



Radial Cement Bond
Gamma Ray
Casing Collar Log

| | | | | | | | |
|------------------------|--|--|--|------------------------------------|--|--|--|
| Company | | | | Kerr-McGee Oil & Gas Onshore, L.P. | | | |
| Well | | | | Elliott State 26C-17HZ | | | |
| Field | | | | Wattenberg | | | |
| County | | | | Weld | | | |
| State | | | | Colorado | | | |
| Location: | | | | API # : 05-123-38629 | | | |
| Permanent Datum | | | | SHL: 537' FNL & 730' FWL | | | |
| Log Measured From | | | | Lat / Long: 40.23168 / -104.92064 | | | |
| Drilling Measured From | | | | SEC 17 TWP 3N RGE 67W | | | |
| Ground Level | | | | Elevation 4836' | | | |
| Kelly Bushing | | | | 14 FT | | | |
| Kelly Bushing | | | | K.B. 4850' | | | |
| | | | | D.F. 4849' | | | |
| | | | | G.L. 4836' | | | |
| Date | | | | 12-May-2014 | | | |
| Run Number | | | | Three | | | |
| Depth Driller | | | | 12512 FT | | | |
| Depth Logger | | | | 6718 FT | | | |
| Bottom Logged Interval | | | | 6713 FT | | | |
| Top Log Interval | | | | Surface | | | |
| Open Hole Size | | | | 8.750" | | | |
| Type Fluid | | | | Water | | | |
| Density / Viscosity | | | | 8.34 lbm/gal | | | |
| Max. Recorded Temp. | | | | 218°F | | | |
| Estimated Cement Top | | | | 218 FT | | | |
| Time Well Ready | | | | ROA | | | |
| Time Logger on Bottom | | | | 12:00 | | | |
| Equipment Number | | | | HD-0311 | | | |
| Location | | | | Fort Lupton, CO | | | |
| Recorded By | | | | Chad Bryan | | | |
| Witnessed By | | | | Trevor Daniel | | | |
| Run Number | | | | Borehole Record | | | |
| Bit | | | | From | | | |
| | | | | To | | | |
| | | | | Size | | | |
| | | | | Weight | | | |
| | | | | From | | | |
| | | | | To | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Casing Record | | | | Size (in) | | | |
| Surface Casing | | | | 9 5/8" | | | |
| Intermediate #1 | | | | 7" | | | |
| Intermediate #2 | | | | 4 1/2" | | | |
| Liner | | | | 11.6 | | | |
| | | | | P-110 | | | |
| | | | | 6667 FT | | | |
| | | | | 12496 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 reference to Casing Tally reported Liner Top at 6667 FT.
Adjusted log +2 FT to correlate with Liner Top.
Gauge Run/Junk Basket run to 6800 FT with no debris found, prior to log run.
Retrievable Bridge Plug set at 6740 FT prior to log run.
Log ran from just above RBP to surface.
Log ran with 2800 PSI surface induced pressure.
Wellhead grease found on logging tools after operations.

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



Main Pass

Database File: 0512338629_anadarko_elliott state 26c-17hz_05-12-14_mit_rbl.db

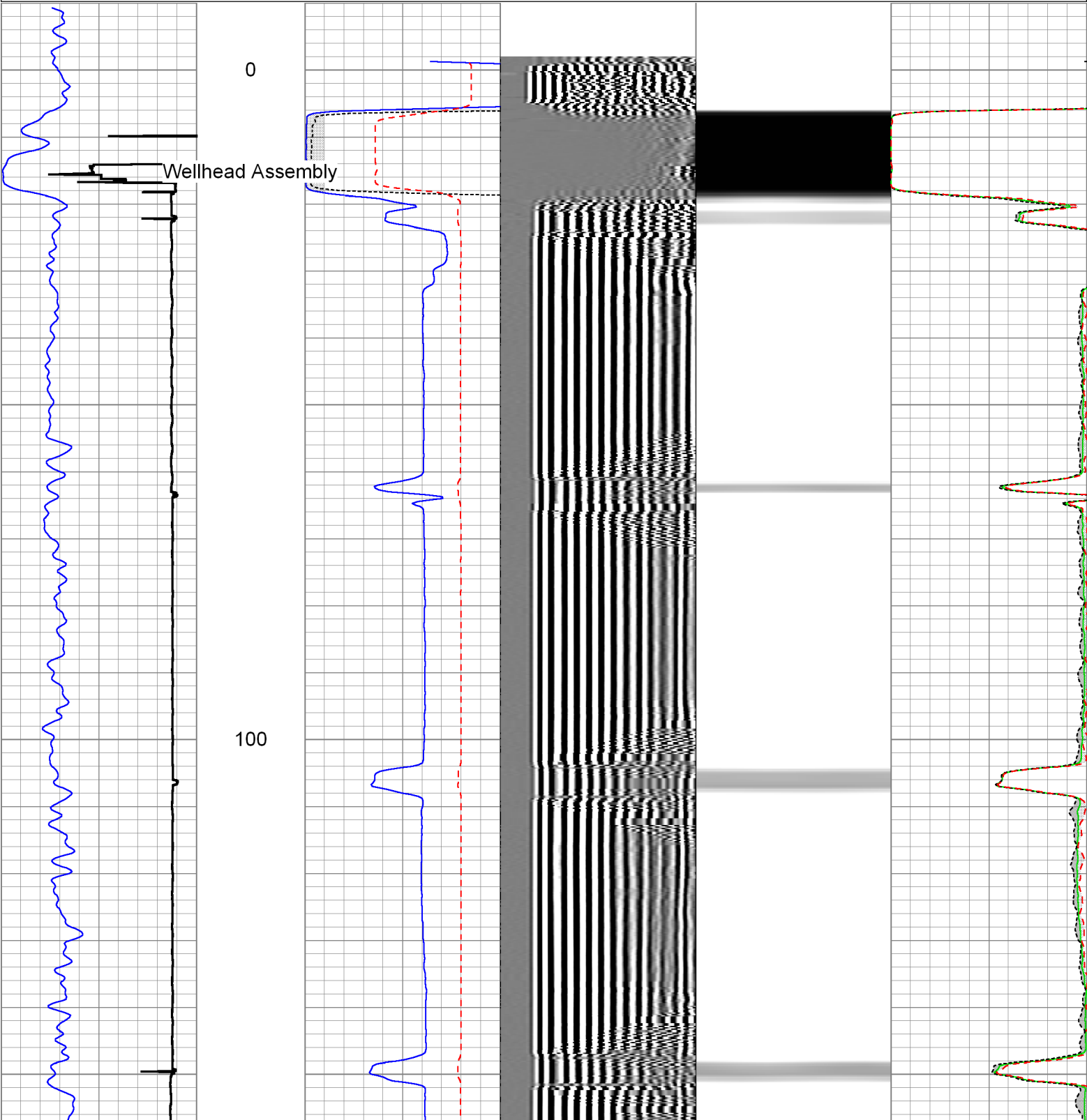
Dataset Pathname: main.1

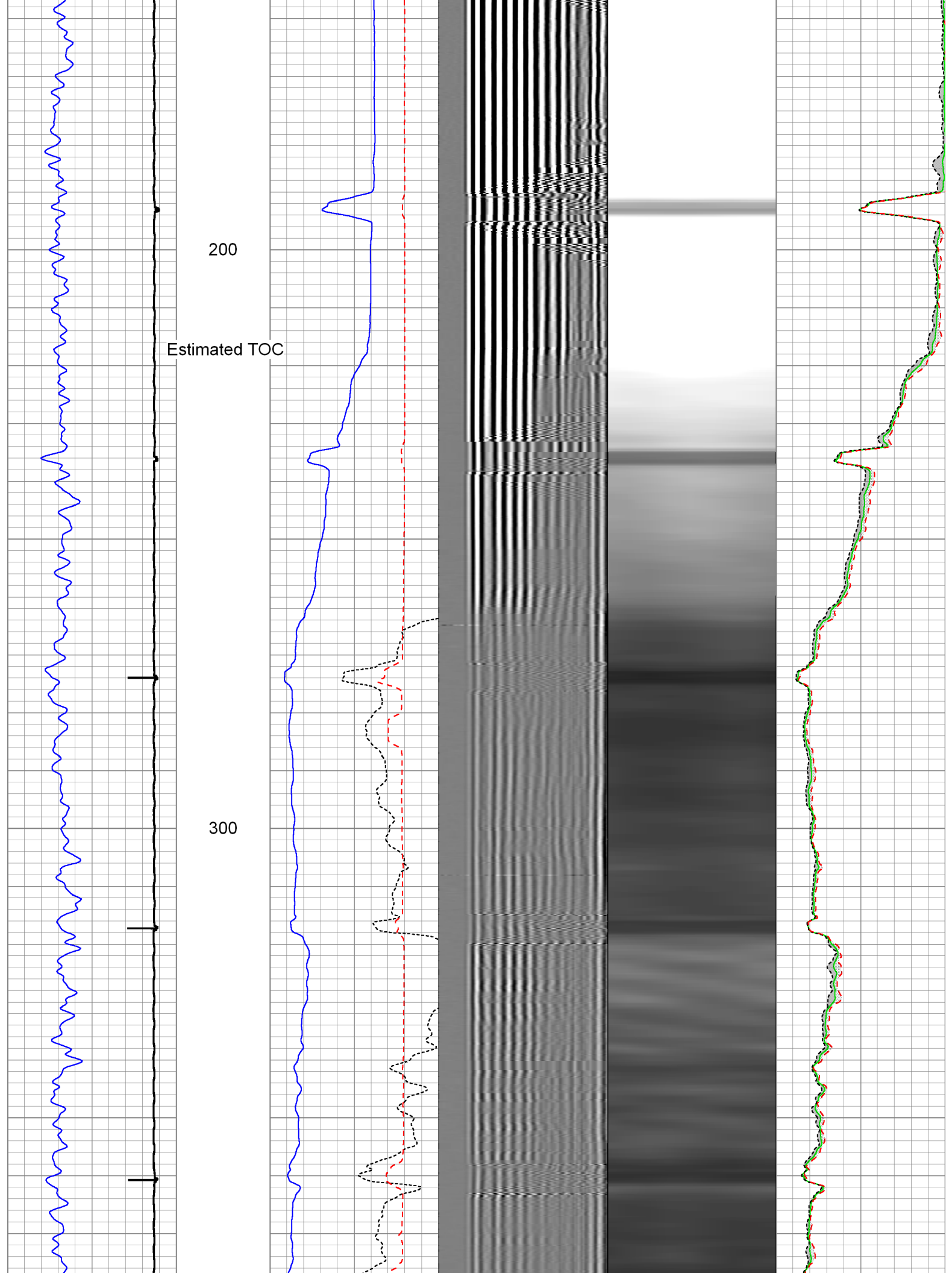
Presentation Format: rbt007

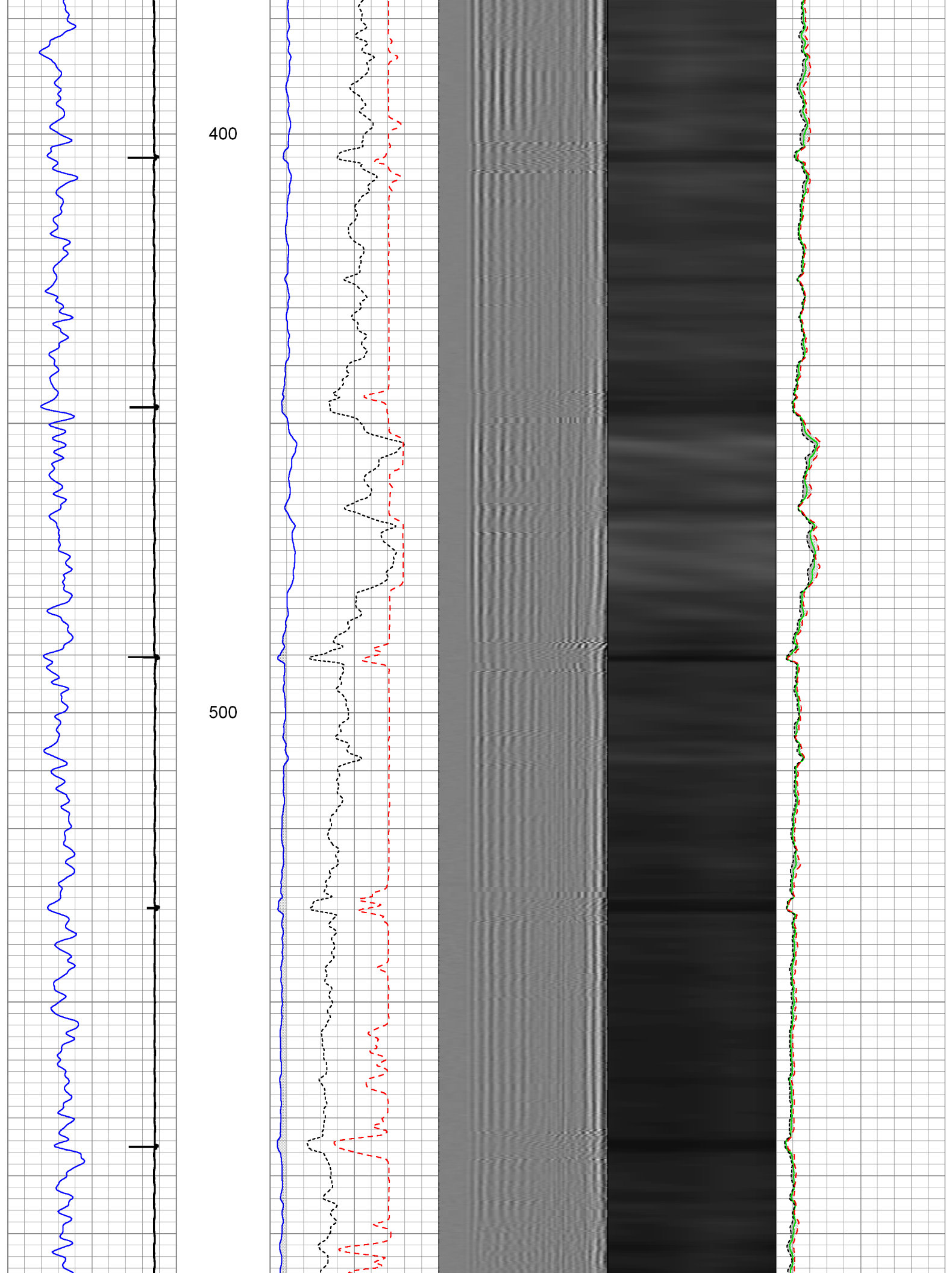
Dataset Creation: Mon May 12 19:45:15 2014 by Calc Sondex V7.03

