

# Radial Cement Bond Gamma Ray Casing Collar Log

|         |                                    |                        |                      |
|---------|------------------------------------|------------------------|----------------------|
| Company | Kerr-McGee Oil & Gas Onshore, L.P. |                        |                      |
| Well    | Kerr 13N-25HZ                      |                        |                      |
| Field   | Wattenberg                         |                        |                      |
| County  | Weld                               |                        |                      |
| State   | Colorado                           |                        |                      |
| Company | Kerr-McGee Oil & Gas Onshore, L.P. | Location:              | API # : 05-123-39357 |
| Well    | Kerr 13N-25HZ                      | SEC 13                 | TWP 2N               |
| Field   | Wattenberg                         | RGE 67W                | Other Services       |
| County  | Weld                               | State                  | Colorado             |
|         |                                    | Permanent Datum        | Ground Level         |
|         |                                    | Log Measured From      | Kelly Bushing        |
|         |                                    | Drilling Measured From | Kelly Bushing        |
|         |                                    | Elevation              | 4892'                |
|         |                                    | Elevation              | K.B. 4917'           |
|         |                                    |                        | D.F. 4916'           |
|         |                                    |                        | G.L. 4892'           |

|                        |                 |
|------------------------|-----------------|
| Date                   | 09-DEC-2014     |
| Run Number             | Three           |
| Depth Driller          | 17525 FT        |
| Depth Logger           | 6800 FT         |
| Bottom Logged Interval | 6572 FT         |
| Top Log Interval       | Surface         |
| Open Hole Size         | 8.750"          |
| Type Fluid             | Water           |
| Density / Viscosity    | 8.34 lbm/gal    |
| Max. Recorded Temp.    | 208°F           |
| Estimated Cement Top   | Surface         |
| Time Well Ready        | ROA             |
| Time Logger on Bottom  | 11:20 AM        |
| Equipment Number       | HD-0324         |
| Location               | Fort Lupton, CO |
| Recorded By            | R. Fogarty      |
| Witnessed By           | Rick Dunford    |

| Borehole Record |           |              |               | Tubing Record |          |      |    |
|-----------------|-----------|--------------|---------------|---------------|----------|------|----|
| Run Number      | Bit       | From         | To            | Size          | Weight   | From | To |
|                 |           |              |               |               |          |      |    |
|                 |           |              |               |               |          |      |    |
|                 |           |              |               |               |          |      |    |
| Casing Record   | Size (in) | Wgt (lbs/ft) | Grade         | Top           | Bottom   |      |    |
| Surface Casing  | 9 5/8     | 36           | J-55 LTC      | Surface       | 1089 FT  |      |    |
| Intermediate #1 | 7         | 26           | HCP-110 LTC   | Surface       | 7517 FT  |      |    |
| Intermediate #2 |           |              |               |               |          |      |    |
| Liner           | 4 1/2     | 11.6         | P-110 DQX/LTC | 6547 FT       | 17515 FT |      |    |

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

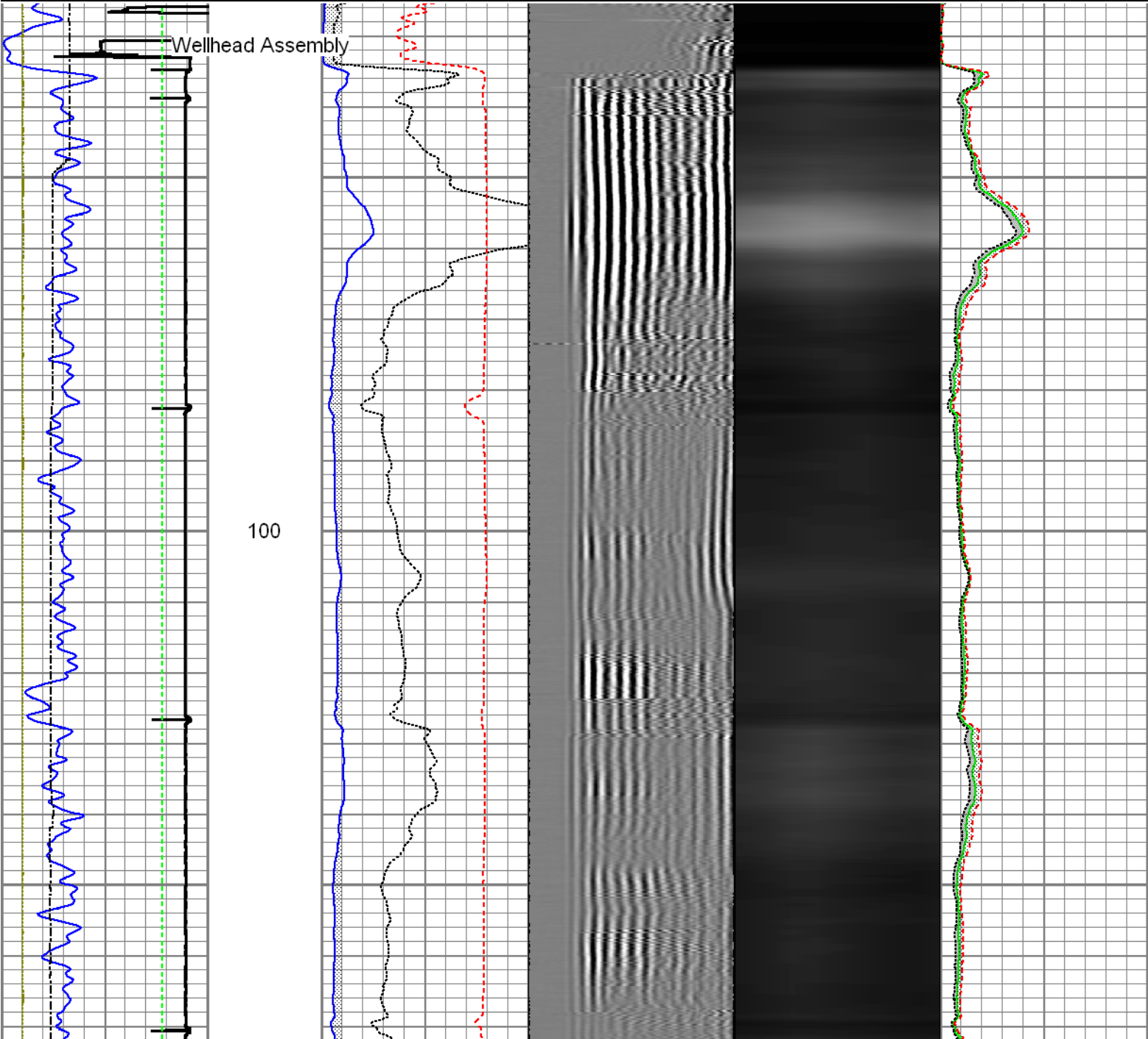
## Comments

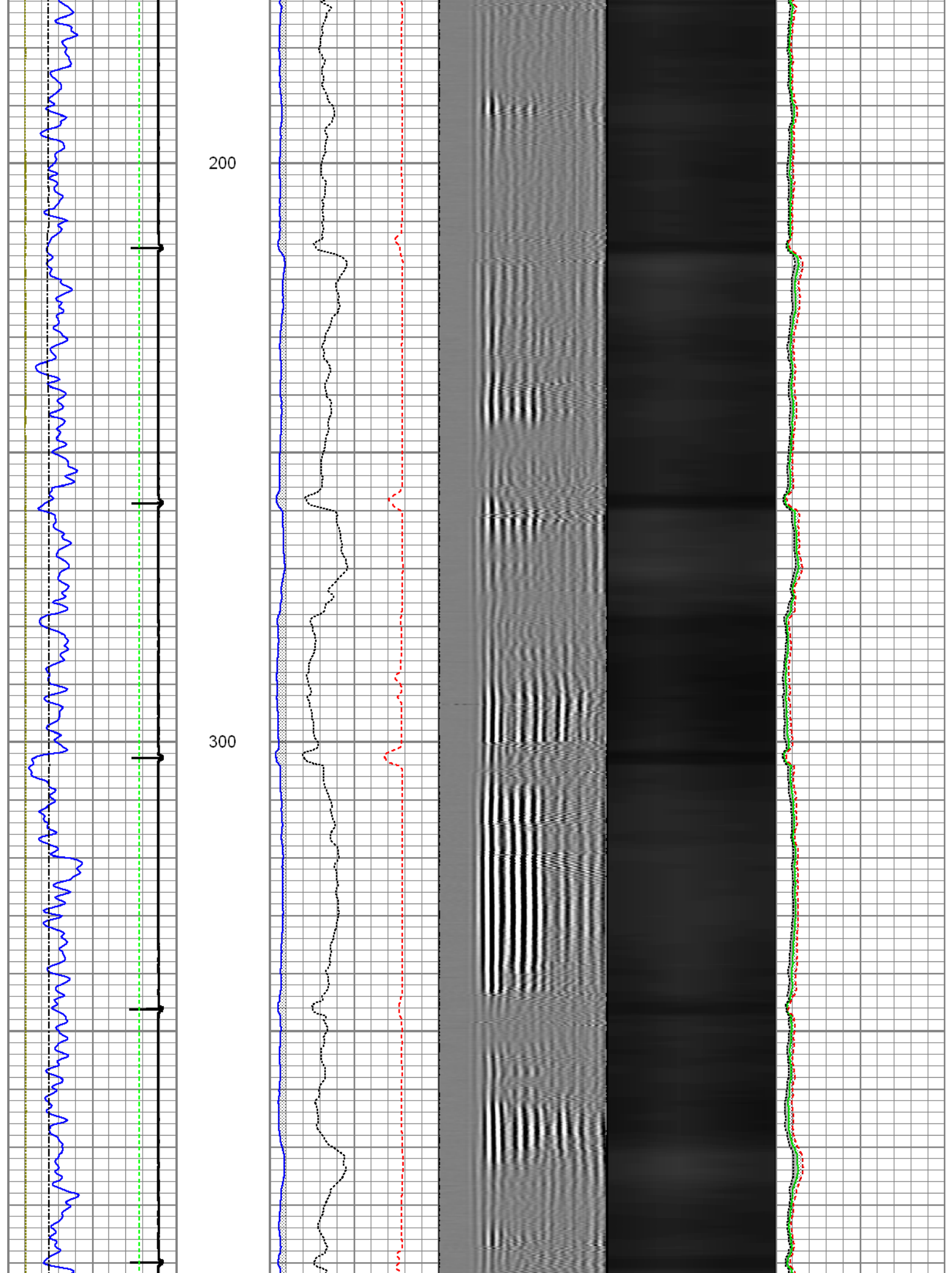
Log ran as per Customer request.  
Depth referenced to Casing Tally reported Liner Top at 6547 FT.  
Adjusted log +12 FT from KB zero to correlate with Liner Top.  
Gauge Ring/ Junk Basket ran to 6800 FT with no debris found  
Log ran as deep as possible in heel to surface  
Log ran with 2800 PSI surface induced pressure.  
Tool string was clean upon completion of operations

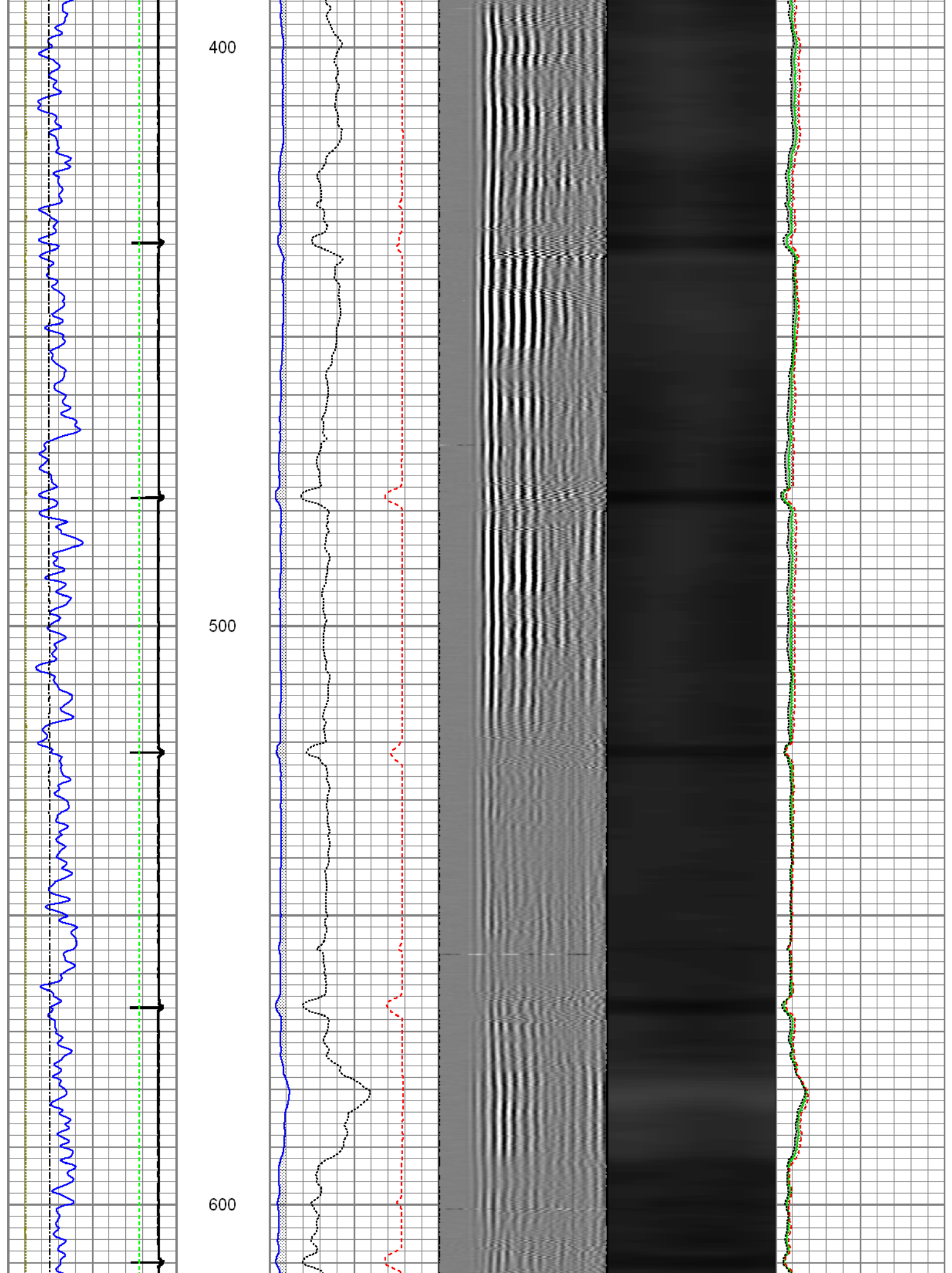
Thank you for choosing FMC Technologies Completion Services, Inc.!!

Database File: 0512339357\_anadarko\_kerr 13n-25hz\_12-09-14\_mit\_rbl.db  
Dataset Pathname: pass6.1  
Presentation Format: rbt4\_mit  
Dataset Creation: Wed Dec 10 08:04:29 2014 by Calc SCH 120430  
Charted by: Depth in Feet scaled 1:240

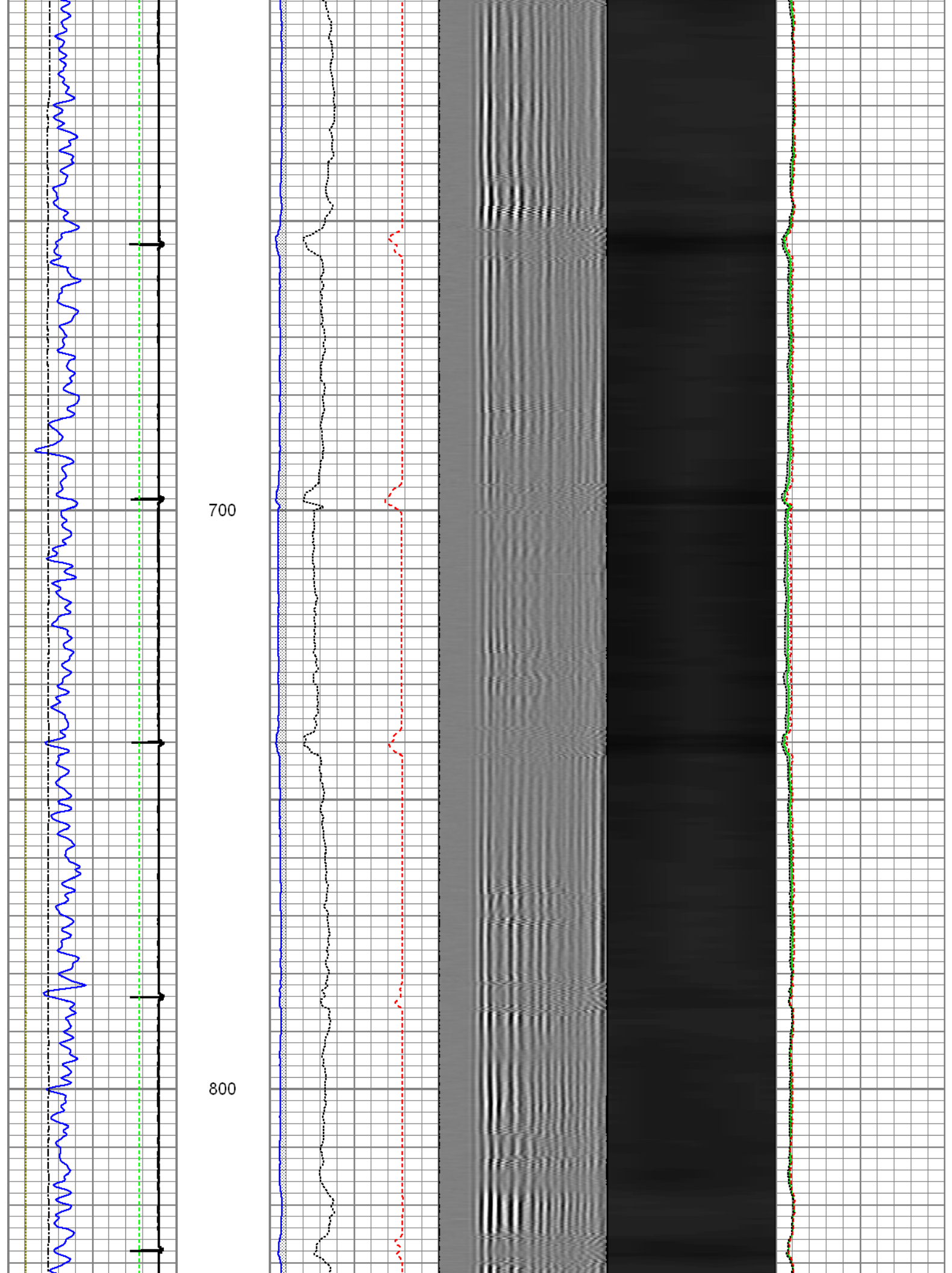
|                       |                  |                         |            |                   |
|-----------------------|------------------|-------------------------|------------|-------------------|
| Gamma Ray             | 3' Amplitude     | 5' Variable Density Log | Sector Map | Average Amplitude |
| 0 (GAPI) 120          | 0 (mV) 100       | 200 1200                |            | 0 100             |
| Casing Collar Locator | 3' Amplitude x 5 |                         |            | Minimum Amplitude |
| Line Speed            | 0 (mV) 20        |                         |            | 0 100             |
| -100 (ft/min) 100     | 3' Travel Time   |                         |            | Maximum Amplitude |
| Line Tension          | 650 (usec) 150   |                         |            | 0 100             |
| 0 (lb) 2000           |                  |                         |            |                   |
| Wellbore Deviation    |                  |                         |            |                   |
| -10 (°) 90            |                  |                         |            |                   |

