



Mud Properties Record

| Date / Time      | Run No. | Measured Depth (ft) | Mud Type        | Density (ppg) | Viscosity (cP) | pH  | Fluid Loss (cm3) | Oil / Water | Source     | Total Chlorides (ppm) | K+ (%) |
|------------------|---------|---------------------|-----------------|---------------|----------------|-----|------------------|-------------|------------|-----------------------|--------|
| 2016-10-04 08:00 | 1       | 1933.00             | Water Based Mud | 8.5           | 27             | 8.8 | 0.0              | 0/1         | Active Pit | 1500                  | 0.00   |
| 2016-10-04 20:00 | 1       | 2191.85             | Oil Based Mud   | 10.1          | 65             | N/A | 19.0             | 0.72/0.14   | Active Pit | 18500                 | 0.00   |
| 2016-10-05 08:00 | 1       | 4749.95             | Oil Based Mud   | 9.7           | 55             | N/A | 18.4             | 0.73/0.15   | Active Pit | 22500                 | 0.00   |
| 2016-10-06 08:00 | 1       | 9677.29             | Oil Based Mud   | 9.6           | 46             | N/A | 17.8             | 0.73/0.16   | Active Pit | 20500                 | 0.00   |
| 2016-10-06 20:00 | 1       | 12459.92            | Oil Based Mud   | 9.6           | 46             | N/A | 17.2             | 0.73/0.15   | Active Pit | 24500                 | 0.00   |
| 2016-10-07 08:00 | 1       | 15350.14            | Oil Based Mud   | 9.7           | 48             | N/A | 19.0             | 0.73/0.14   | Active Pit | 21500                 | 0.00   |

Equipment and Service Data

| Run No. | Tool    | Serial Number | Measurement          | Sensor Offset (ft) | Bit Offset (ft) | Max O.D. (in) | Min I.D. (in) |
|---------|---------|---------------|----------------------|--------------------|-----------------|---------------|---------------|
| 1       | ATC_SU  | 11994999      | Near Bit VSS         | 5.93               | 6.73            | 7.000         | 4.330         |
| 1       | ATC_SU  | 11994999      | Near Bit Inclination | 5.93               | 6.73            | 7.000         | 4.330         |
| 1       | ATC_MWD | 12141354      | Gamma (single)       | 2.73               | 12.90           | 7.000         | 3.250         |
| 1       | ATC_MWD | 12141354      | Directional (mag)    | 12.27              | 22.44           | 7.000         | 3.250         |

Comments


- 1 Baker Hughes Run 1 utilized a 6.75 inch AutoTrak Curve Rotary Steerable assembly tool behind a 8.50 inch bit from 1933 to 16055 ft MD (1933 to 5670 ft TVD).
- 2 Depth measurements obtained from a depth control system not supplied or operated by Baker Hughes. Due to lack of control by Baker Hughes logging engineers, depth calibrations and measurements could not be independently verified.

Remarks

| Number | Measured Depth (ft) | Hole Section (in) | Run No. | Remark  |
|--------|---------------------|-------------------|---------|---|
| 1      | 1940.00             | 8.500             | 1       | Gamma ray logging services began at 1921 ft MD (1921 ft TVD). |
| 2      | 16050.00            | 8.500             | 1       | Gamma ray logging services ended 16042 ft MD (5670 ft TVD).   |

Curve Mnemonics

| Presented Curves | Description                         | Units    |
|------------------|-------------------------------------|----------|
| ROPA             | Depth Averaged ROP 3 ft Average     | ft/h     |
| GRAM             | Gamma Ray - Apparent 0.5 ft Average | API      |
| GRIM             | Gamma Ray Data Point Indicator      | unitless |
| GRTM             | Gamma Time Since Drilled            | min      |
| TCDM             | Downhole Temperature                | degF     |
| TVD              | True Vertical Depth                 | ft       |
| WOBA             | Weight On Bit, Average 1 ft Average | klb      |



Company

Well

Interval

Created

Noble Energy

Ellie LD26-645

Date From:2016-10-04 18:49:35

Date To:2016-10-07 11:02:24

2016-10-08 04:44

Top:1921.00

Bottom:16055.00

Gamma Ray - Apparent 0.5 ft Average GRAM

0150

API

True Vertical Depth TVD

68001800

ft

MD 1:240 feet

Rate of Penetration 3 ft Average ROPA

10000

ft/h

Gamma Time Since Drilled GRTM

0600

min

Surface Weight On Bit 1 ft Average WOBA

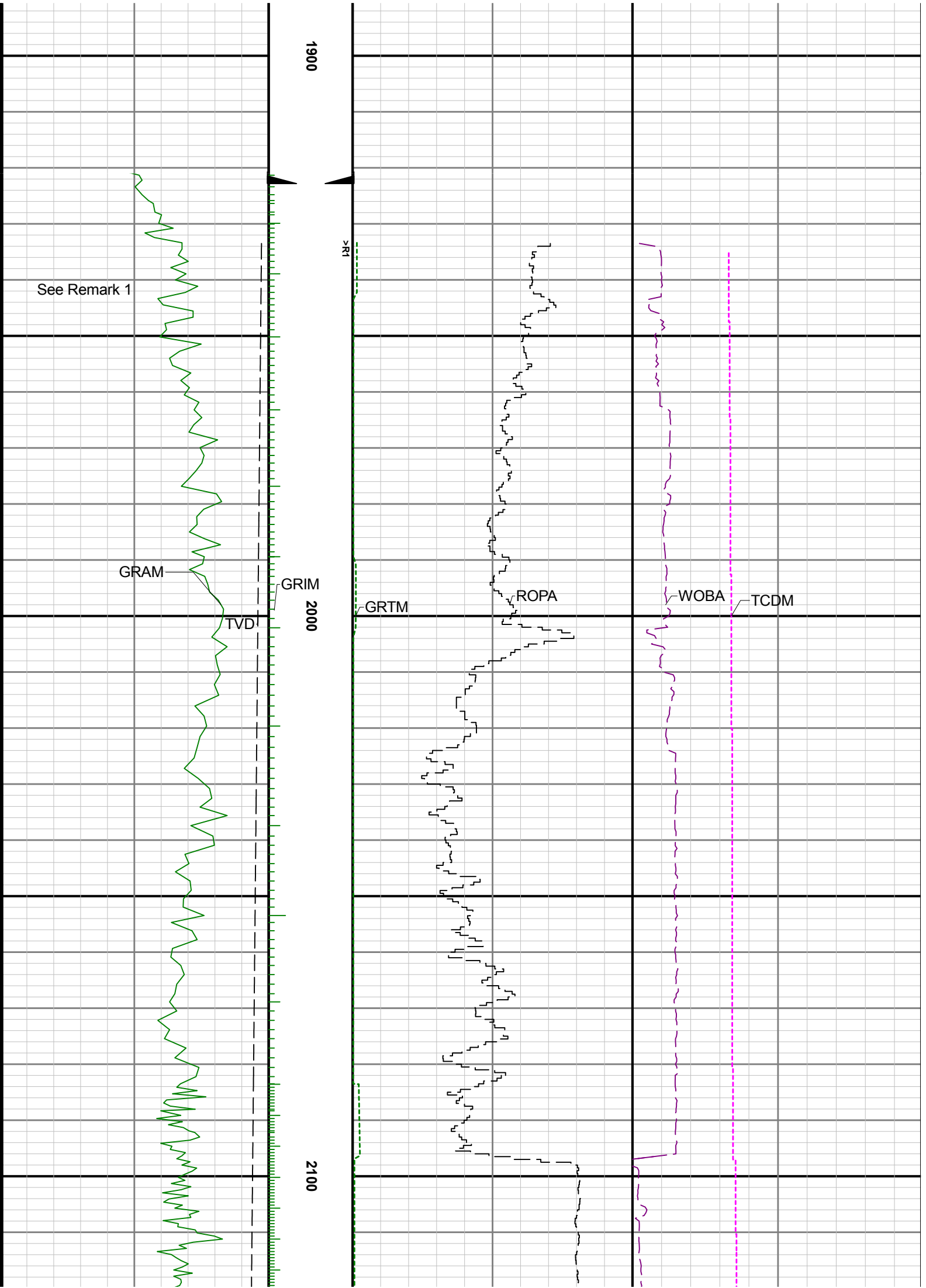
0100

klb

Downhole Temperature TCDM

0300

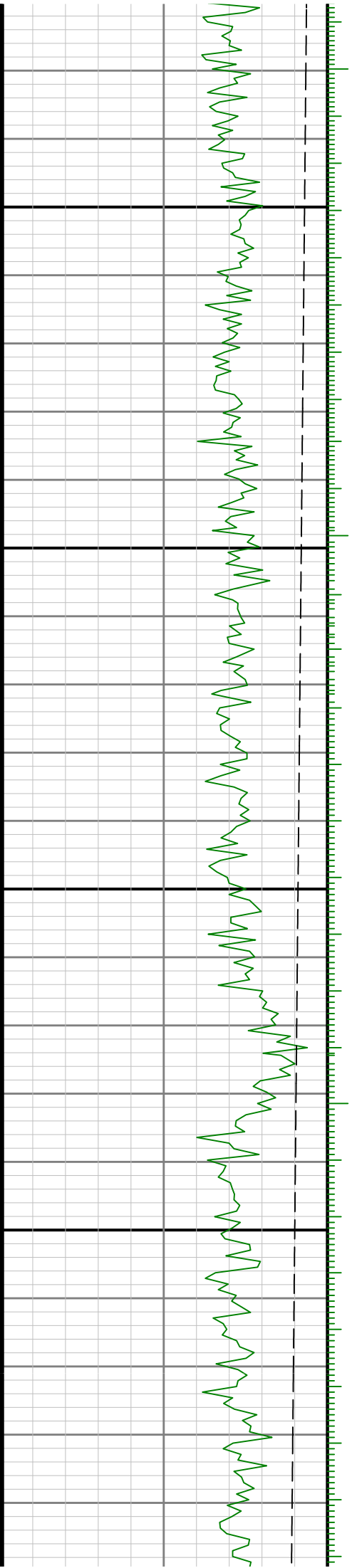
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2200

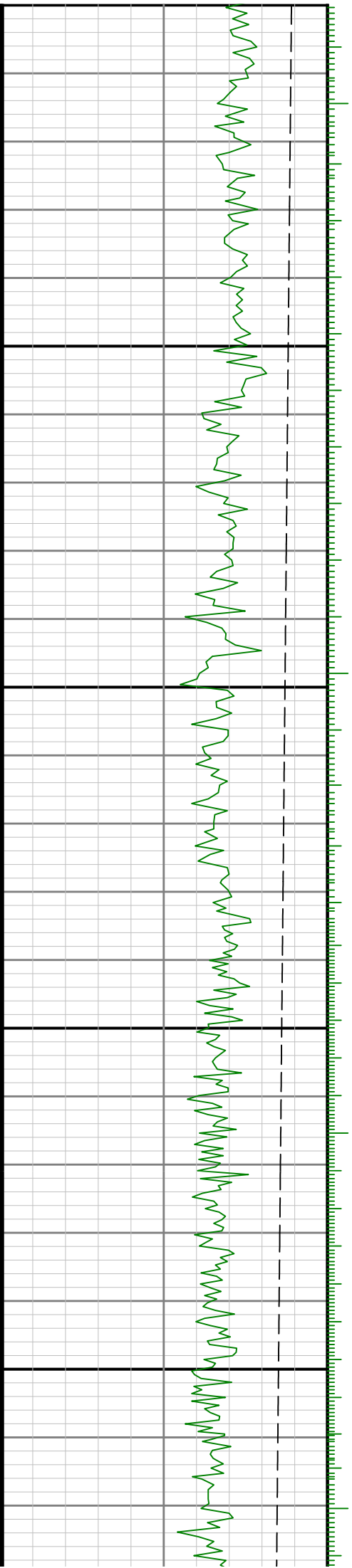
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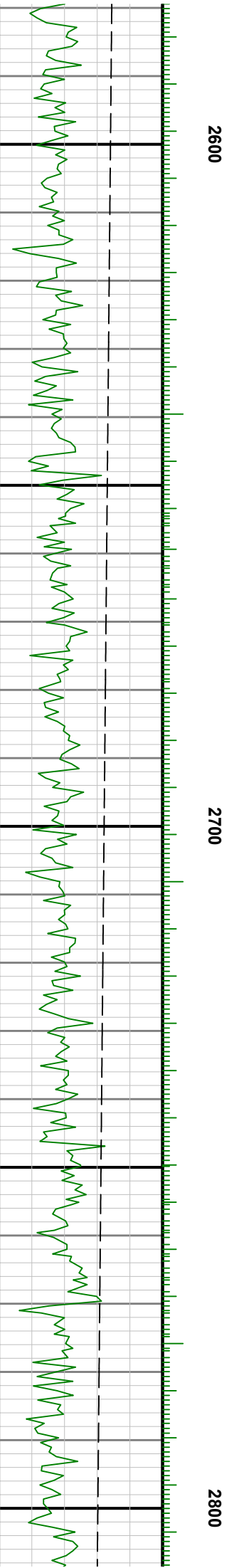


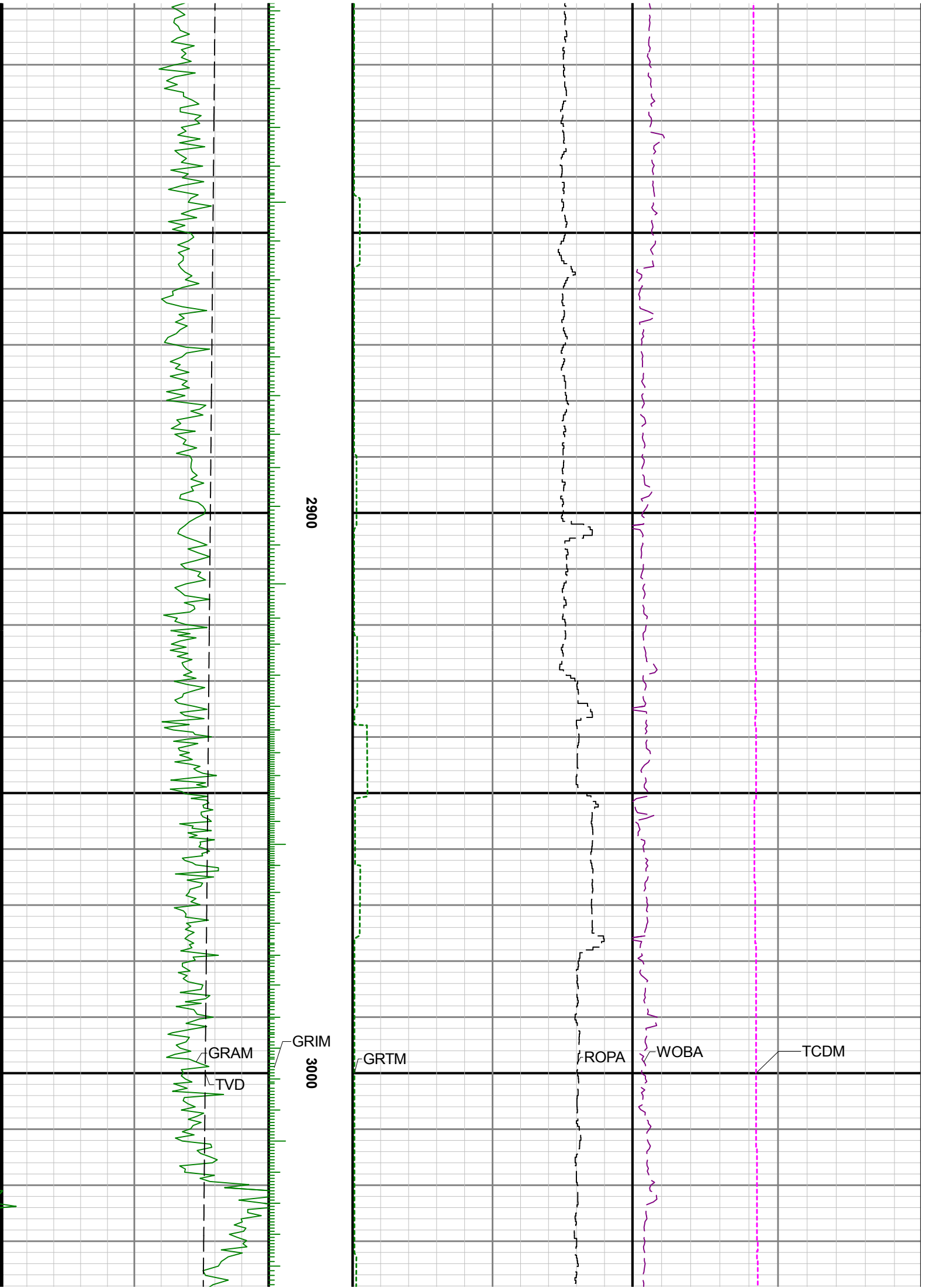


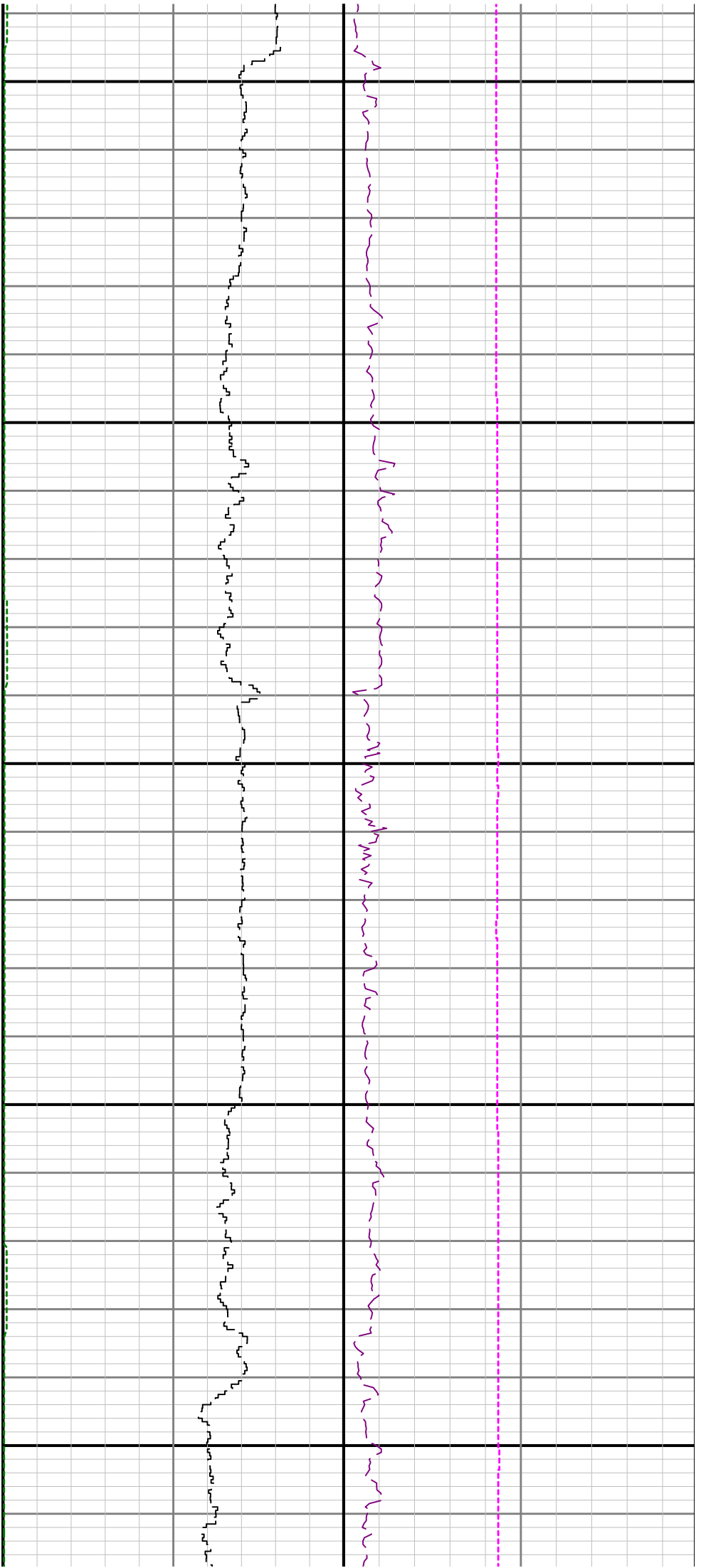
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2500



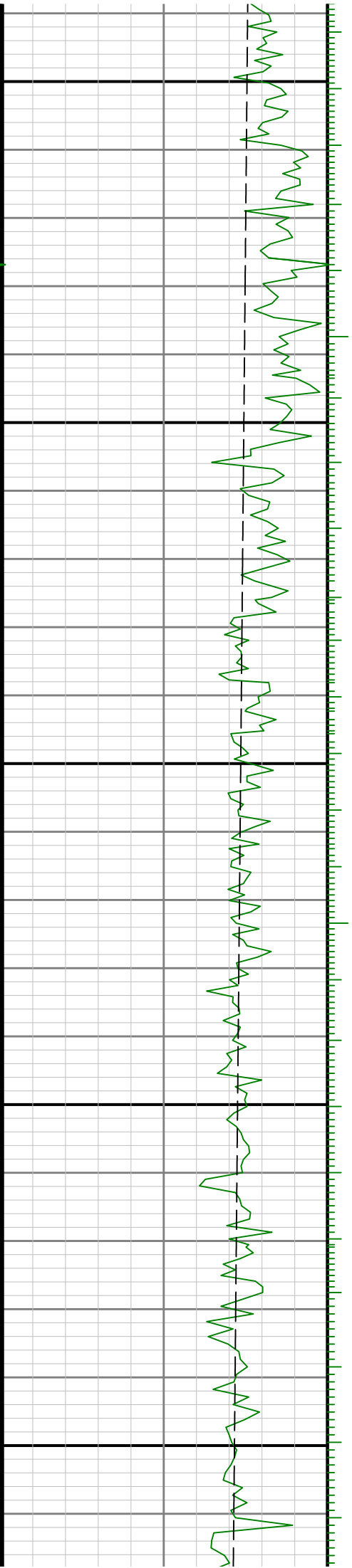




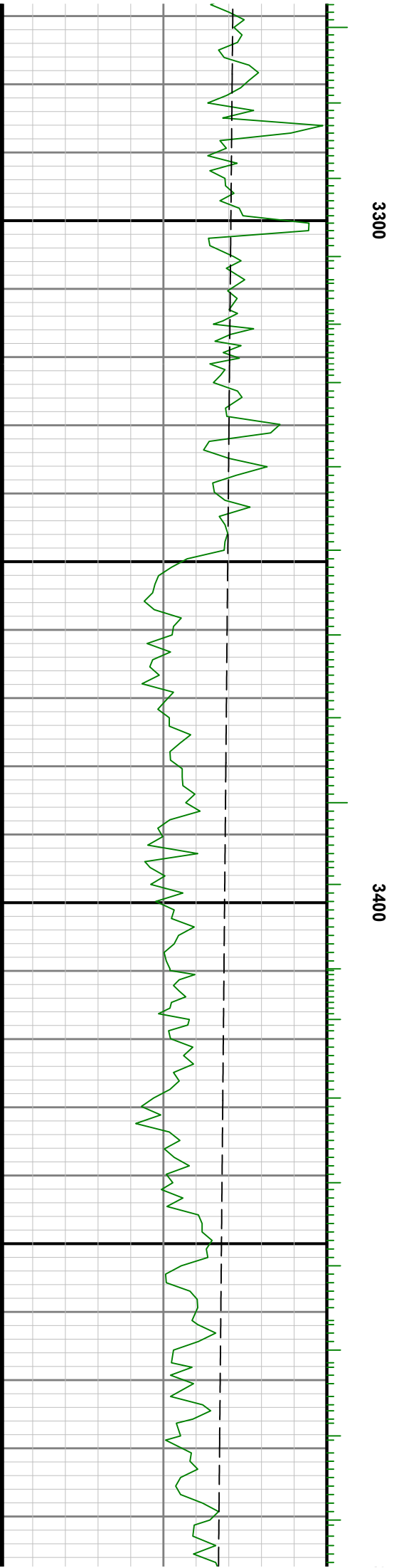
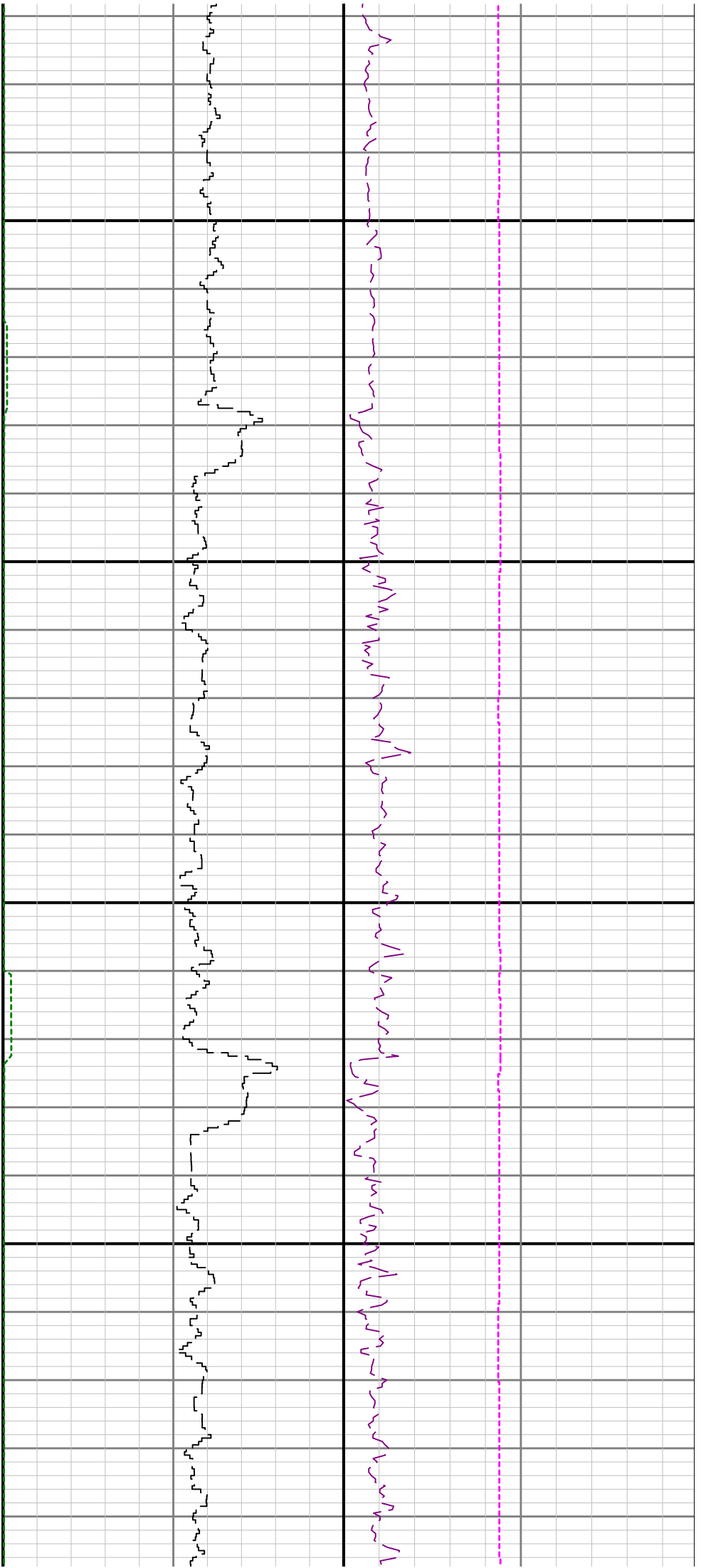


