



Temperature
Gamma Ray
Casing Collar Log

| | | | | | | | | | |
|--------------------------------|--------------------|------------------------|-------|----------------|----------|-----------------|----|----------------|--|
| Company TEP Rocky Mountain LLC | | Well Federal RU 413-17 | | Field Rulison | | County Garfield | | State Colorado | |
| Company TEP Rocky Mountain LLC | | Well Federal RU 413-17 | | Field Rulison | | County Garfield | | State Colorado | |
| Location: | | API # : 05-045-23740 | | Other Services | | | | | |
| SEC 17 TWP 7S RGE 93W | | Ground Level | | Elevation | | 8365.6' | | | |
| Permanent Datum | | Log Measured From | | Kelly Bushing | | 24 FT | | K.B. 8389.6' | |
| Drilling Measured From | | Kelly Bushing | | 24 FT | | | | D.F. 8388.6' | |
| | | | | | | | | G.L. 8365.6' | |
| Date | 20-APR-2018 | | | | | | | | |
| Run Number | One | | | | | | | | |
| Depth Driller | 10722 FT | | | | | | | | |
| Depth Logger | 10672 FT | | | | | | | | |
| Bottom Logged Interval | 10672 FT | | | | | | | | |
| Top Log Interval | Surface | | | | | | | | |
| Open Hole Size | 8.750" | | | | | | | | |
| Type Fluid | Fresh Water | | | | | | | | |
| Density / Viscosity | 8.34 lb/gal | | | | | | | | |
| Max. Recorded Temp. | 256°F | | | | | | | | |
| E. estimated Cement Top | 5425 FT | | | | | | | | |
| Time Well Ready | ROA | | | | | | | | |
| Time Logger on Bottom | 12.00 | | | | | | | | |
| E. equipment Number | HD-0359 | | | | | | | | |
| Location | Grand Junction, CO | | | | | | | | |
| Recorded By | Z. Fisher | | | | | | | | |
| Witnessed By | Nathan Burr | | | | | | | | |
| Borehole Record | | To | | Size | | Weight | | From | |
| Run Number | Bit | From | To | Size | Weight | From | To | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| Casing Record | Size (in) | Wgt (lbs/ft) | Grade | Top | Bottom | | | | |
| Surface Casing | 9 5/8 | 32.3 | H-40 | Surface | 1139 FT | | | | |
| Intermediate #1 | 4 1/2 | 11.6 | P-110 | Surface | 10682 FT | | | | |
| Intermediate #2 | | | | | | | | | |
| Inner | | | | | | | | | |

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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 Kelly Bushing at 24 FT
Marker Joint logged from 6673 to 6695 FT
Log ran from 10672 FT to Surface

Thank you for choosing Reliance Oilfield Services, LLC!!



Main Pass (Quick Look)

| | |
|---------------------|---|
| Database File | tep_federal ru 413-17_temp\tep_federal ru 413-17_temp_04-20-18.db |
| Dataset Pathname | main.1 |
| Presentation Format | ros_temp_ql_tep |
| Dataset Creation | Sat Apr 21 02:50:24 2018 |
| Charted by | Depth in Feet scaled 1:10000 |

50

TEMP (degF)

250

TEMP (degF)

500

62.7

1000

70.4

1500

79.4

2000

84.9

2500

90.7

3000

98.6

3500

105.9

4000

110.3

4500

117.0

5000

121.2

5500

136.8

Estimated Top of Cement →

6000

154.4

6500

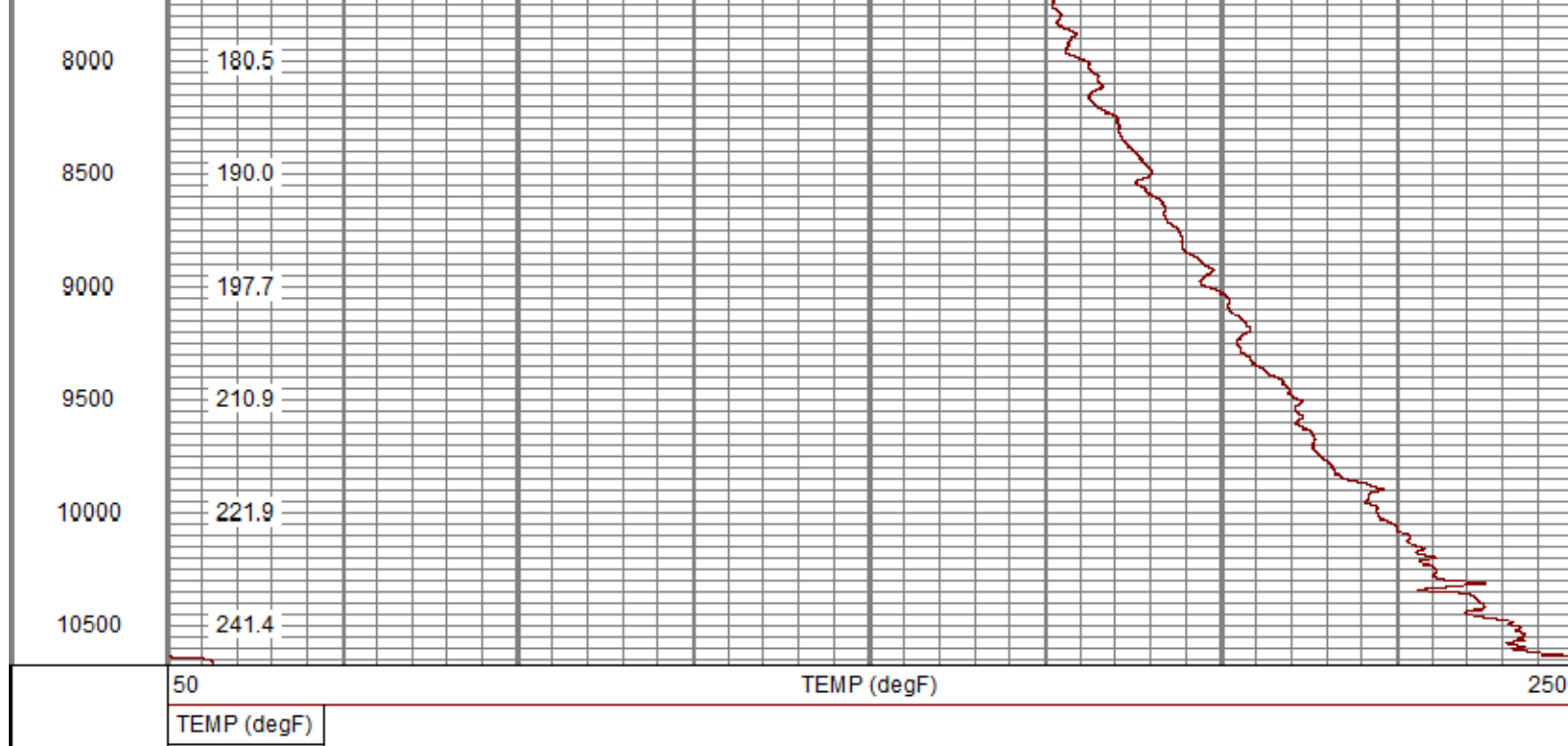
156.1

7000

163.6

7500

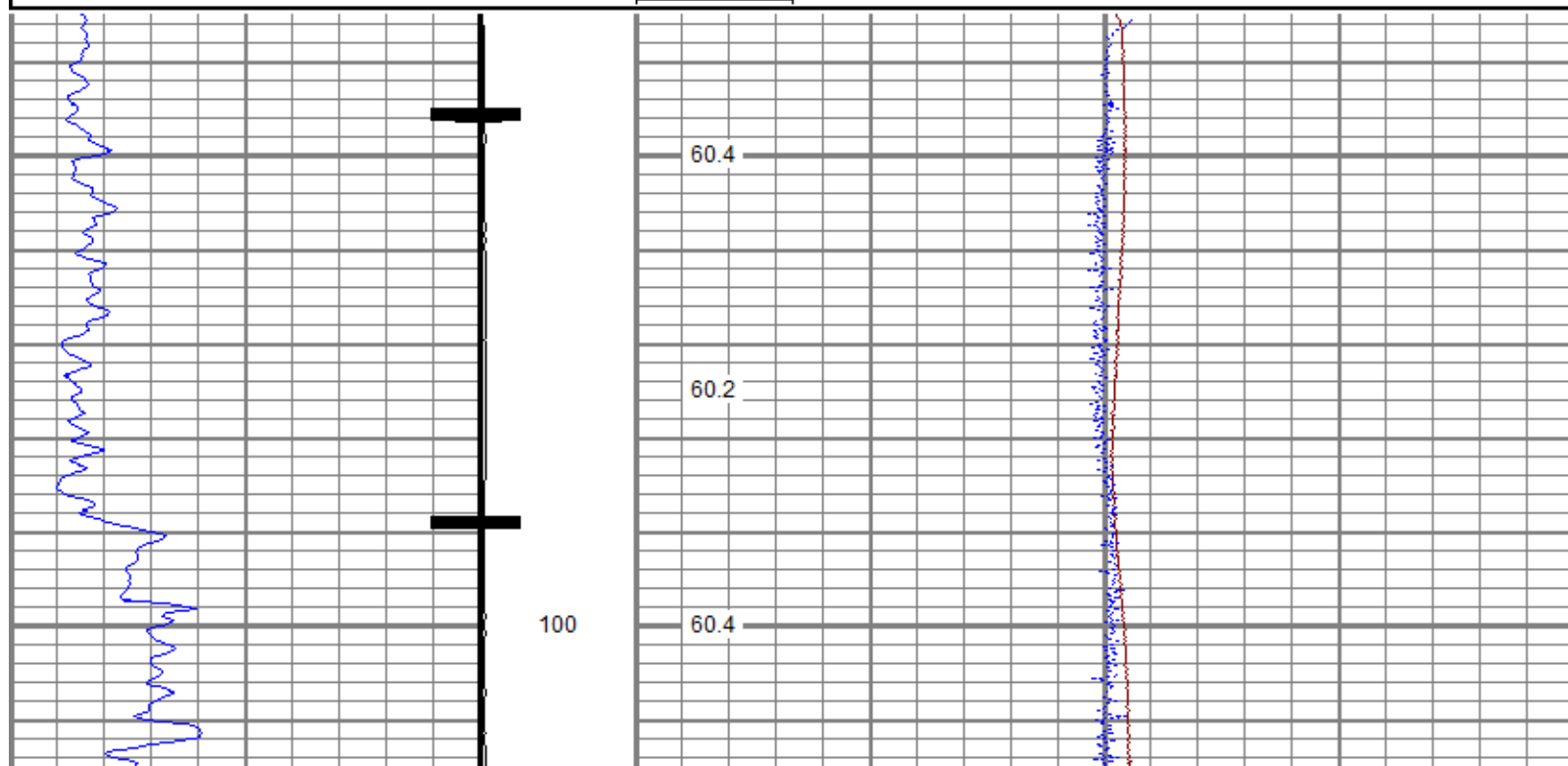
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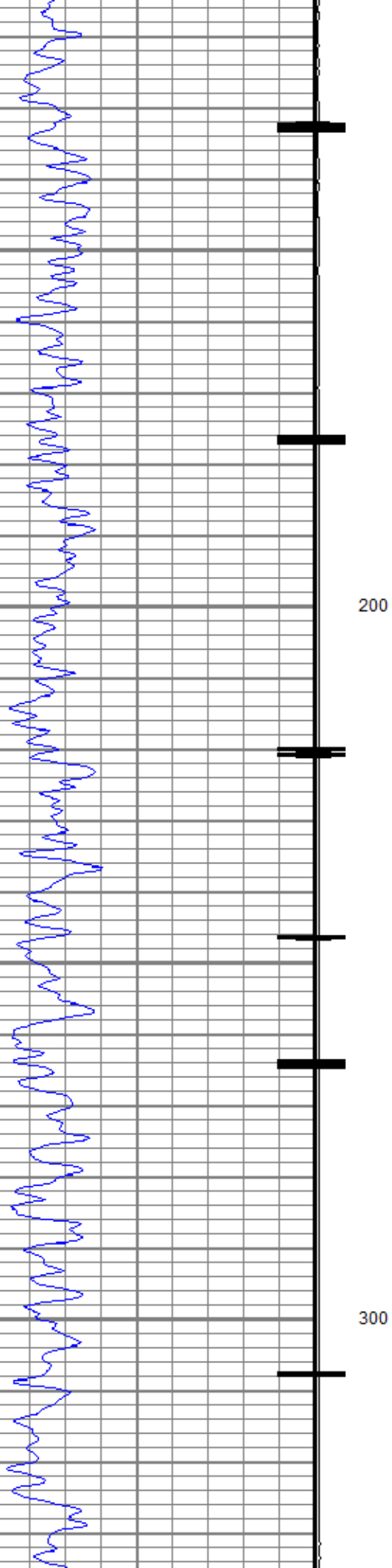


Main Pass

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 Dataset Pathname main
 Presentation Format ros_temp_tep
 Dataset Creation Sat Apr 21 01:15:28 2018
 Charted by Depth in Feet scaled 1:240

| | | | | | | |
|---|-----------------------|-----|-----------|-------------|-------------|----|
| 0 | Gamma Ray (GAPI) | 120 | LTEN | 50 | TEMP (degF) | 70 |
| | Casing Collar Locator | 0 | (lb) 2000 | -1 | DTMP (degF) | 1 |
| | | | | TEMP (degF) | | |





60.5

60.8

61.1

61.2

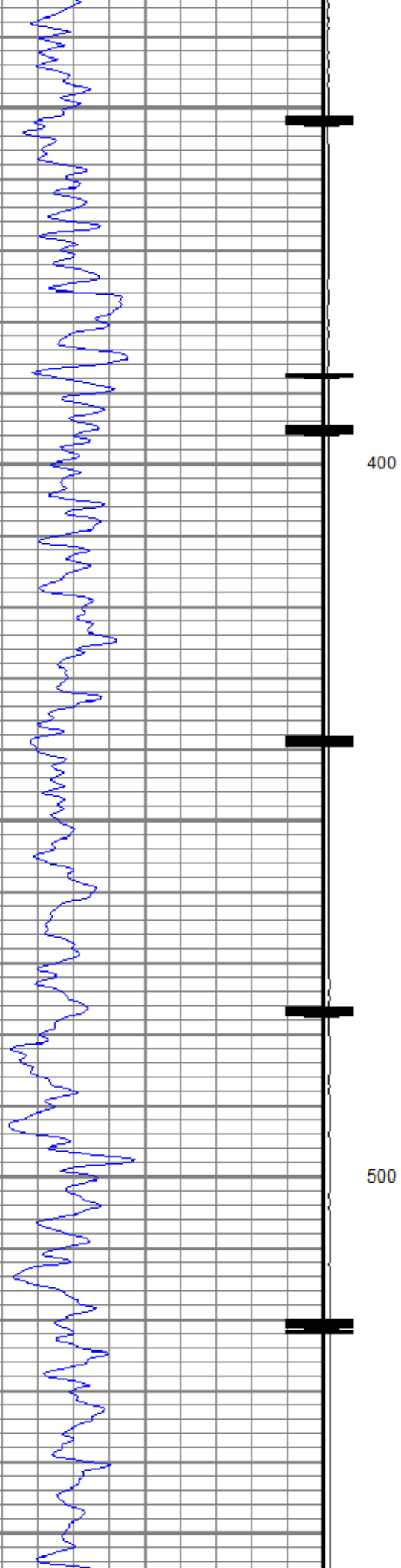
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60.8

60.5

60.5

60.6



61.2

62.0

62.4

62.4

62.2

62.2

62.7

63.1

63.5



600

700

63.9

64.1

63.6

63.8

64.3

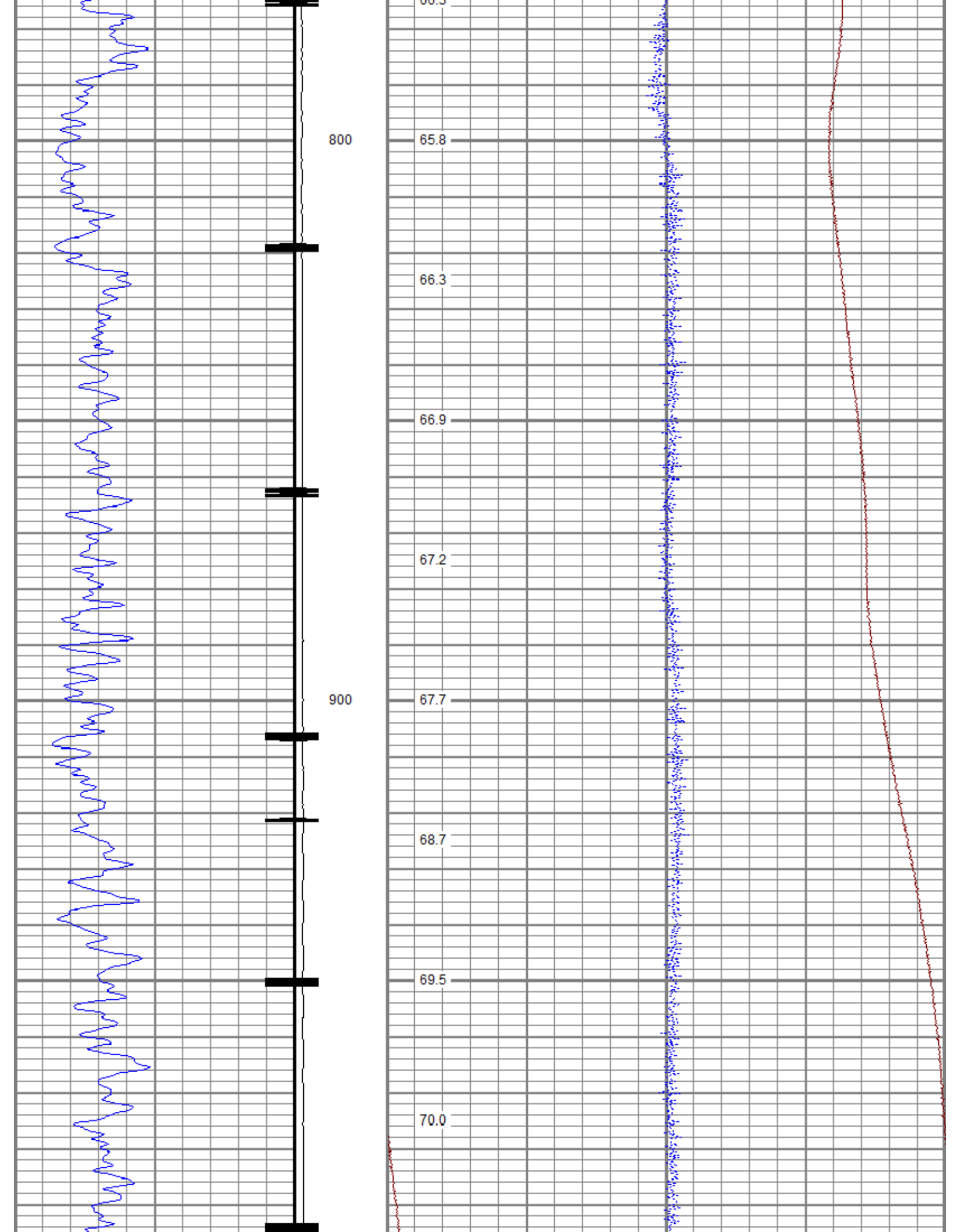
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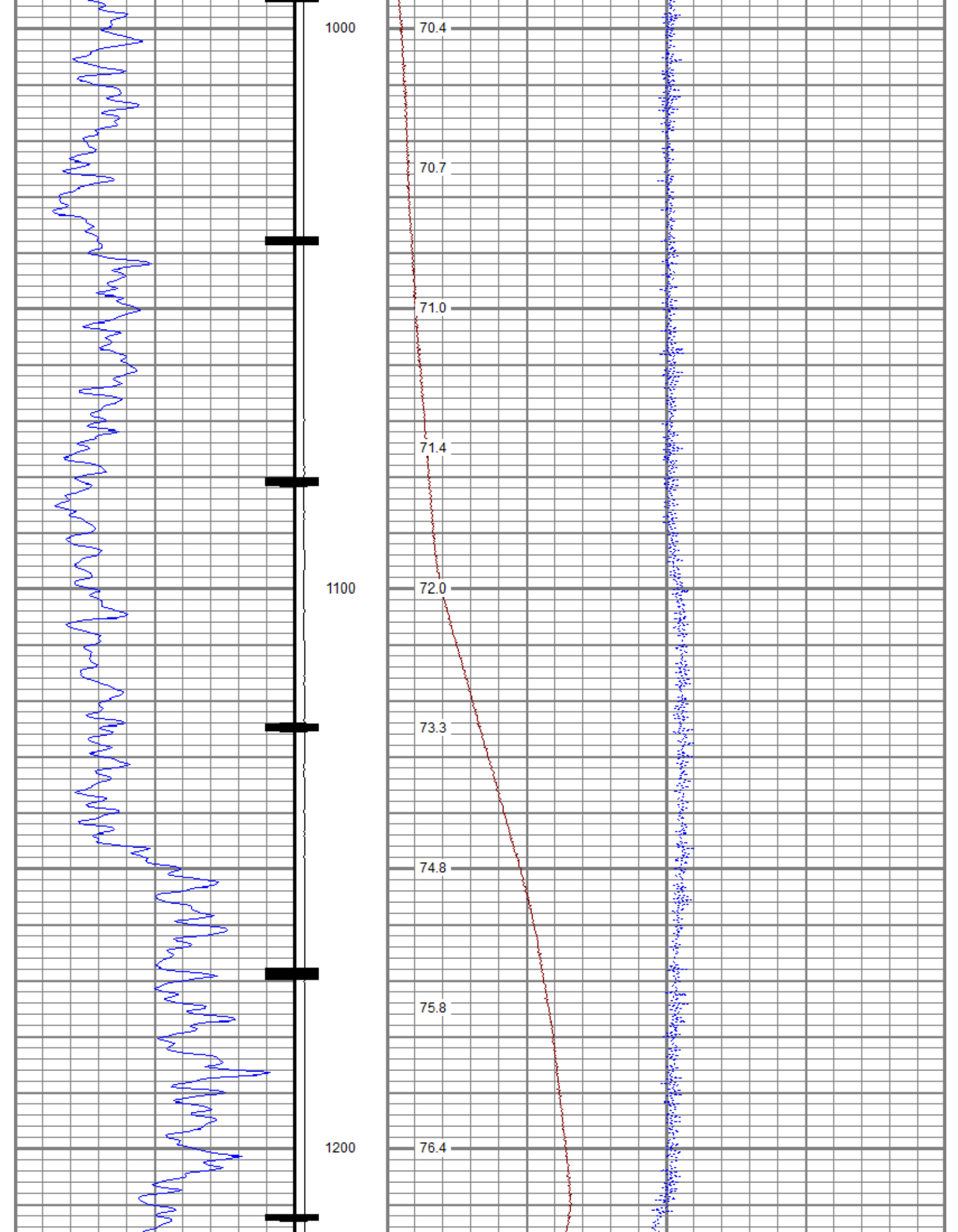
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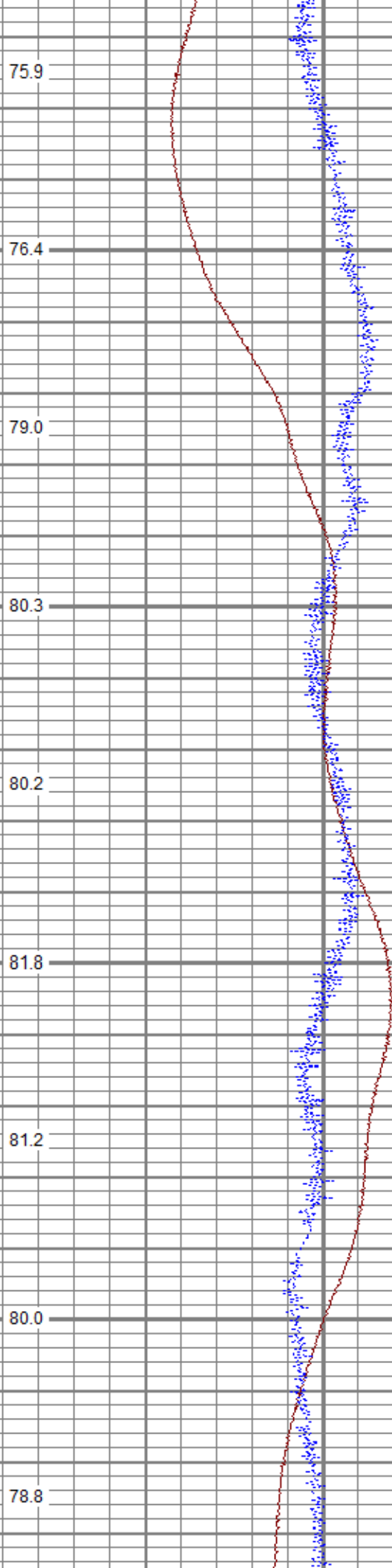
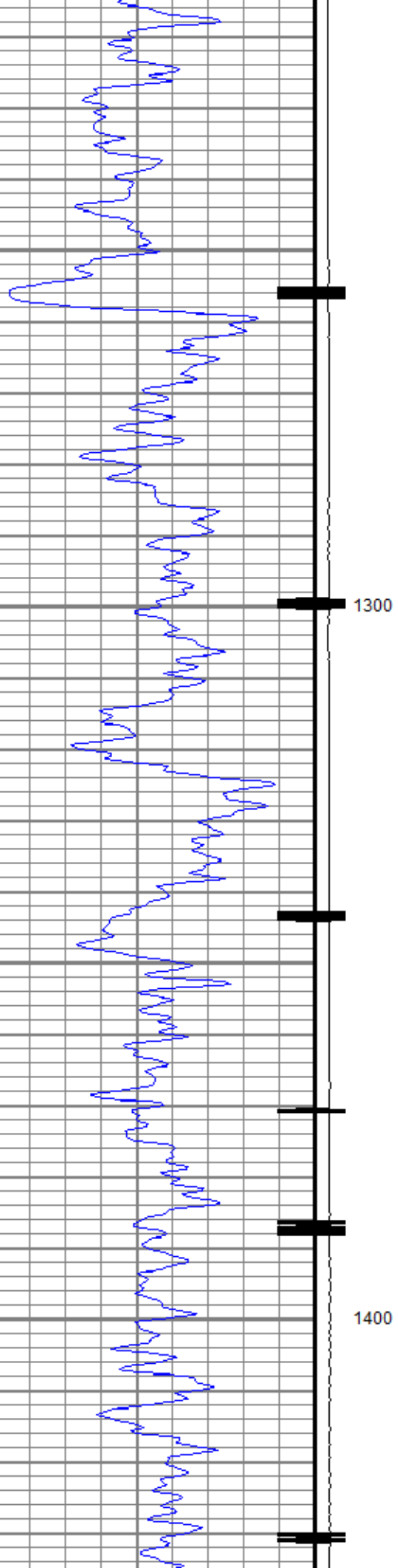
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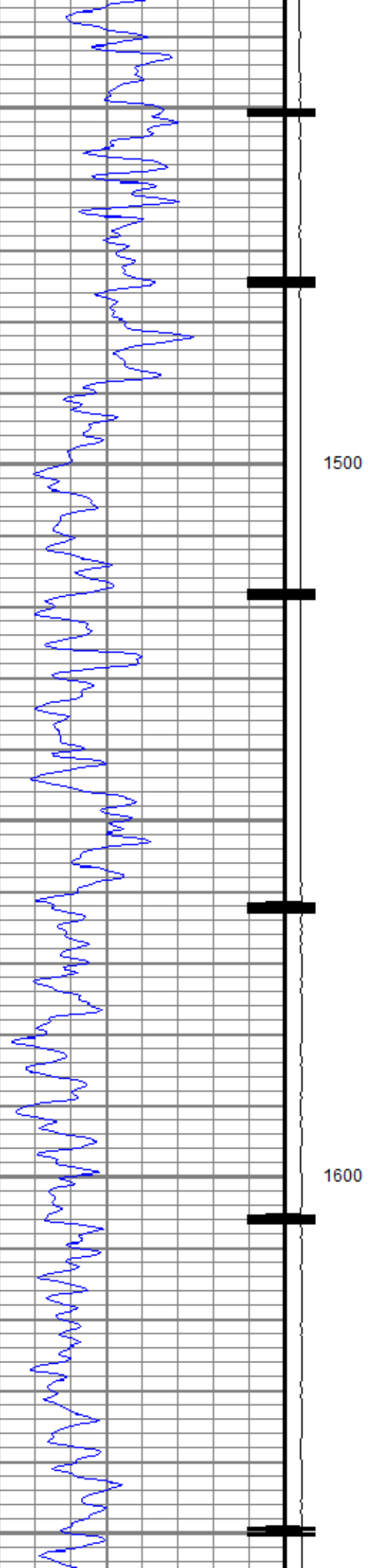
66.2











