



REALTIME LOG

Gamma Ray

Scale: Company: Anadarko

1:240 MD Well: Azul 13-12HZ

Depth Reference: Field: Wattenburg

Driller's Depth County: Weld Country: United States

State: Colorado

Status: Surface Location: Other Services:

Final Print Latitude: Longitude: Directional

API No: 051234590900 SEC: 13 TWN: 1N RGE: 66W

Permanent Datum (P.D.): Mean Sea Level Elevation: 0.00 ft Elev. KB: N/A
Log Measured From: Rig Floor Above P.D. 5088.00 ft Elev. DF: 5088.00 ft
Elev. GL: 5071.00 ft

| Dates | | | | Interval Logged | | | | Magnetic Field Reference | | | |
|------------|------------|--------------|----------|--|------|------------------|--------|--------------------------|--|--|--|
| Date From: | 2018-03-07 | Top: (ft) | 1862.00 | Azi Reference North: | True | Dip Angle: (deg) | 66.29 | | | | |
| Date To: | 2018-03-10 | Bottom: (ft) | 12582.00 | Total Magnetic Field Strength: (nT) | | | 52293 | | | | |
| Spud Date: | 2018-03-07 | | | Mag to Reference North Correction: (deg) | | | 7.85 E | | | | |

| Borehole Record | | | | Casing Record | | | |
|-----------------|-----------|----------|-----------|----------------|-----------|---------|--|
| Hole Size (in) | From (ft) | To (ft) | Size (in) | Weight (lb/ft) | From (ft) | To (ft) | |
| 13.000 | 17.00 | 1862.00 | 9.625 | 25.00 | 17.00 | 1862.00 | |
| 8.500 | 1862.00 | 12630.00 | | | | | |
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| Mud Record | | | | Deviation Record | | | |
|----------------------|-----------|----------|----------------|------------------|------------------|----------------|--|
| Type | From (ft) | To (ft) | Hole Size (in) | Interval (ft) | Inc Az (Start) | Inc Az (End) | |
| Diesel-Oil Based Mud | 1862.00 | 12630.00 | 8.500 | | | | |
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| Acquisition System | | Software Version | | Other | |
|----------------------|------------|------------------|--------------------|-----------|--|
| Baker Hughes Cadence | RT4.1 | | Rig: Xtreme 22 | | |
| PlotStudio | 4.1.7763.3 | | Contractor: Xtreme | | |
| | | | District: RMA | Unit: D&E | |

©"4239"Dcmgt"Jwi jgu."c"IG"eqorcp{."NNE"ó"Cnn"tki jvu"tgugt xgf0"Dcmgt"Jwi jgu."c"IG"eqorcp{."NNE"cpf"kvu"chhknkcvgu"*ôDJIGö+ "rtq xkfgu"vjku"kphqtocvkqp"qp"cp"ôcu"kuö"dcuku"hqt"igpgtcn"kphqtocvkqp" purposes and believes it to be accurate as of the date of publication. BHGE does not make any representation as to the accuracy or completeness of the information and makes no warranties of any kind, specific, implied or oral, to the fullest extent permissible by law, including those of merchantability and fitness for a particular purpose or use. BHGE hereby disclaims any and all liability for any direct, indirect, consequential or special damages, claims for lost profits, or third party claims arising from the use of the information, whether a claim is asserted in contract, tort, or otherwise. The BHGE logo is a trademark of Baker Hughes, a GE company, LLC. GE and the GE monogram are trademarks of General Electric Company used under trademark license.

Log Run Summary

| Run No | Bit Run No. | Bit Size (in) | Bit Type | Bit Gauge Length (in) | Assembly Type | Logged Interval | | Bit Depth Interval | | Date / Time | | Circ. Hours (h) |
|--------|-------------|---------------|----------|-----------------------|---------------|-----------------|----------|--------------------|----------|------------------|------------------|-----------------|
| | | | | | | Top | Bottom | From | To | Start Logging | End Logging | |
| | | | | | | (ft) | (ft) | (ft) | (ft) | | | |
| 1 | 1 | 8.500 | PDC | 2.00 | Steerable | 1862.00 | 12582.00 | 1862.00 | 12630.00 | 2018-03-08 01:10 | 2018-03-10 02:26 | 43.61 |

Crew

| Name | | Arrive Wellsite | Depart Wellsite | Name | | Arrive Wellsite | Depart Wellsite | Name | | Arrive Wellsite | Depart Wellsite |
|-----------------|--|-----------------|-----------------|-----------|--|-----------------|-----------------|------|--|-----------------|-----------------|
| Teni Onafowokan | | 2018-03-07 | 2018-03-10 | Will Roth | | 2018-03-07 | 2018-03-10 | | | | |

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+ (%) |
|------------------|---------|---------------------|----------------------|---------------|----------------|-----|------------------|-------------|------------|-----------------------|--------|
| 2018-03-07 17:39 | 1 | 1862.00 | Diesel-Oil Based Mud | 9.0 | 15 | N/A | N/A | 70/30 | Active Pit | 40000 | 0.00 |
| 2018-03-08 19:00 | 1 | 6456.00 | Diesel-Oil Based Mud | 8.8 | 13 | N/A | N/A | 71/29 | Active Pit | 43000 | 0.00 |
| 2018-03-09 19:00 | 1 | 10837.00 | Diesel-Oil Based Mud | 8.9 | 13 | N/A | N/A | 70.7/29.3 | Active Pit | 43000 | 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 | NaviGamma | 10341481 | Gamma (single) | 10.12 | 47.60 | 6.500 | 2.250 |
| 1 | NaviGamma | 10341481 | Directional (mag) | 13.54 | 51.02 | 6.500 | 2.250 |
| 1 | NaviGamma | 10341481 | VSS | 13.54 | 51.02 | 6.500 | 2.250 |

Service and Tool Mnemonics

| Mnemonic | Name | Description |
|----------|-----------|---|
| GAM | NaviGamma | Probe Based Gamma Module, NaviTrak Platform |

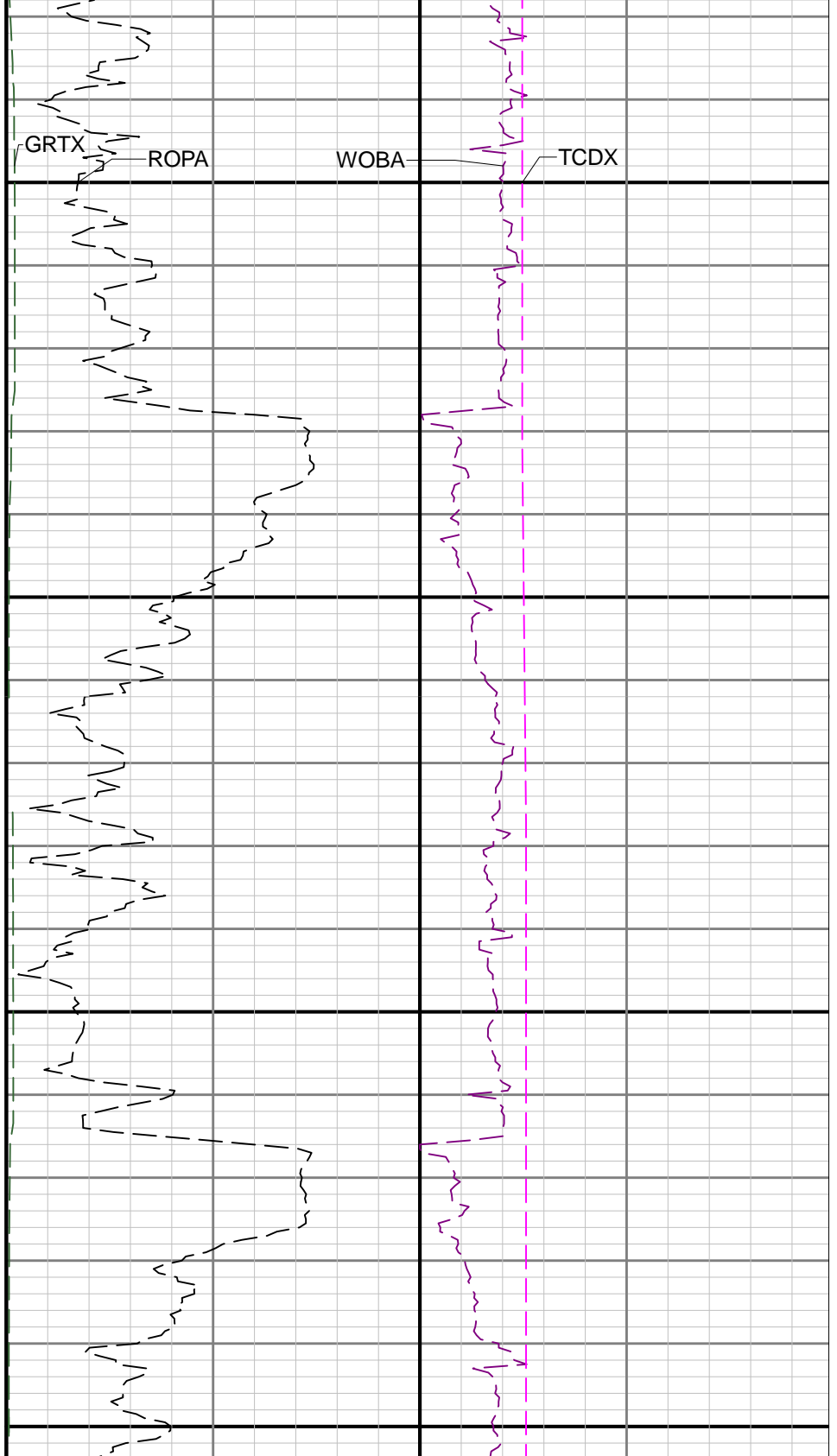
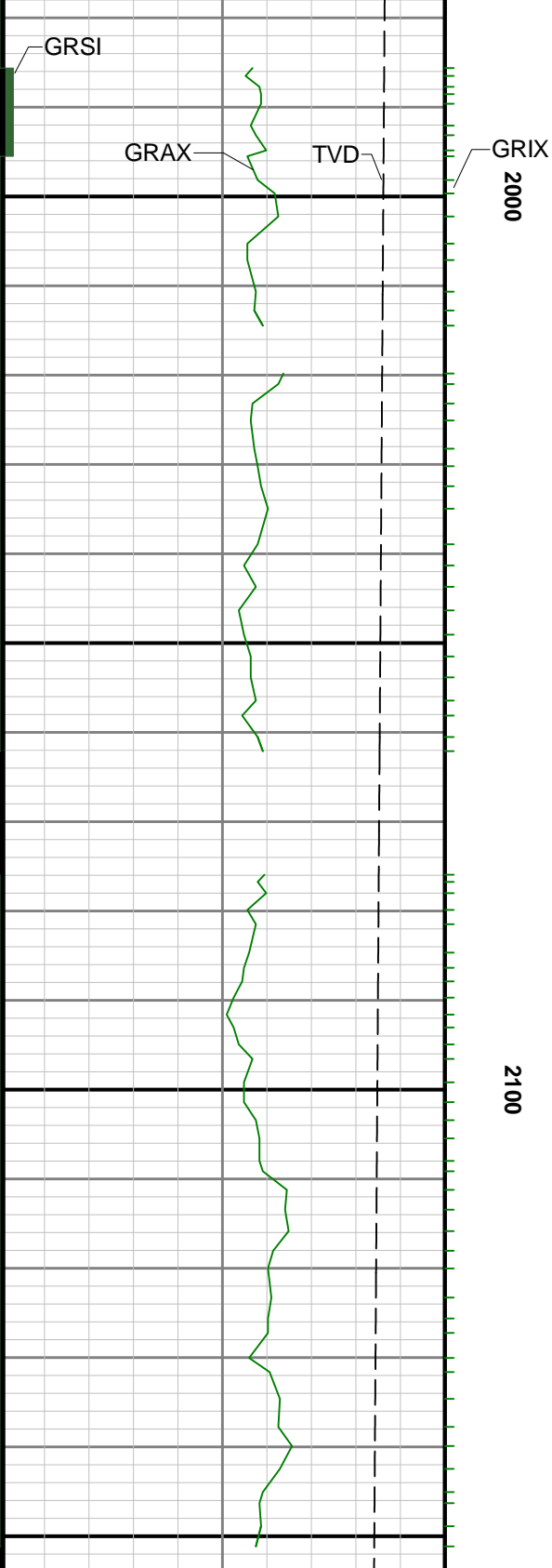
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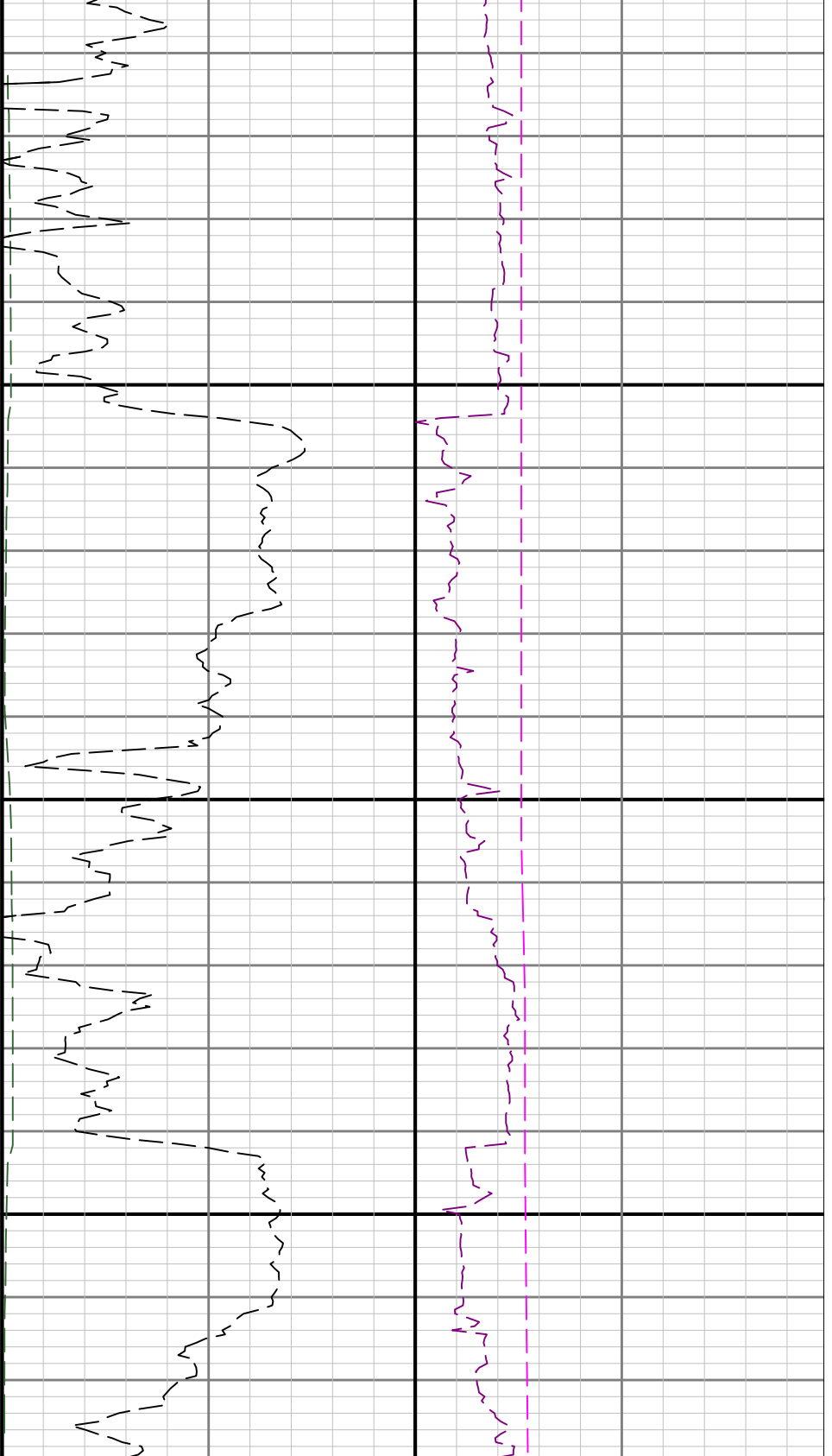
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|---|---|
| 1 | Depth measurements were obtained from a depth control system not supplied or operated by Baker Hughes. Due to the lack of control by Baker Hughes logging engineers, depth calibrations and measurements could not be independently verified. |
| 2 | A sliding indicator is shown to the left edge of track 1 as a heavy line. The indicator has been depth-shifted to the Gamma Ray sensor offset to correspond with Gamma Ray data acquired while sliding. |
| 3 | Baker Hughes run 1 utilized 6.50 inch NaviGamma services (Gamma Ray and Directional) behind a 8 1/2 inch bit and steerable assembly from 1862 to 12630 feet MD (1838 to 7242 feet TVD). |
| 4 | Numerous gaps are present throughout the log due to surveying while on bottom drilling ahead. |
| 5 | Gamma Ray (GRAX) scale is presented 0 to 200 API per customer request. |