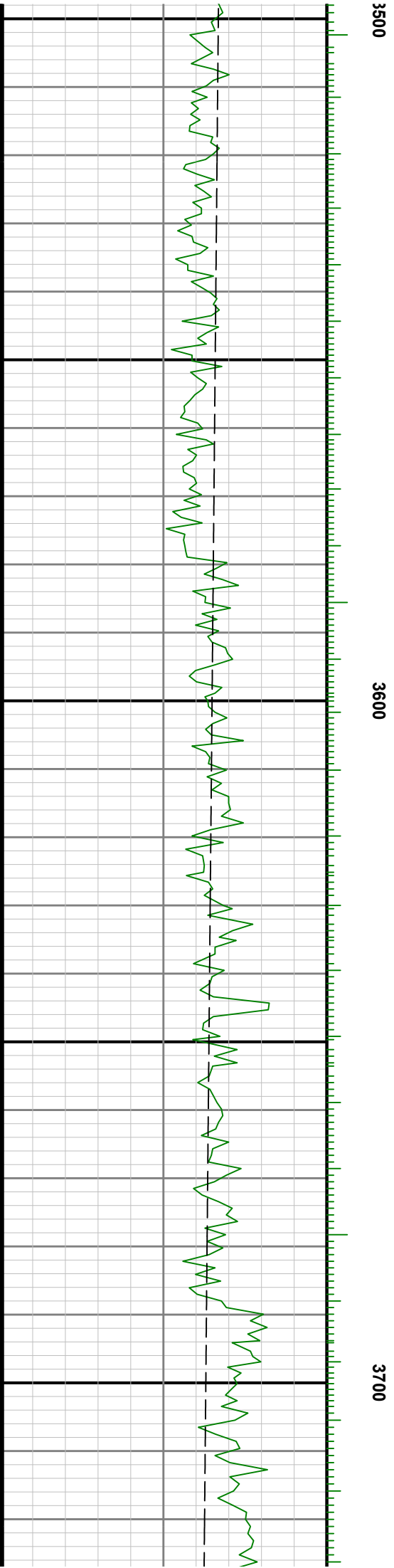
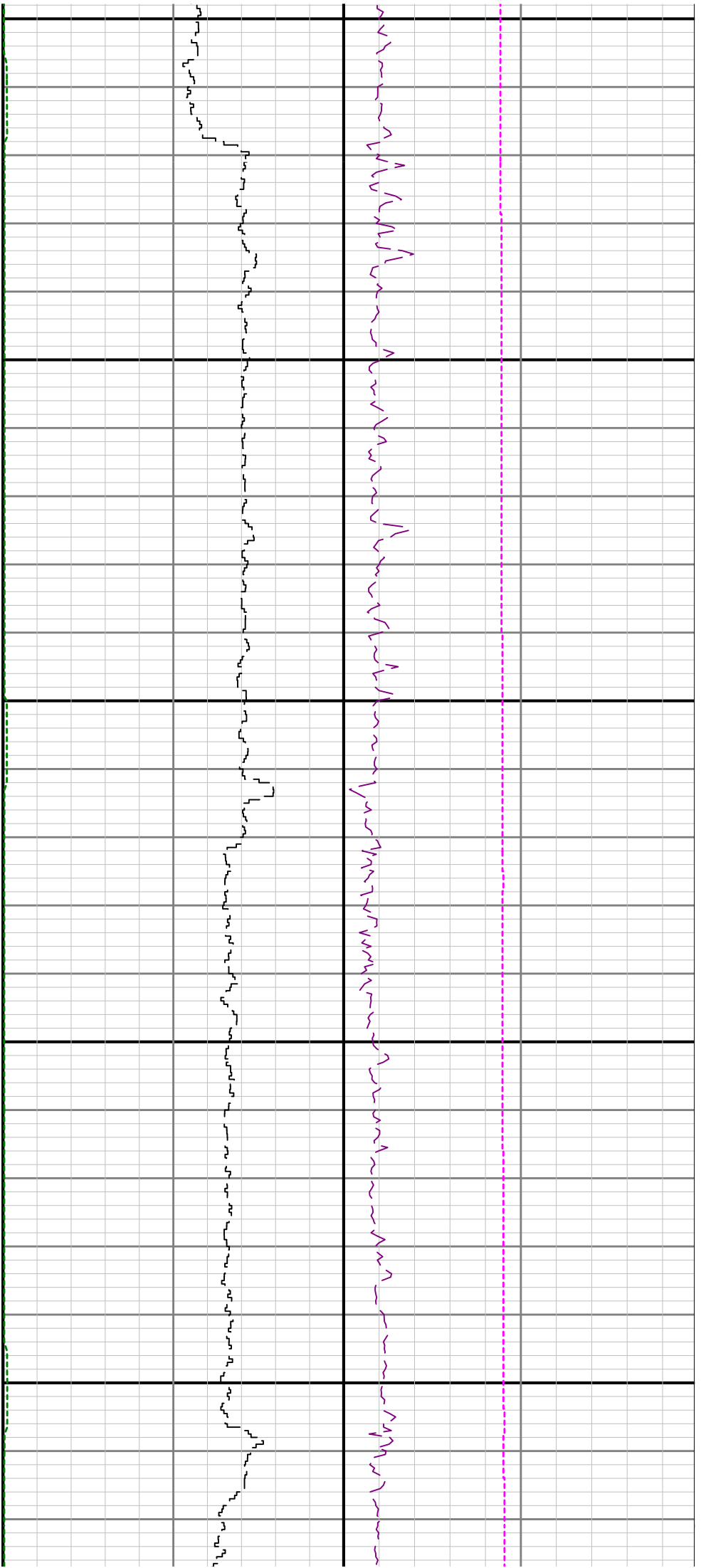
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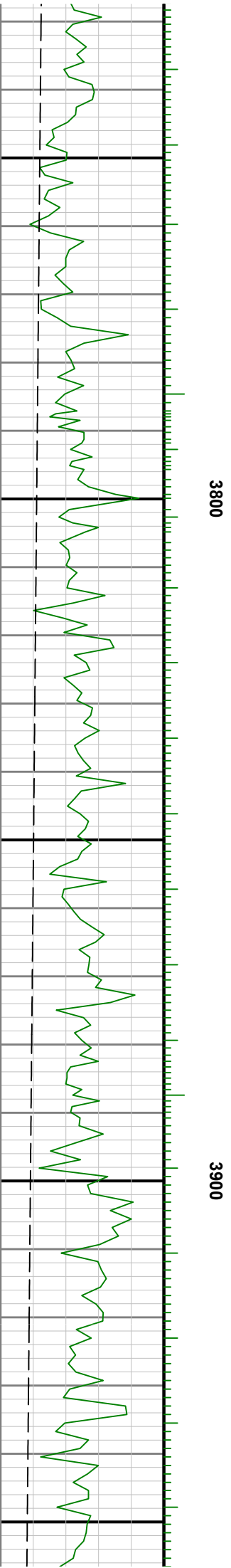
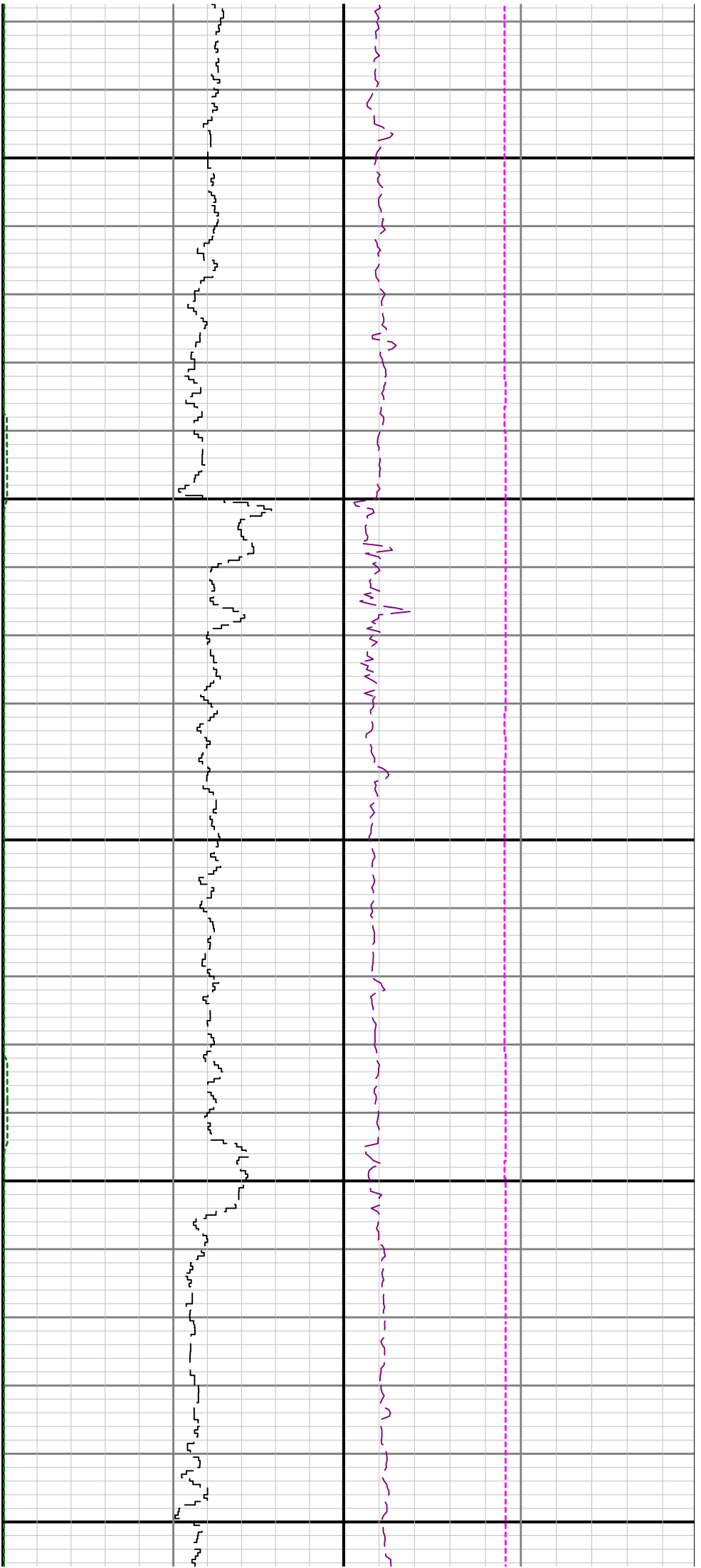
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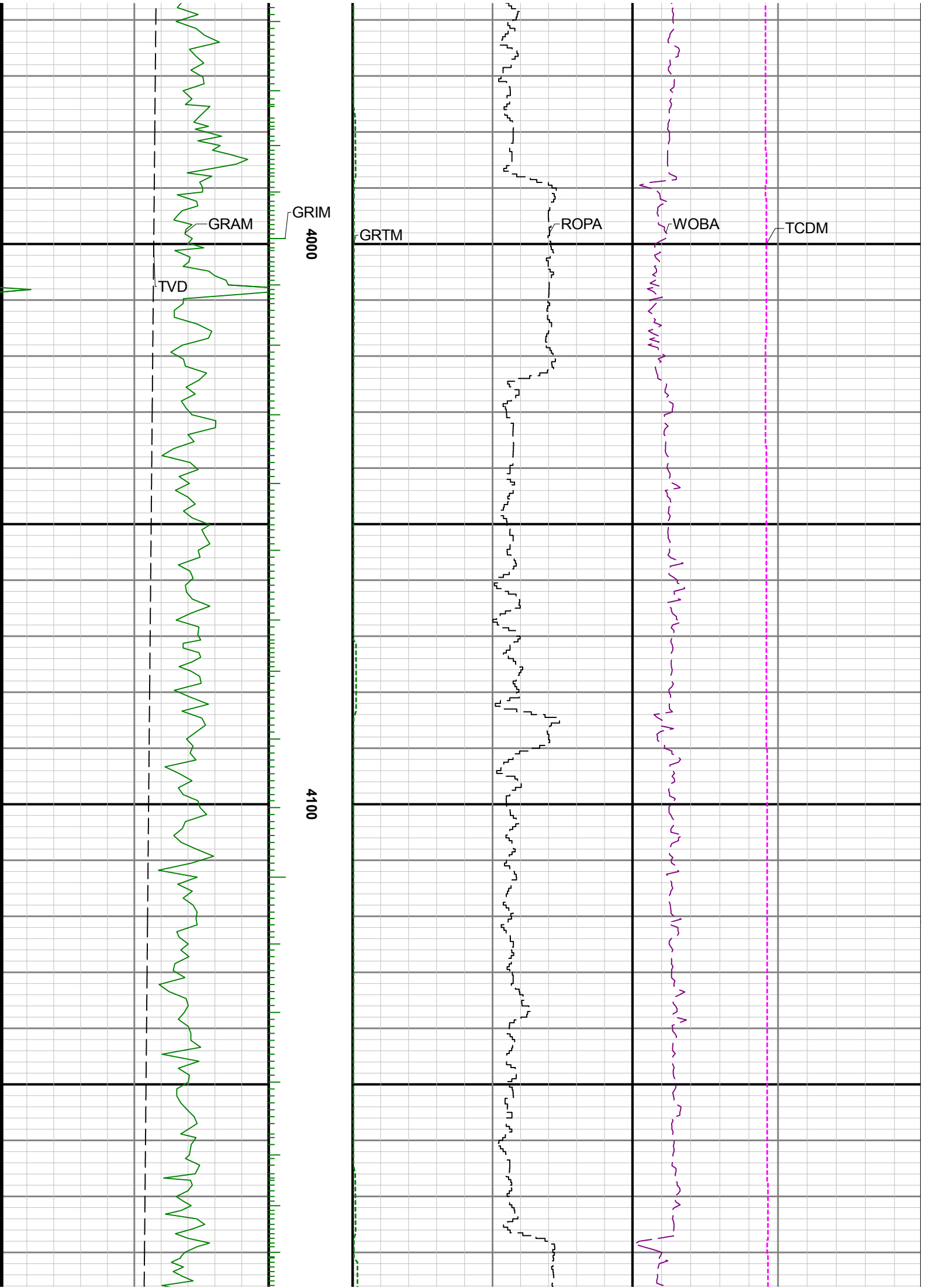


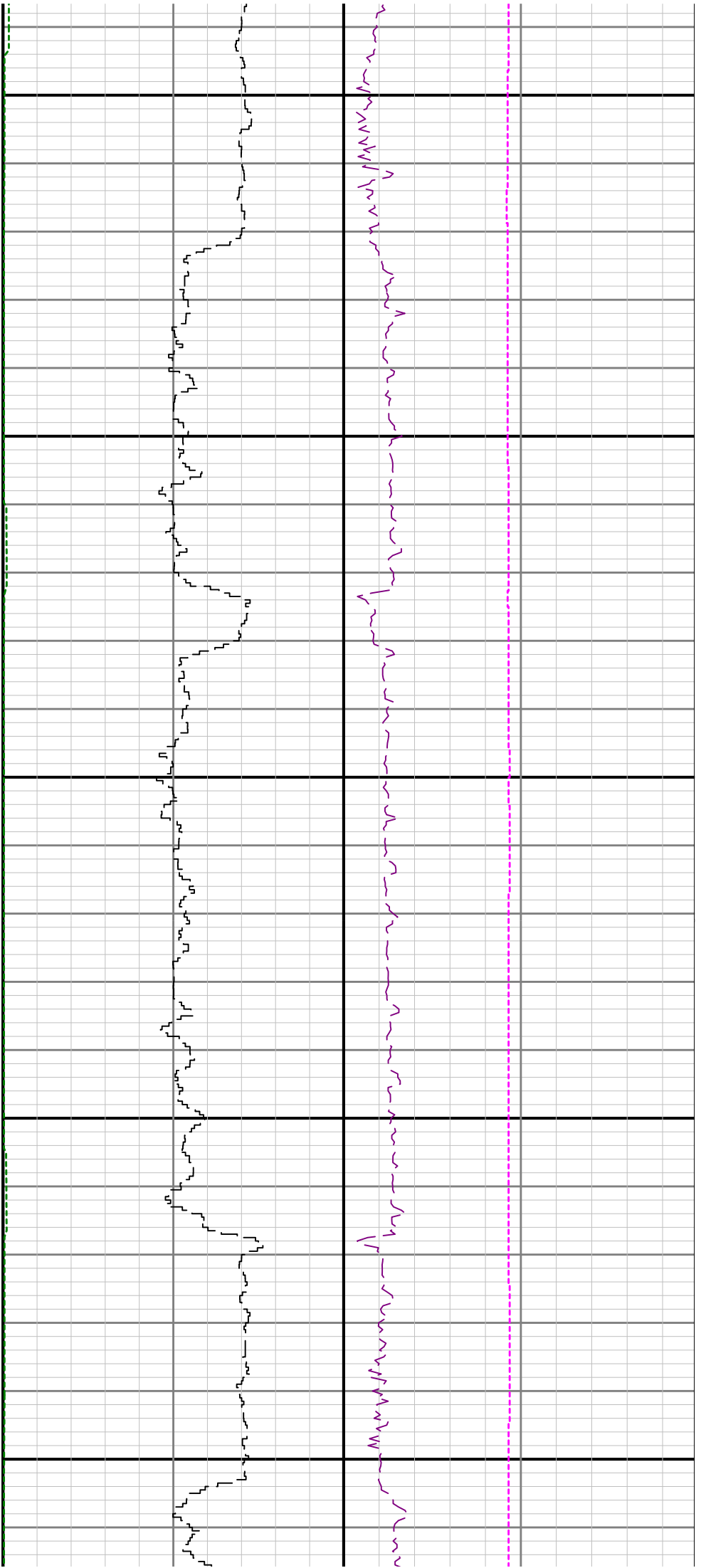








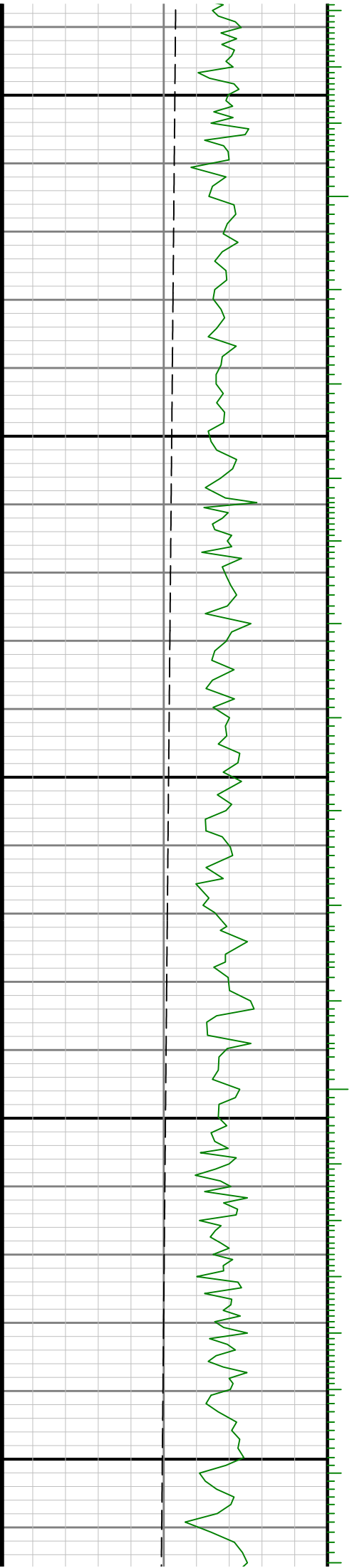




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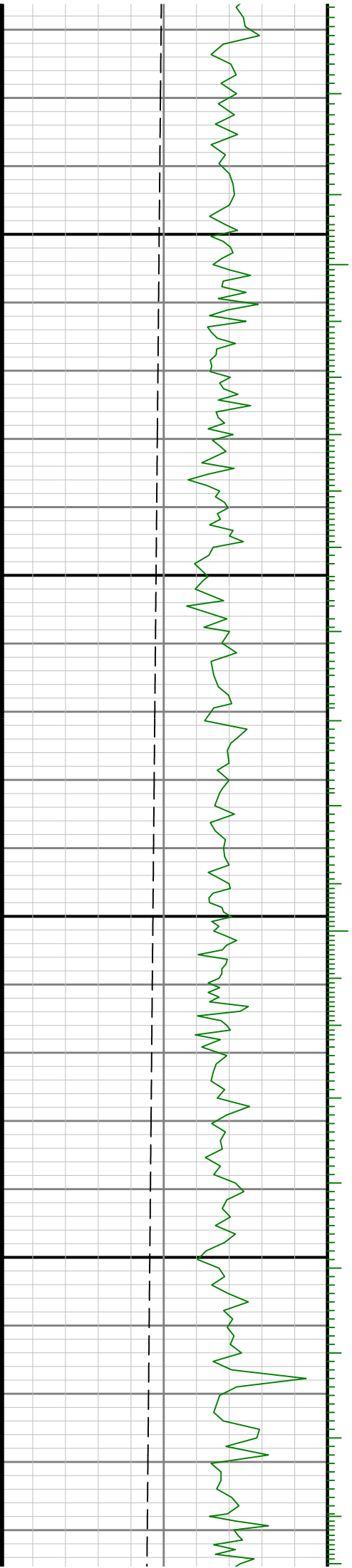
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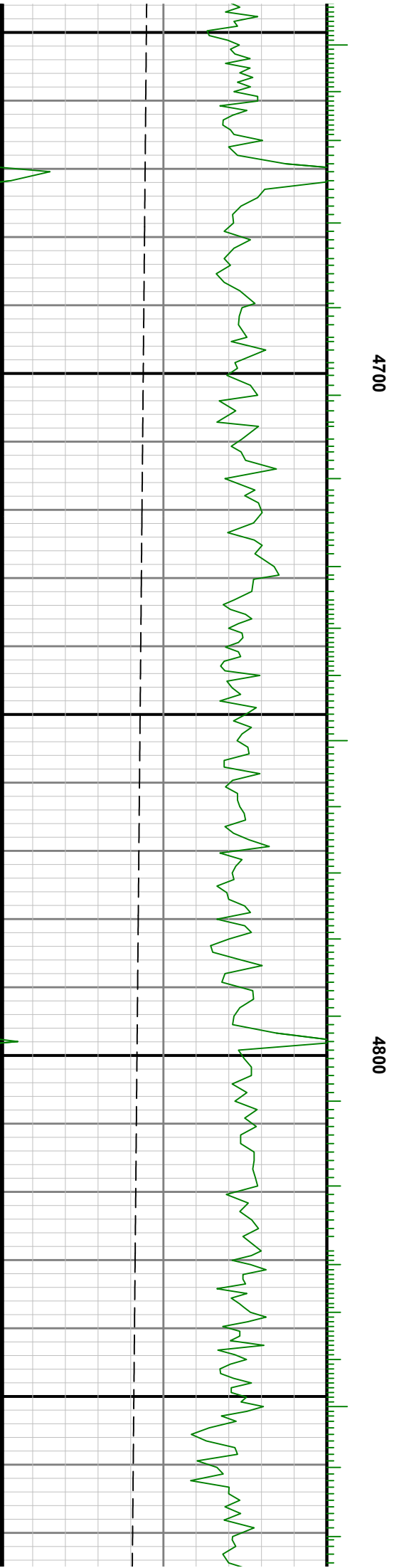
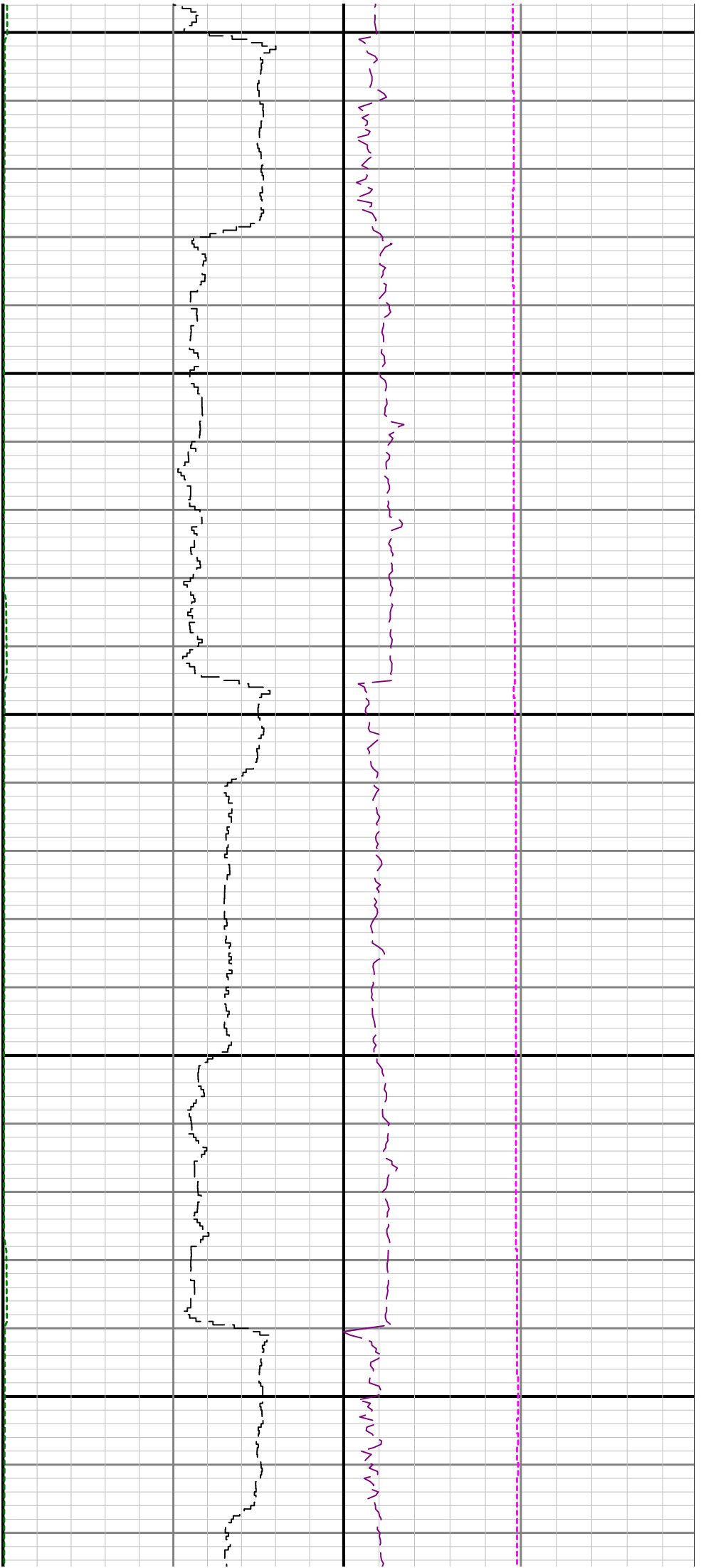


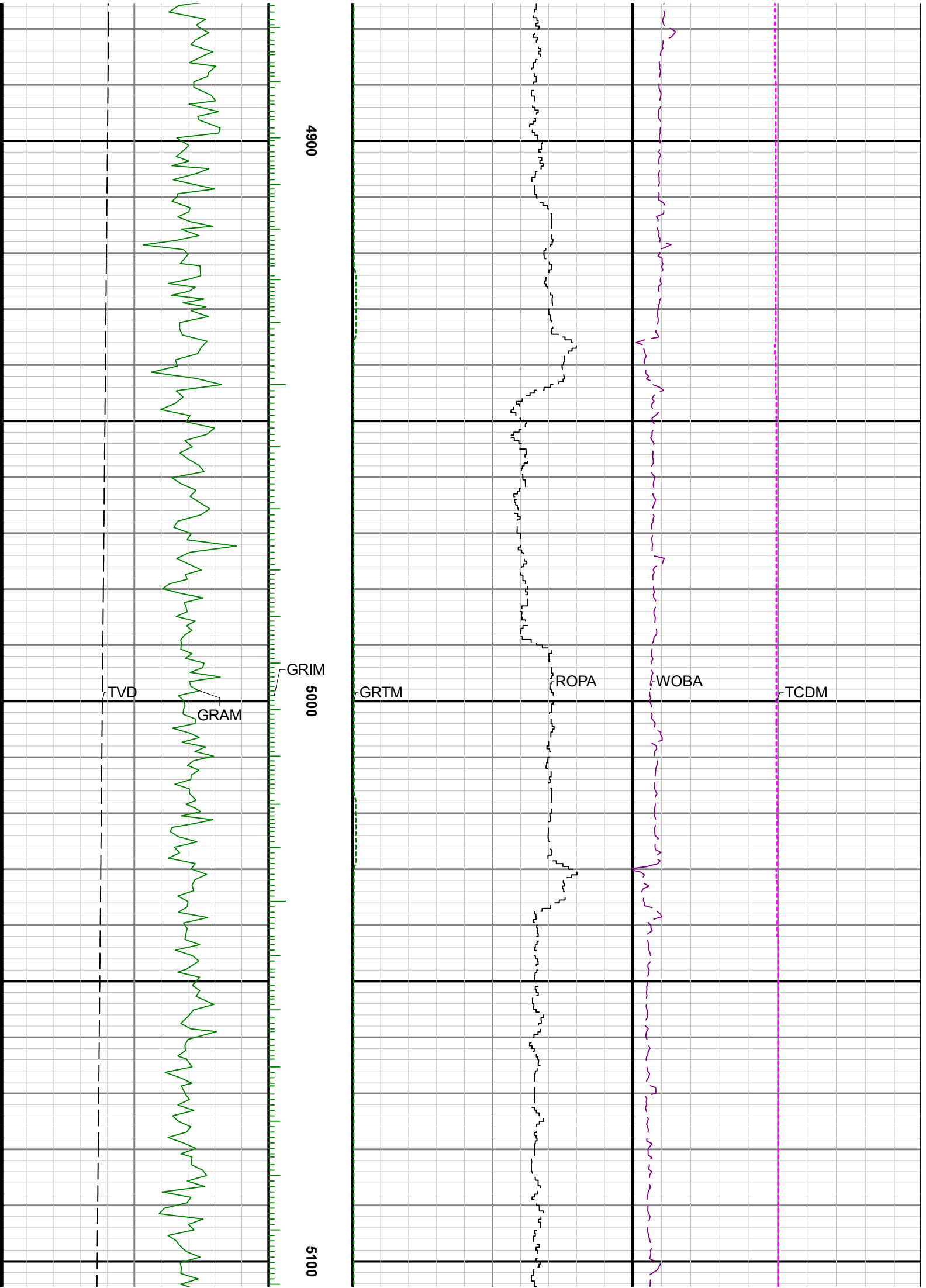


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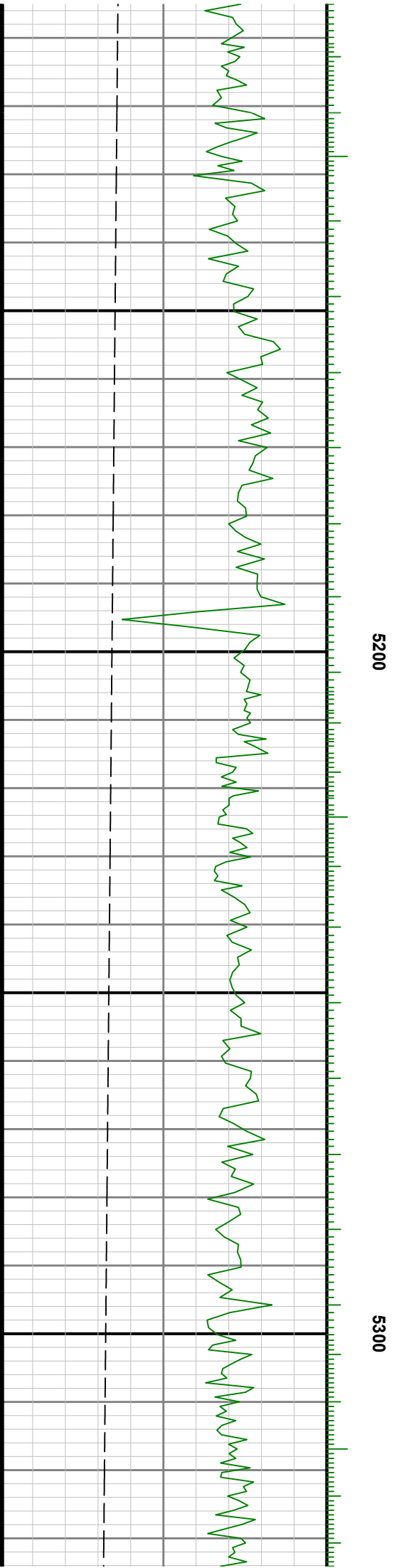
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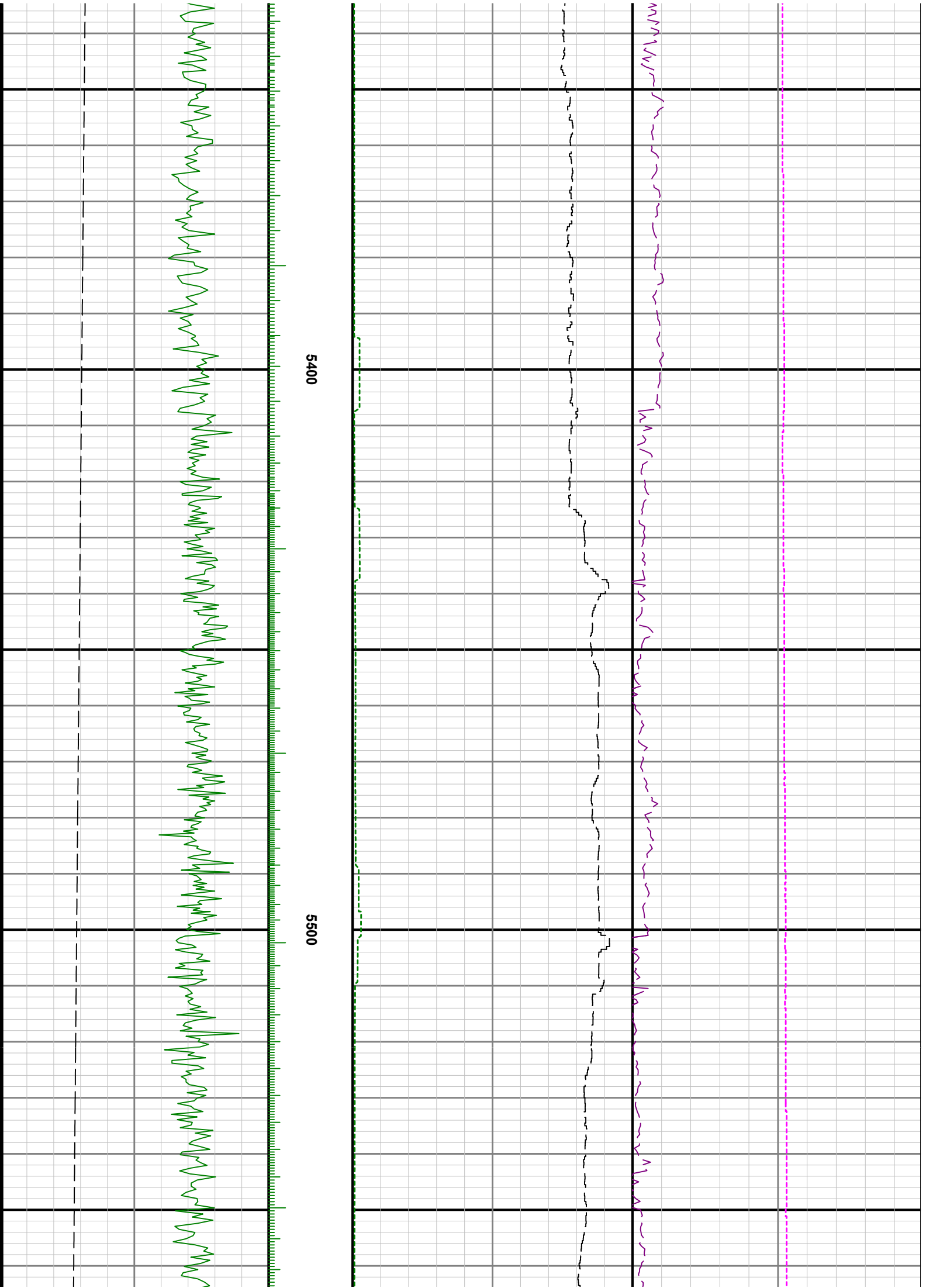