78.9

79.7

79.4

80.5

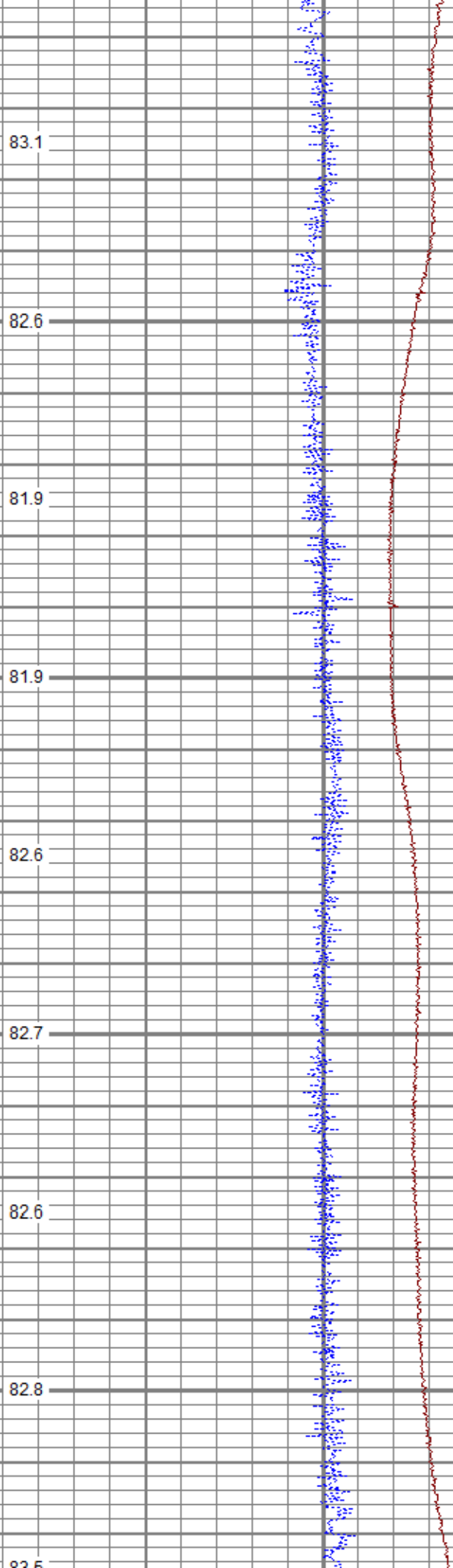
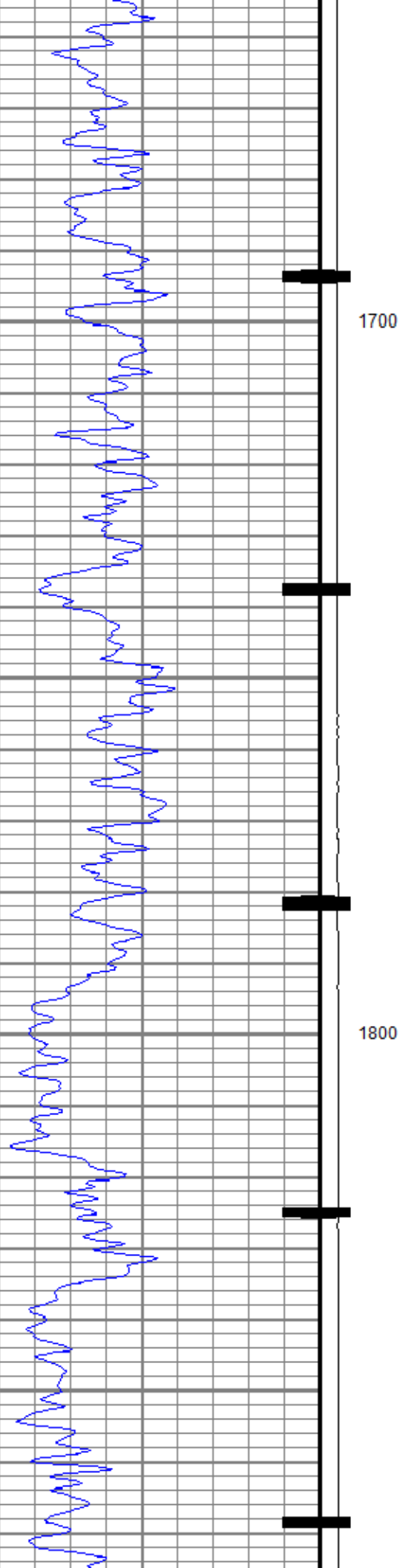
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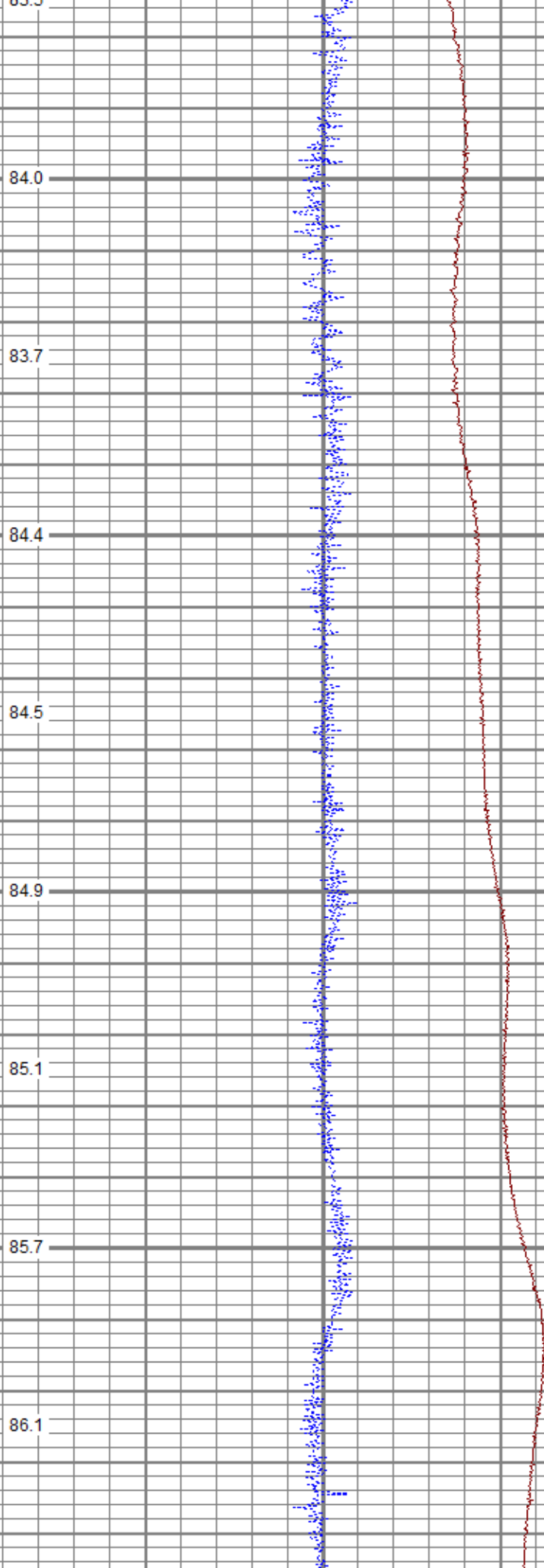
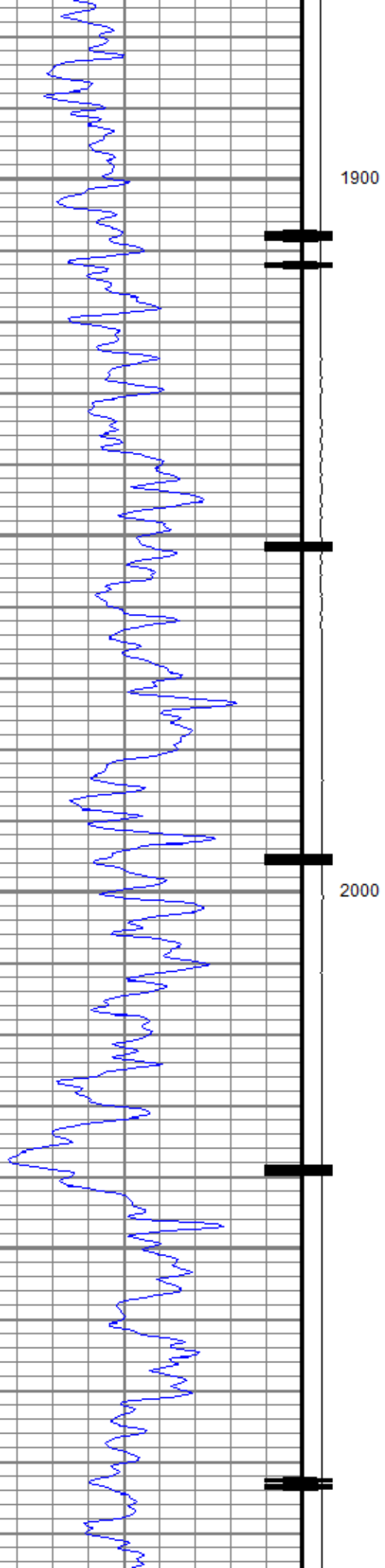
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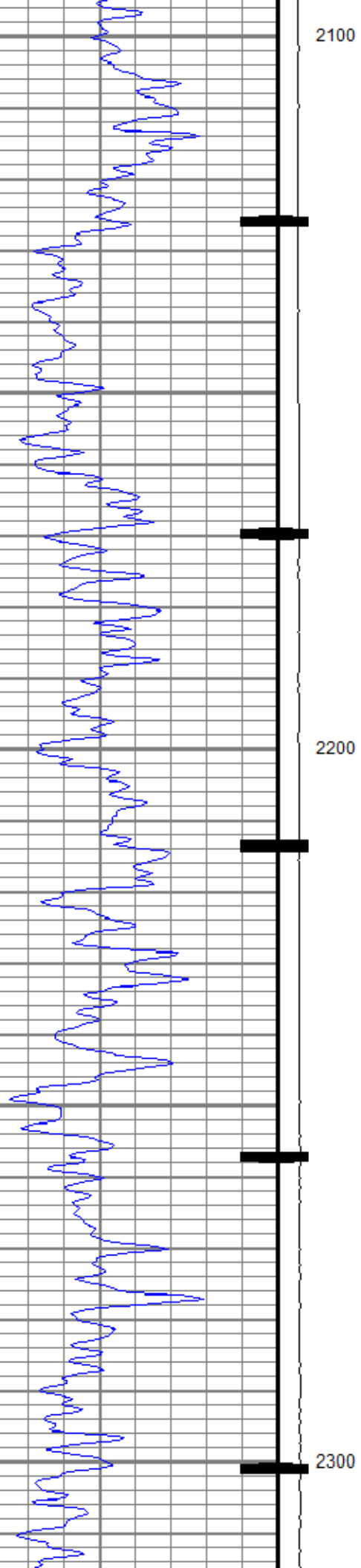
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83.5

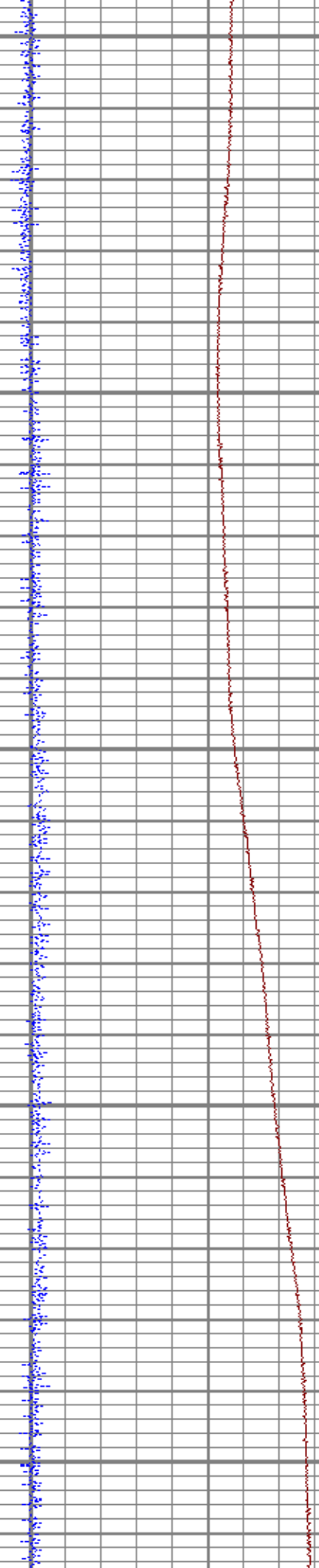
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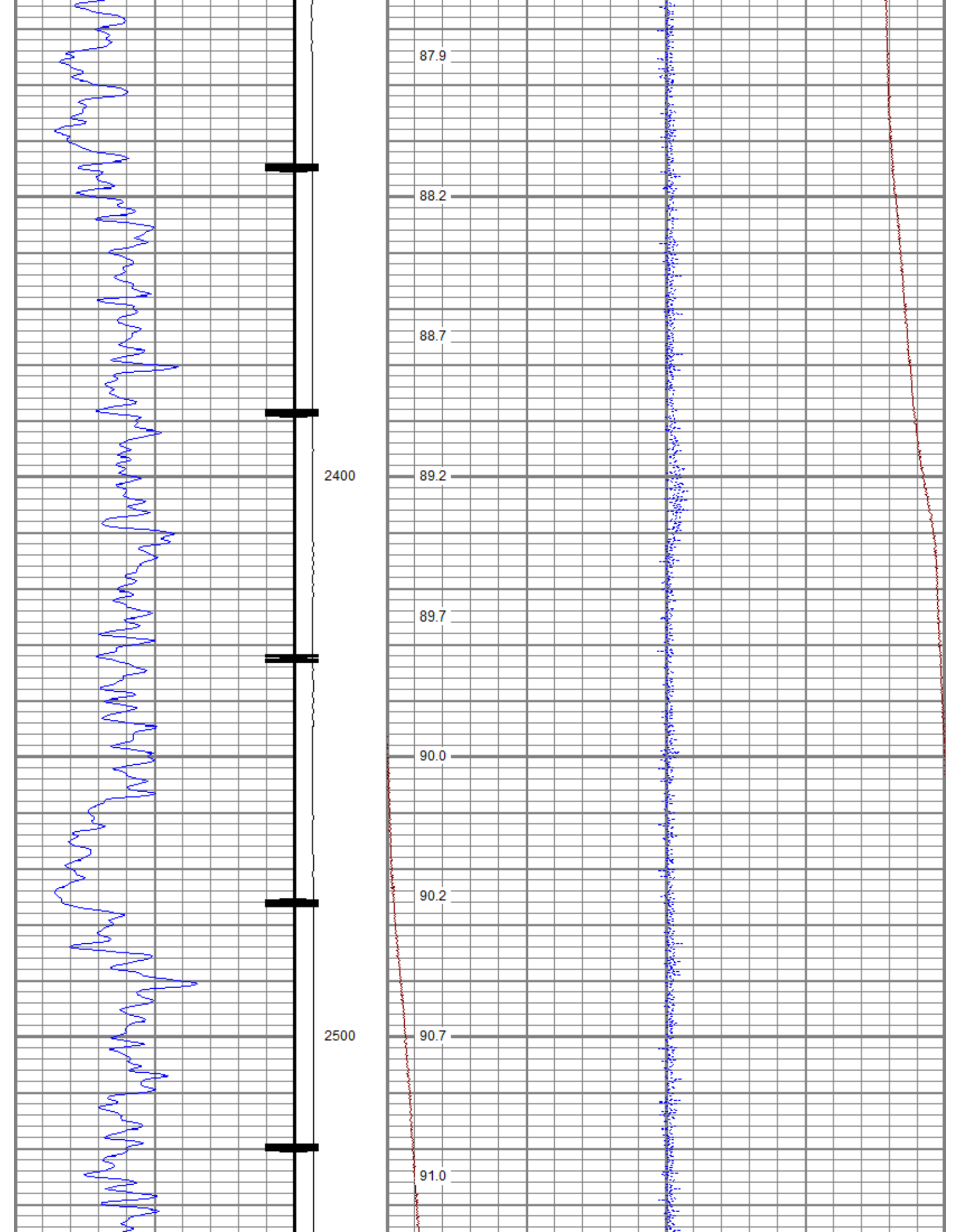


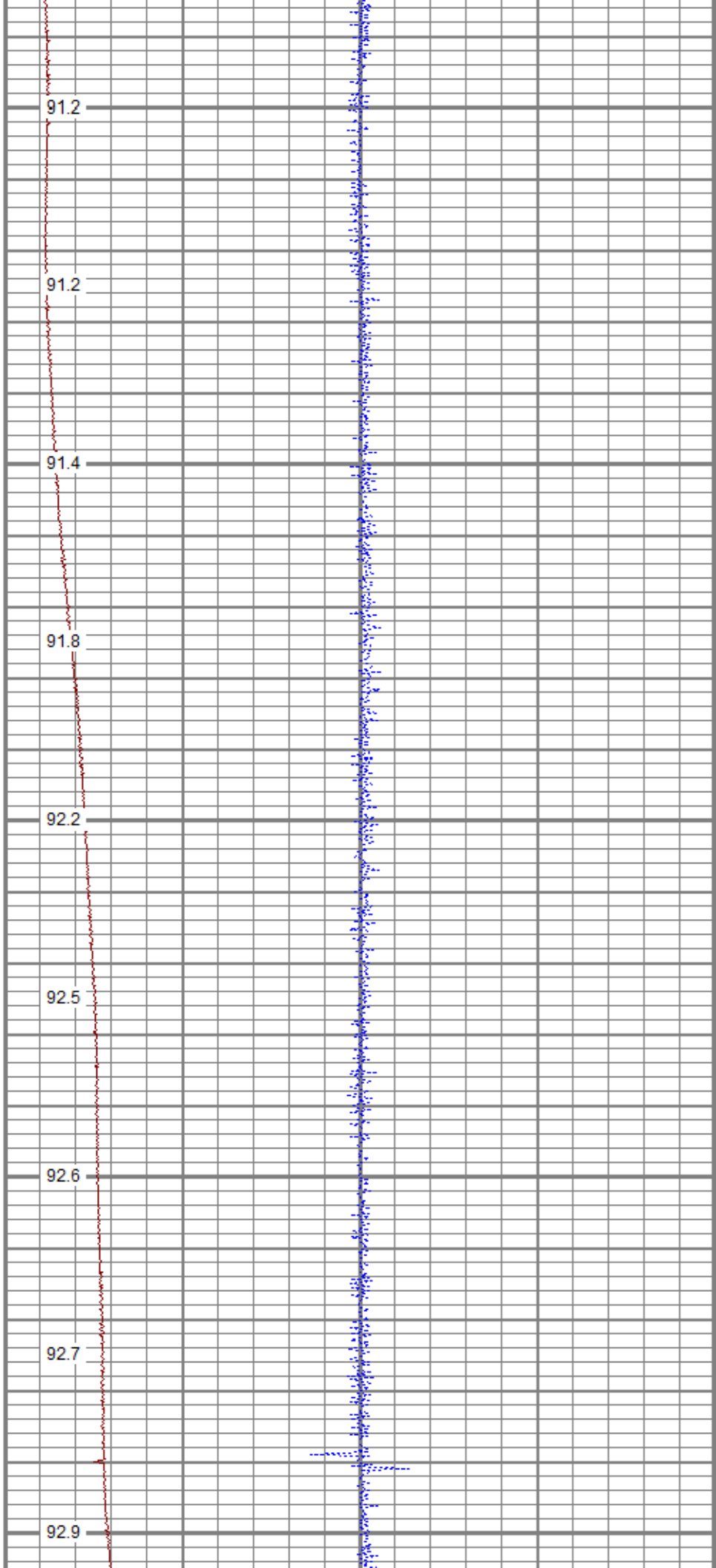
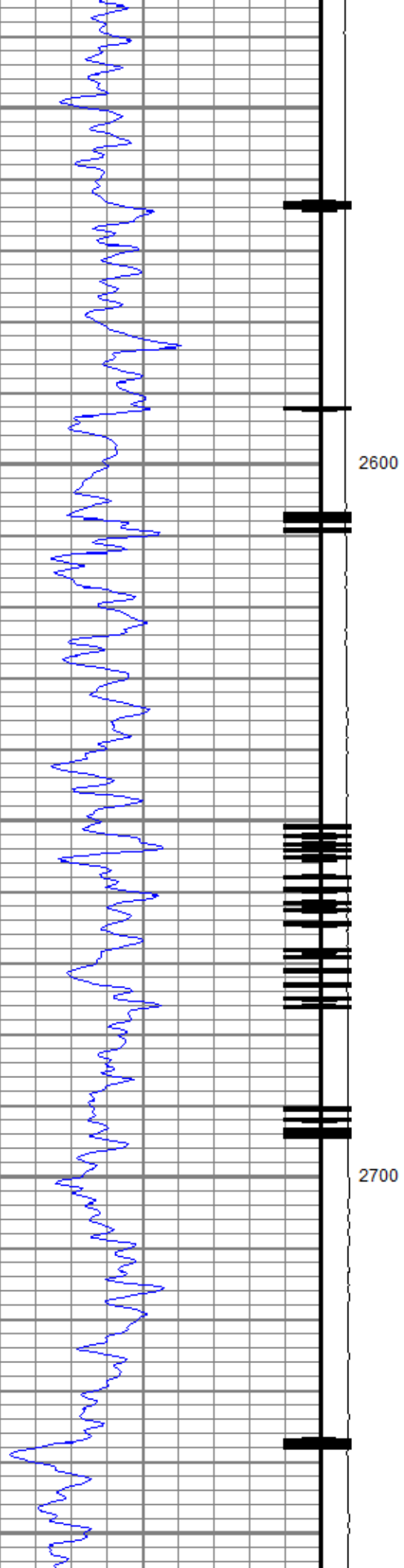