Remarks

| | Measured | Hole | Run | |
|--|----------|------|-----|--|
|--|----------|------|-----|--|

| Gamma Ray - Apparent 0.5 ft Average [GRAX] | | MD 1:240 feet | Gamma Time Since Drilled [GRTX] | | Weight On Bit, Average 1 ft Average [WOBA] | |
|--|------|--|--|---|--|-----|
| API | | | min | | klb | |
| True Vertical Depth [TVD] | | | Depth Averaged ROP 3 ft Average [ROPA] | | Downhole Temperature [TCDX] | |
| 8000 | 1000 | | 1000 | 0 | 0 | 300 |
| ft | | | ft/h | | degF | |
| <div>GRAX</div> <div>TVD</div> | | <div>9 5/8" Casing</div> <div>GRIX</div> <div>1900</div> | <div>GRTX</div> <div>ROPA</div> | | <div>WOBA</div> <div>TCDX</div> | |

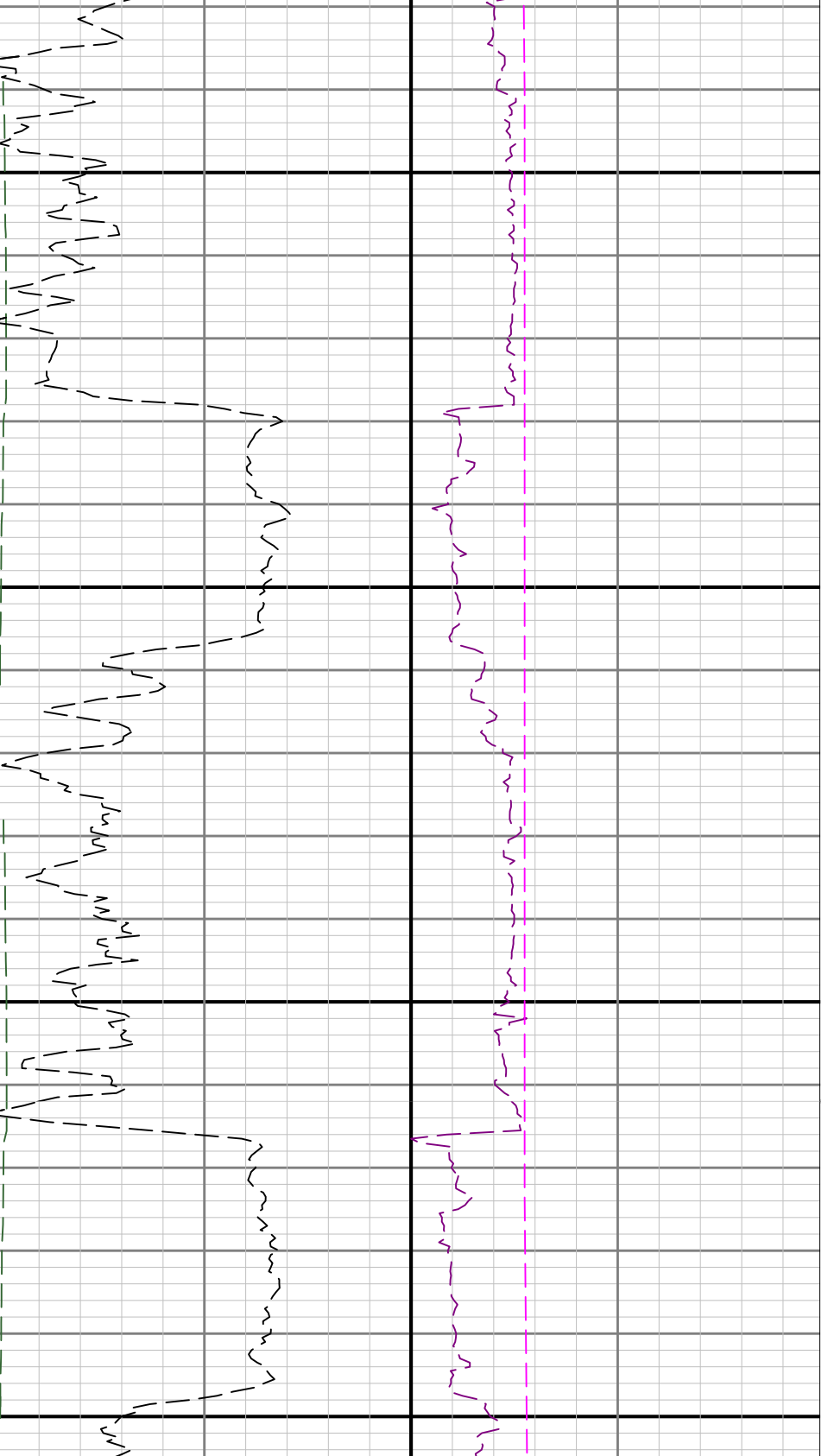




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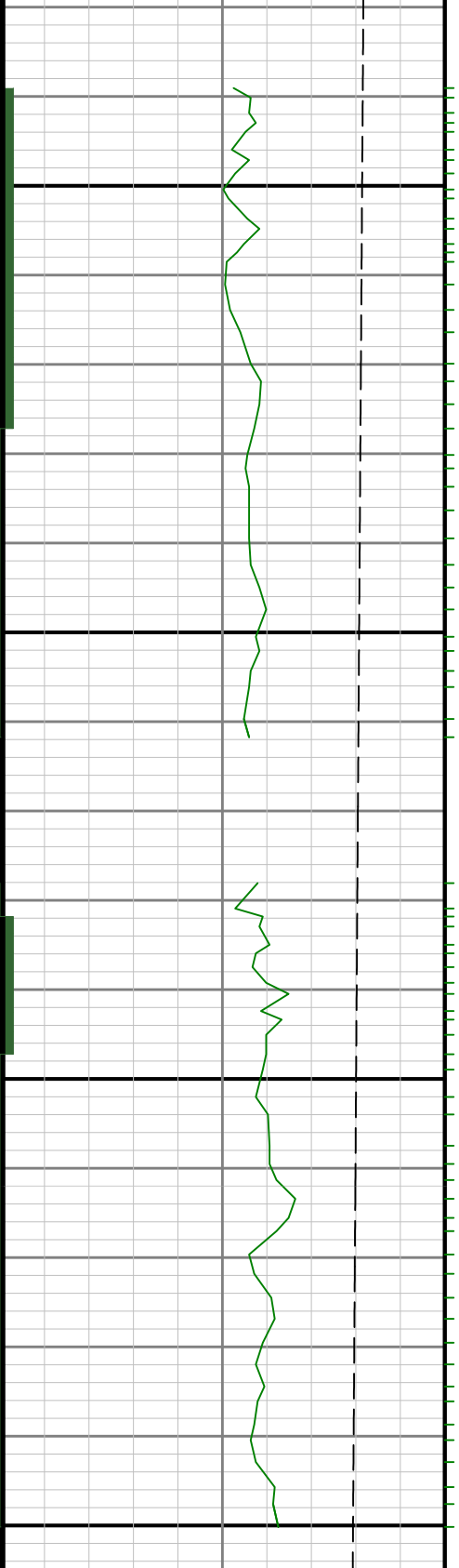
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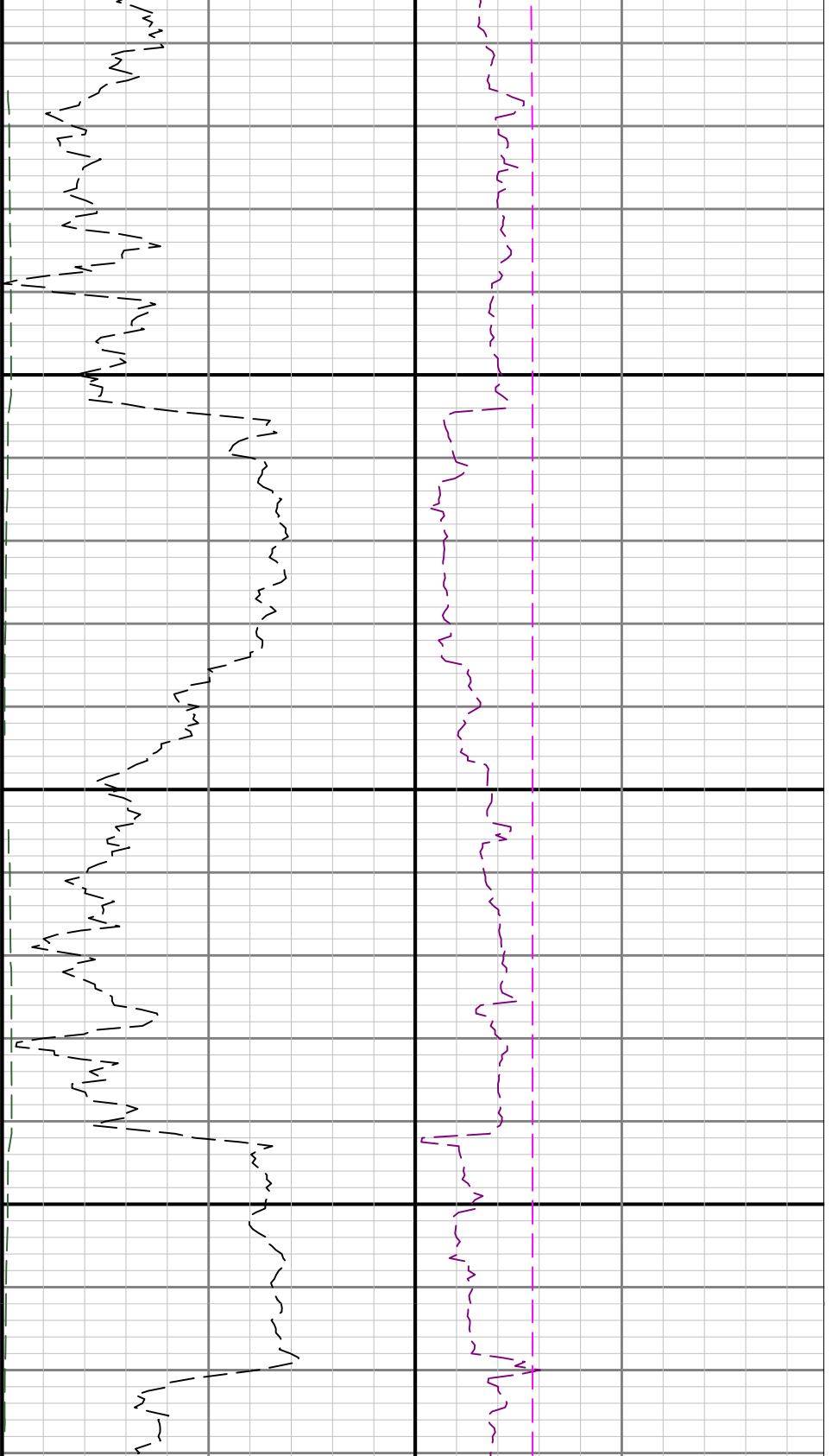