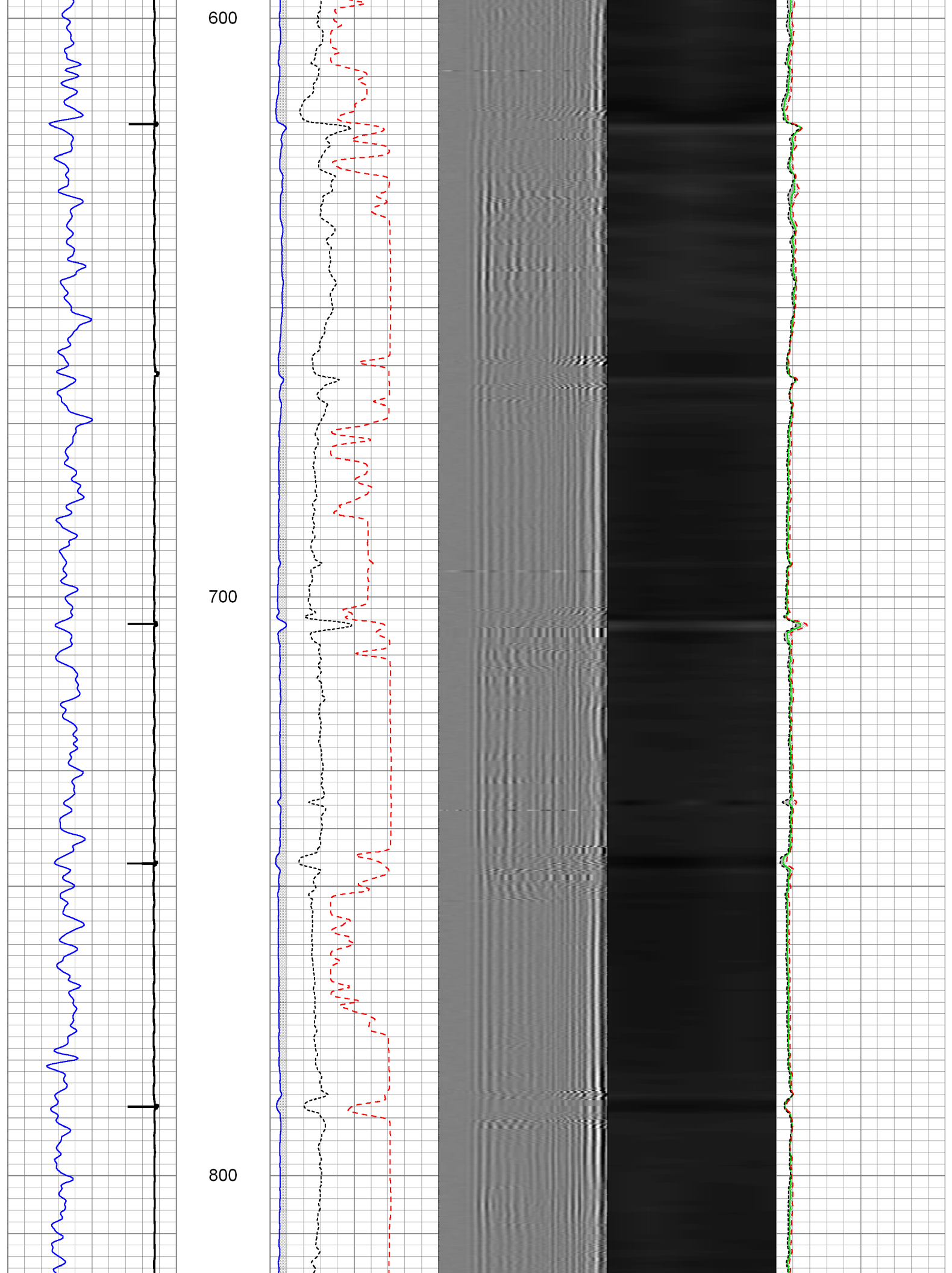
Charted by: Depth in Feet scaled 1:240

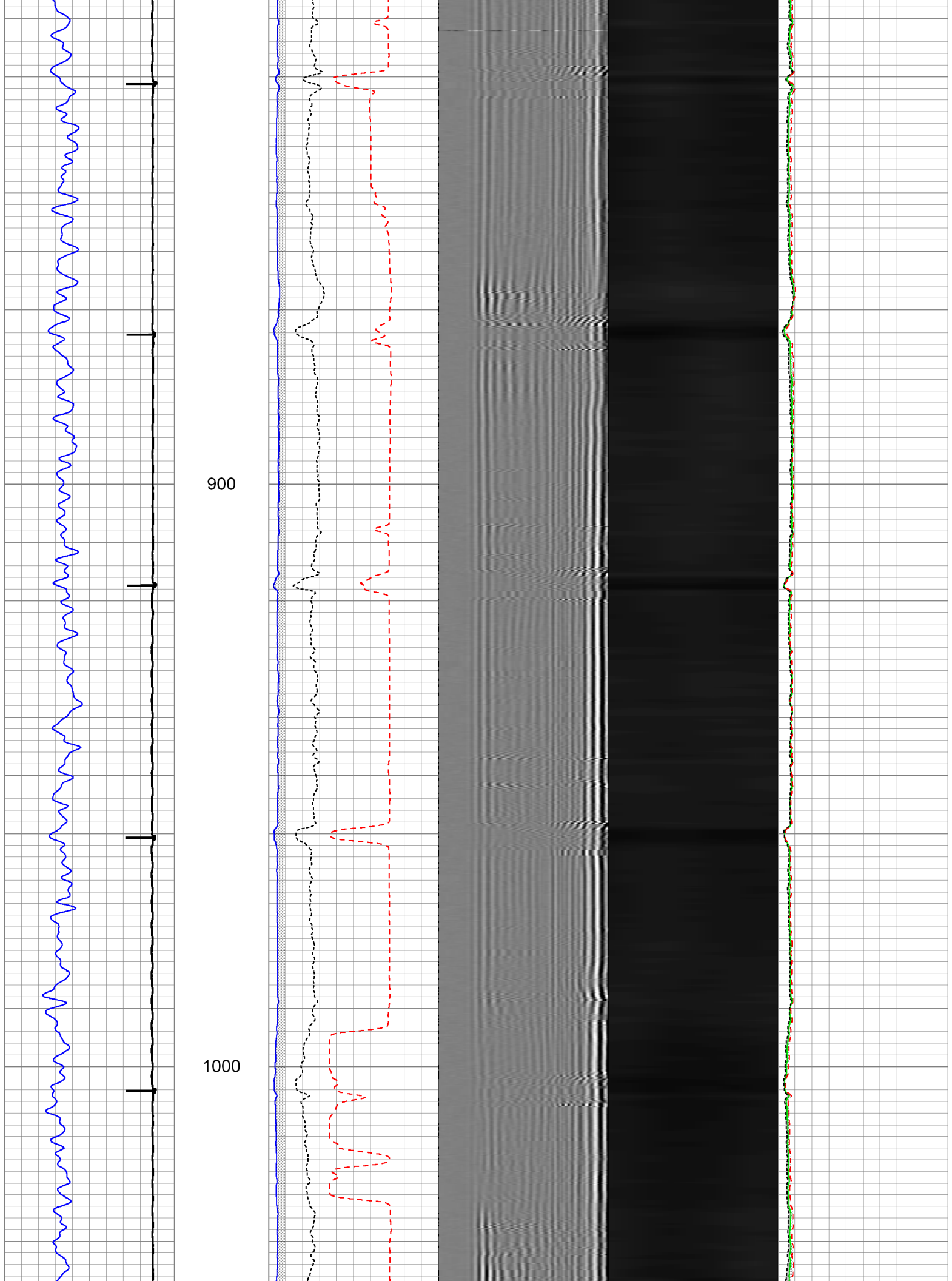
| | | | | |
|-----------------------|------------------|-------------------------|------------|-------------------|
| Gamma Ray | 3' Amplitude | 5' Variable Density Log | Sector Map | Average Amplitude |
| 0 (GAPI) 120 | 0 (mV) 100 | 200 1200 | | 0 100 |
| Casing Collar Locator | 3' Amplitude x 5 | | | Minimum Amplitude |
| | 0 (mV) 20 | | | 0 100 |
| | 3' Travel Time | | | Maximum Amplitude |
| | 650 (usec) 150 | | | 0 100 |