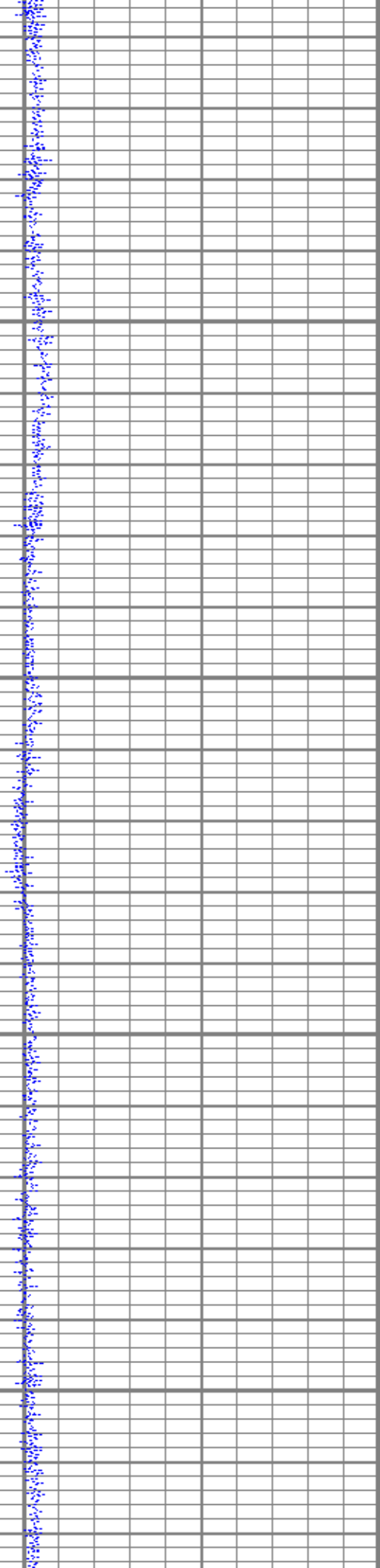
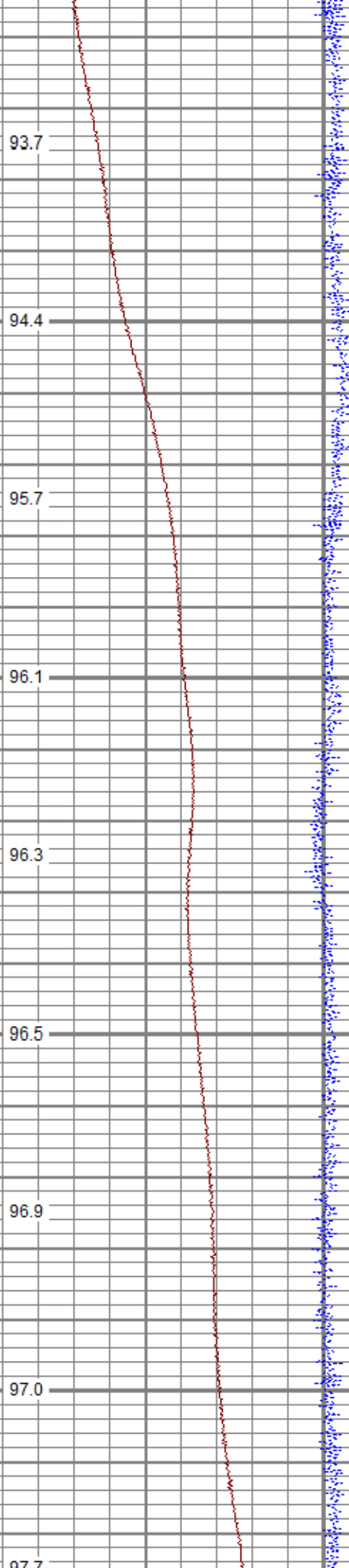
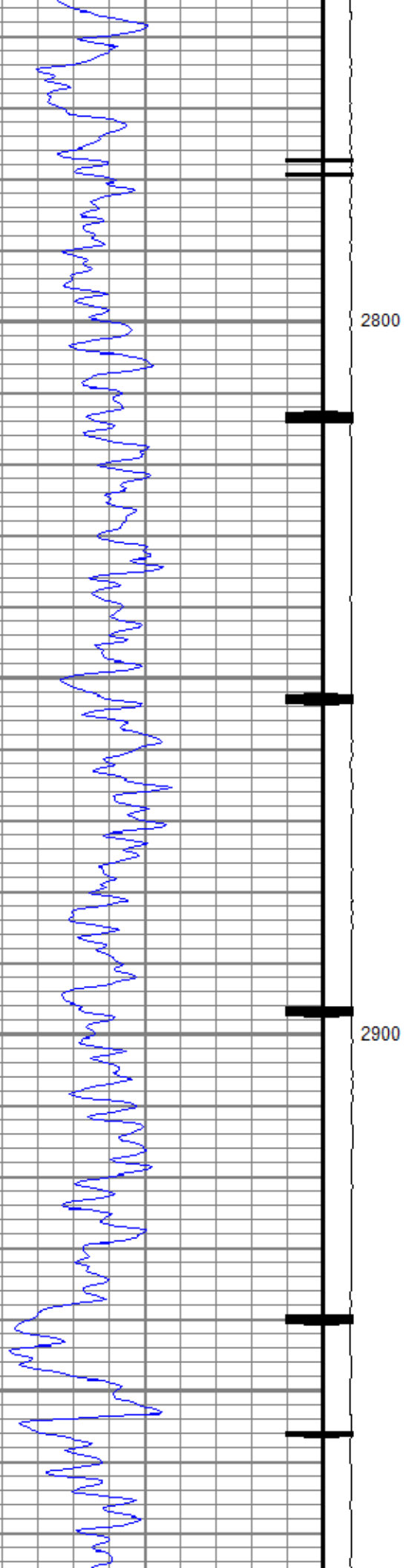


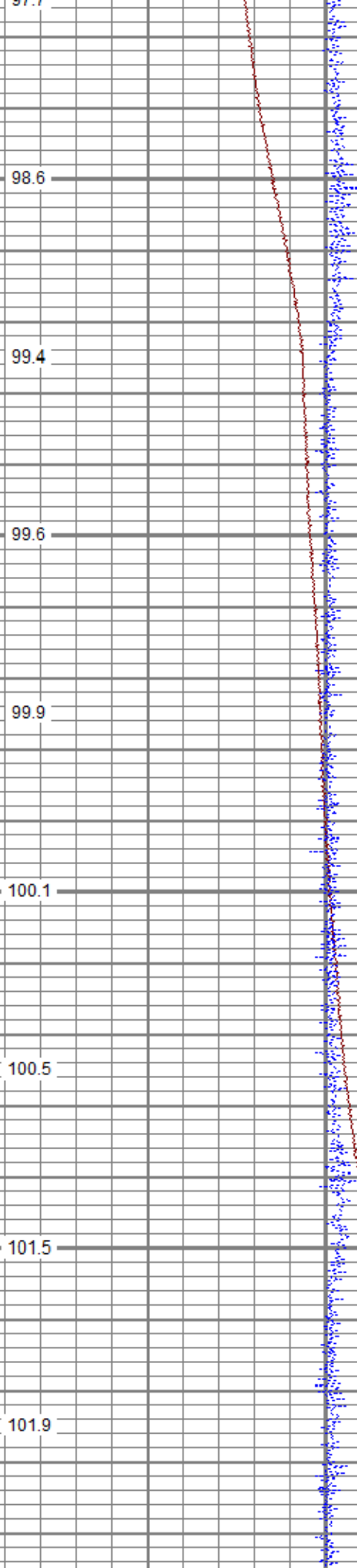
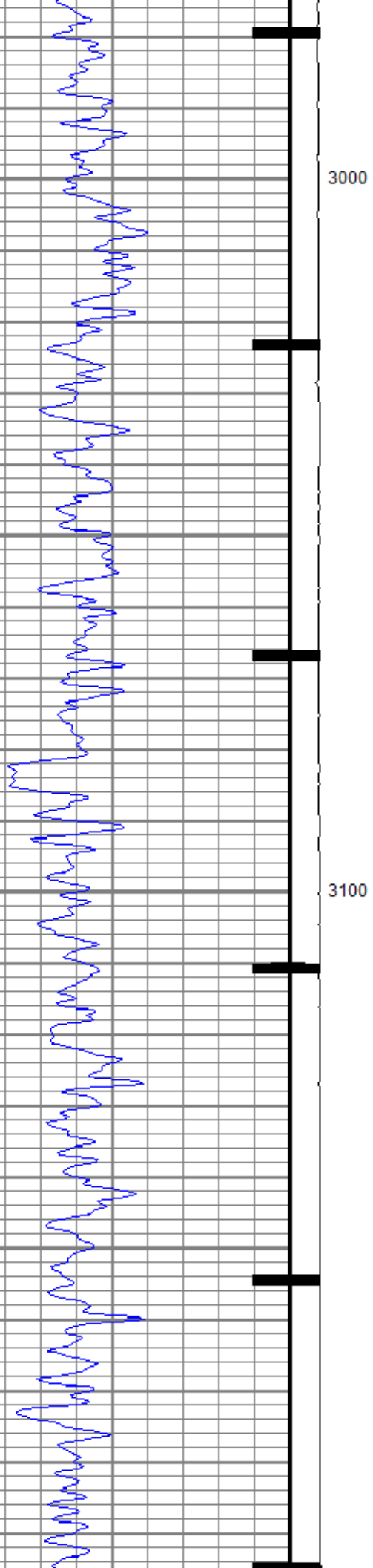
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85.5
85.3
85.4
85.8
86.4
86.9
87.5
87.8

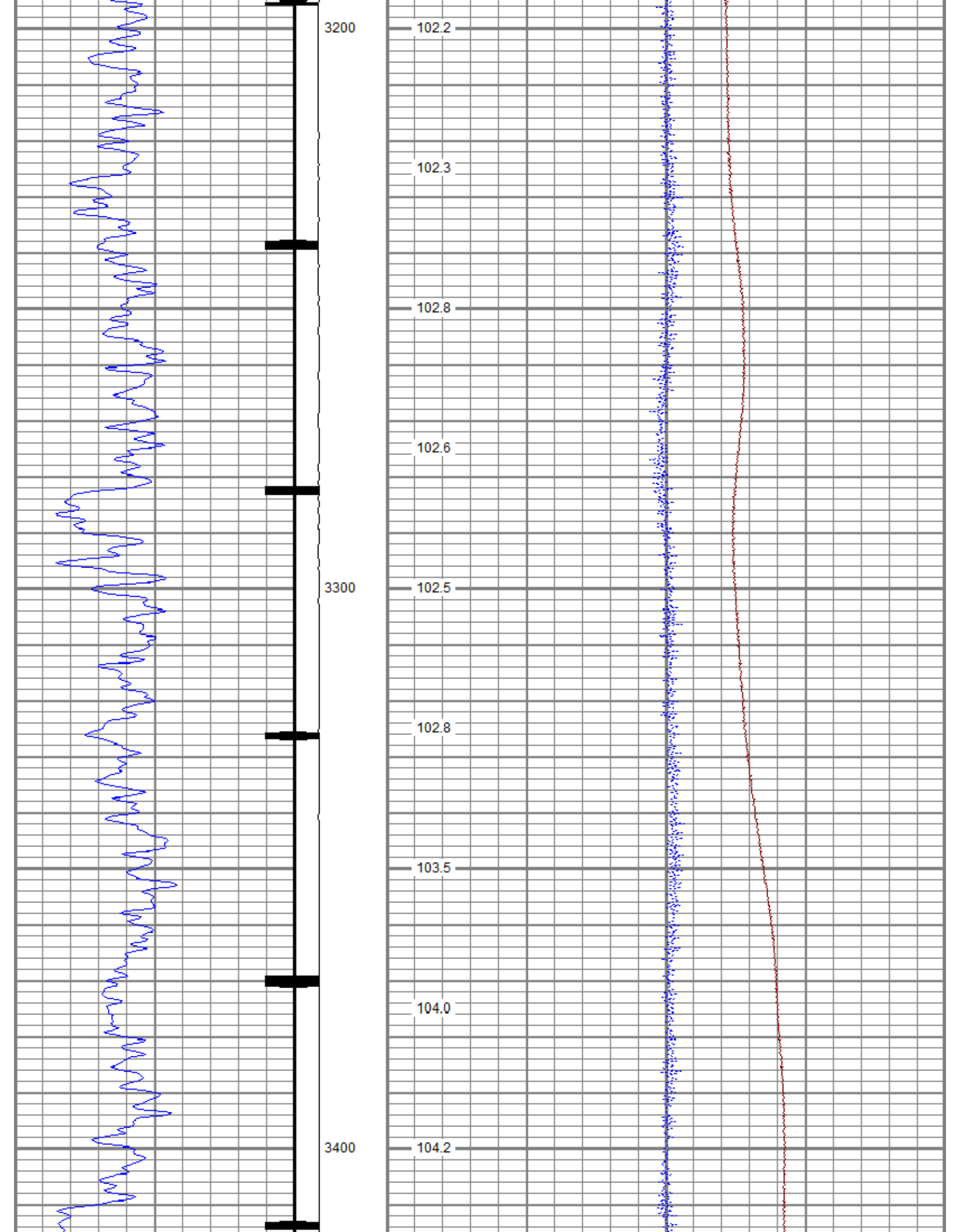


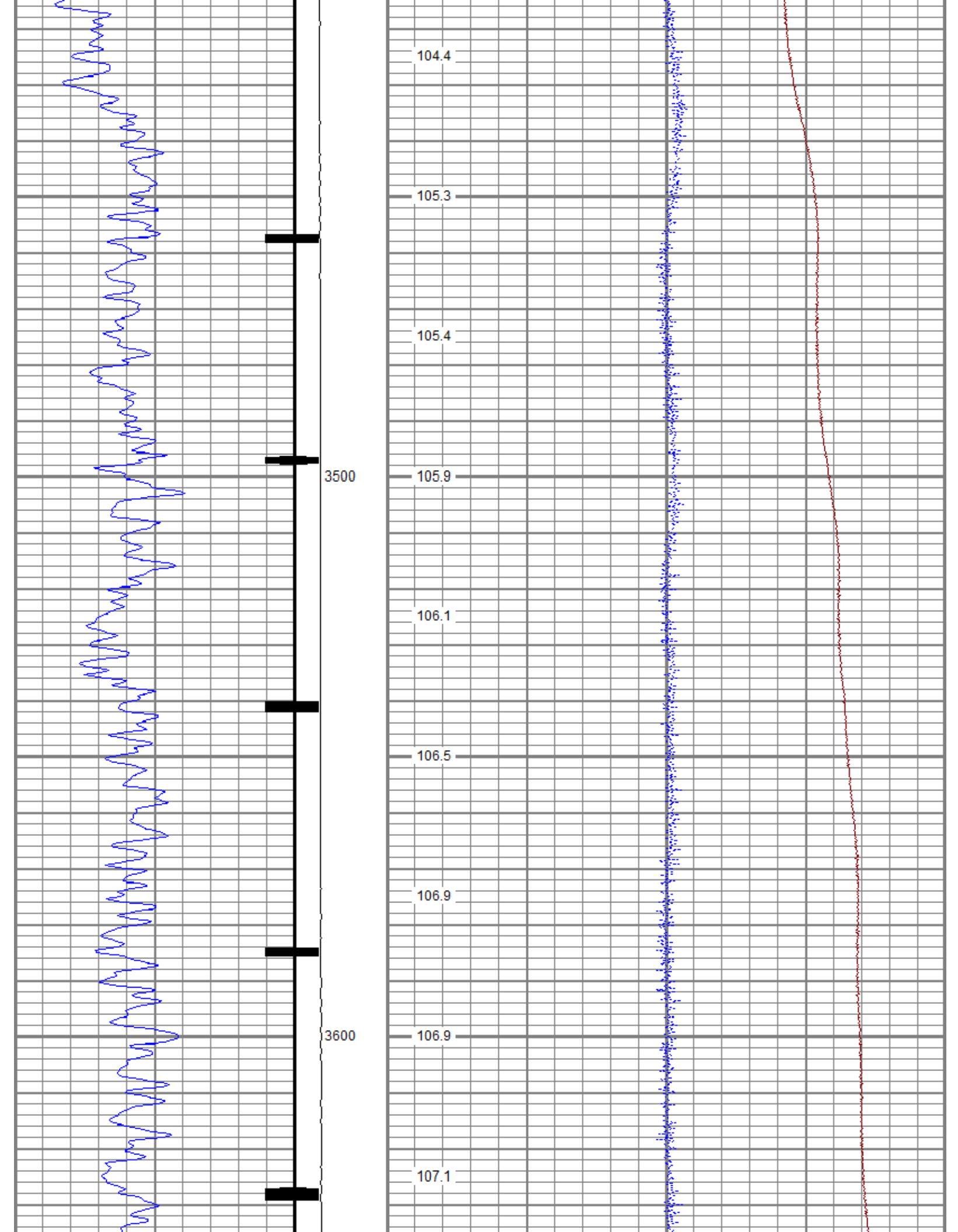


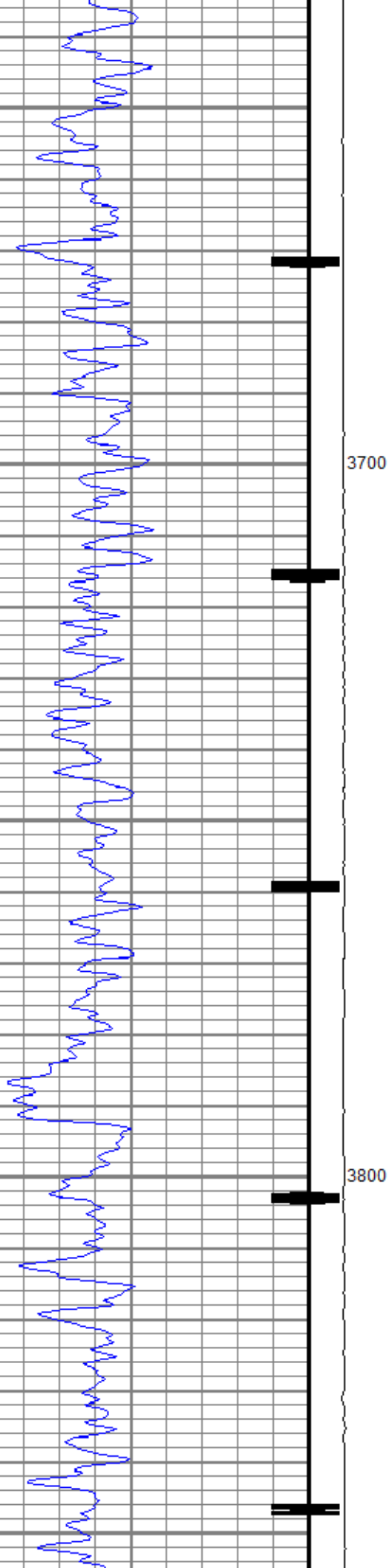












107.3

107.0

106.9

107.1

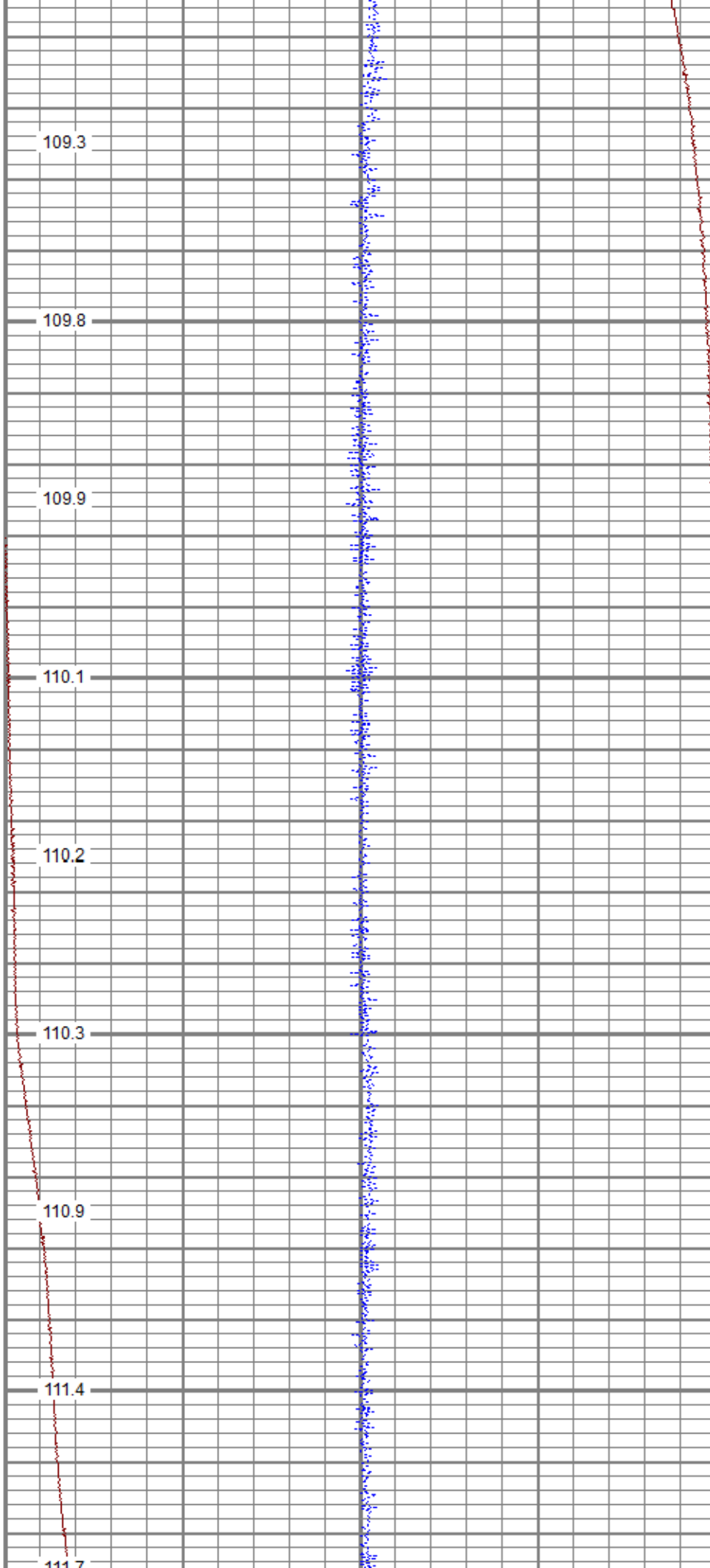
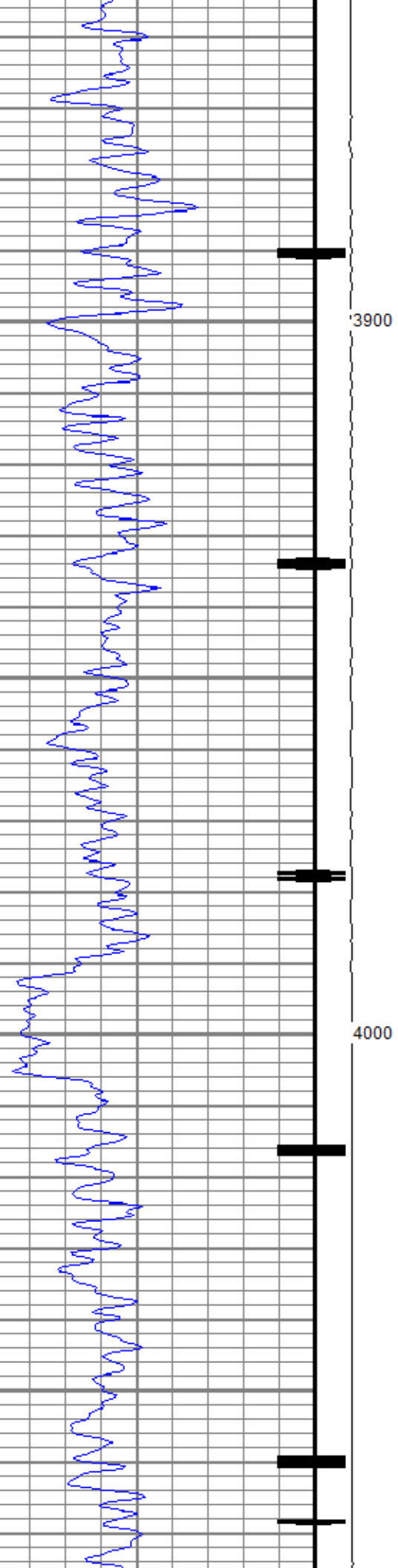
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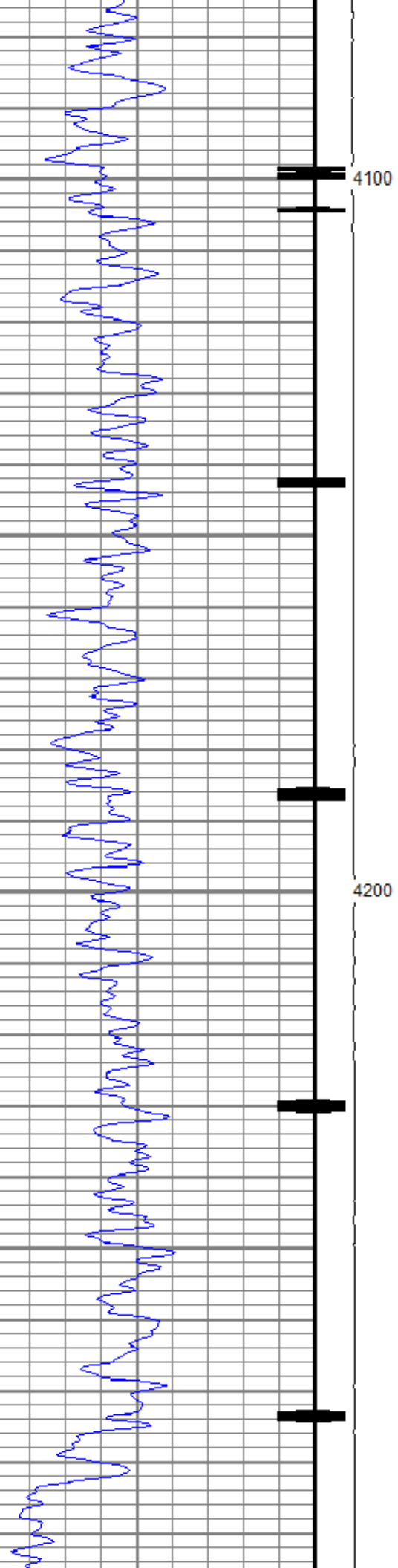
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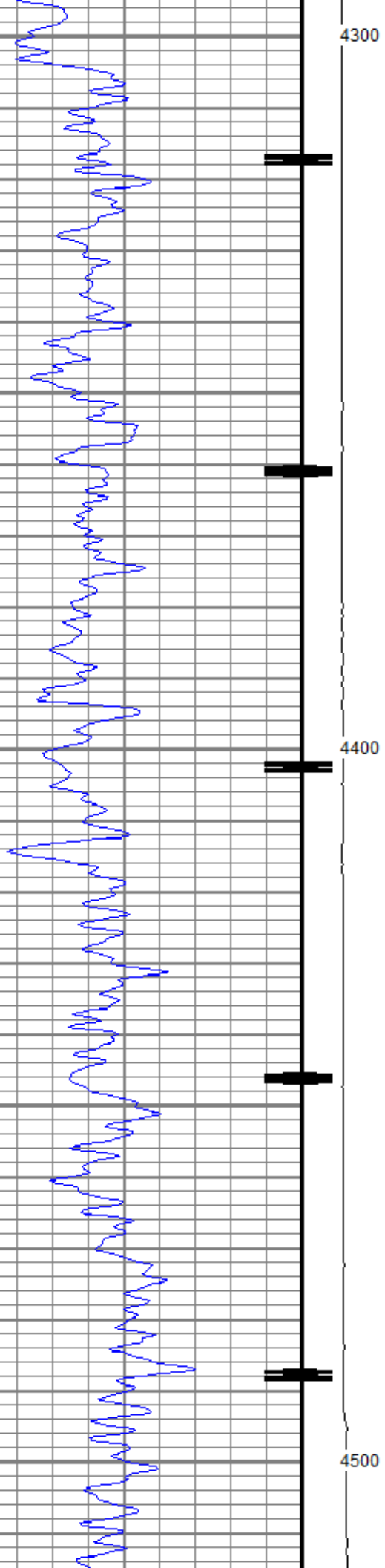
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108.0