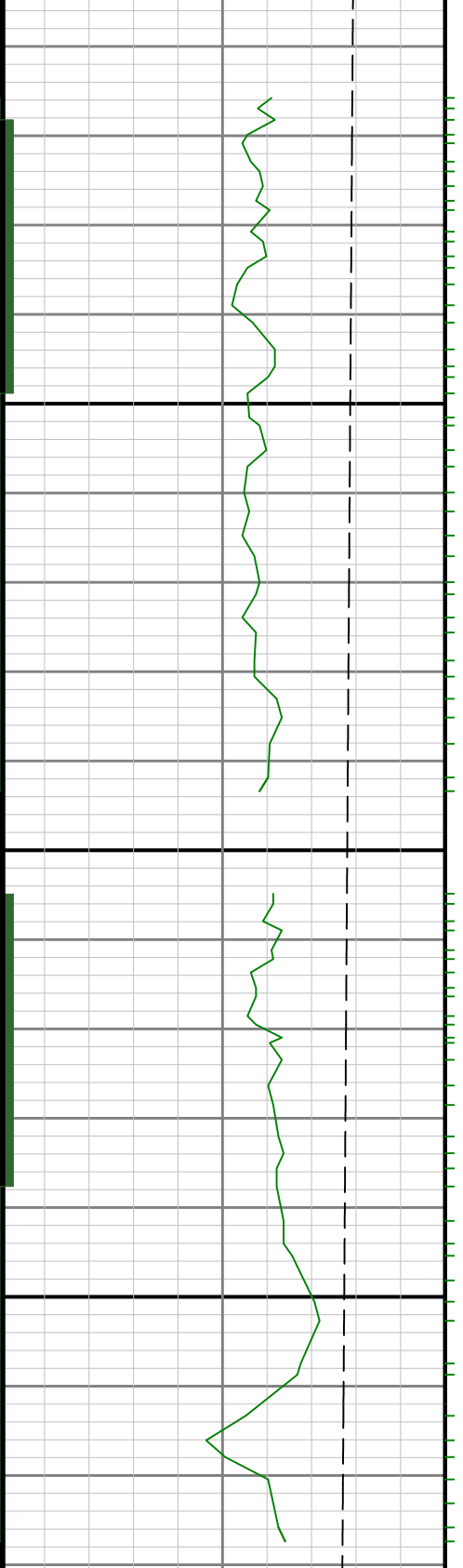
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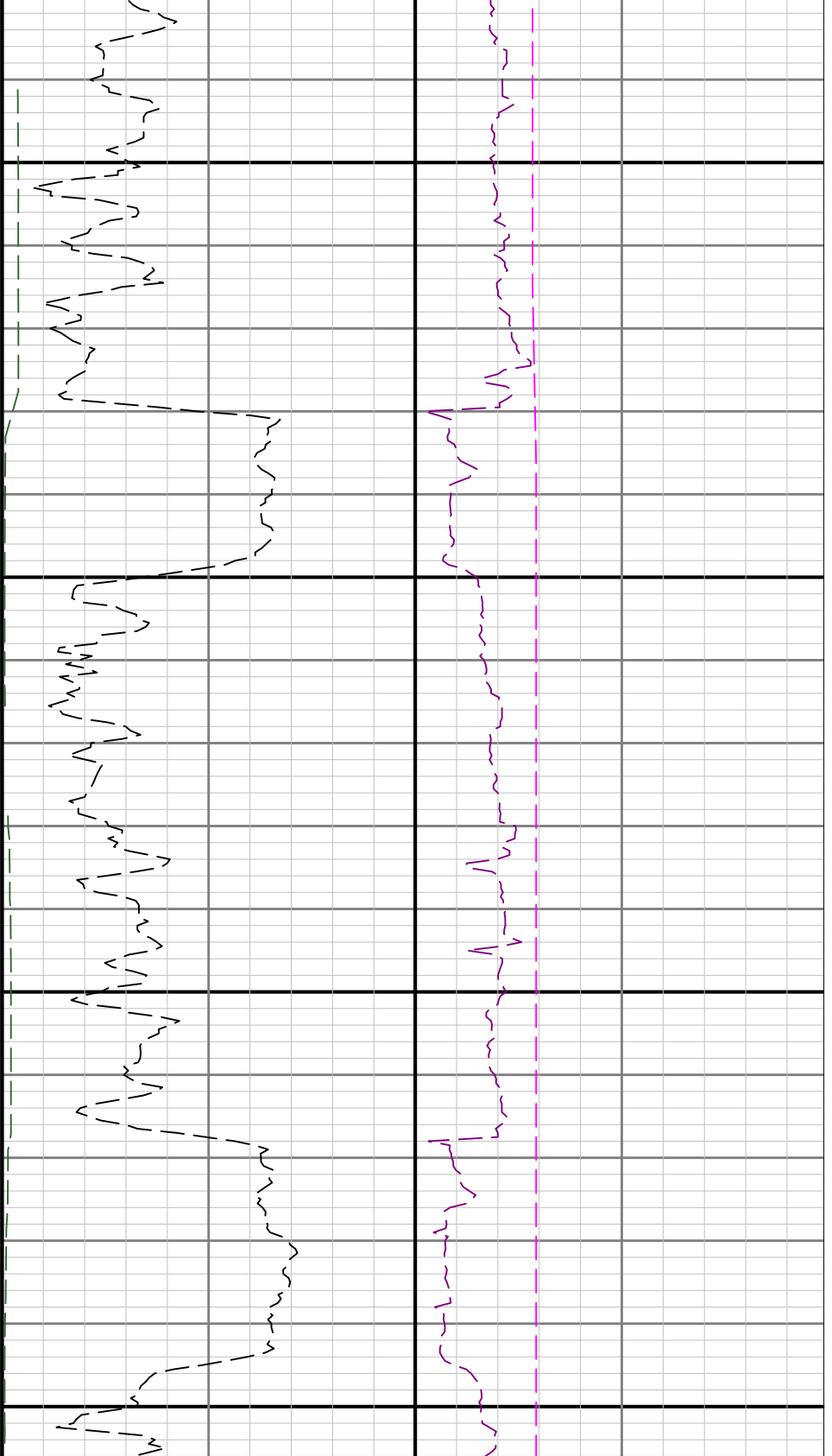
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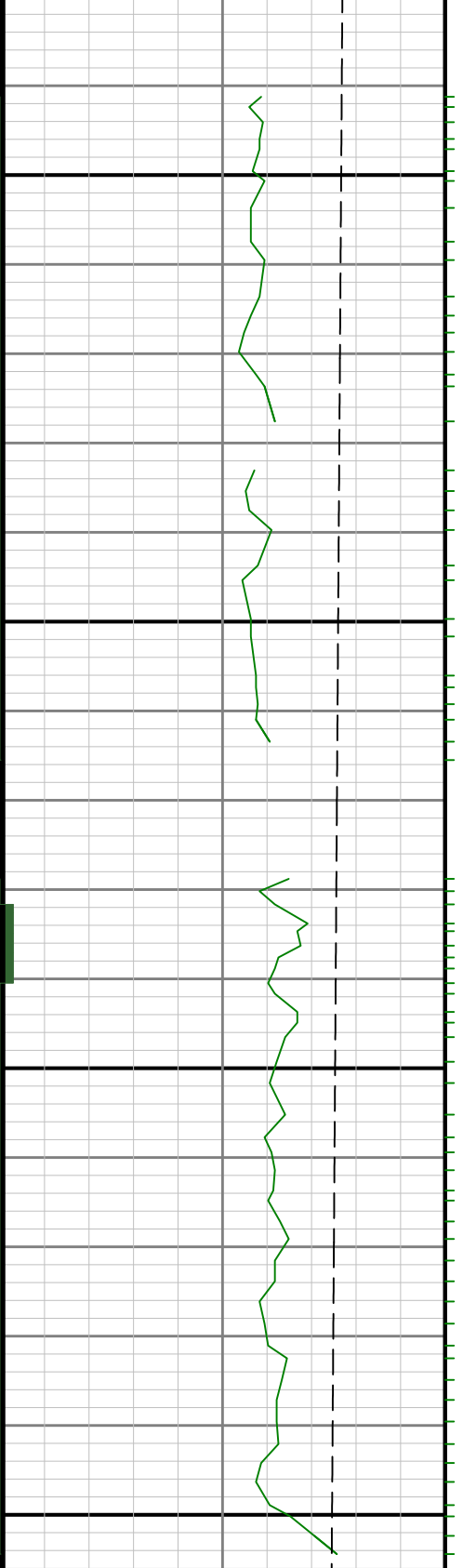
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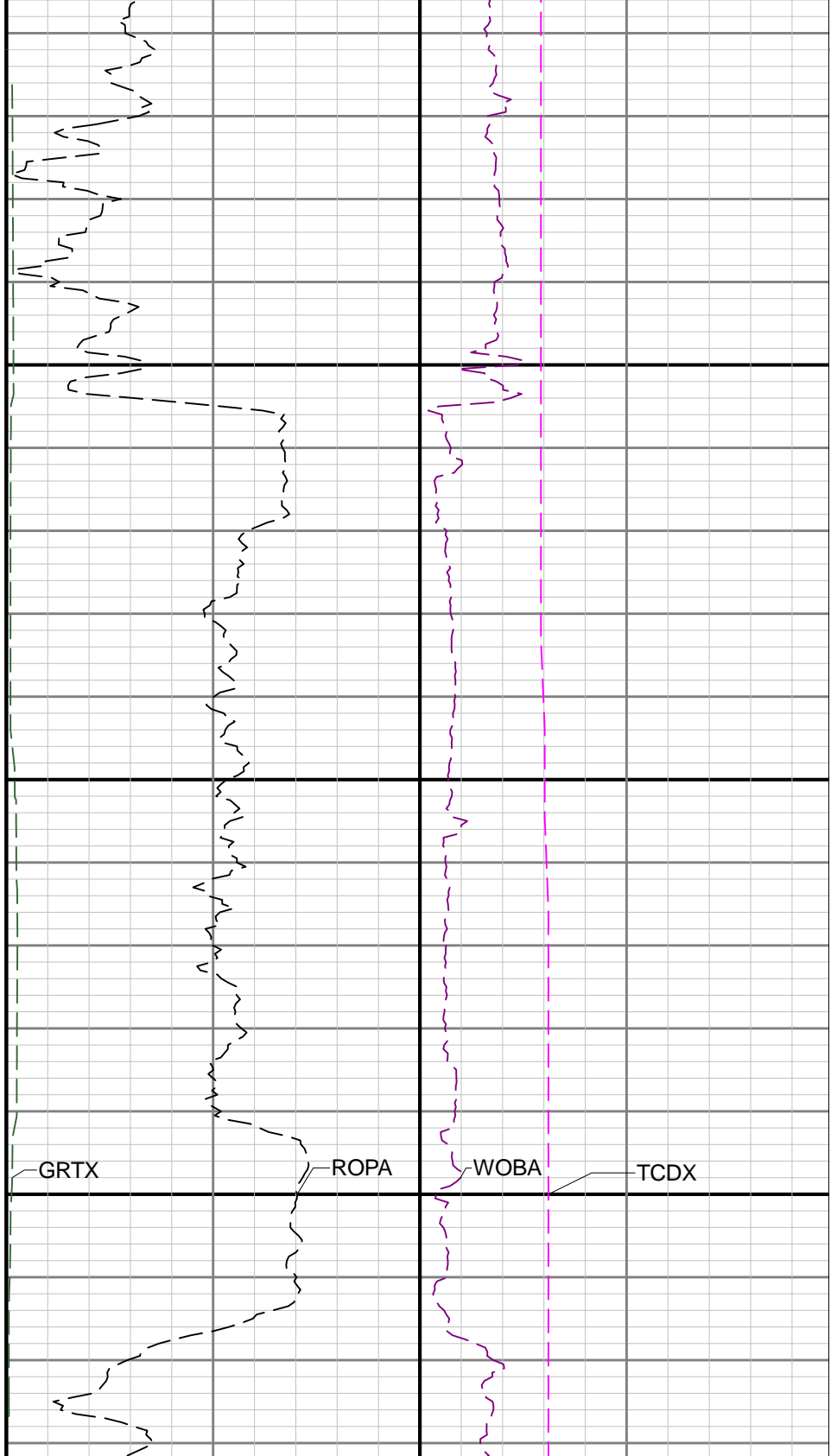
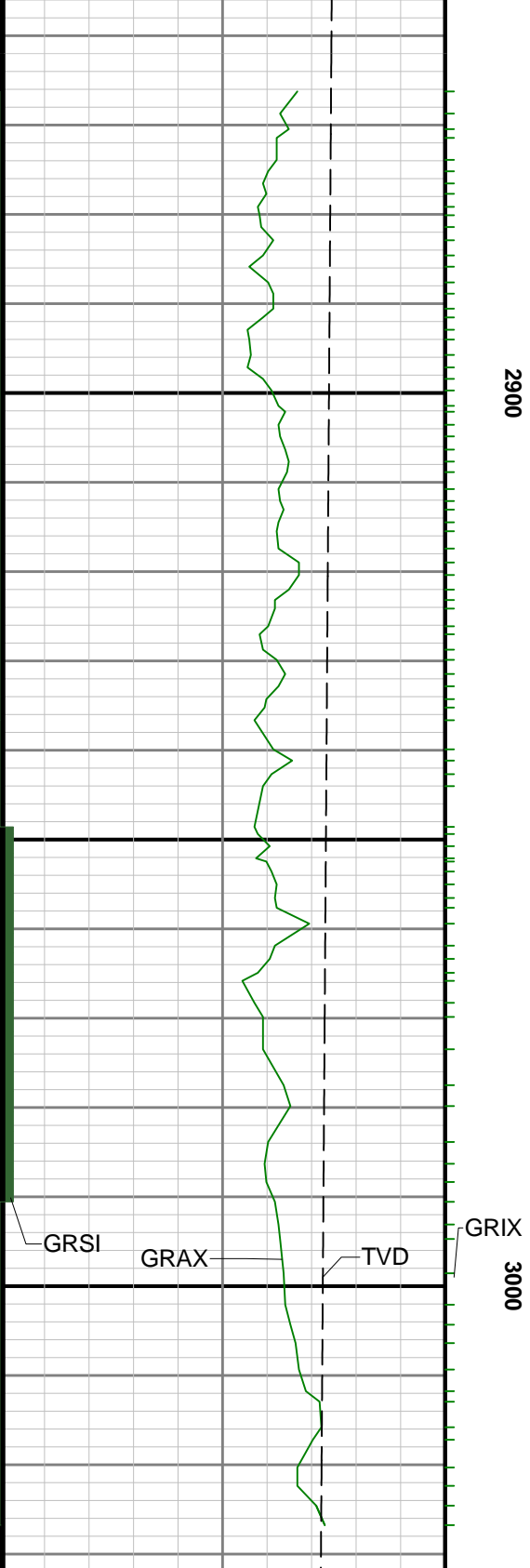


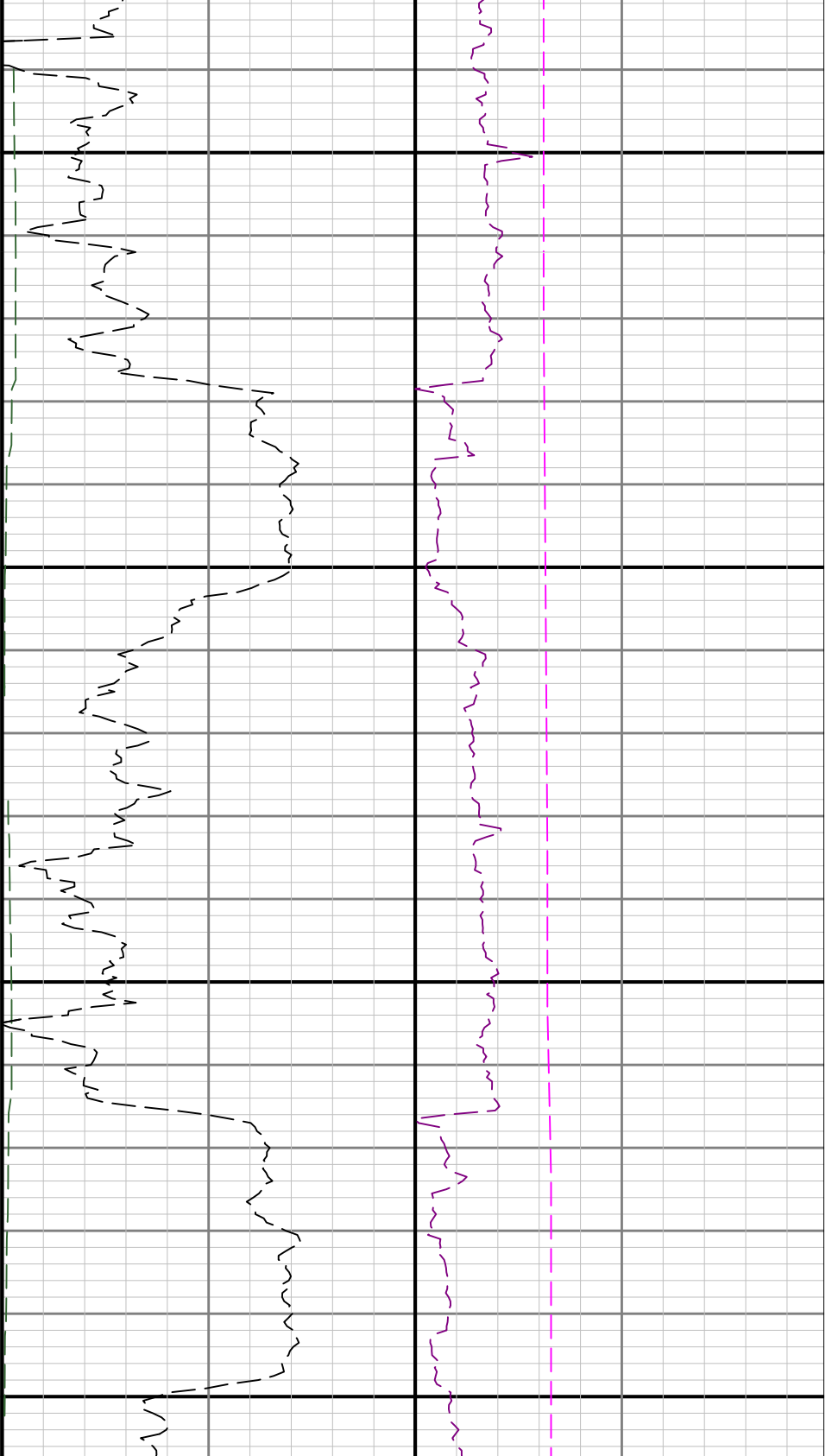


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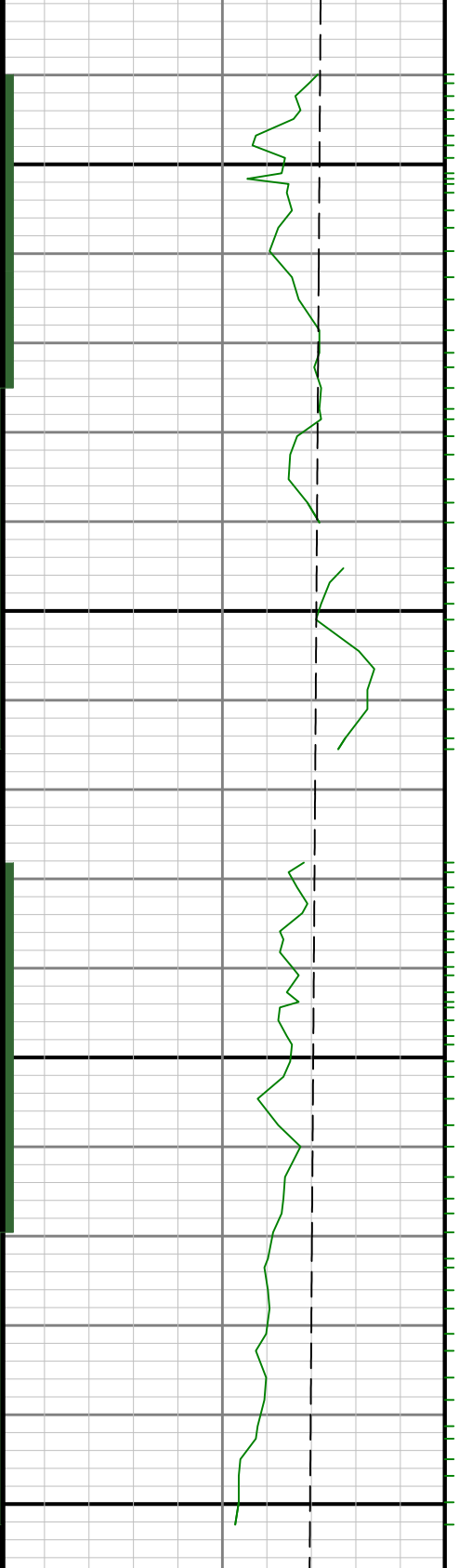