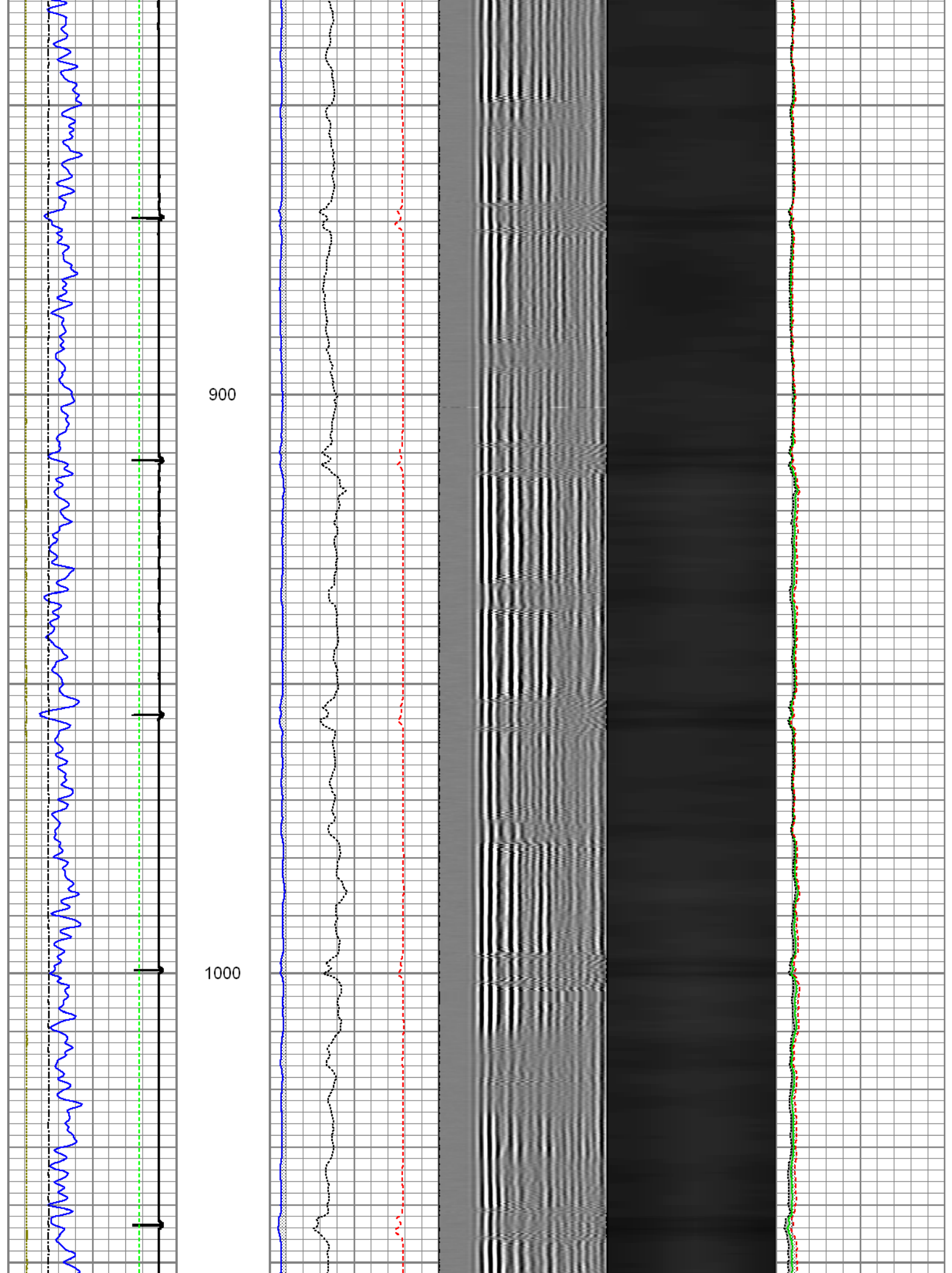


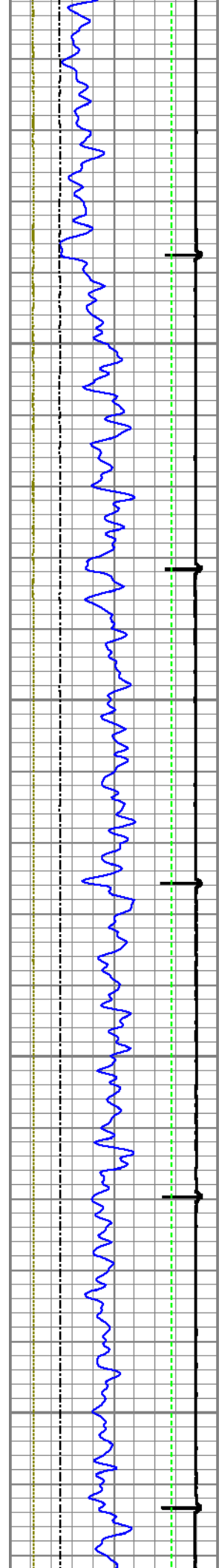






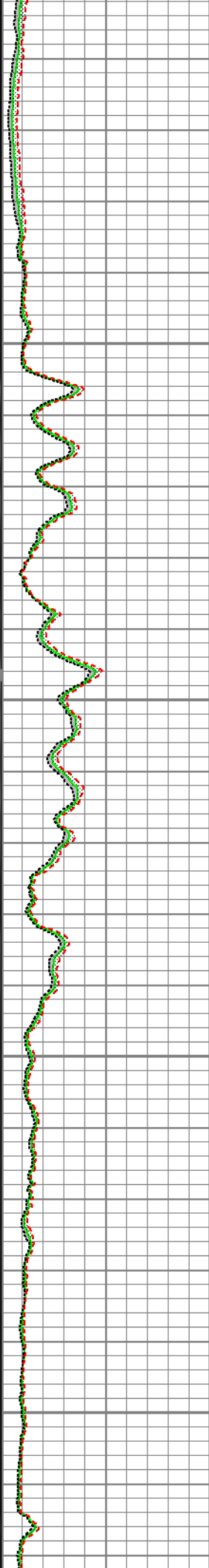
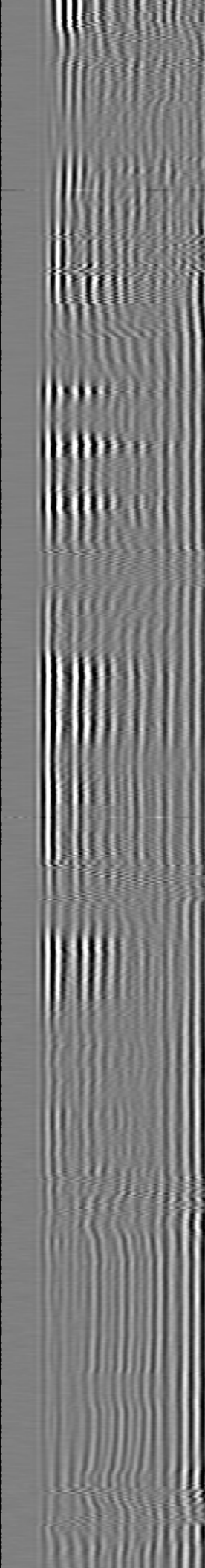
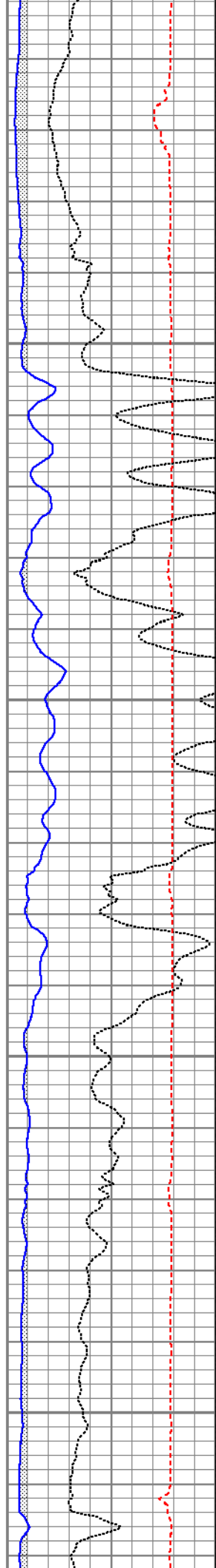


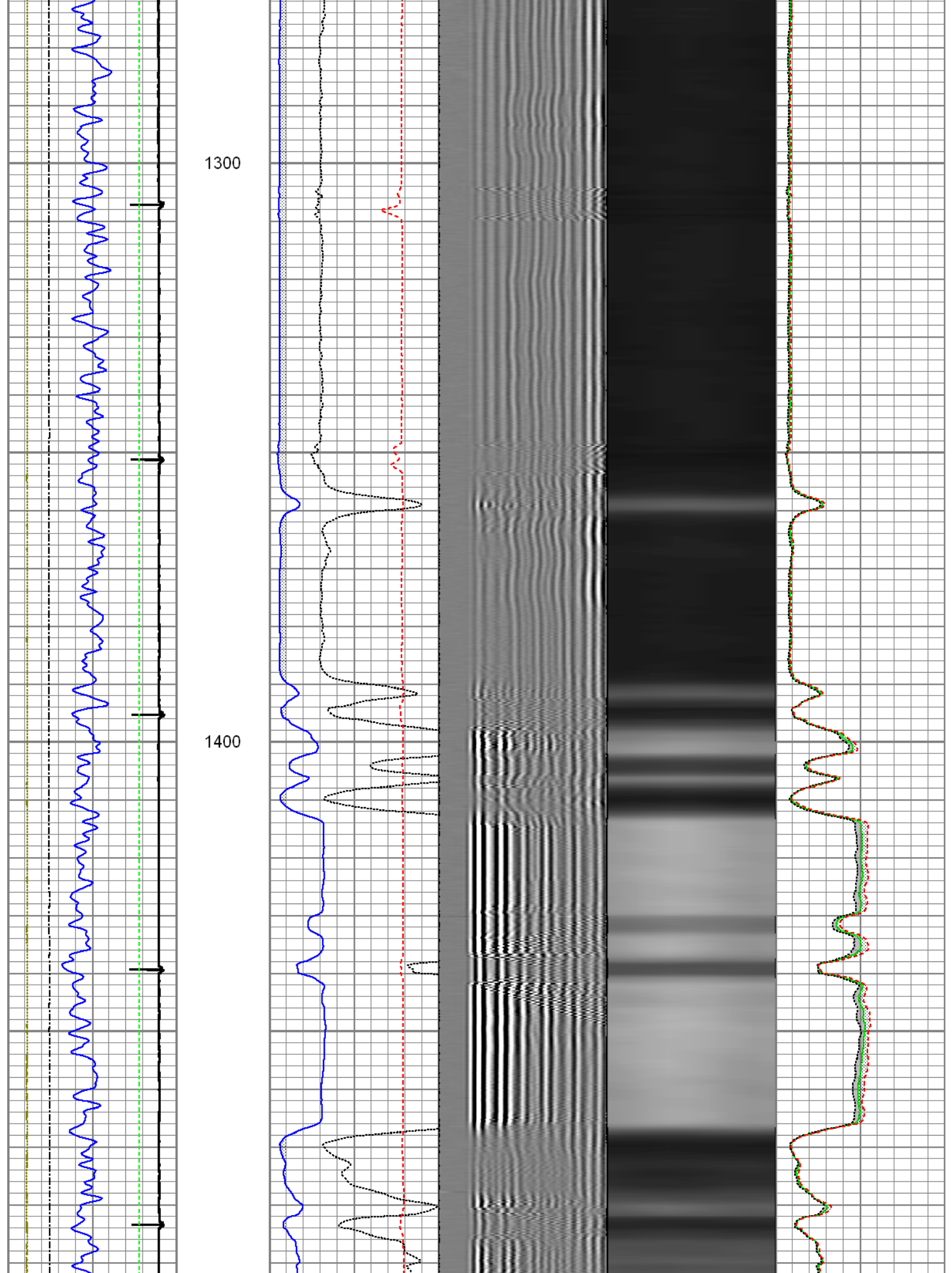




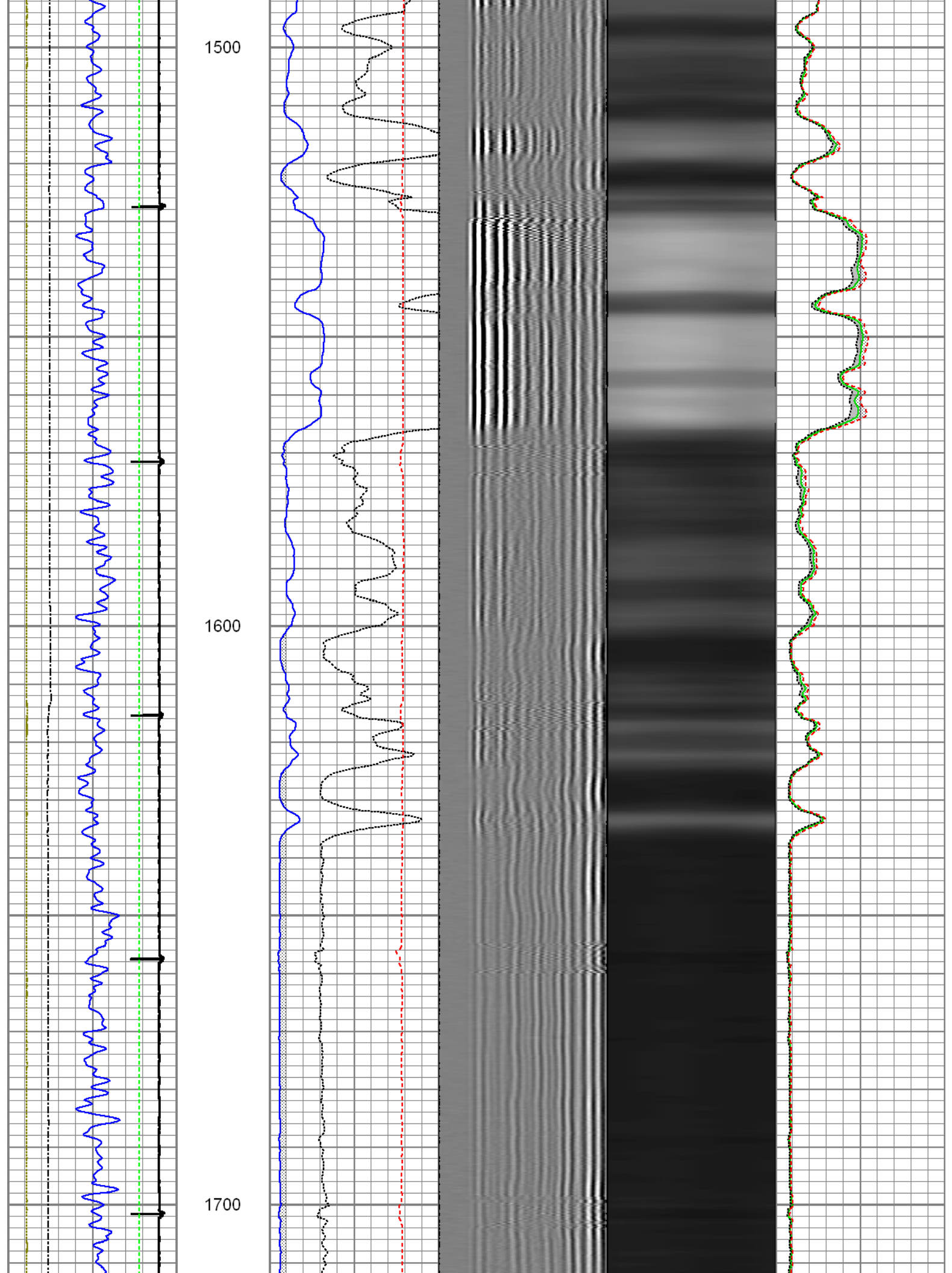
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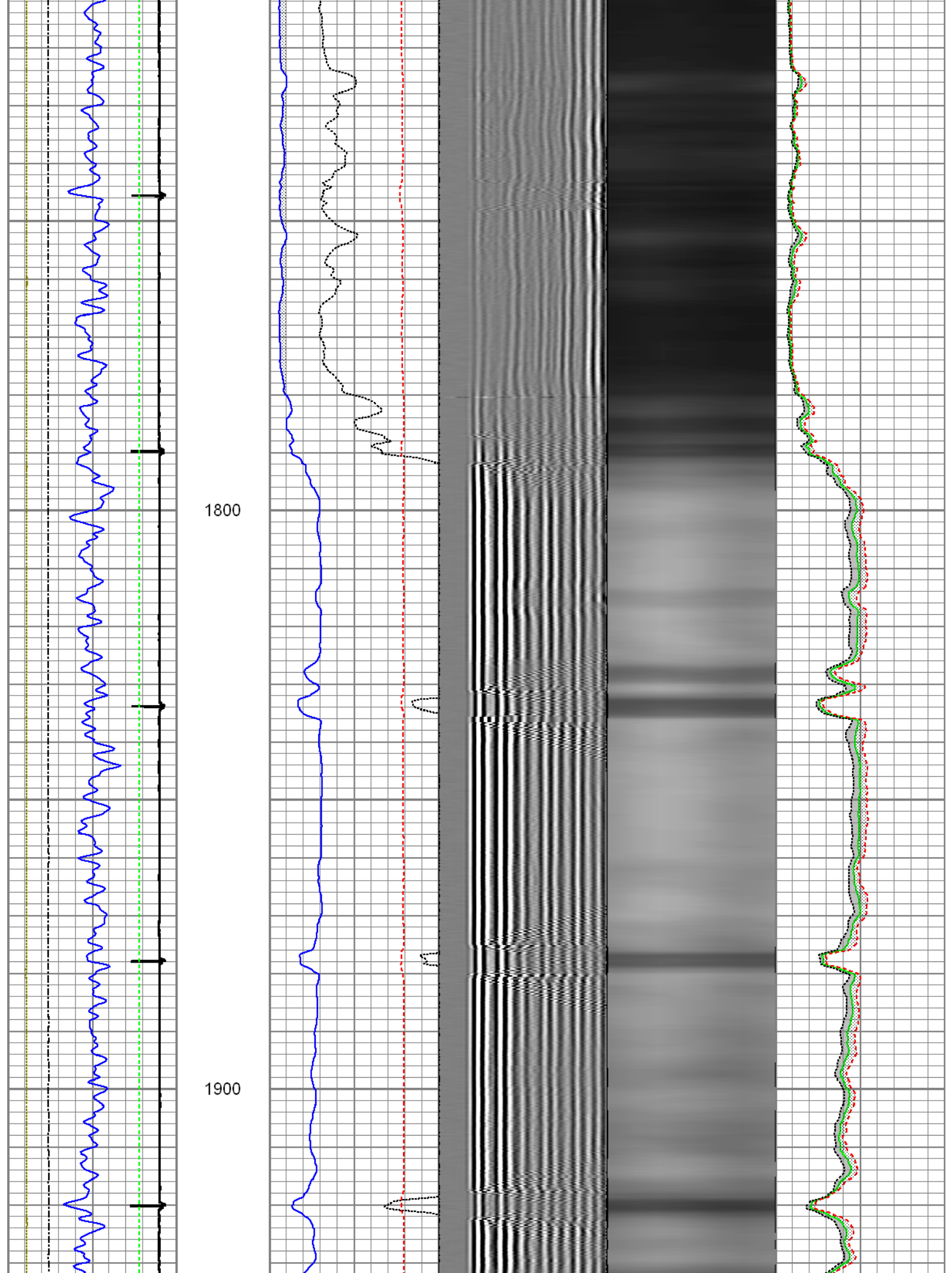
1200