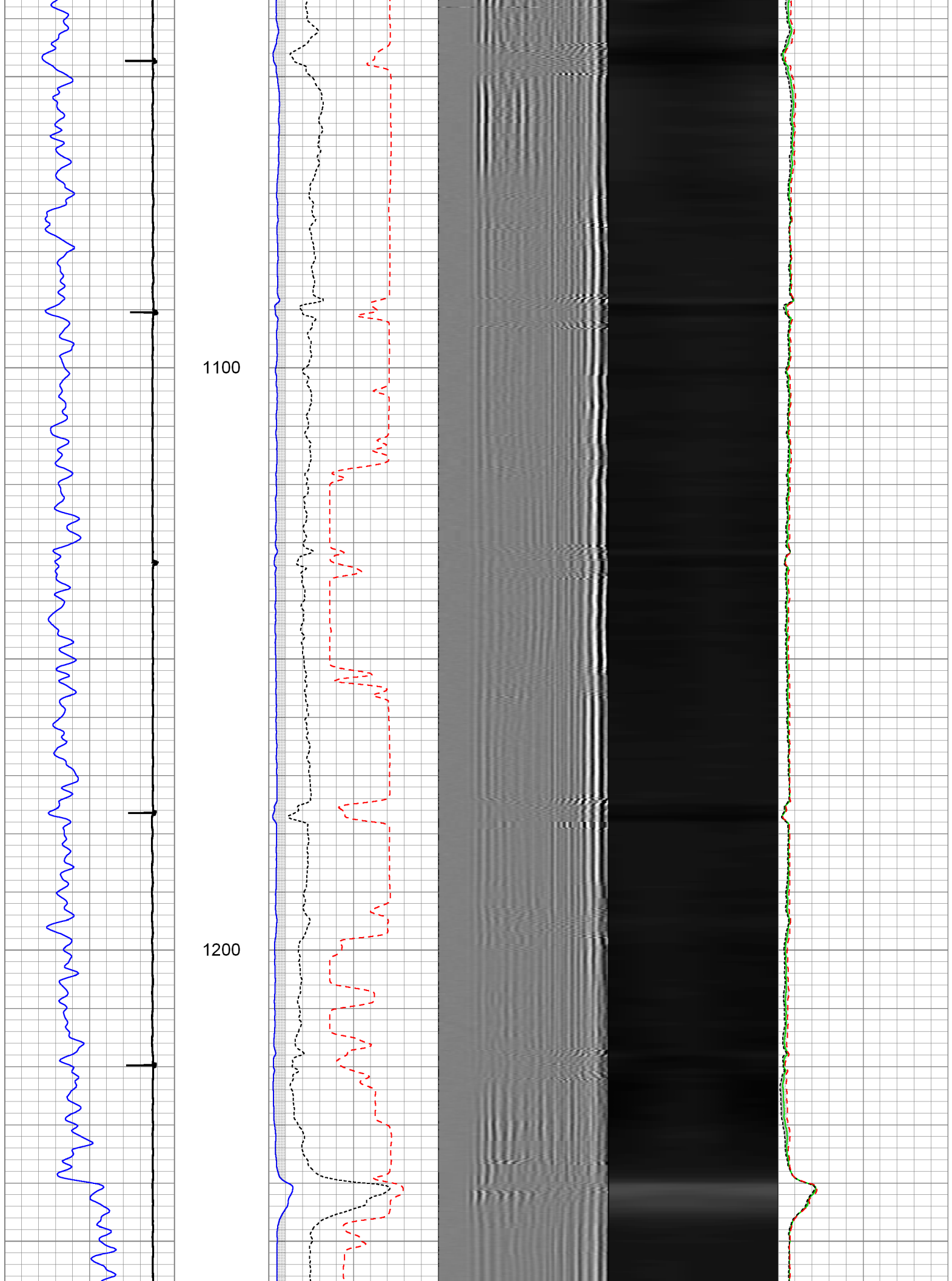


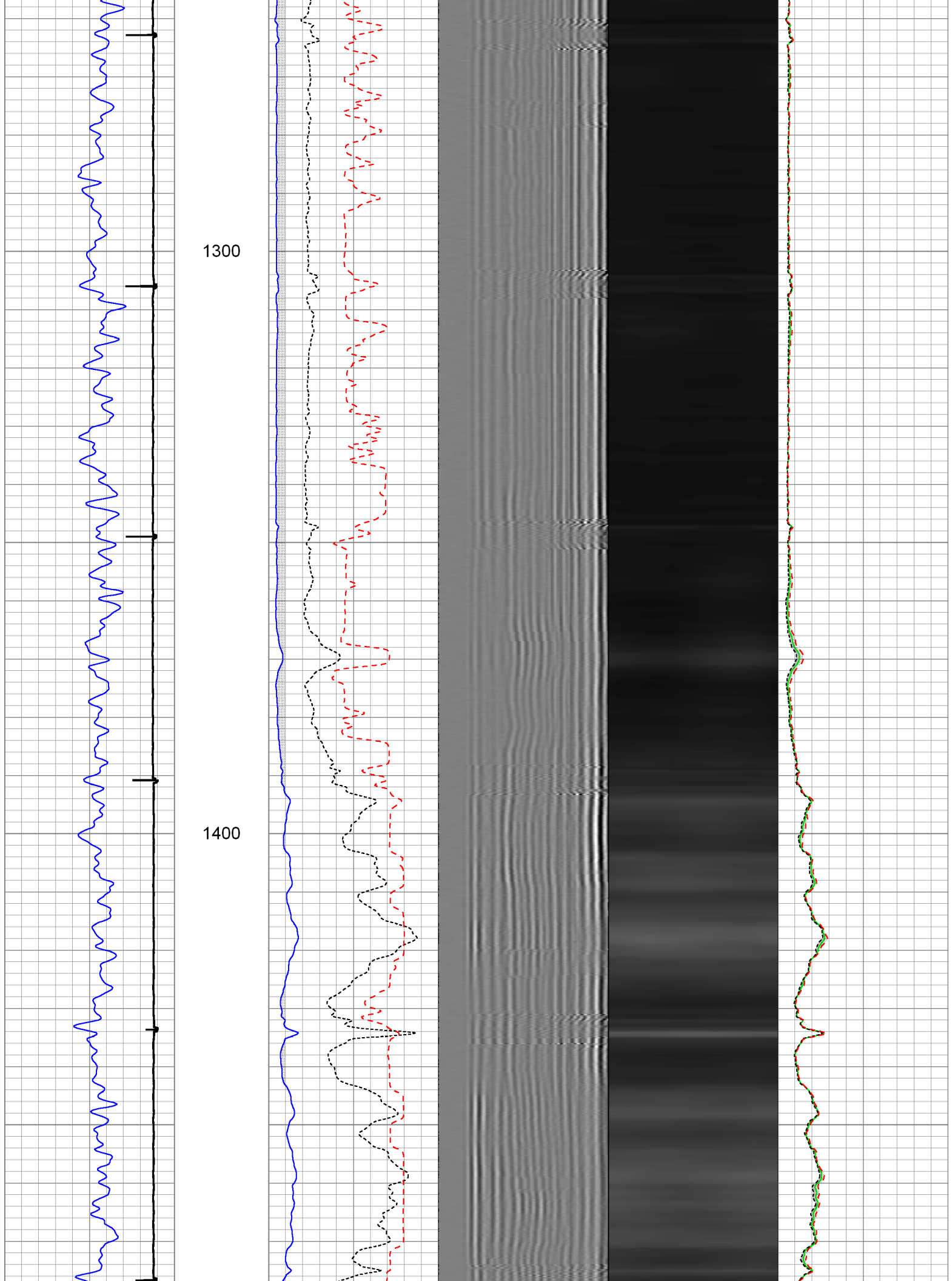


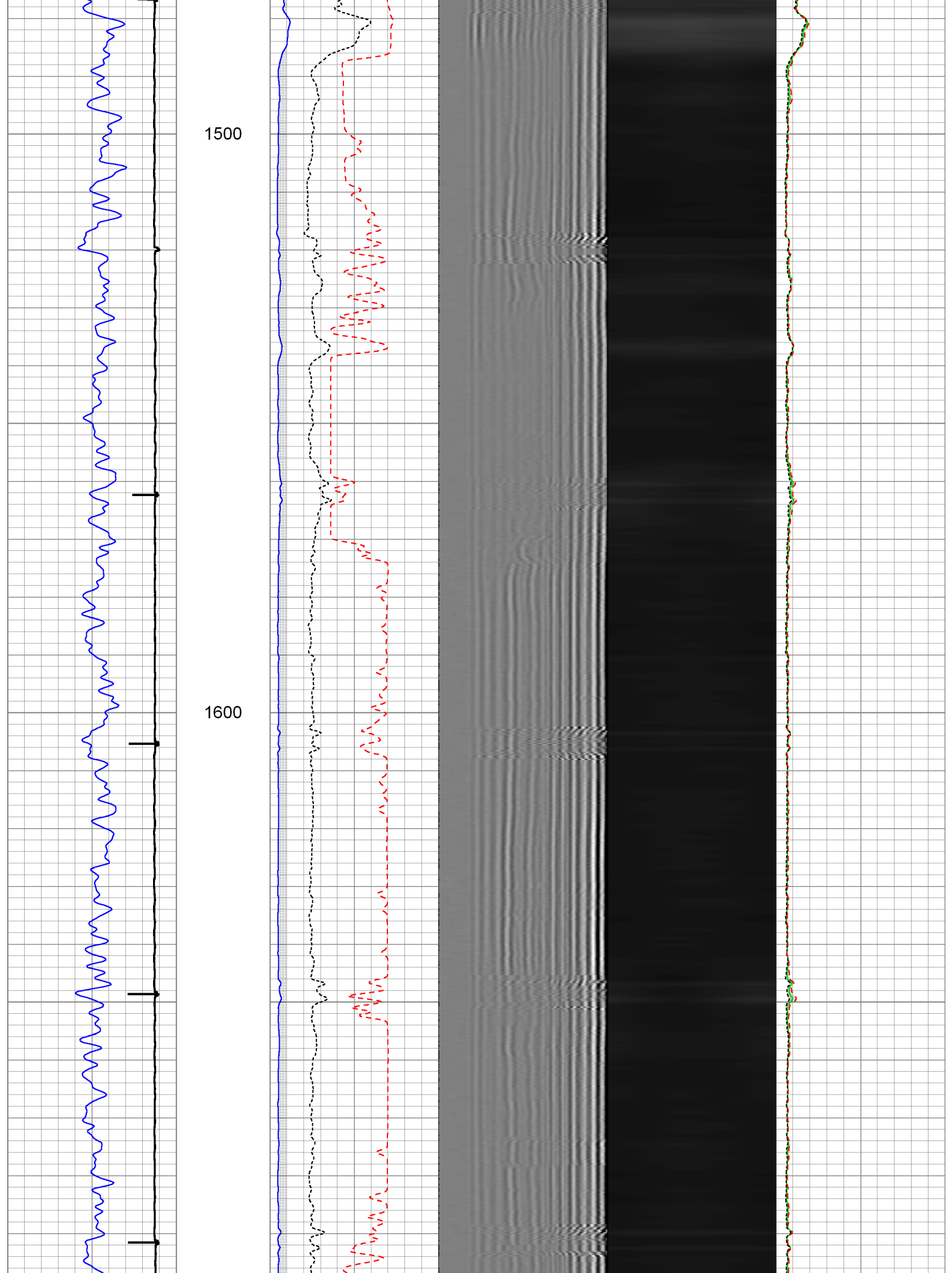








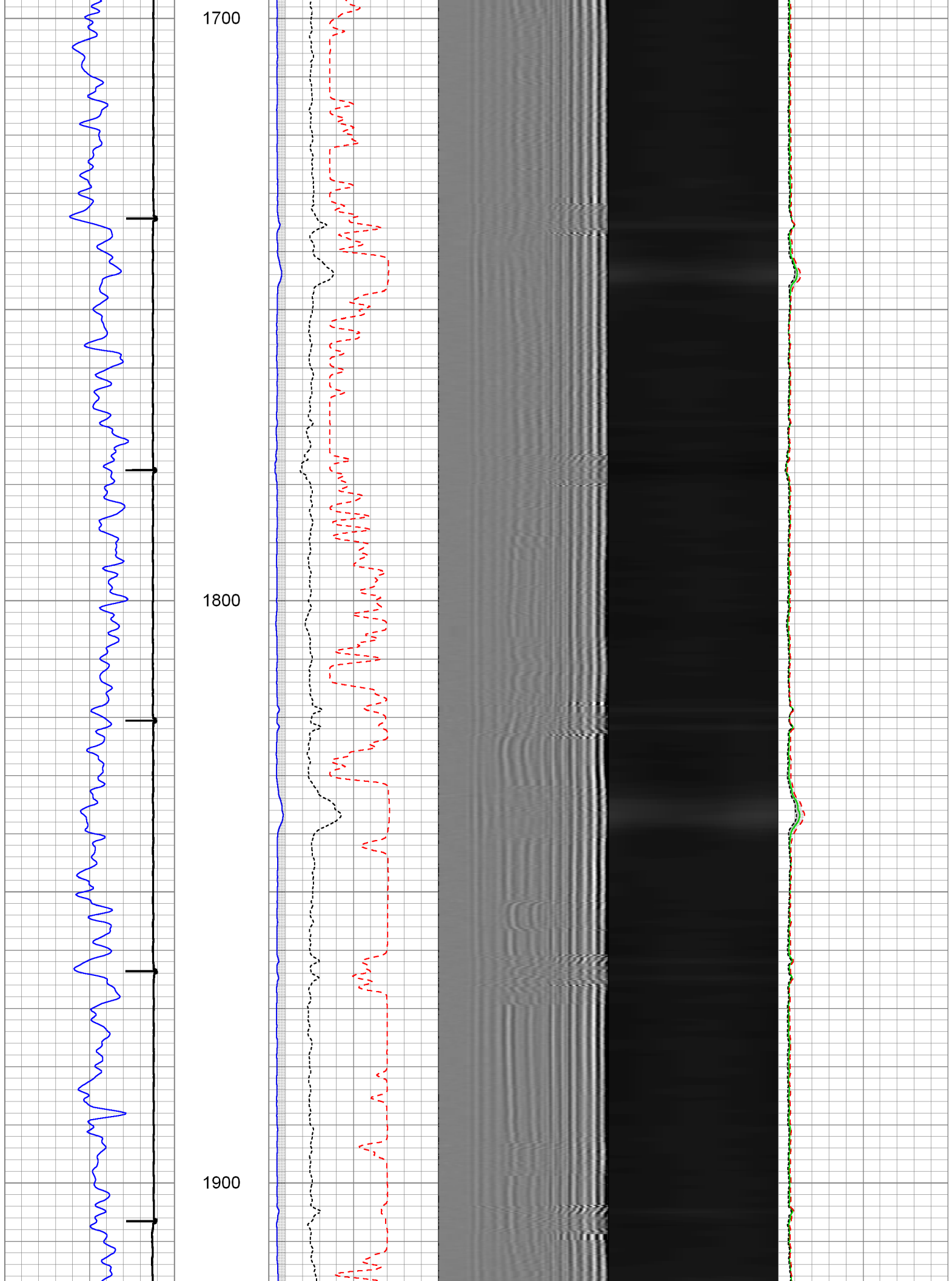


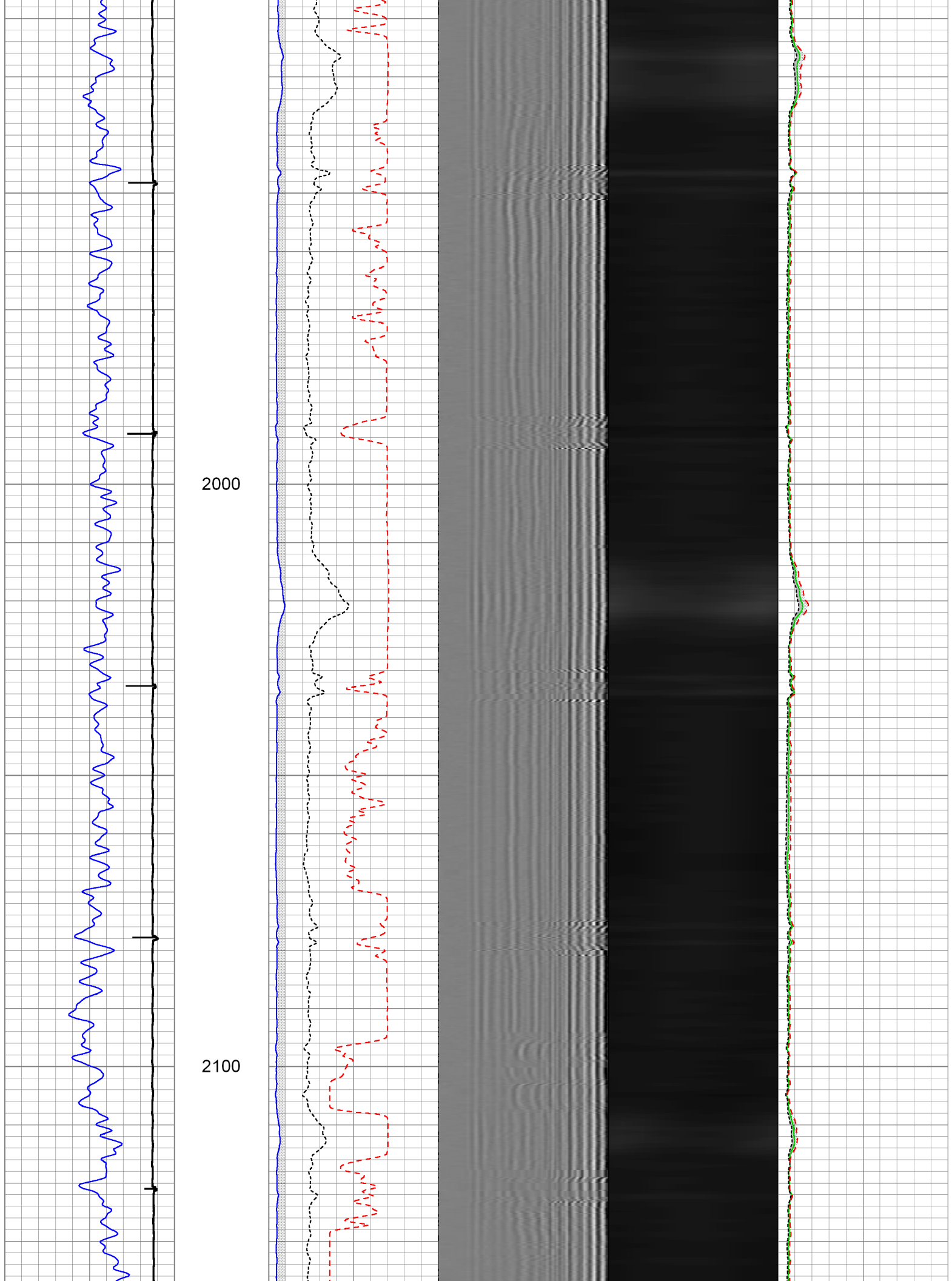


1700

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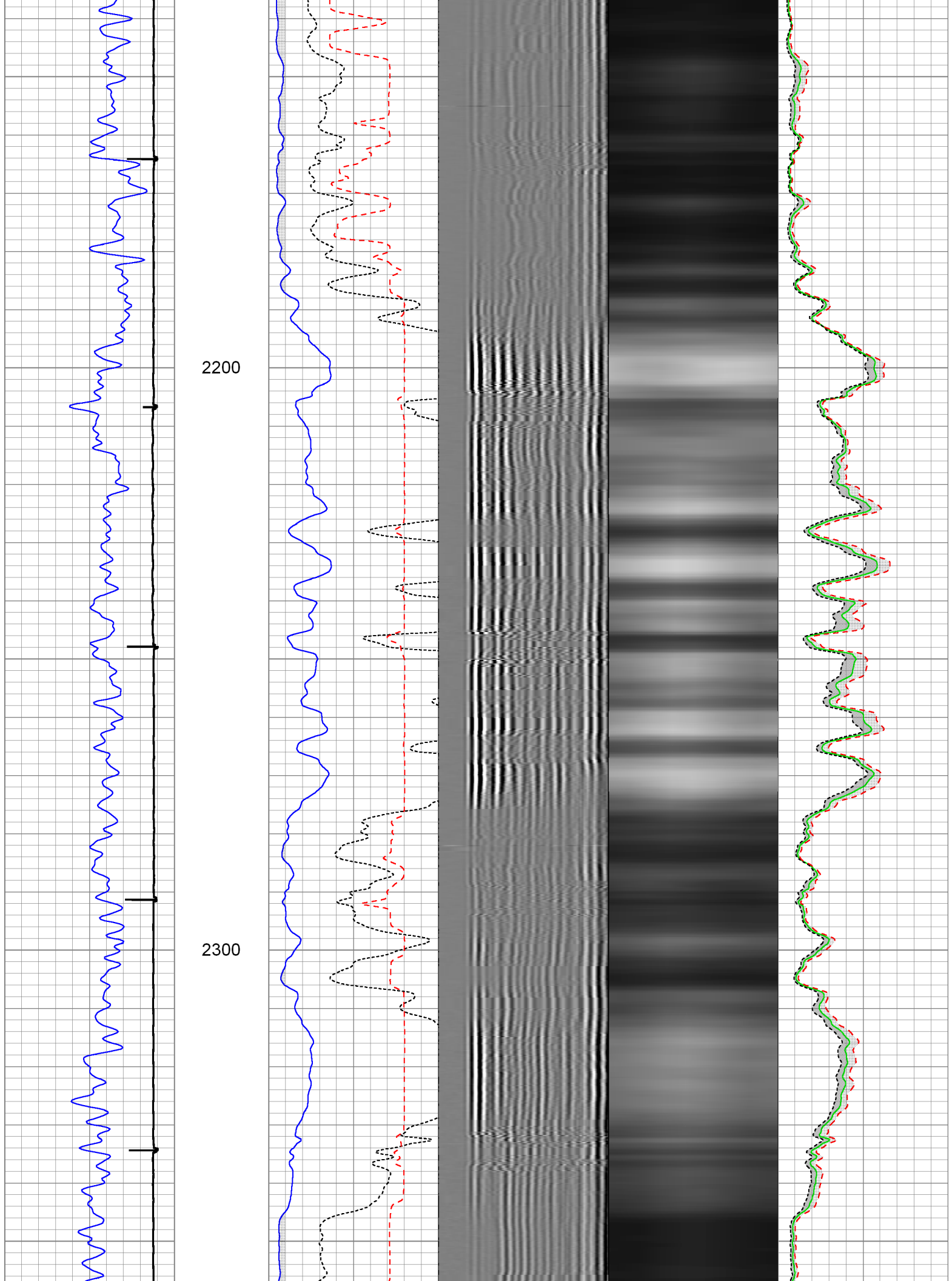
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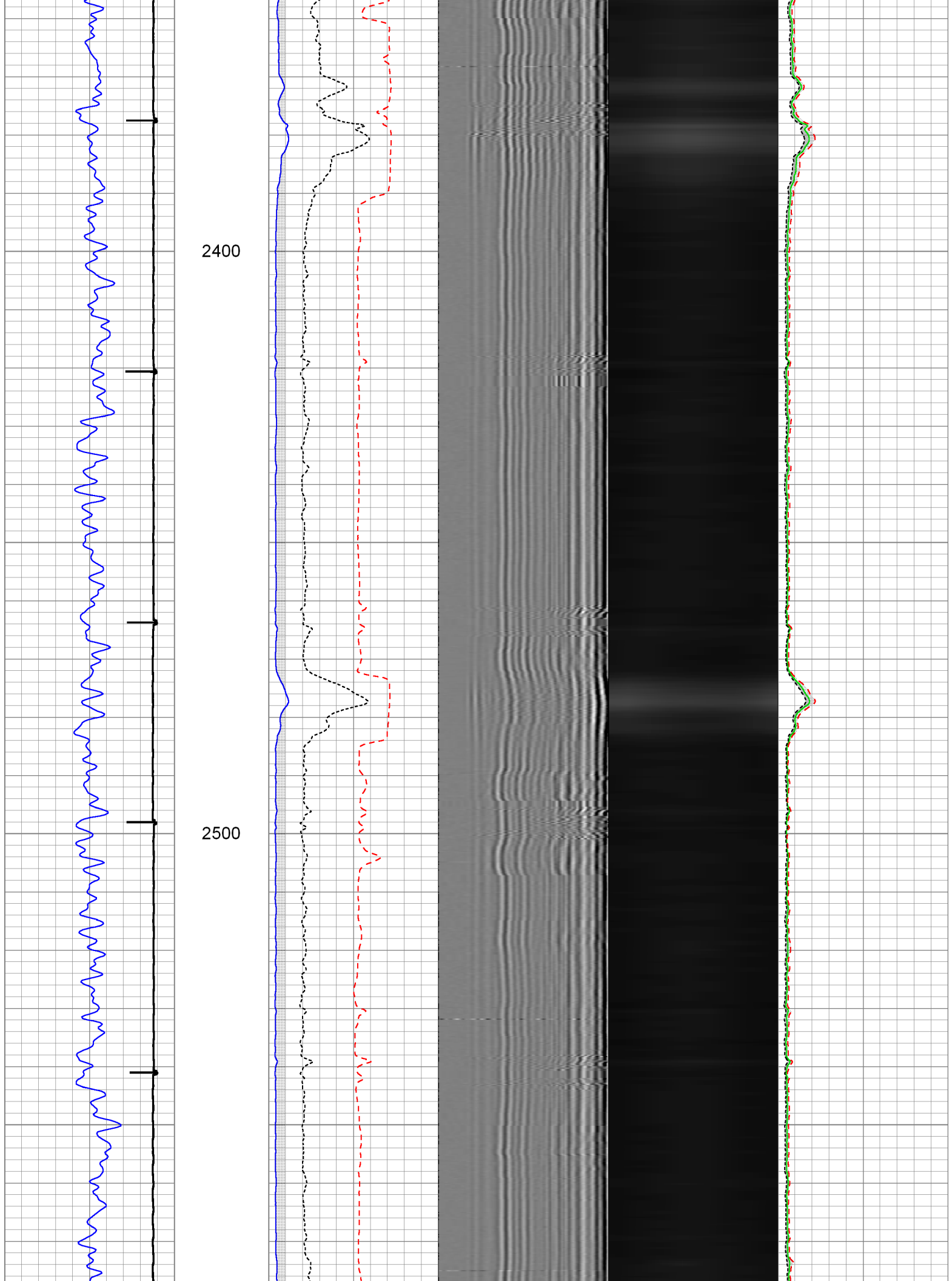