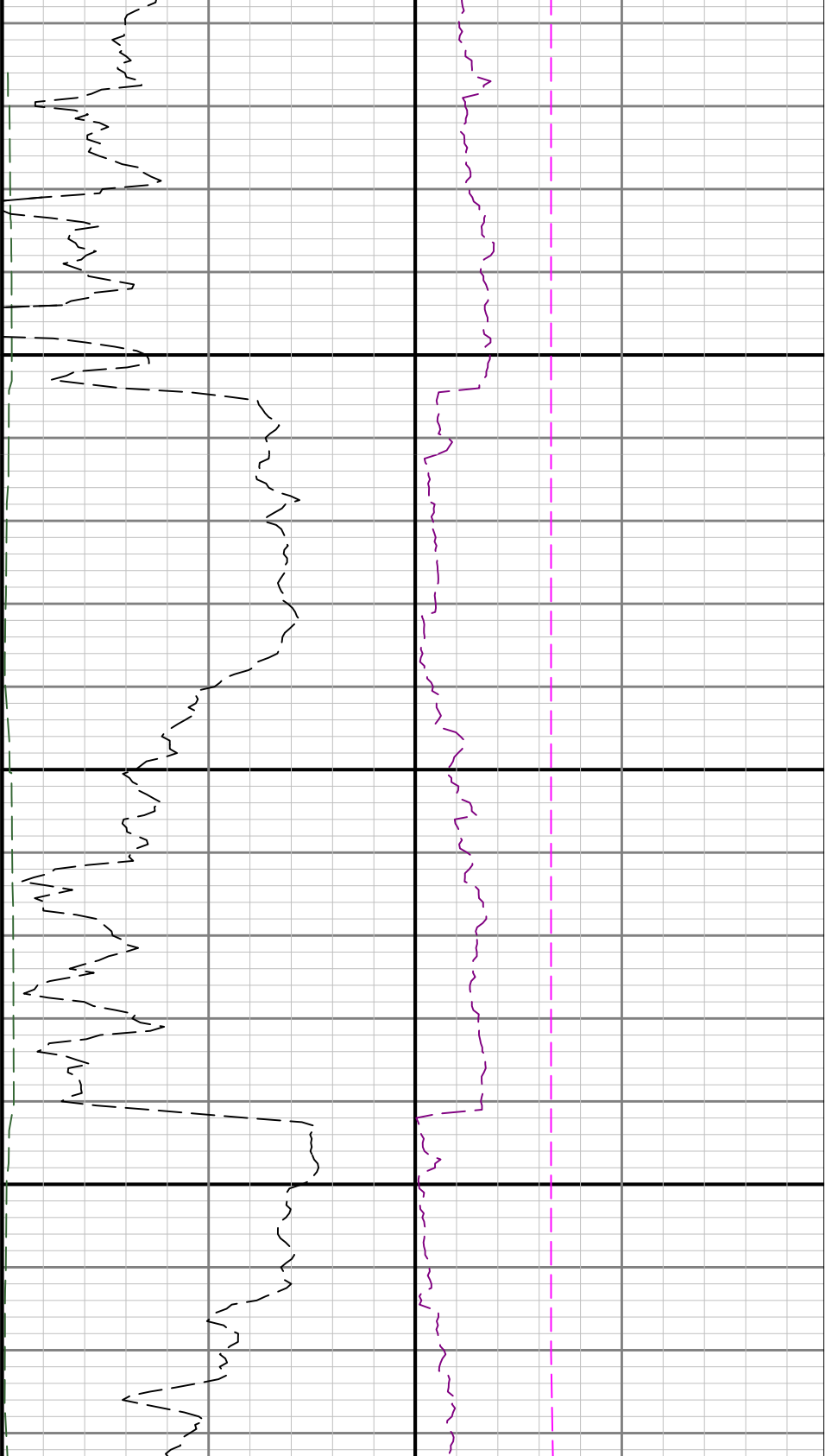




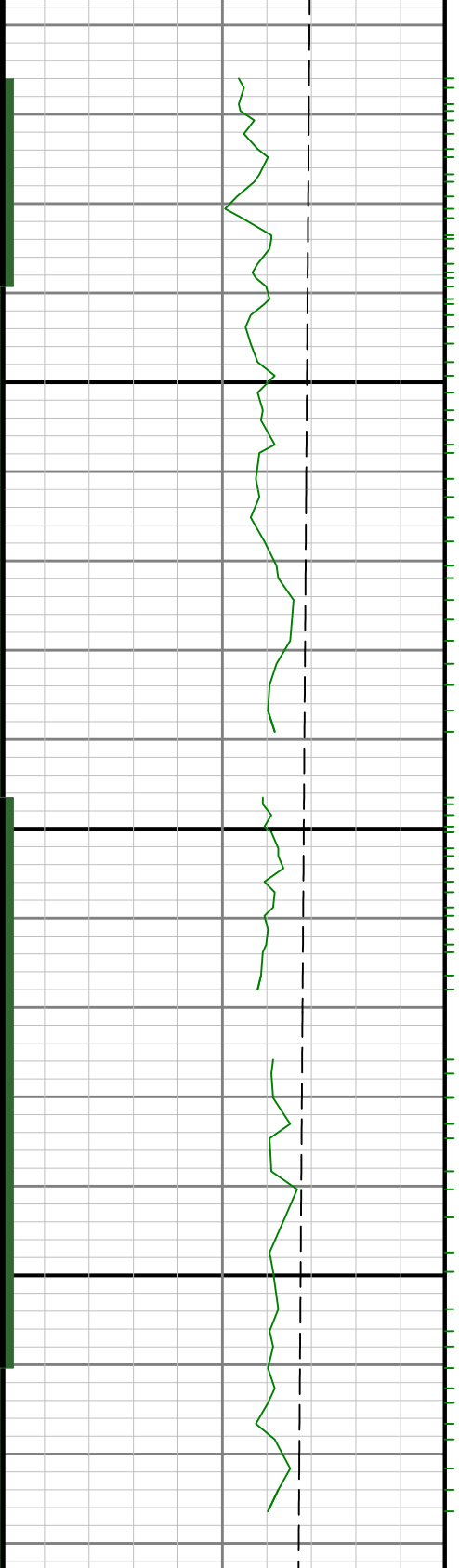
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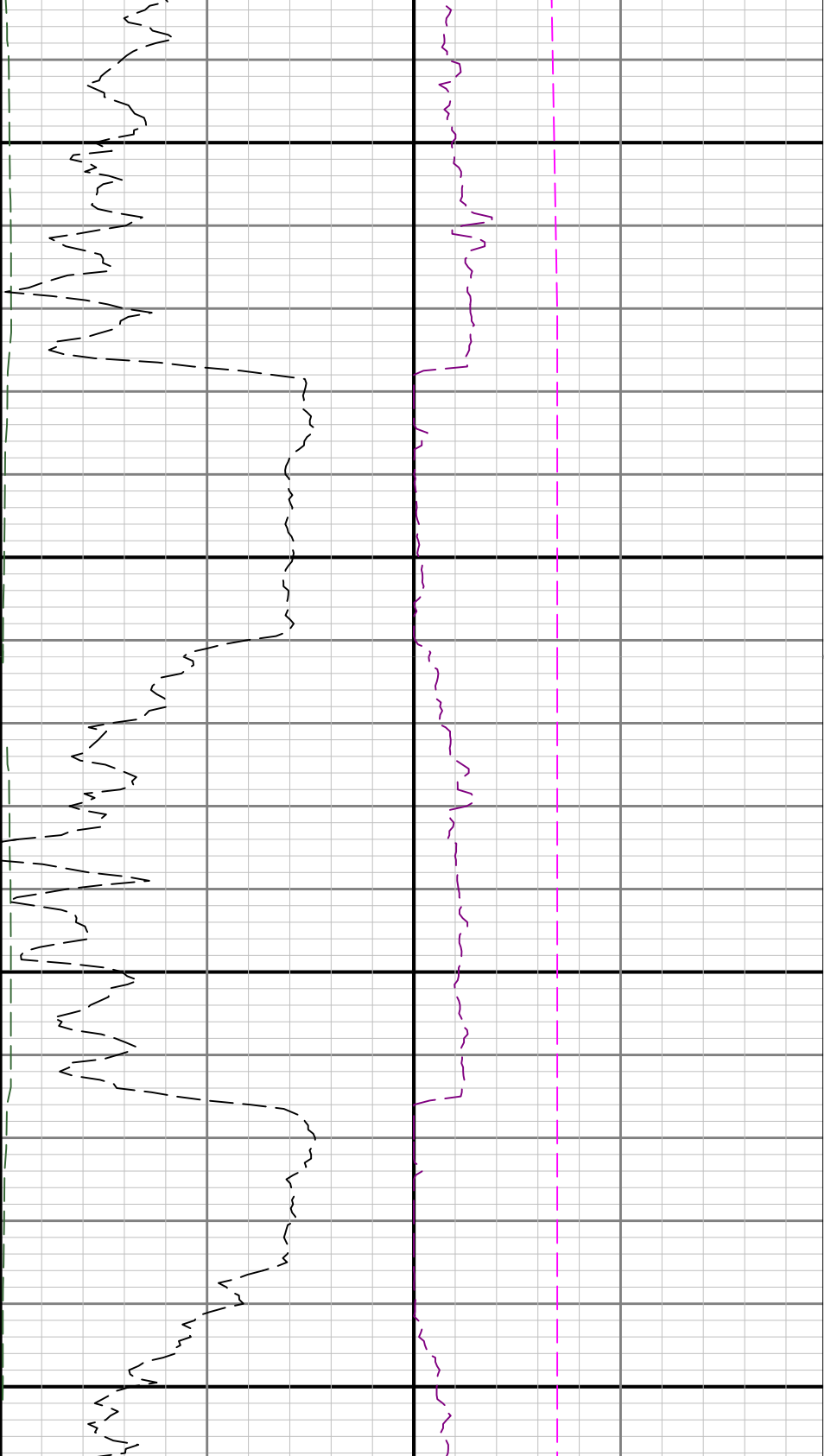
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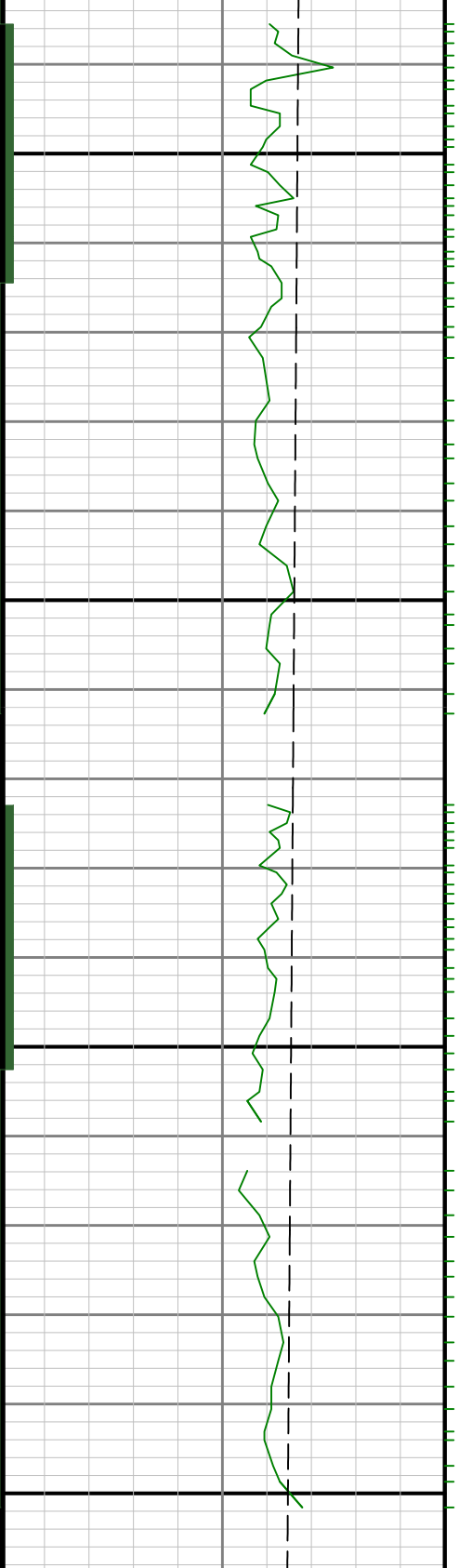
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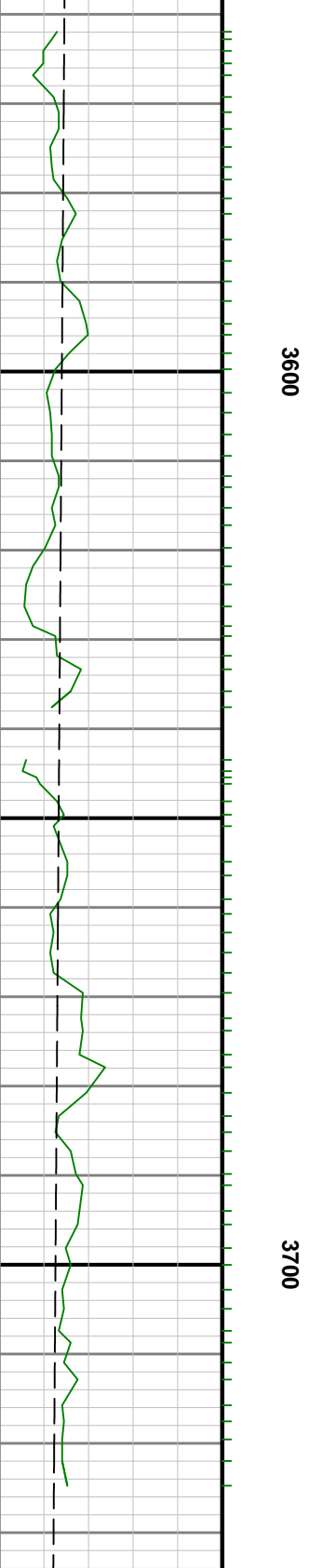
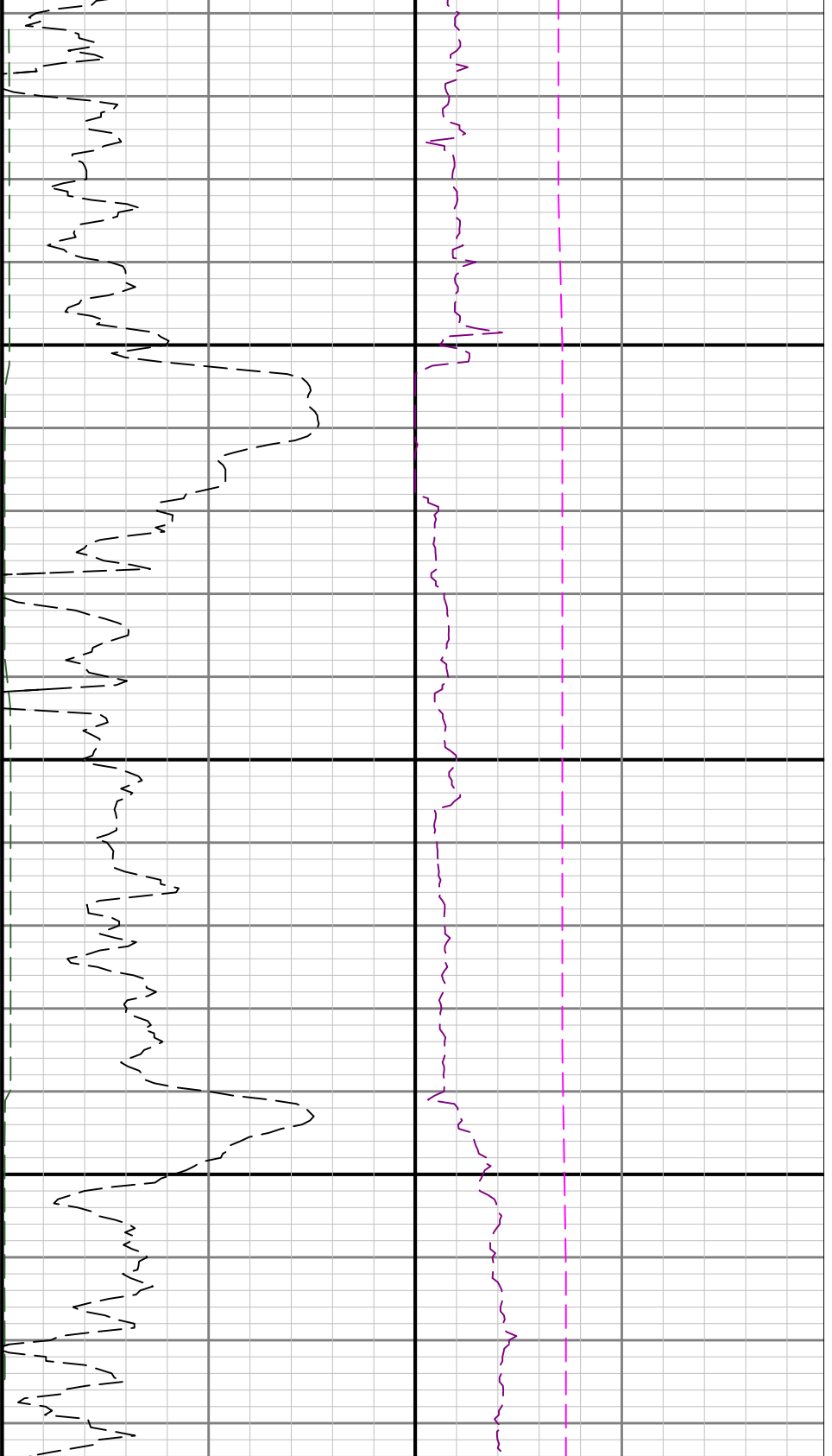