108.6







113.8

114.3

114.7

114.9

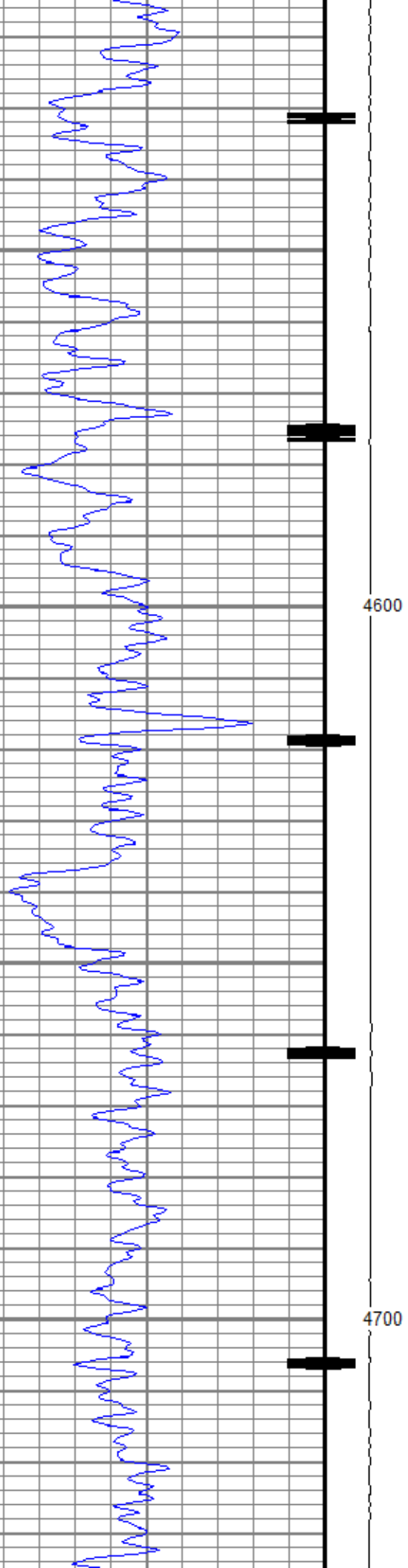
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116.1

116.7

117.0



116.4

116.3

116.4

116.7

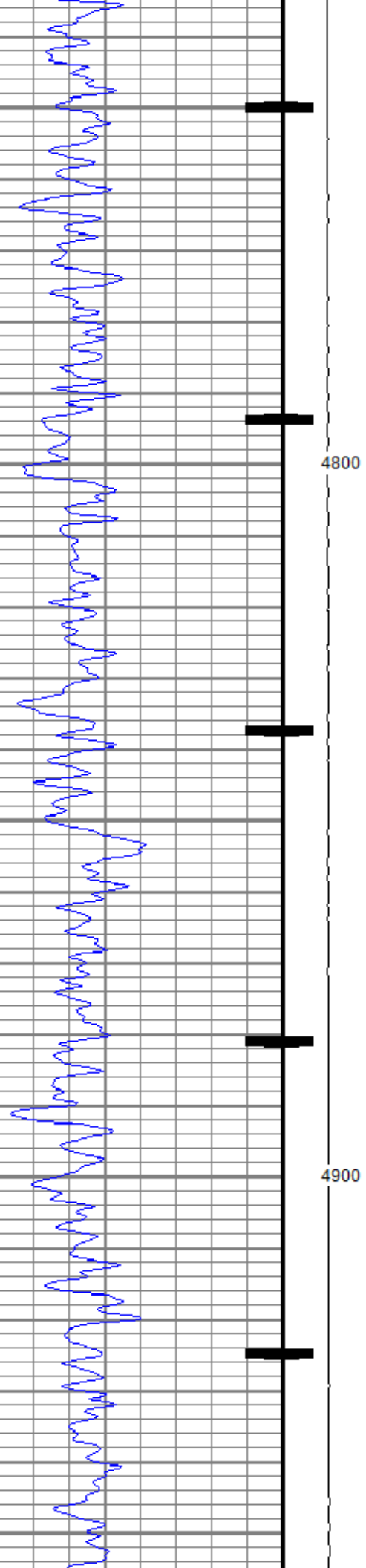
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117.3

117.5

117.5

117.7



117.8

118.2

118.8

119.0

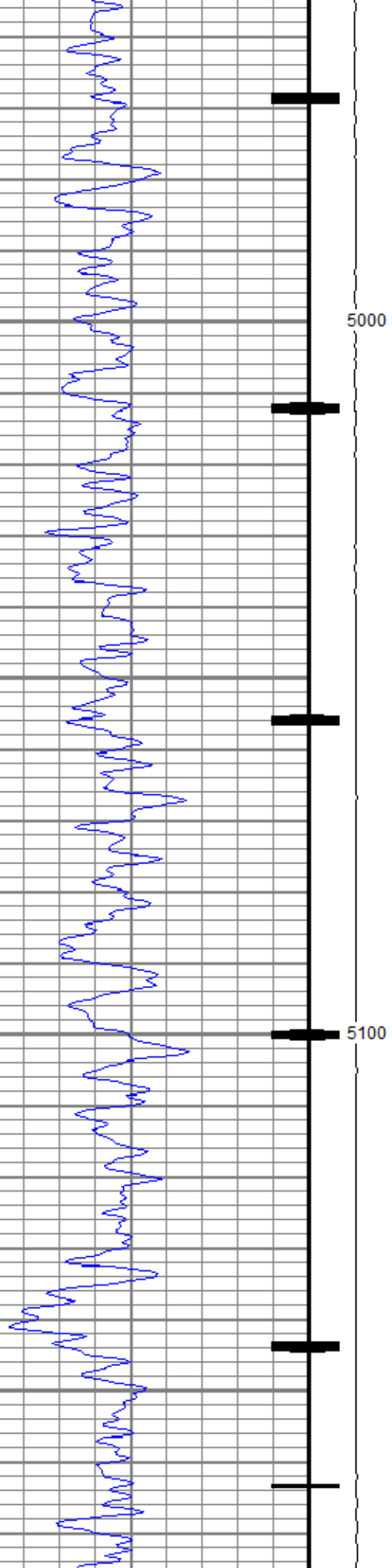
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119.4

119.8

120.1

120.6



120.8

121.2

121.5

121.7

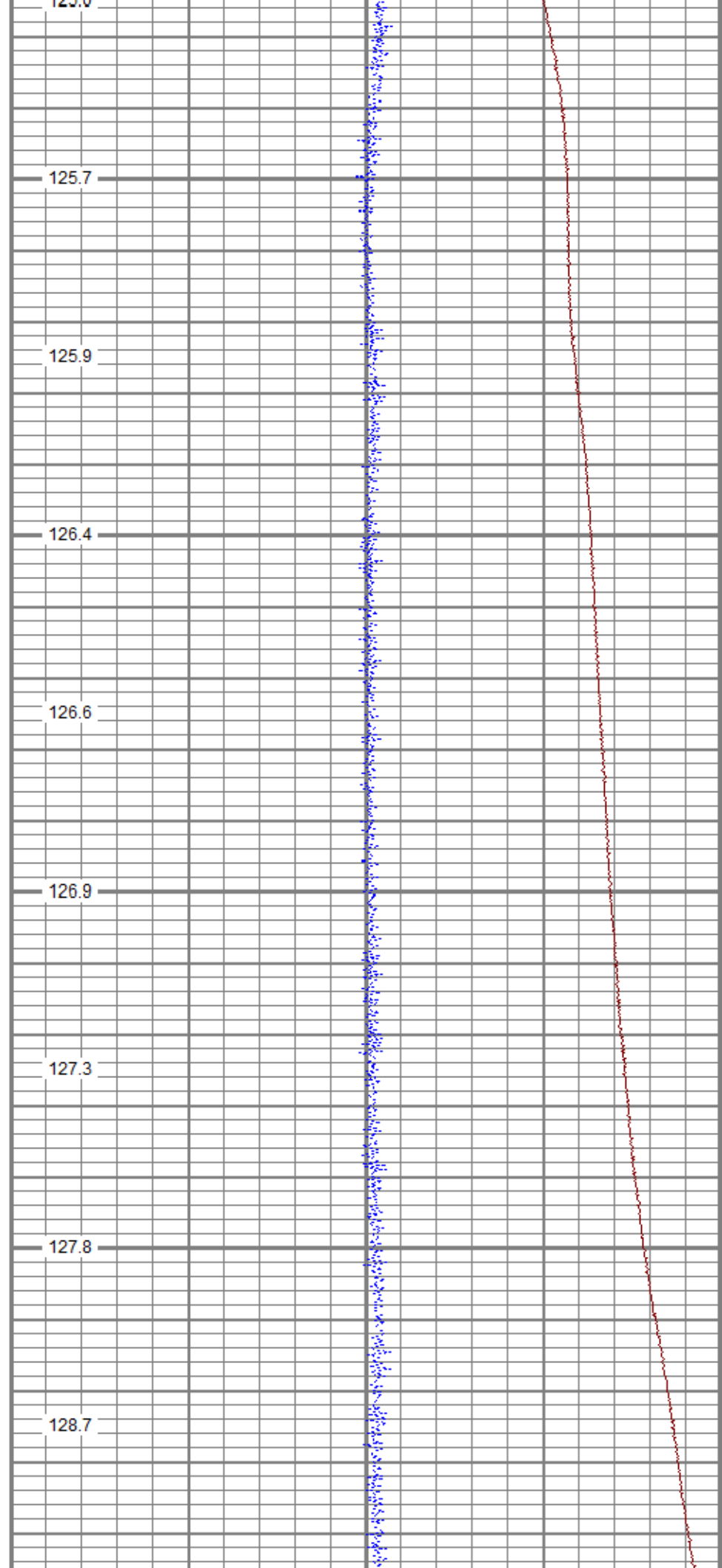
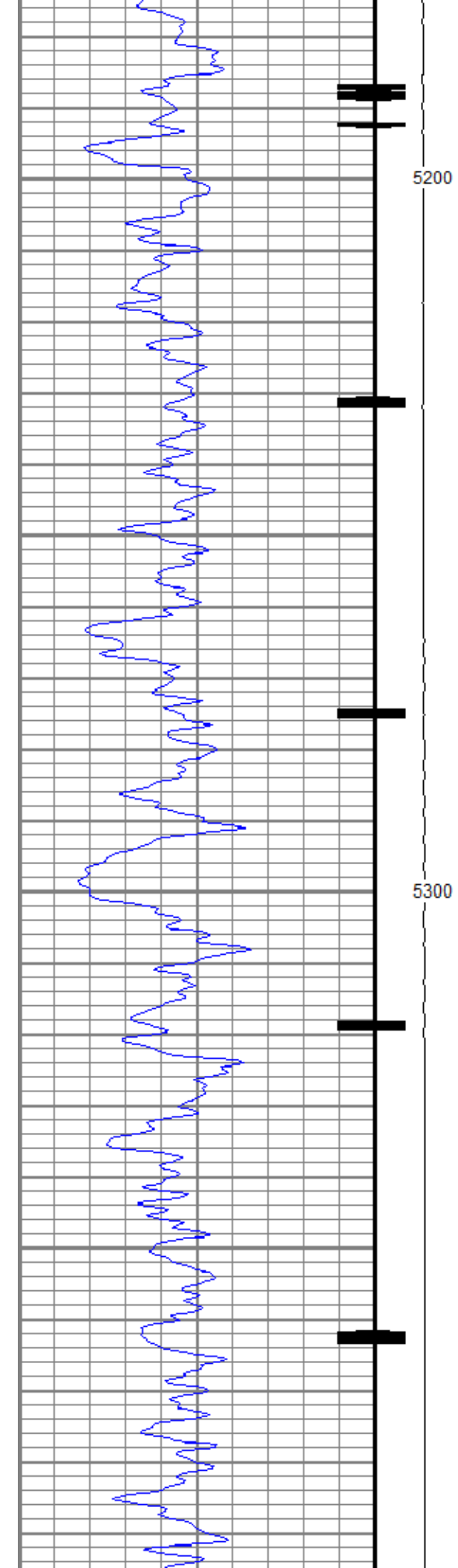
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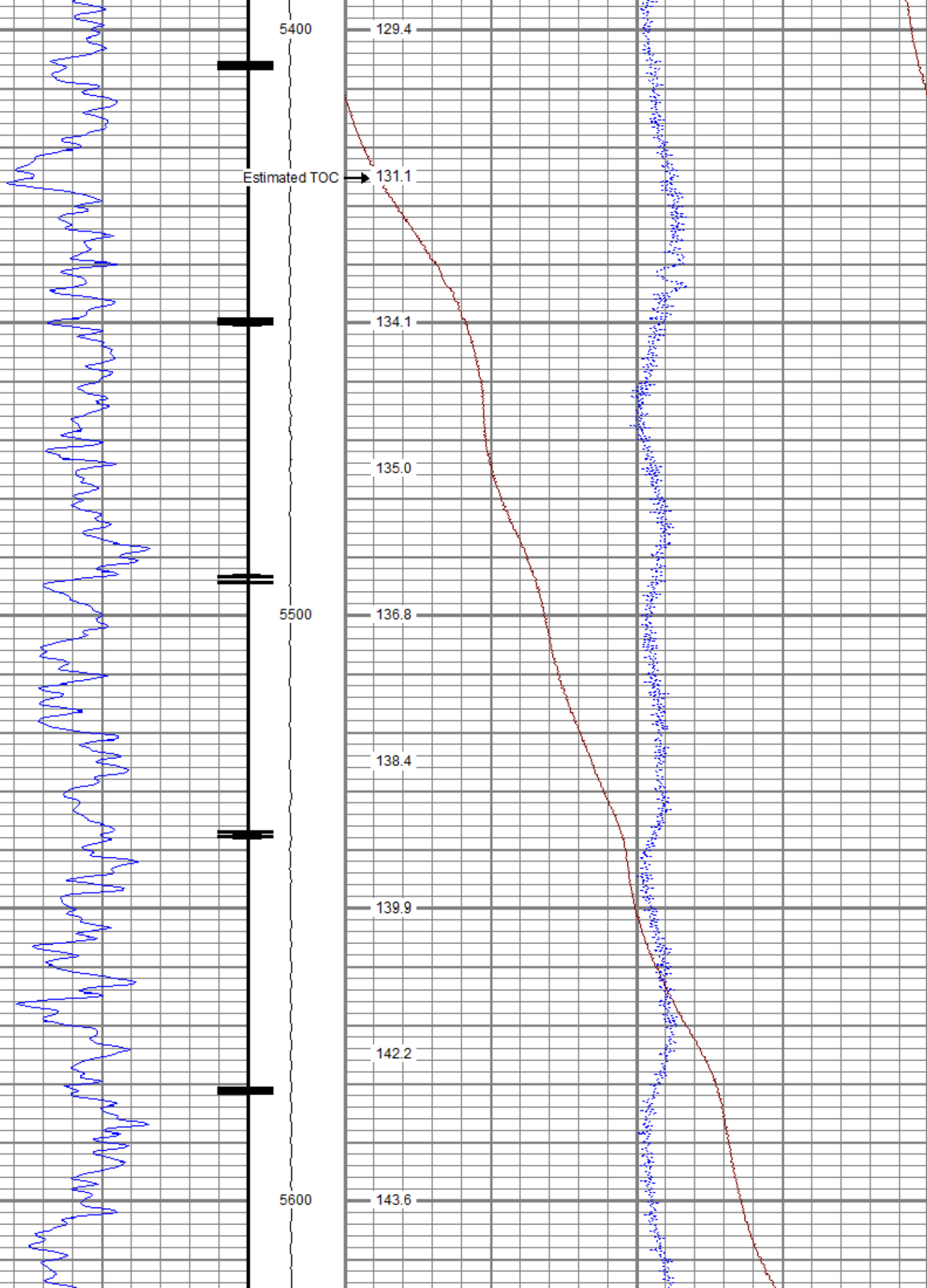
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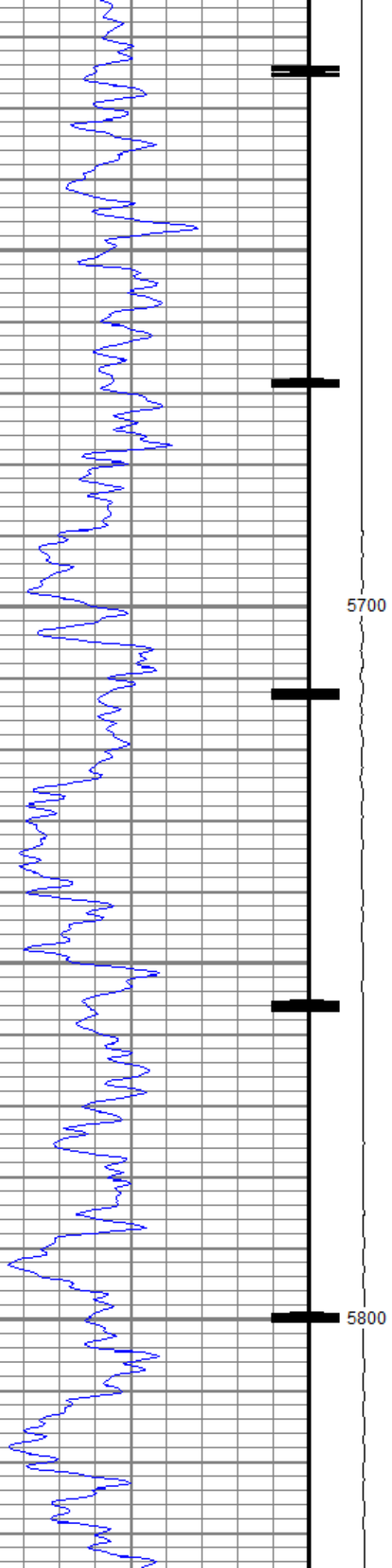
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124.1