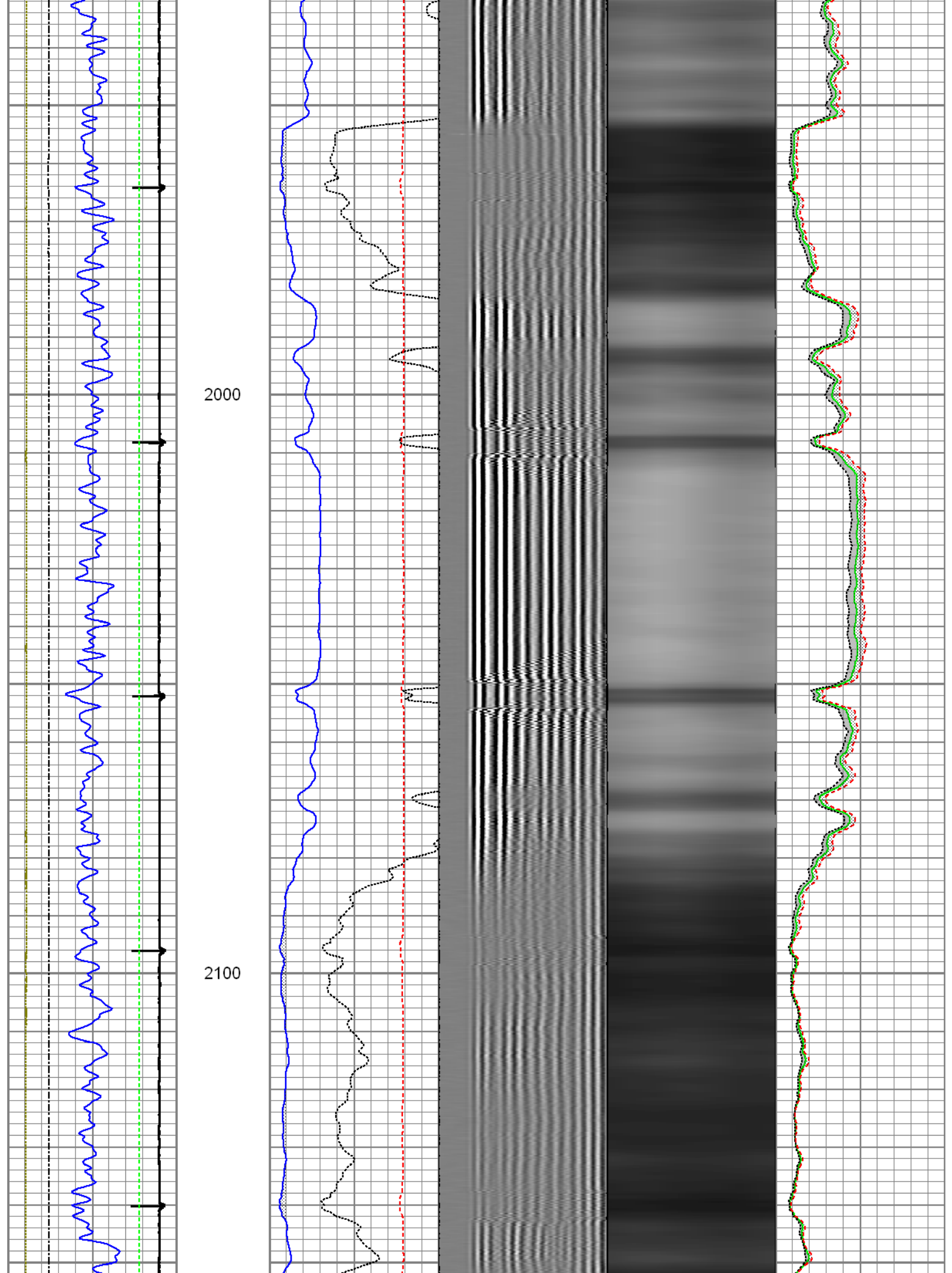


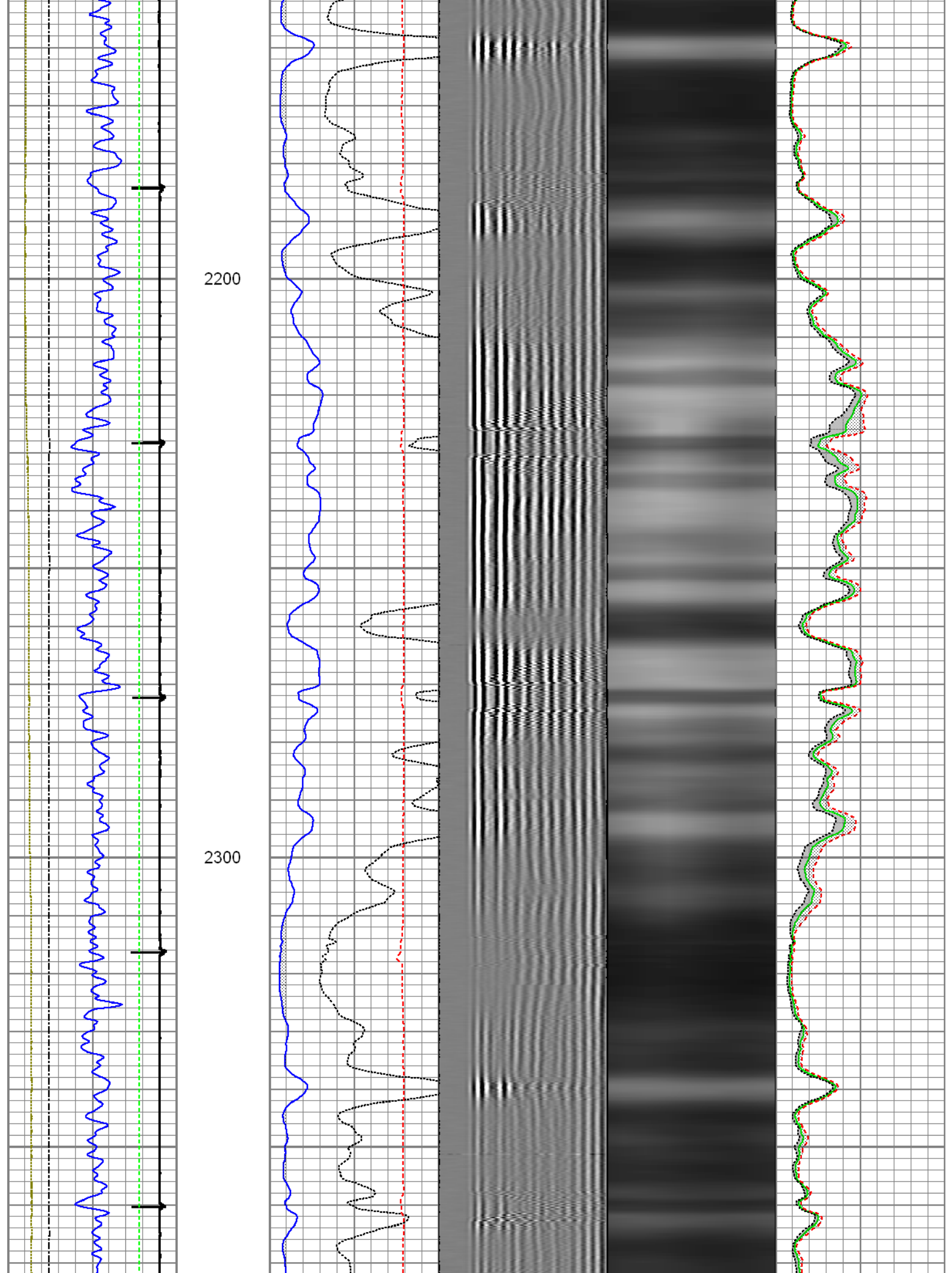




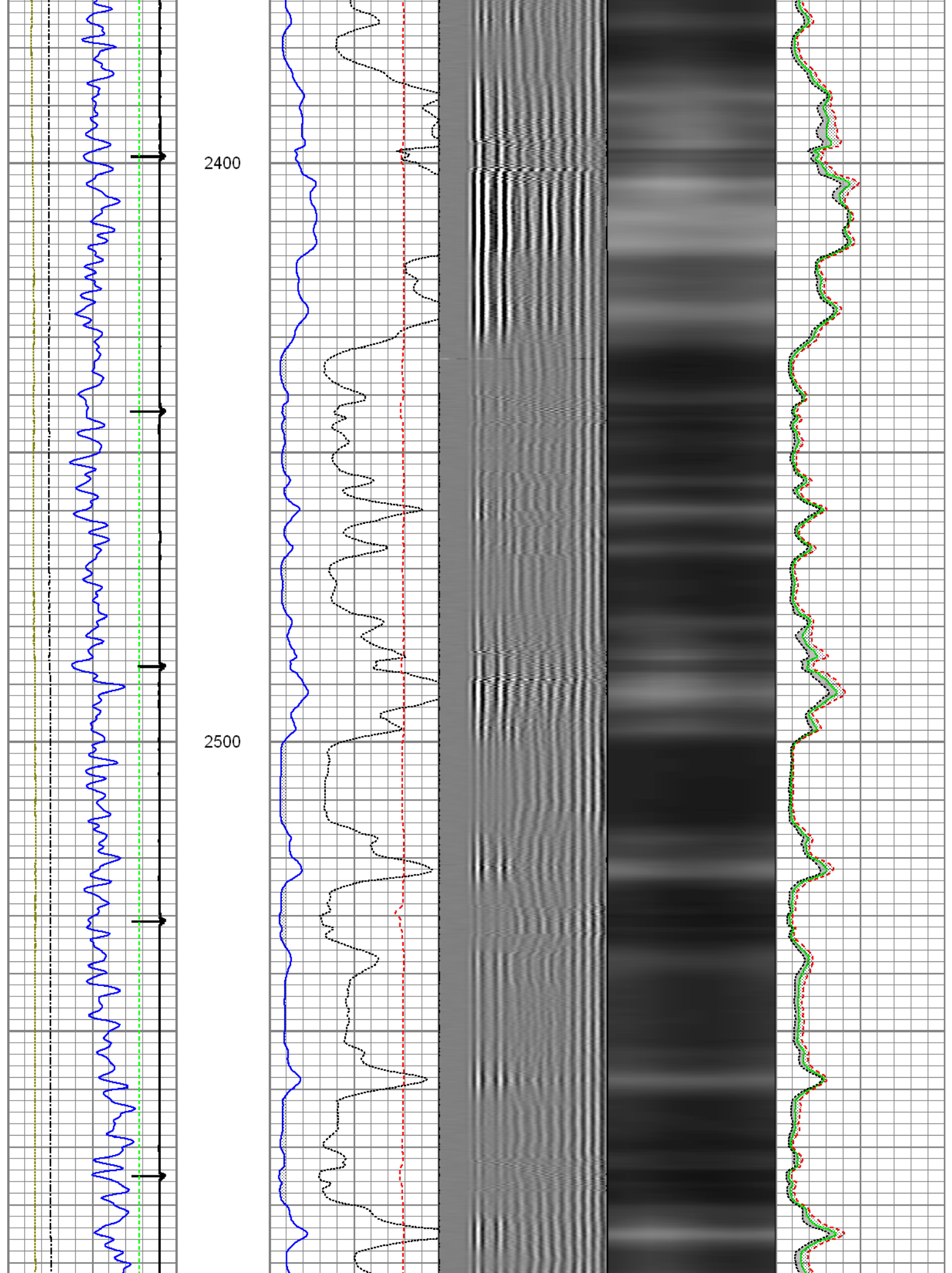


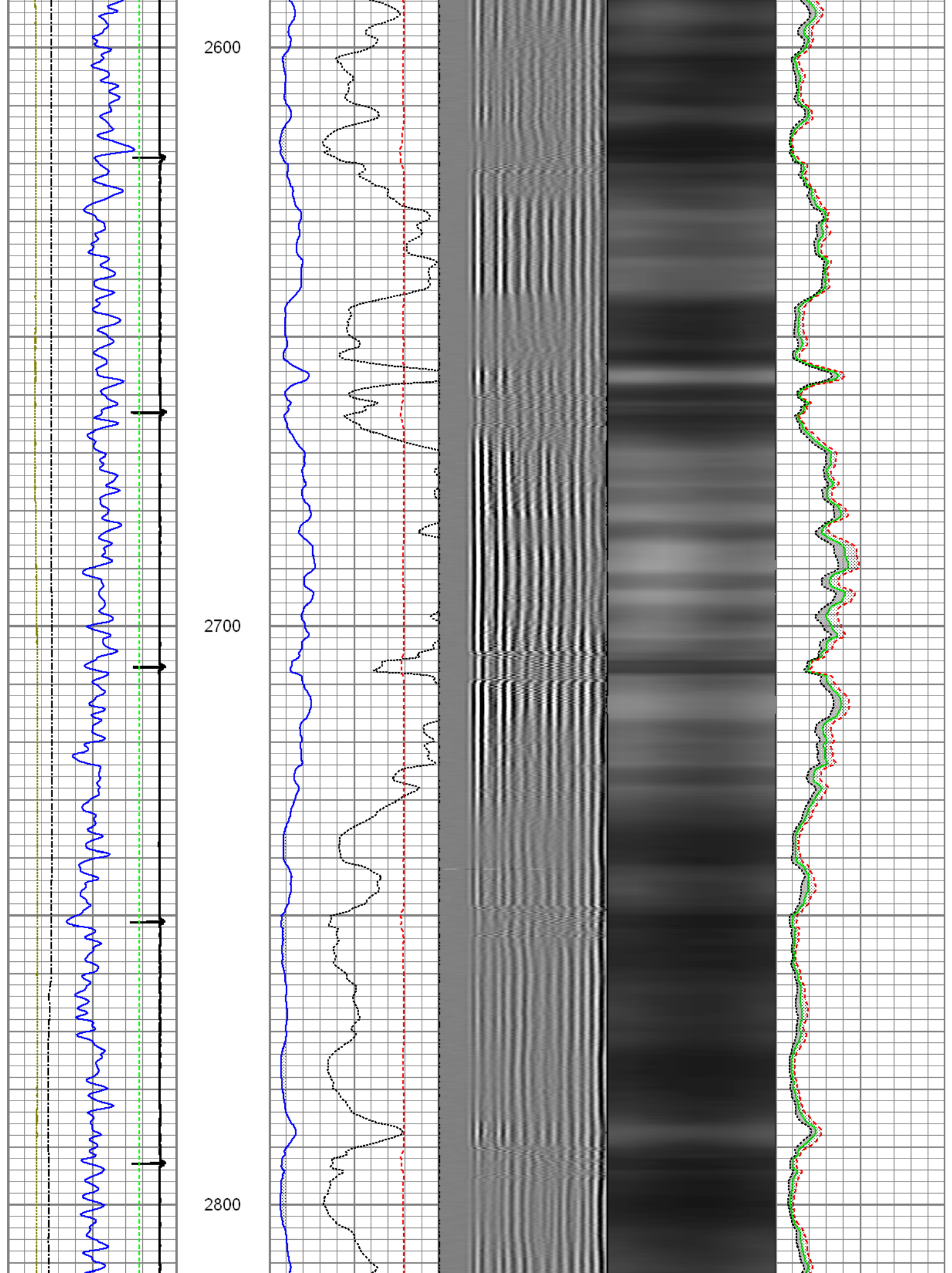


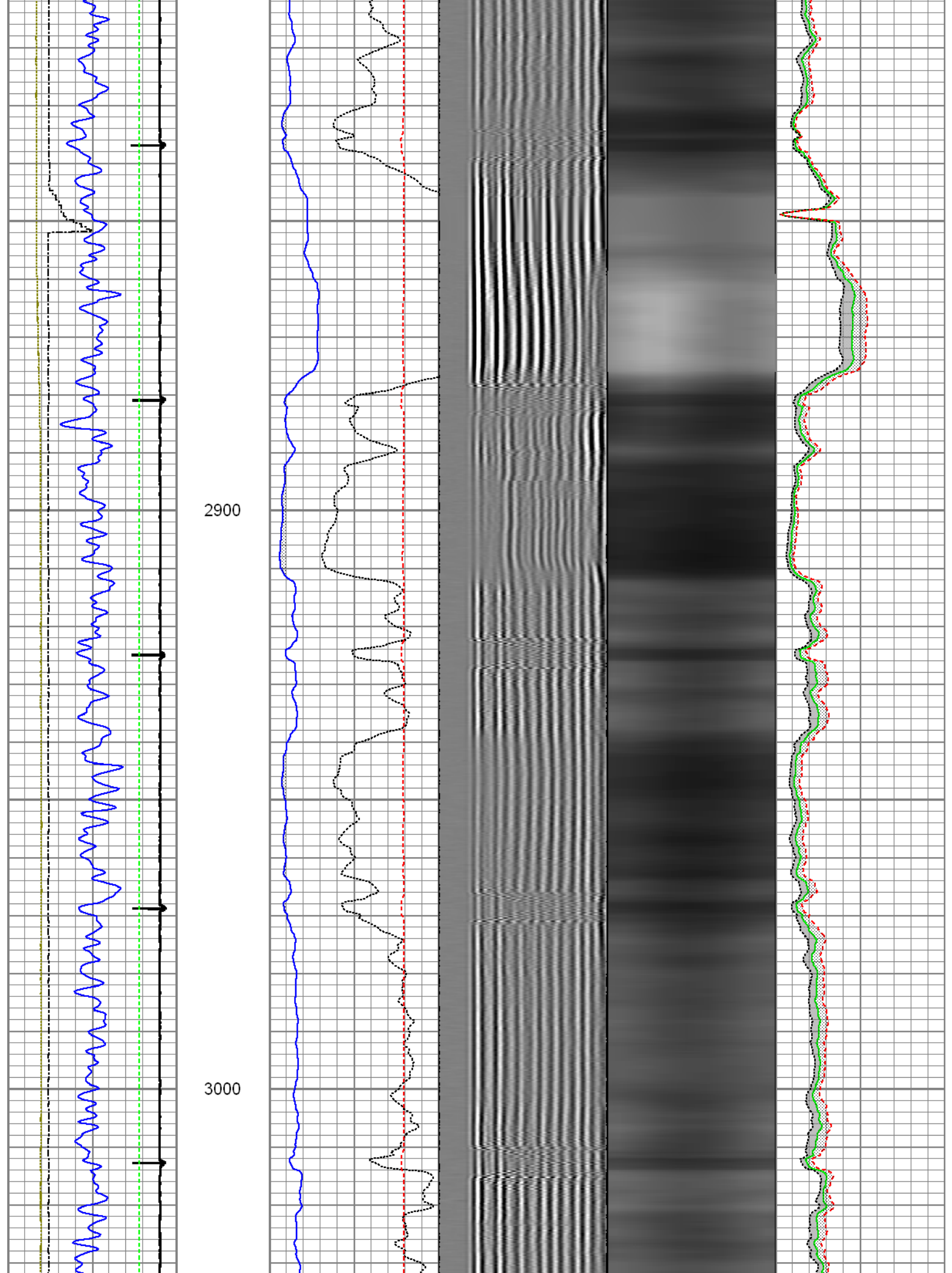