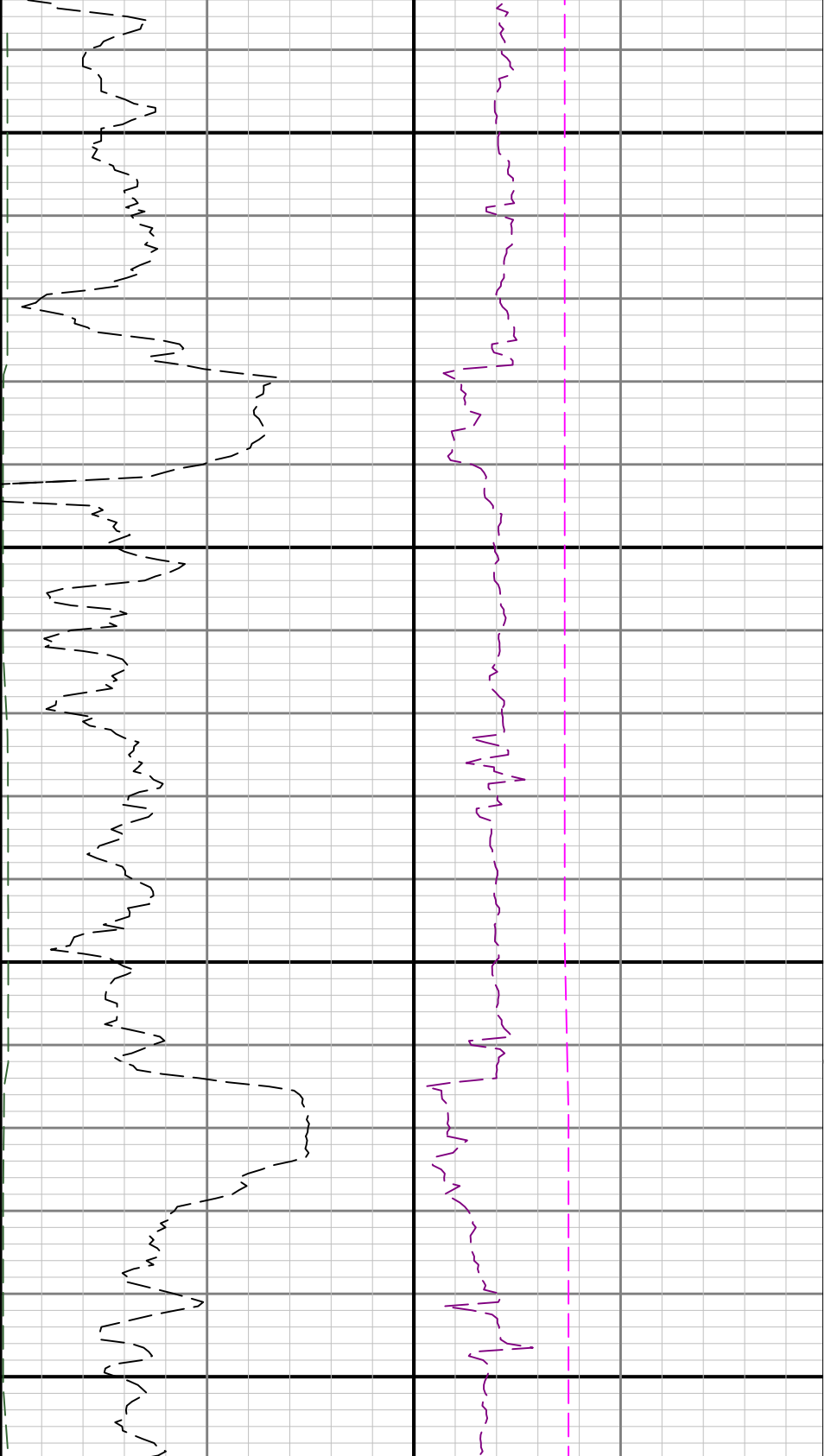


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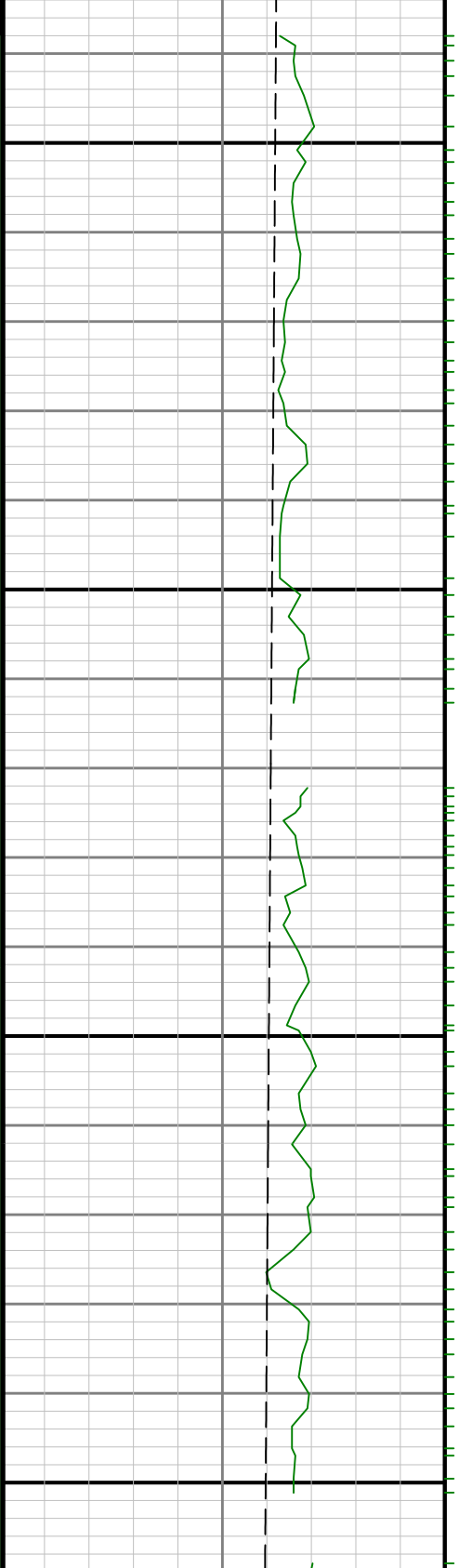


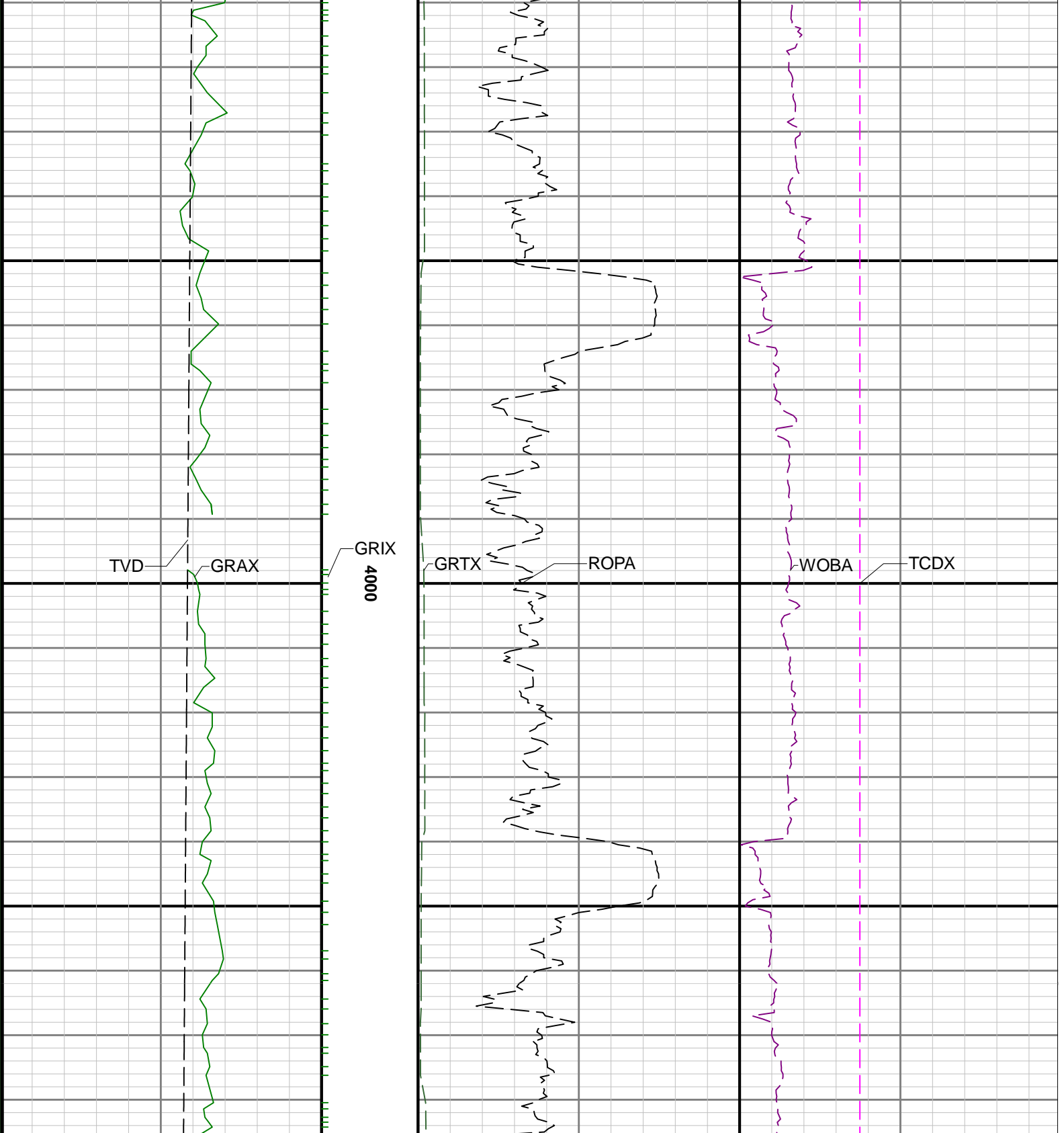


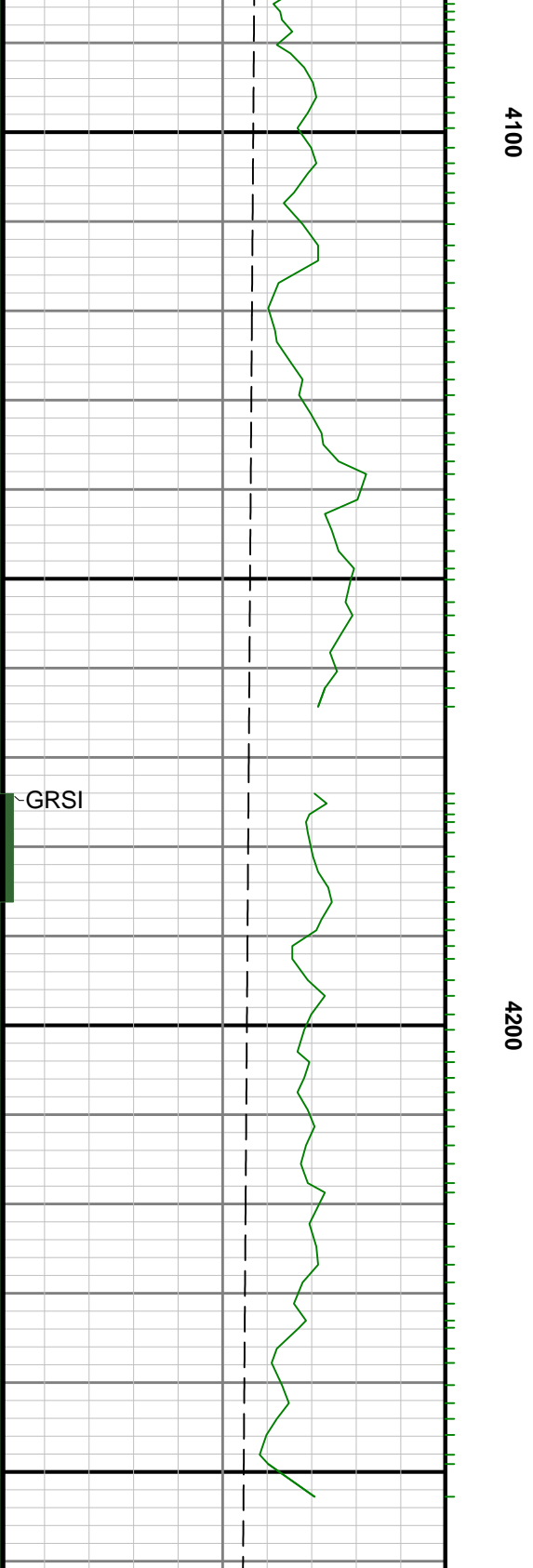
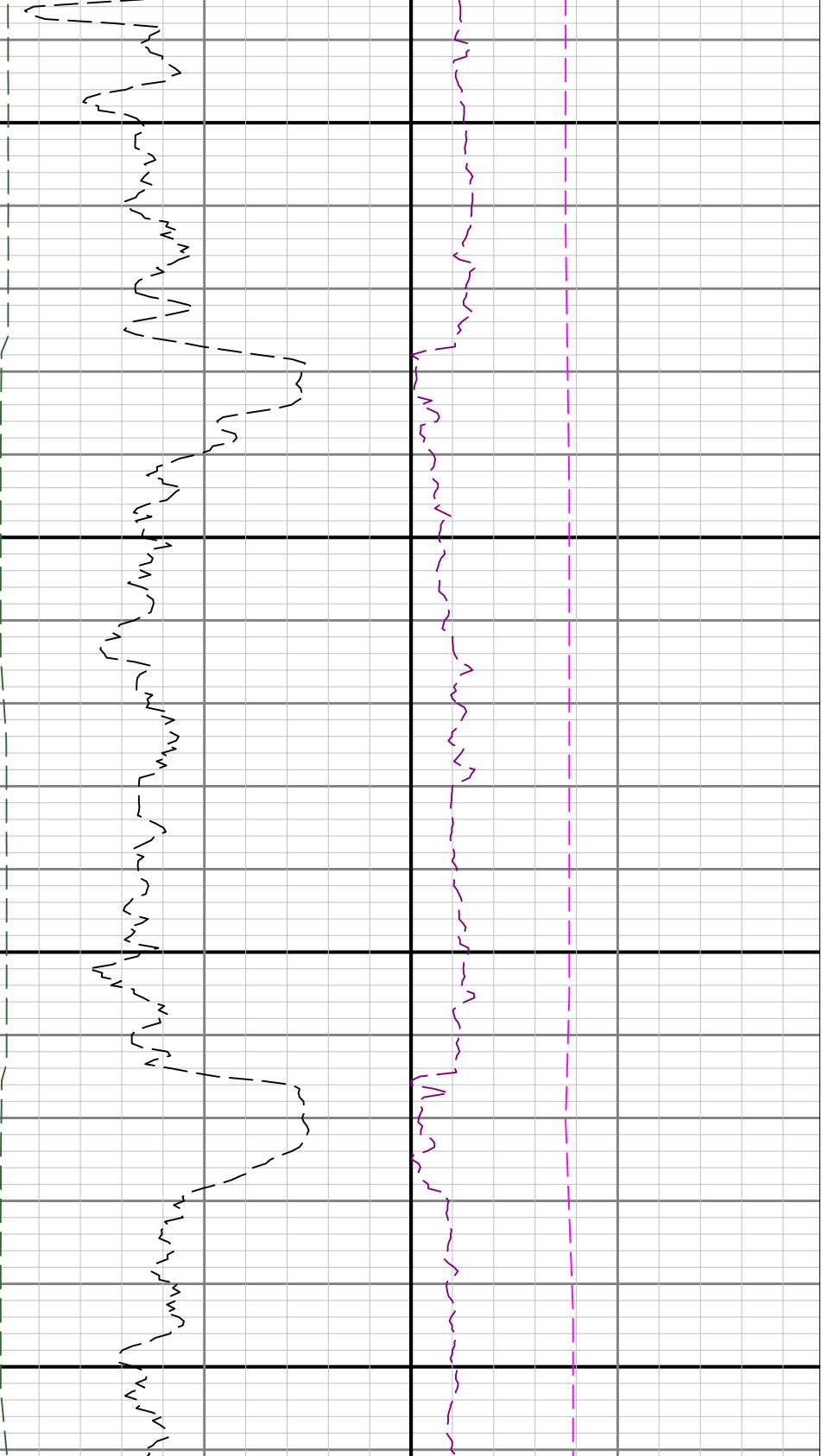