125.0







145.7

147.9

148.6

147.3

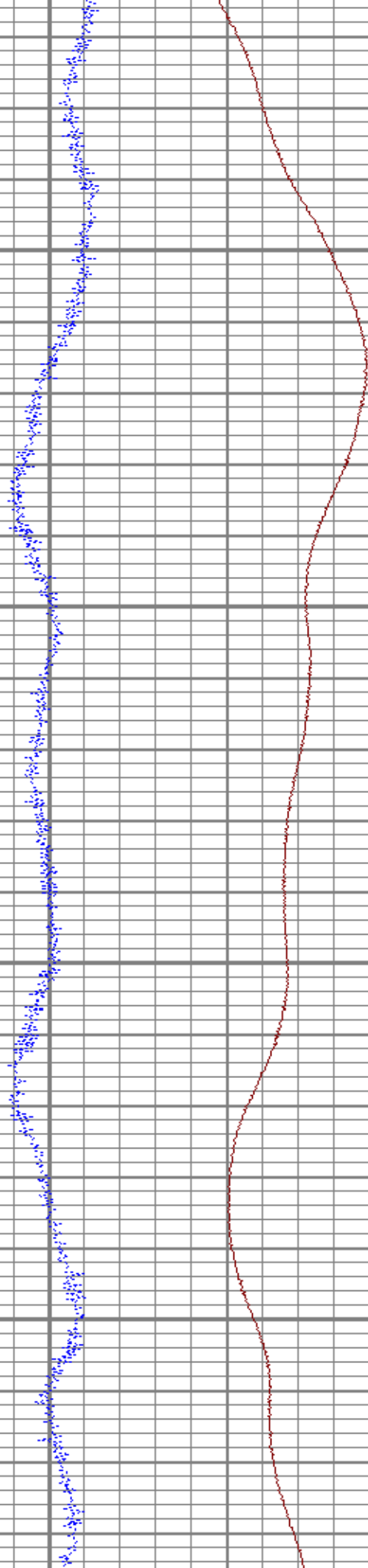
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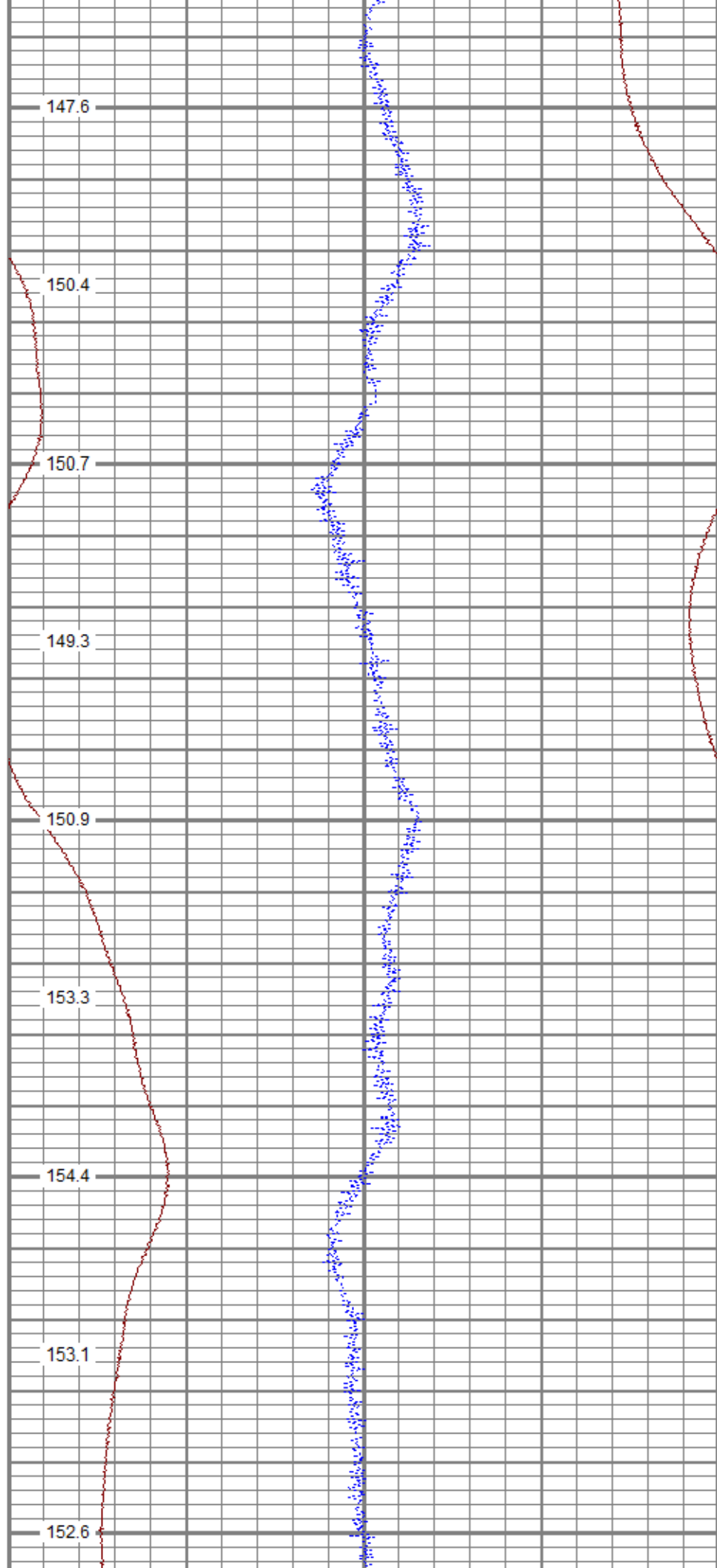
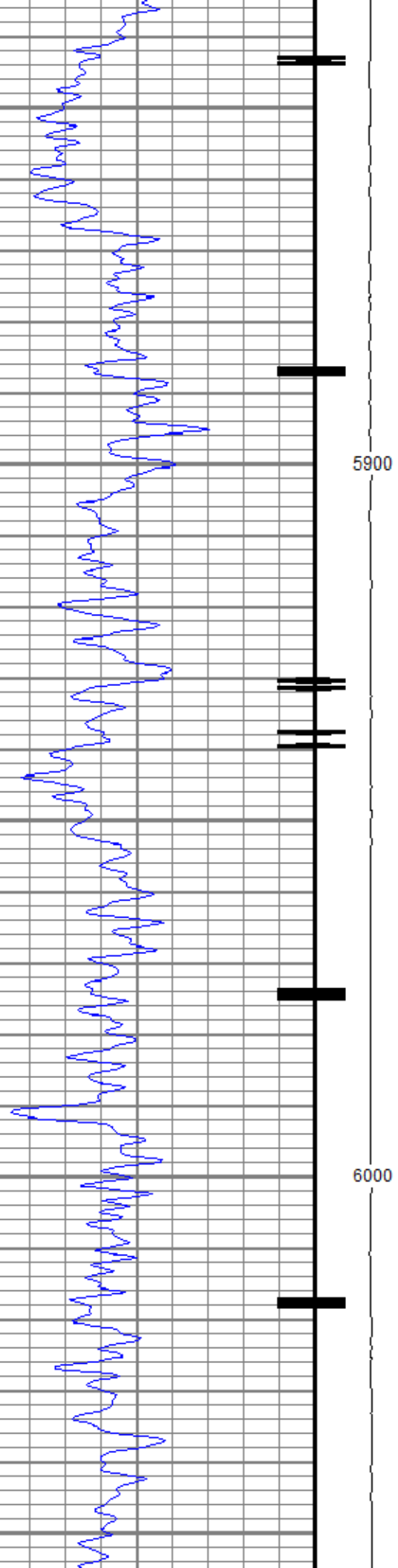
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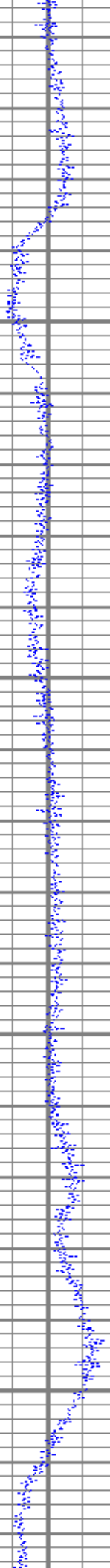
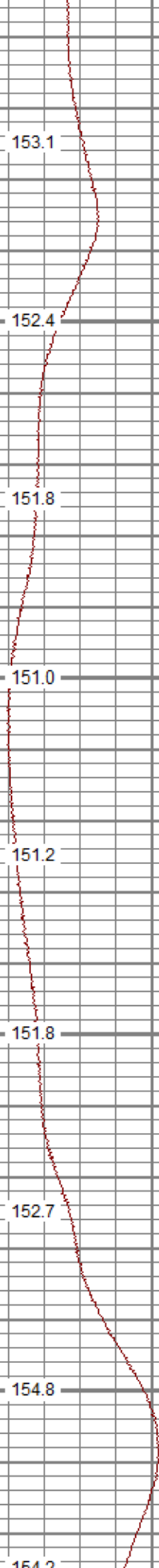
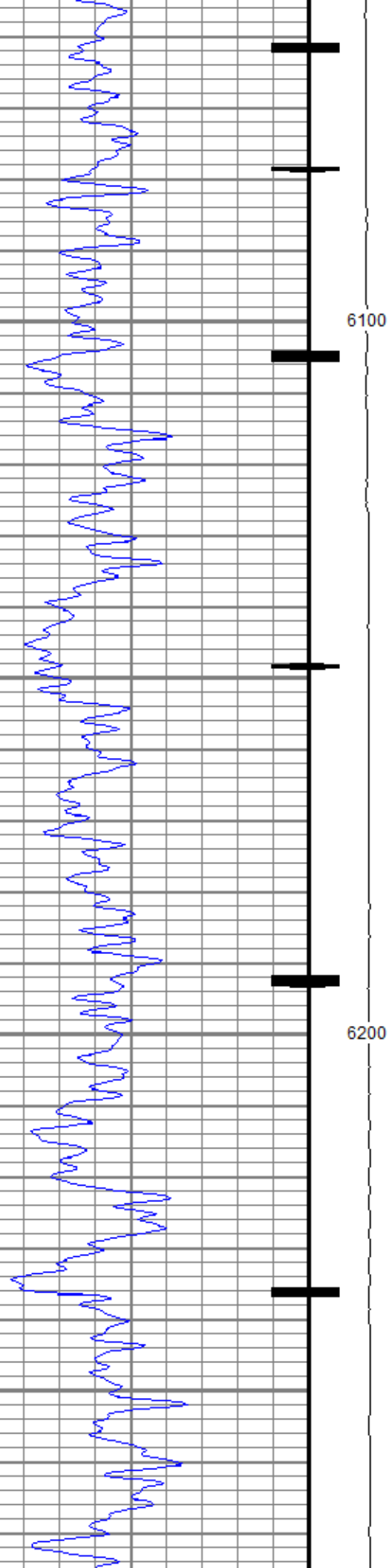
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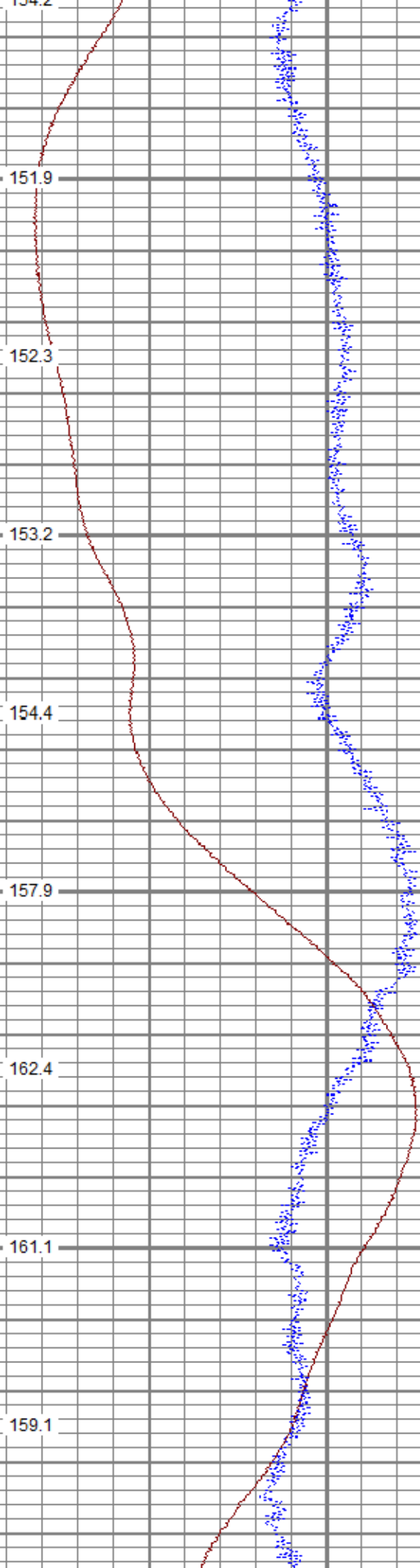
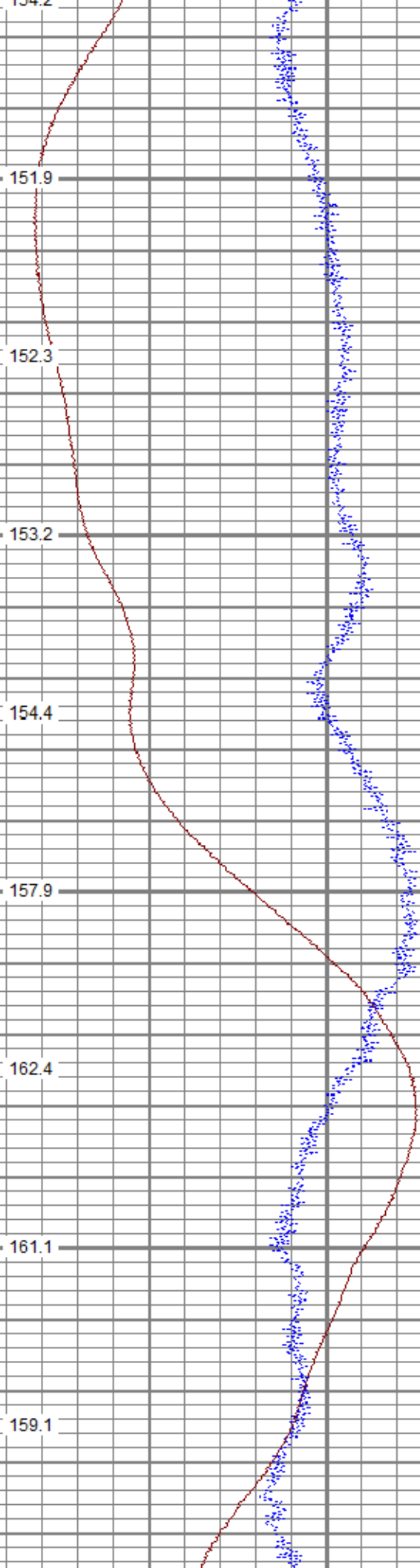
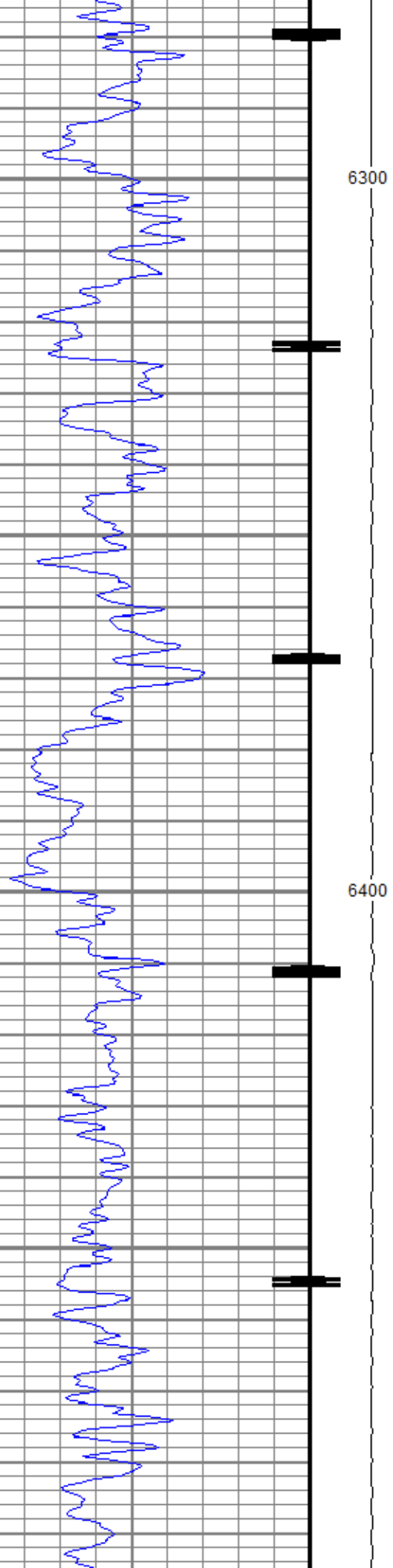
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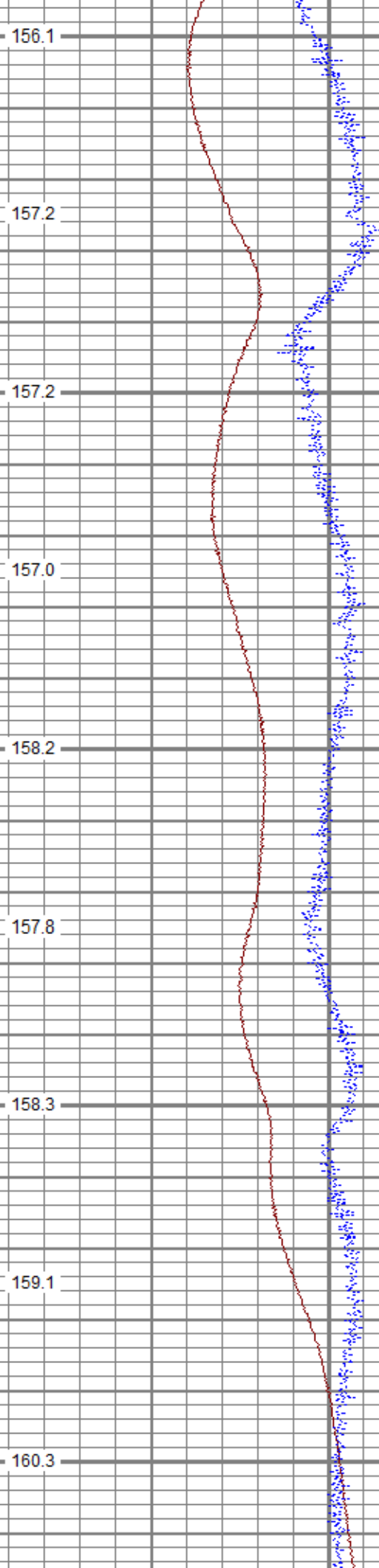
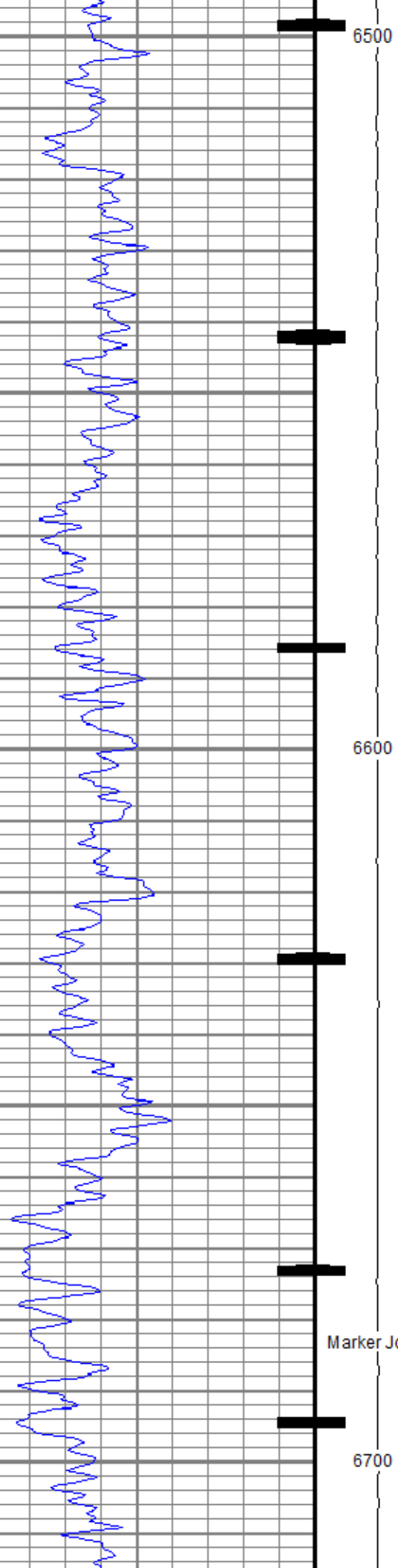
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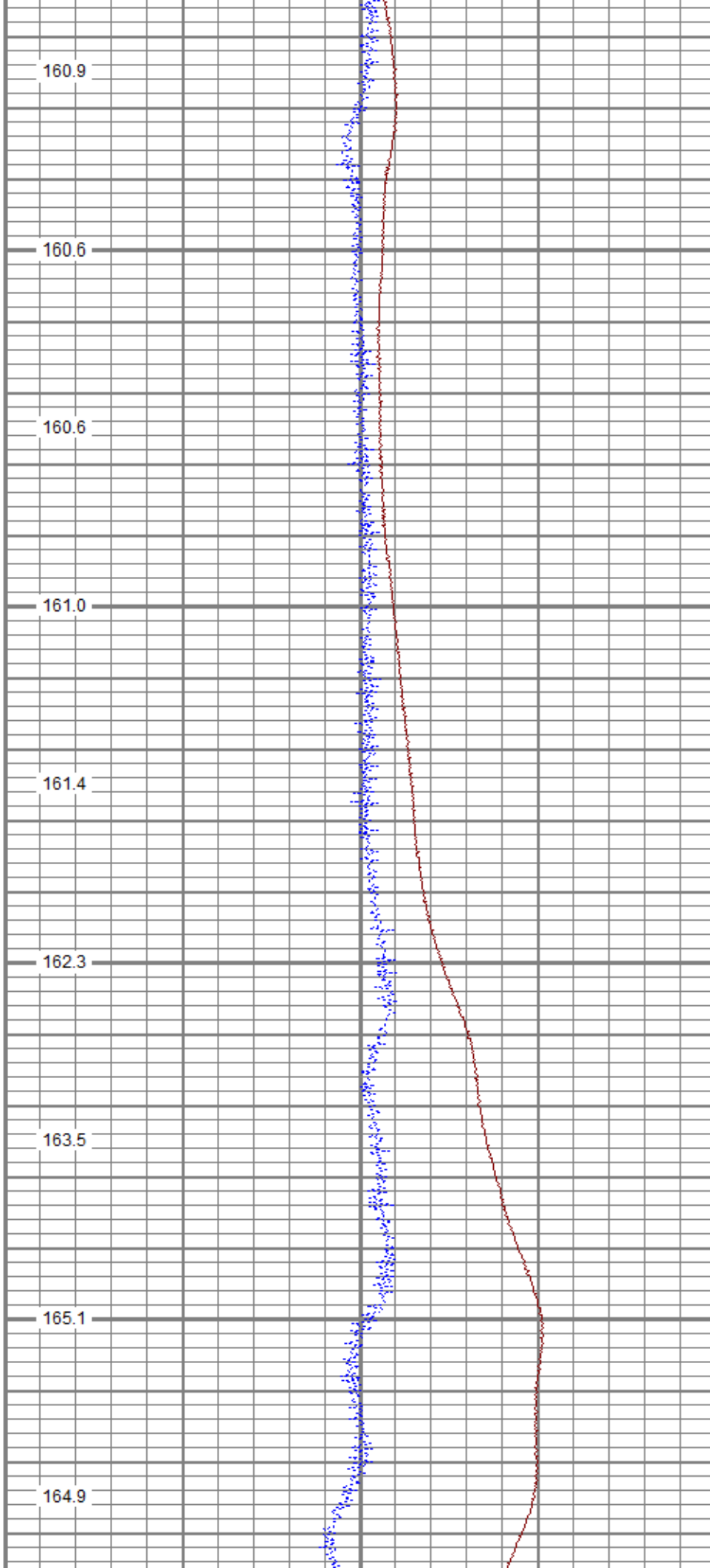
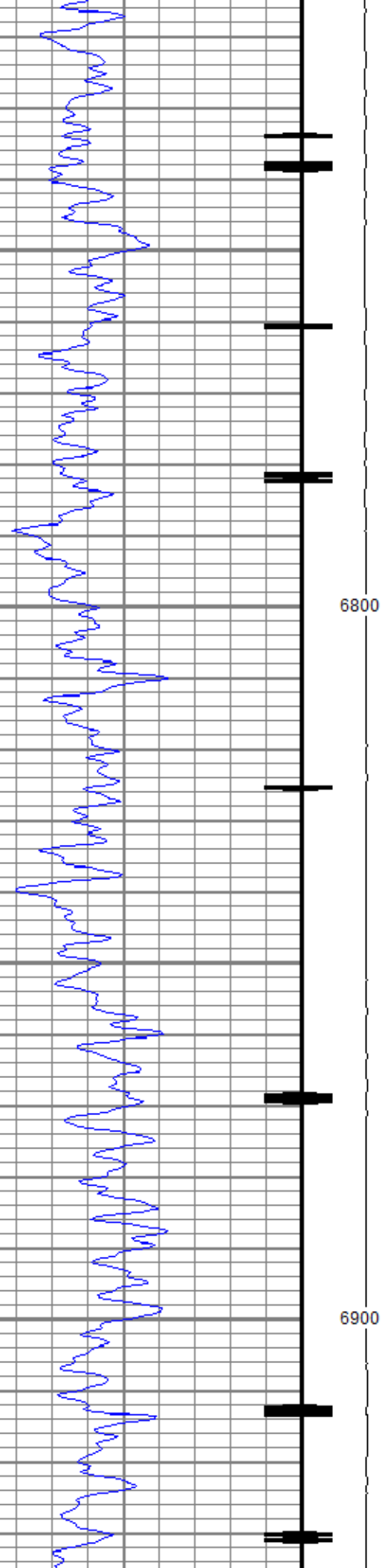


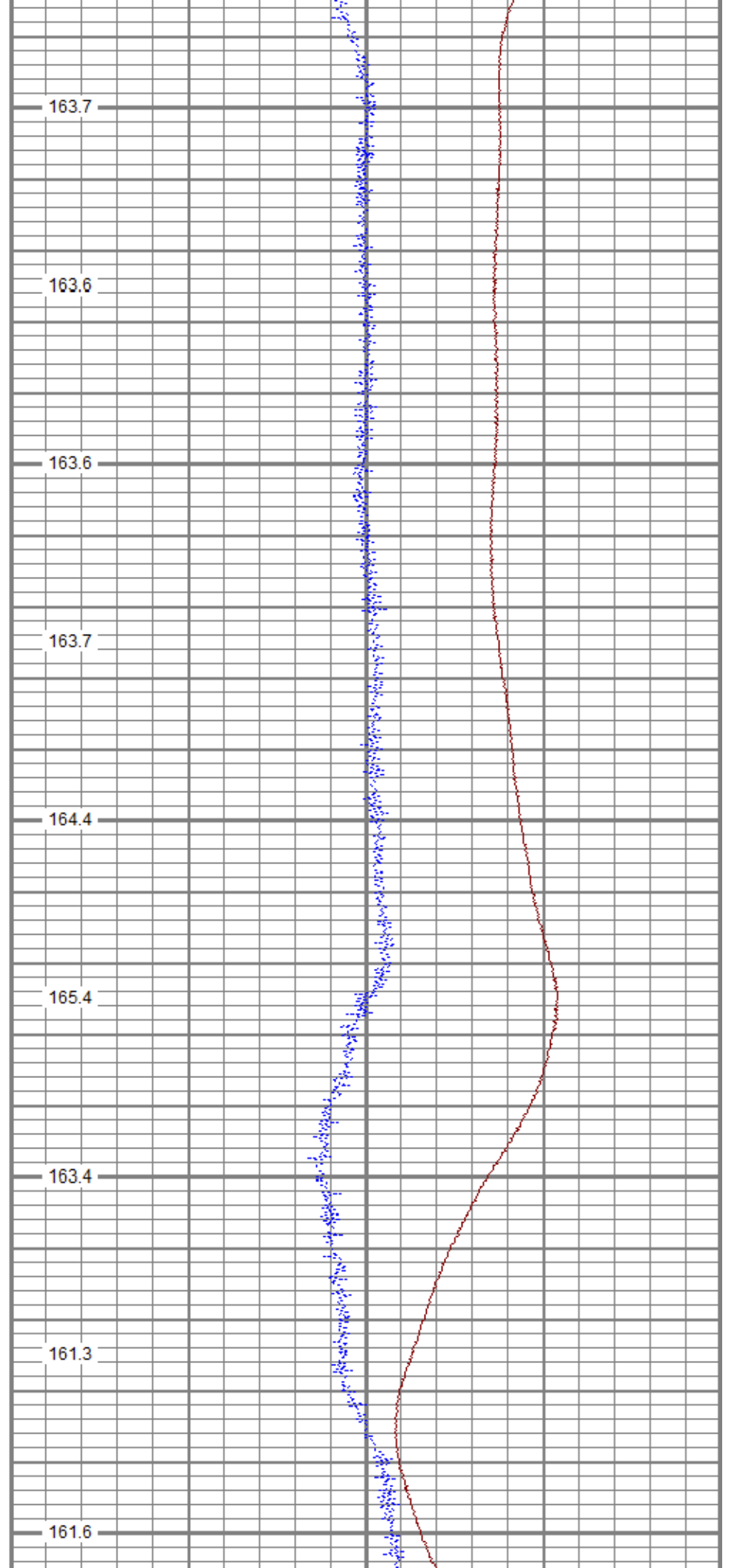
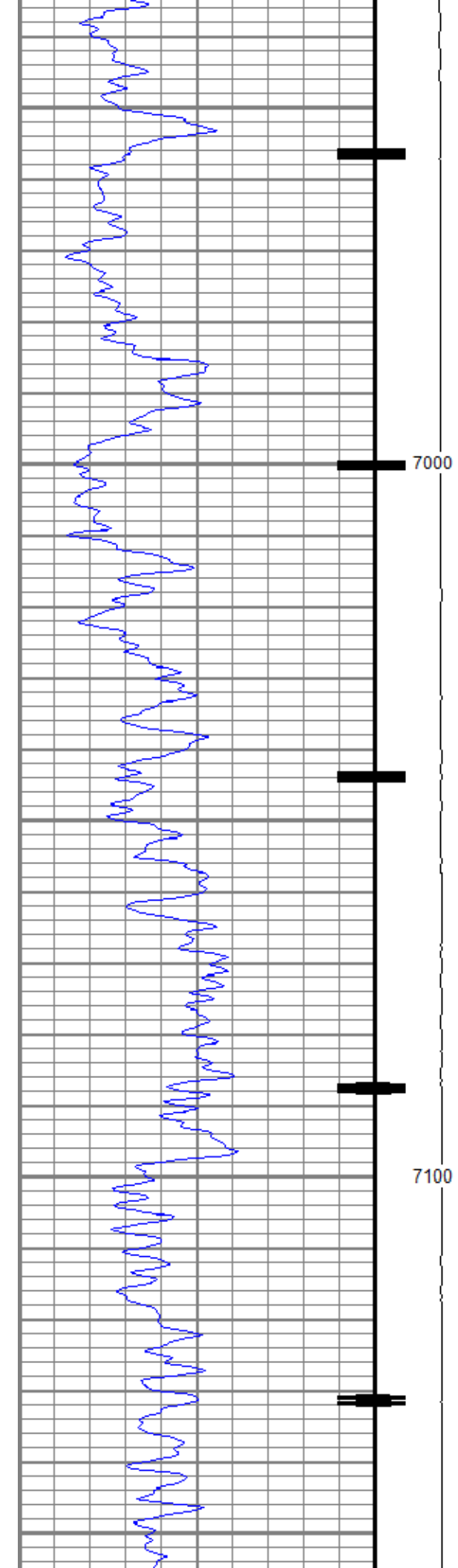