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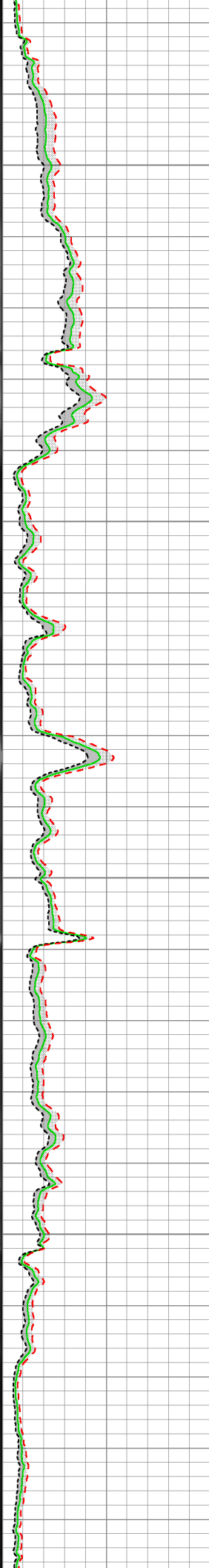
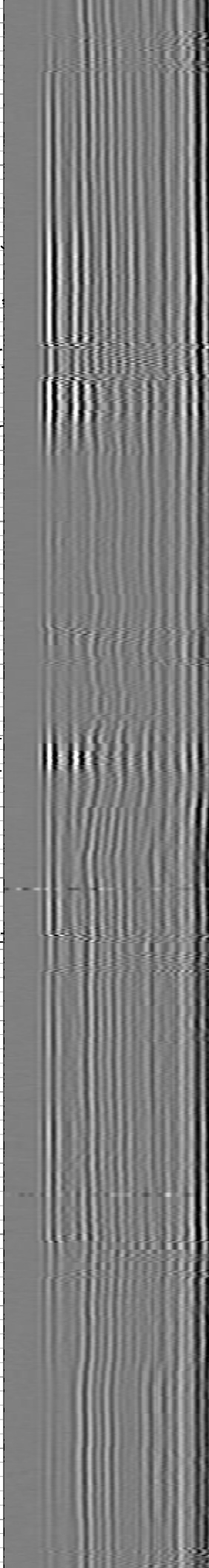
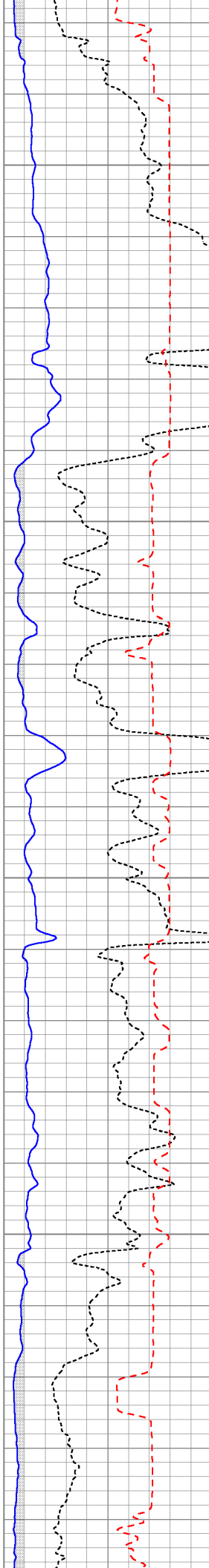
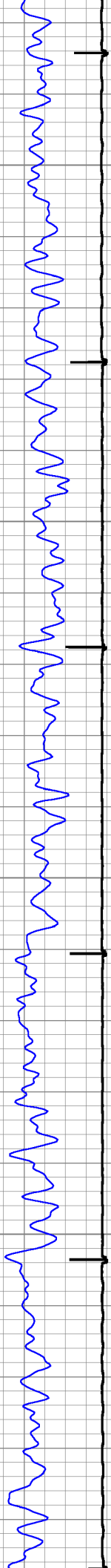
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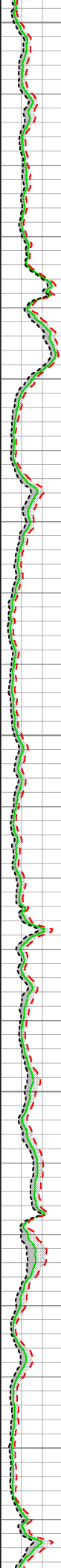
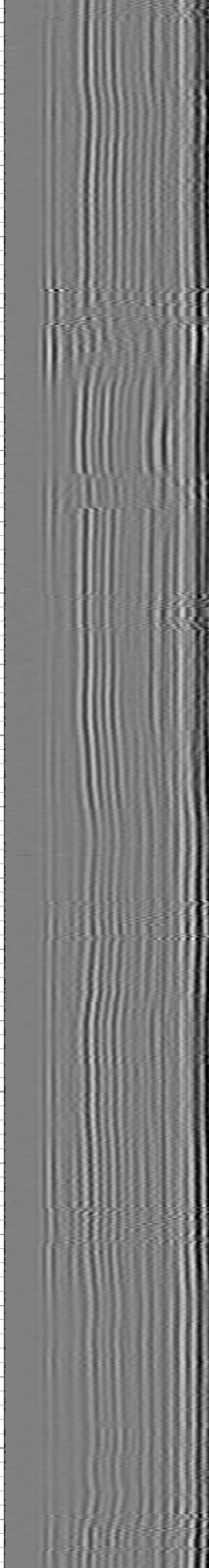
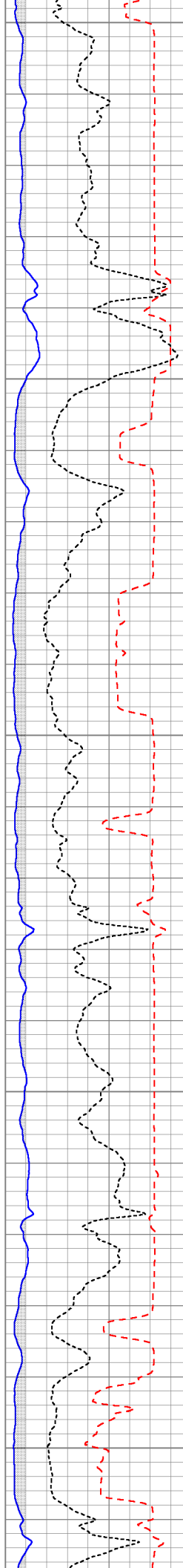
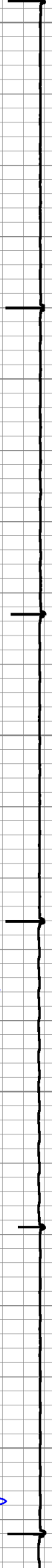
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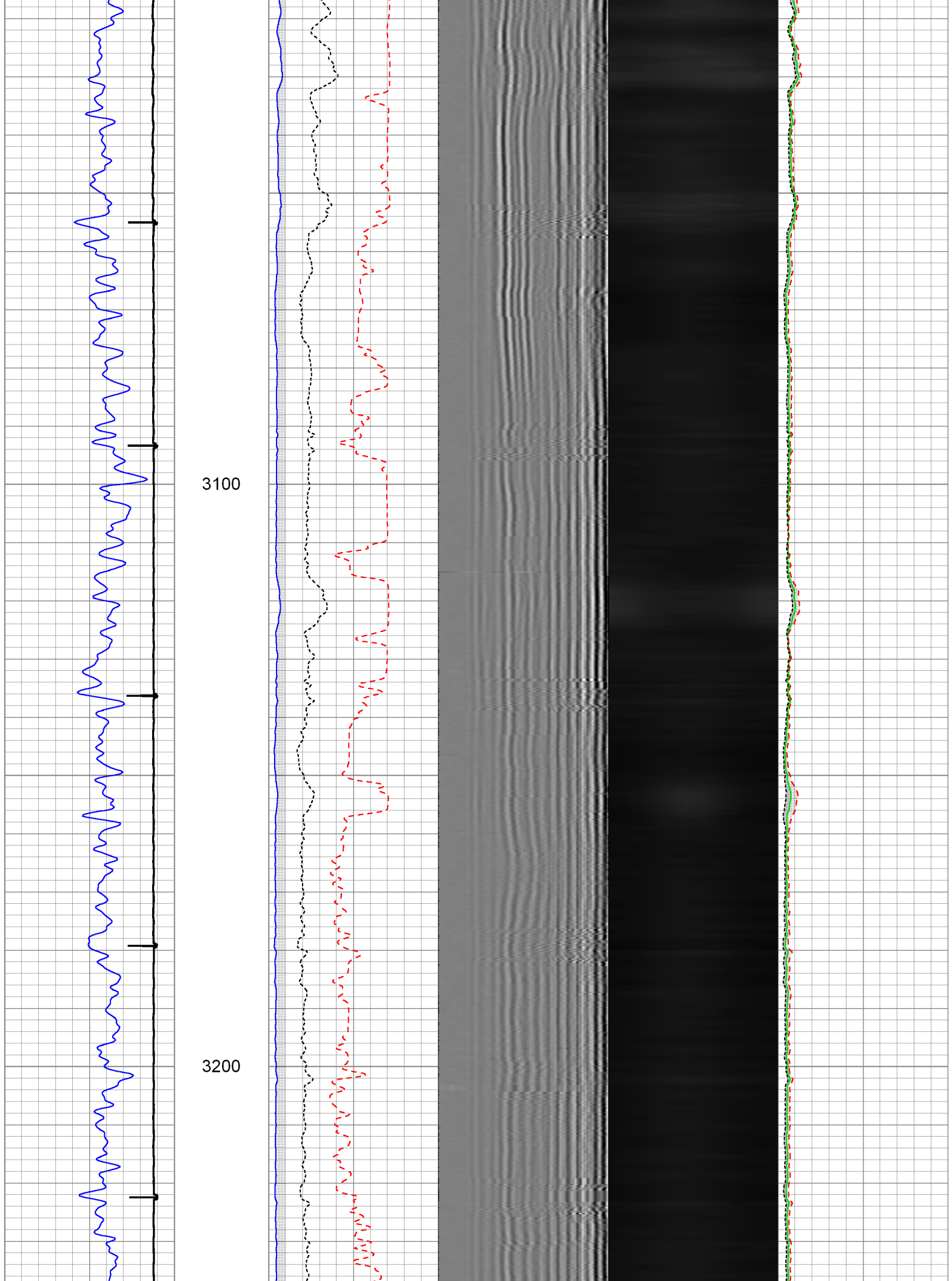


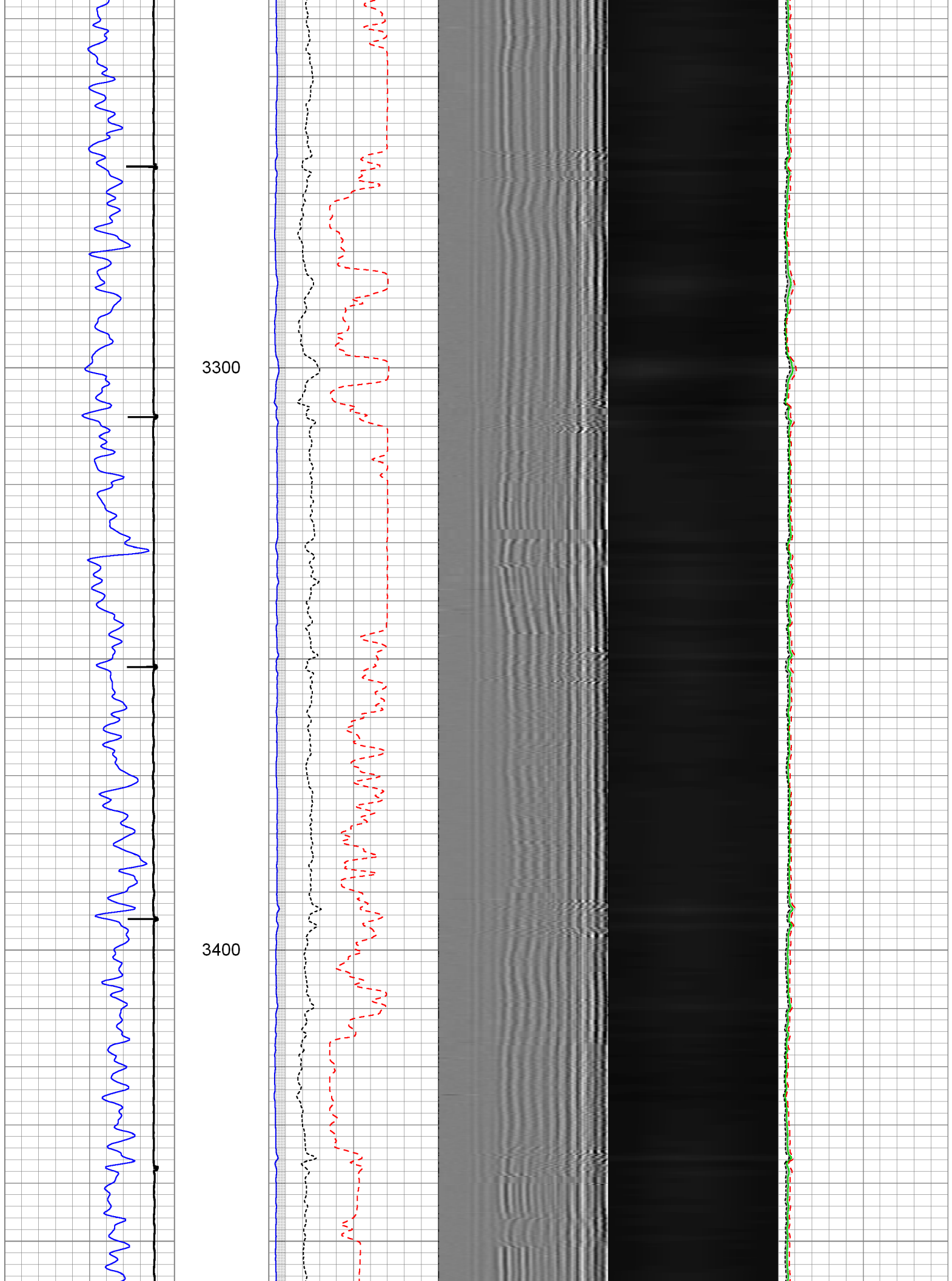
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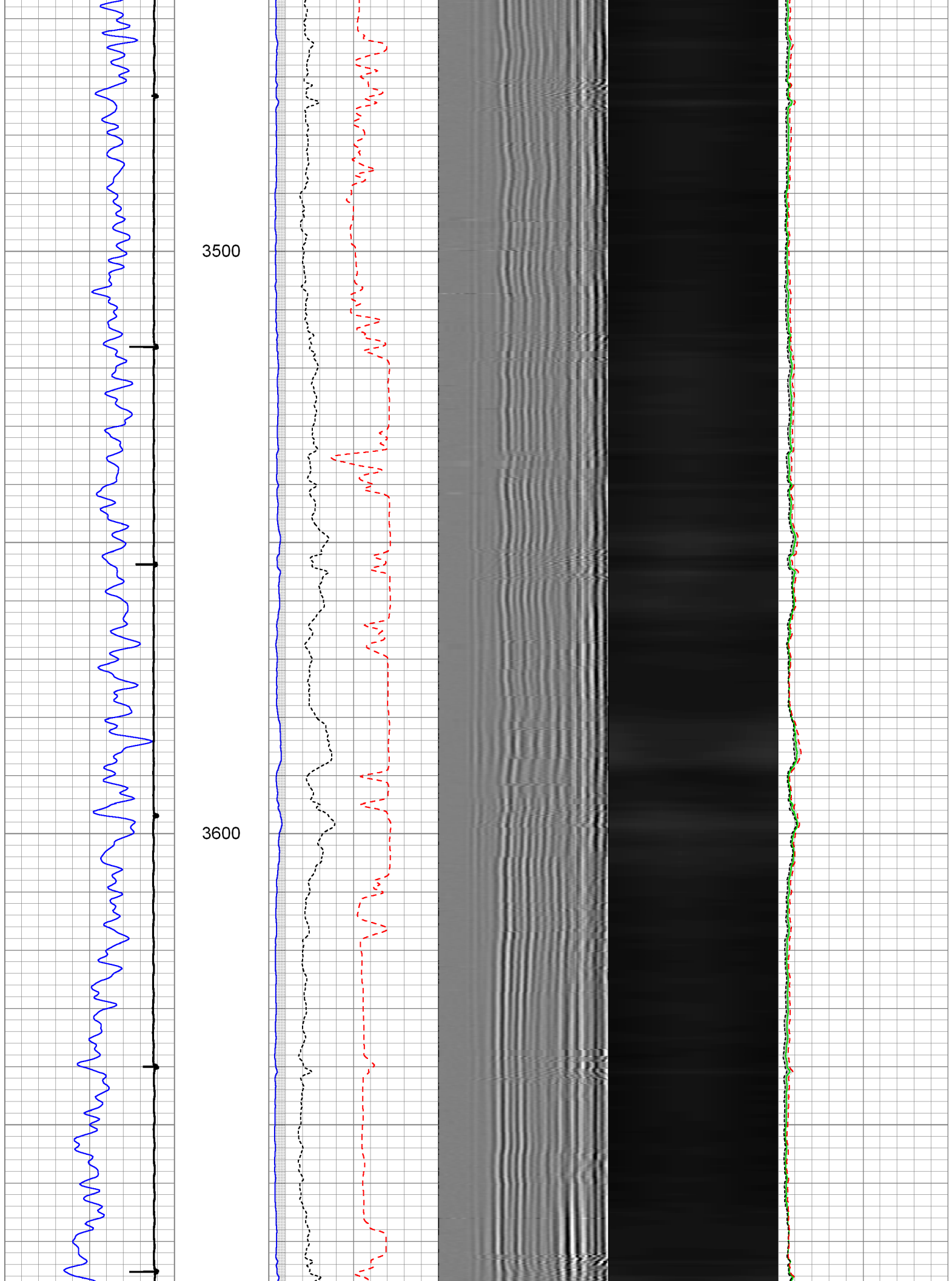
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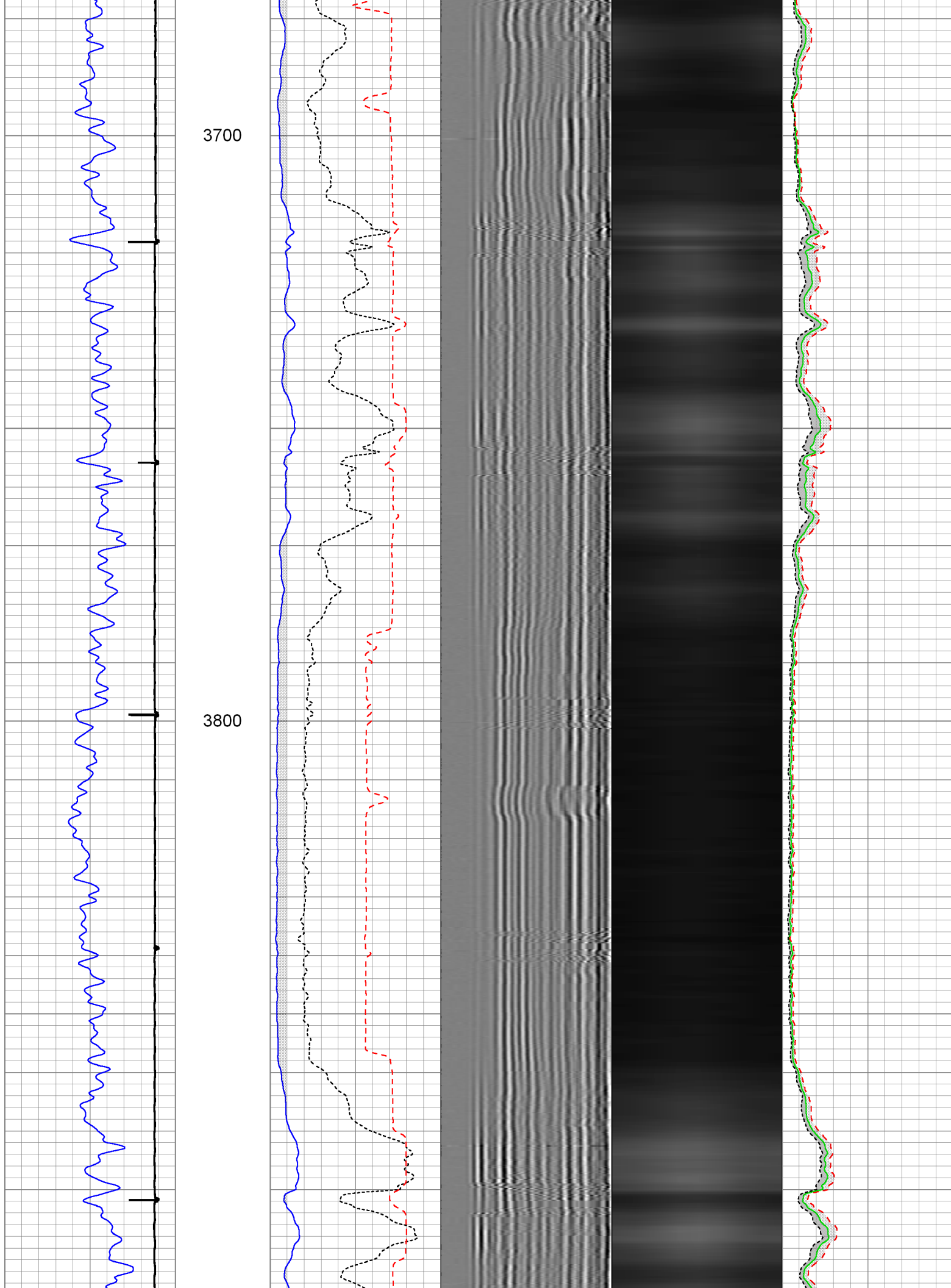