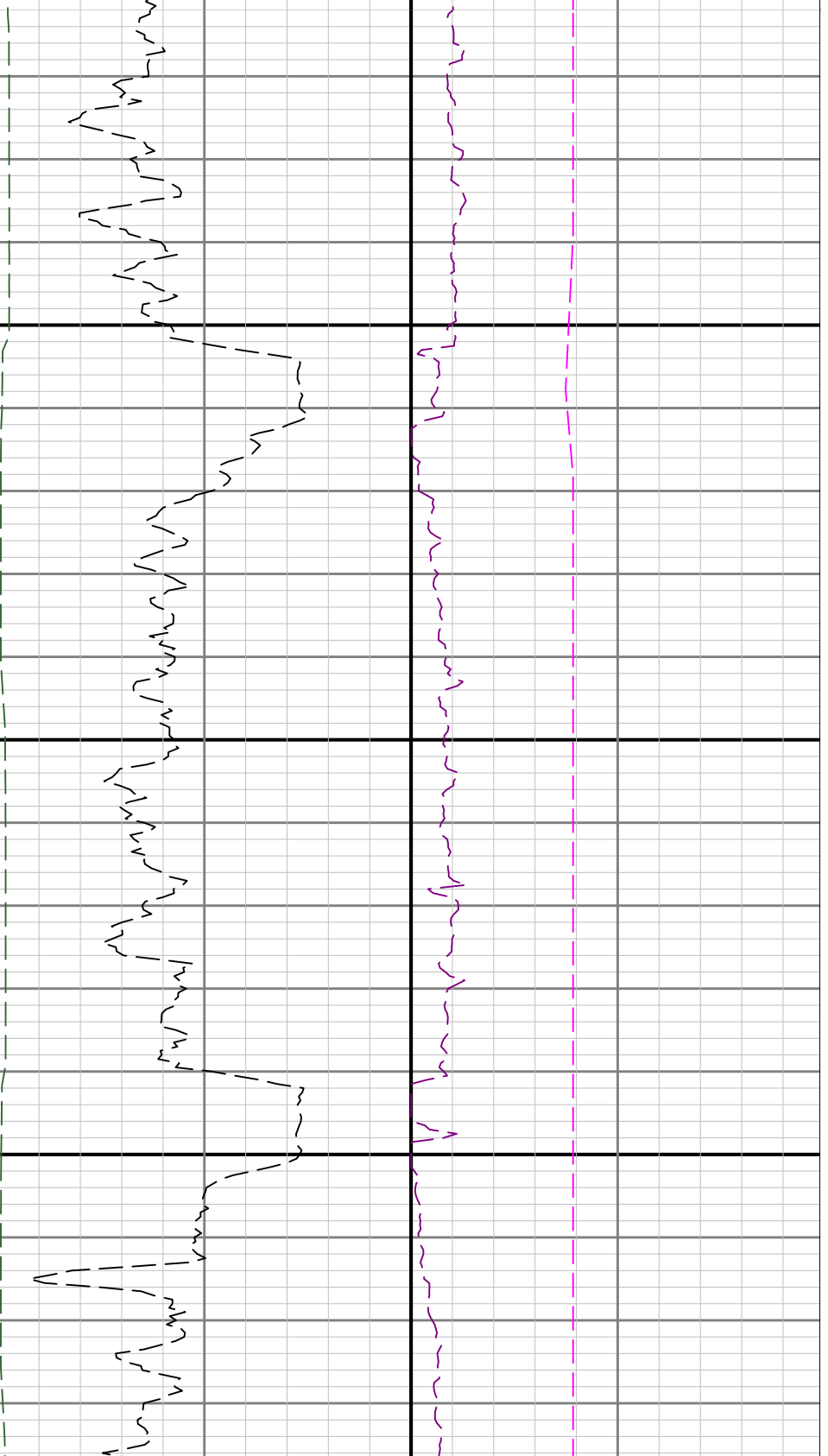
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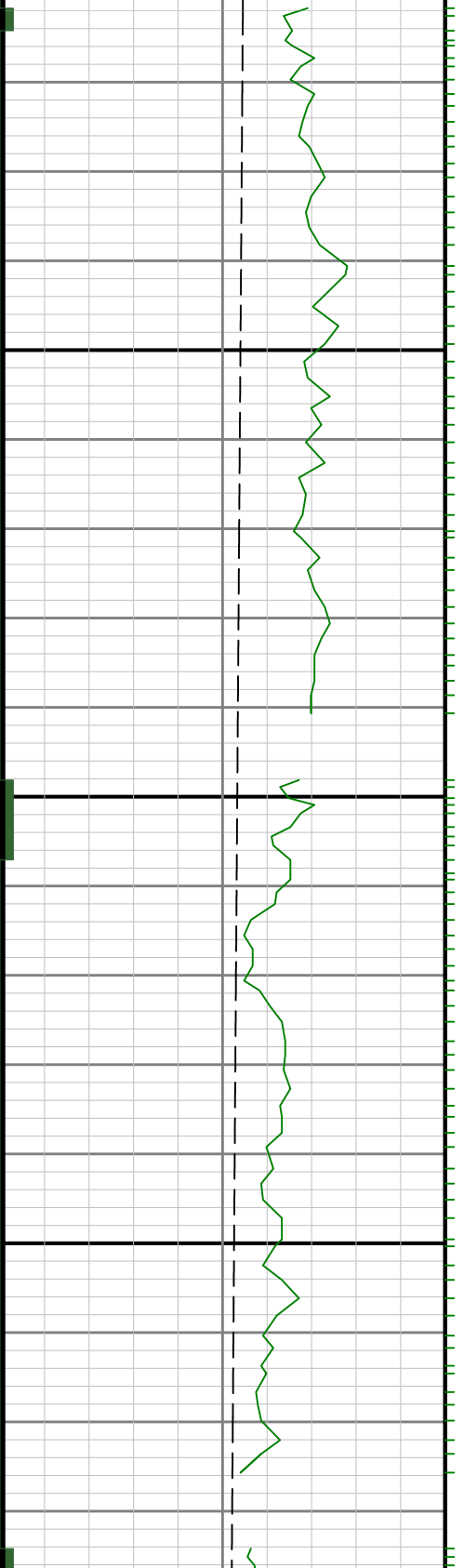






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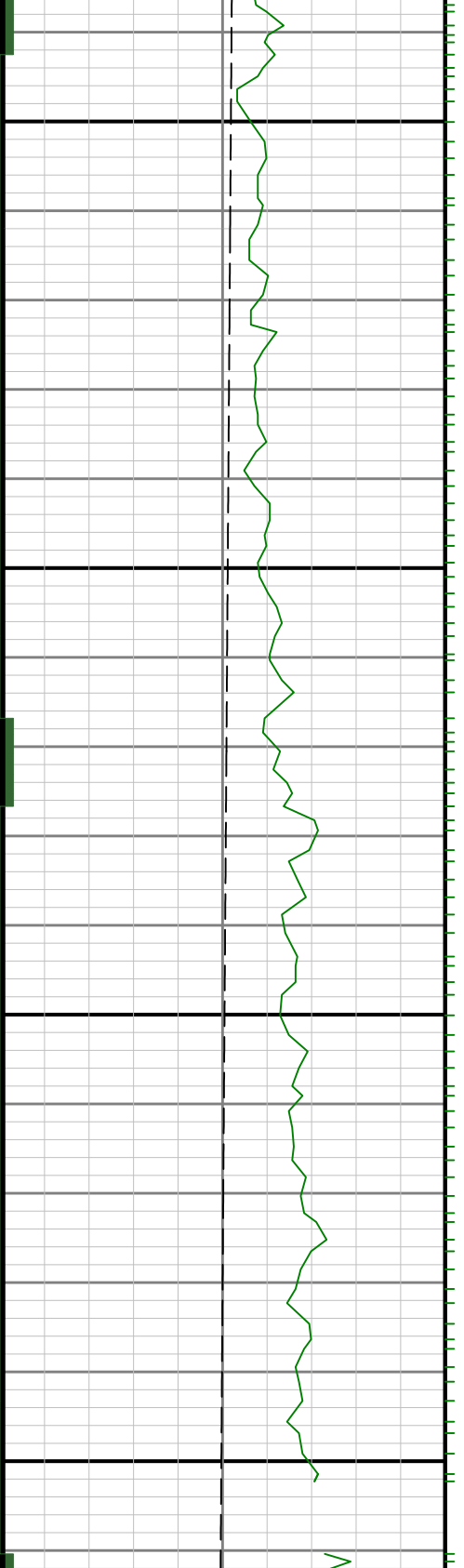
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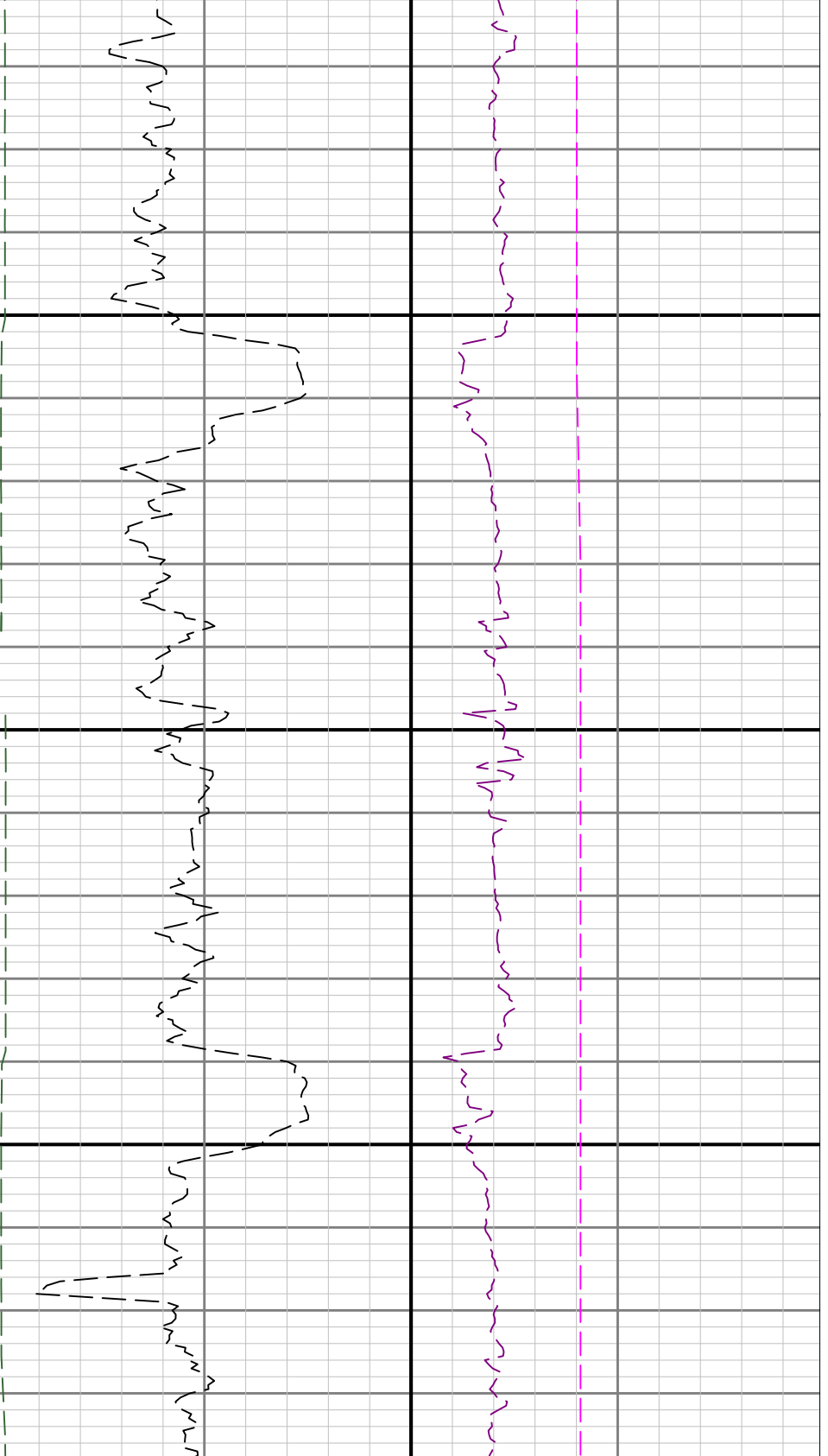