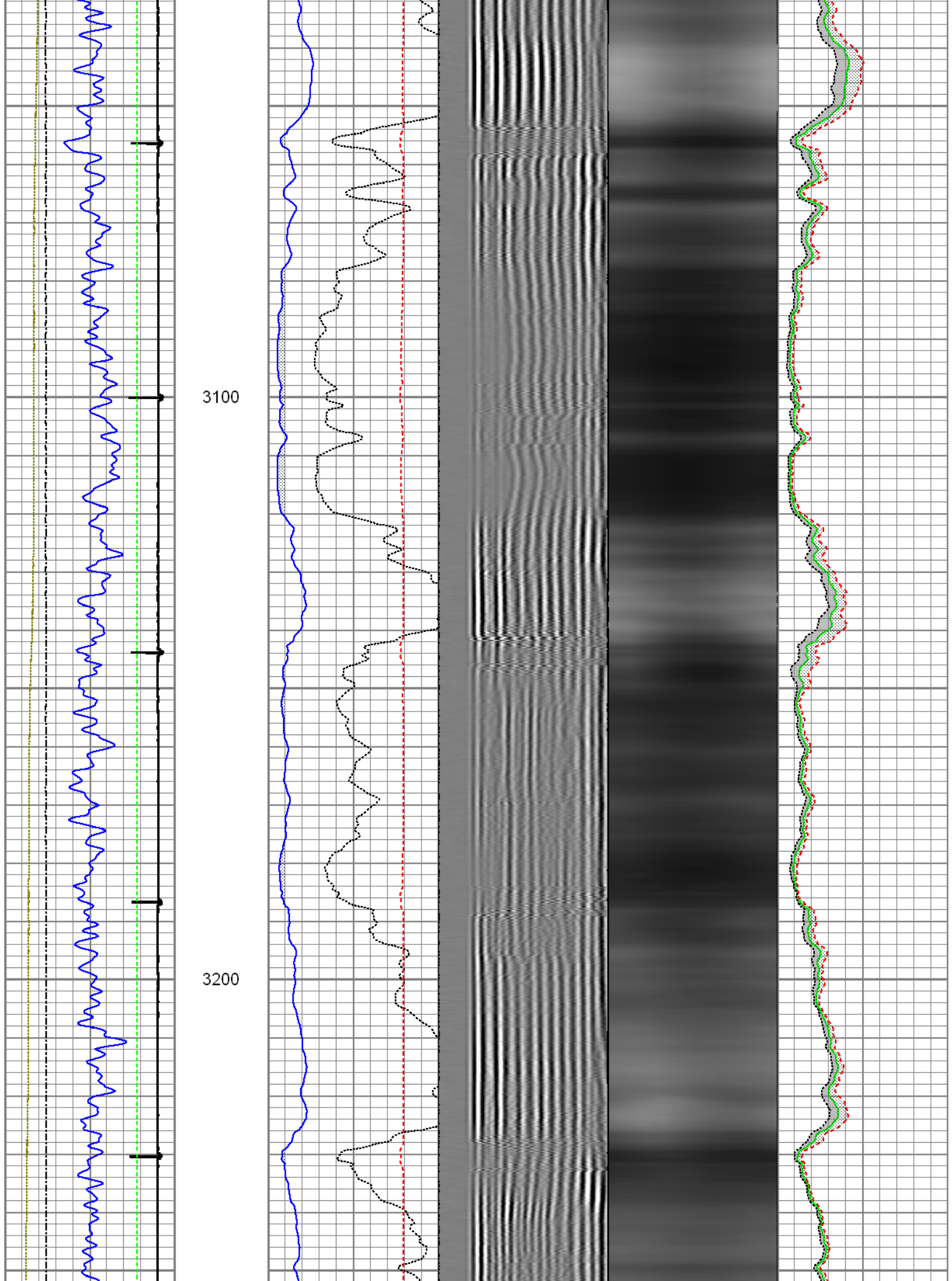




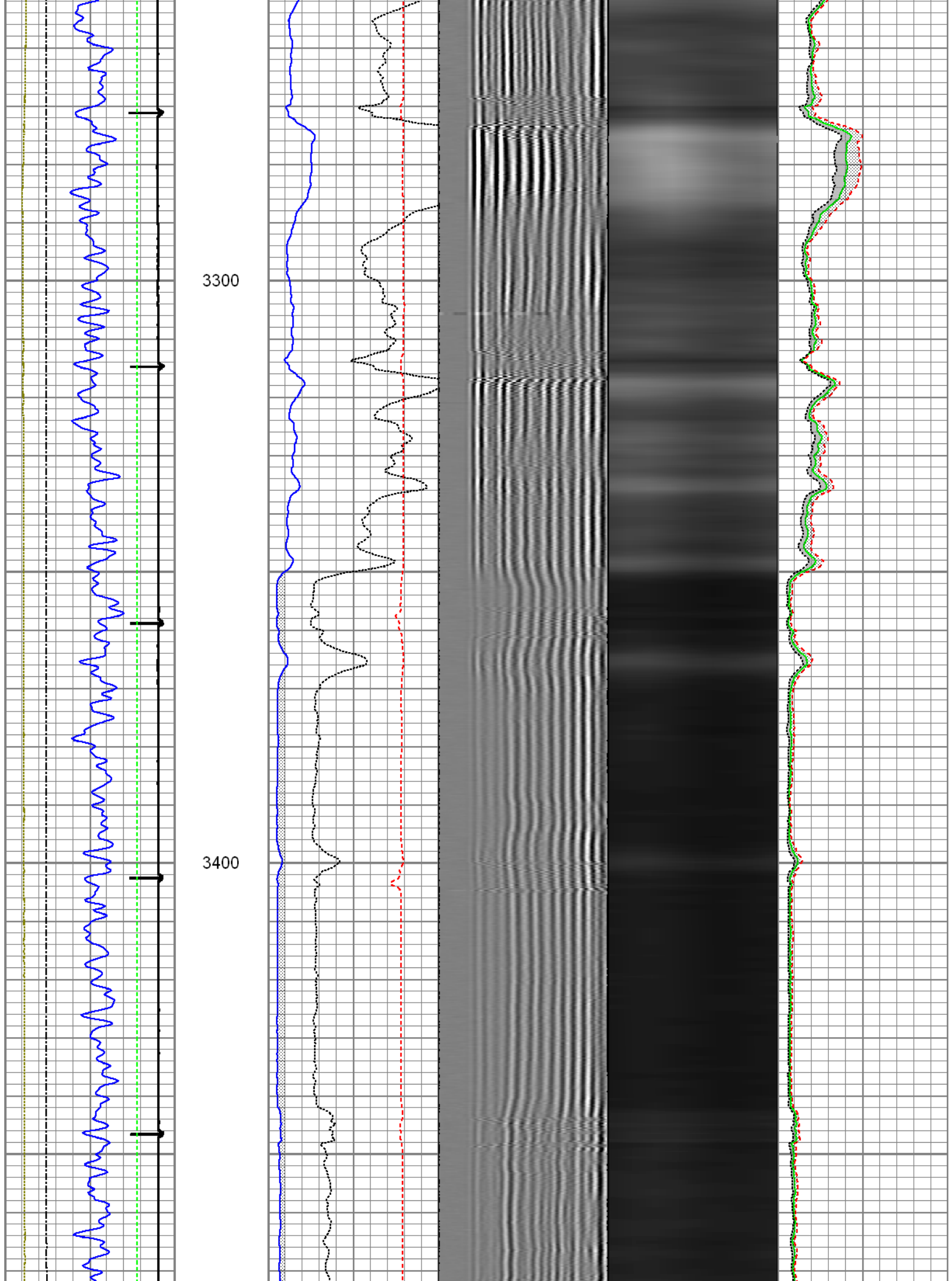


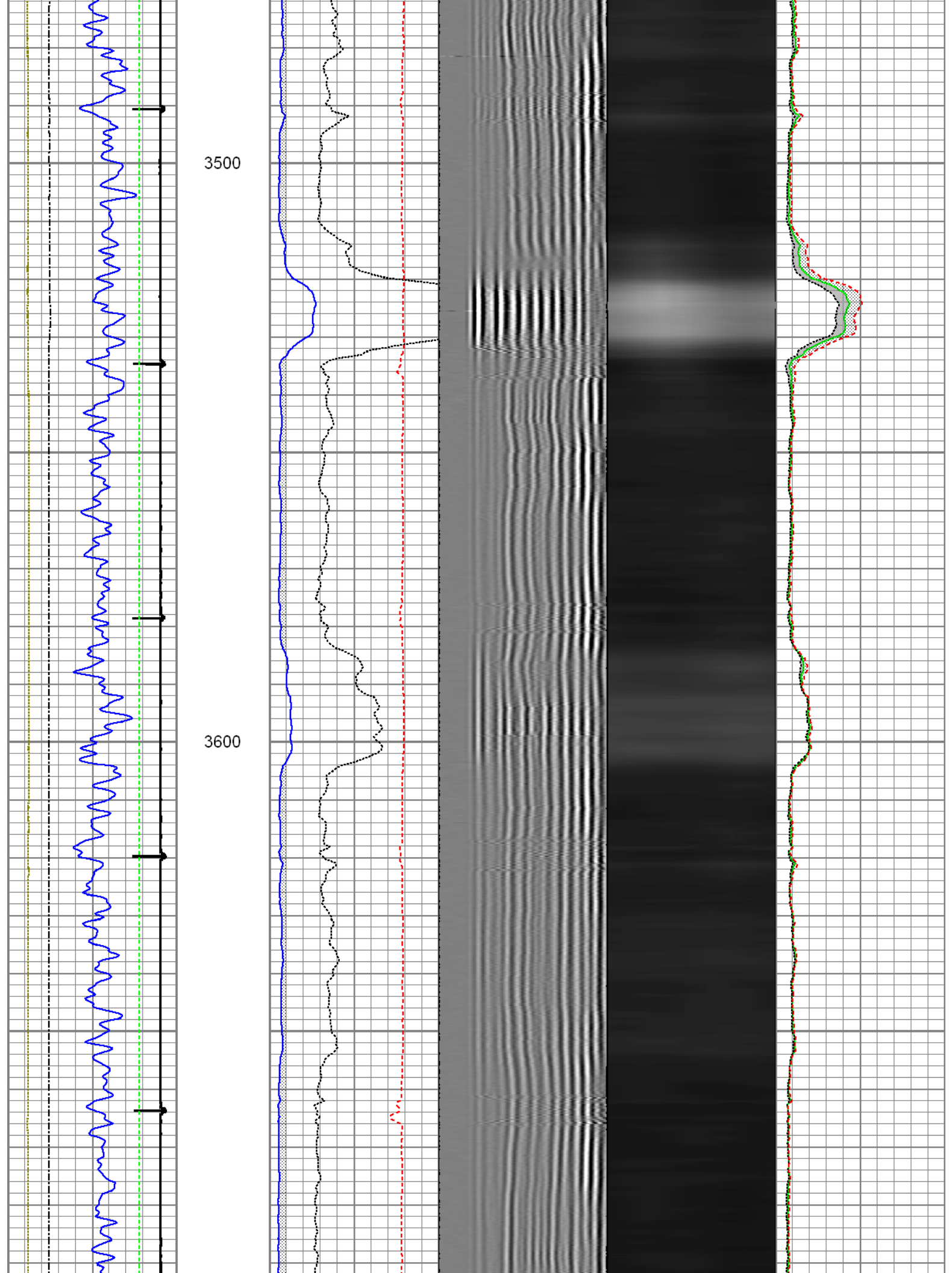


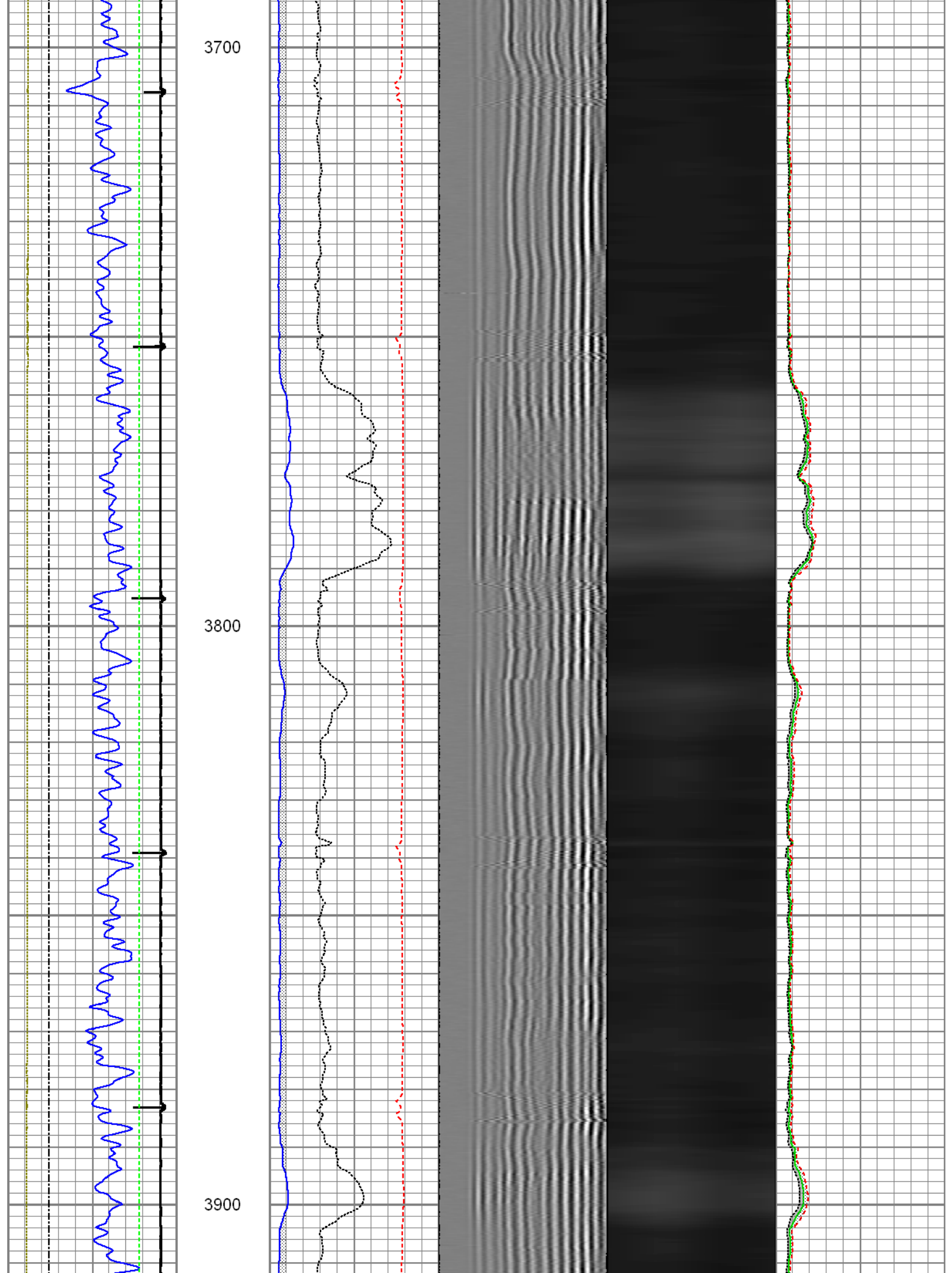


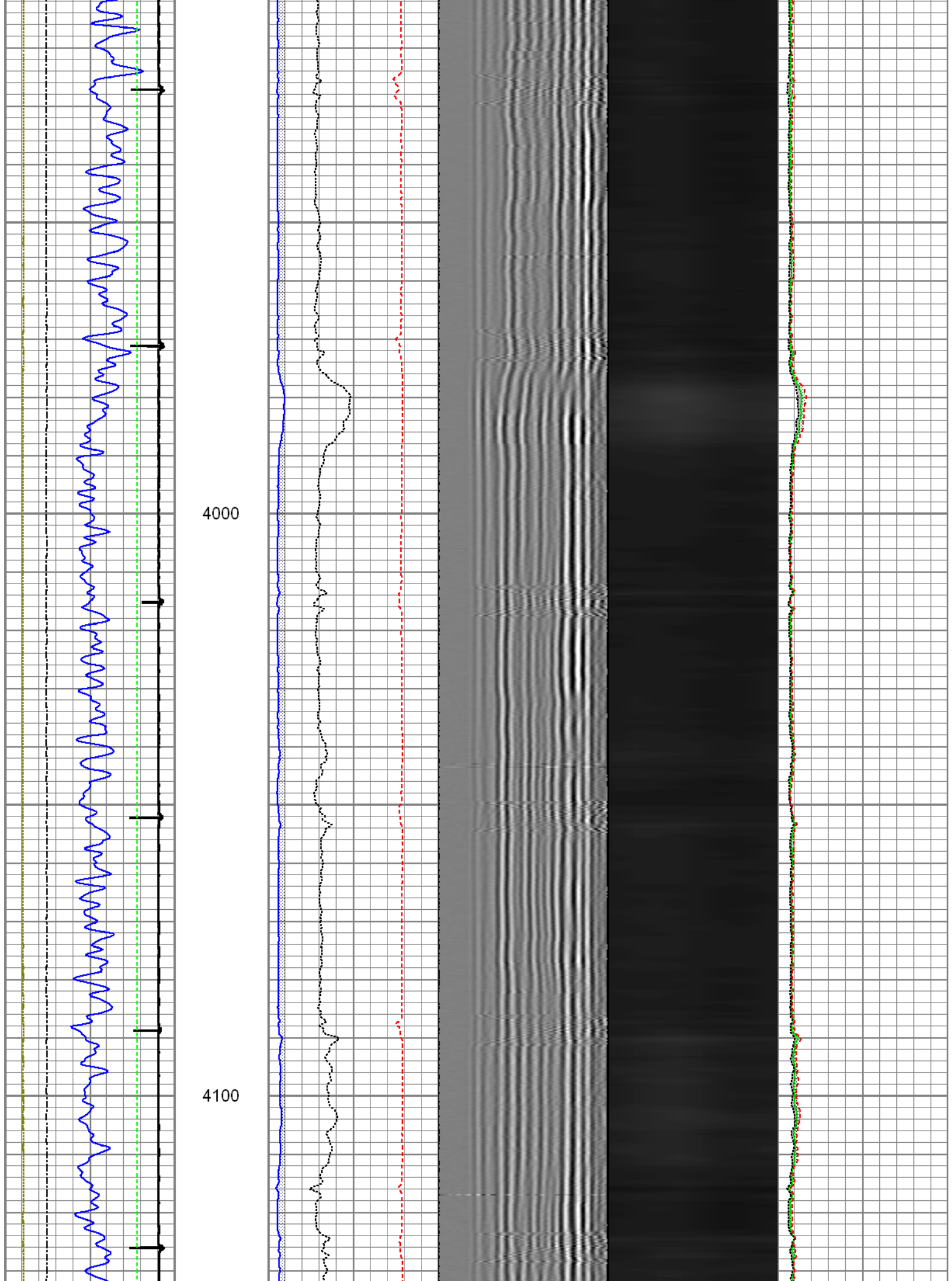