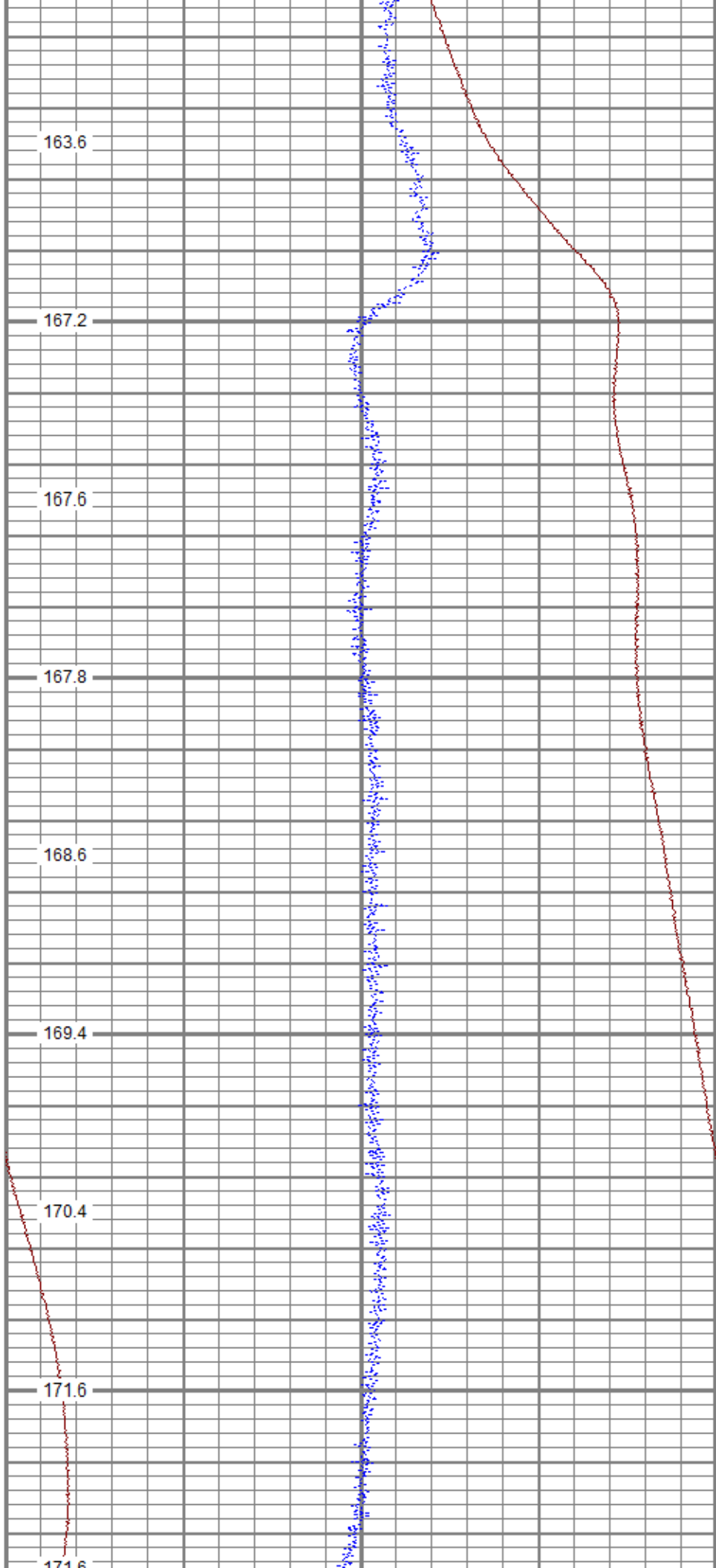
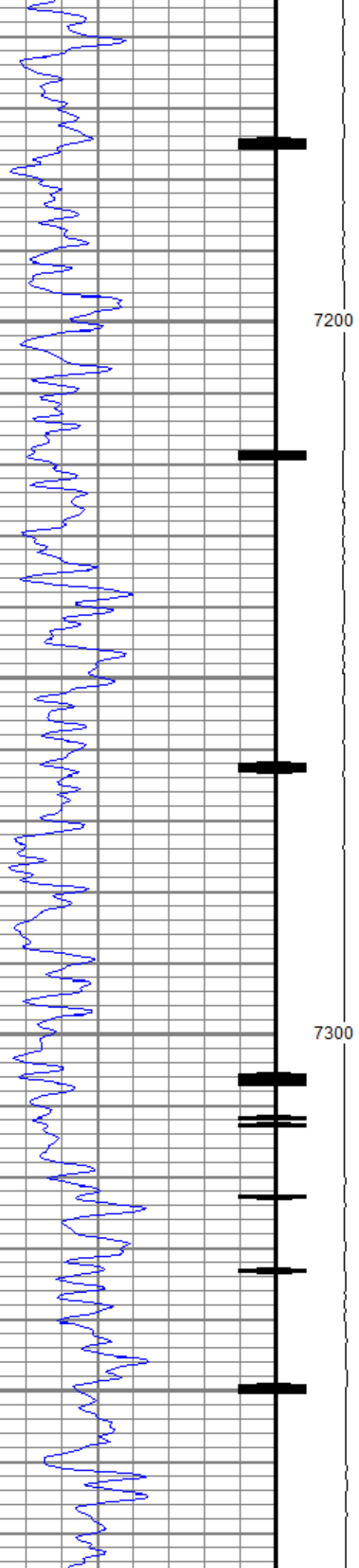


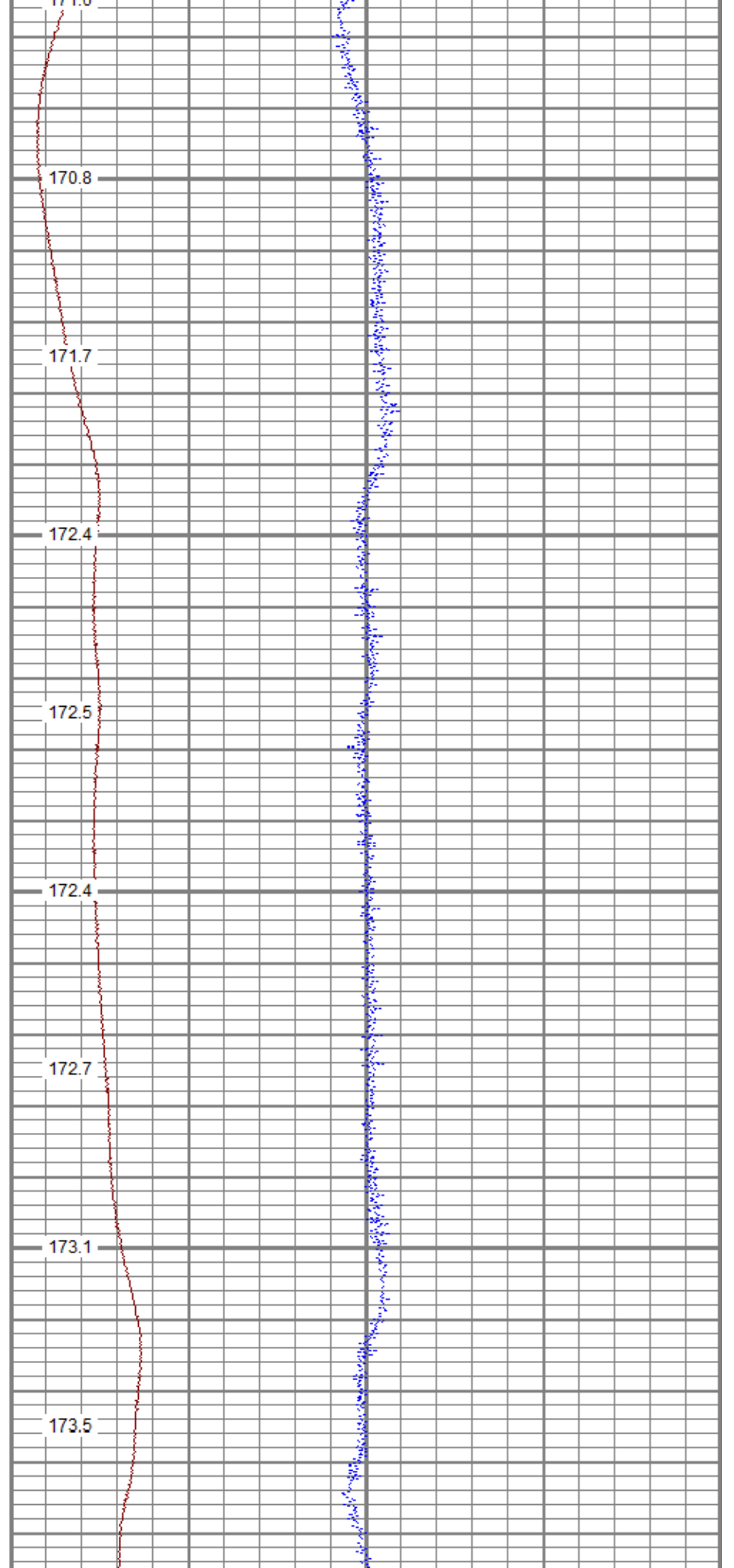
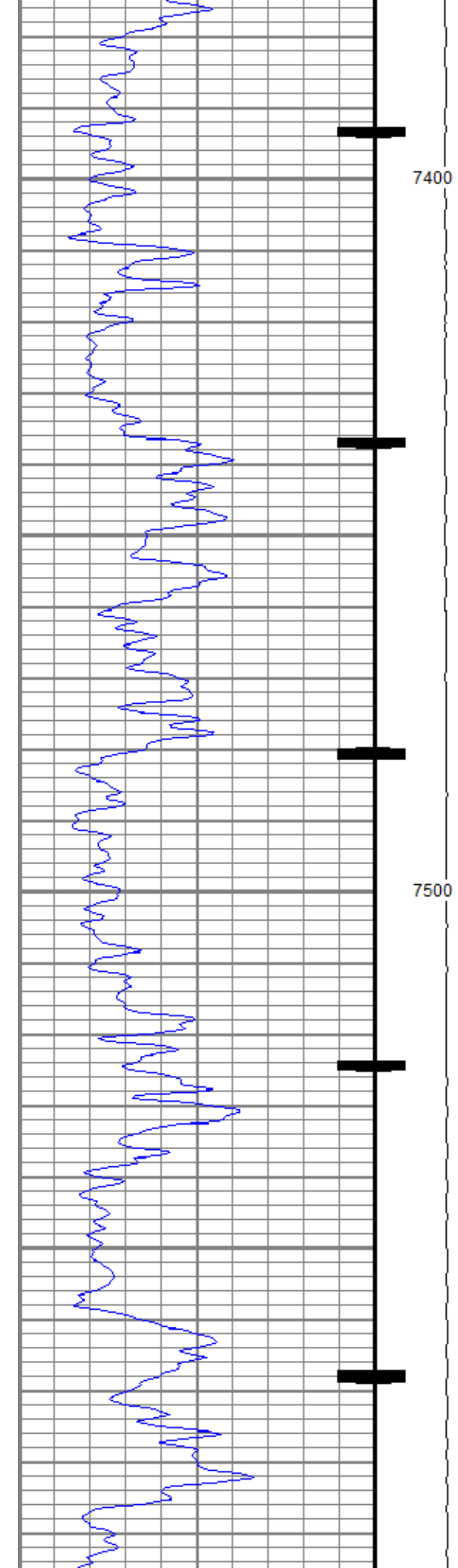


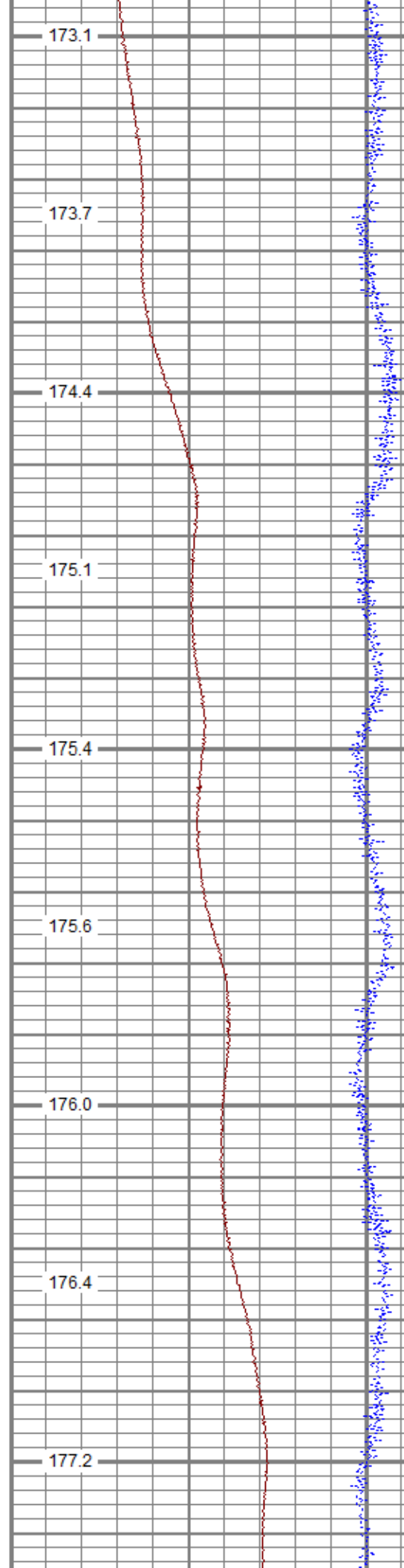
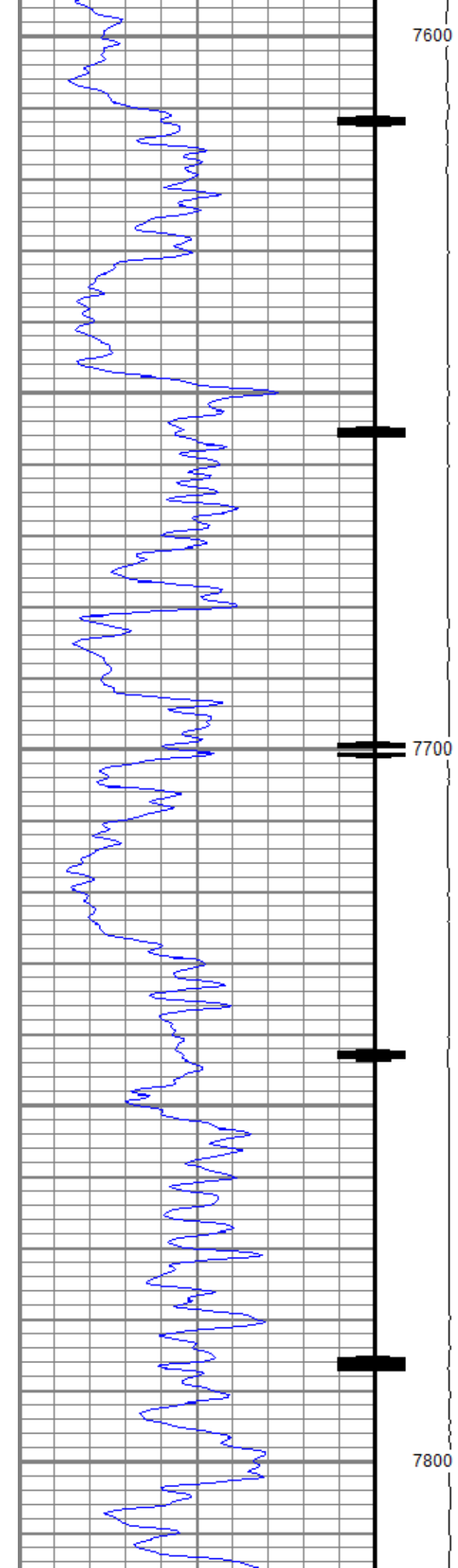


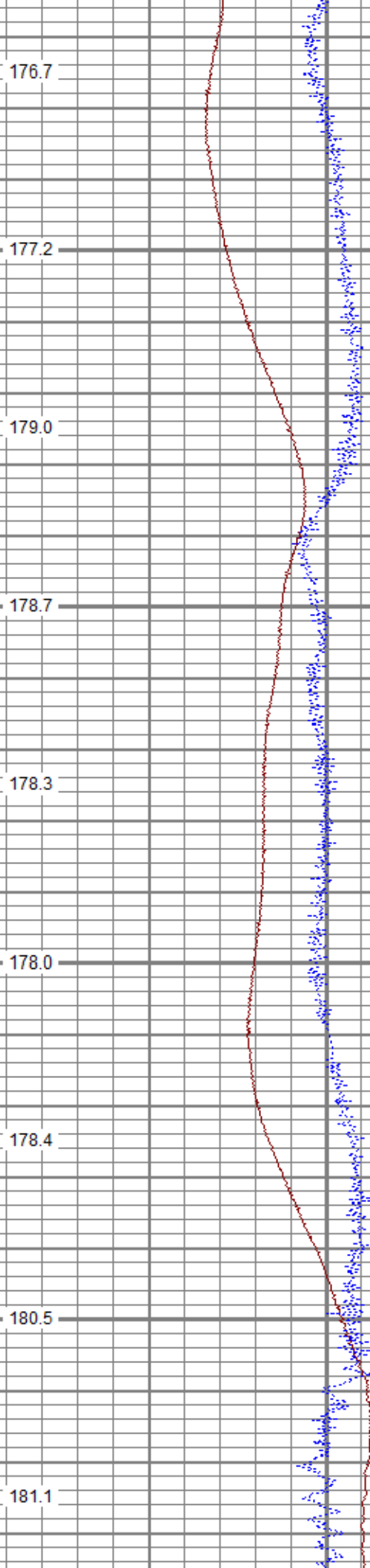
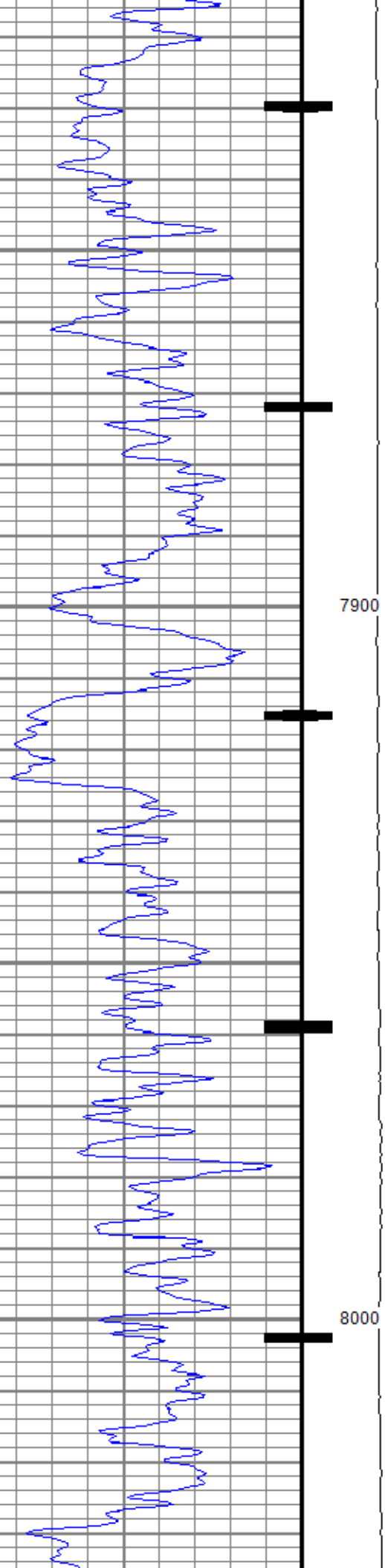


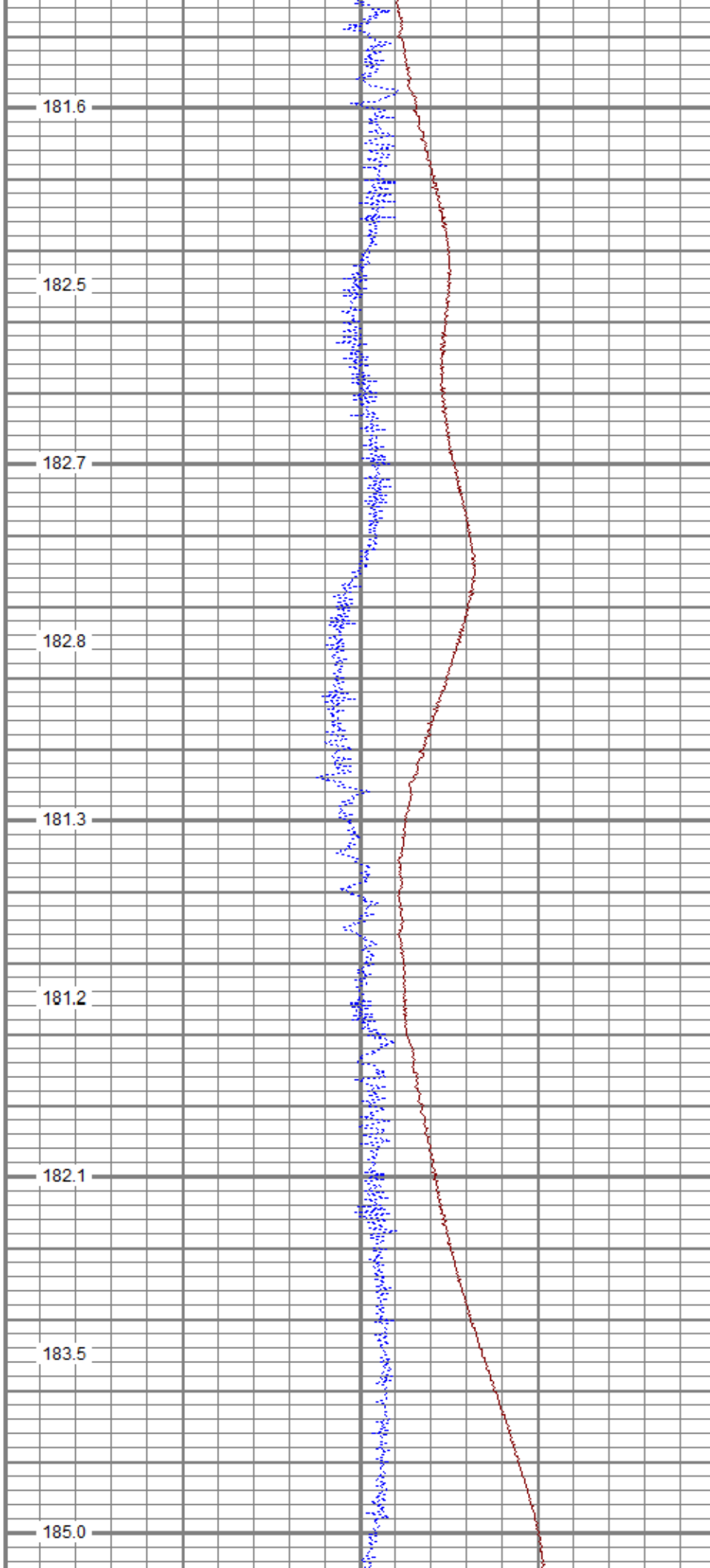
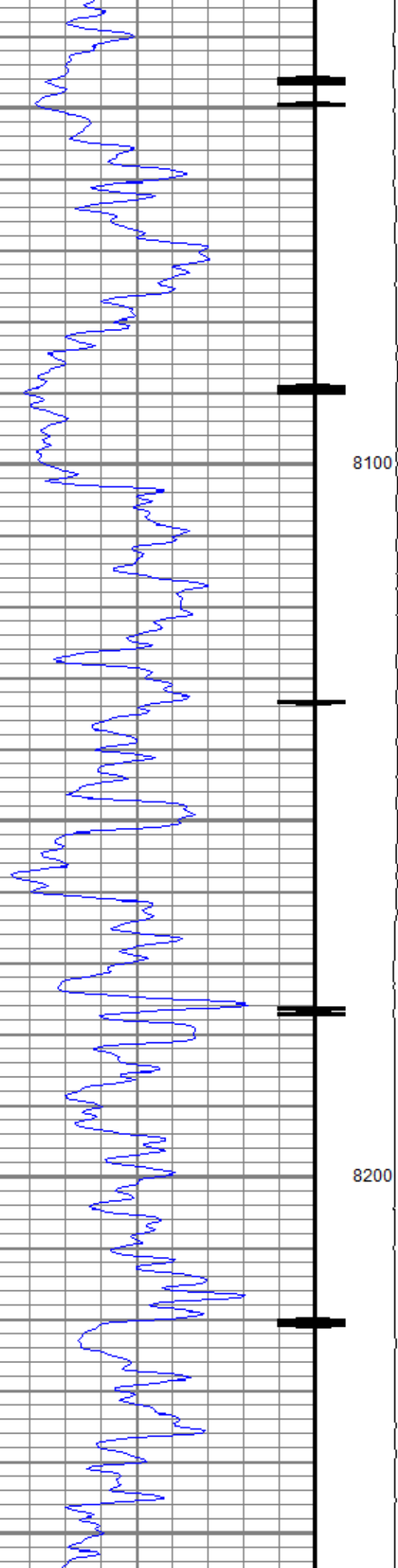