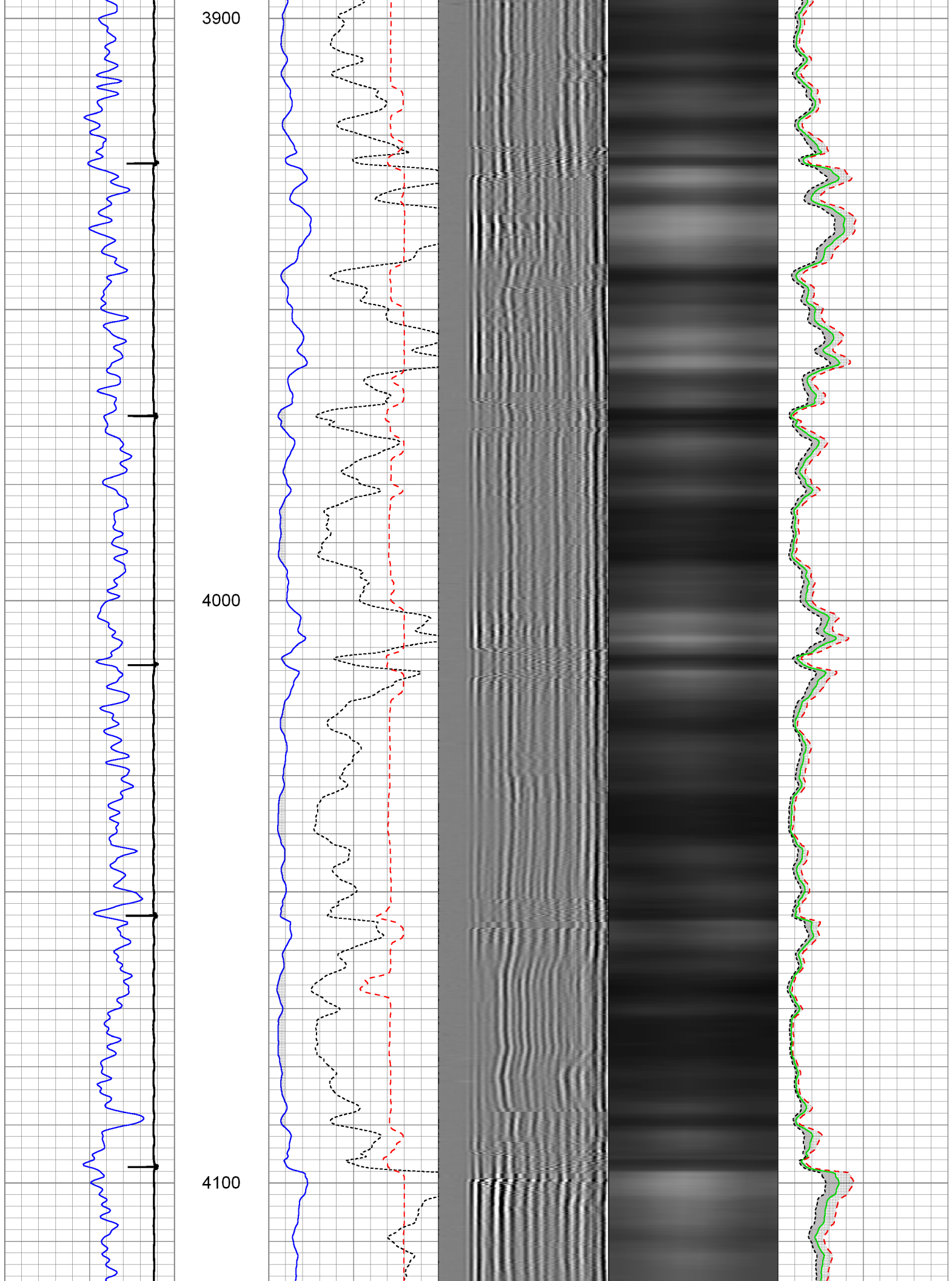


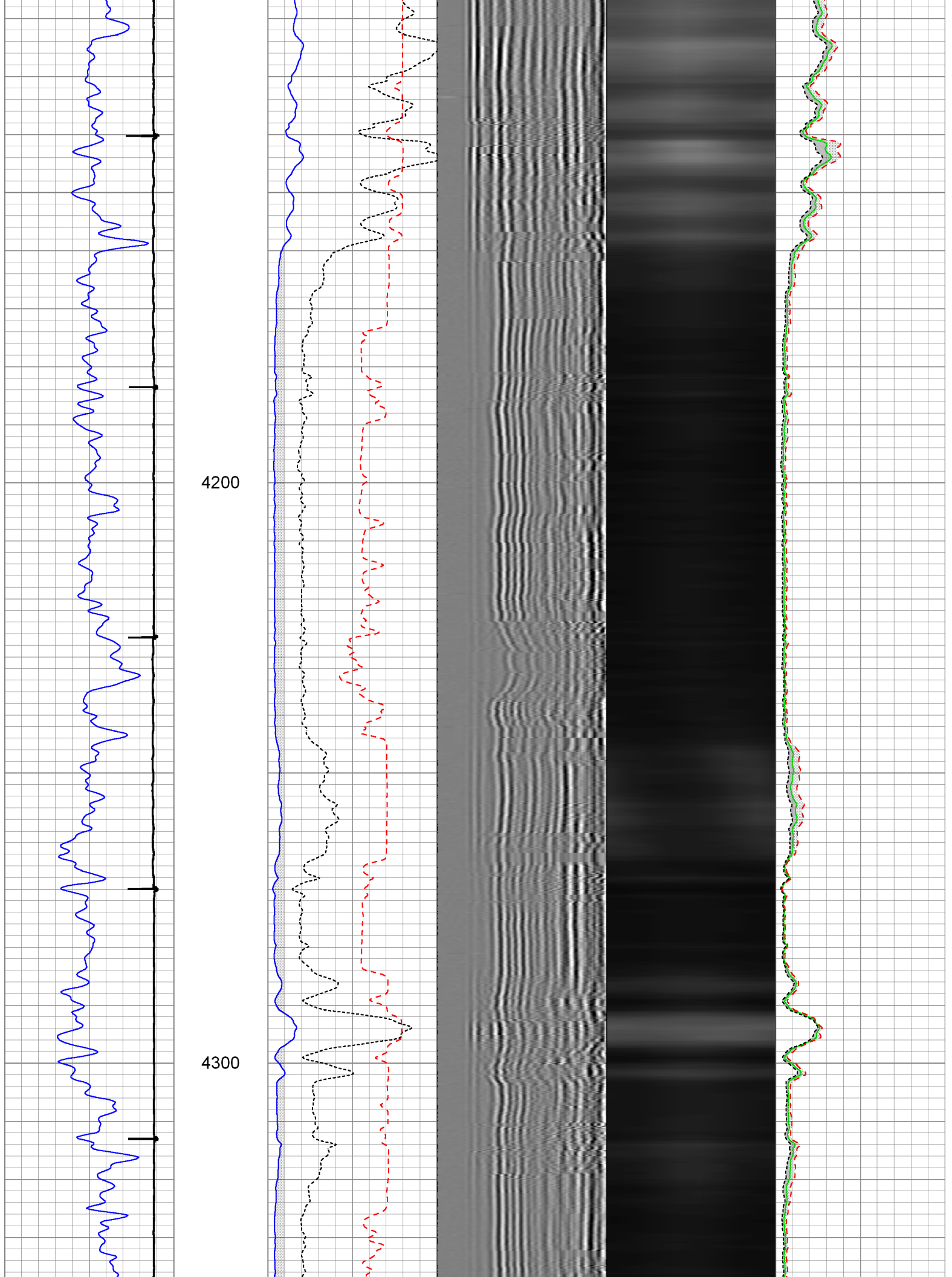


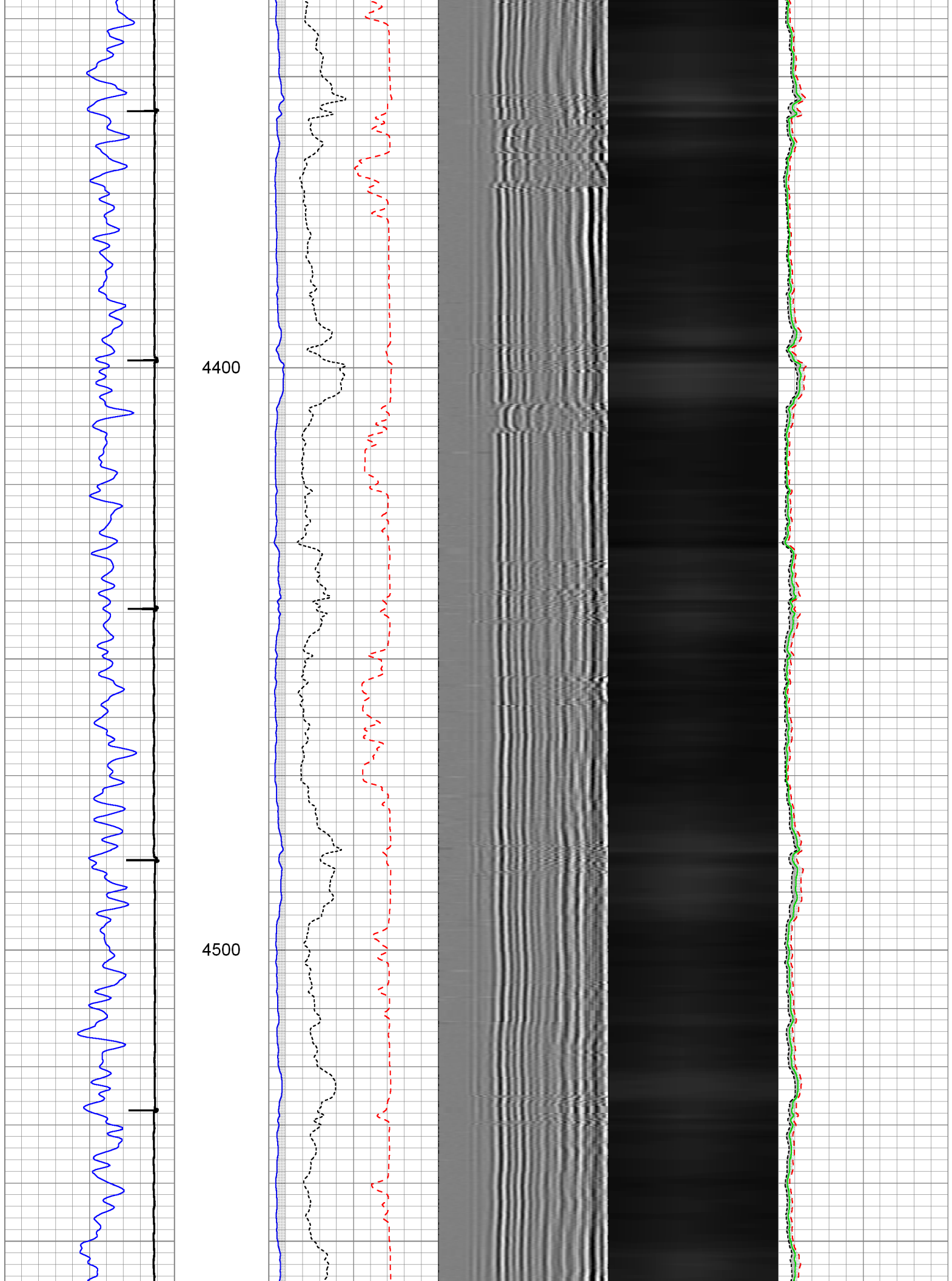
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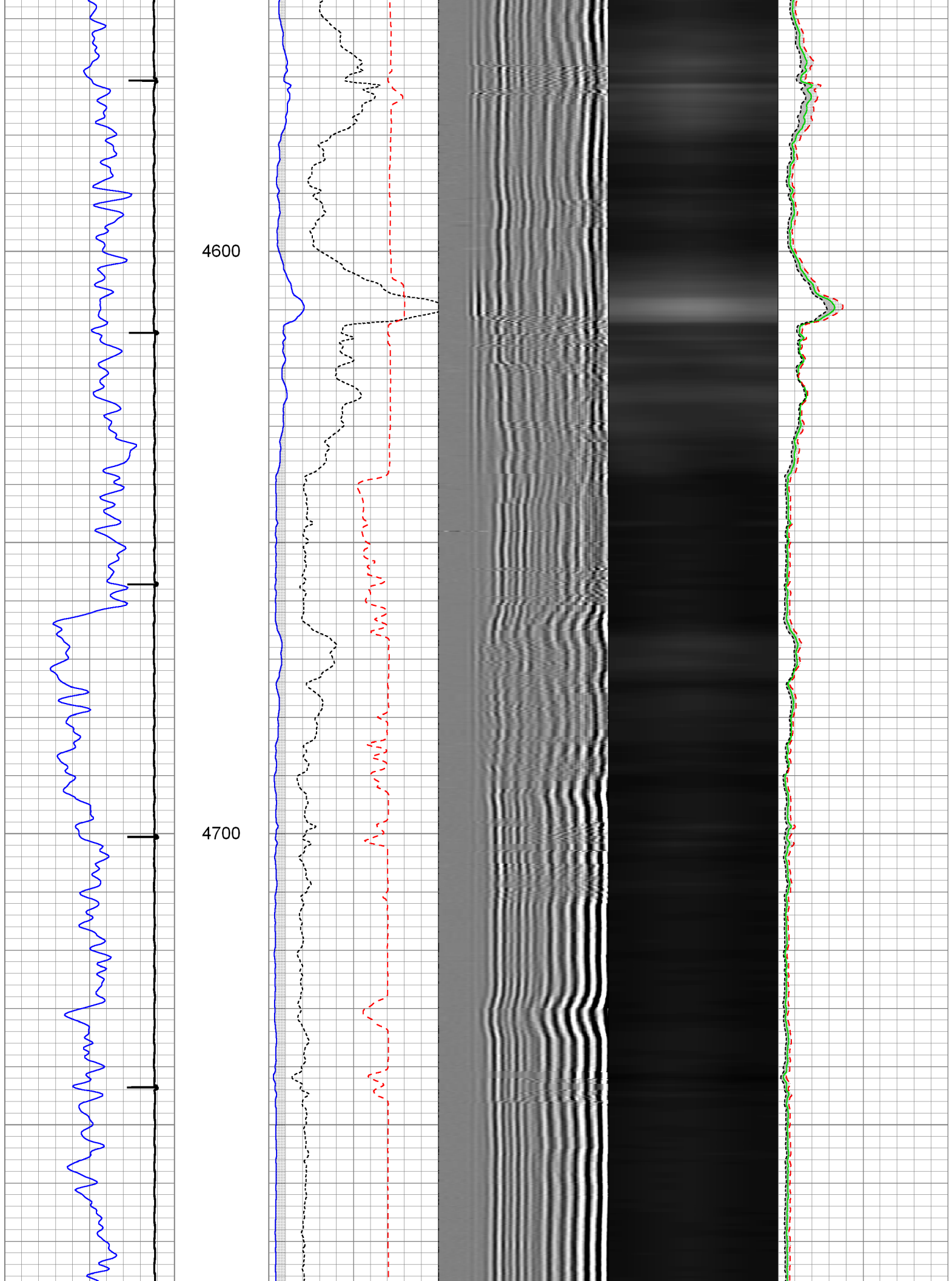
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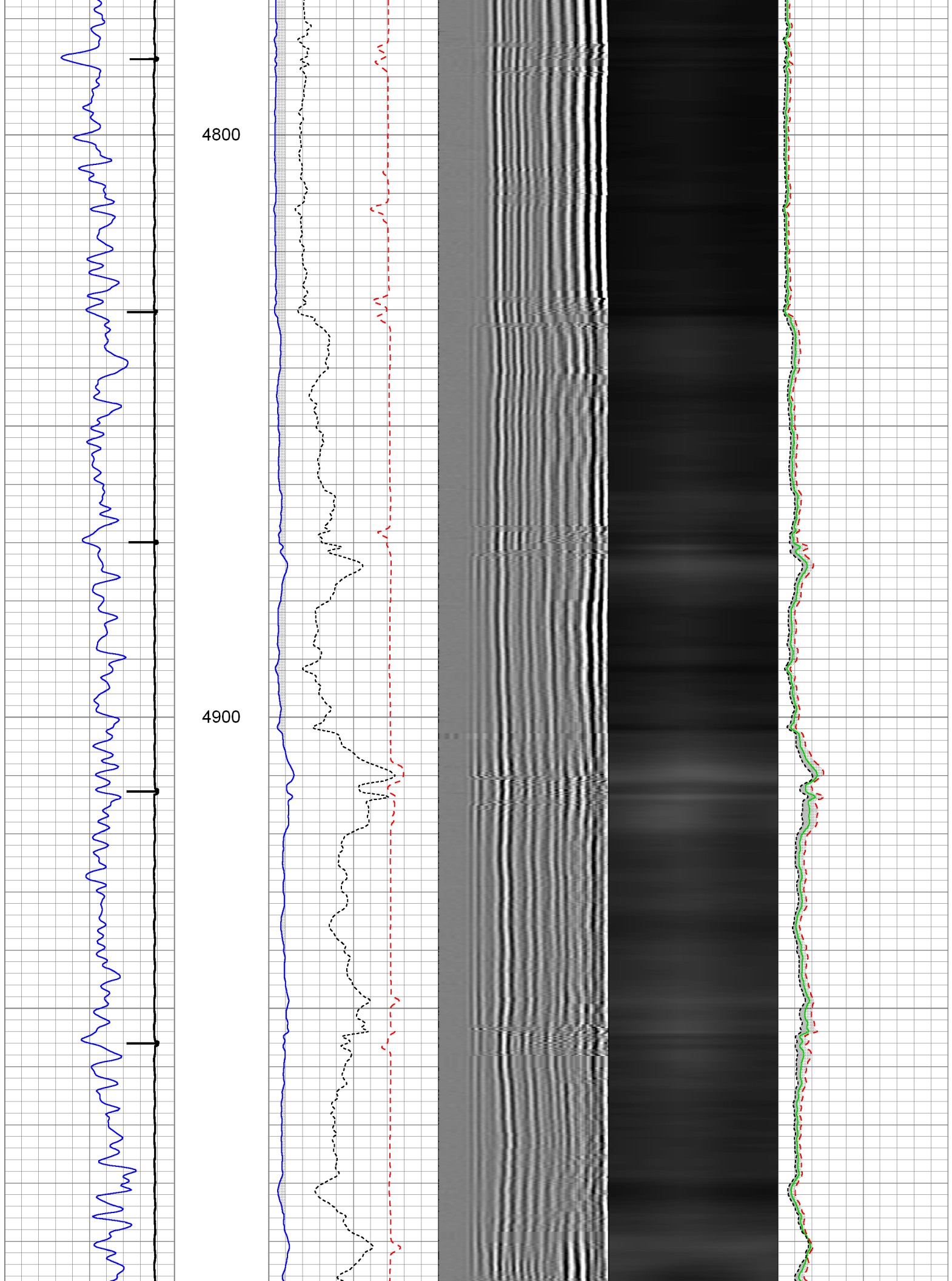