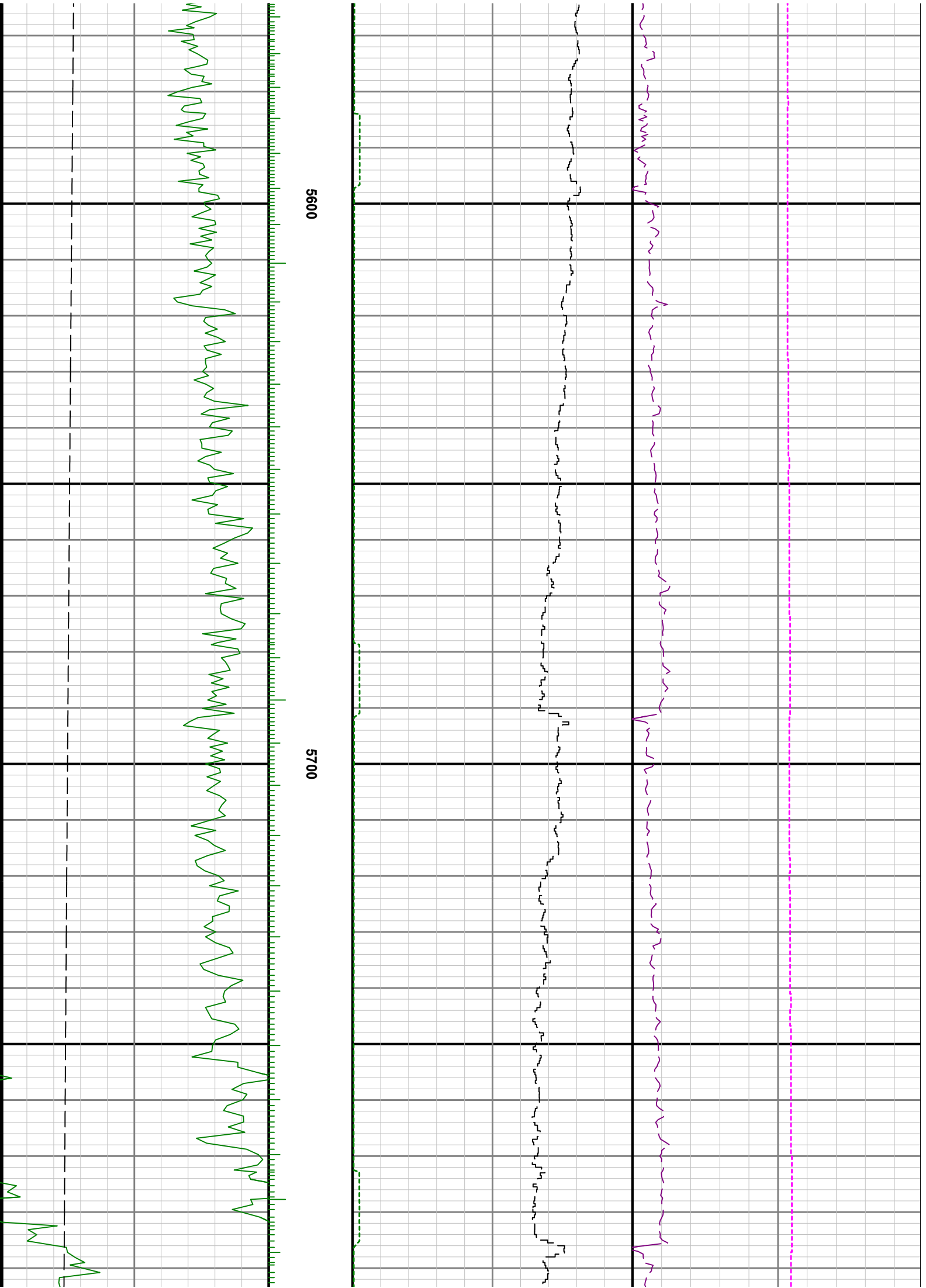


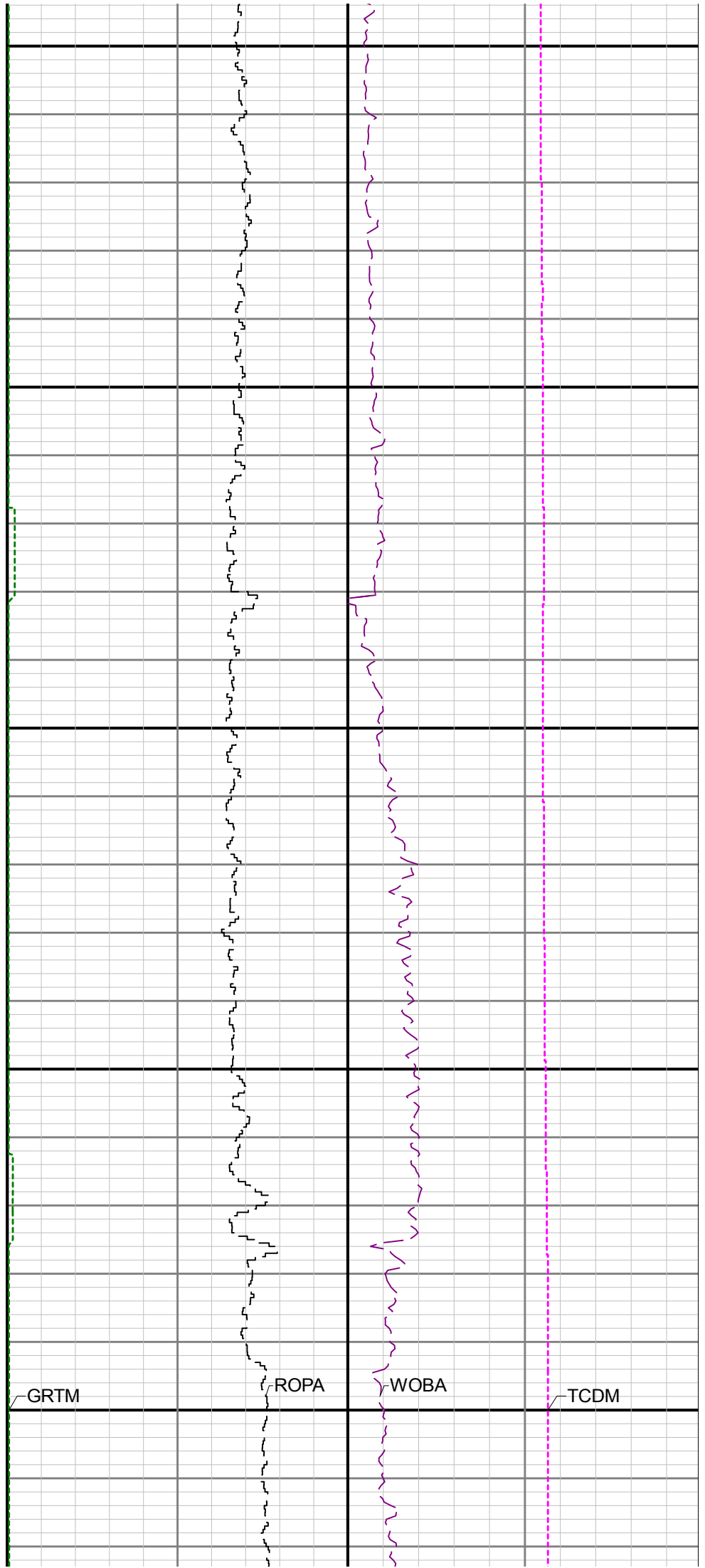
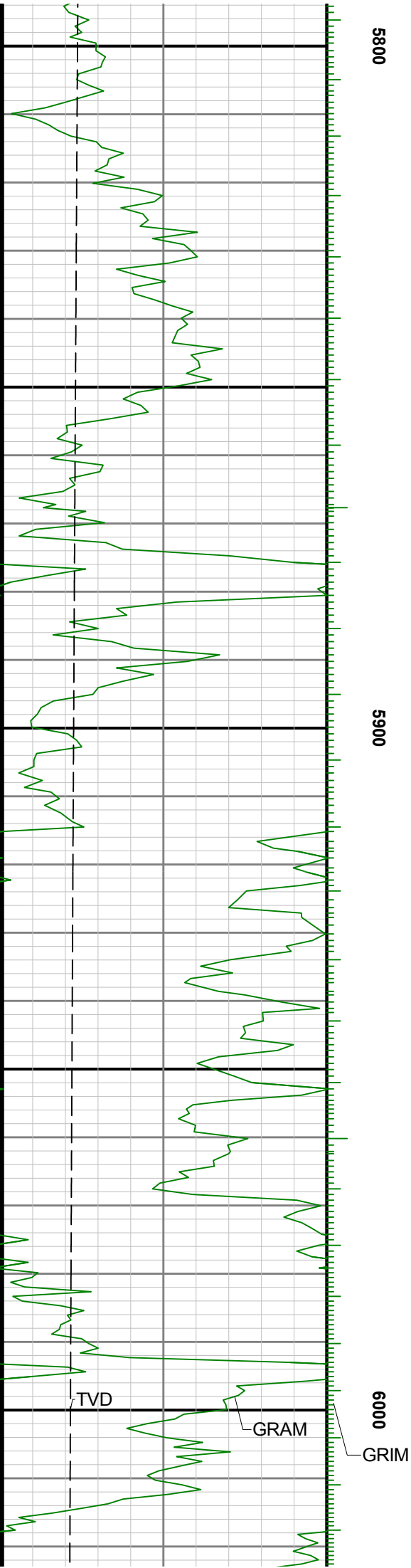


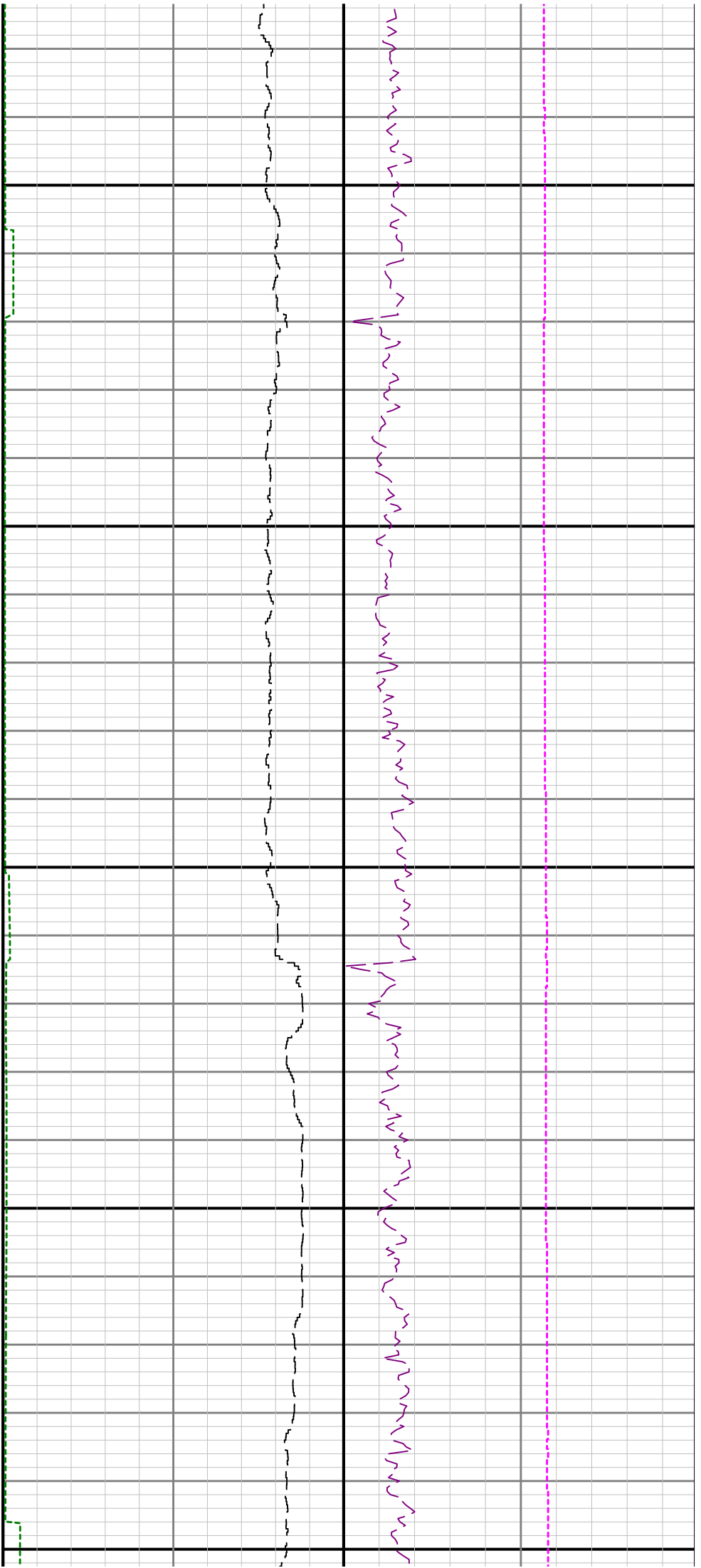






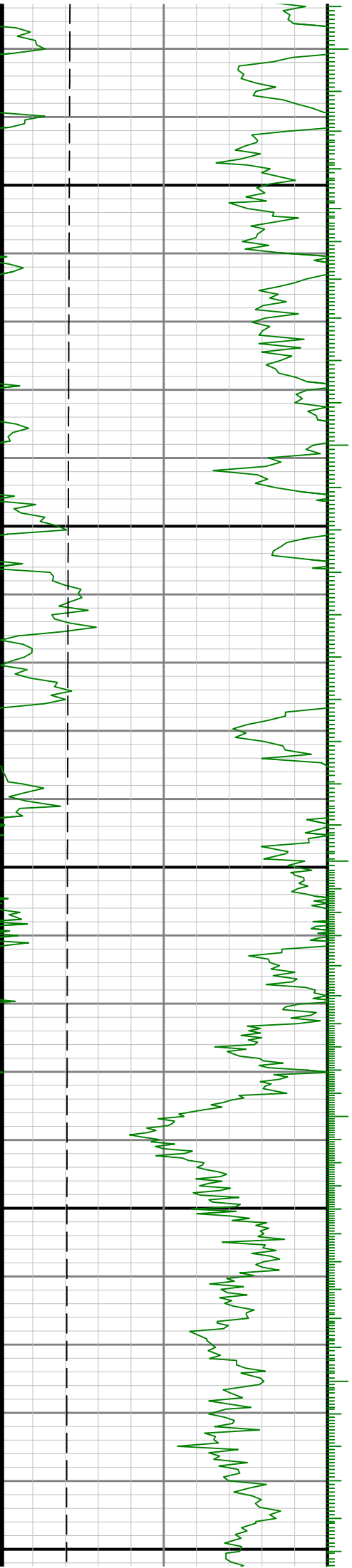


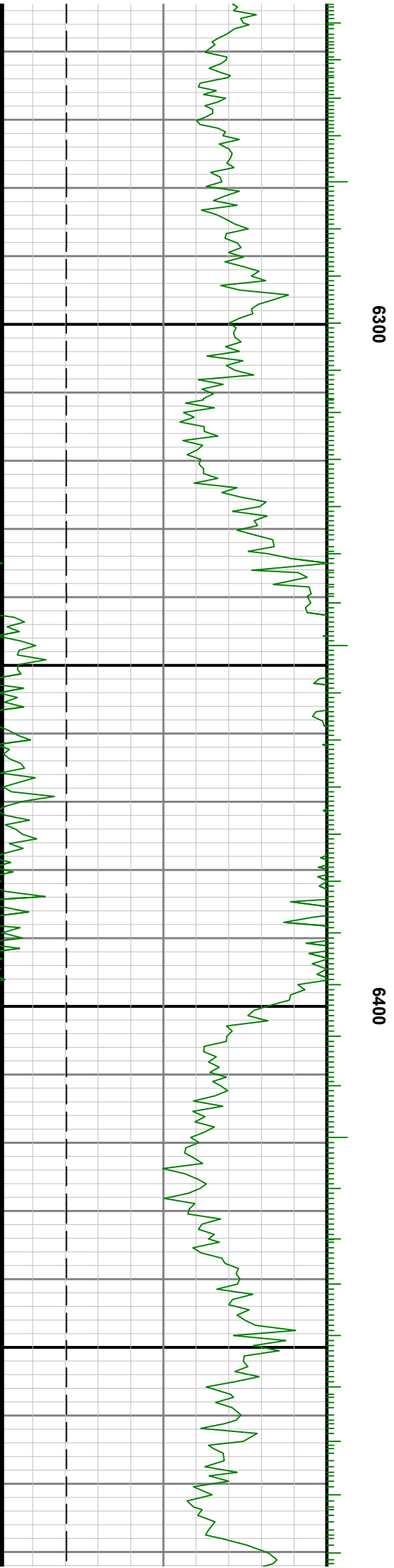
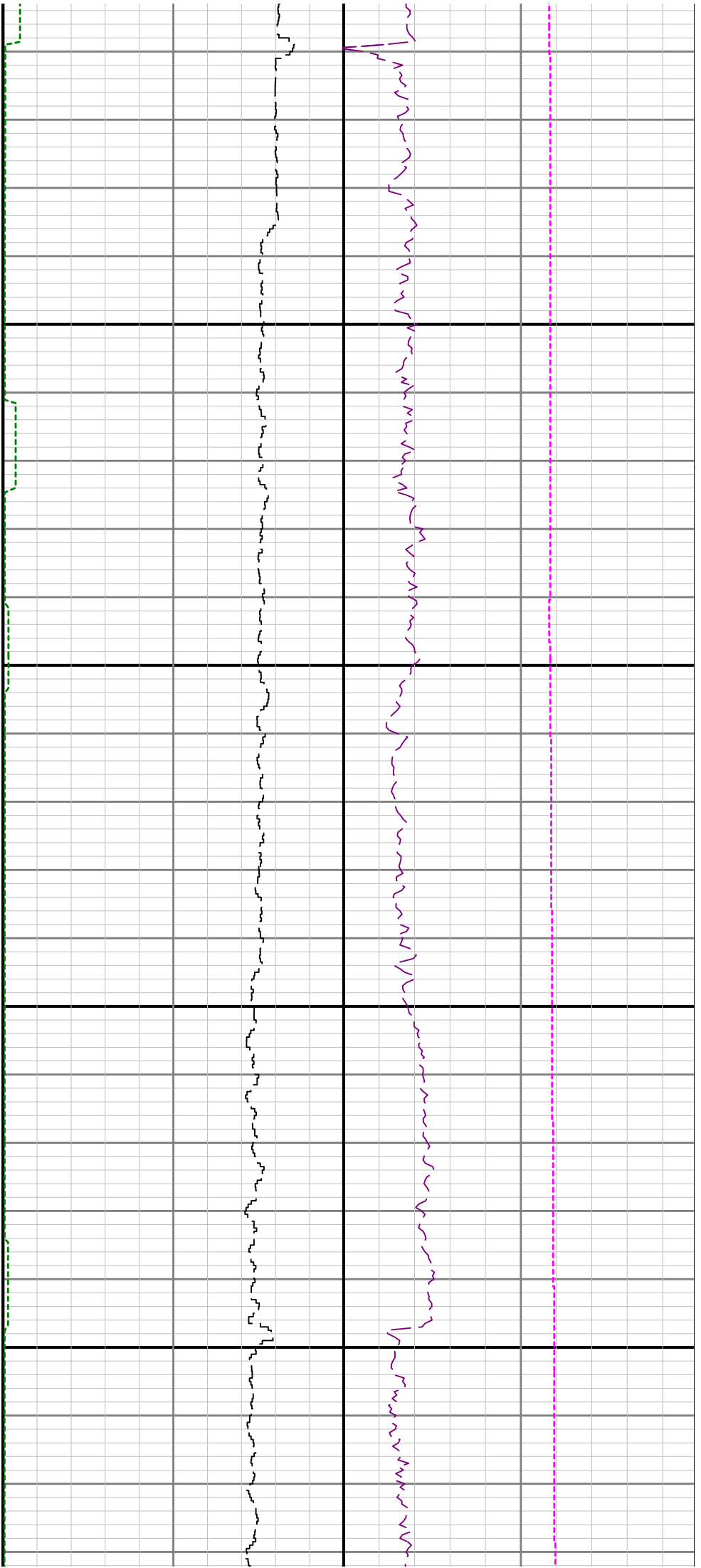


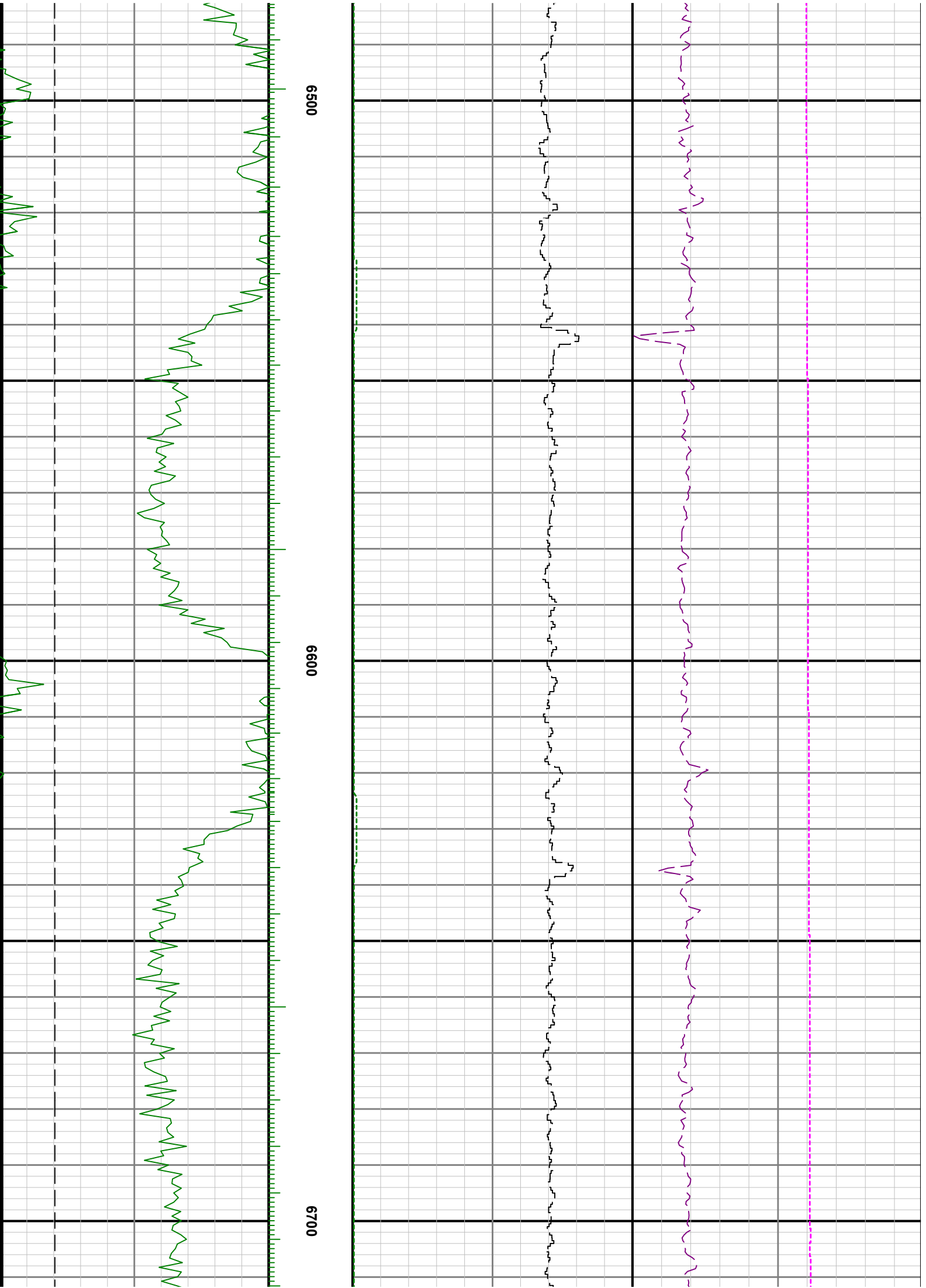


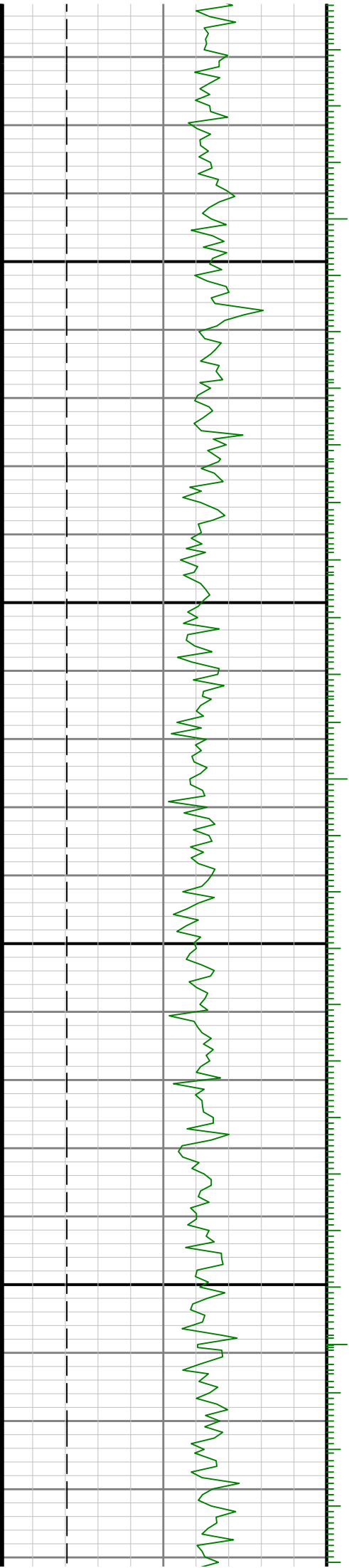
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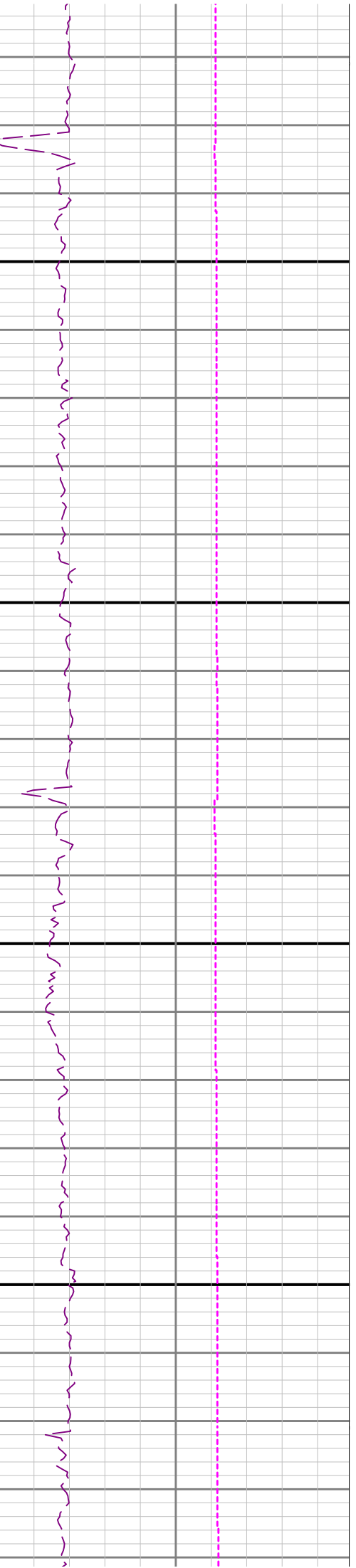
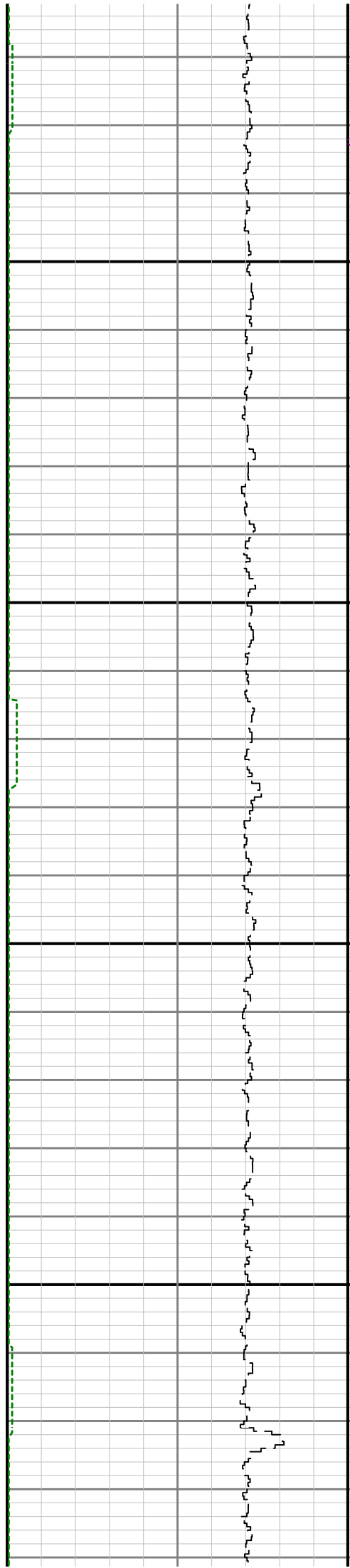