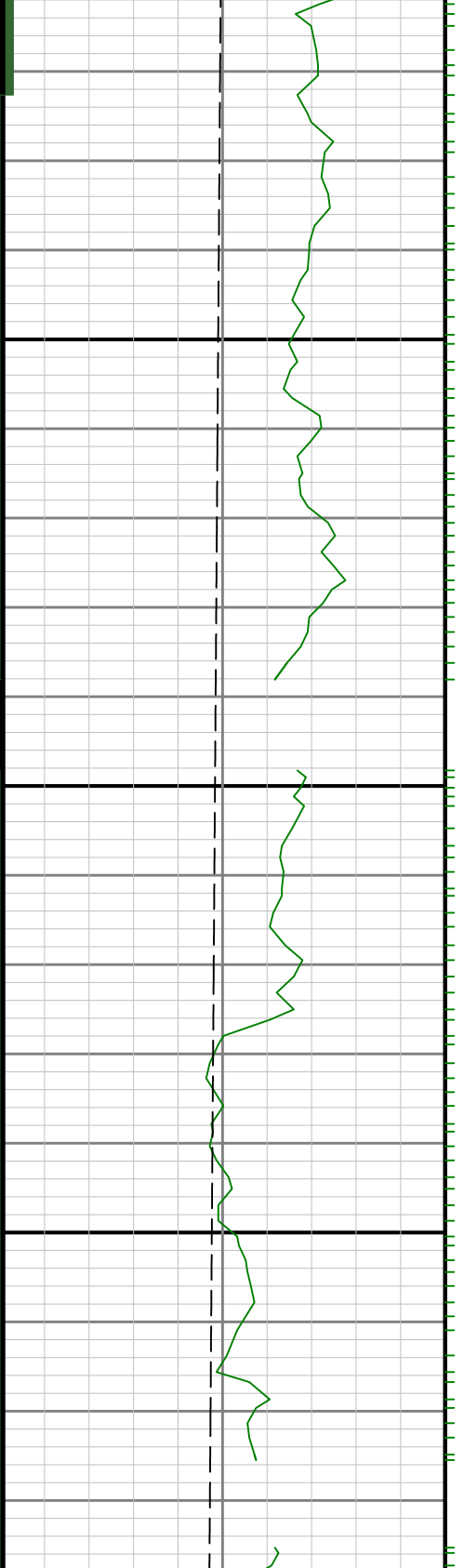
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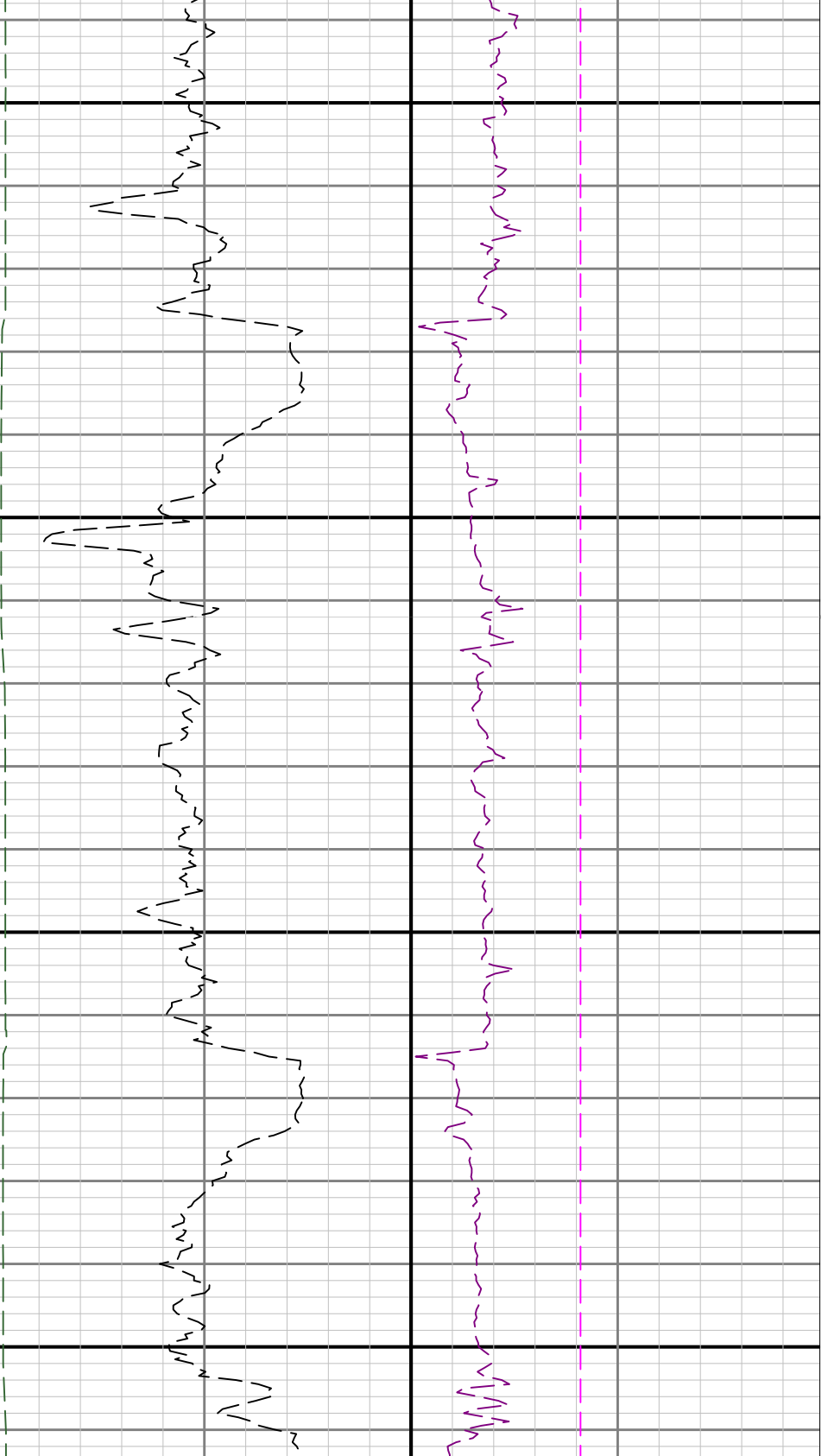
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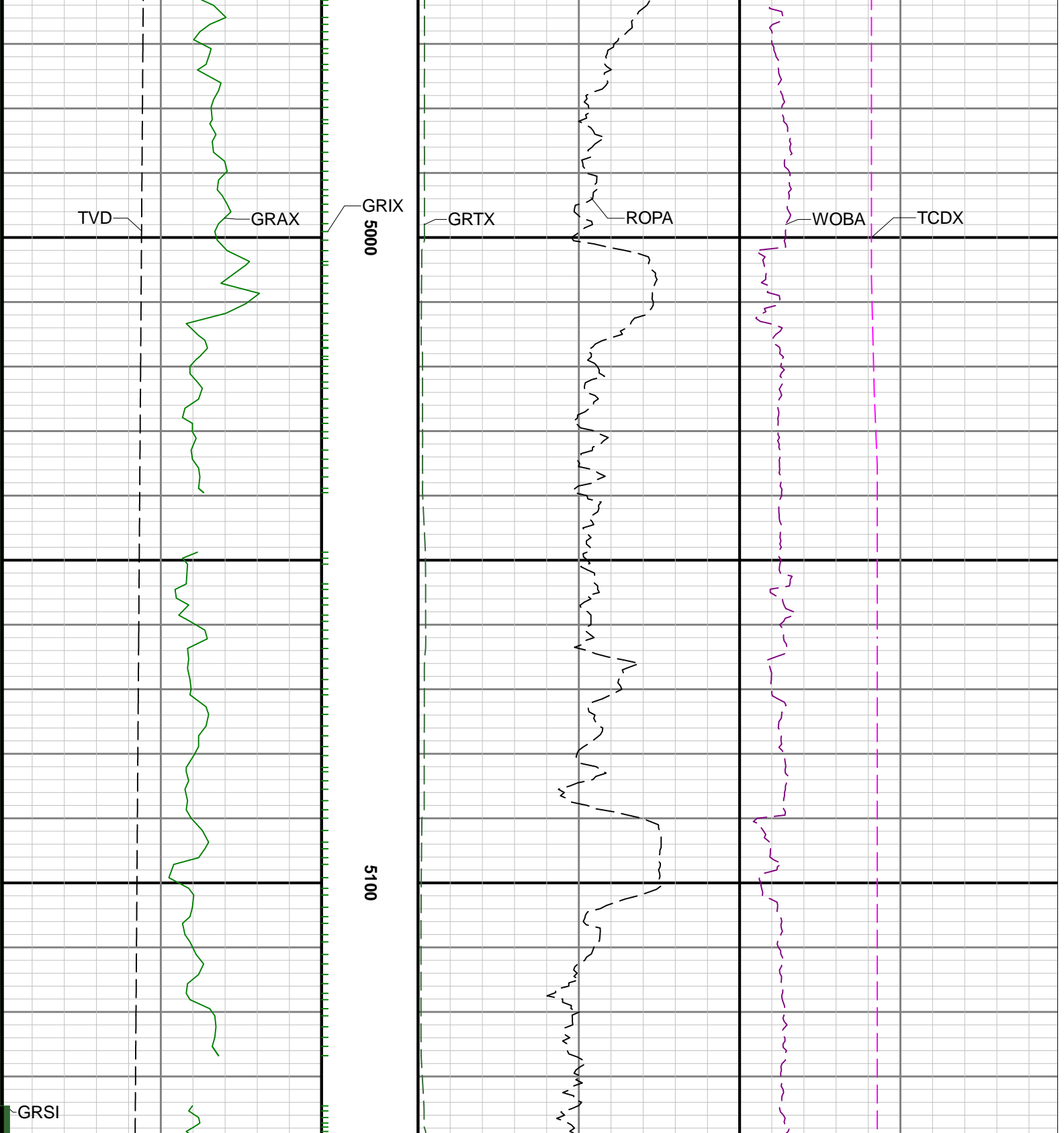
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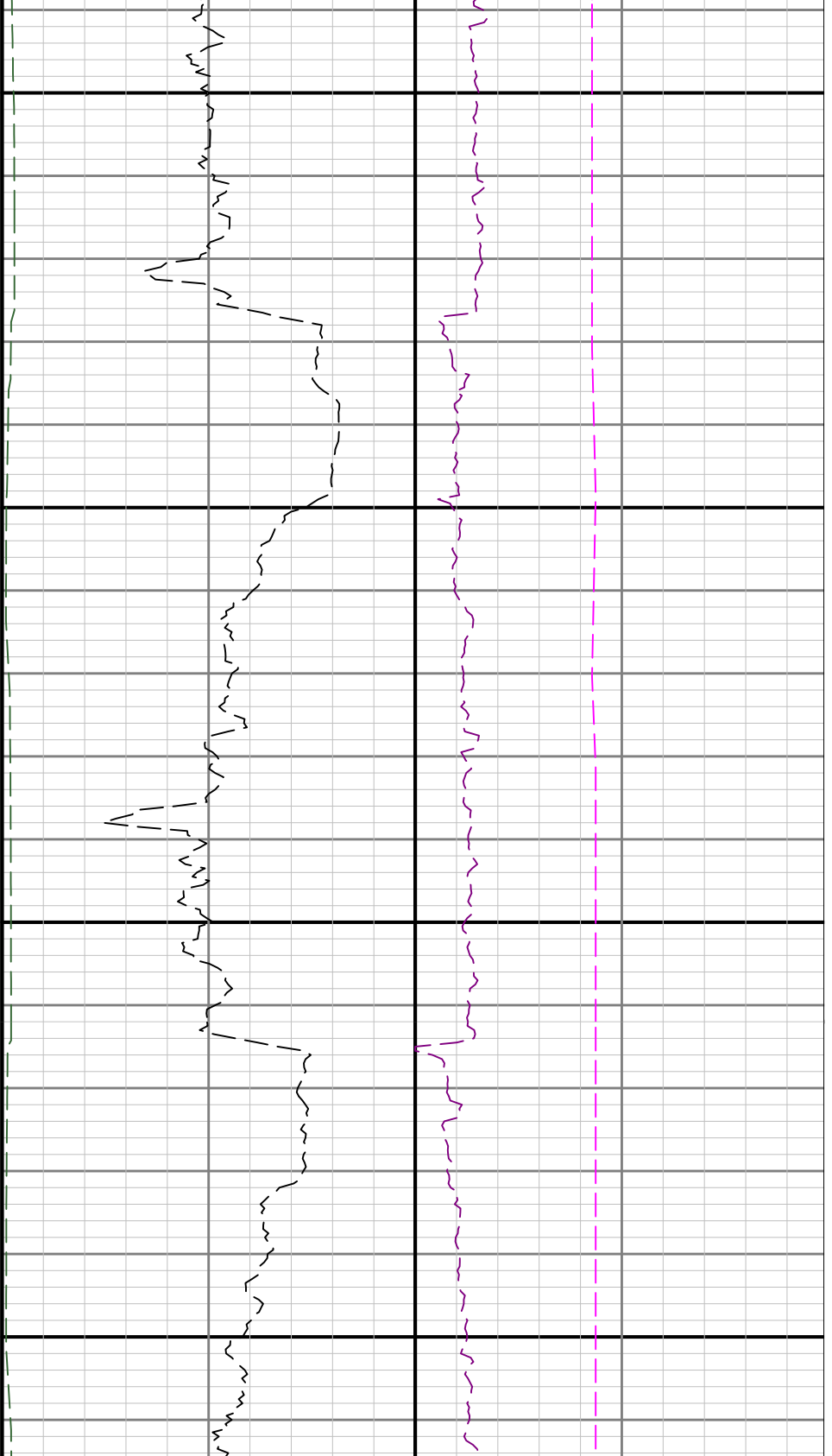




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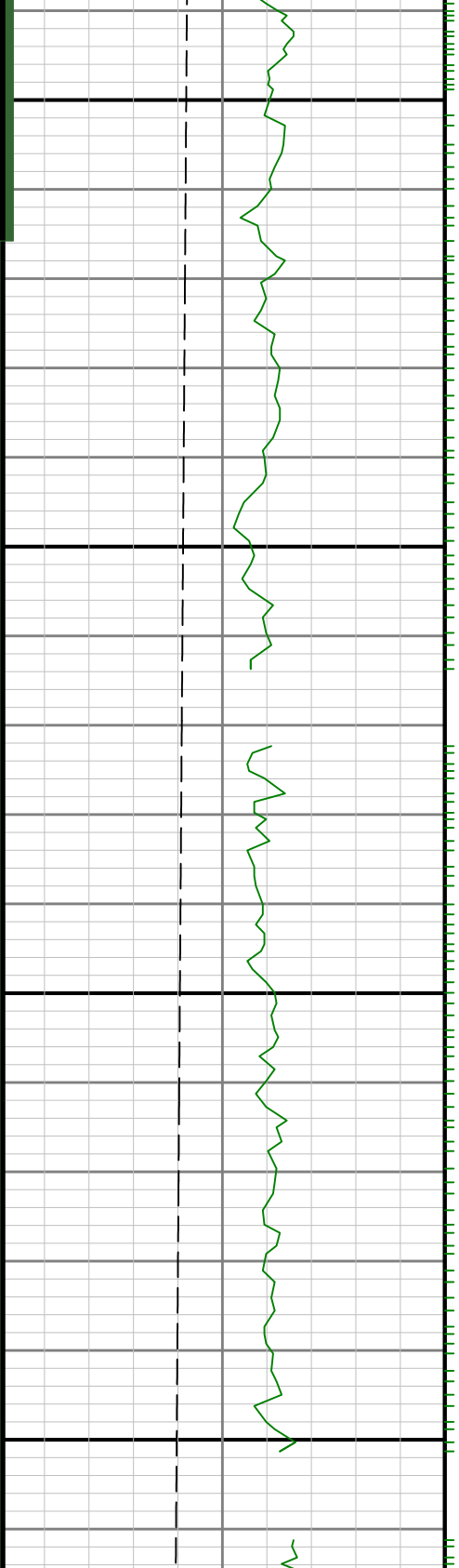
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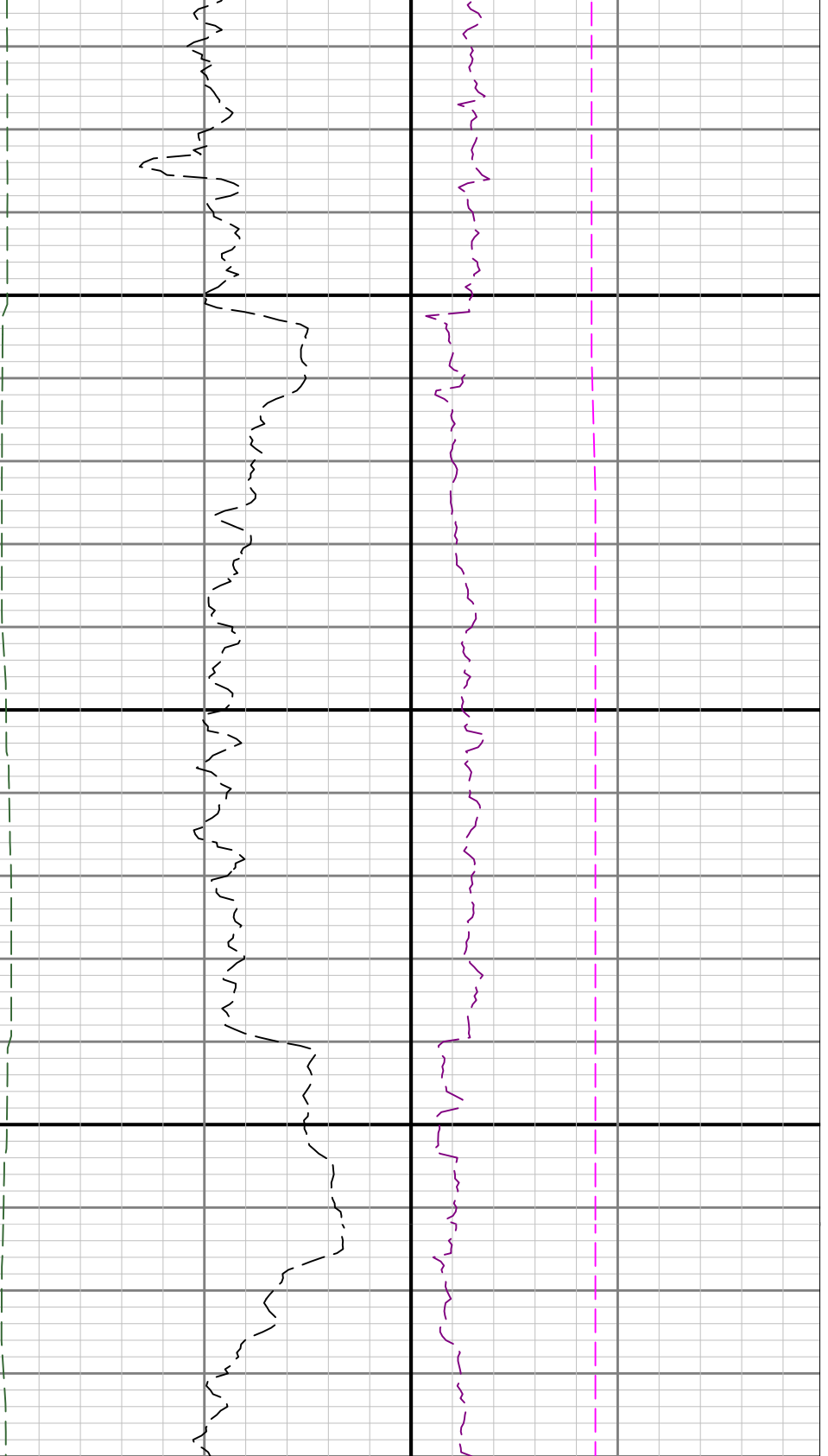