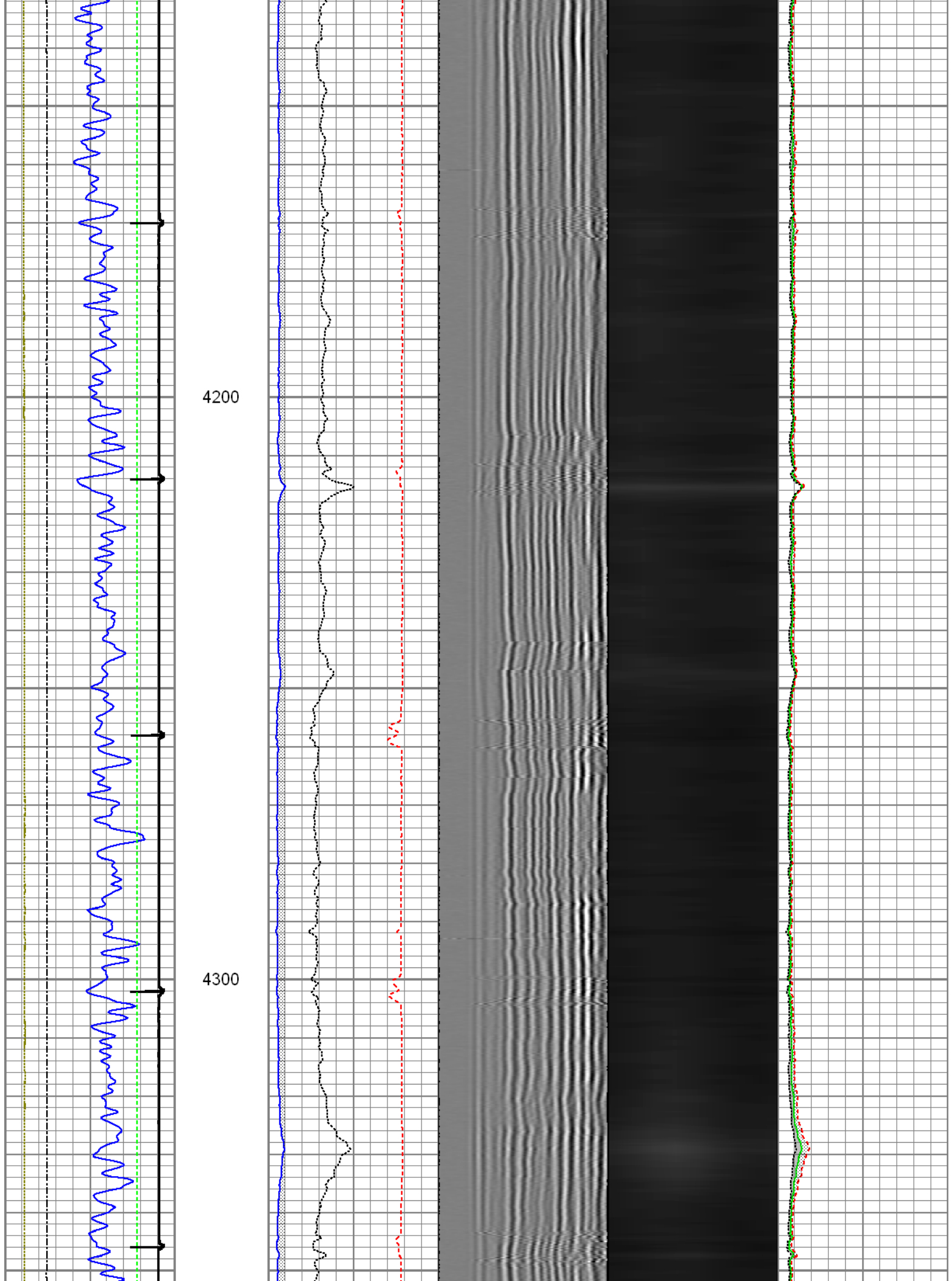


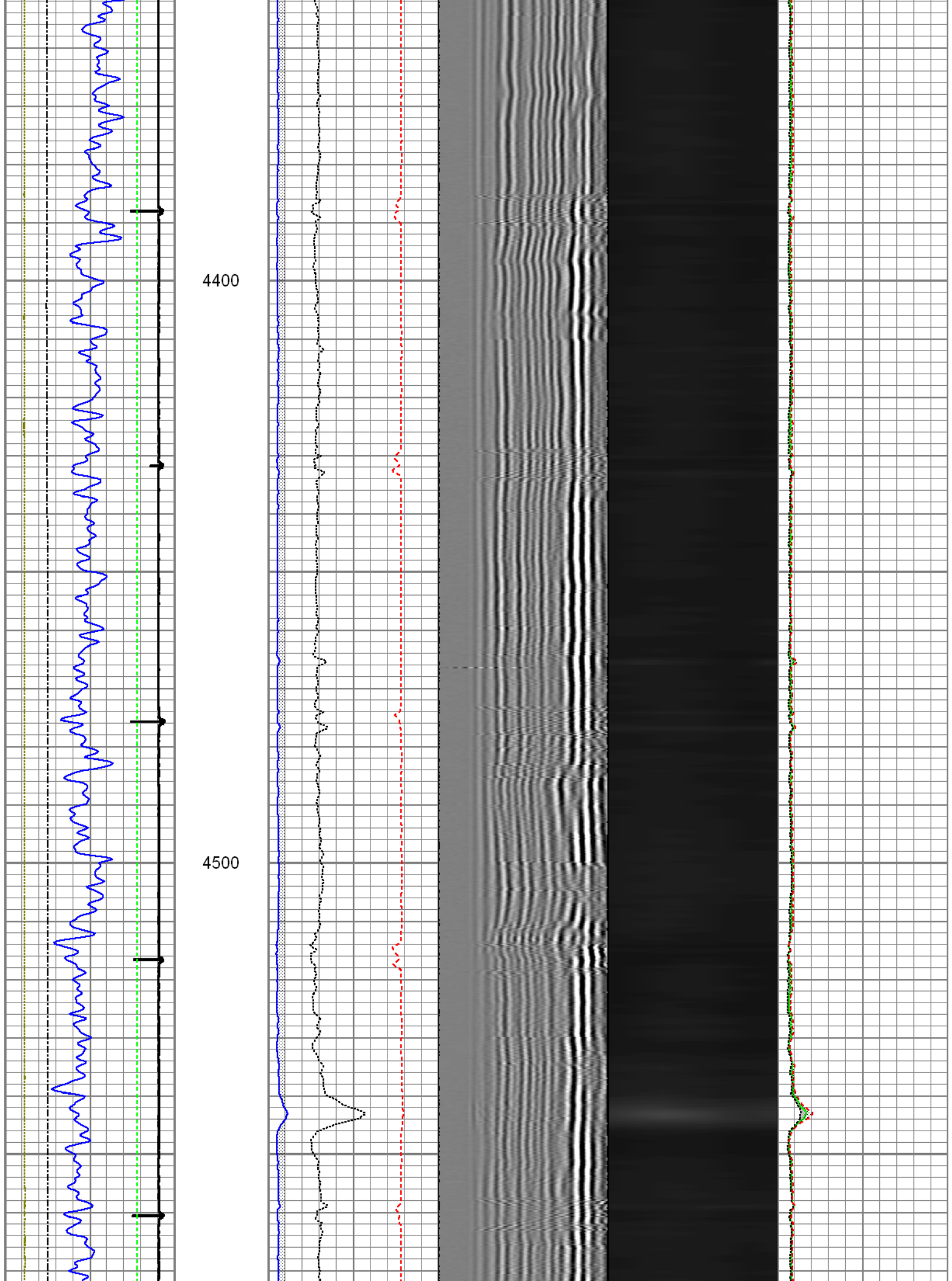


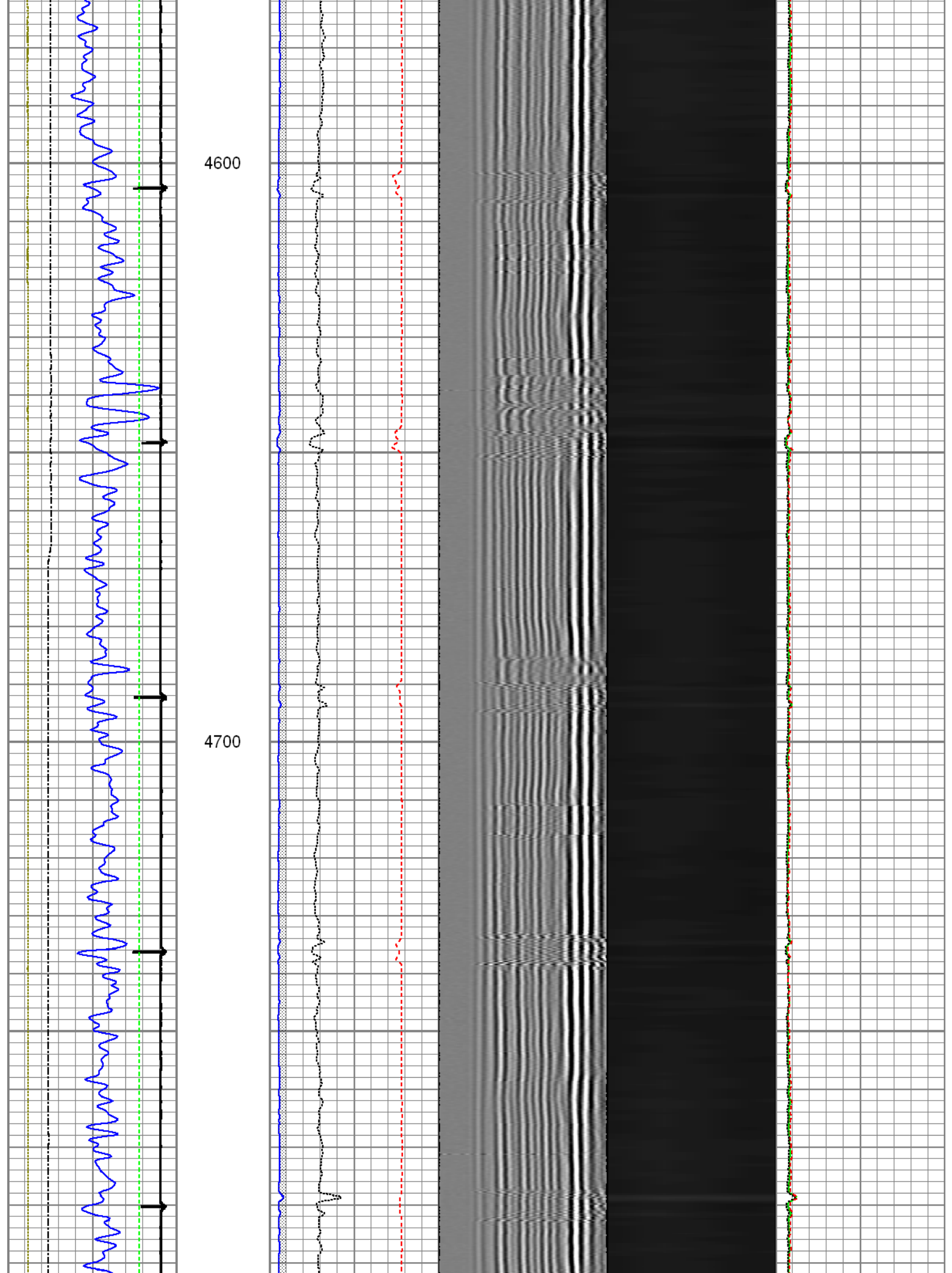


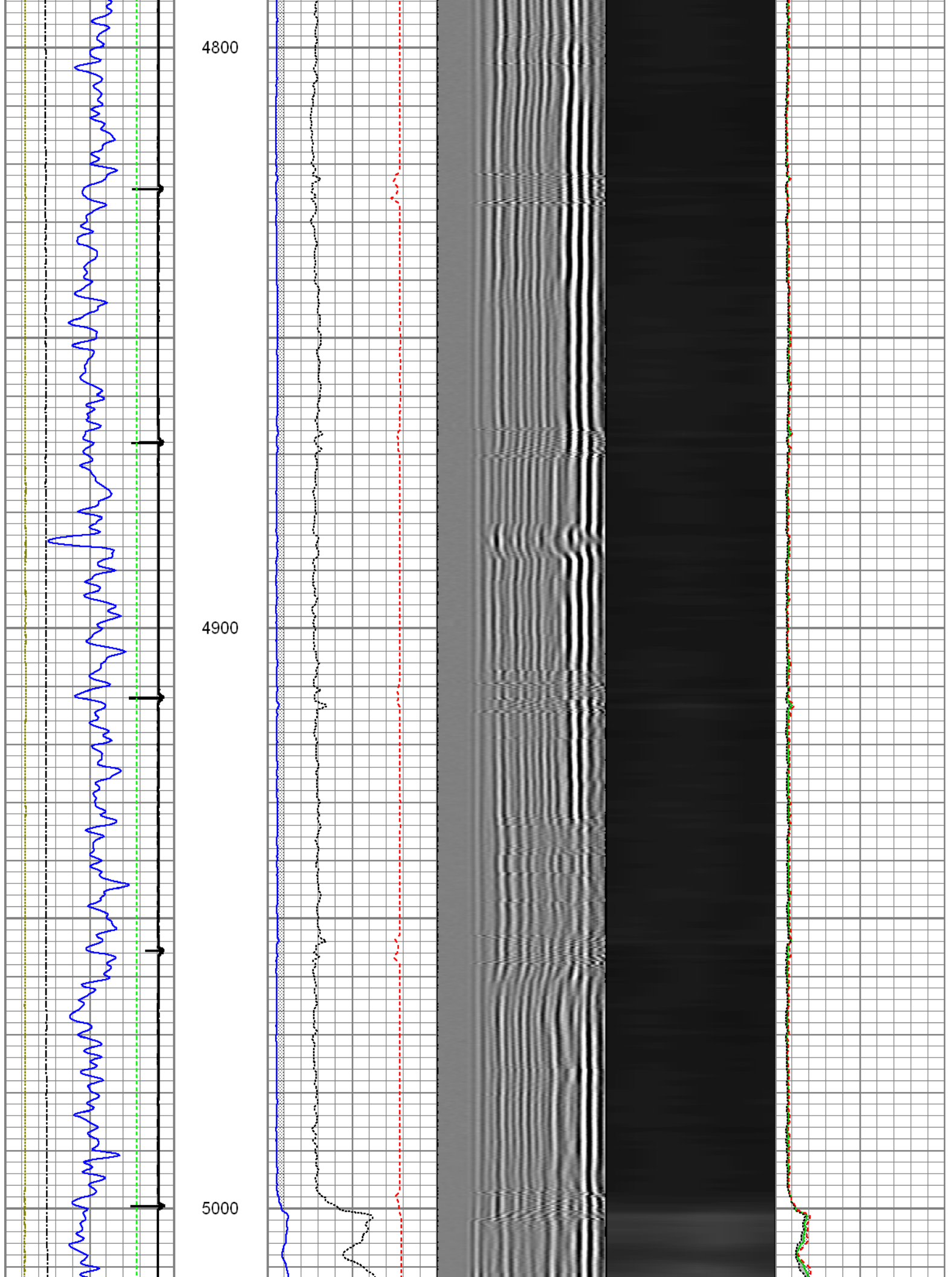