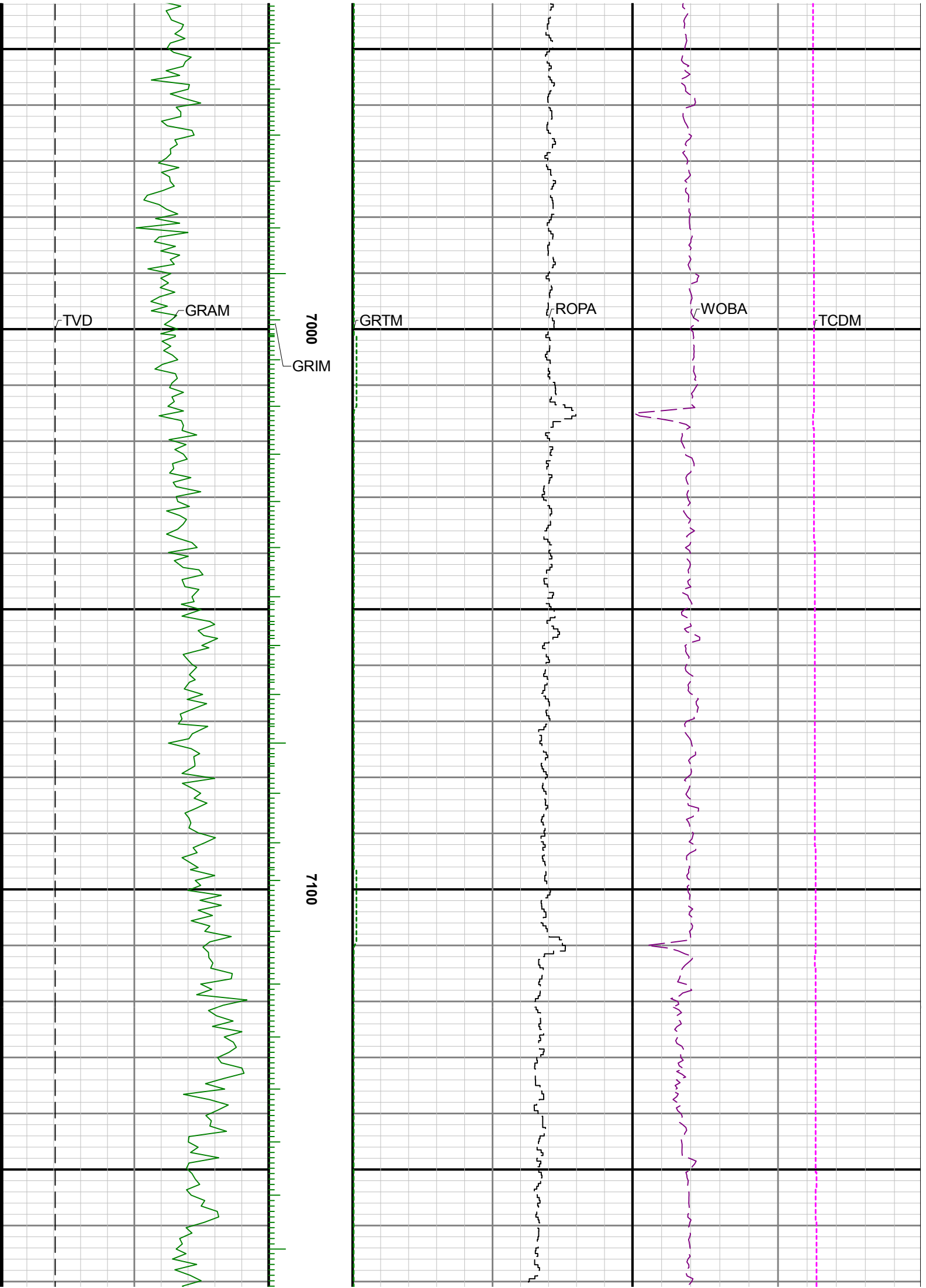


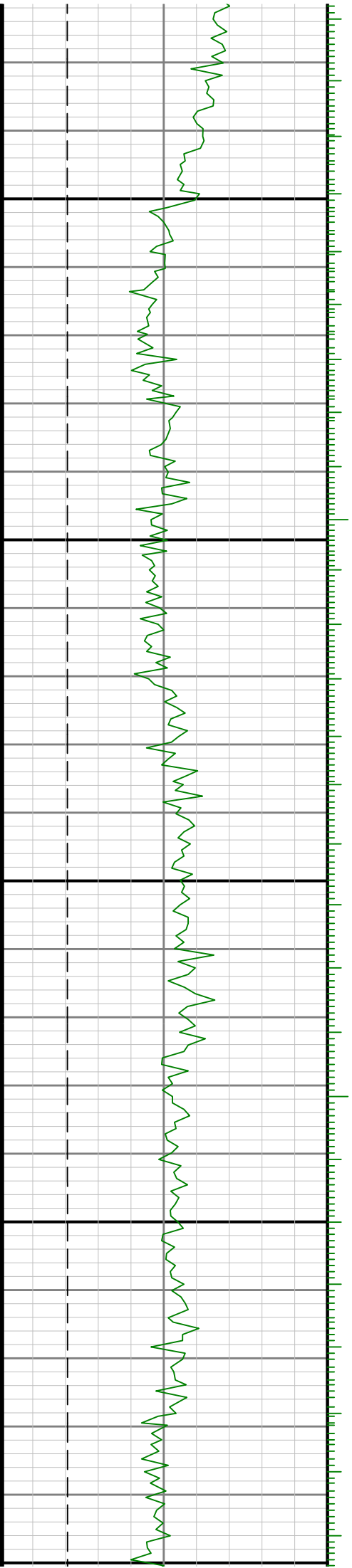
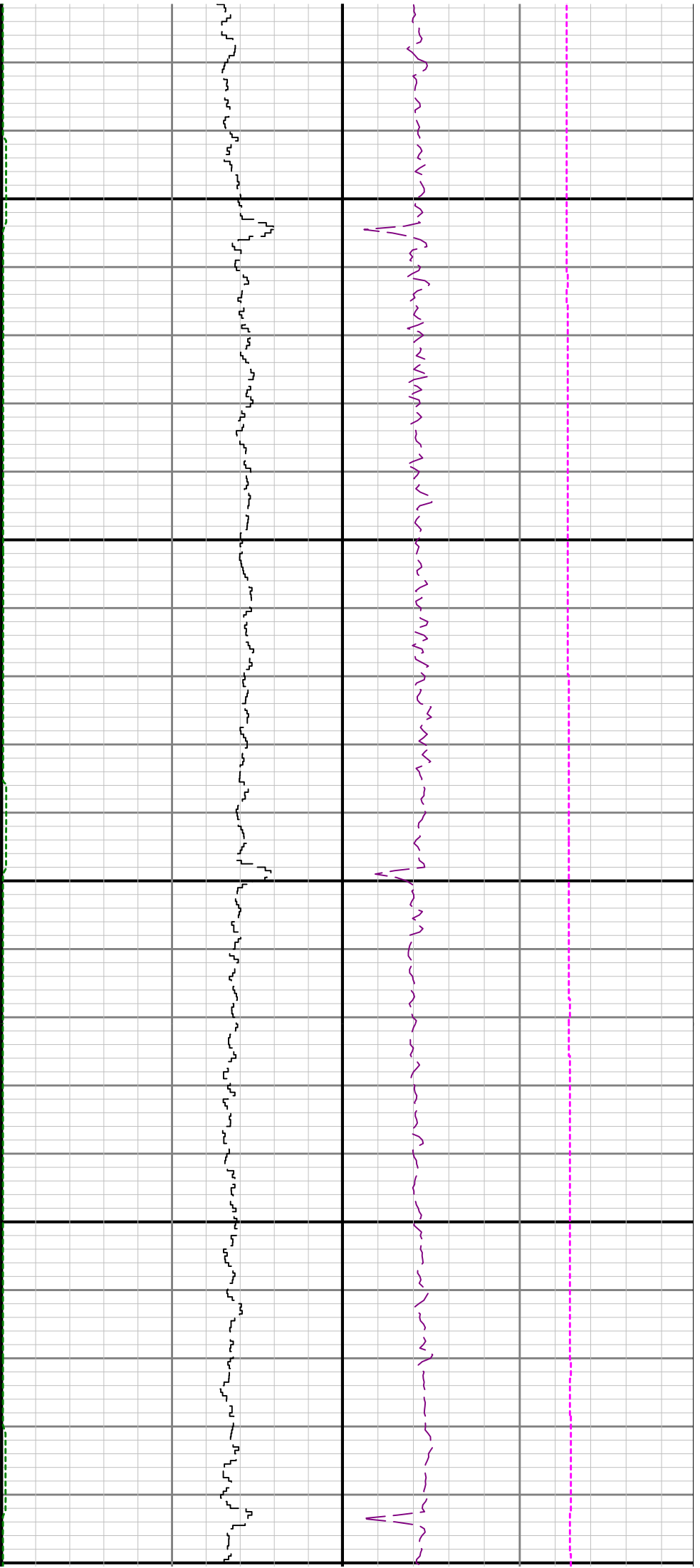
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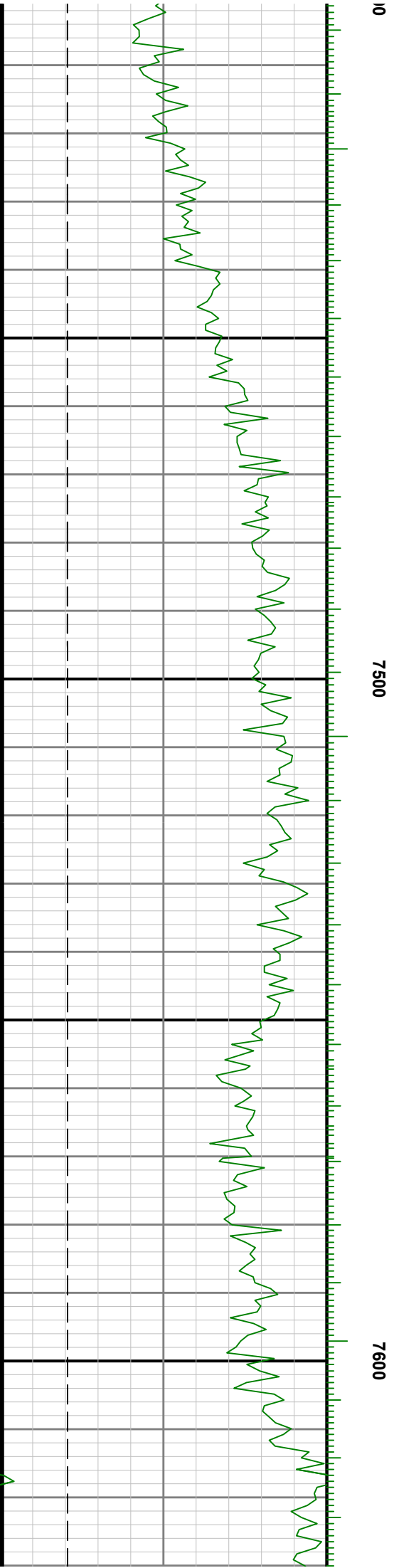
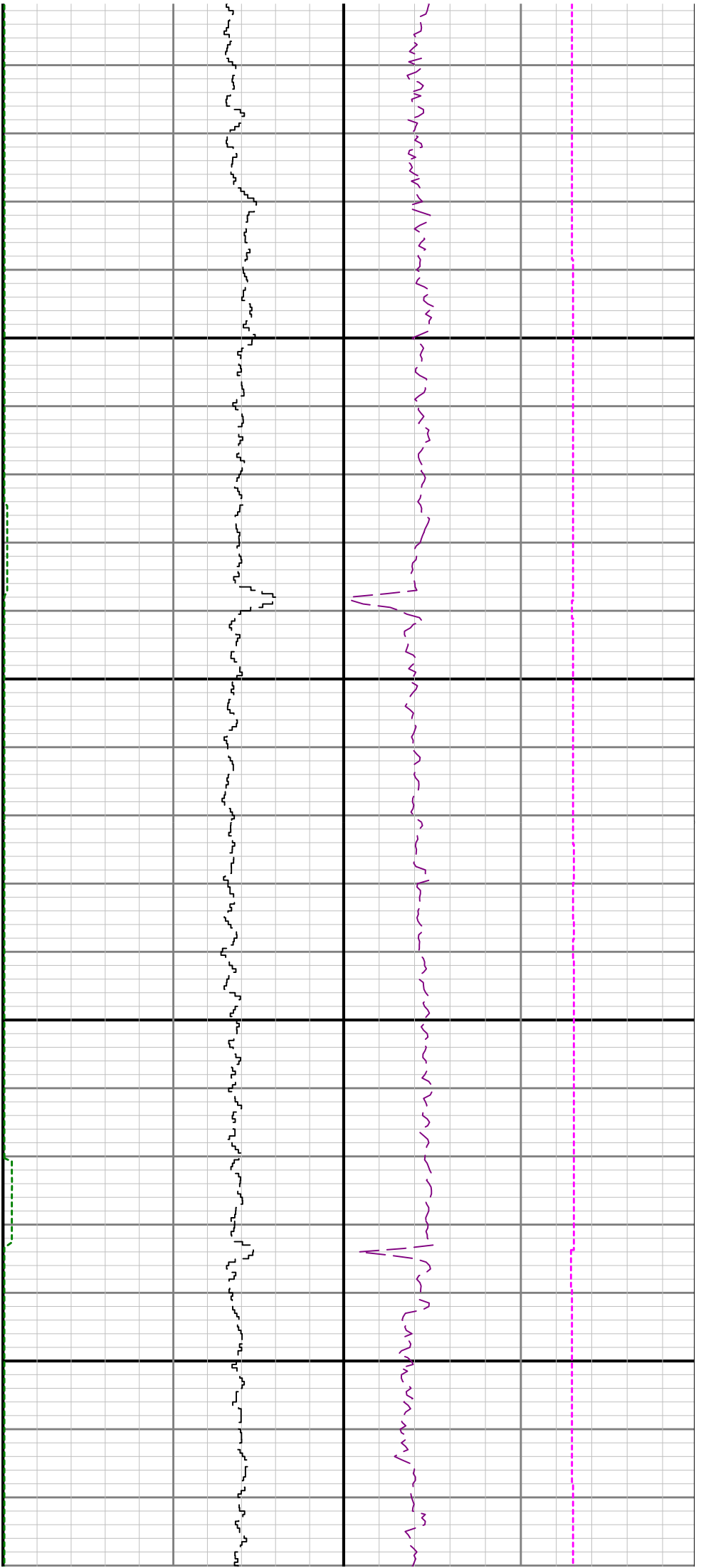
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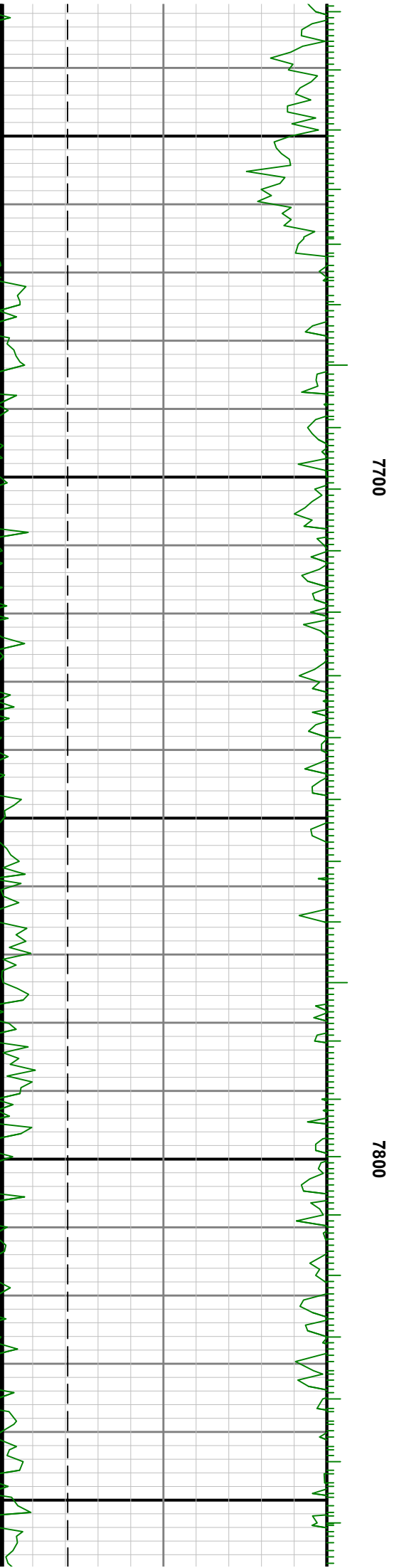


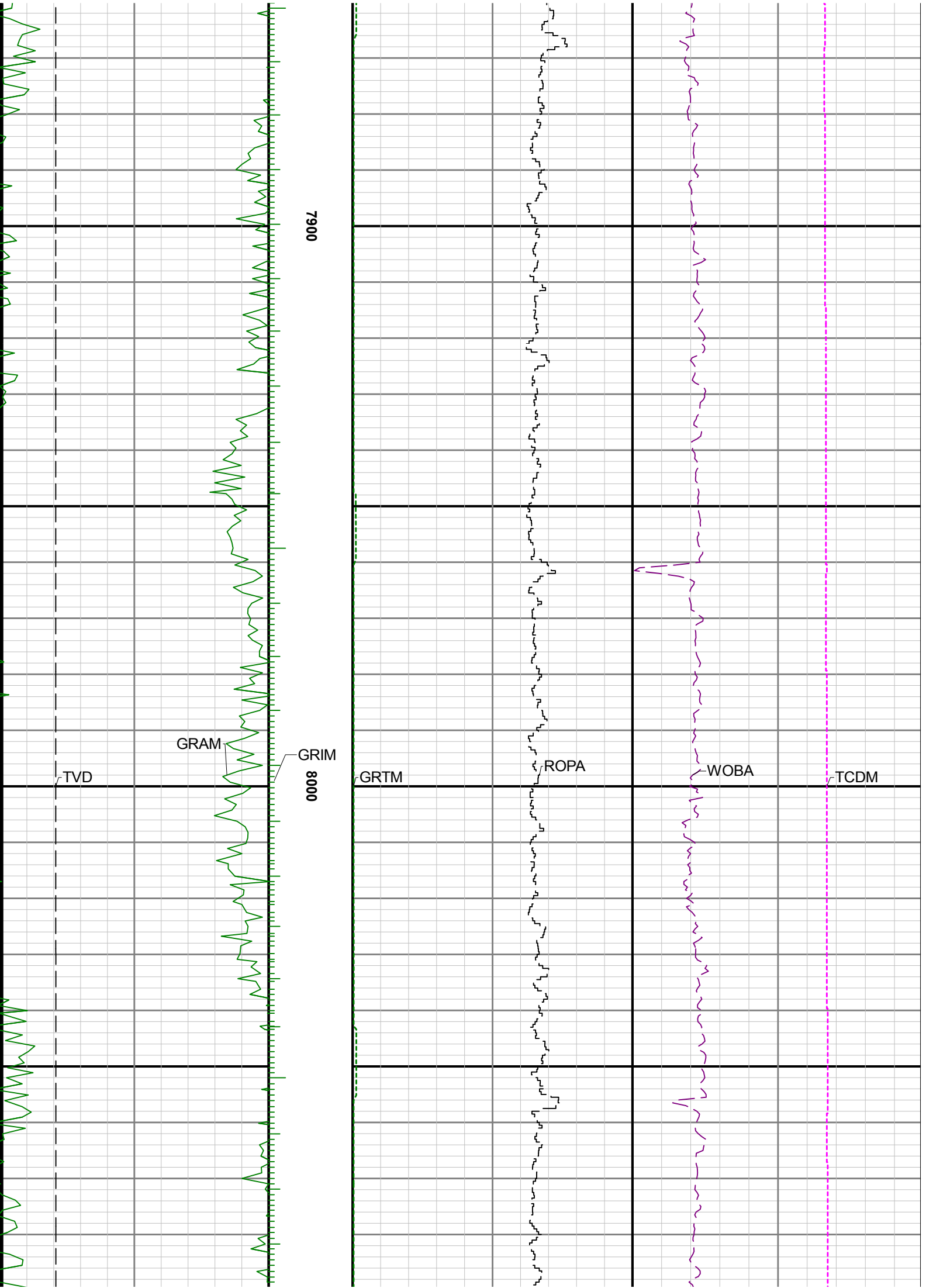


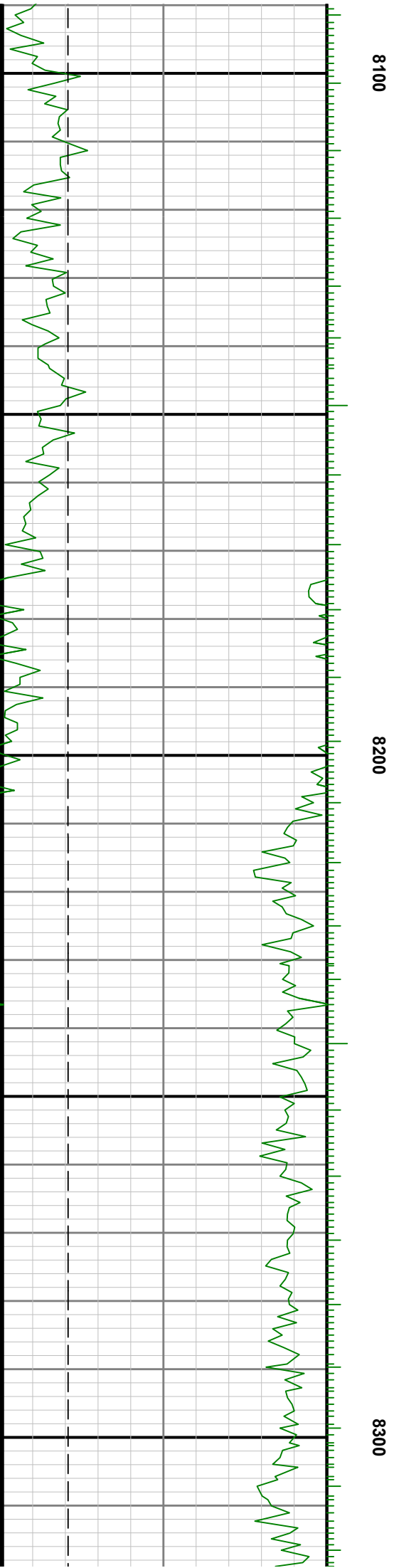
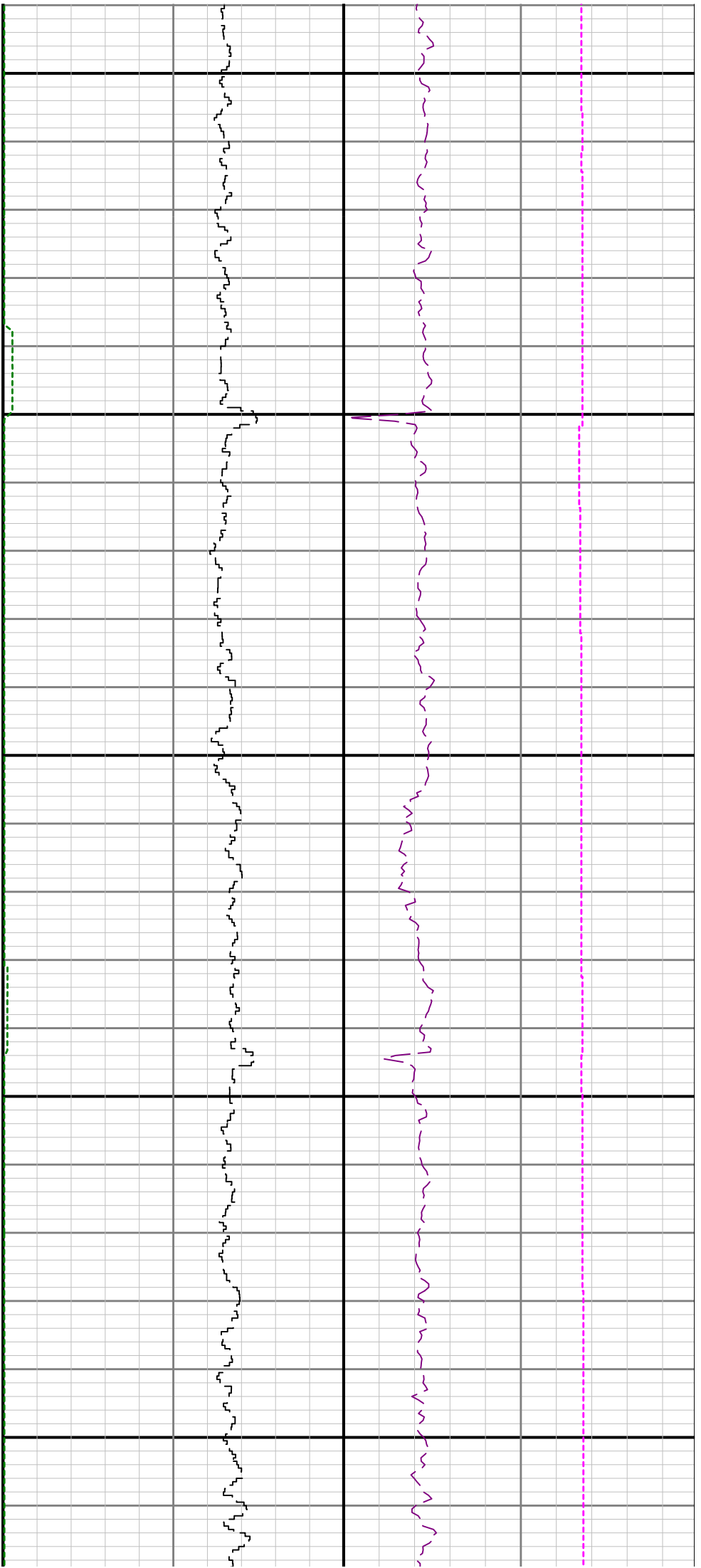