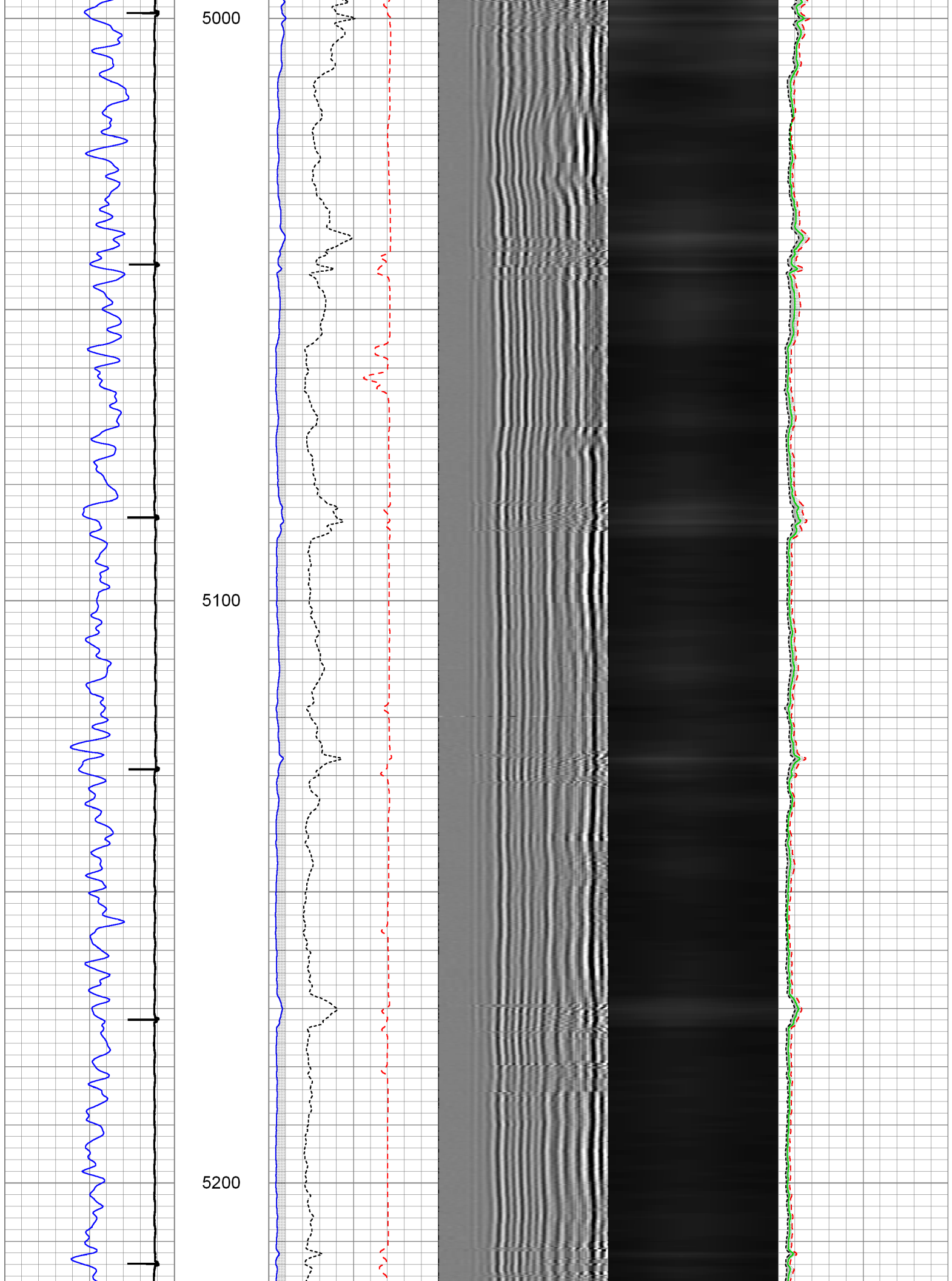


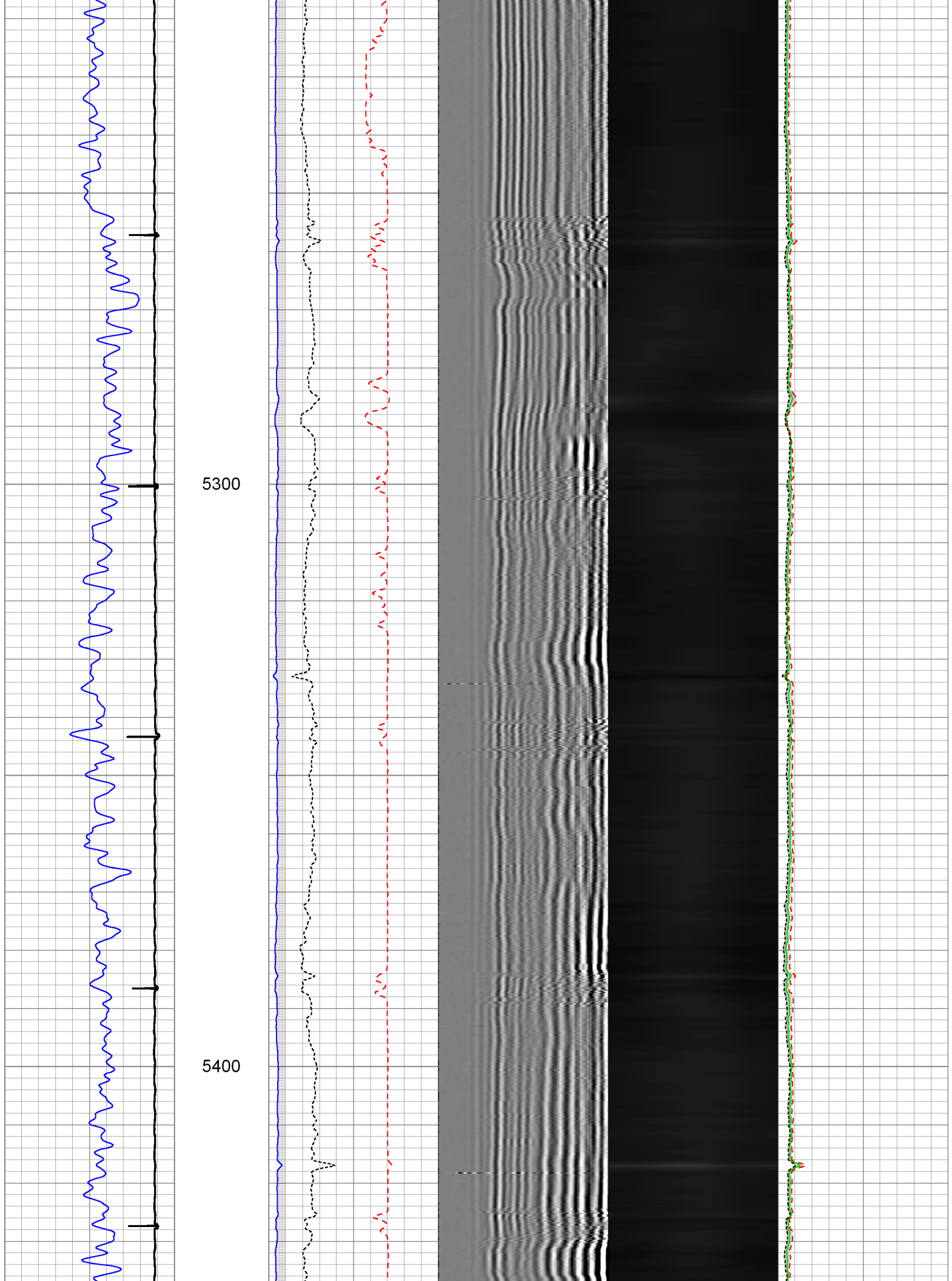


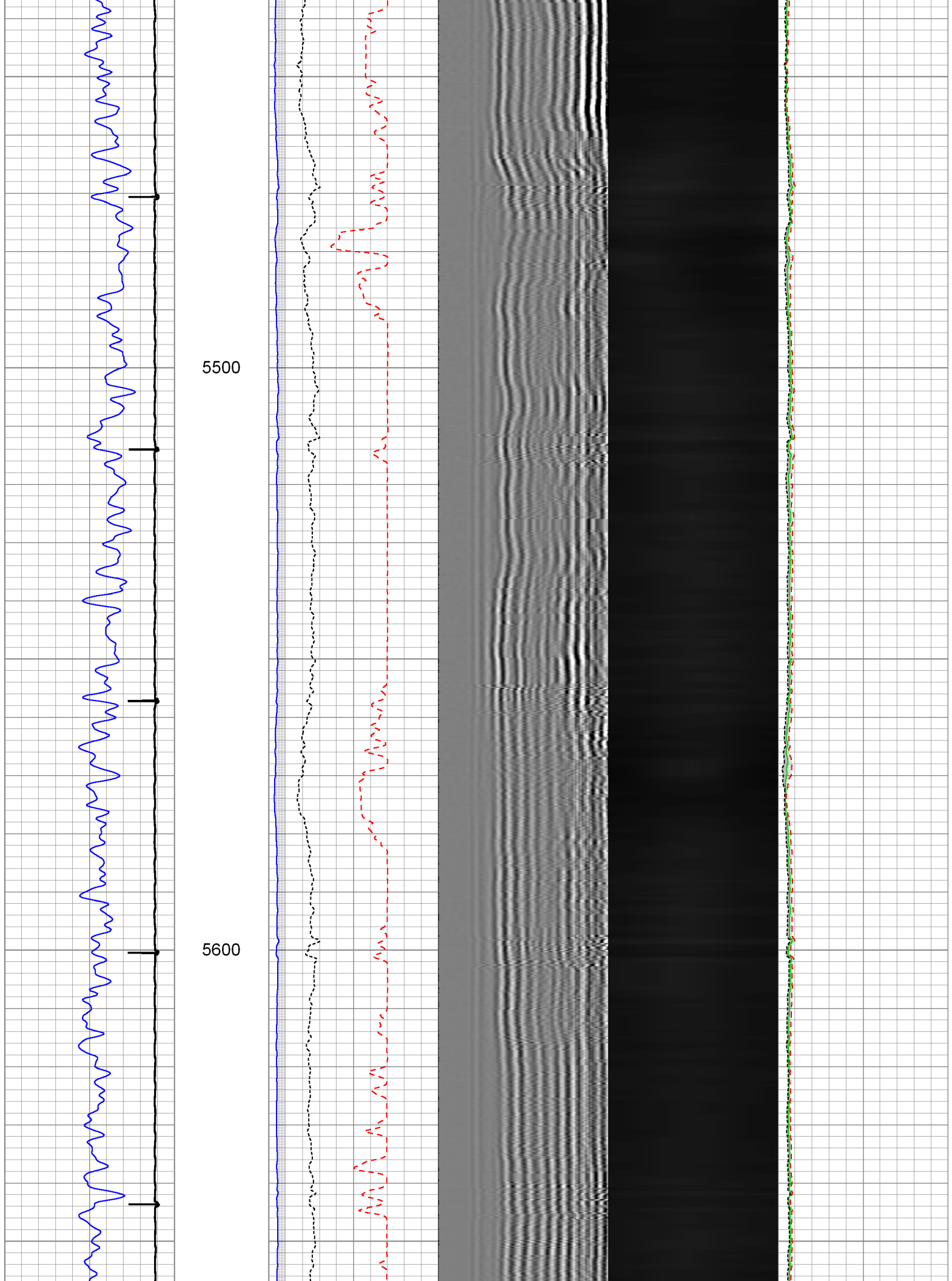


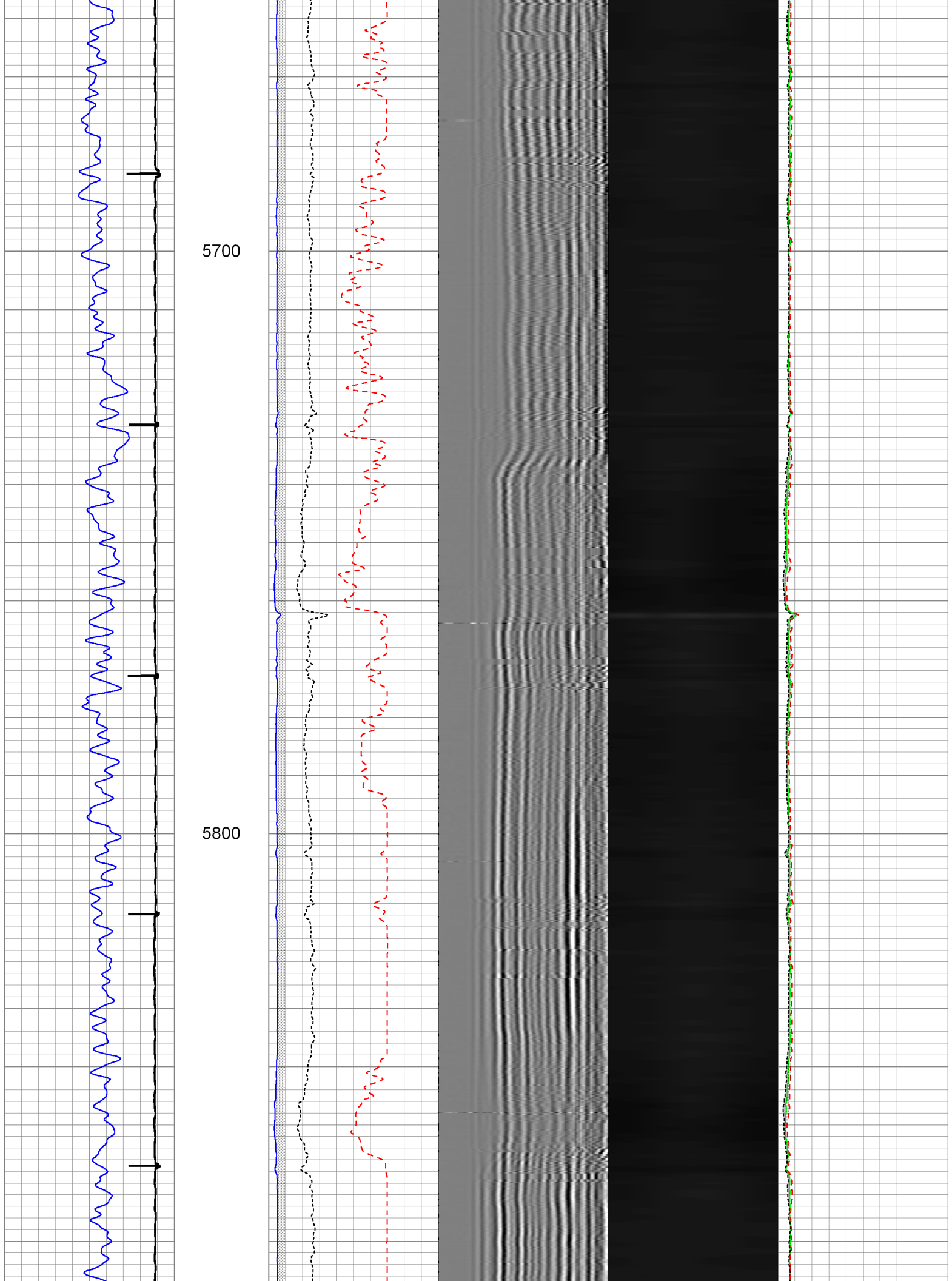


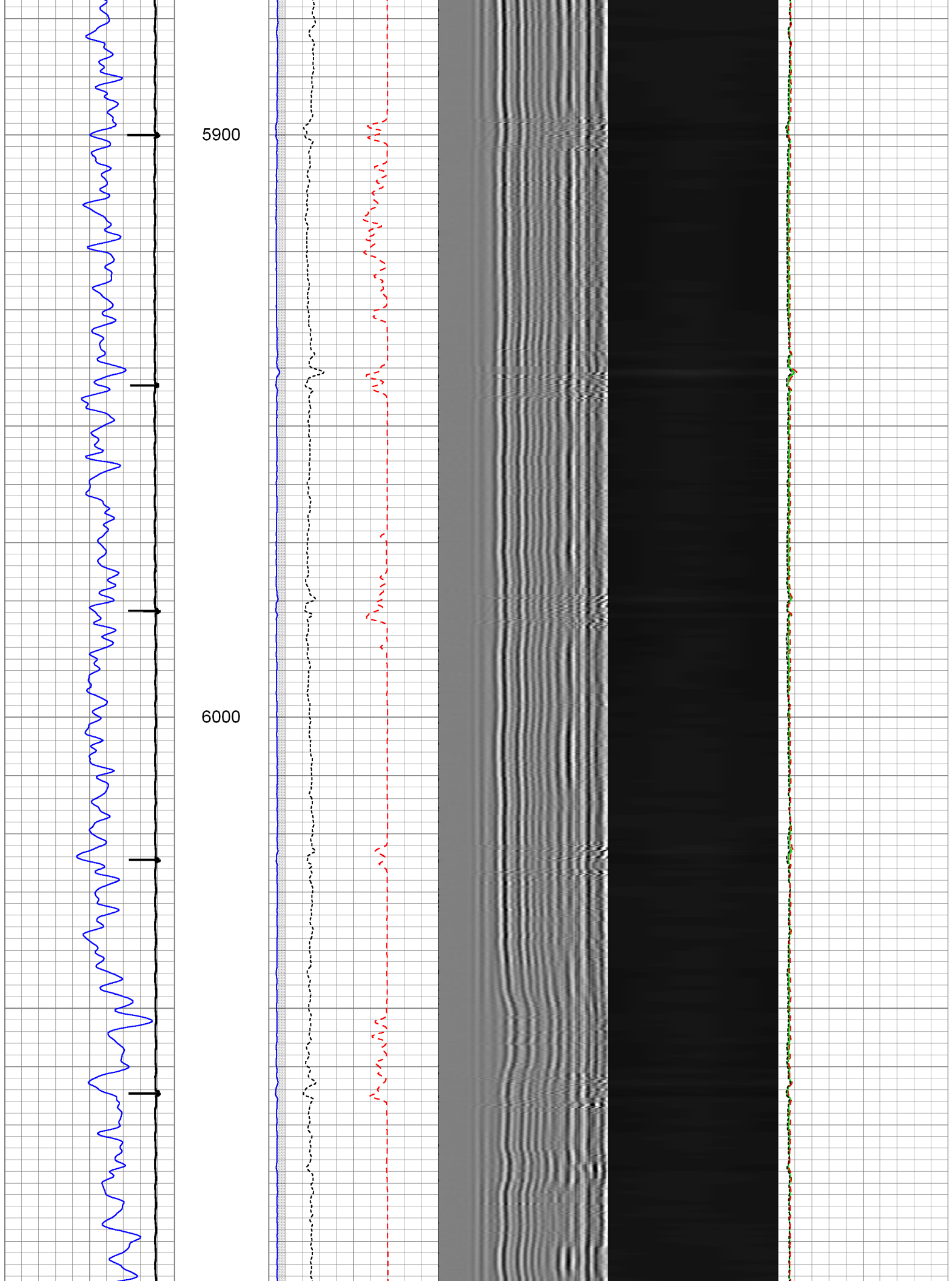








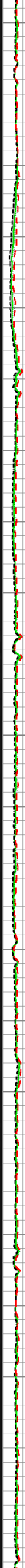
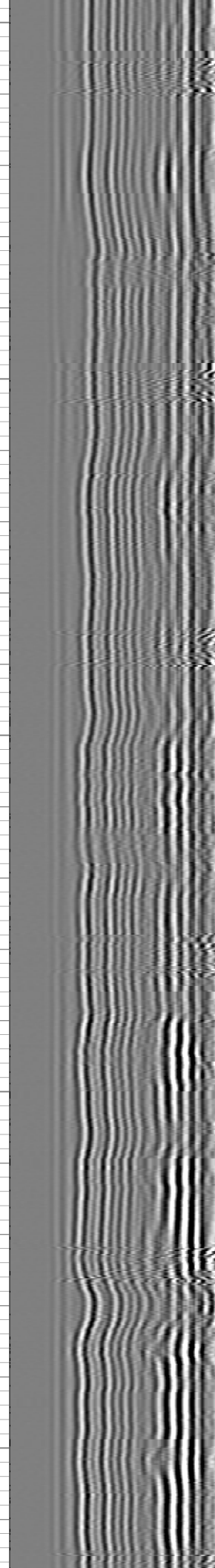
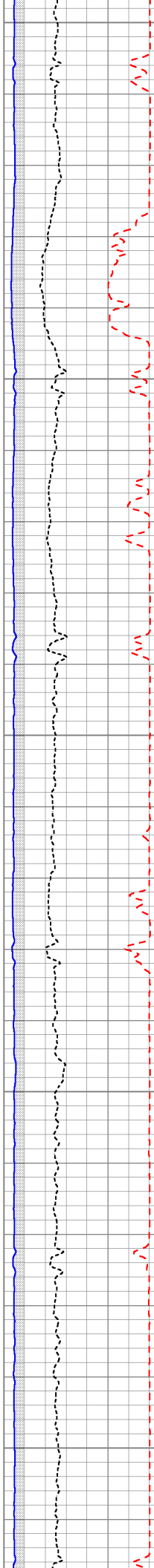
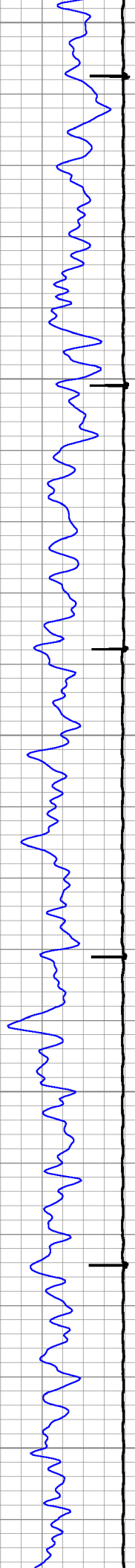


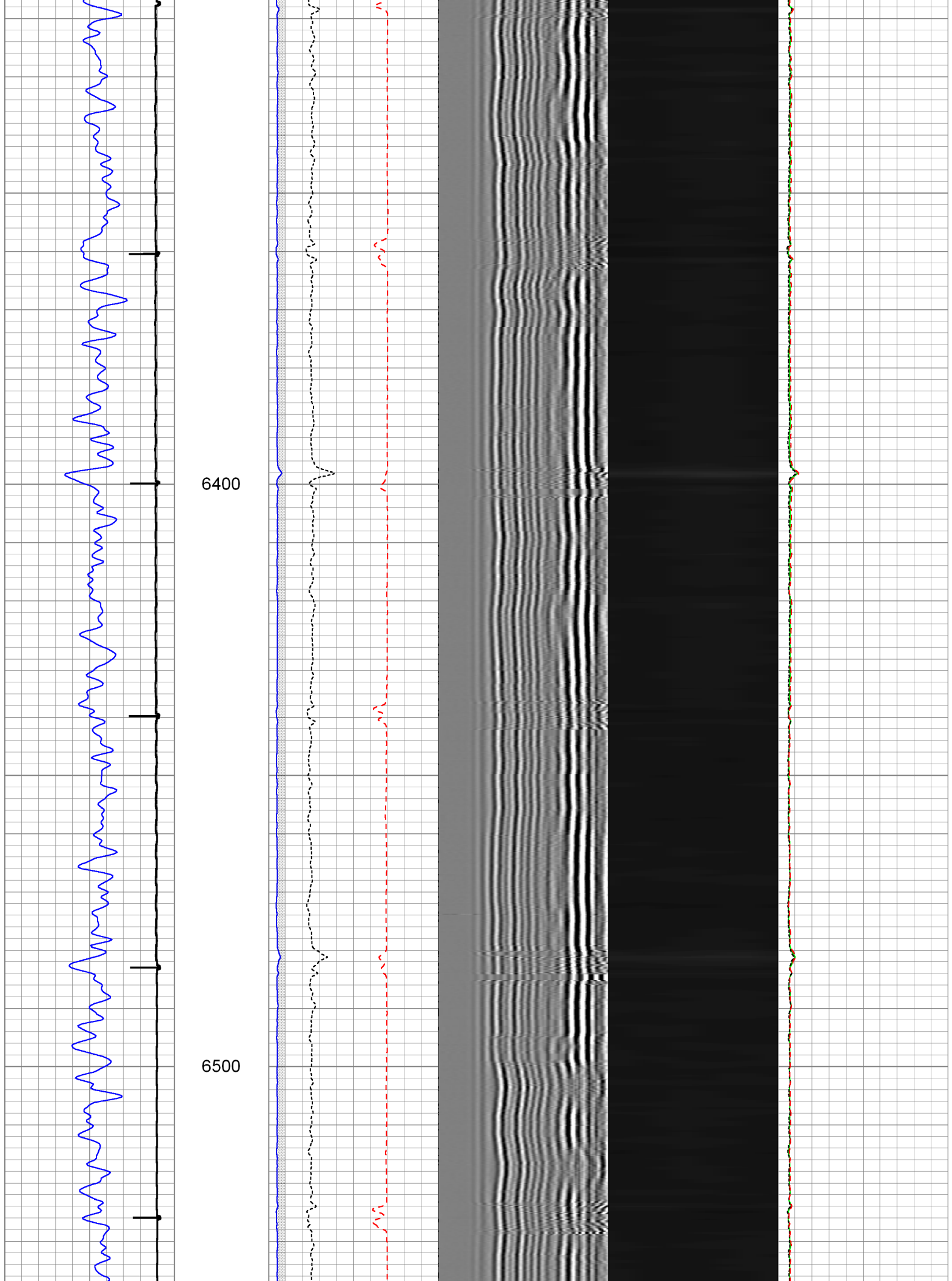


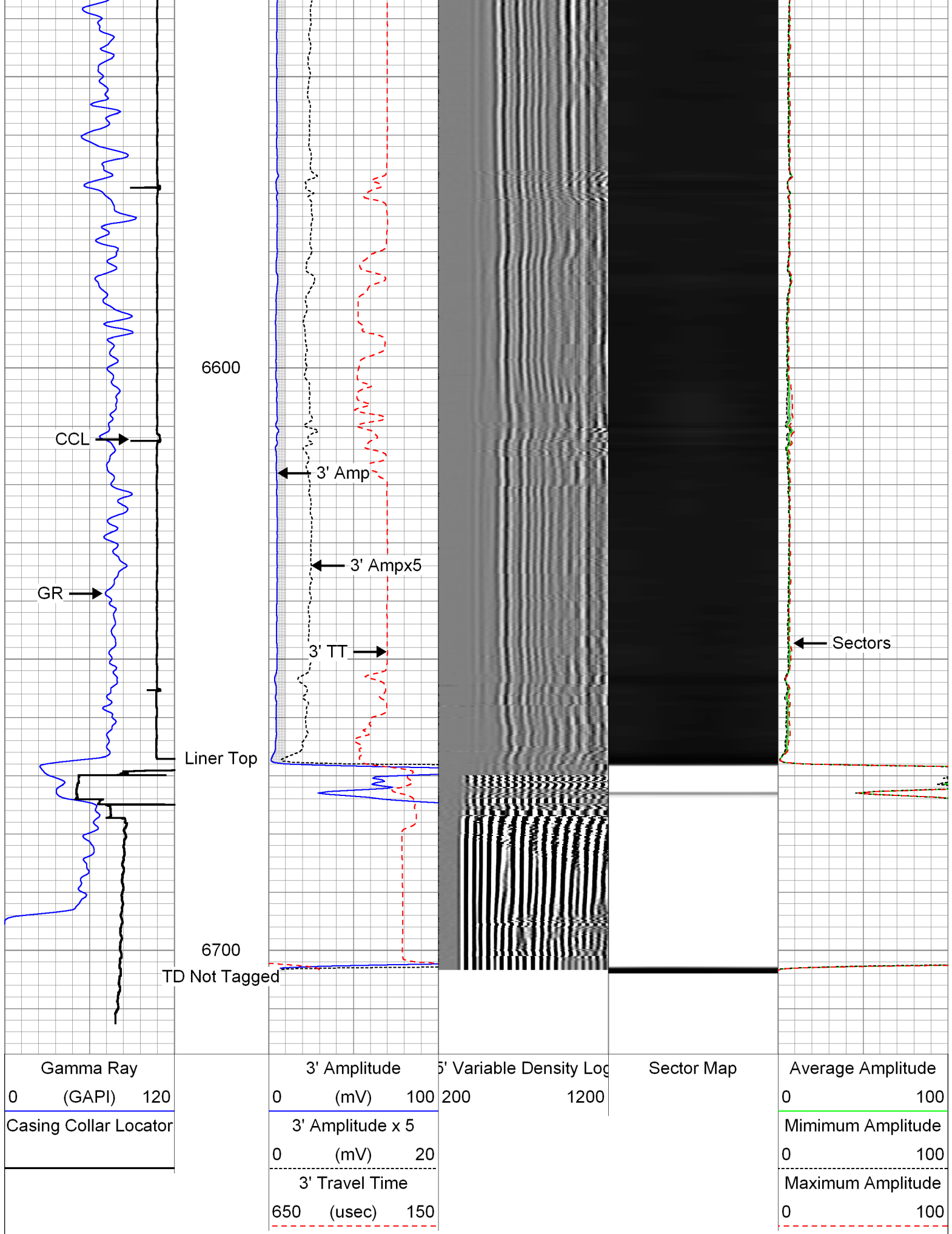
6100

6200

6300



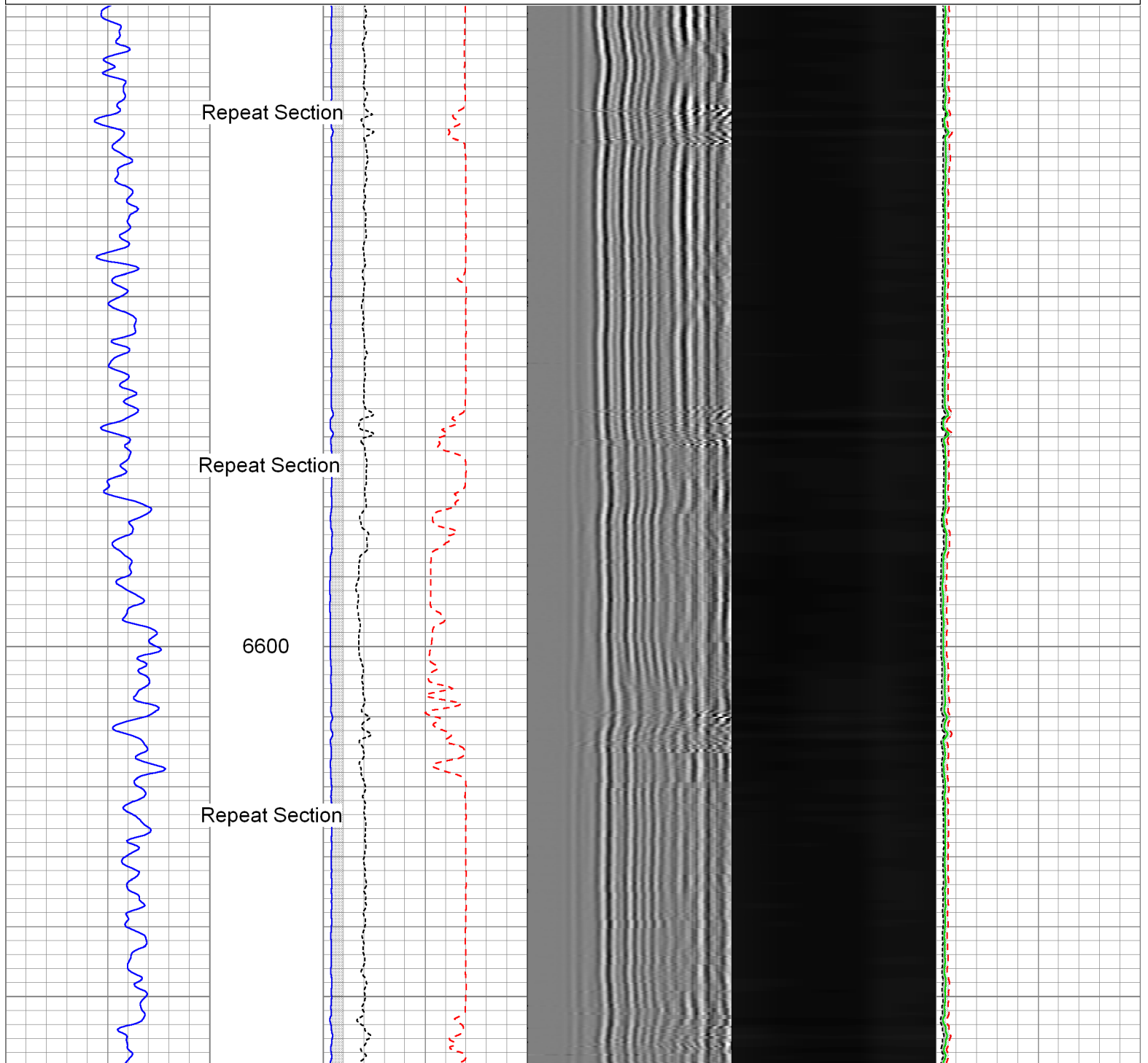


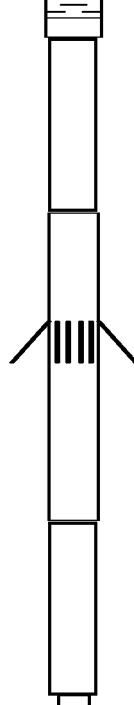


Repeat Section

Database File: 0512338629_anadarko_elliott state 26c-17hz_05-12-14_mit_rbl.db
 Dataset Pathname: repeat
 Presentation Format: rbt007
 Dataset Creation: Mon May 12 11:53:19 2014 by Log Sondex V7.03
 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) | | | 0 | 100 |
| | | | 3' Amplitude x 5 | | | | Minimum Amplitude | |
| | | | 0 | (mV) | 20 | | 0 | 100 |
| | | | 3' Travel Time | | | | Maximum Amplitude | |
| | | | 650 | (usec) | 150 | | 0 | 100 |