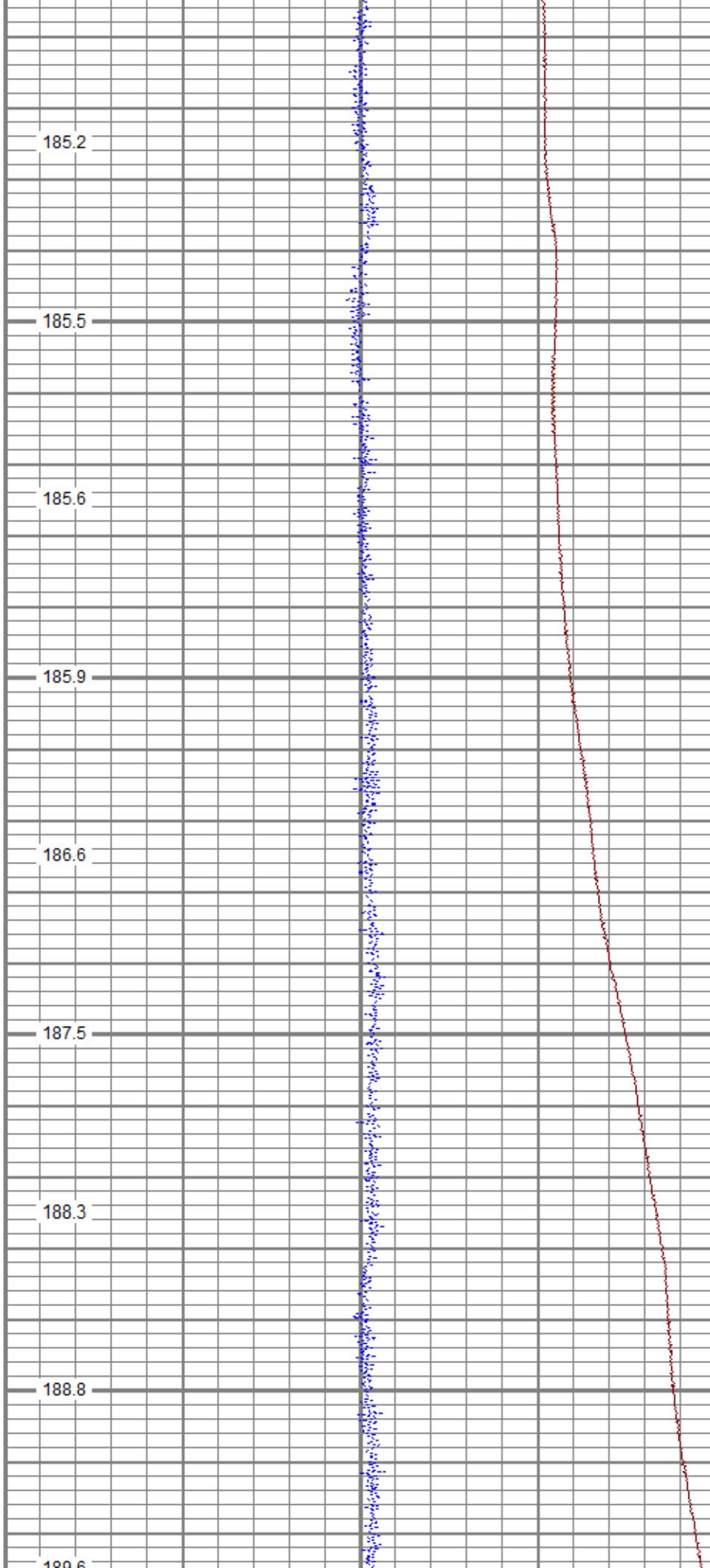
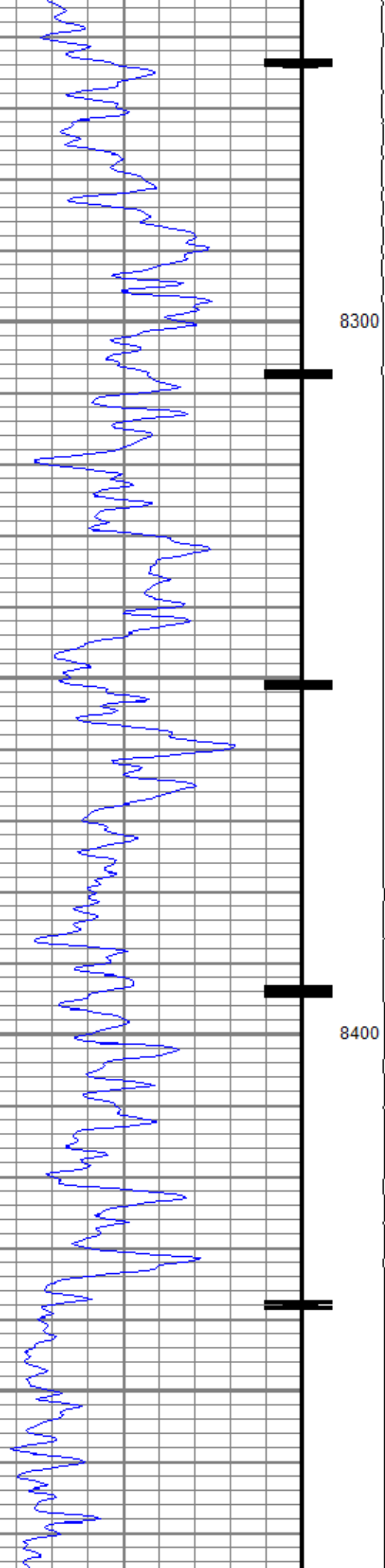


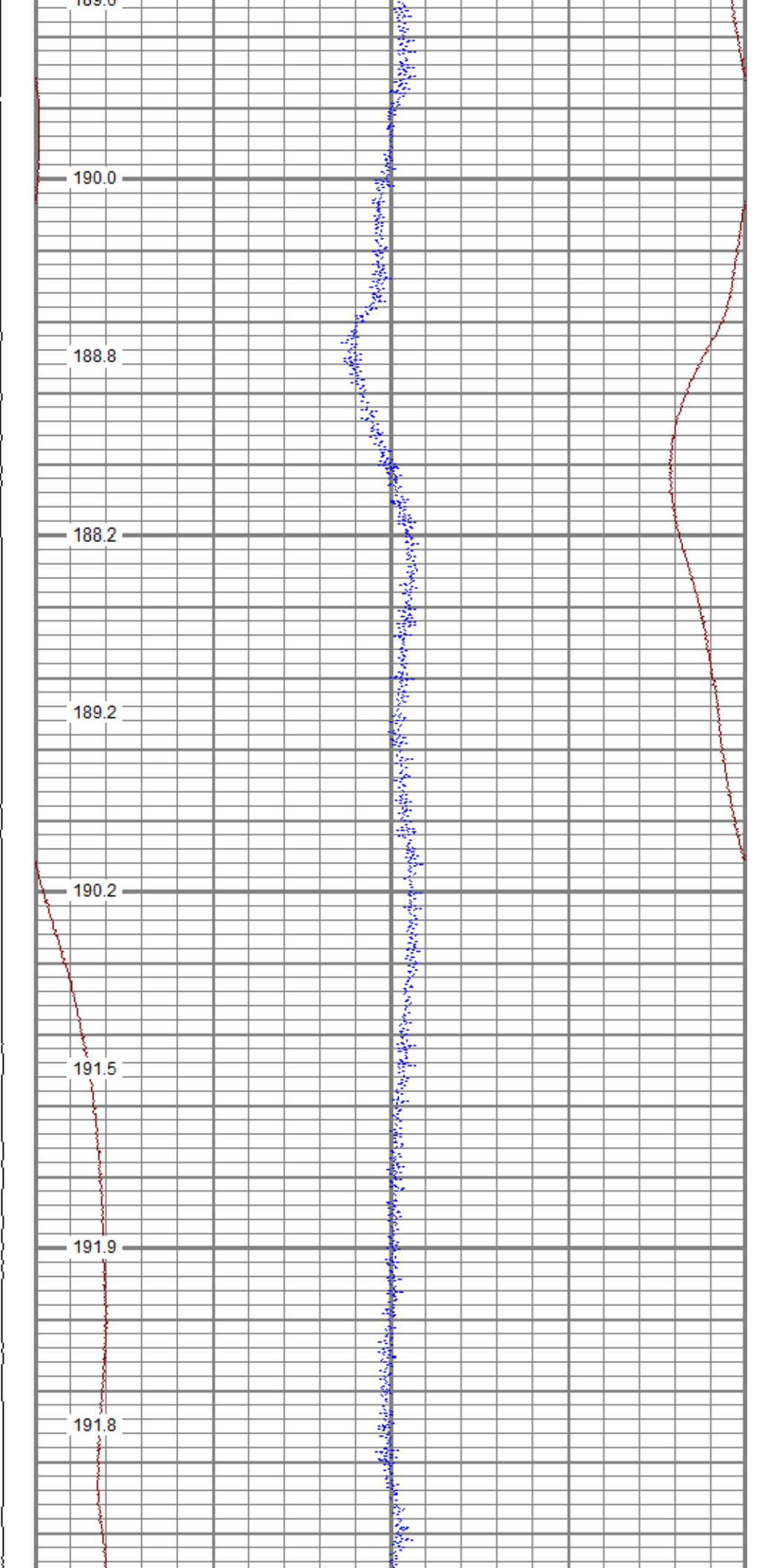
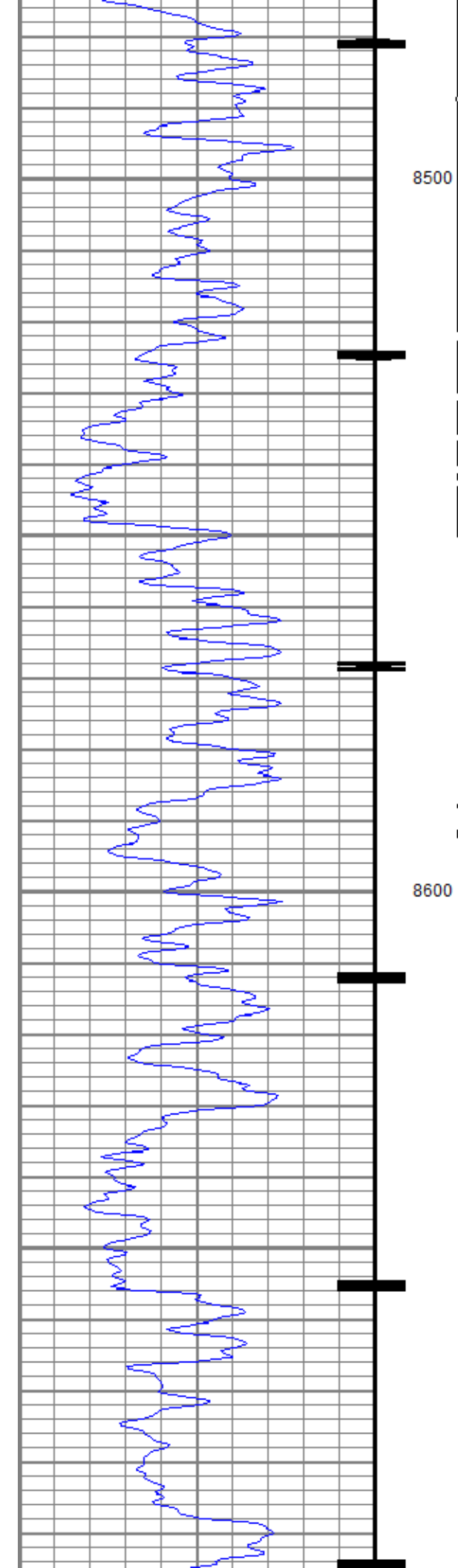


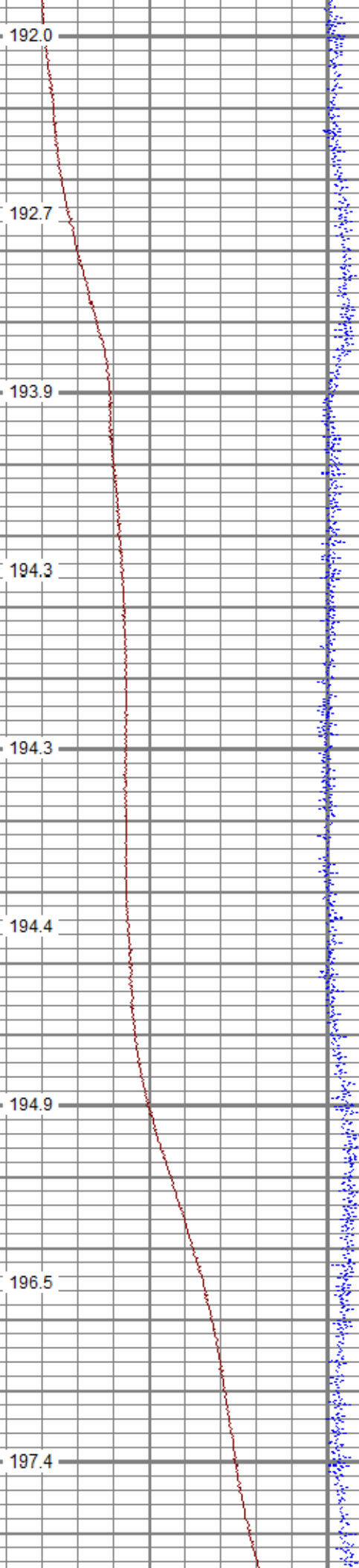
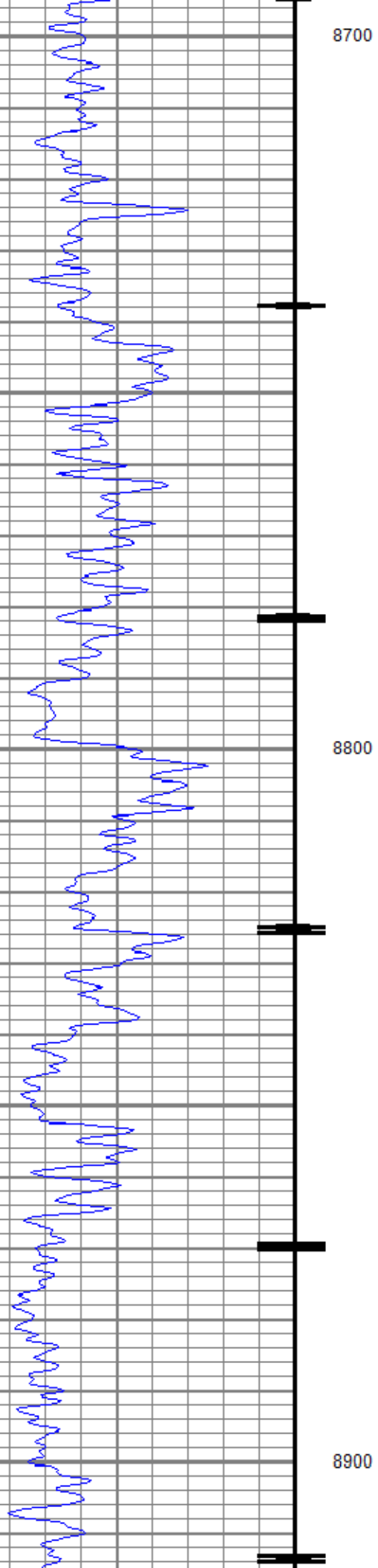