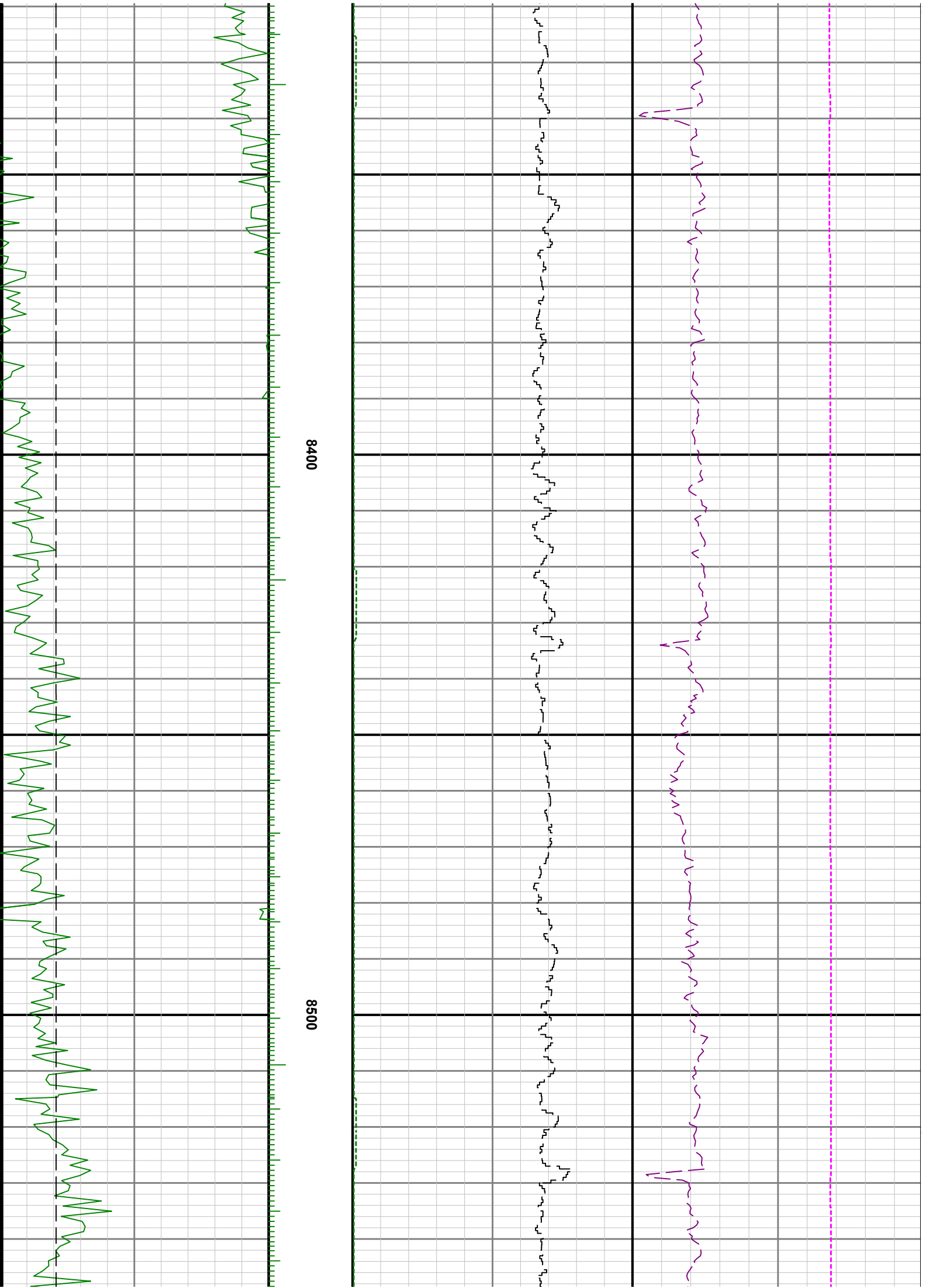


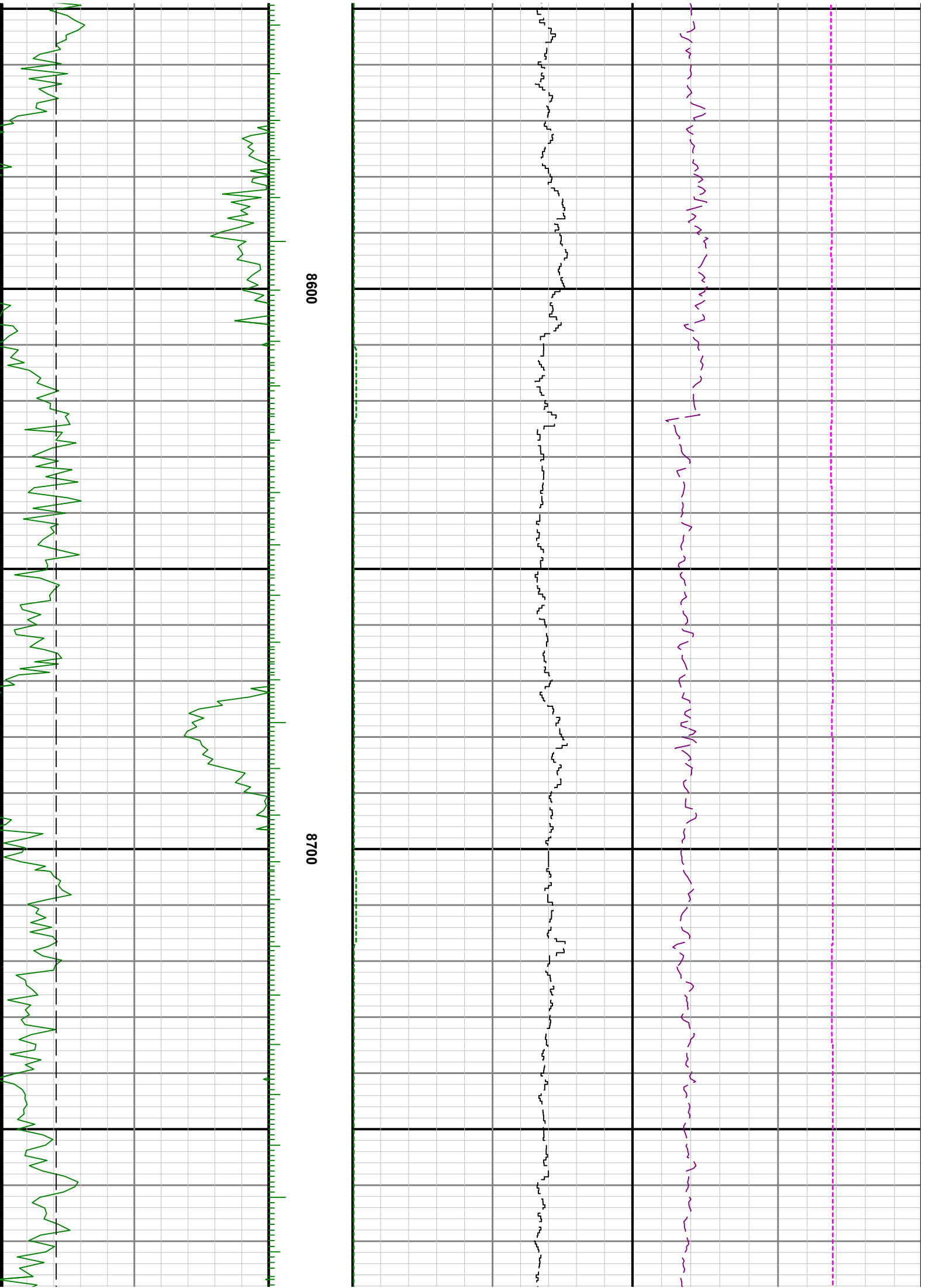




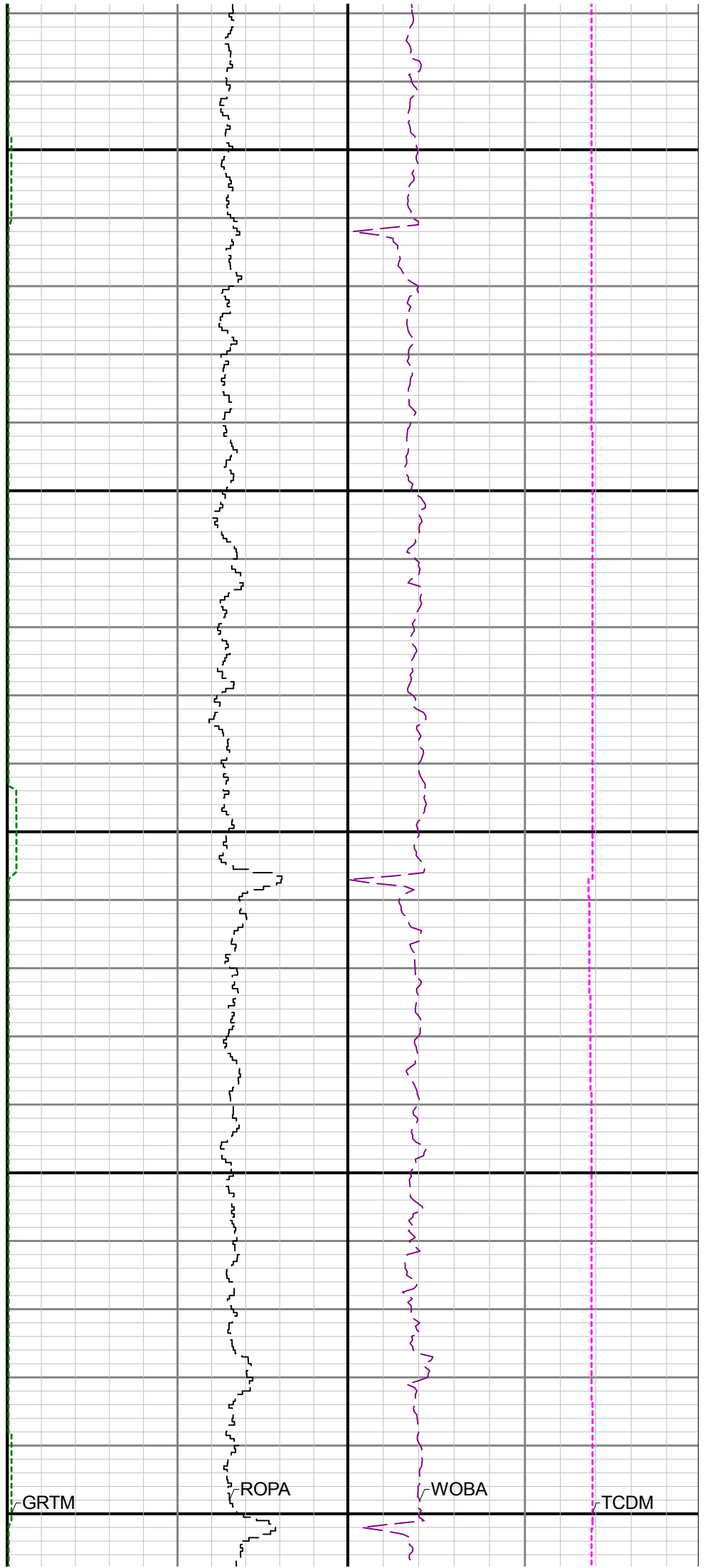
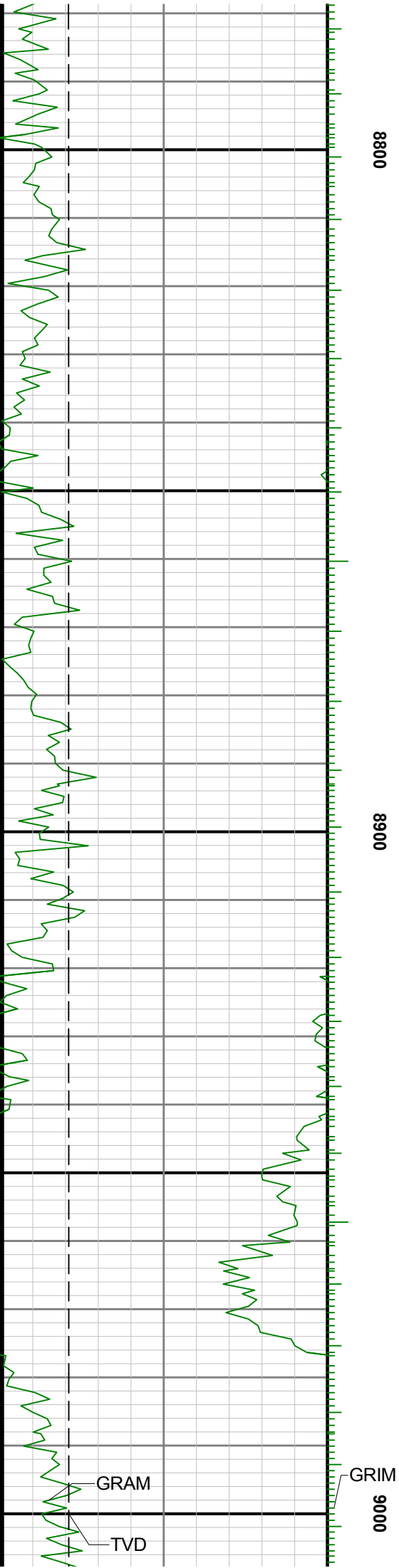


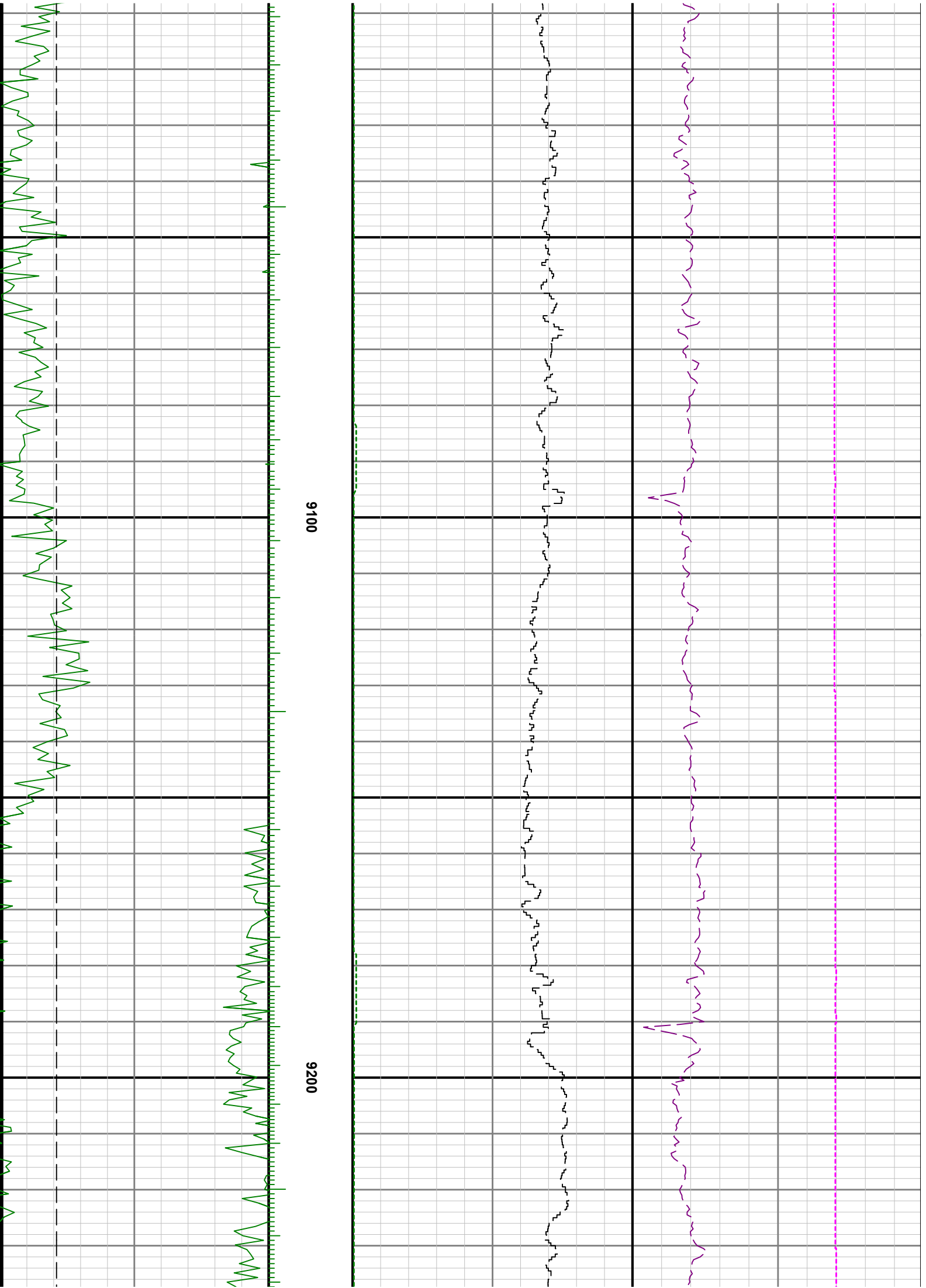




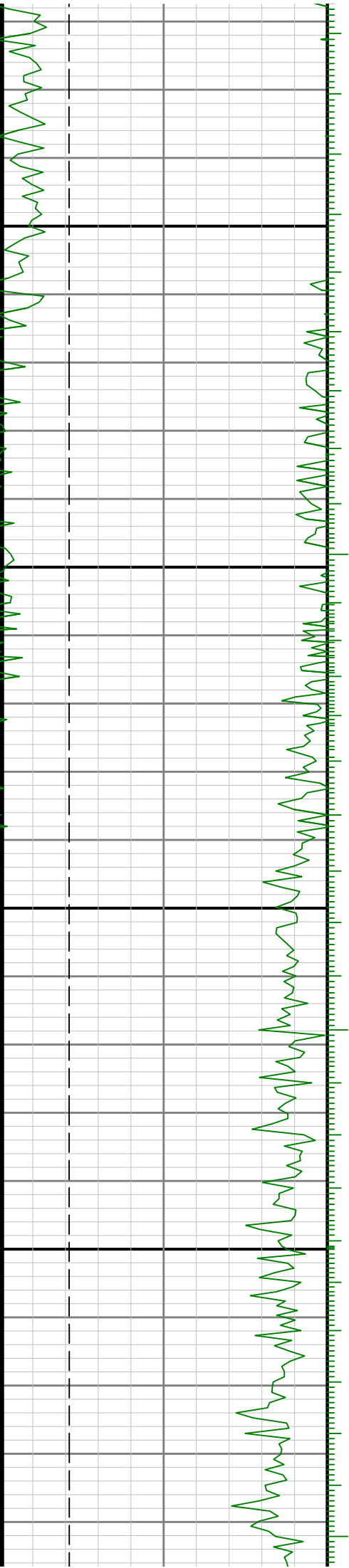






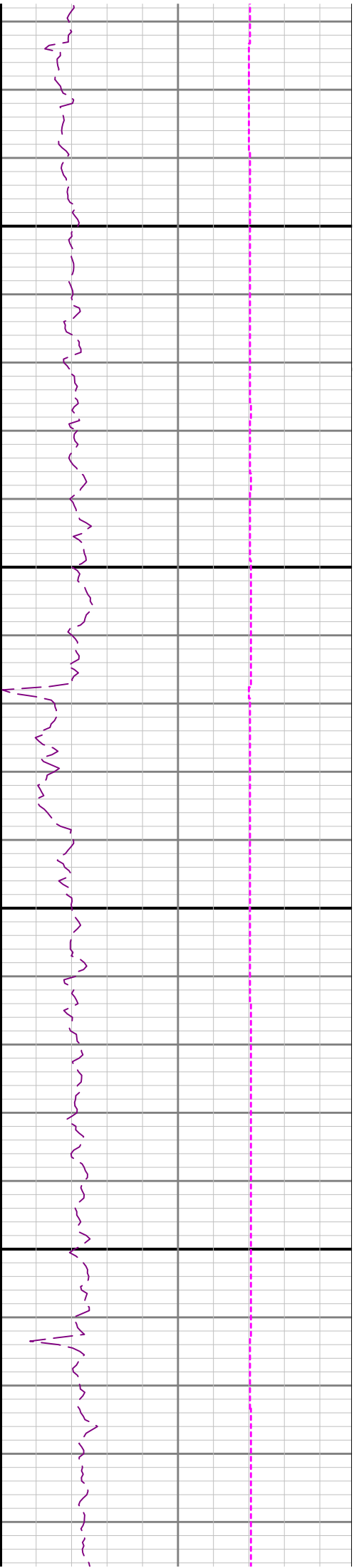
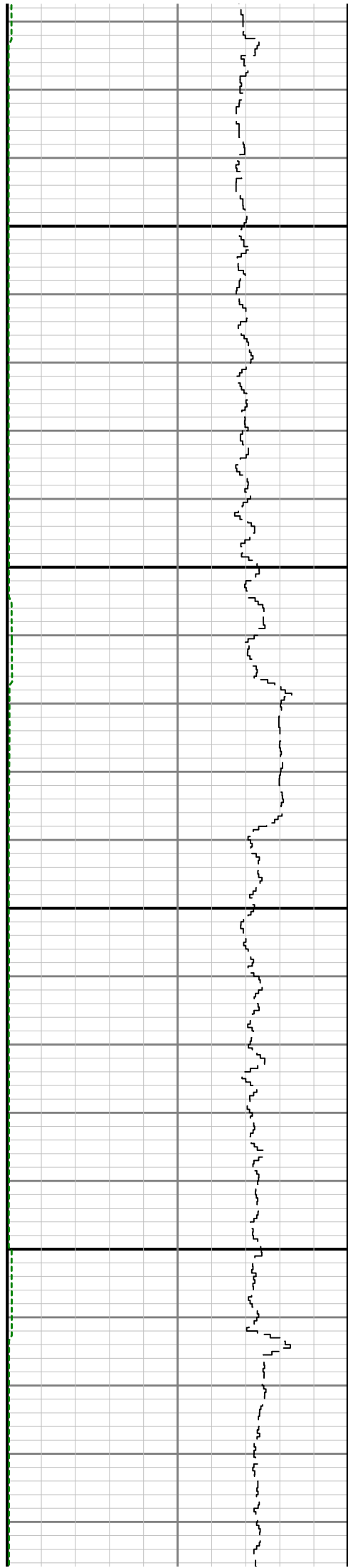


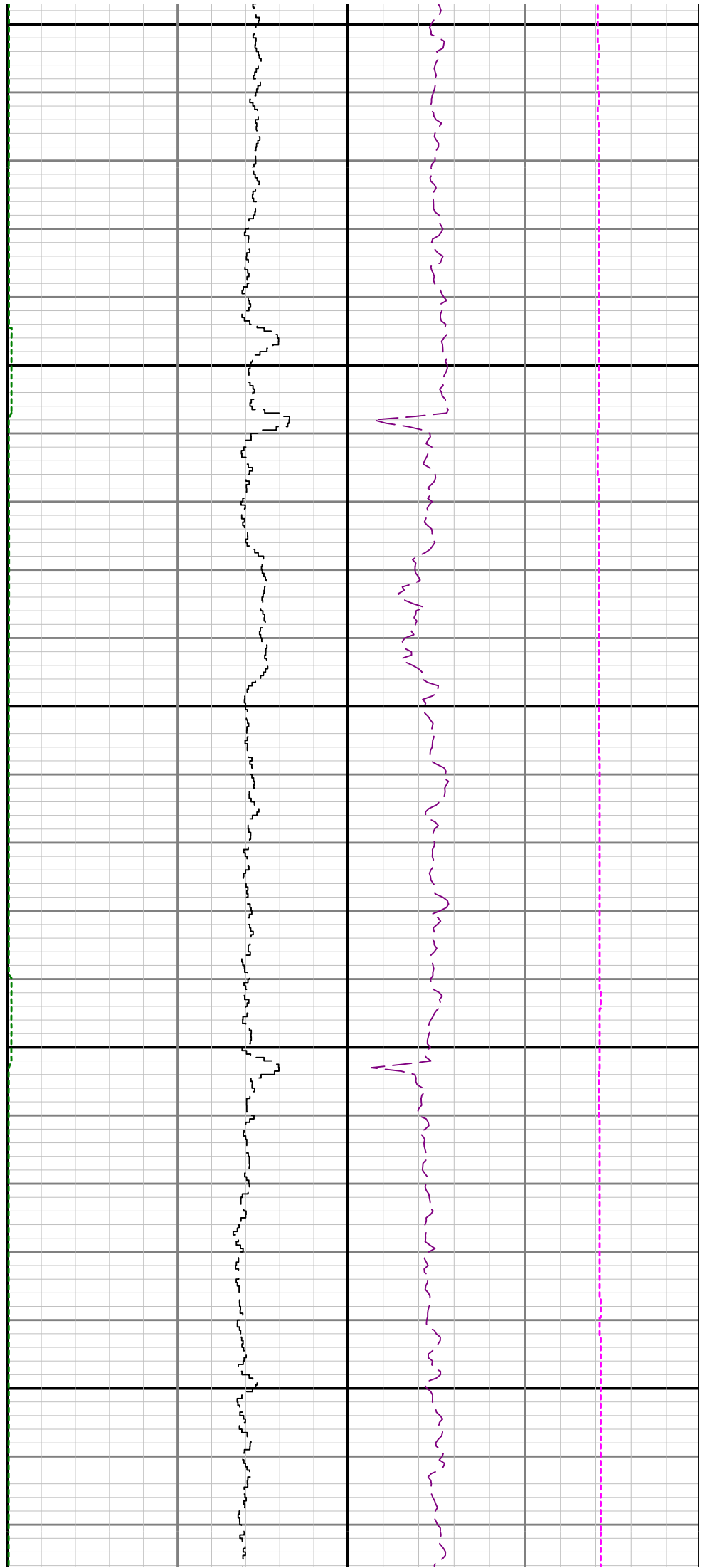
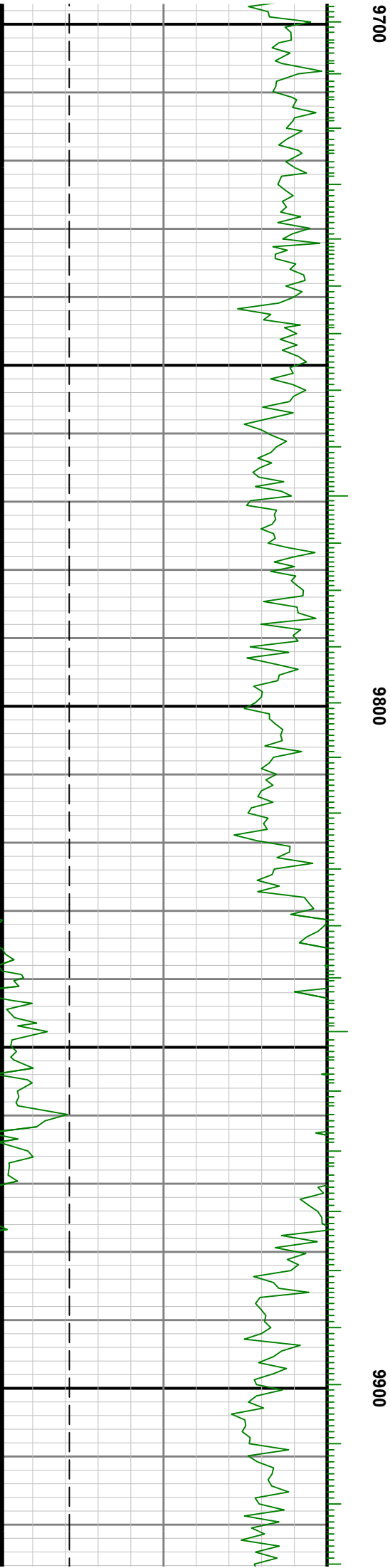