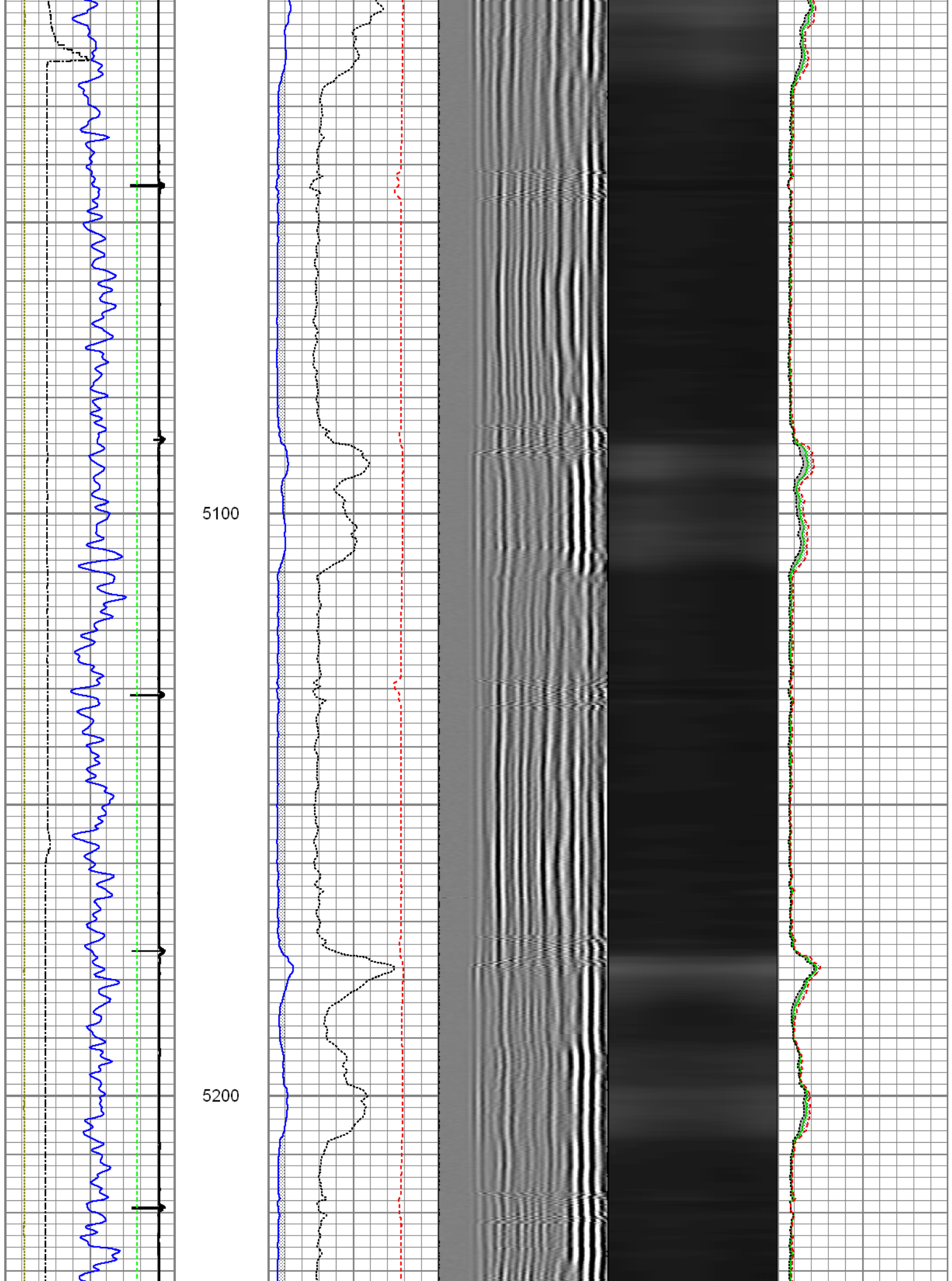


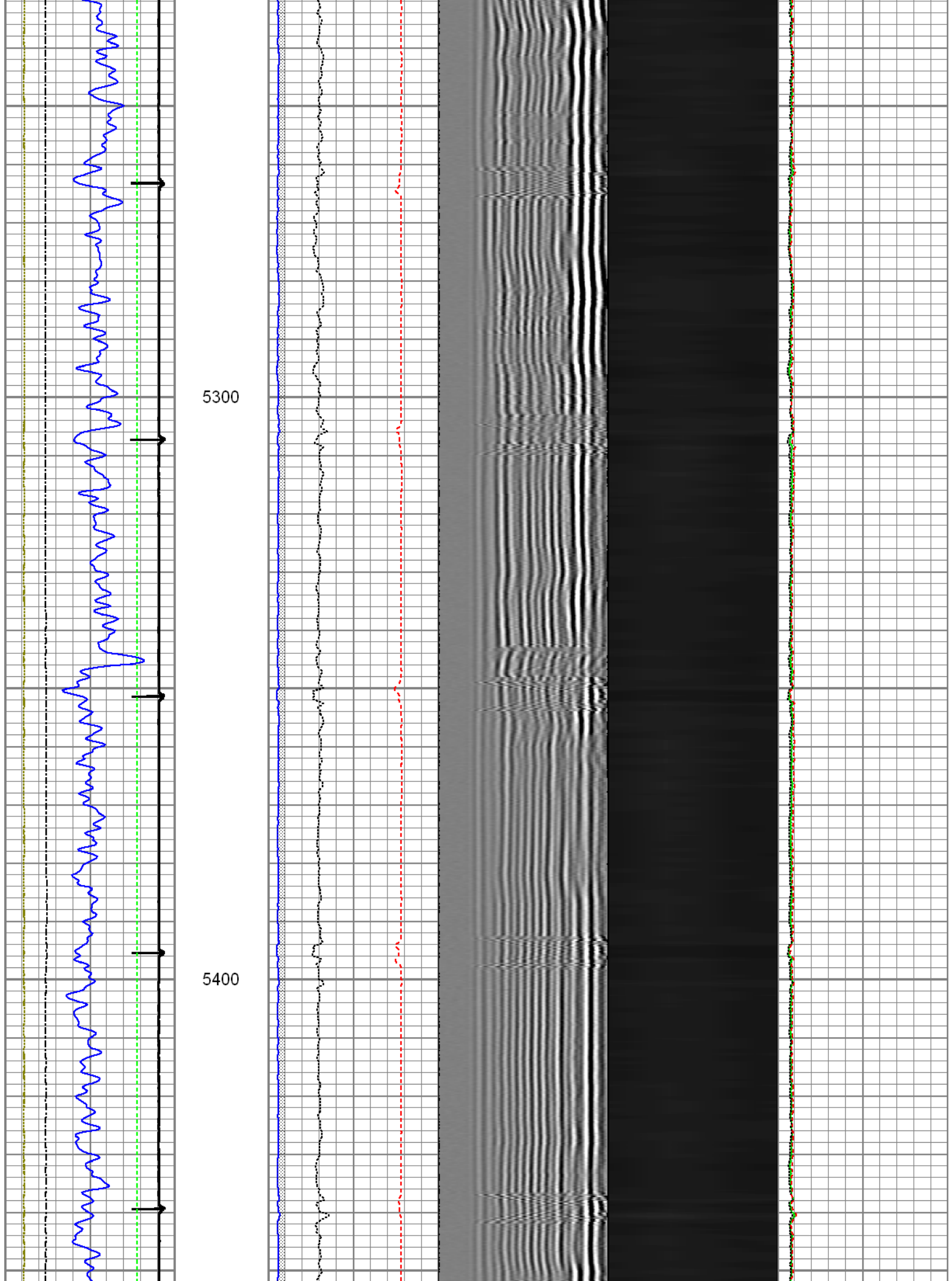


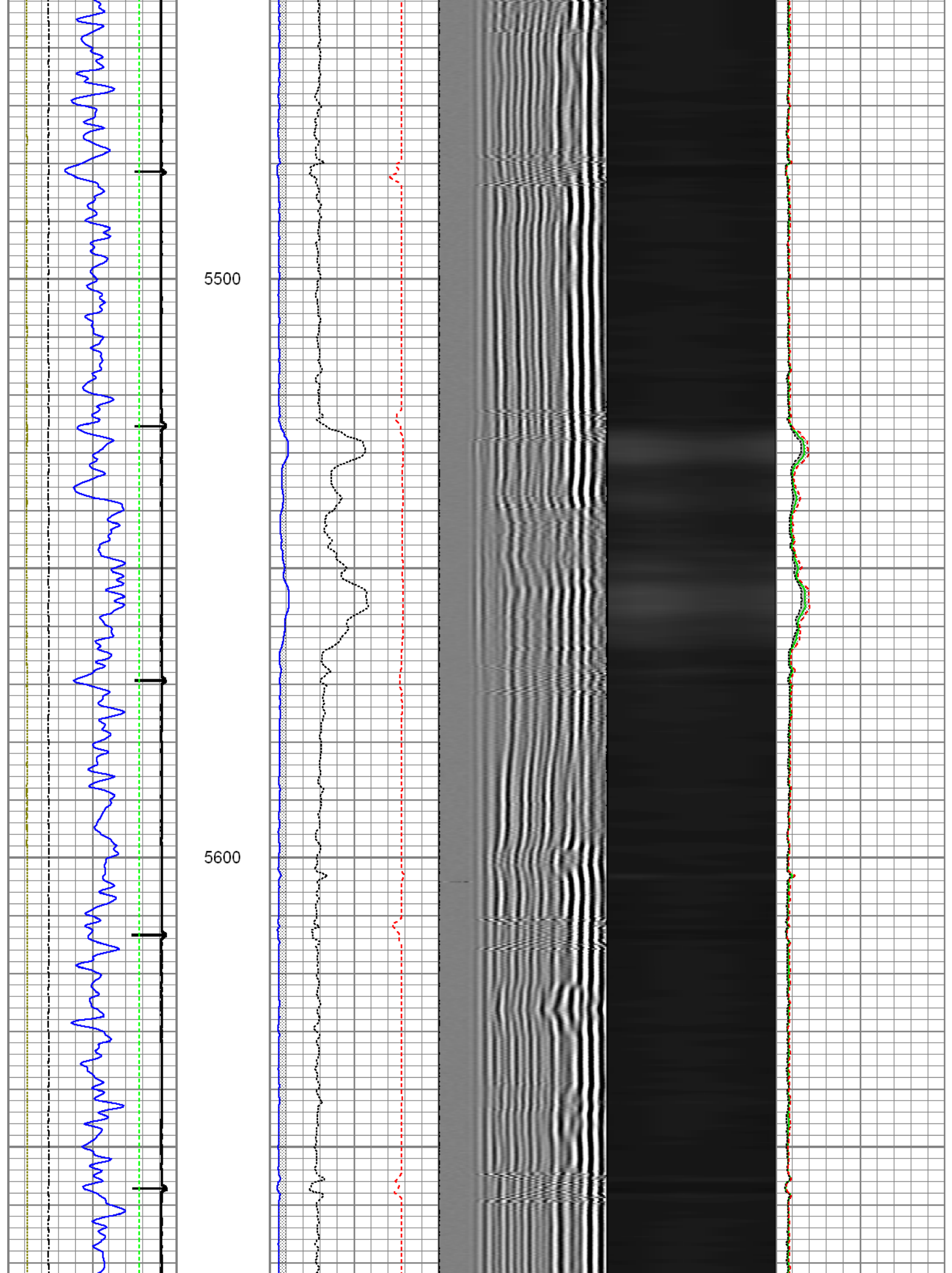


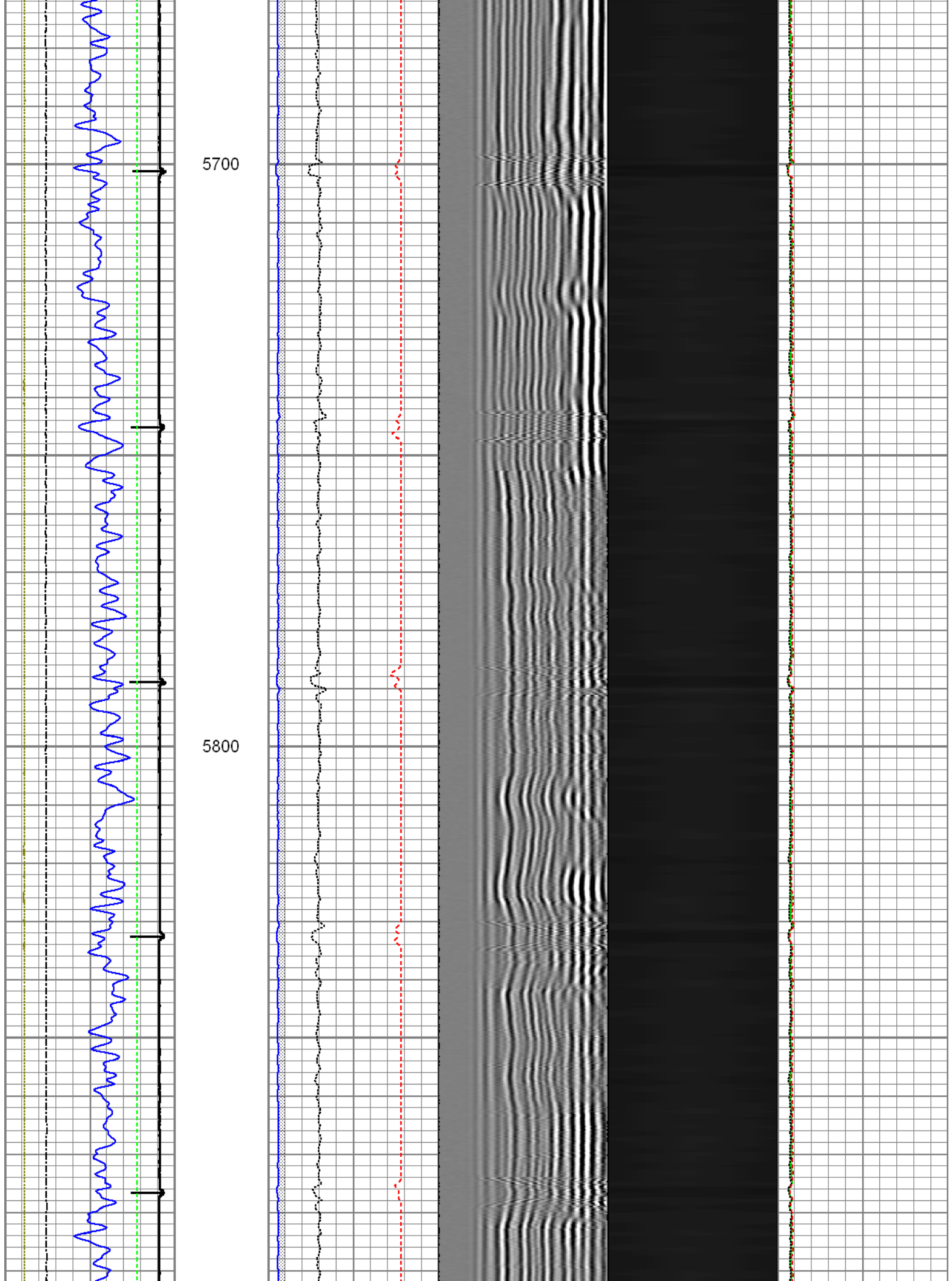




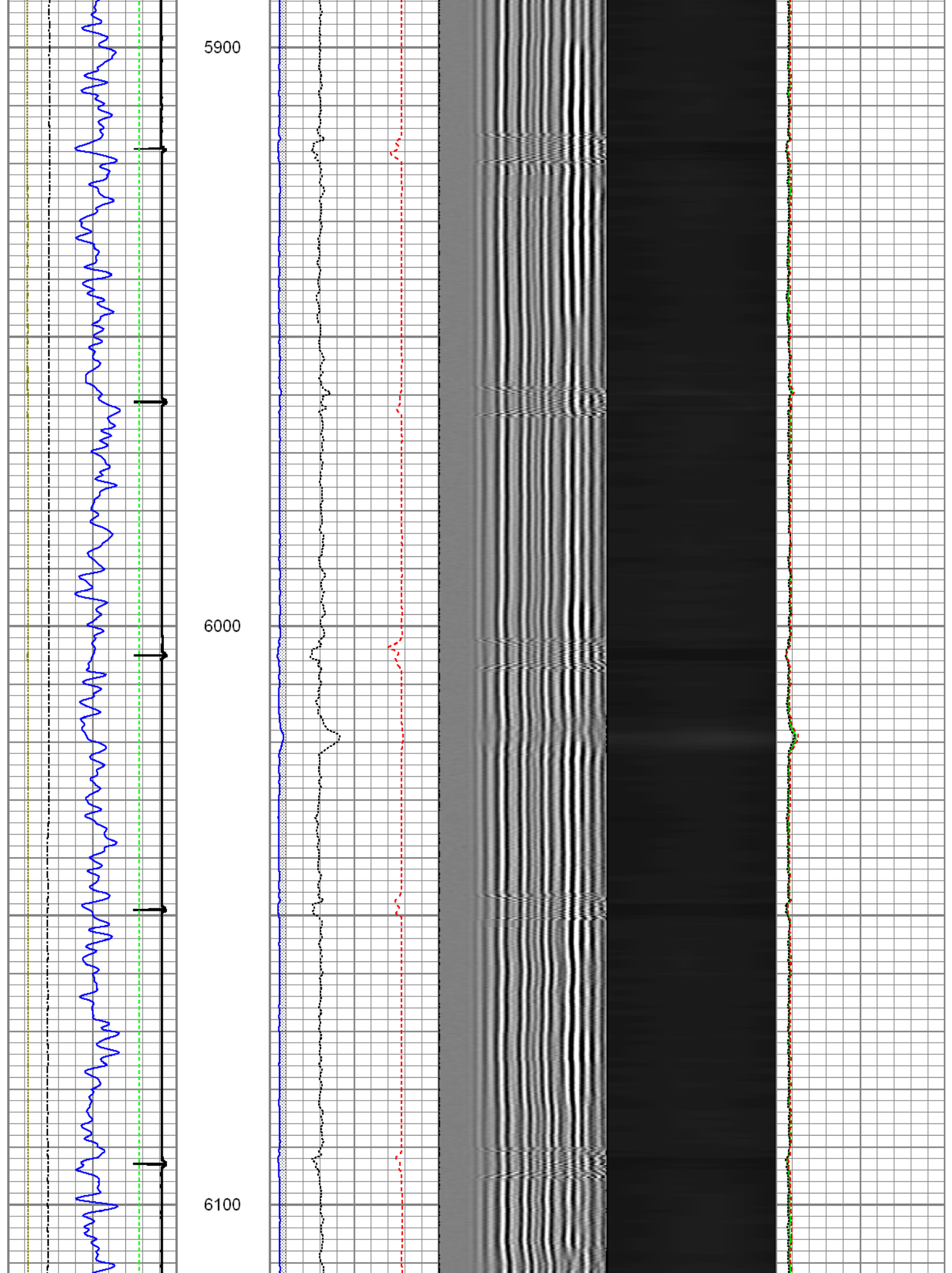


