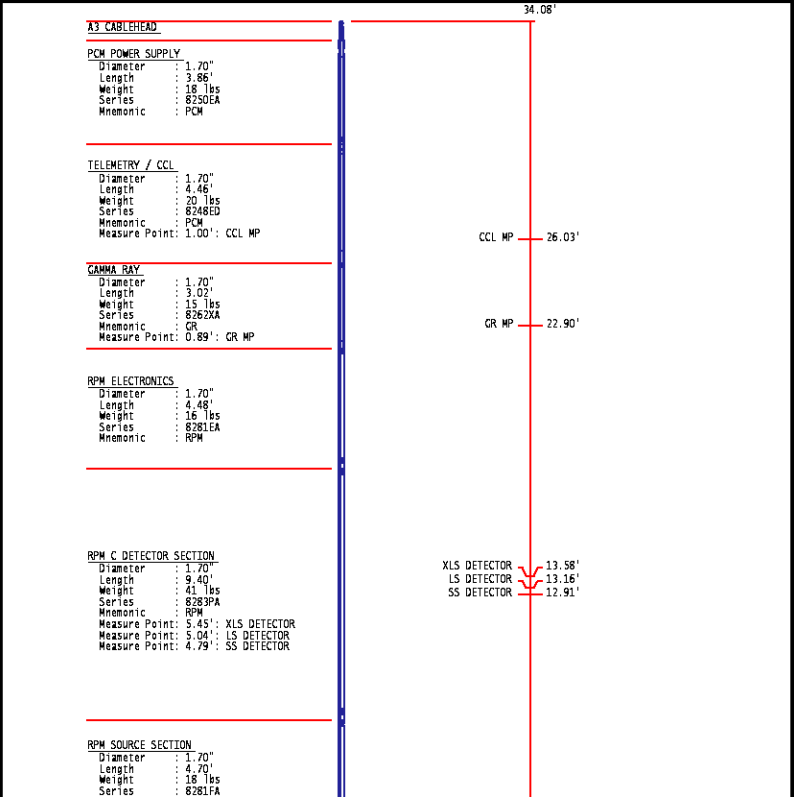
| | | | | | | | | |
|----------|--------|------|------|-----|-------------|-----------|-------------|-----------|
| | ISS | BKS | BKL | BKX | SGA1 | SDA1 | SGA2 | SDA2 |
| Raw Data | 807240 | 6543 | 1352 | 236 | 25.88 | 0.15 | 24.03 | 0.34 |
| | | | | | 25.95 26.40 | 0.00 0.00 | 23.40 24.80 | 0.00 0.40 |

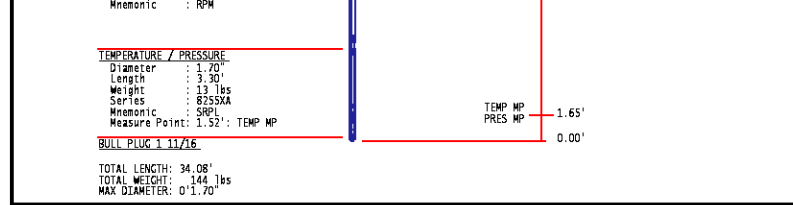
| | | | | | | | | |
|---------------|--------|--------|-------|-------|-------|-------|-------|-------|
| | ISS | ILS | IXS | SS | SS2 | LS | CSS | CLS |
| Raw Data | 807240 | 164687 | 25336 | 86104 | 30690 | 8086 | 52299 | 12945 |
| Fit Quality % | | 0.492 | 0.443 | 0.487 | 0.490 | 0.506 | 0.462 | 0.494 |


| | | | | | | | | |
|---------------|---------|-----------|-----------|-------------|-------------|-------------|-----------|-----------|
| | ISS | RBOR | RIN | RIN13 | RICS | RATO | RTWO | RONE |
| | | | ISS/ALS | ISS/XS | ISS/CSS | SS/LS | SS/LS | CSS/CLS |
| Raw Data | 807240 | 1.44 | 4.90 | 31.88 | 15.44 | 10.65 | 3.80 | 4.04 |
| | | 1.42 1.45 | 5.05 5.02 | 22.20 30.70 | 10.88 16.74 | 10.06 11.10 | 3.59 3.85 | 3.76 4.20 |
| Fit Quality % | | 0.052 | 0.128 | 0.117 | 0.144 | 0.021 | 0.011 | 0.031 |
| Reduced | 1232260 | 1.44 | 4.91 | 31.91 | 15.45 | 10.65 | 3.80 | 4.04 |
| | | 1.42 1.45 | 5.05 5.02 | 22.20 30.70 | 10.88 16.74 | 10.06 11.10 | 3.59 3.85 | 3.76 4.20 |

INSTRUMENT CONFIGURATION

Source File: Idatt1A1.ARAMIE_BRUTON_19_16E.RPM-1dg





| | | | | | |
|--|--------------------------------------|--------------------------------------|------------|-------------|----------------|
|  | COMPANY | LARAMIE ENERGY | | FILE NO: | |
| | WELL | BRUTON 19-16E | | | |
| | FIELD | VEGA | | API NO: | |
| | COUNTY | MESA | STATE | COLORADO | 05077103800000 |
| | LOCATION: | SHL: LAT:39.255232N;LONG:107.806537W | | ELEVATIONS: | |
| | BHL: LAT:39.259203N;LONG:107.807021W | | KB 7449 FT | | |
| | SEC 19 | TWP 9S | RGE 93W | DF 7448 FT | |
| | DATE | | | 23-AUG-2017 | |