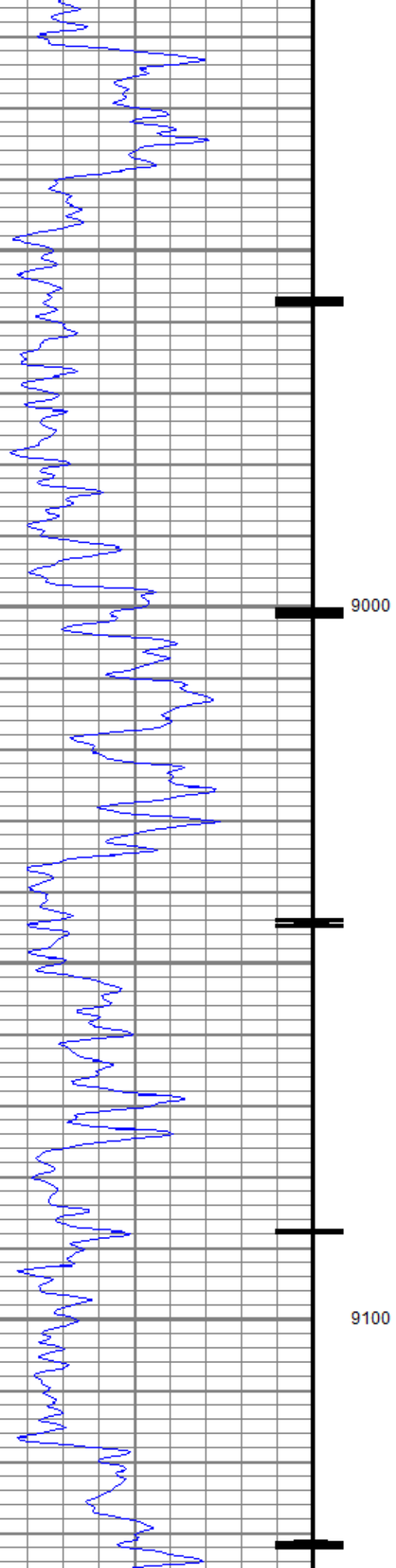












198.8

198.1

197.1

197.7

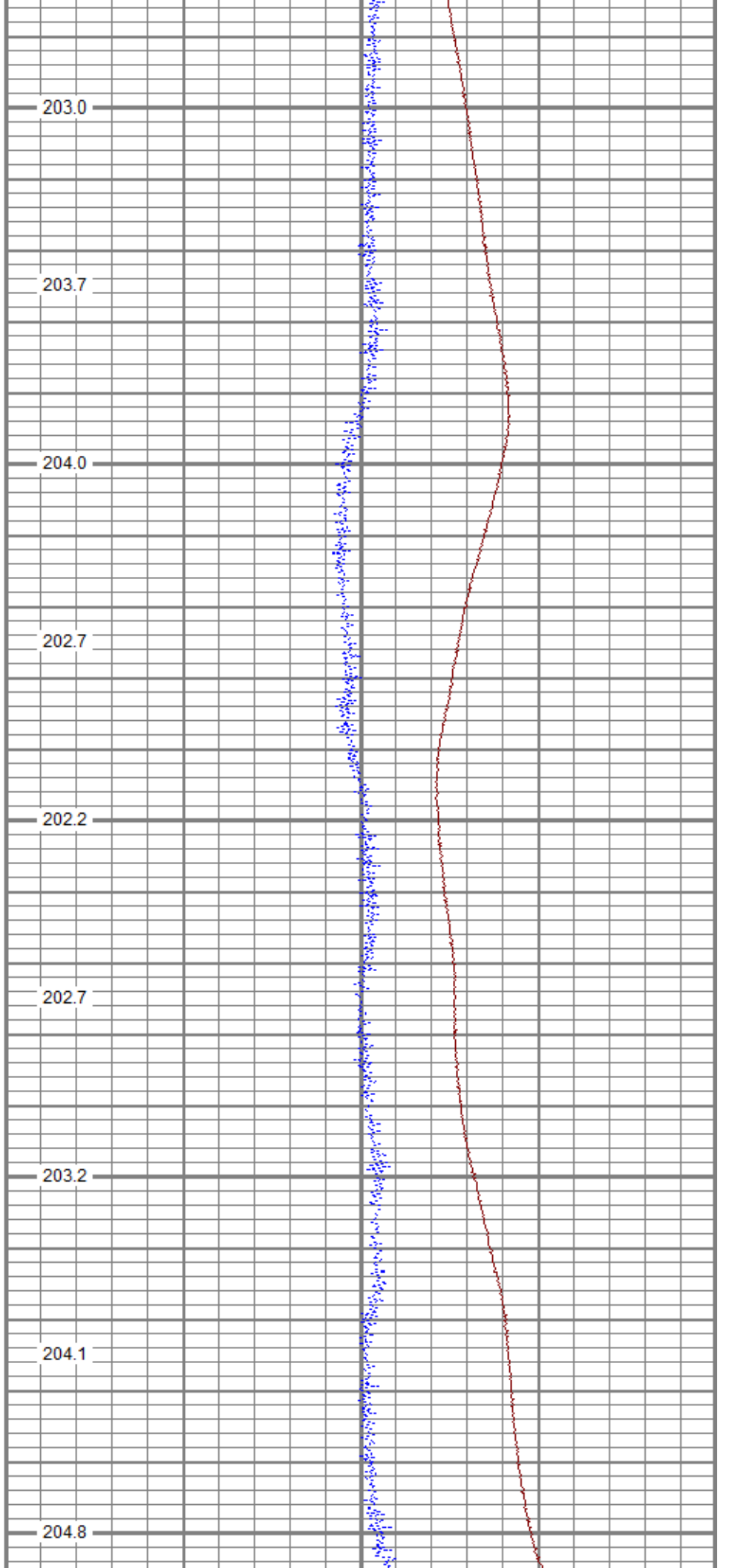
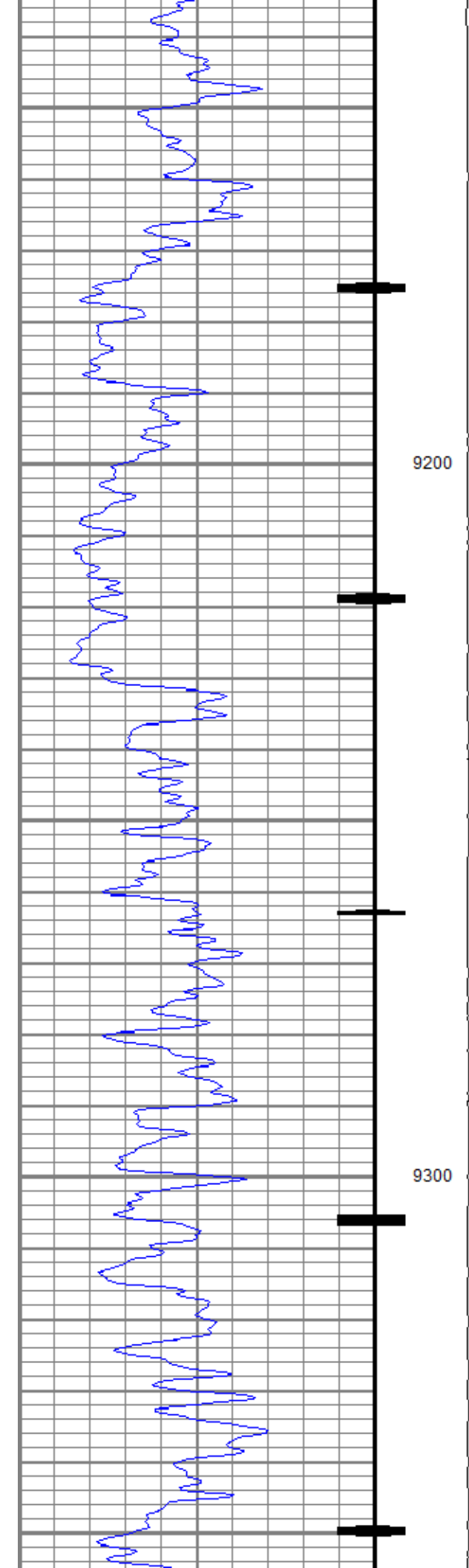
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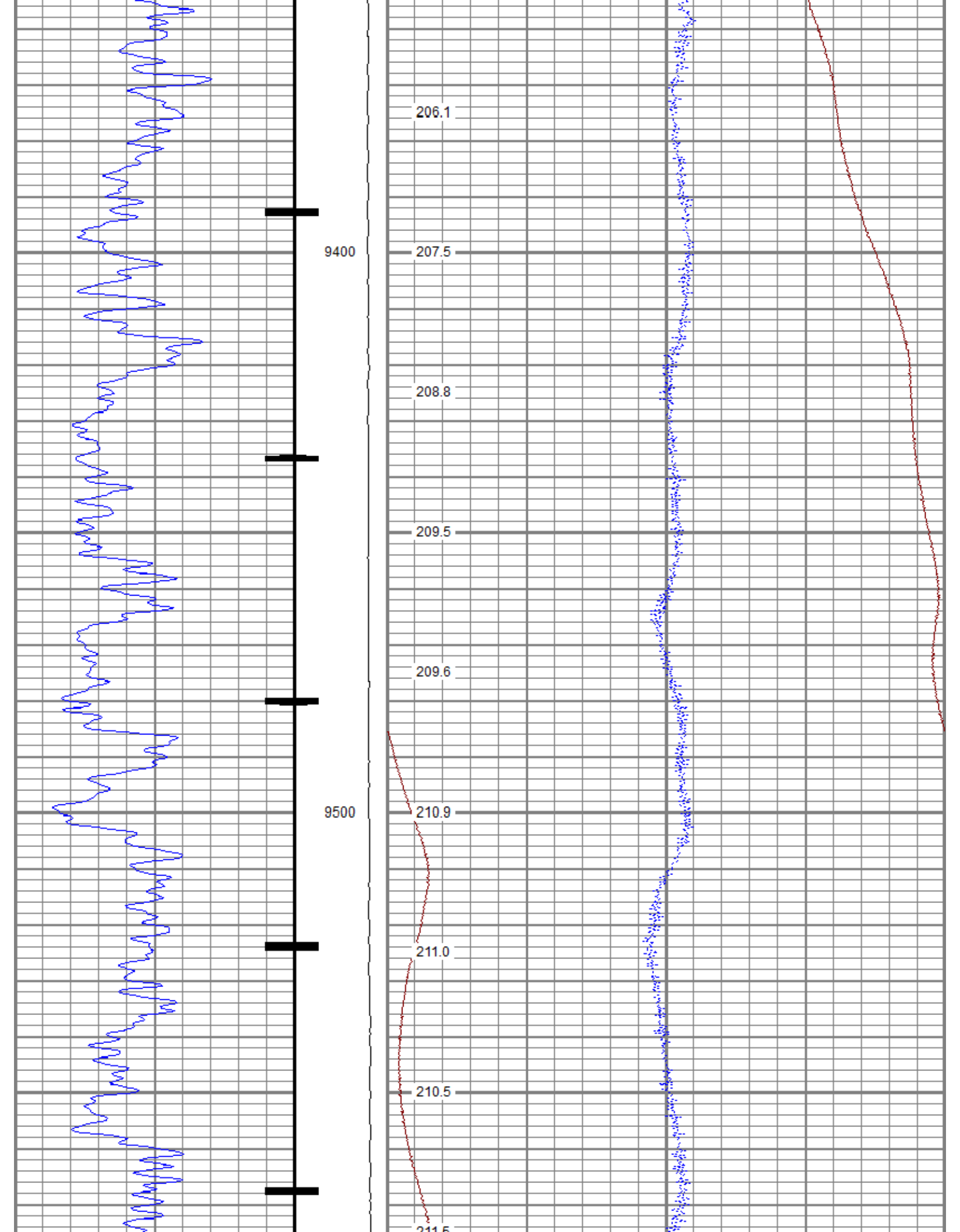
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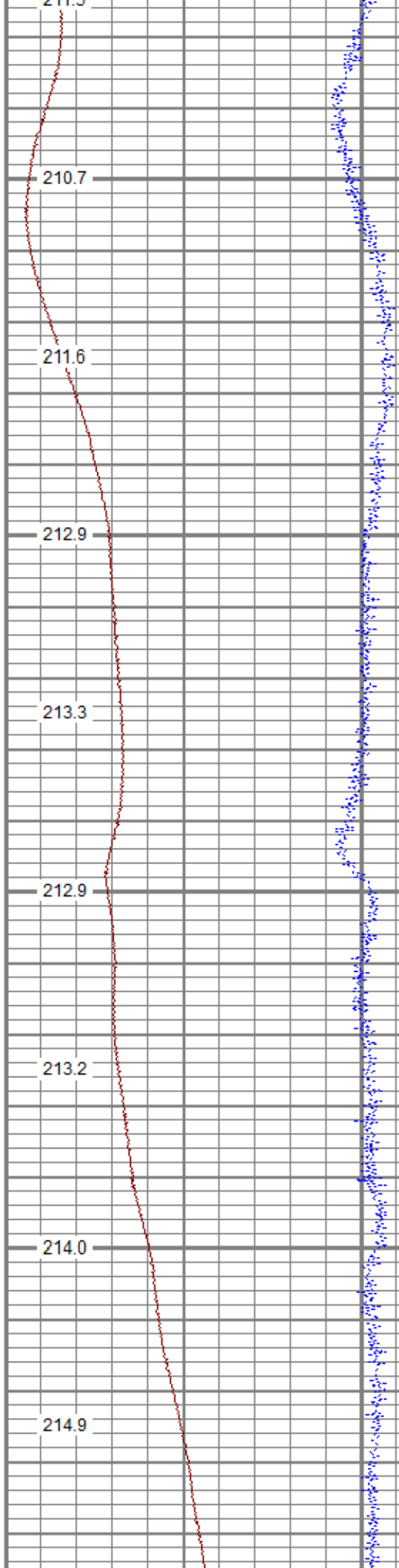
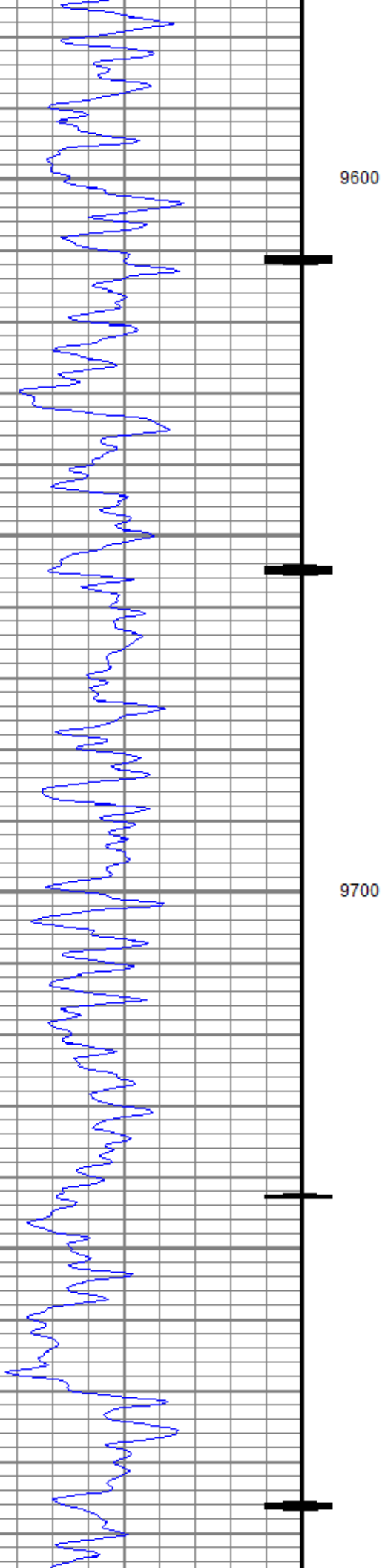
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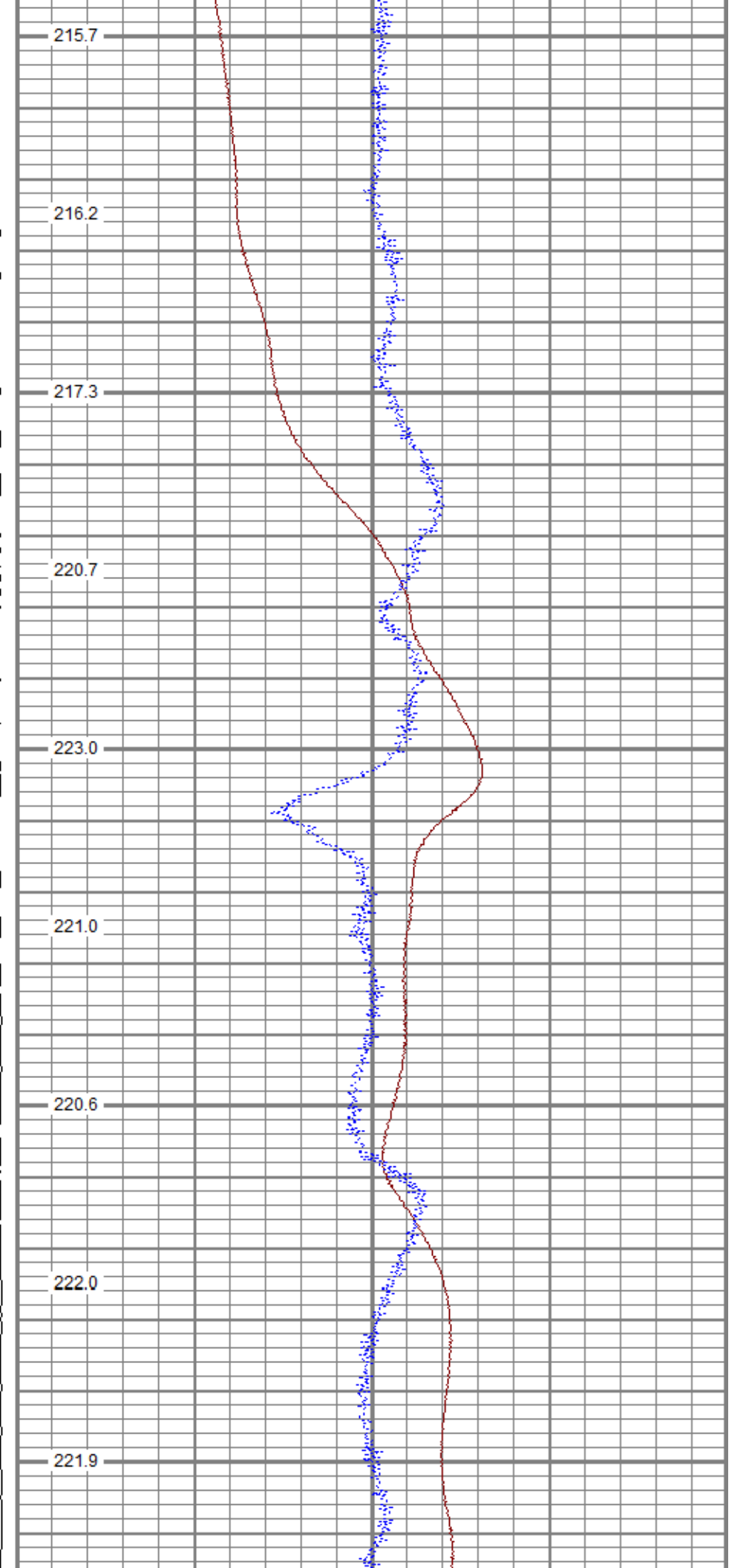
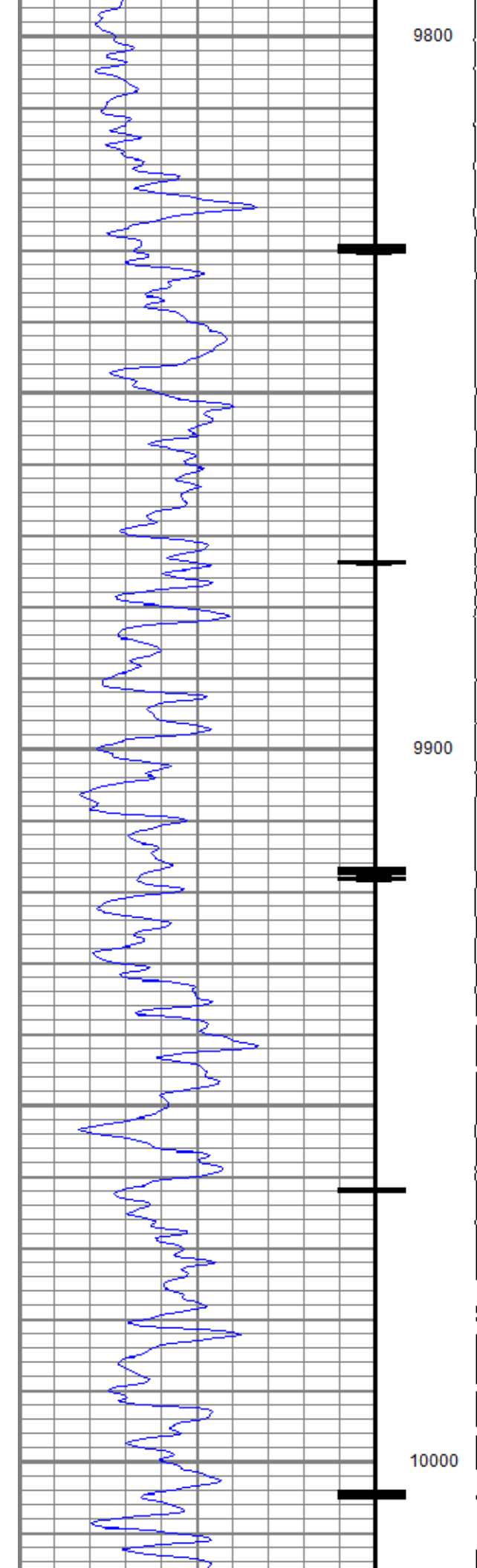
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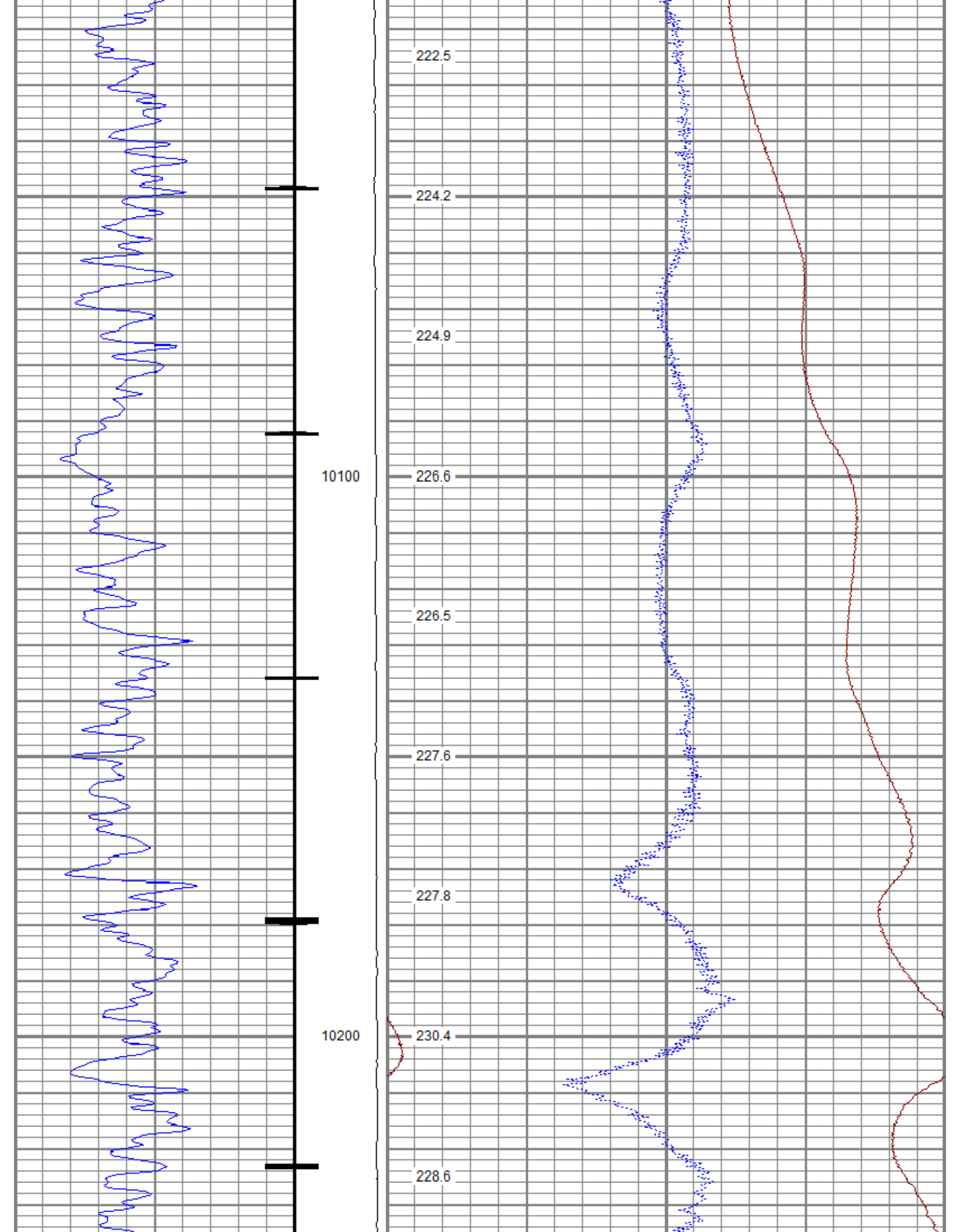
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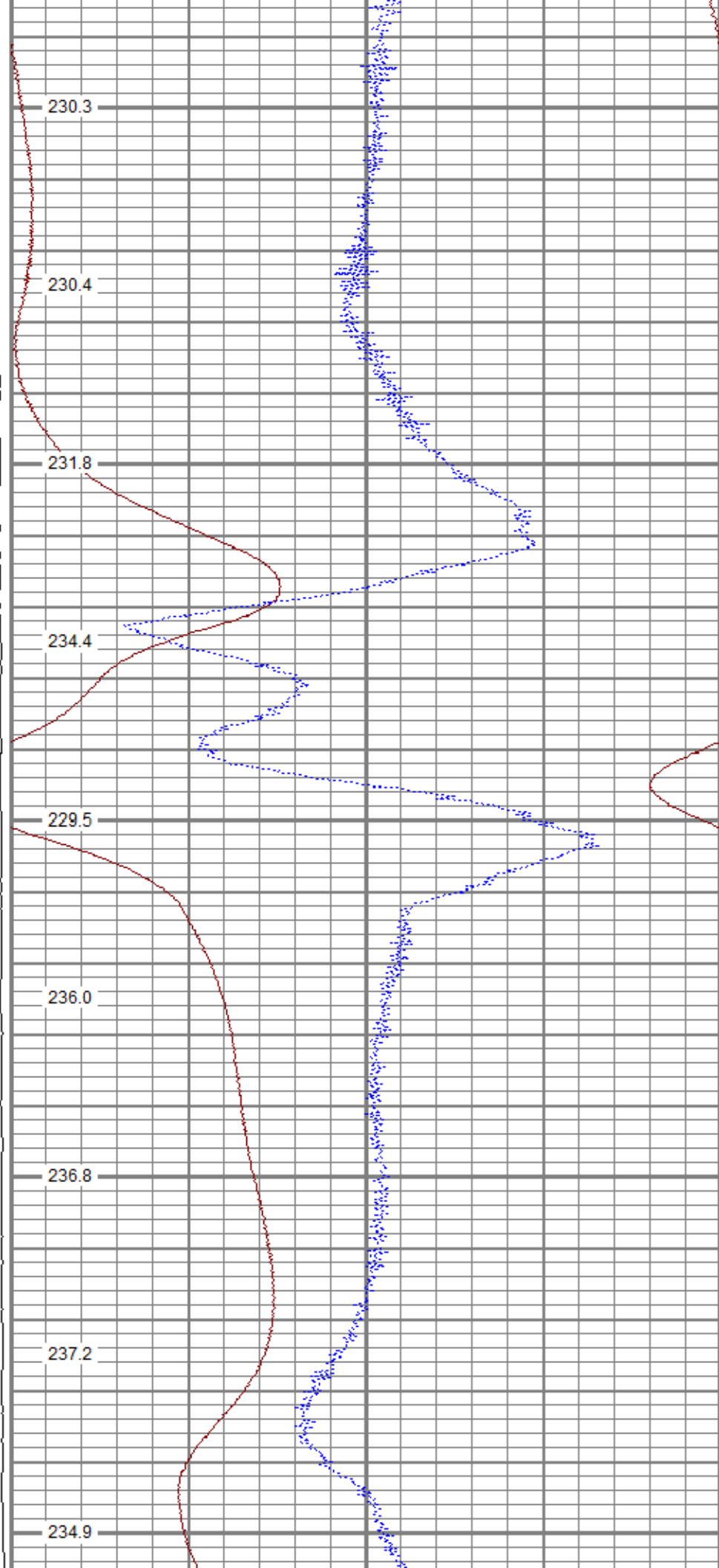
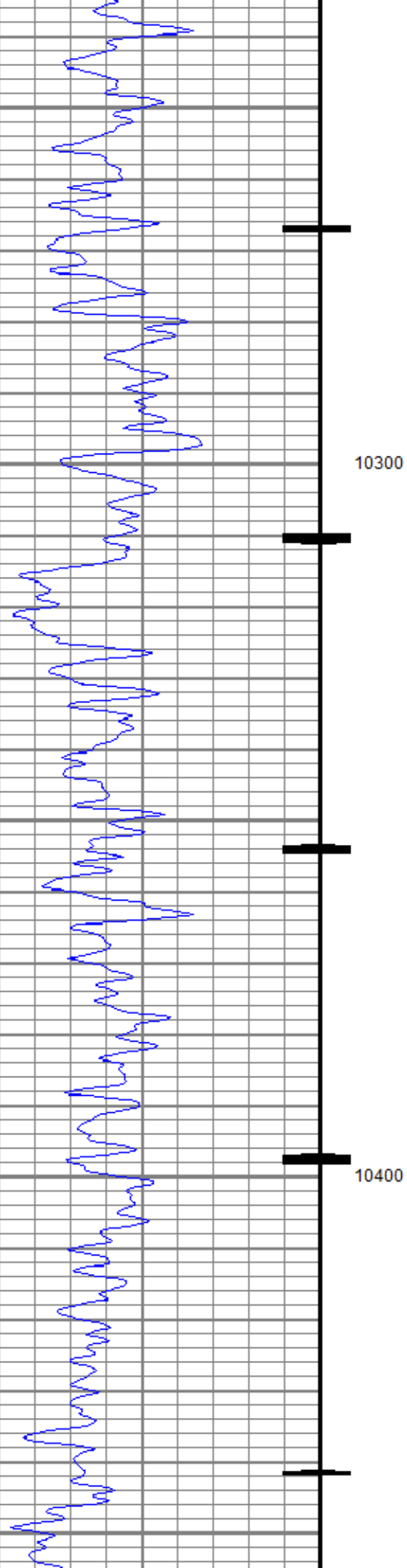


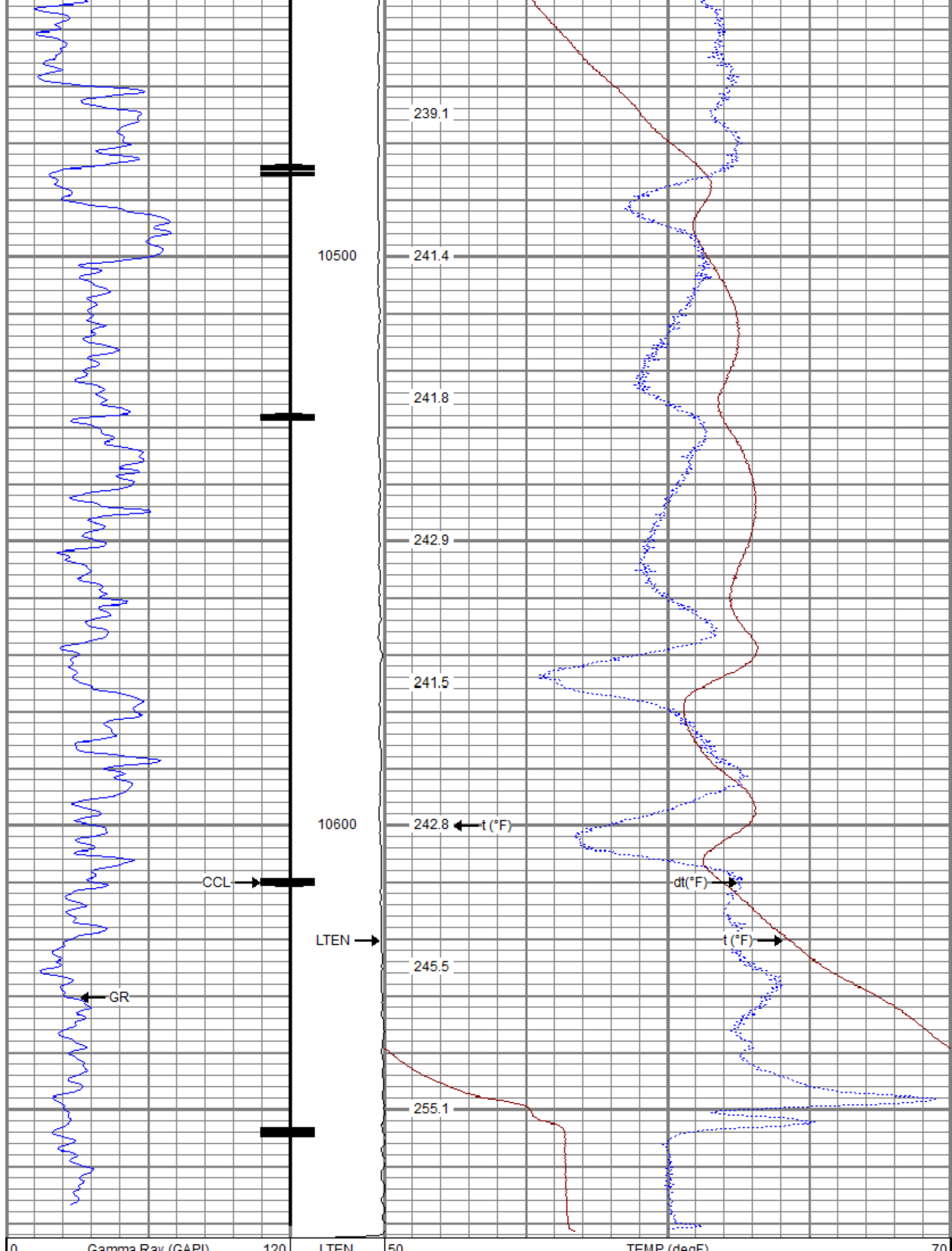




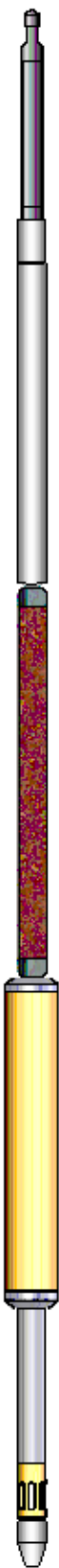








| | | | |
|-----------------------|-----|-------------|----|
| Gamma Ray (GRA) | 120 | TEMP (degF) | 70 |
| Casing Collar Locator | 0 | (lb) 2000 | -1 |
| | | DTMP (degF) | 1 |
| | | TEMP (degF) | |

| Sensor | Offset (ft) | Schematic | Description | Length (ft) | O.D. (in) | Weight (lb) |
|---|-------------|--|--|-------------|-----------|-------------|
| GR | 3.37 |  | Titan CHD-14375 GO Titan 1-7/16" Assembled Electric Cable Head w/ 1" Fishing Neck | 1.03 | 1.44 | 3.60 |
| | | | UW AGS-001 (211461) Sondex Adapter - GO Box to Sondex Pin | 0.21 | 1.69 | 1.00 |
| | | | UW XTU-002 (10017430) Crossover Ultrawire Toolbus to Ultralink | 1.58 | 1.69 | 6.50 |
| CCL | 1.77 | | UW PGR-020 (10019371) Production Gamma Ray | 1.92 | 1.69 | 9.50 |
| | | | UW CCL-028 (10018437) 3-1/8" Ultrawire Casing Collar Locator | 1.61 | 3.13 | 36.00 |
| TEMP | 0.37 | | UW PRT-016 (10025093) Platinum Resistance Thermometer | 1.04 | 1.69 | 5.20 |
| TSTAMP | 0.00 | | UW BUL-006 (10019616) Sondex Ultrawire Bullnose Terminator Sub | 0.22 | 1.69 | 1.20 |
| Dataset: TEP_Federal RU 413-17_TEMP_04-20-18.db: field/well/run1/main Total length: 7.62 ft Total weight: 63.00 lb O.D.: 3.13 in | | | | | | |

Temperature Calibration Report

Serial Number: 10025093
Tool Model: 016
Performed: Sun Nov 12 13:20:23 2017

| Point # | Reading | Reference |
|---------|--------------|-------------|
| 1 | 13006.00 cps | 68.00 degF |
| 2 | 18181.00 cps | 104.00 degF |
| 3 | 29634.00 cps | 176.00 degF |
| 4 | 41077.00 cps | 248.00 degF |
| 5 | 52560.00 cps | 320.00 degF |
| 6 | 58409.00 cps | 356.00 degF |
| 7 | cps | degF |
| 8 | cps | degF |
| 9 | cps | degF |
| 10 | cps | degF |

Gamma Ray Calibration Report

Serial Number: 10019371
Tool Model: 020
Performed: Sun Nov 12 05:37:04 2017

Calibrator Value: 637.0 GAPI

Background Reading: 78.8 cps
Calibrator Reading: 1069.9 cps

Sensitivity: 0.6427 GAPI/cps



Company TEP Rocky Mountain LLC
Well Federal RU 413-17
Field Rulison
County Garfield
State Colorado