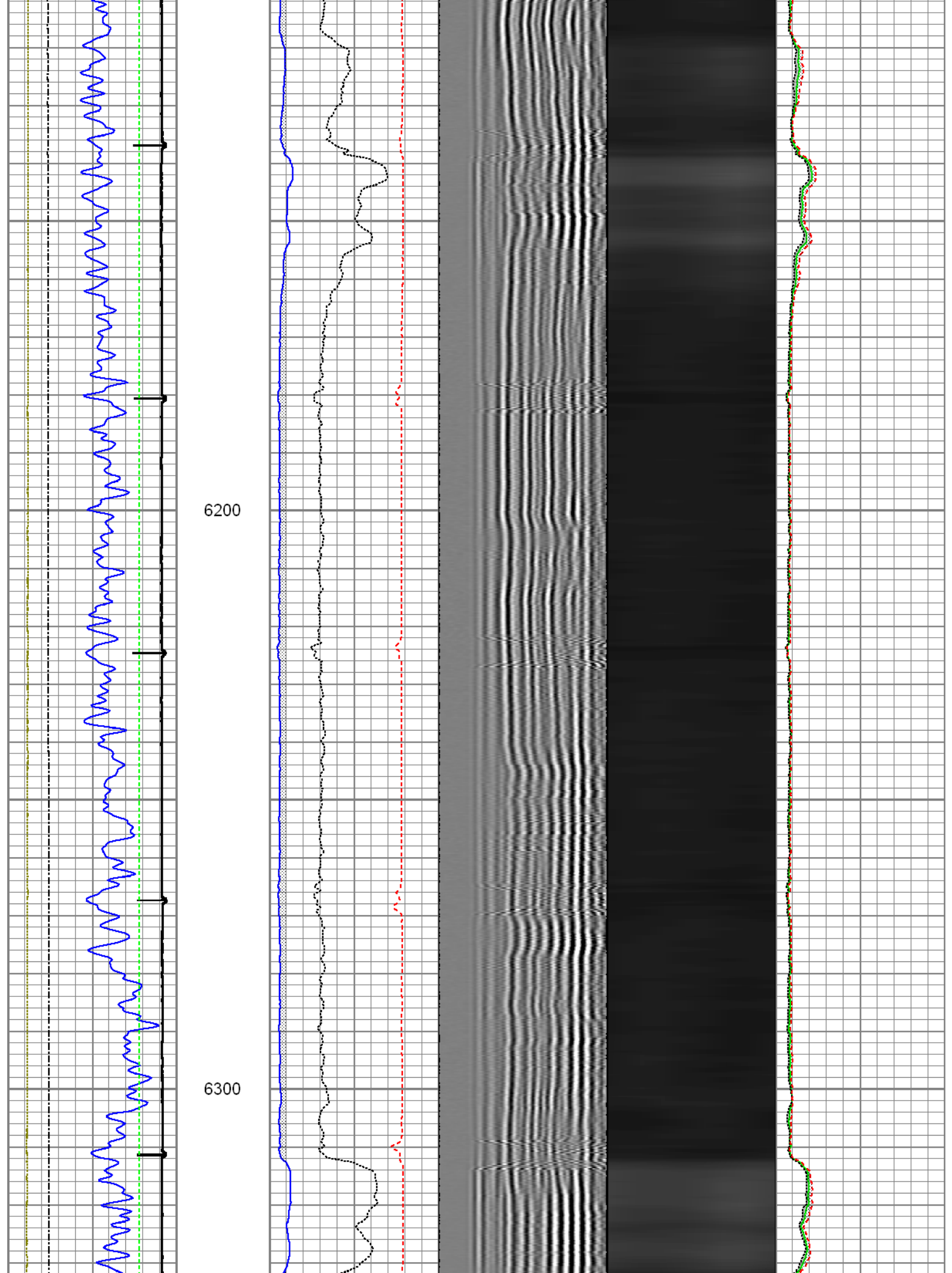


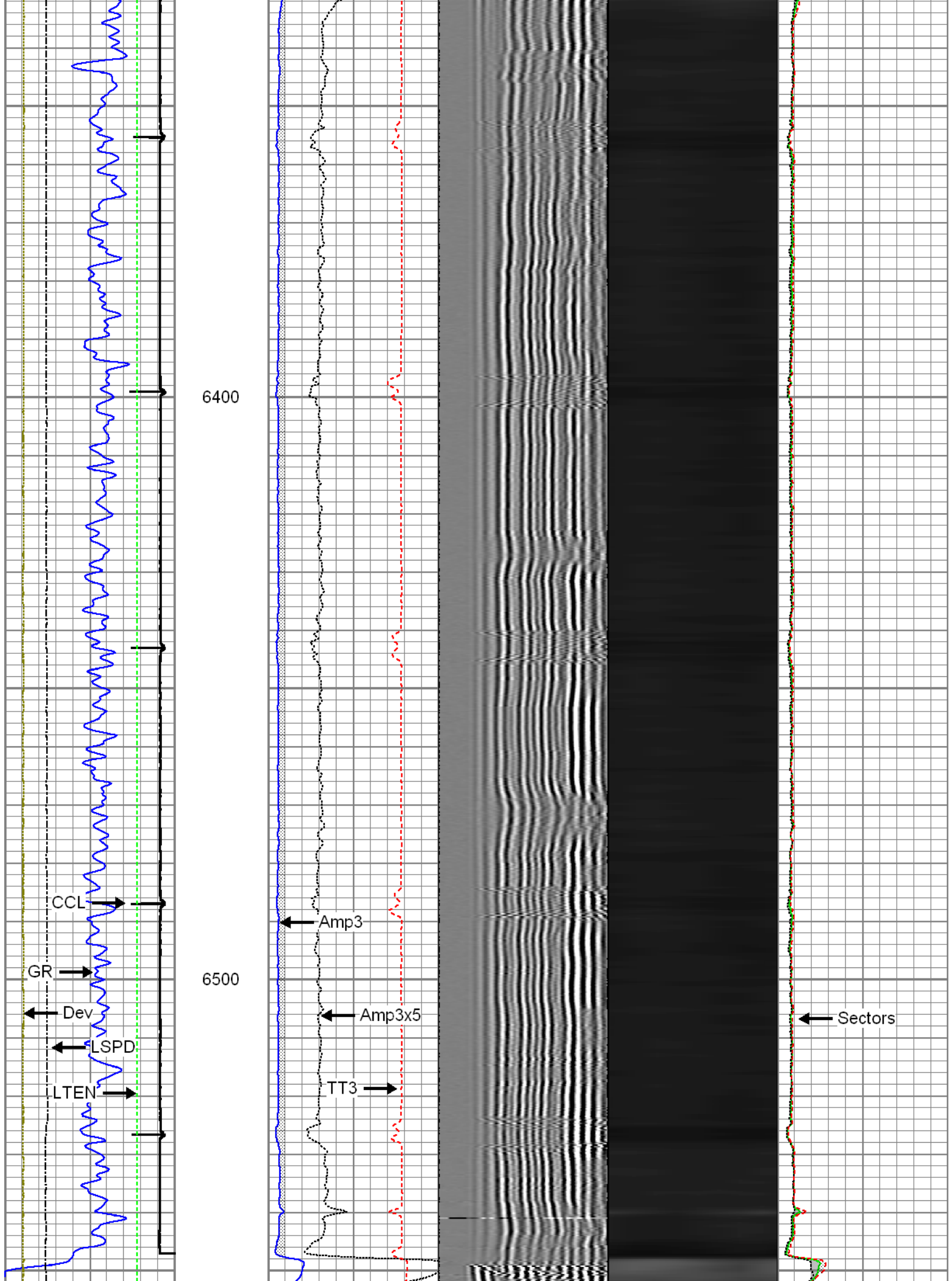


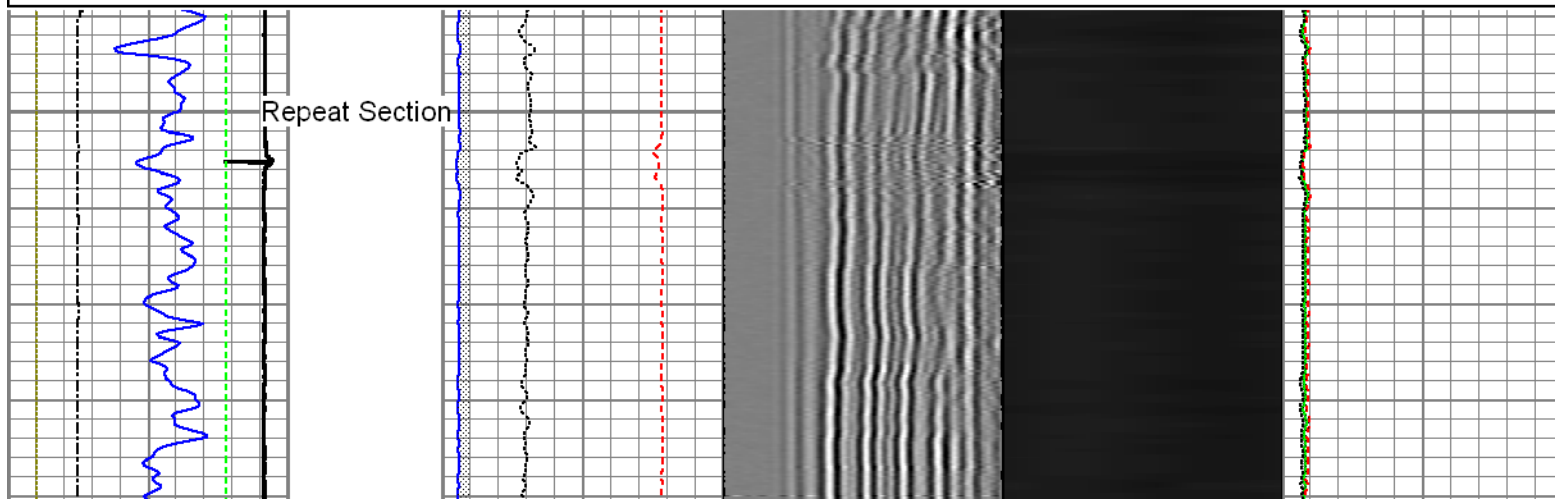
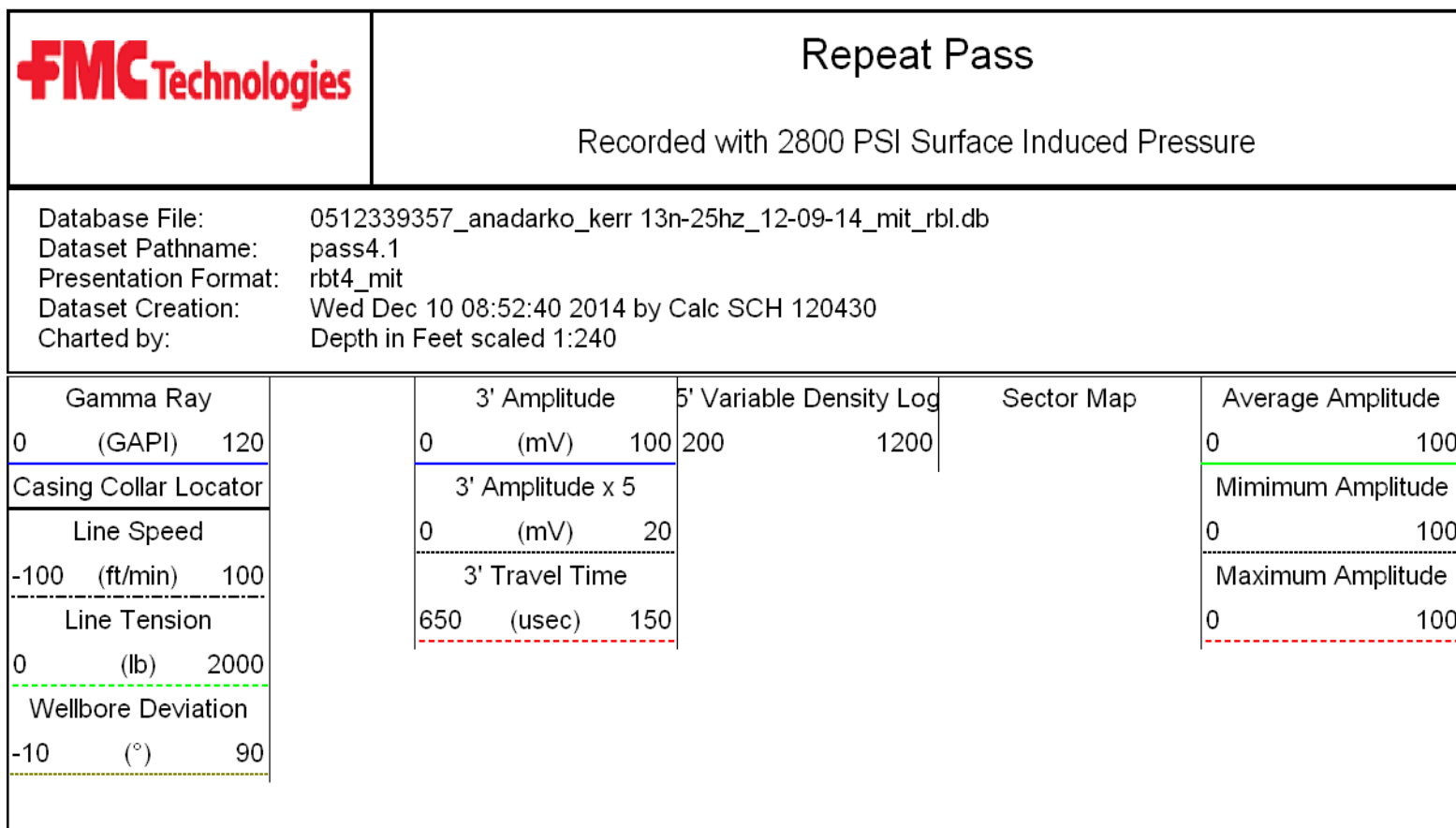
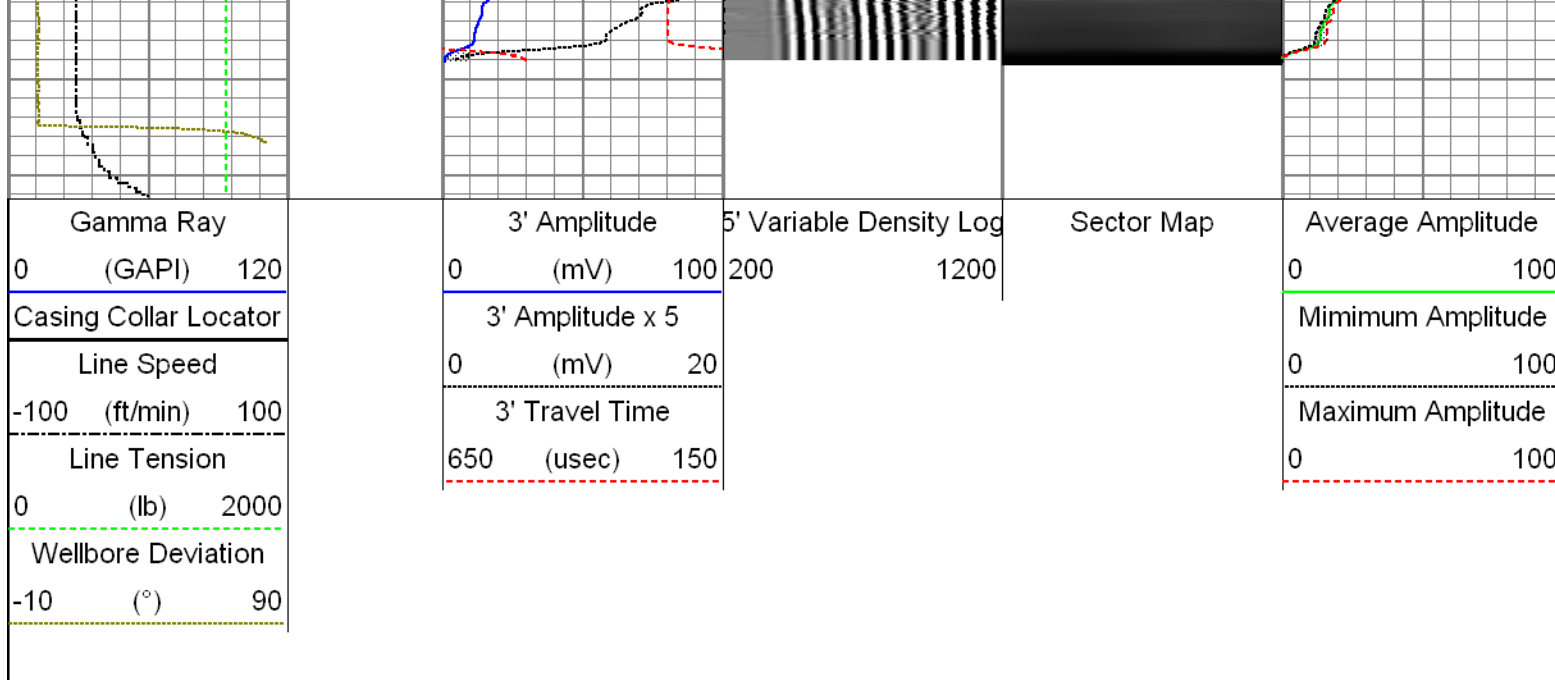