| | | | | | | |
|--|-------|---|---|------|------|-------|
| CBLTEMP | 14.99 |  | PRC-RAC.20 (20081) Roller Arm Centralizer (5 Arm) | 2.55 | 2.75 | 32.00 |
| CBLROT | 14.99 | | | | | |
| WVF5FT | 13.99 | | | | | |
| | | | | | | |
| MIT | 5.11 | | MIT-027 (10014703) Multifinger Imaging Tool (UW 40F) | 4.54 | 2.75 | 61.10 |
| | | | | | | |
| | | | PRC-RAC.20 (20080) Roller Arm Centralizer (5 Arm) | 2.55 | 2.75 | 32.00 |
| | | | | | | |
| TSTAMP | 0.00 | | BUL-006 (000002) Bullnose Terminator | 0.22 | 1.69 | 1.20 |
| Dataset: 0512338629_Anadarko_Elliott State 26C-17HZ_05-12-14_MIT_RBL.db: field/well/run1/calreport Total Length: 27.68 ft Total Weight: 322.40 lb O.D.: 3.13 in | | | | | | |

| Calibration Report | |
|--------------------|--|
| Database File: | 0512338629_Anadarko_Elliott State 26C-17HZ_05-12-14_MIT_RBL.db |
| Dataset Pathname: | calreport |
| Dataset Creation: | Mon May 12 21:41:27 2014 by Log Sondex V7.03 |

| Multi-finger Imaging Tool Calibration Report |
|--|
|--|

| | |
|--------------------|----------|
| Serial Number: | 10014703 |
| Number of Fingers: | 40 |
| Tool Model: | 027 |

| Inclinometer Calibration Report | | |
|---------------------------------|--------------------------|-------|
| Performed: | Fri Sep 20 11:47:48 2013 | |
| Calibration Angle: | 45 | |
| | Inc X | Inc Y |
| Vertical: | 1963 | 1960 |
| Finger 1 up: | 1748 | 1727 |
| Finger 31 up: | 2195 | 1742 |
| Finger 21 up: | 2178 | 2188 |
| Finger 11 up: | 1727 | 2173 |
| Sensitivity ratio: | 1.00706 | |
| X-axis angle: | 132.825 | |
| Deviation const.: | 317.775 | |

| Finger Calibration Report | | | | | | | |
|---------------------------|------|-------|------|------------|--------------------------|-------|------|
| | | | | Performed: | Mon May 12 11:01:37 2014 | | |
| Ring size: | 4 | 5 | 6 | 7 | | | |
| (in) | | | | | | | |
| | Sens | Sens | Sens | | | | |
| Finger 01: | 1092 | 352.0 | 1444 | 423.0 | 1867 | 393.0 | 2260 |
| Finger 02: | 1043 | 362.0 | 1405 | 434.0 | 1839 | 414.0 | 2253 |
| Finger 03: | 1043 | 357.0 | 1400 | 417.0 | 1817 | 403.0 | 2220 |
| Finger 04: | 999 | 374.0 | 1373 | 430.0 | 1803 | 426.0 | 2229 |
| Finger 05: | 1032 | 365.0 | 1397 | 396.0 | 1793 | 394.0 | 2187 |
| Finger 06: | 1020 | 385.0 | 1405 | 402.0 | 1807 | 412.0 | 2219 |
| Finger 07: | 1022 | 385.0 | 1405 | 402.0 | 1807 | 412.0 | 2219 |

| | | | | | | | |
|------------|------|-------|------|-------|------|-------|------|
| Finger 07: | 1030 | 387.0 | 1417 | 386.0 | 1803 | 404.0 | 2207 |
| Finger 08: | 989 | 394.0 | 1383 | 393.0 | 1776 | 420.0 | 2196 |
| Finger 09: | 1047 | 405.0 | 1452 | 371.0 | 1823 | 397.0 | 2220 |
| Finger 10: | 1014 | 406.0 | 1420 | 367.0 | 1787 | 405.0 | 2192 |
| Finger 11: | 992 | 400.0 | 1392 | 365.0 | 1757 | 414.0 | 2171 |
| Finger 12: | 1068 | 406.0 | 1474 | 341.0 | 1815 | 379.0 | 2194 |
| Finger 13: | 1002 | 402.0 | 1404 | 352.0 | 1756 | 409.0 | 2165 |
| Finger 14: | 984 | 421.0 | 1405 | 360.0 | 1765 | 427.0 | 2192 |
| Finger 15: | 957 | 418.0 | 1375 | 359.0 | 1734 | 431.0 | 2165 |
| Finger 16: | 995 | 412.0 | 1407 | 346.0 | 1753 | 422.0 | 2175 |
| Finger 17: | 1028 | 403.0 | 1431 | 337.0 | 1768 | 403.0 | 2171 |
| Finger 18: | 1054 | 402.0 | 1456 | 336.0 | 1792 | 405.0 | 2197 |
| Finger 19: | 1022 | 407.0 | 1429 | 348.0 | 1777 | 417.0 | 2194 |
| Finger 20: | 944 | 401.0 | 1345 | 358.0 | 1703 | 433.0 | 2136 |
| Finger 21: | 1036 | 385.0 | 1421 | 350.0 | 1771 | 414.0 | 2185 |
| Finger 22: | 1017 | 390.0 | 1407 | 360.0 | 1767 | 422.0 | 2189 |
| Finger 23: | 1130 | 363.0 | 1493 | 341.0 | 1834 | 388.0 | 2222 |
| Finger 24: | 1037 | 382.0 | 1419 | 379.0 | 1798 | 424.0 | 2222 |
| Finger 25: | 1041 | 369.0 | 1410 | 381.0 | 1791 | 428.0 | 2219 |
| Finger 26: | 1076 | 364.0 | 1440 | 381.0 | 1821 | 410.0 | 2231 |
| Finger 27: | 1093 | 348.0 | 1441 | 380.0 | 1821 | 411.0 | 2232 |
| Finger 28: | 1054 | 354.0 | 1408 | 405.0 | 1813 | 421.0 | 2234 |
| Finger 29: | 1038 | 351.0 | 1389 | 420.0 | 1809 | 435.0 | 2244 |
| Finger 30: | 1033 | 345.0 | 1378 | 424.0 | 1802 | 431.0 | 2233 |
| Finger 31: | 1095 | 339.0 | 1434 | 414.0 | 1848 | 406.0 | 2254 |
| Finger 32: | 1039 | 338.0 | 1377 | 430.0 | 1807 | 426.0 | 2233 |
| Finger 33: | 1055 | 339.0 | 1394 | 436.0 | 1830 | 423.0 | 2253 |
| Finger 34: | 1050 | 338.0 | 1388 | 448.0 | 1836 | 428.0 | 2264 |
| Finger 35: | 1110 | 327.0 | 1437 | 425.0 | 1862 | 399.0 | 2261 |
| Finger 36: | 1044 | 332.0 | 1376 | 444.0 | 1820 | 422.0 | 2242 |
| Finger 37: | 1154 | 325.0 | 1479 | 418.0 | 1897 | 387.0 | 2284 |
| Finger 38: | 1106 | 331.0 | 1437 | 429.0 | 1866 | 399.0 | 2265 |
| Finger 39: | 1055 | 342.0 | 1397 | 441.0 | 1838 | 414.0 | 2252 |
| Finger 40: | 990 | 355.0 | 1345 | 458.0 | 1803 | 435.0 | 2238 |

| Post Survey Calibration Check | | | | | | | | |
|-------------------------------------|-------|--------------|-------|--------------|-------|--------------|-------|--------------|
| Performed: Mon May 12 15:20:01 2014 | | | | | | | | |
| Ring size: (in) | 4 | Nom. wear | 5 | Nom. wear | 6 | Nom. wear | 7 | Nom. wear |
| Finger 01: | 3.993 | -0.003 | 5.033 | 0.017 | 6.020 | 0.010 | 7.020 | 0.010 |
| Finger 02: | 3.983 | -0.009 | 5.033 | 0.016 | 6.013 | 0.006 | 7.016 | 0.008 |
| Finger 03: | 3.982 | -0.009 | 5.030 | 0.015 | 6.013 | 0.006 | 7.017 | 0.009 |
| Finger 04: | 3.987 | -0.006 | 5.034 | 0.017 | 6.024 | 0.012 | 7.023 | 0.011 |
| Finger 05: | 3.988 | -0.006 | 5.032 | 0.016 | 6.019 | 0.009 | 7.023 | 0.012 |
| Finger 06: | 3.990 | -0.005 | 5.025 | 0.013 | 6.022 | 0.011 | 7.017 | 0.009 |
| Finger 07: | 3.990 | -0.005 | 5.027 | 0.014 | 6.028 | 0.014 | 7.028 | 0.014 |
| Finger 08: | 3.990 | -0.005 | 5.026 | 0.013 | 6.023 | 0.012 | 7.024 | 0.012 |
| Finger 09: | 3.985 | -0.007 | 5.015 | 0.007 | 6.030 | 0.015 | 7.024 | 0.012 |
| Finger 10: | 3.995 | -0.003 | 5.015 | 0.007 | 6.030 | 0.015 | 7.024 | 0.012 |
| Finger 11: | 3.976 | -0.012 | 5.011 | 0.006 | 6.019 | 0.010 | 7.014 | 0.007 |
| Finger 12: | 3.985 | -0.007 | 5.006 | 0.003 | 6.023 | 0.012 | 7.020 | 0.010 |
| Finger 13: | 3.987 | -0.007 | 5.011 | 0.006 | 6.012 | 0.006 | 7.022 | 0.011 |
| Finger 14: | 3.984 | -0.008 | 5.005 | 0.002 | 6.019 | 0.009 | 7.016 | 0.008 |
| Finger 15: | 3.986 | -0.007 | 5.010 | 0.005 | 6.021 | 0.010 | 7.019 | 0.009 |
| Finger 16: | 3.983 | -0.008 | 5.008 | 0.004 | 6.021 | 0.010 | 7.010 | 0.005 |
| Finger 17: | 3.988 | -0.006 | 5.013 | 0.006 | 6.019 | 0.009 | 7.019 | 0.010 |
| Finger 18: | 3.986 | -0.007 | 5.017 | 0.009 | 6.019 | 0.009 | 7.016 | 0.008 |
| Finger 19: | 3.987 | -0.006 | 5.021 | 0.010 | 6.021 | 0.010 | 7.016 | 0.008 |
| Finger 20: | 3.981 | -0.009 | 5.024 | 0.012 | 6.014 | 0.007 | 7.013 | 0.006 |
| Finger 21: | 3.976 | -0.012 | 5.040 | 0.020 | 6.023 | 0.011 | 7.025 | 0.012 |
| Finger 22: | 3.979 | -0.011 | 5.028 | 0.014 | 6.018 | 0.009 | 7.015 | 0.008 |
| Finger 23: | 3.985 | -0.008 | 5.033 | 0.017 | 6.017 | 0.009 | 7.016 | 0.008 |
| Finger 24: | 3.986 | -0.007 | 5.037 | 0.019 | 6.020 | 0.010 | 7.017 | 0.009 |
| Finger 25: | 3.990 | -0.005 | 5.031 | 0.016 | 6.021 | 0.011 | 7.017 | 0.008 |
| Finger 26: | 3.987 | -0.007 | 5.029 | 0.015 | 6.028 | 0.014 | 7.020 | 0.010 |

| | | | | | | | | |
|------------|-------|--------|-------|-------|-------|-------|-------|-------|
| Finger 27: | 3.987 | -0.007 | 5.021 | 0.011 | 6.019 | 0.009 | 7.018 | 0.009 |
| Finger 28: | 3.989 | -0.005 | 5.020 | 0.010 | 6.019 | 0.010 | 7.031 | 0.016 |
| Finger 29: | 3.992 | -0.004 | 5.017 | 0.009 | 6.024 | 0.012 | 7.024 | 0.012 |
| Finger 30: | 3.990 | -0.005 | 5.013 | 0.007 | 6.024 | 0.012 | 7.024 | 0.012 |
| Finger 31: | 3.987 | -0.006 | 5.014 | 0.007 | 6.025 | 0.013 | 7.027 | 0.013 |
| Finger 32: | 3.994 | -0.003 | 5.009 | 0.005 | 6.024 | 0.012 | 7.021 | 0.011 |
| Finger 33: | 3.991 | -0.004 | 5.007 | 0.004 | 6.025 | 0.012 | 7.019 | 0.010 |
| Finger 34: | 3.982 | -0.009 | 5.001 | 0.001 | 6.019 | 0.009 | 7.016 | 0.008 |
| Finger 35: | 3.984 | -0.008 | 5.012 | 0.006 | 6.019 | 0.009 | 7.016 | 0.008 |
| Finger 36: | 3.969 | -0.015 | 5.016 | 0.008 | 6.024 | 0.012 | 7.016 | 0.008 |
| Finger 37: | 3.980 | -0.010 | 5.012 | 0.006 | 6.013 | 0.007 | 7.013 | 0.007 |
| Finger 38: | 3.979 | -0.010 | 5.017 | 0.009 | 6.017 | 0.009 | 7.011 | 0.006 |
| Finger 39: | 3.985 | -0.007 | 5.023 | 0.011 | 6.025 | 0.012 | 7.012 | 0.006 |
| Finger 40: | 3.984 | -0.008 | 5.023 | 0.011 | 6.017 | 0.008 | 7.016 | 0.008 |
| Average: | 3.986 | -0.007 | 5.020 | 0.010 | 6.021 | 0.010 | 7.019 | 0.009 |

Segmented Cement Bond Log Calibration Report

| | |
|----------------|------|
| Serial Number: | 1066 |
| Tool Model: | 004 |

| | | |
|------------------------------|---------|----|
| Calibration Casing Diameter: | 7.000 | in |
| Calibration Depth: | 681.005 | ft |

Master Calibration, performed Mon May 12 19:45:11 2014:

| | Raw (v) | | Calibrated (mv) | | Results | |
|-----|---------|-------|-----------------|---------|---------|--------|
| | Zero | Cal | Zero | Cal | Gain | Offset |
| 3FT | 0.011 | 0.732 | 0.800 | 62.165 | 85.188 | -0.156 |
| 5FT | 0.001 | 0.701 | 0.800 | 62.165 | 87.666 | 0.693 |
| S1 | 0.006 | 0.664 | 0.000 | 100.000 | 151.870 | -0.862 |
| S2 | 0.006 | 0.691 | 0.000 | 100.000 | 145.997 | -0.875 |
| S3 | 0.011 | 0.729 | 0.000 | 100.000 | 139.169 | -1.514 |
| S4 | 0.017 | 0.769 | 0.000 | 100.000 | 133.037 | -2.269 |
| S5 | 0.023 | 0.781 | 0.000 | 100.000 | 132.089 | -3.097 |
| S6 | 0.023 | 0.771 | 0.000 | 100.000 | 133.715 | -3.043 |
| S7 | 0.023 | 0.742 | 0.000 | 100.000 | 139.015 | -3.183 |
| S8 | 0.021 | 0.693 | 0.000 | 100.000 | 148.875 | -3.122 |

Gamma Ray Calibration Report

| | |
|----------------|--------------------------|
| Serial Number: | 000001 |
| Tool Model: | 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 | Elliott State 26C-17HZ |
| Field | Wattenberg |
| County | Weld |
| State | Colorado |