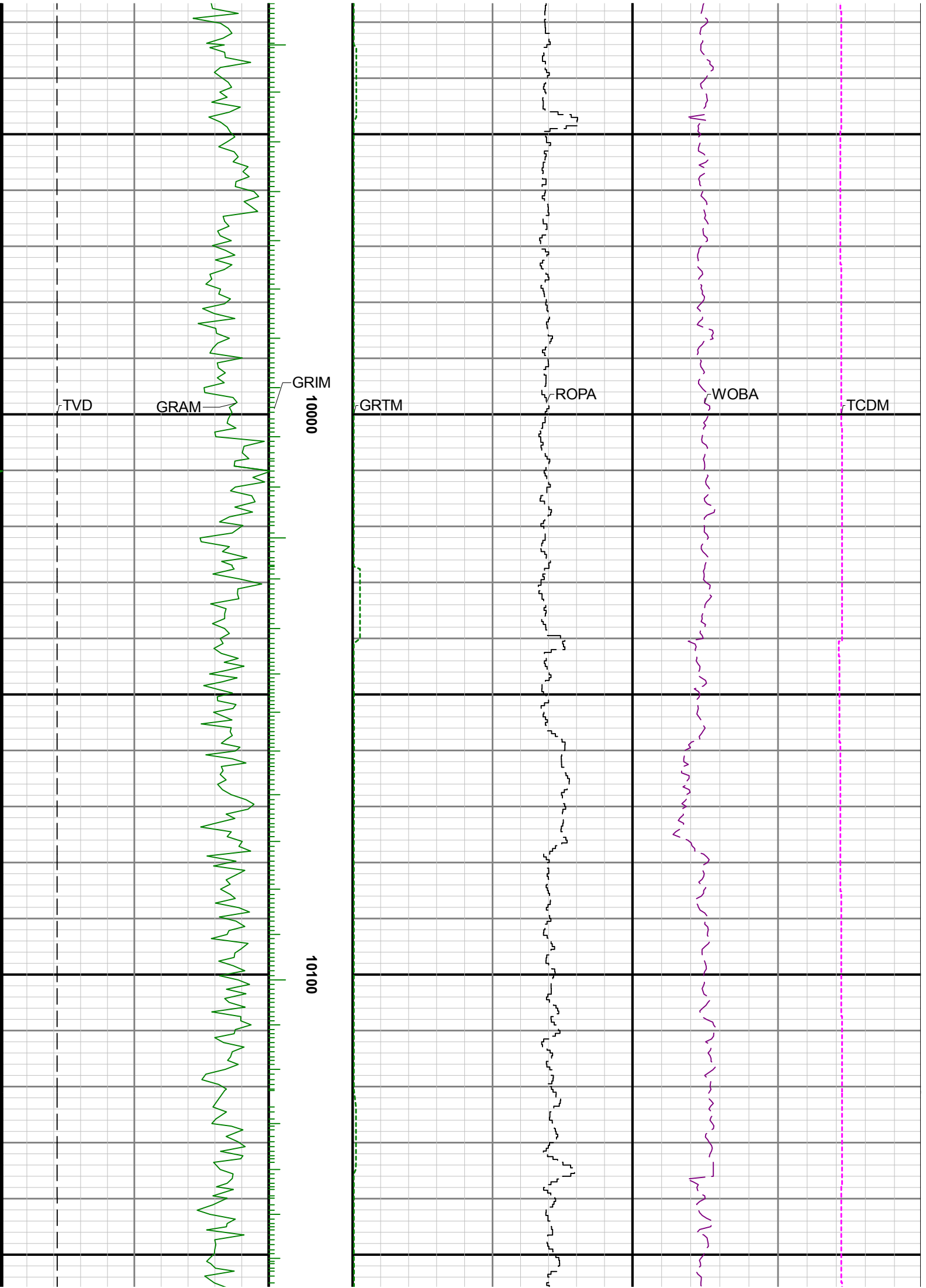


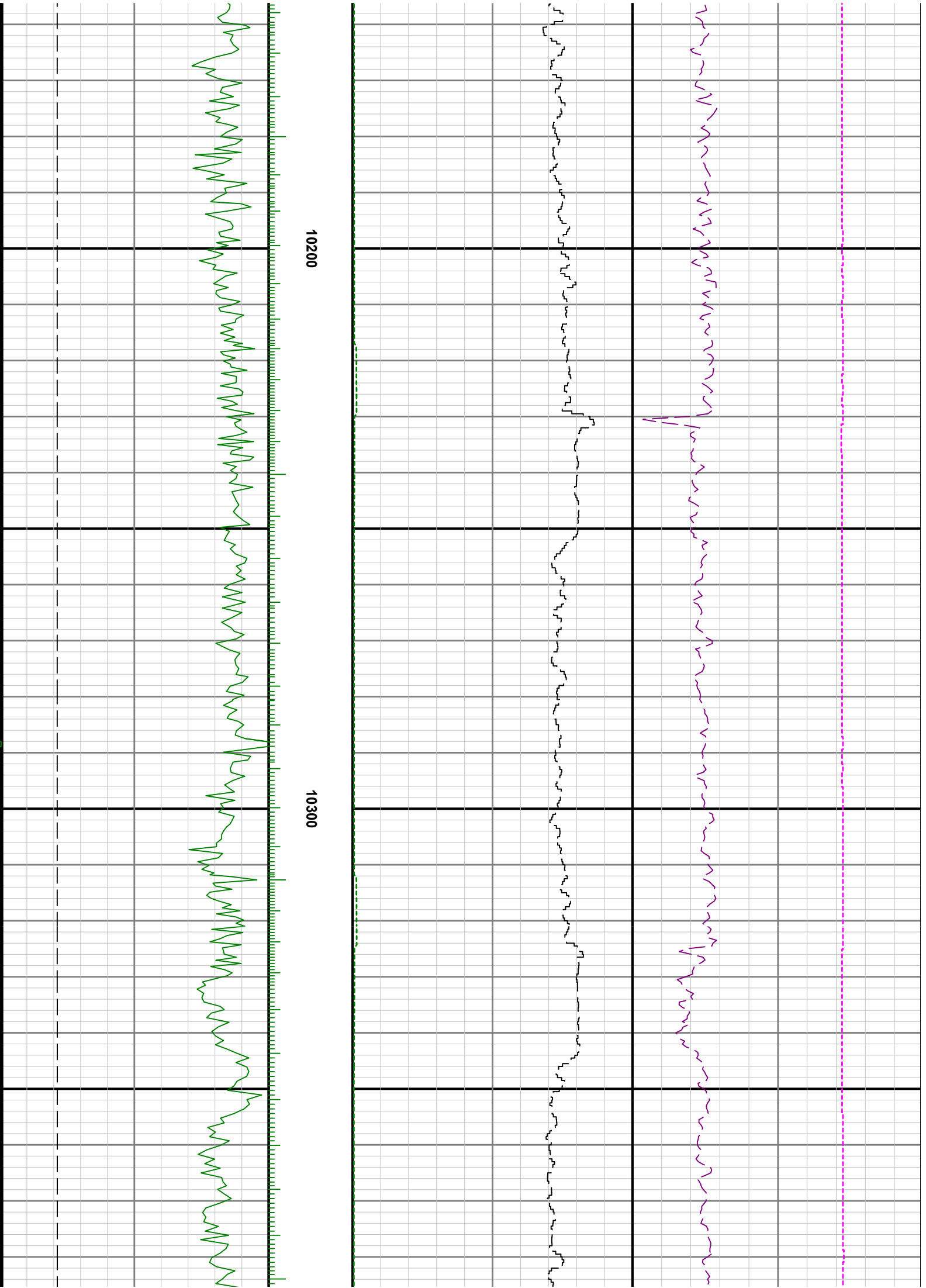
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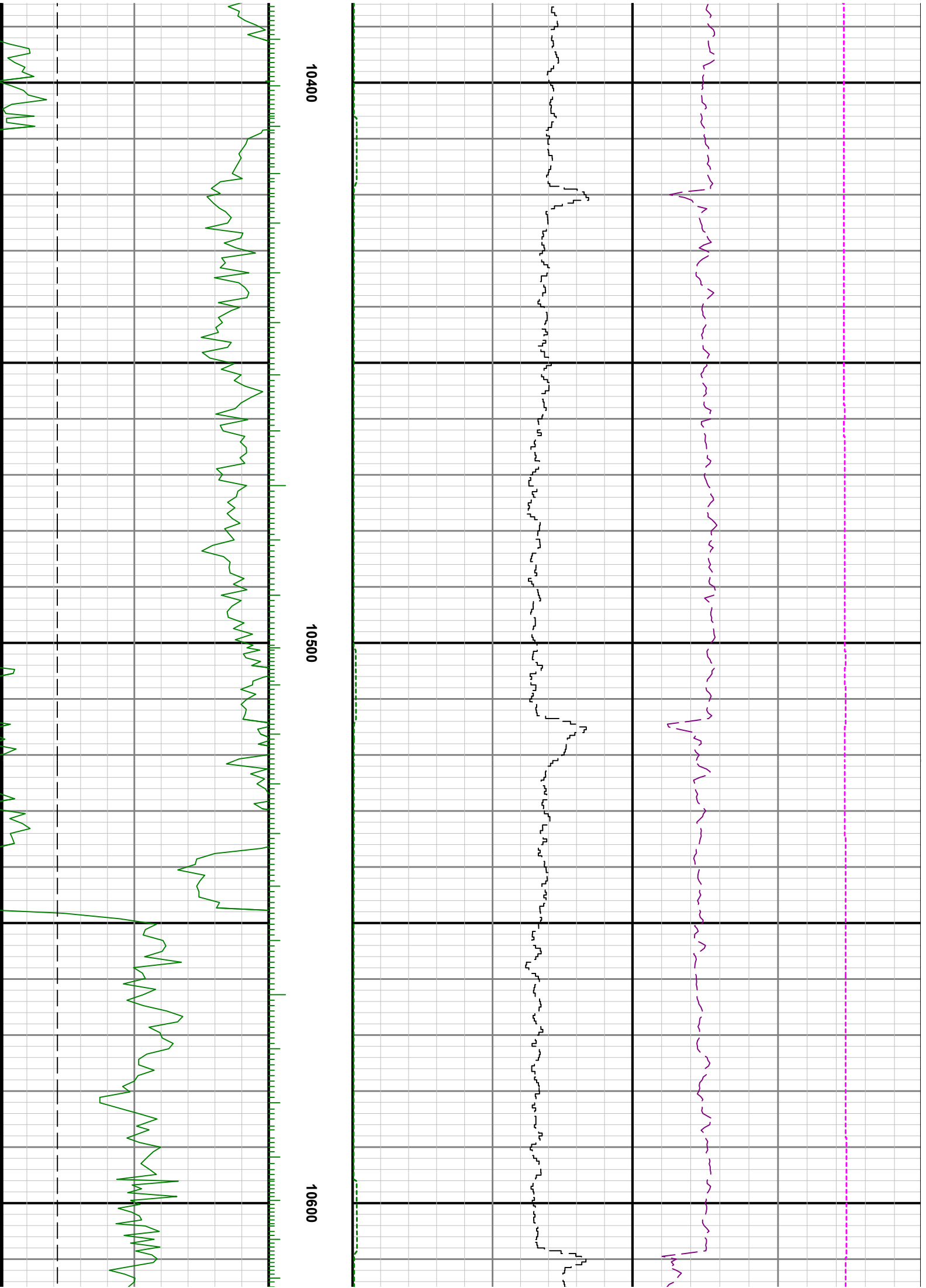
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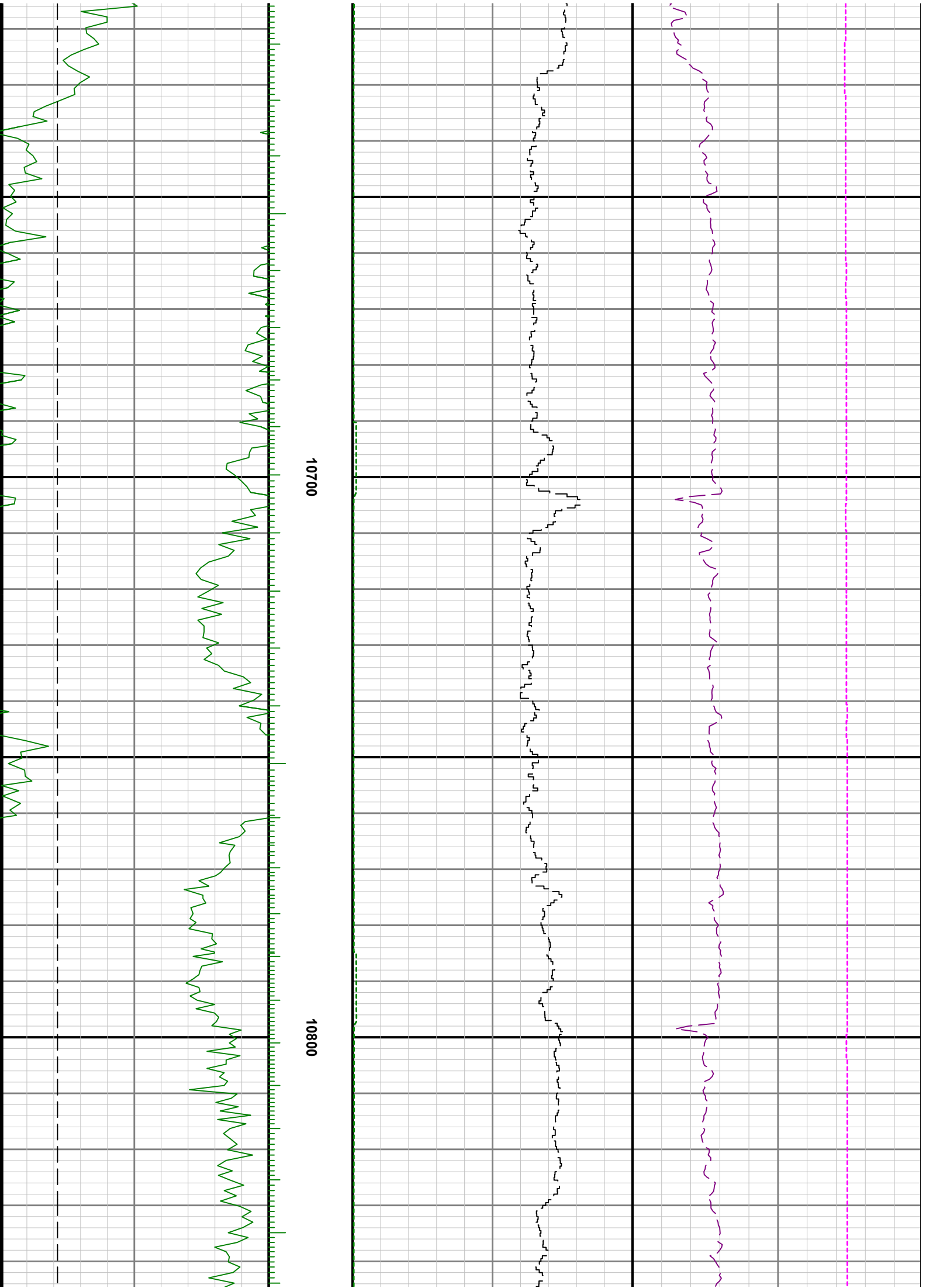


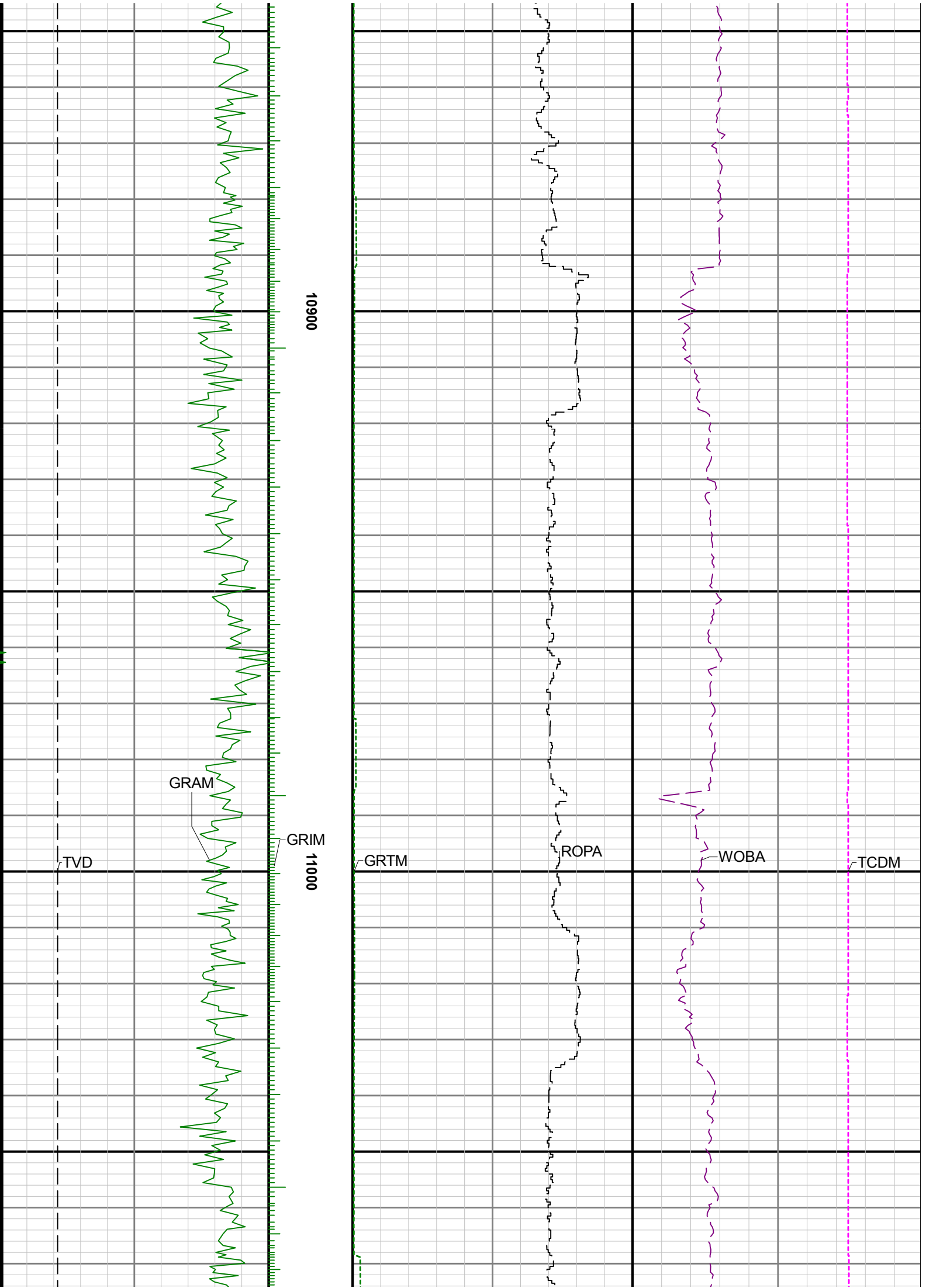


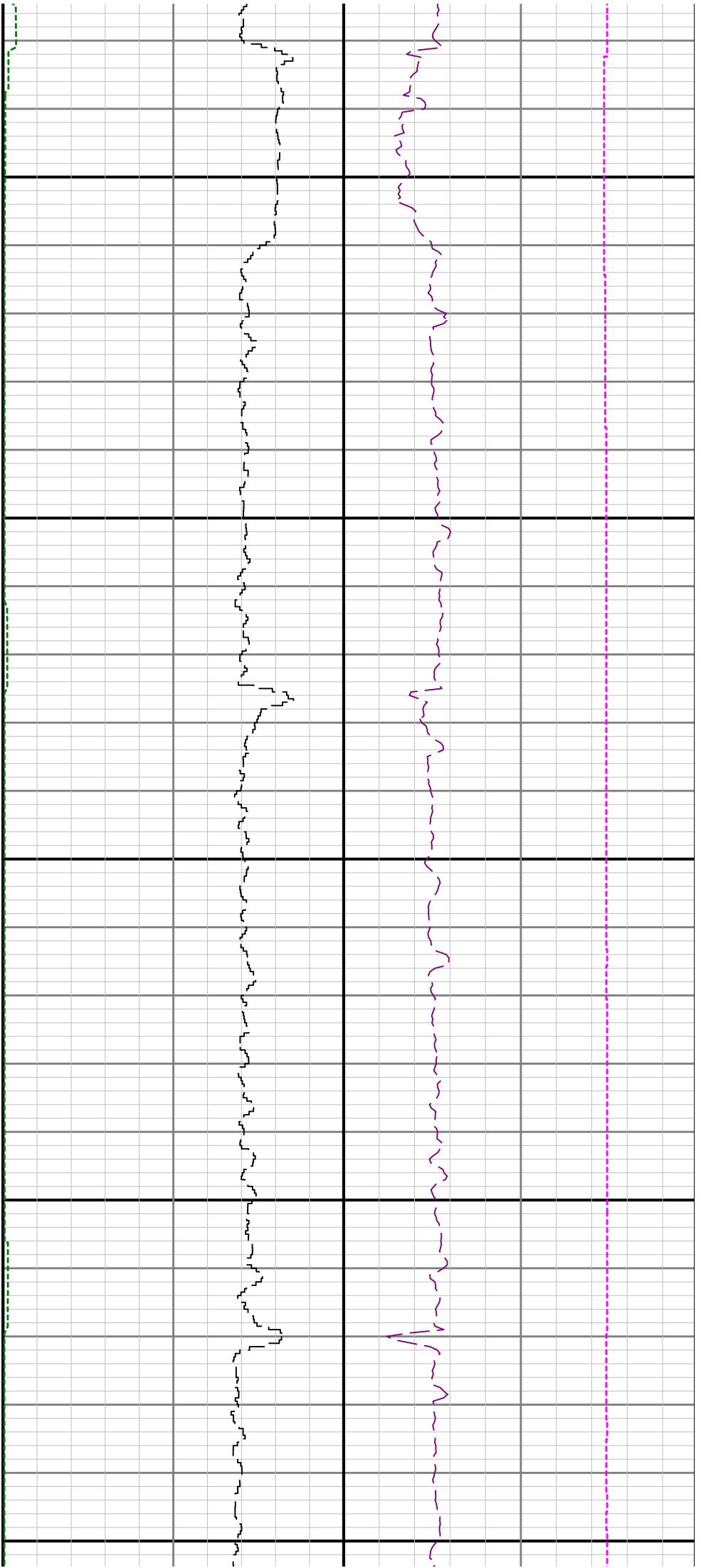








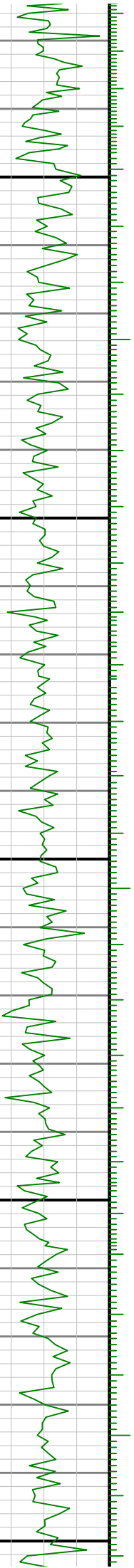


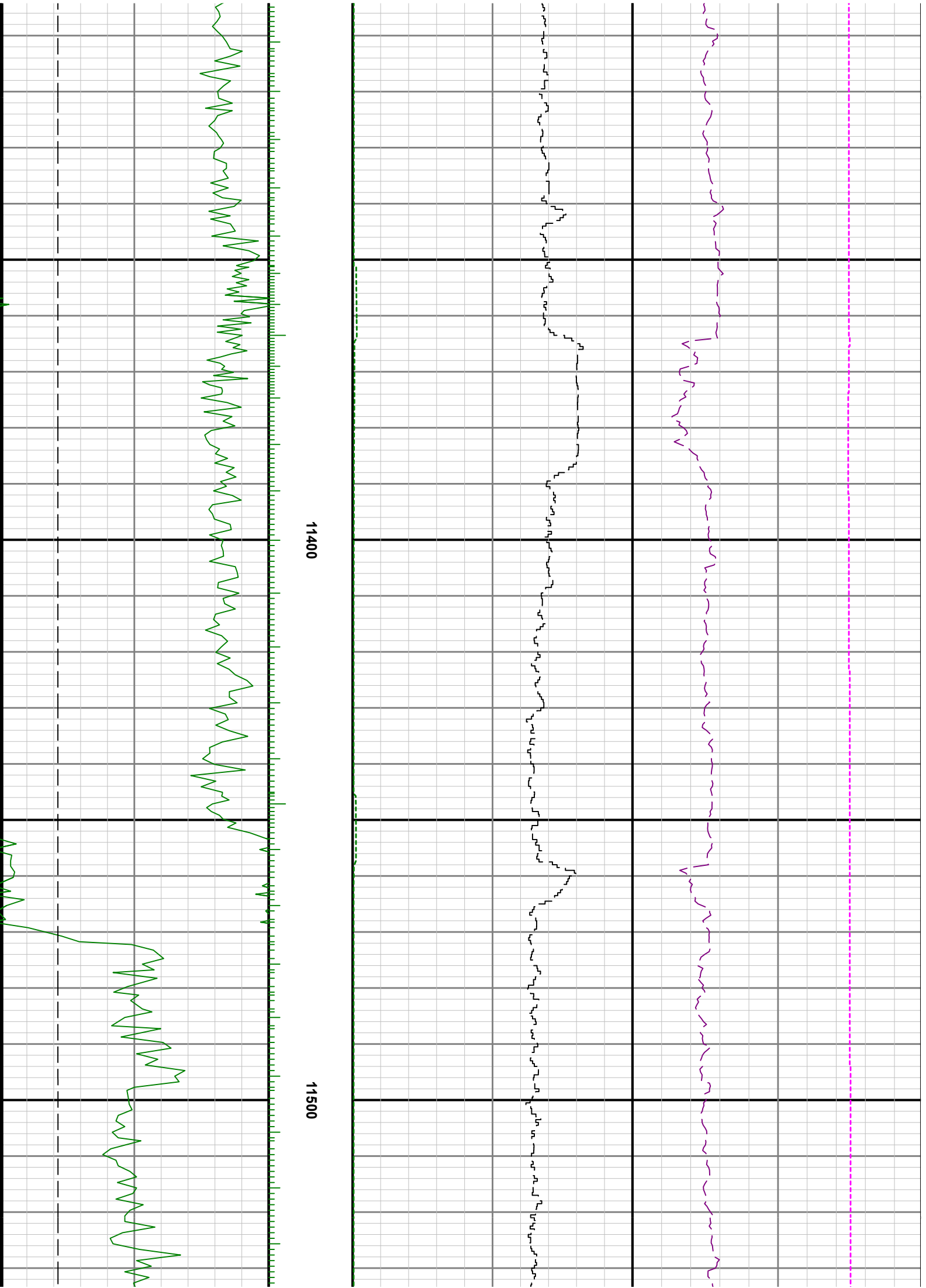


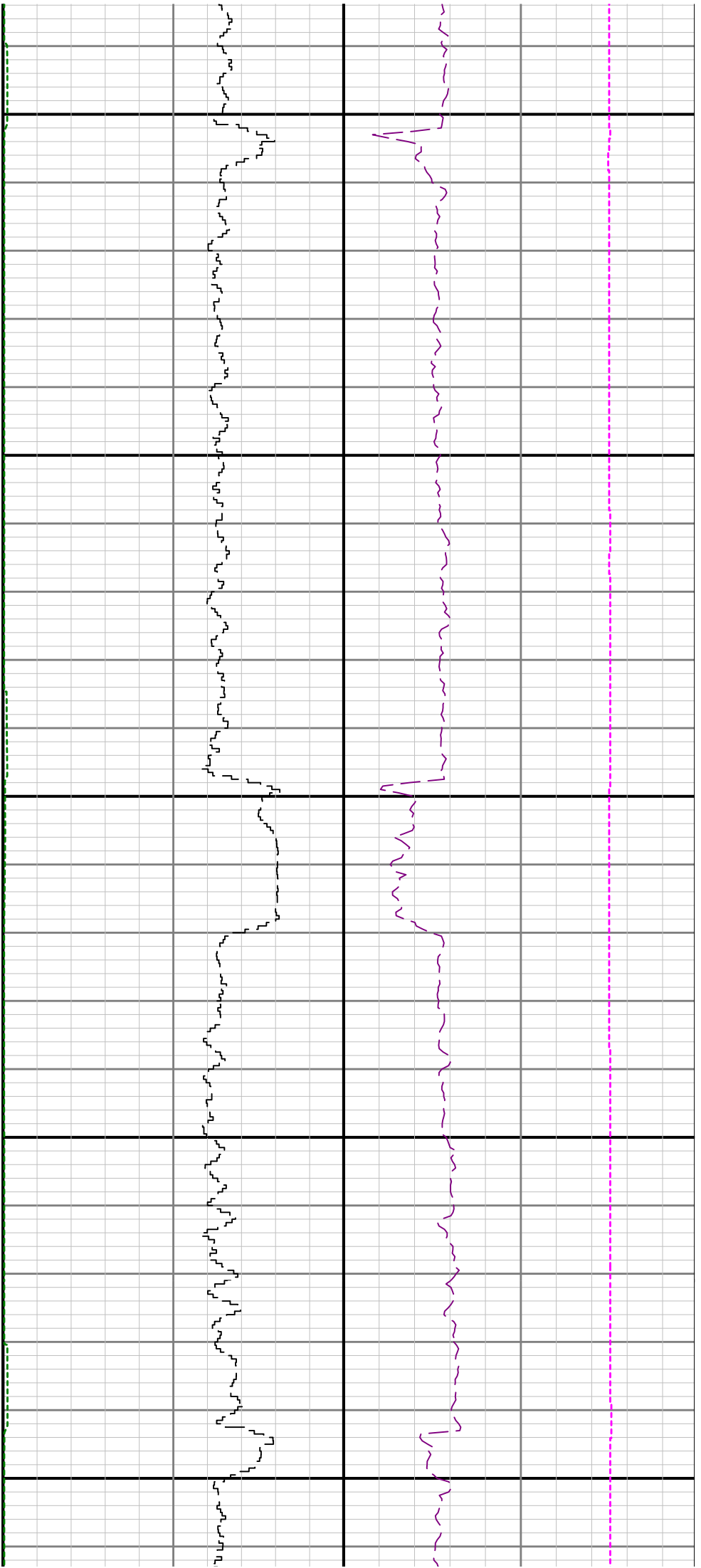
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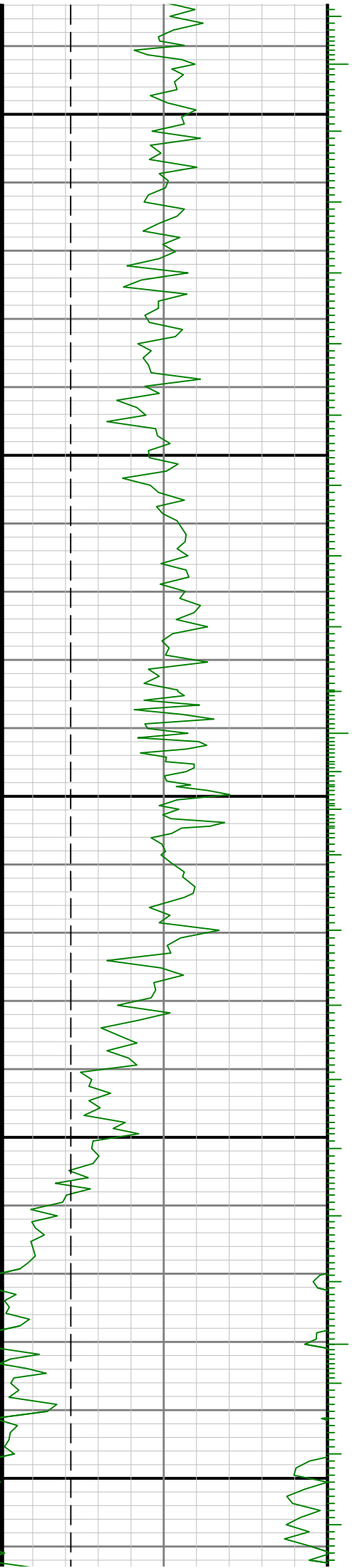