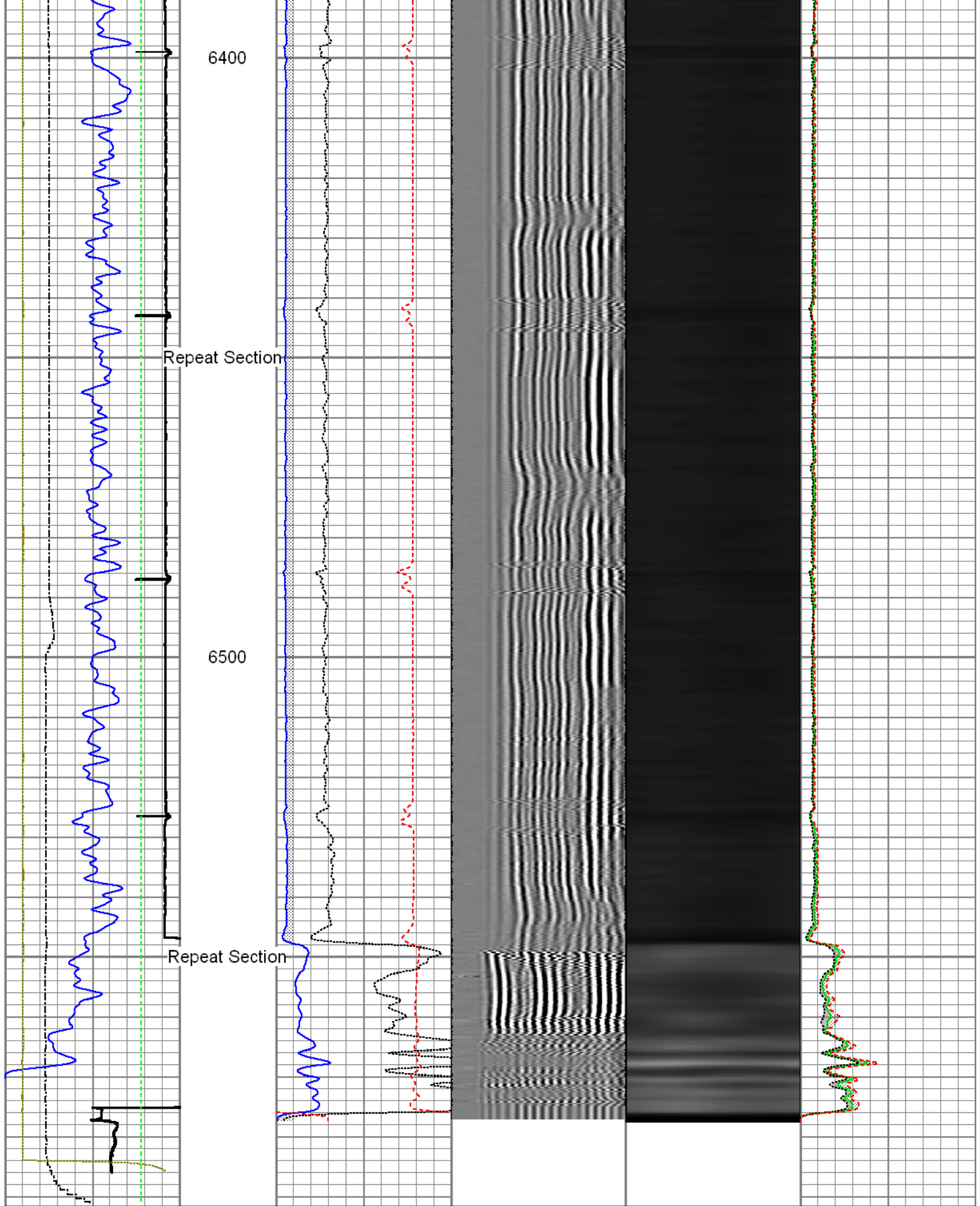






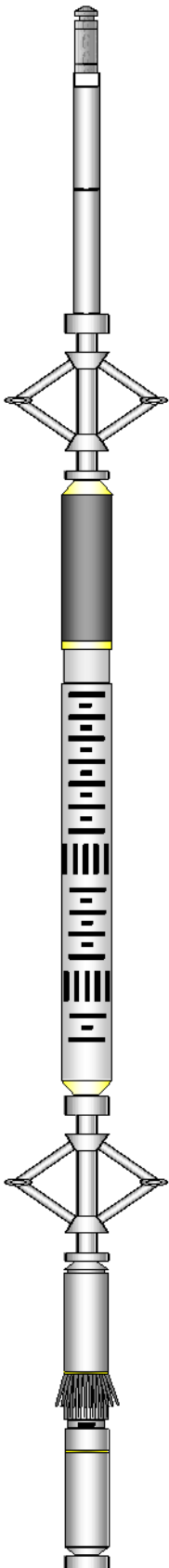
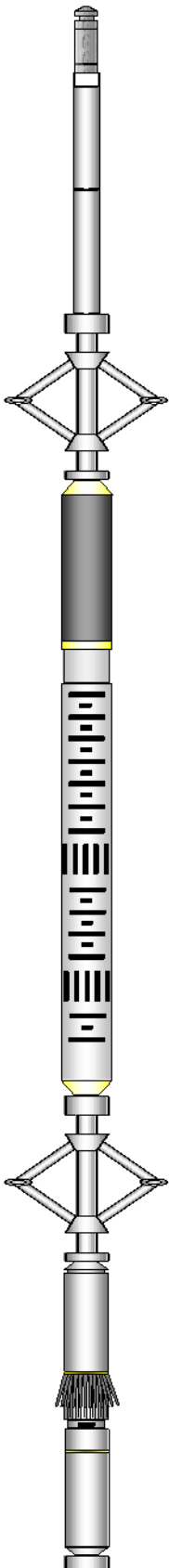
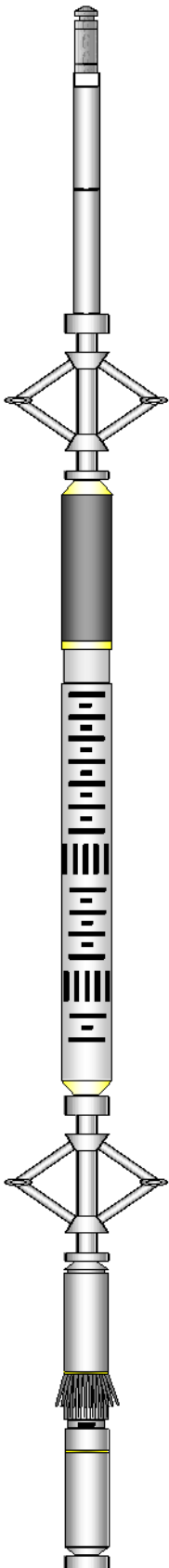


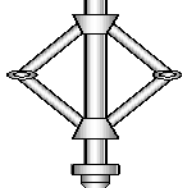




|                       |                  |                         |            |                   |
|-----------------------|------------------|-------------------------|------------|-------------------|
| Gamma Ray             | 3' Amplitude     | 5' Variable Density Log | Sector Map | Average Amplitude |
| 0 (GAPI) 120          | 0 (mV) 100       | 200 1200                |            | 0 100             |
| Casing Collar Locator | 3' Amplitude x 5 |                         |            | Minimum Amplitude |
| Line Speed            | 0 (mV) 20        |                         |            | 0 100             |

|                    |                |                   |
|--------------------|----------------|-------------------|
| -100 (ft/min) 100  | 3' Travel Time | Maximum Amplitude |
| Line Tension       | 650 (usec) 150 | 0 100             |
| 0 (lb) 2000        |                |                   |
| Wellbore Deviation |                |                   |
| -10 (°) 90         |                |                   |

| Sensor  | Offset (ft) | Schematic  | Description  | Len (ft) | OD (in) | Wt (lb) |
|---------|-------------|--|--|----------|---------|---------|
| GR      | 22.81       |  | T_CH14375_1_GO<br>Titan 1-7/16" Assembled Electric Cable Head with 1" Fishing Neck | 1.03     | 1.44    | 4.00    |
|         |             |  | UW_AGS-UW_AGS_001 (215017)<br>Sondex Adapter - GO Box to Sondex Pin                | 0.21     | 1.69    | 1.00    |
|         |             |  | UW_XTU-UW_XTU_002 (218874)<br>Crossover Ultrawire Toolbus to Ultralink             | 1.58     | 1.69    | 6.50    |
|         |             |  | UW_PGR-UW_PGR_020 (10013899)<br>Production Gamma Ray                               | 1.93     | 1.69    | 9.50    |
|         |             |  | UW_PRC #4 -DSSRAC (082)<br>2-3/4" DSS 5 Arm Roller Centralizer                     | 2.55     | 2.75    | 32.00   |
| WVFS1   | 15.42       |  | UW_RBT-UW_RBT_004 (10013454)<br>Sondex Ultrawire 3-1/8" Radial Bond Tool           | 9.47     | 3.13    | 140.00  |
| WVFS2   | 15.42       |  |  |          |         |         |
| WVFS3   | 15.42       |  |  |          |         |         |
| WVFS4   | 15.42       |  |  |          |         |         |
| WVFS5   | 15.42       |  |  |          |         |         |
| WVFS6   | 15.42       |  |  |          |         |         |
| WVFS7   | 15.42       |  |  |          |         |         |
| WVFS8   | 15.42       |  |  |          |         |         |
| CBLTEMP | 15.42       |  |  |          |         |         |
| CBLROT  | 15.42       |  |  |          |         |         |
| WVFS5FT | 14.42       |  |  |          |         |         |
| MIT     | 5.41        |  | UW_PRC-DSSRAC (080)<br>2-3/4" DSS 5 Arm Roller Centralizer                         | 2.55     | 2.75    | 32.00   |
|         |             |  | UW_MIT-UW_MIT40_027 (218950)<br>40 Multifinger Imaging Tool                        | 4.54     | 2.75    | 61.10   |

|  |      |   |   |      |      |       |
|--|------|---|---|------|------|-------|
| TSTAMP   | 0.00 |  | UW_PRC #3 -UW_PRC_057 (1038)<br>Sondex 2-3/4" 4-Arm Production Roller Centraliser | 2.98 | 2.75 | 32.00 |
|  |      |   | UW_BUL-UW_BUL_006 (218707)<br>Sondex Ultrawire Bullnose Terminator                | 0.22 | 1.69 | 1.20  |
| Dataset: 0512339357_Anadarko_Kerr 13N-25HZ_12-09-14_MIT_RBL.db: field/well/run1/pass6<br>Total Length: 27.05 ft<br>Total Weight: 319.30 lb<br>O.D. 3.13 in |      |   |   |      |      |       |

|  |   |                            |       |
|--|---|----------------------------|-------|
| Calibration Report                           |   |                            |       |
| Database File:                               | 0512339357_anadarko_kerr 13n-25hz_12-09-14_mit_rbl.db |                            |       |
| Dataset Pathname:                            | pass6.1   |                            |       |
| Dataset Creation:                            | Wed Dec 10 08:04:29 2014 by Calc SCH 120430           |                            |       |
| Multi-finger Imaging Tool Calibration Report |   |                            |       |
| Serial Number:                               |   | 218950                     |       |
| Number of Fingers:                           |   | 40                         |       |
| Tool Model:                                  |   | UW_MIT40_027               |       |
| Inclinometer Calibration Report              |   |                            |       |
| Performed:                                   |   | Fri, Oct, 10 10:41:51 2008 |       |
| Calibration Angle:                           |   | 45                         |       |
|  |   | Inc X                      | Inc Y |
| Vertical:                                    |   | 1996                       | 1975  |
| Finger 1 up:                                 |   | 2238                       | 2226  |
| Finger 31 up:                                |   | 1760                       | 2216  |
| Finger 21 up:                                |   | 1769                       | 1745  |
| Finger 11 up:                                |   | 2250                       | 1738  |
| Sensitivity ratio:                           | 1.00023   |                            |       |
| X-axis angle:                                | 314.283   |                            |       |
| Deviation const.:                            | 339.139   |                            |       |

|                                     |            |            |            |      |  |  |
|-------------------------------------|------------|------------|------------|------|--|--|
| Finger Calibration Report           |            |            |            |      |  |  |
| Performed: Tue Dec 09 10:15:02 2014 |            |            |            |      |  |  |
| Ring size:                          | 4          | 5          | 6          | 7    |  |  |
| (in)                                |            |            |            |      |  |  |
|                                     | Sens       | Sens       | Sens       |      |  |  |
| Finger 01:                          | 1471 180.0 | 1651 381.0 | 2032 295.0 | 2327 |  |  |
| Finger 02:                          | 1523 165.0 | 1688 347.0 | 2035 264.0 | 2299 |  |  |
| Finger 03:                          | 1424 184.0 | 1608 390.0 | 1998 301.0 | 2299 |  |  |
| Finger 04:                          | 1456 187.0 | 1643 386.0 | 2029 292.0 | 2321 |  |  |
| Finger 05:                          | 1497 183.0 | 1680 372.0 | 2052 280.0 | 2332 |  |  |
| Finger 06:                          | 1397 193.0 | 1590 401.0 | 1991 303.0 | 2294 |  |  |
| Finger 07:                          | 1421 187.0 | 1608 393.0 | 2001 304.0 | 2305 |  |  |
| Finger 08:                          | 1446 179.0 | 1625 393.0 | 2018 297.0 | 2315 |  |  |
| Finger 09:                          | 1426 191.0 | 1617 398.0 | 2015 302.0 | 2317 |  |  |
| Finger 10:                          | 1442 184.0 | 1626 380.0 | 2006 288.0 | 2294 |  |  |
| Finger 11:                          | 1446 192.0 | 1638 386.0 | 2024 302.0 | 2326 |  |  |
| Finger 12:                          | 1398 192.0 | 1590 396.0 | 1986 310.0 | 2296 |  |  |
| Finger 13:X                         | 1492 177.0 | 1669 355.0 | 2024 277.0 | 2301 |  |  |
| Finger 14:                          | 1458 181.0 | 1639 369.0 | 2008 293.0 | 2301 |  |  |
| Finger 15:                          | 1497 181.0 | 1678 408.0 | 2086 290.0 | 2376 |  |  |
| Finger 16:                          | 1468 189.0 | 1657 378.0 | 2035 296.0 | 2331 |  |  |
| Finger 17:                          | 1516 186.0 | 1702 385.0 | 2087 300.0 | 2387 |  |  |
| Finger 18:                          | 1438 185.0 | 1623 378.0 | 2001 301.0 | 2302 |  |  |
| Finger 19:X                         | 1506 182.0 | 1688 428.0 | 2116 291.0 | 2407 |  |  |
| Finger 20:                          | 1476 191.0 | 1667 384.0 | 2051 303.0 | 2354 |  |  |
| Finger 21:                          | 1423 195.0 | 1618 399.0 | 2017 320.0 | 2337 |  |  |
| Finger 22:                          | 1484 180.0 | 1664 366.0 | 2030 292.0 | 2322 |  |  |
| Finger 23:                          | 1476 188.0 | 1664 377.0 | 2041 301.0 | 2342 |  |  |

|             |      |       |      |       |      |       |      |
|-------------|------|-------|------|-------|------|-------|------|
| Finger 20:  | 1478 | 188.0 | 1651 | 377.0 | 2044 | 301.0 | 2342 |
| Finger 24:X | 1511 | 189.0 | 1700 | 368.0 | 2068 | 288.0 | 2356 |
| Finger 25:  | 1507 | 191.0 | 1698 | 376.0 | 2074 | 300.0 | 2374 |
| Finger 26:  | 1462 | 189.0 | 1651 | 386.0 | 2037 | 305.0 | 2342 |
| Finger 27:  | 1523 | 179.0 | 1702 | 367.0 | 2069 | 287.0 | 2356 |
| Finger 28:  | 1513 | 183.0 | 1696 | 382.0 | 2078 | 302.0 | 2380 |
| Finger 29:  | 1568 | 173.0 | 1741 | 356.0 | 2097 | 277.0 | 2374 |
| Finger 30:  | 1481 | 181.0 | 1662 | 383.0 | 2045 | 306.0 | 2351 |
| Finger 31:  | 1499 | 186.0 | 1685 | 388.0 | 2073 | 303.0 | 2376 |
| Finger 32:  | 1539 | 173.0 | 1712 | 364.0 | 2076 | 281.0 | 2357 |
| Finger 33:  | 1507 | 186.0 | 1693 | 388.0 | 2081 | 301.0 | 2382 |
| Finger 34:X | 1501 | 179.0 | 1680 | 395.0 | 2075 | 306.0 | 2381 |
| Finger 35:  | 1557 | 168.0 | 1725 | 353.0 | 2078 | 272.0 | 2350 |
| Finger 36:  | 1521 | 170.0 | 1691 | 375.0 | 2066 | 288.0 | 2354 |
| Finger 37:  | 1490 | 177.0 | 1667 | 390.0 | 2057 | 295.0 | 2352 |
| Finger 38:X | 1578 | 159.0 | 1737 | 345.0 | 2082 | 265.0 | 2347 |
| Finger 39:  | 1493 | 174.0 | 1667 | 376.0 | 2043 | 283.0 | 2326 |
| Finger 40:  | 1426 | 187.0 | 1613 | 397.0 | 2010 | 308.0 | 2318 |

### Segmented Cement Bond Log Calibration Report

Serial Number: 10013454  
Tool Model: UW\_RBT\_004

Calibration Casing Diameter: 7.000 in  
Calibration Depth: 25.078 ft

Master Calibration, performed Tue Dec 09 10:20:34 2014:

|     | Raw (v) |       | Calibrated (mv) |         | Results |        |
|-----|---------|-------|-----------------|---------|---------|--------|
|     | Zero    | Cal   | Zero            | Cal     | Gain    | Offset |
| 3FT | -0.002  | 1.002 | 0.800           | 62.165  | 61.085  | 0.949  |
| 5FT | -0.004  | 0.990 | 0.800           | 62.165  | 61.760  | 1.026  |
| S1  | -0.002  | 1.002 | 0.000           | 100.000 | 99.629  | 0.181  |
| S2  | -0.004  | 1.002 | 0.000           | 100.000 | 99.420  | 0.364  |
| S3  | -0.003  | 1.007 | 0.000           | 100.000 | 99.058  | 0.277  |
| S4  | -0.004  | 1.007 | 0.000           | 100.000 | 98.923  | 0.371  |
| S5  | -0.002  | 1.009 | 0.000           | 100.000 | 98.902  | 0.162  |
| S6  | -0.004  | 1.009 | 0.000           | 100.000 | 98.724  | 0.362  |
| S7  | -0.002  | 0.998 | 0.000           | 100.000 | 99.983  | 0.237  |
| S8  | -0.002  | 1.000 | 0.000           | 100.000 | 99.784  | 0.241  |

### Gamma Ray Calibration Report

Serial Number: 10013899  
Tool Model: UW\_PGR\_020  
Performed: Sun Jun 13 13:33:21 1993

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps  
Calibrator Reading: 1.0 cps

Sensitivity: 1.0000 GAPI/cps



Company Kerr-McGee Oil & Gas Onshore, L.P.  
Well Kerr 13N-25HZ  
Field Wattenberg  
County Weld



|  |       |          |
|--|-------|----------|
|  | State | Colorado |
|--|-------|----------|