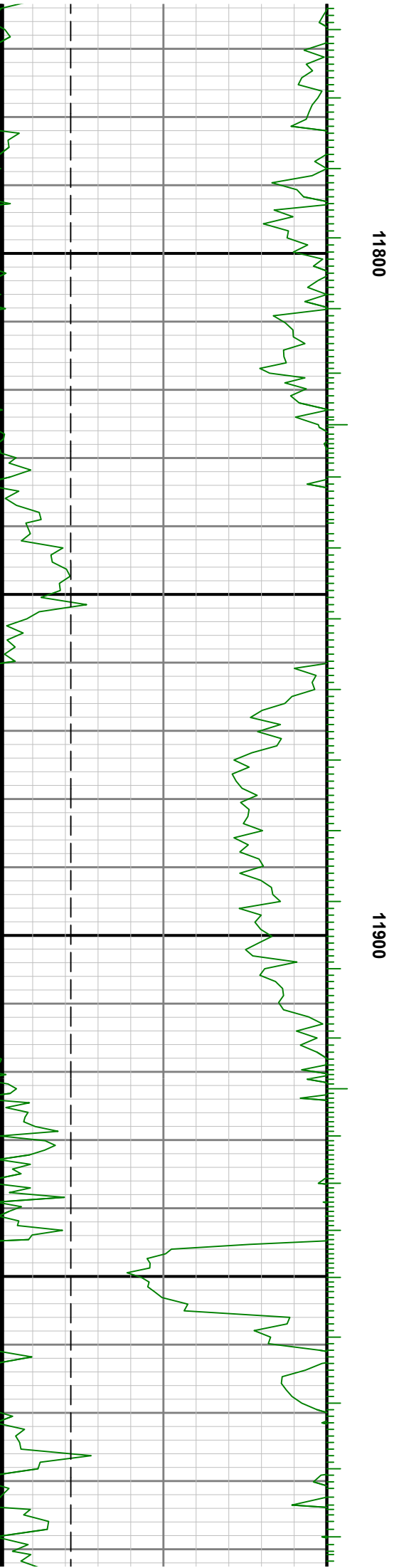
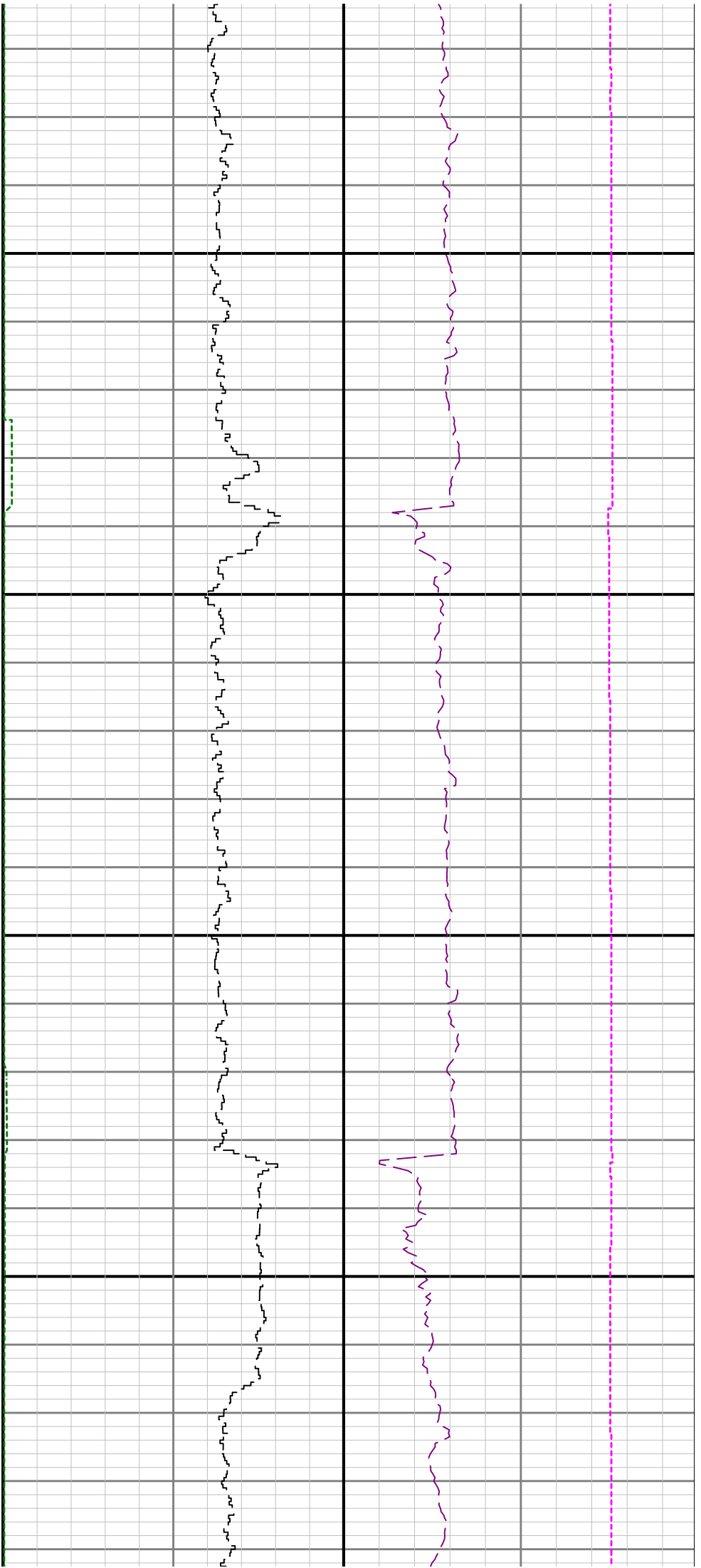


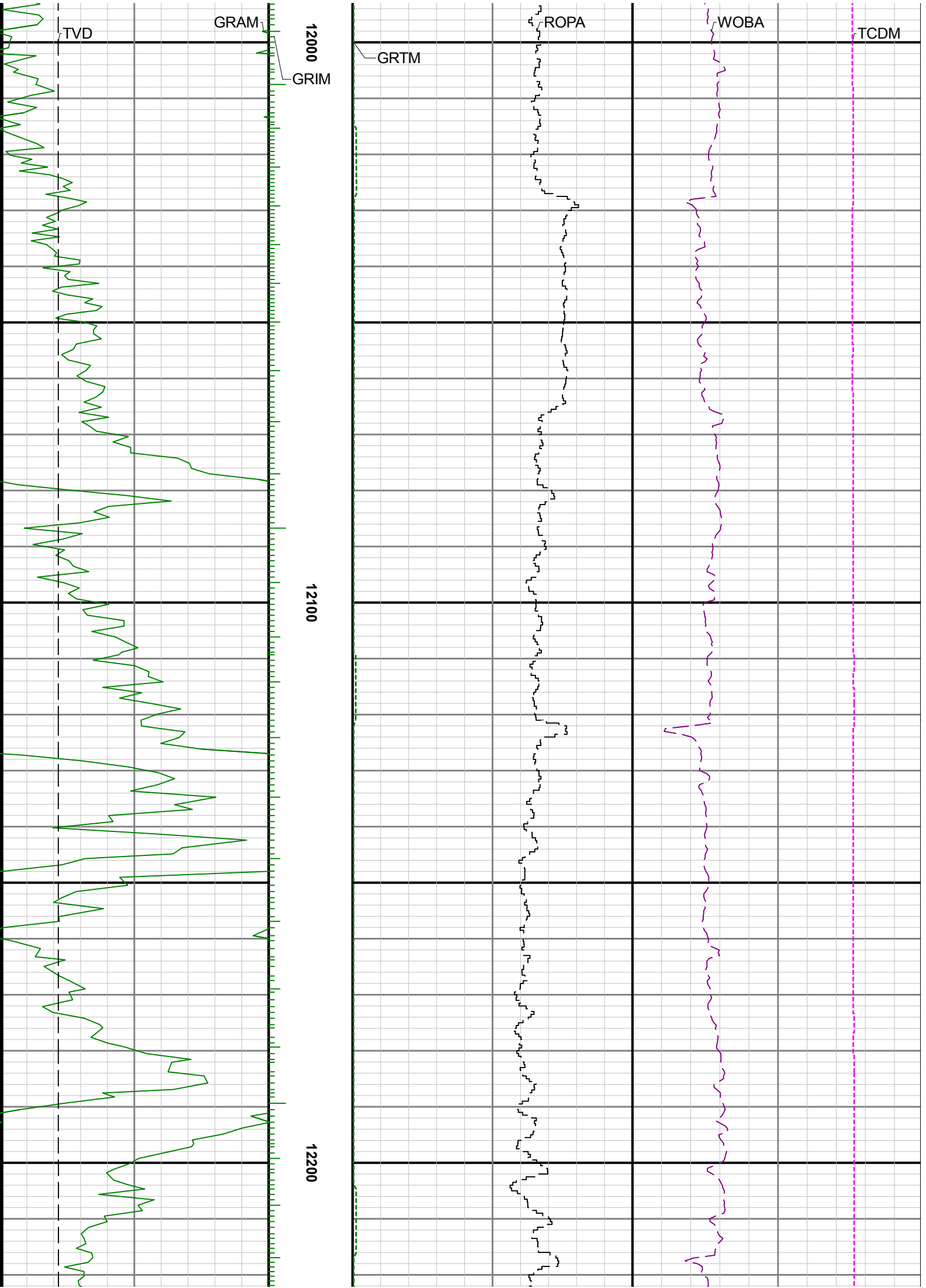


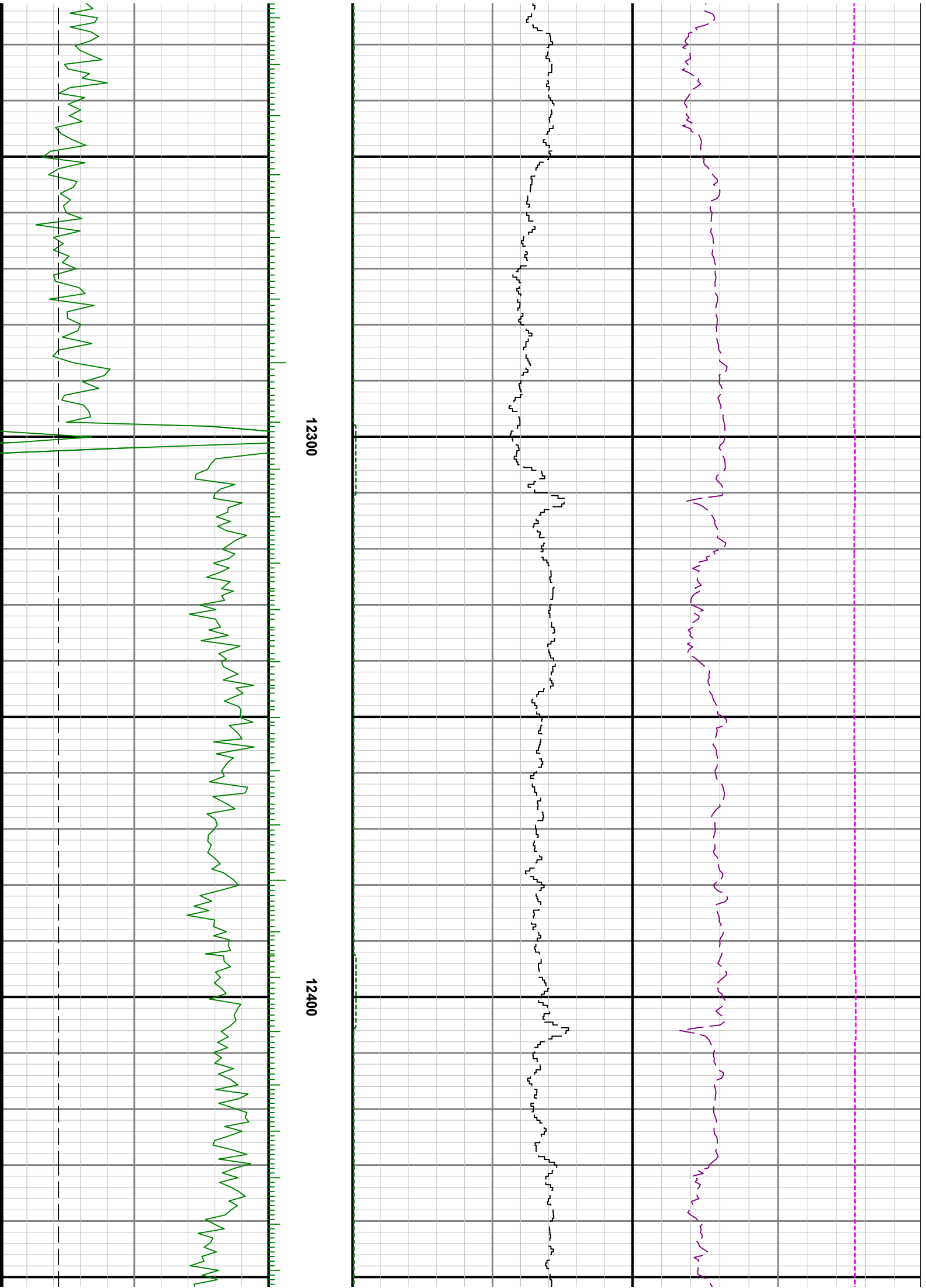
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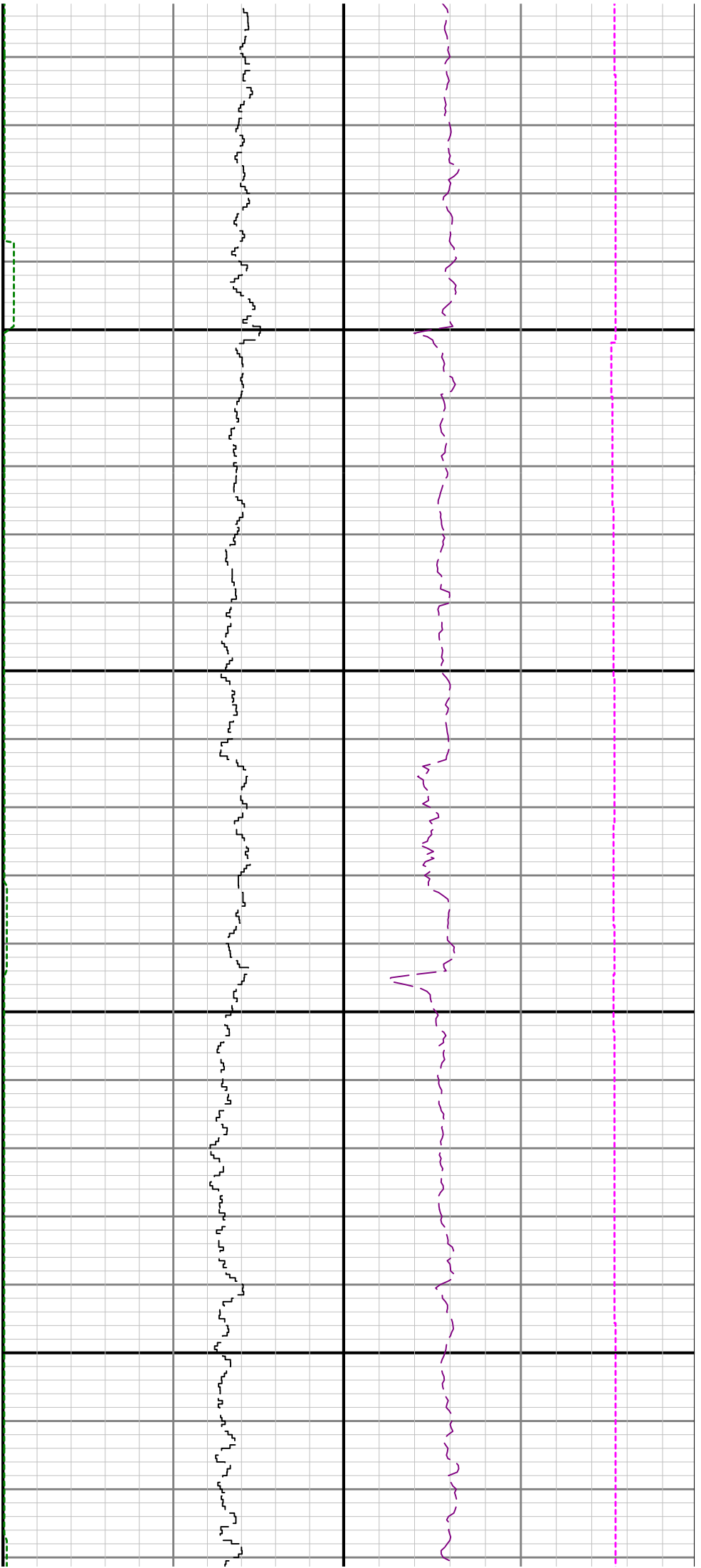






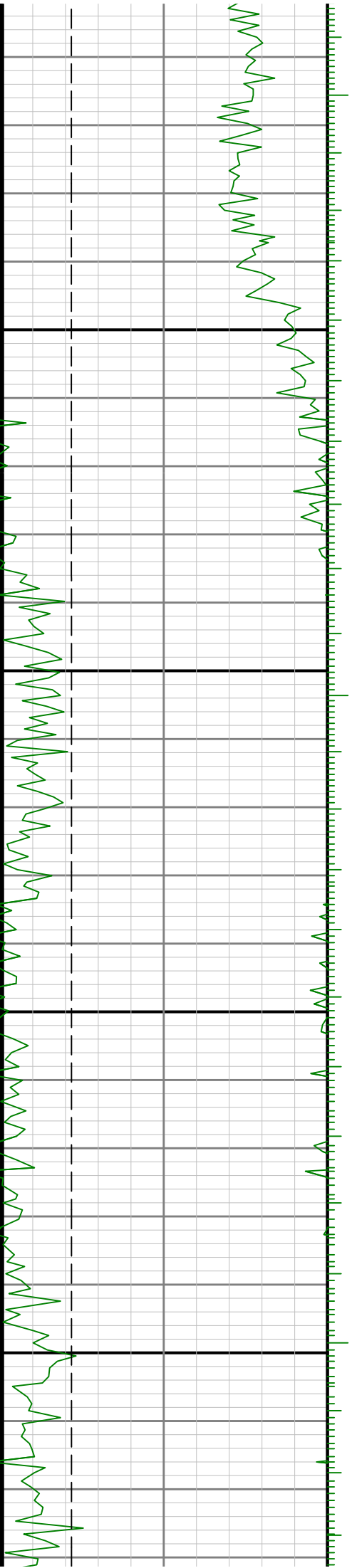


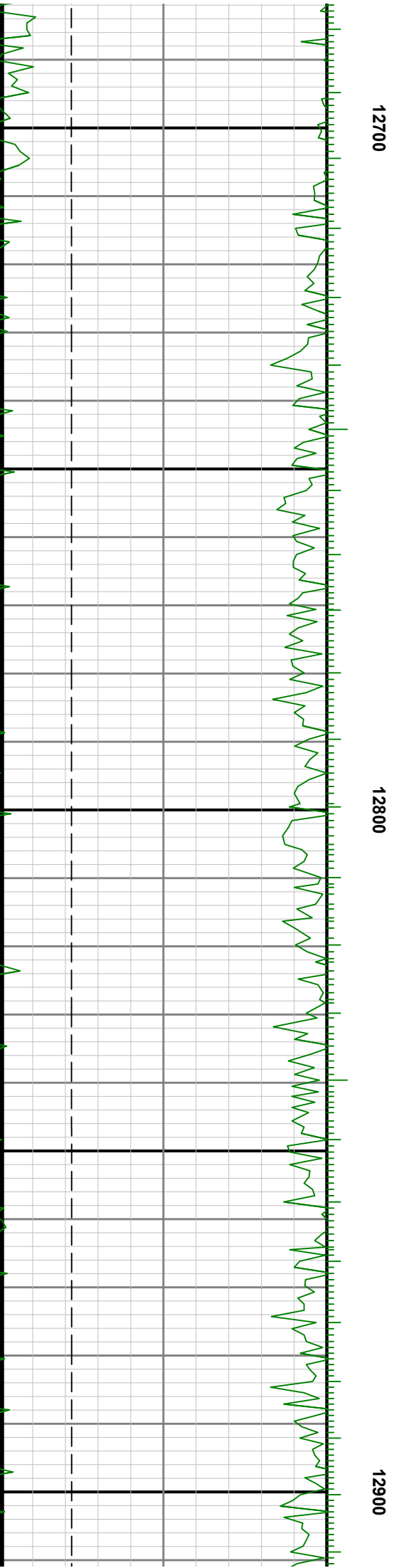
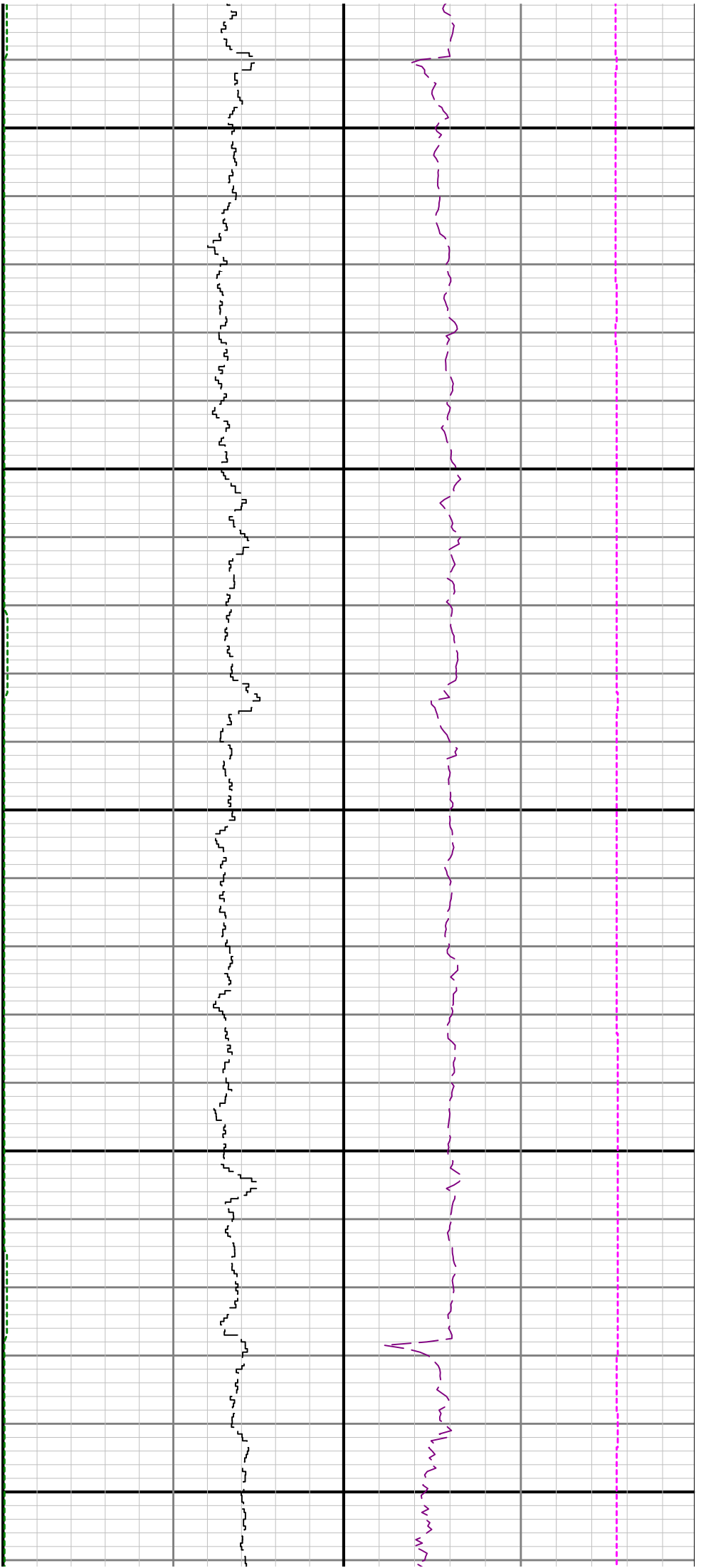


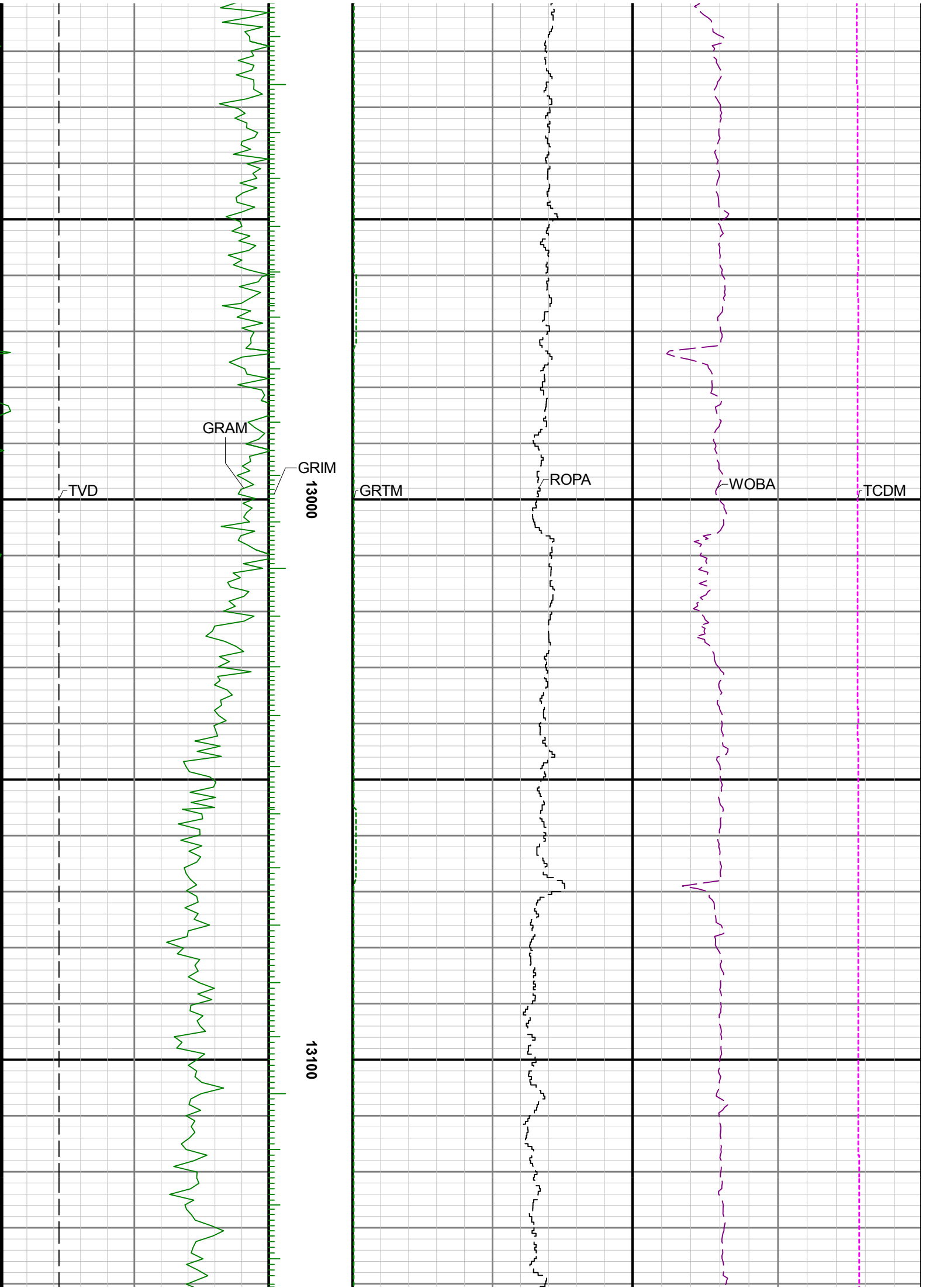


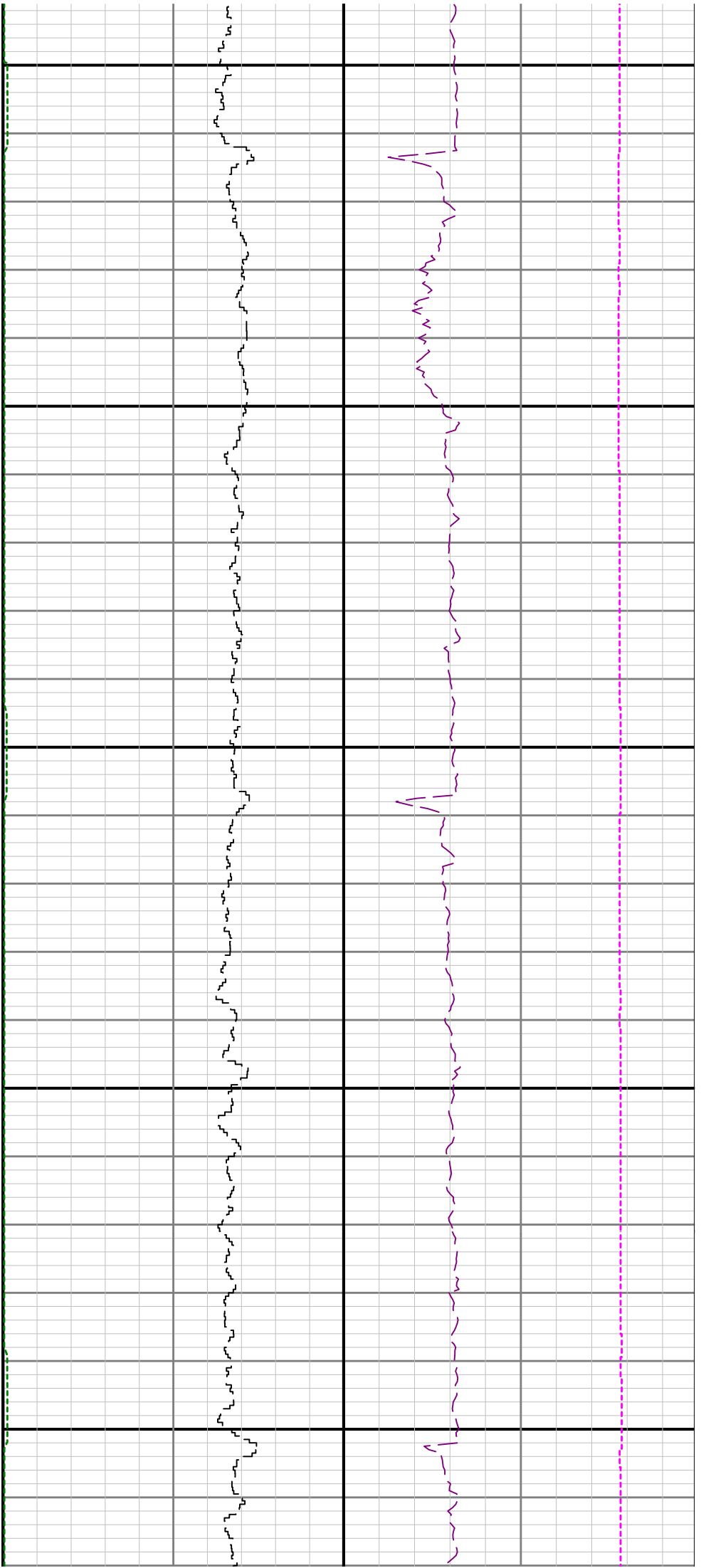
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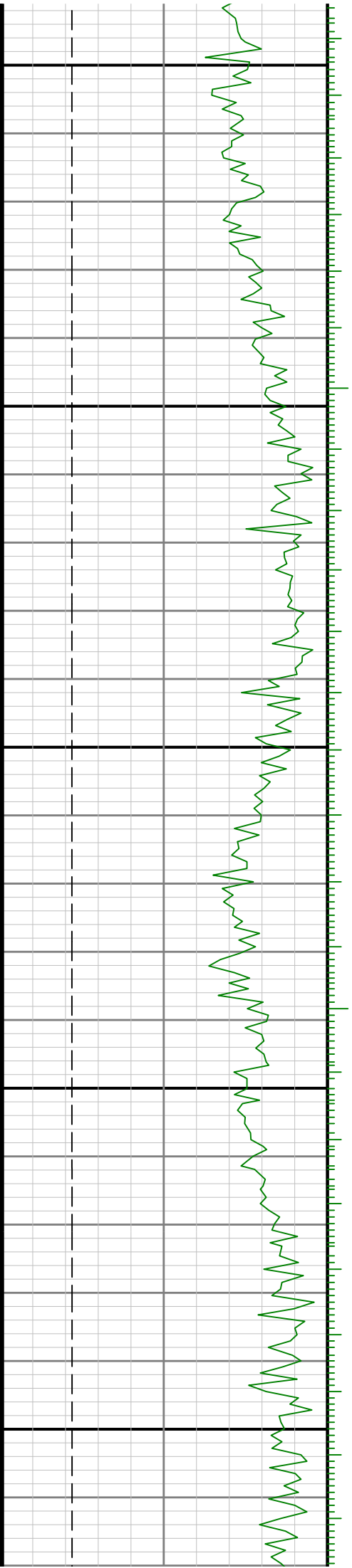


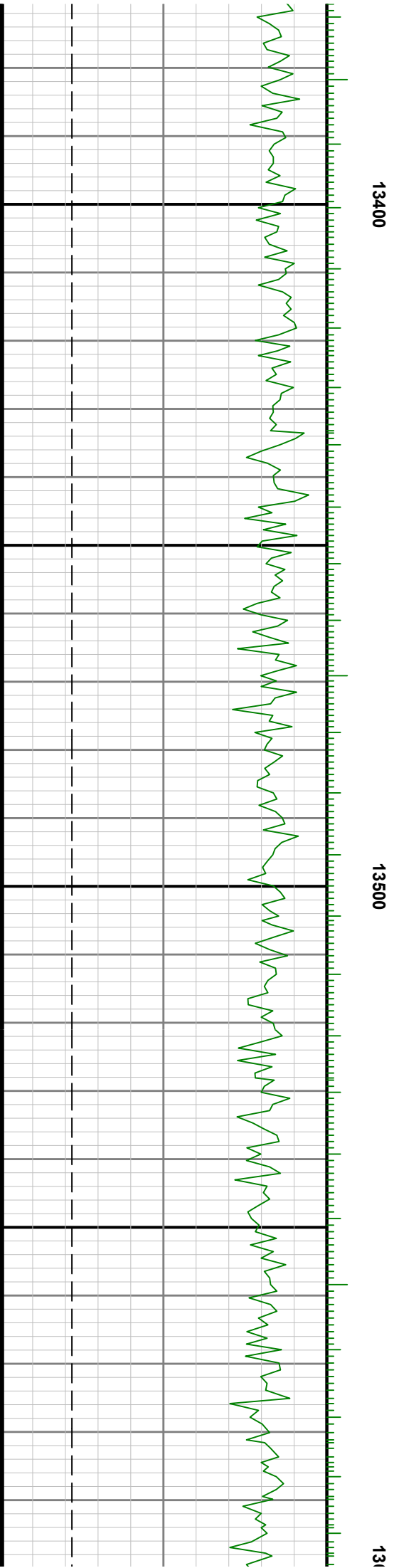
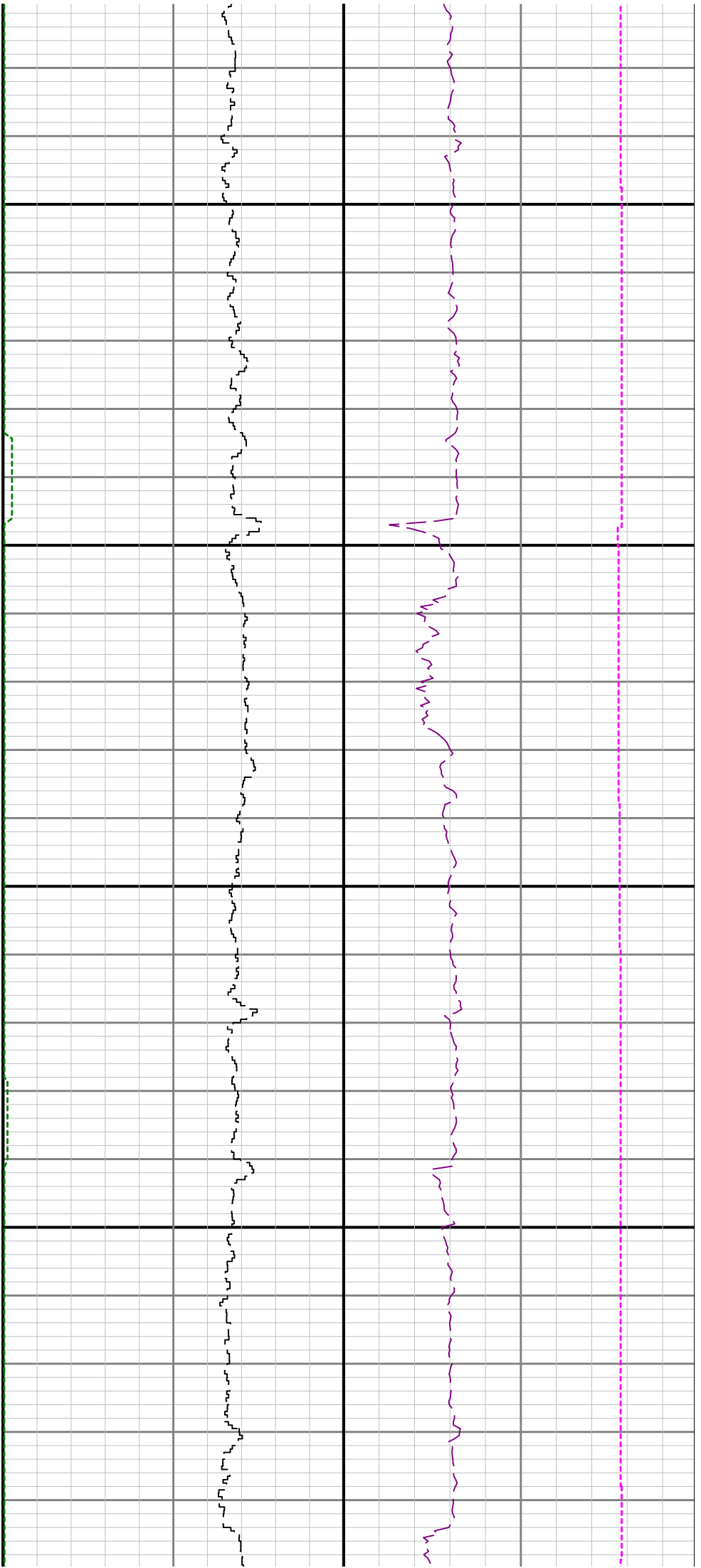


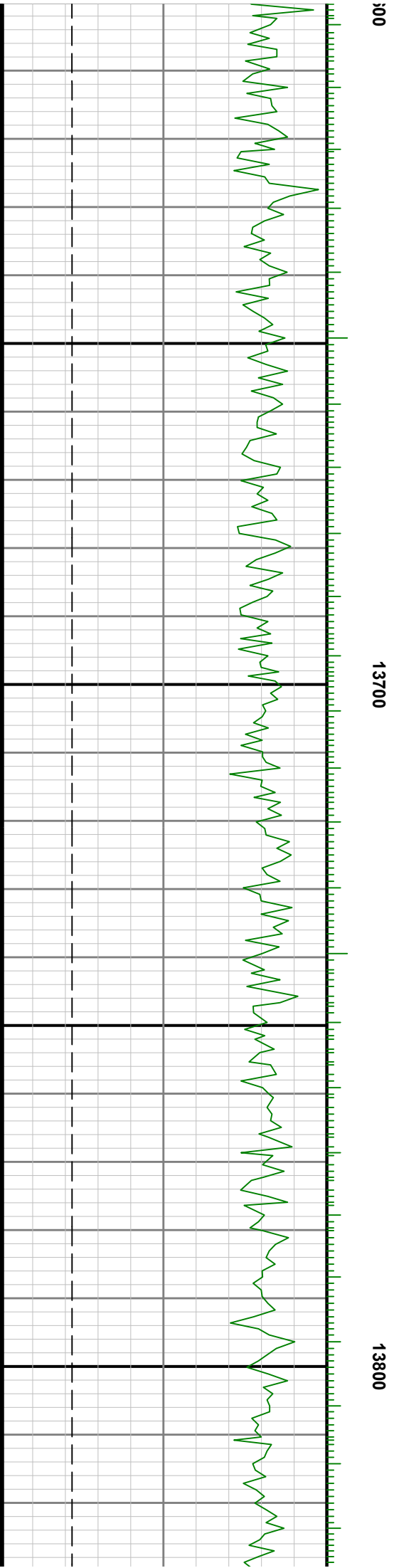
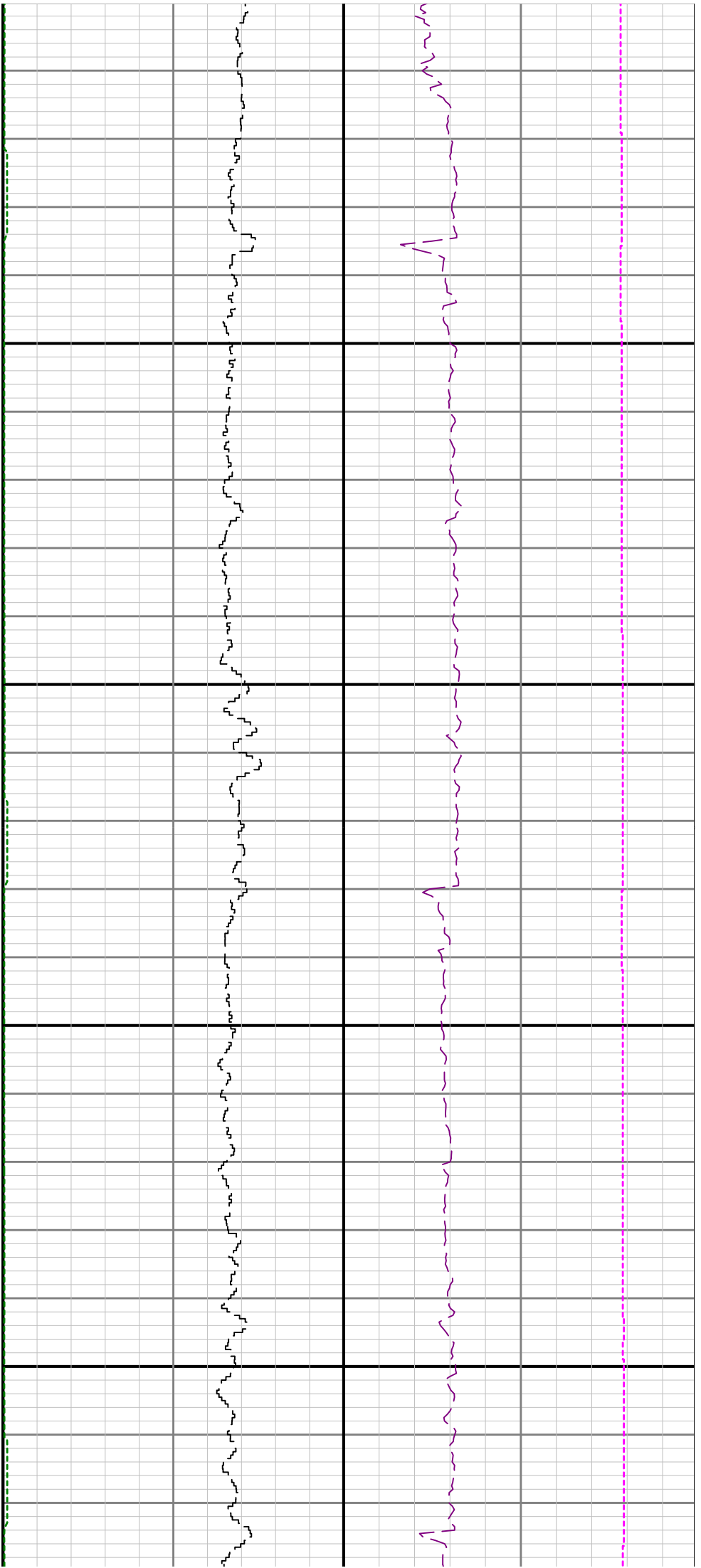


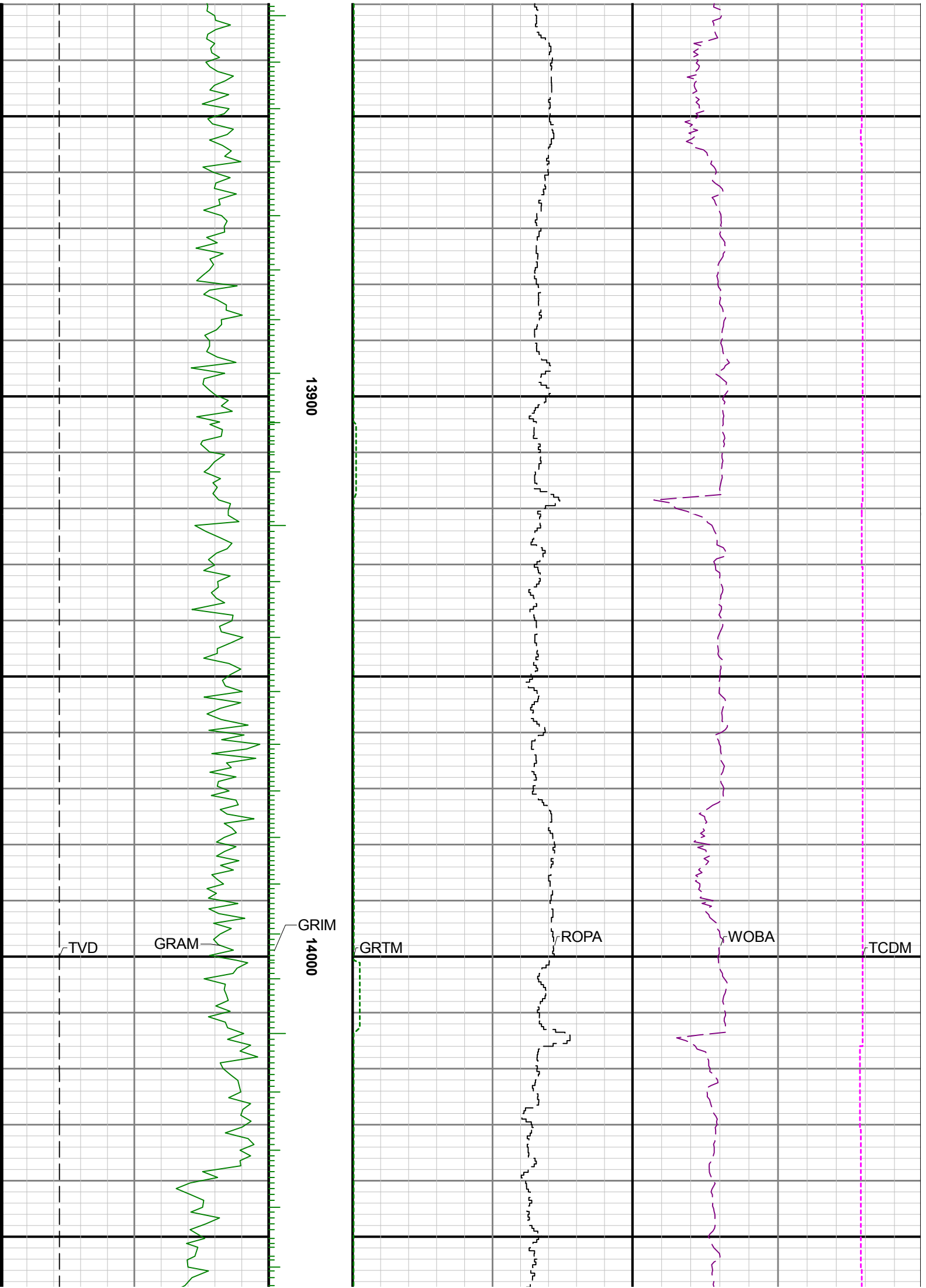
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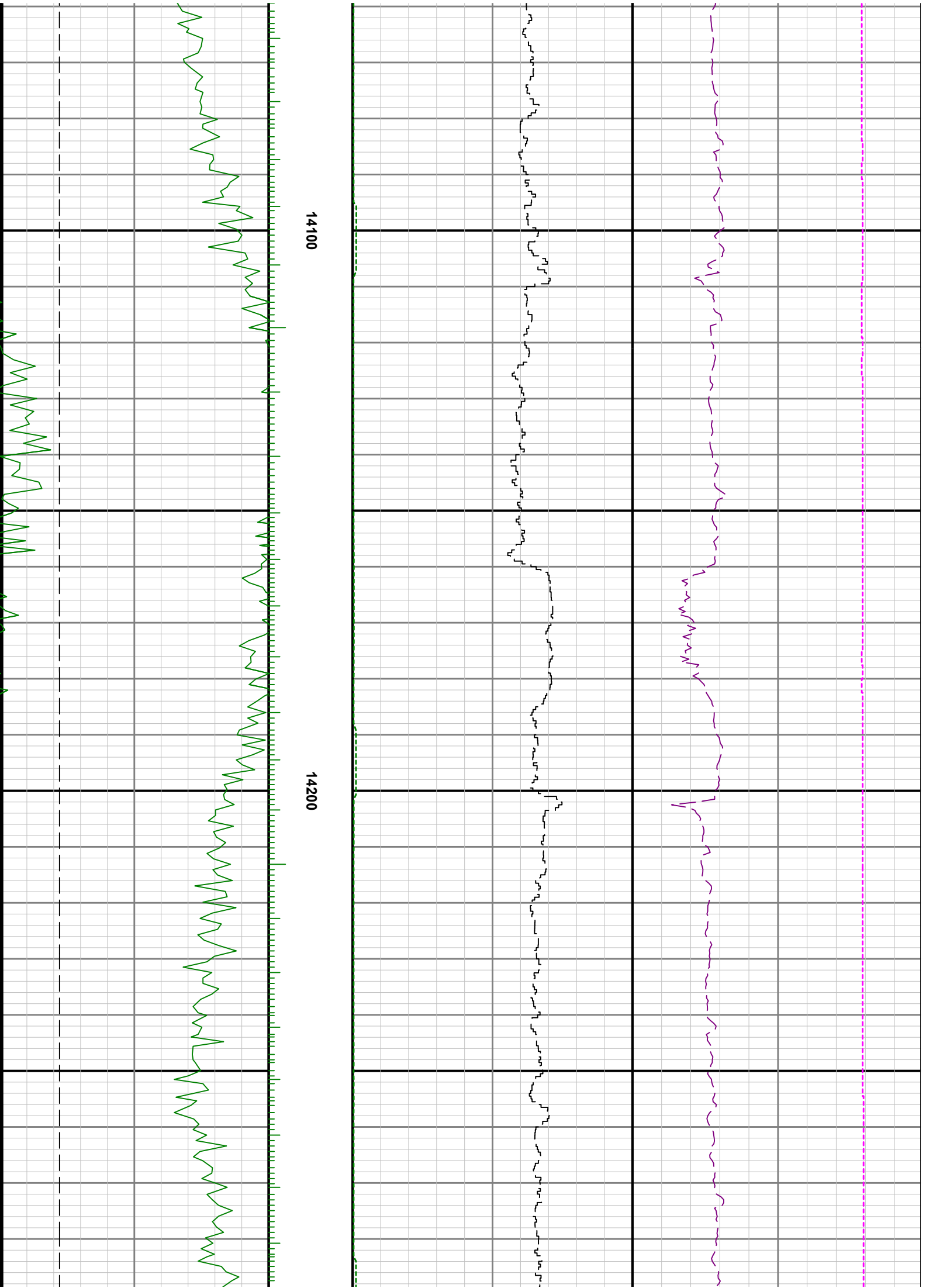
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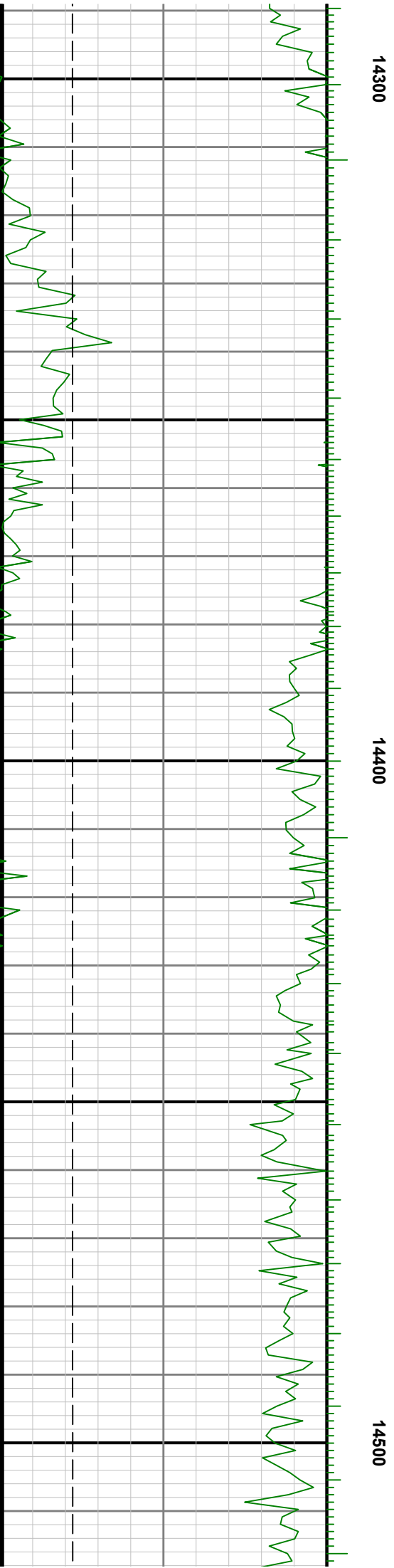
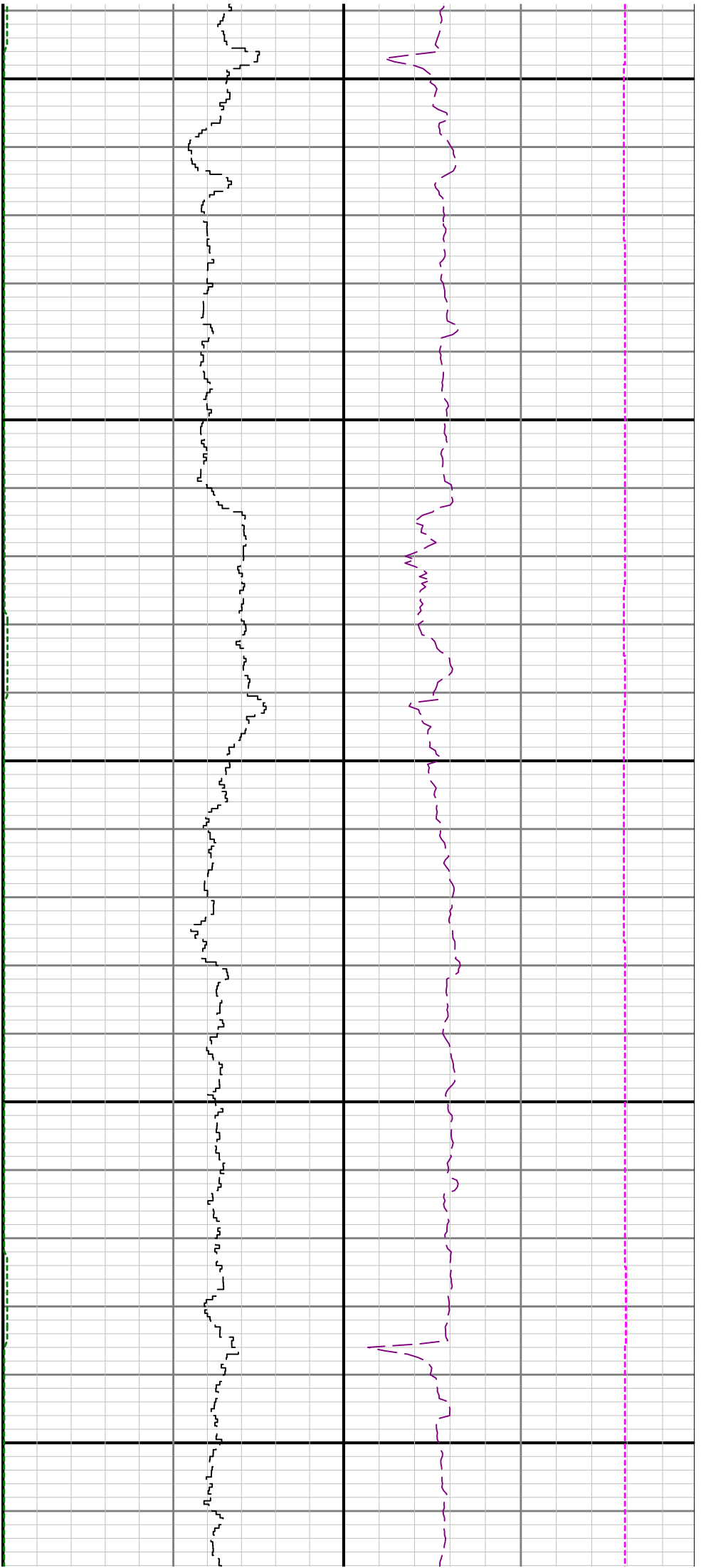


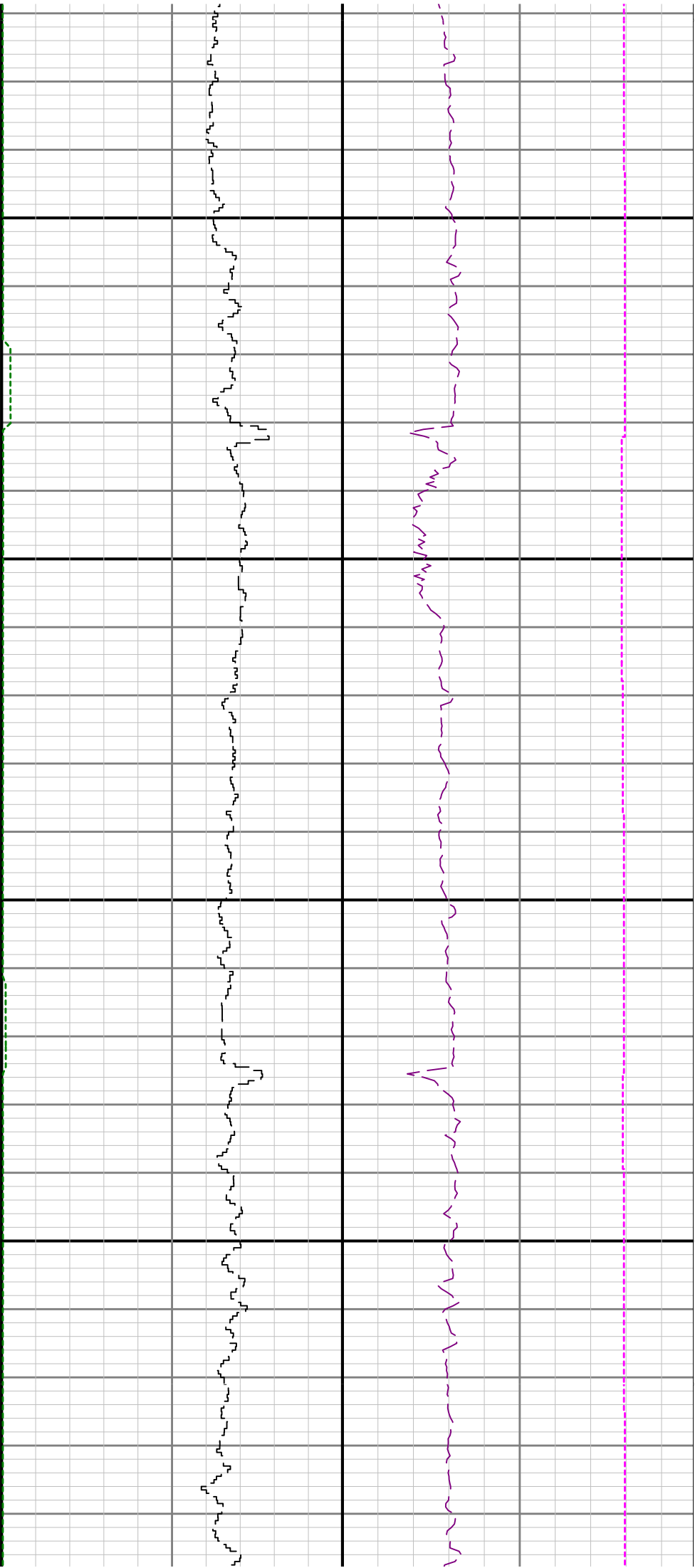












14600

14700