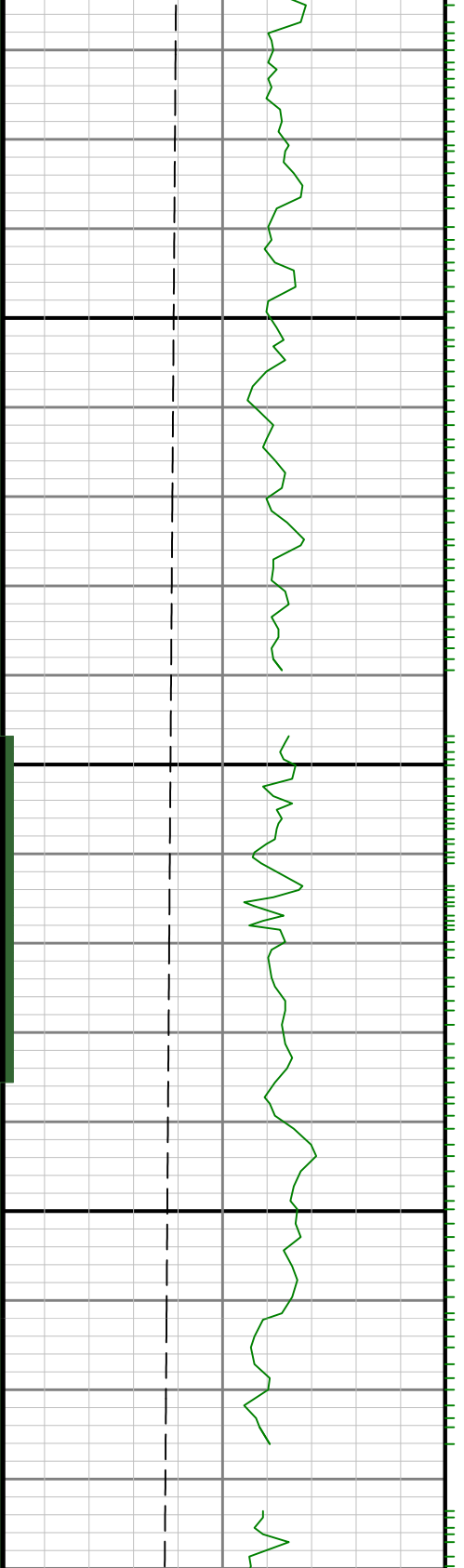
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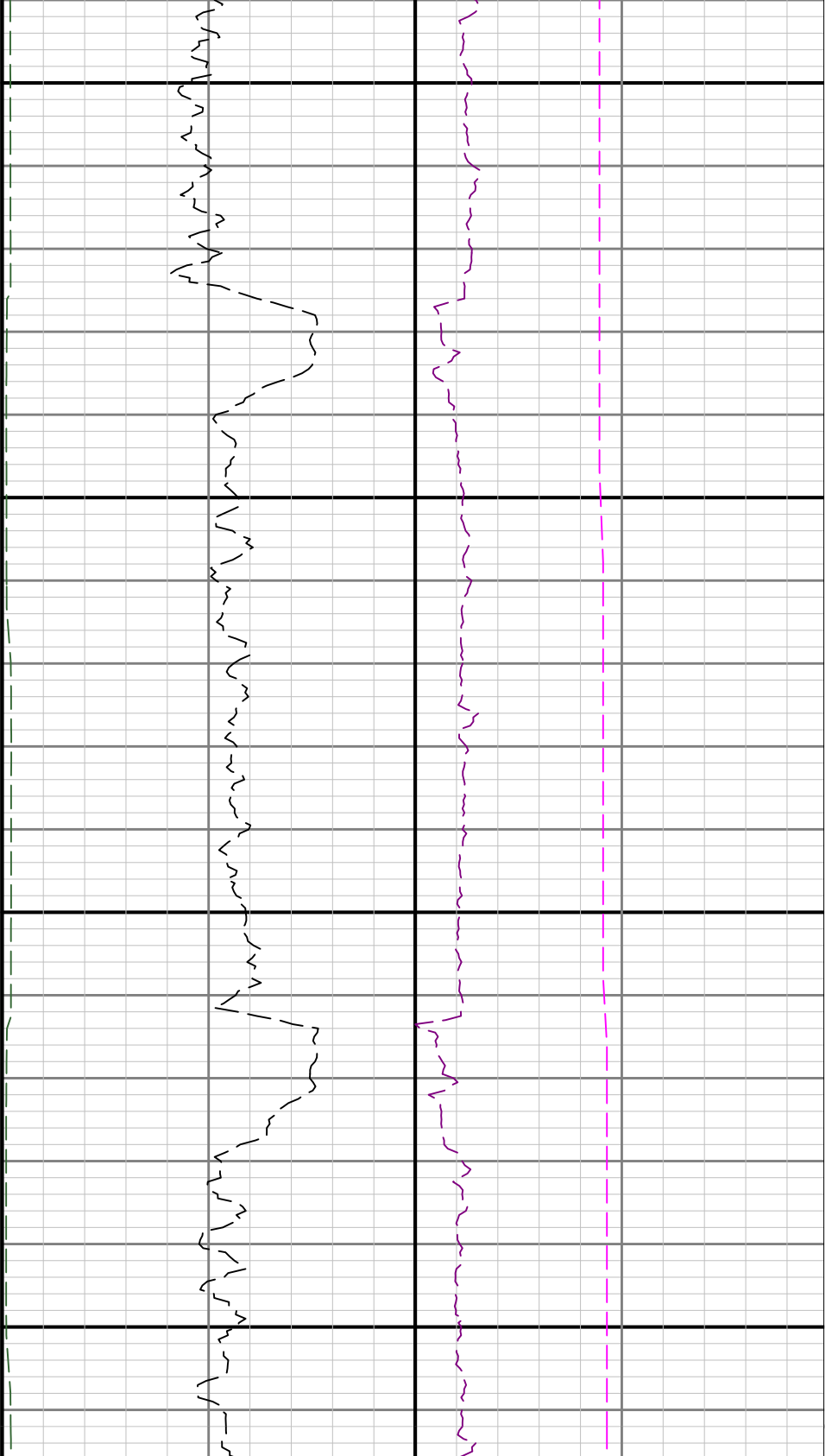
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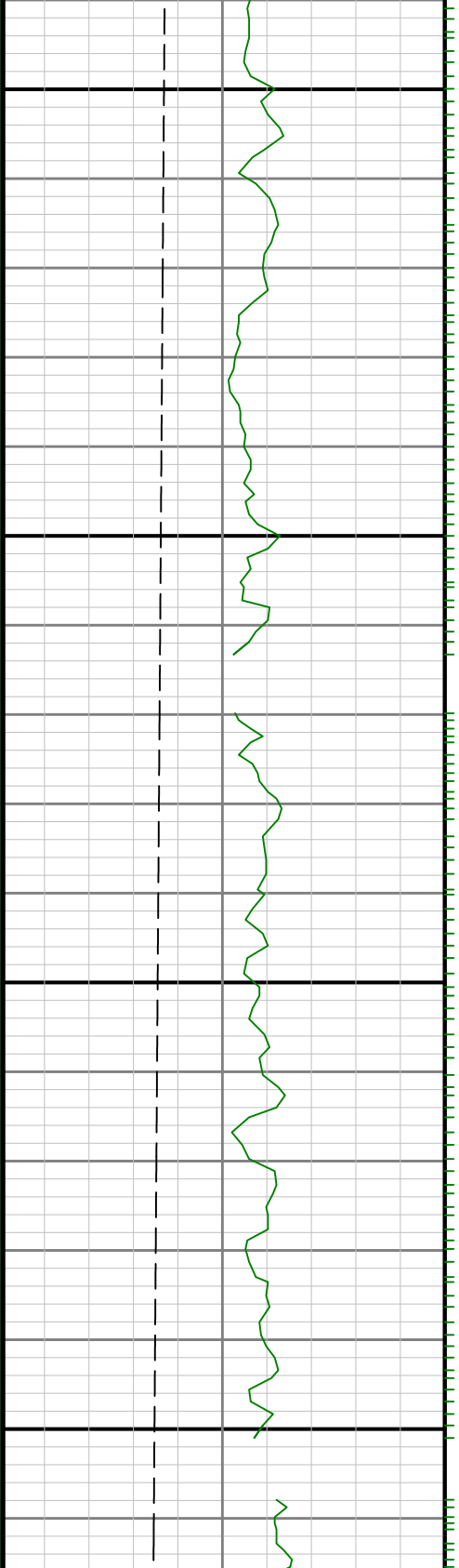
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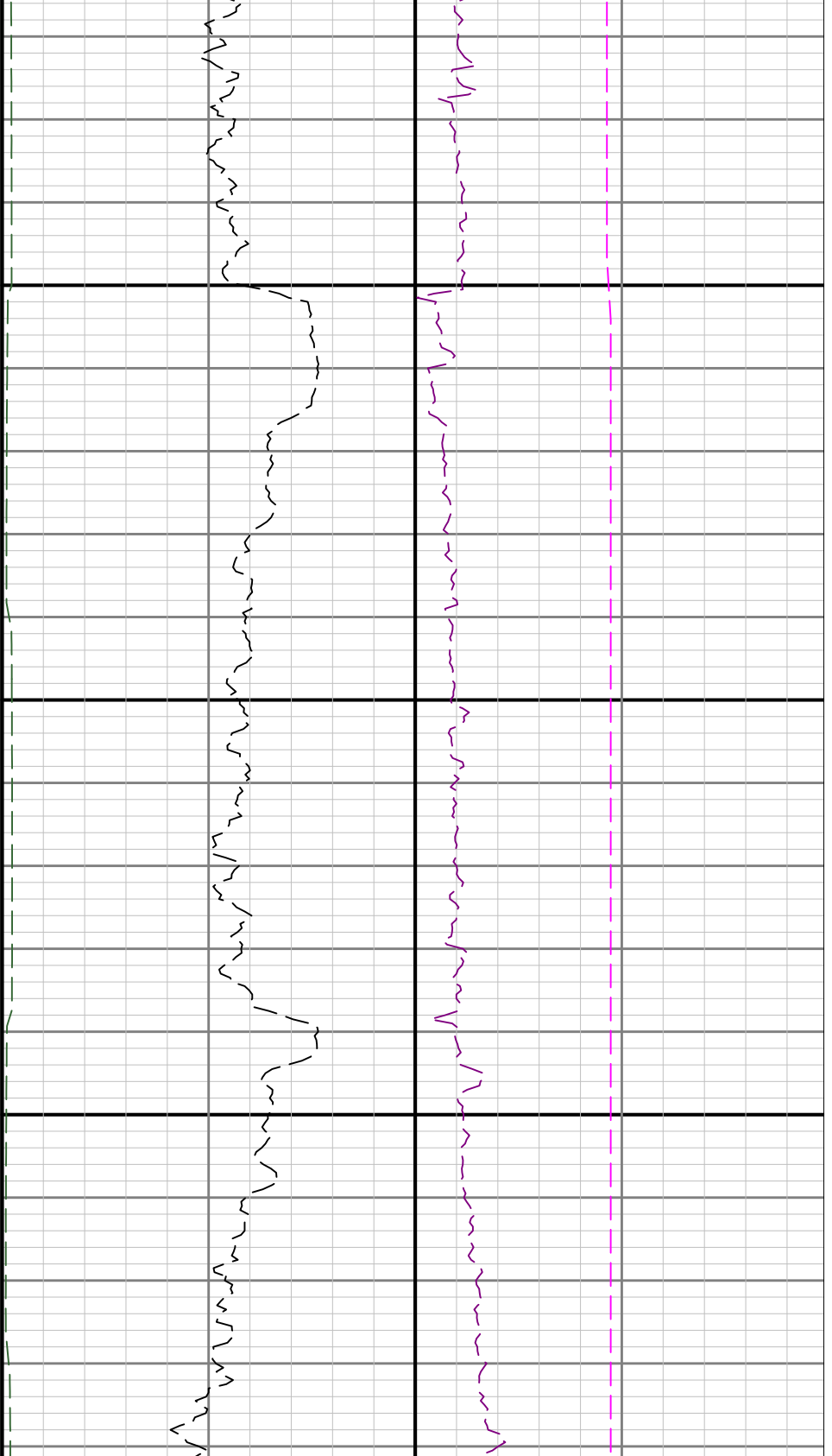




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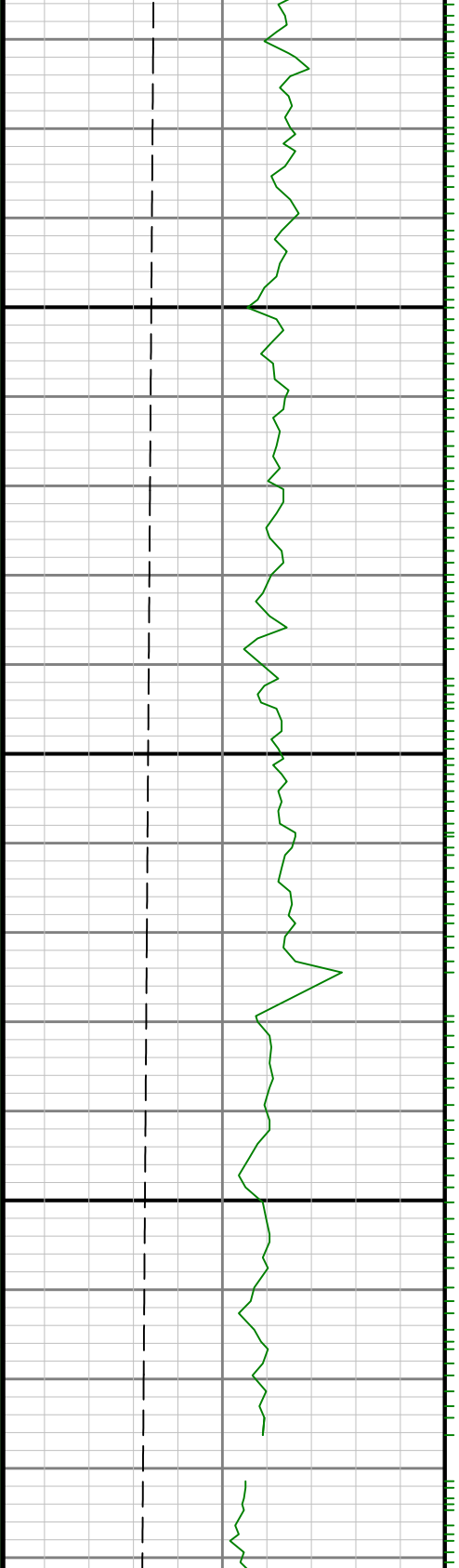
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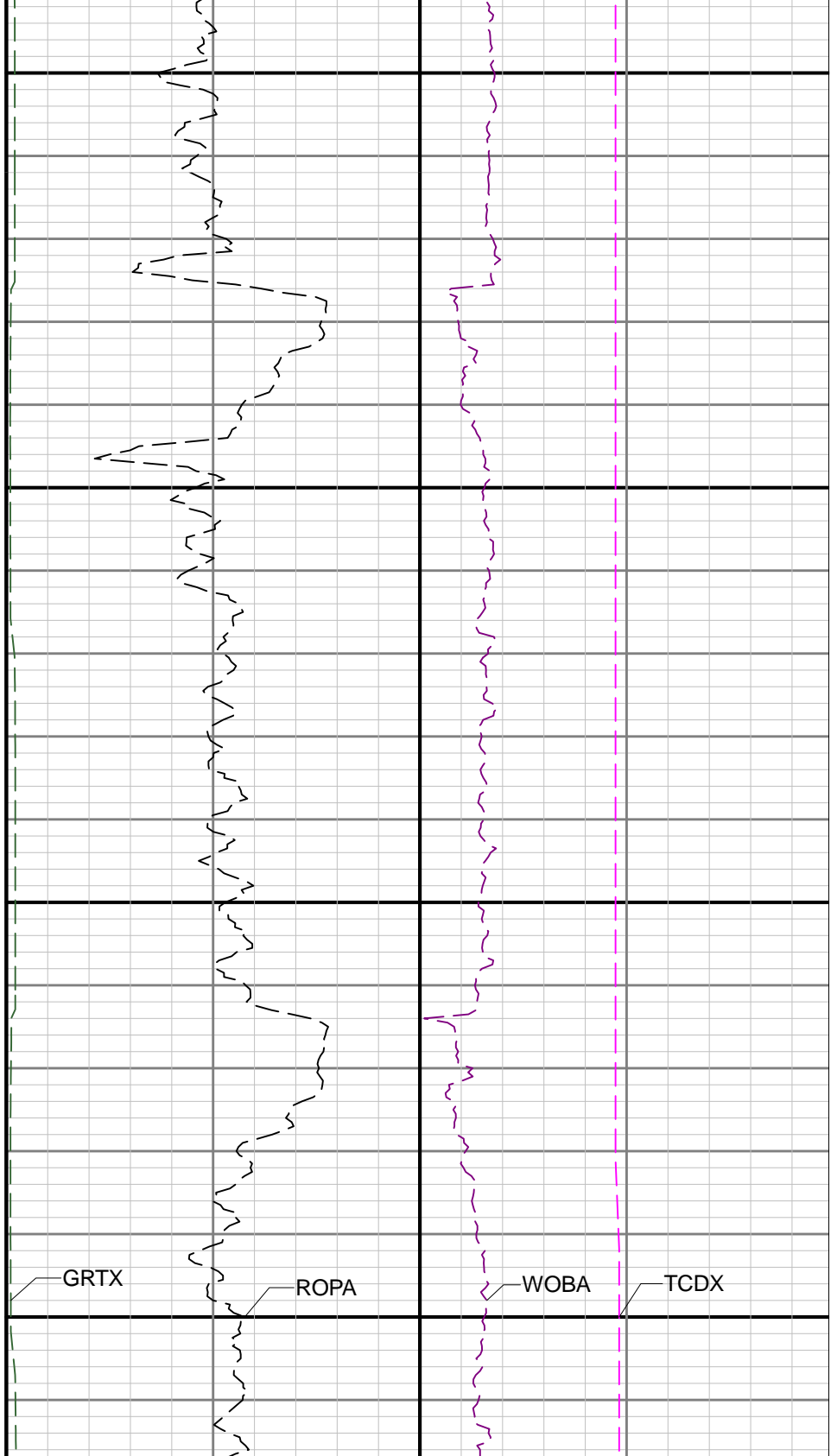
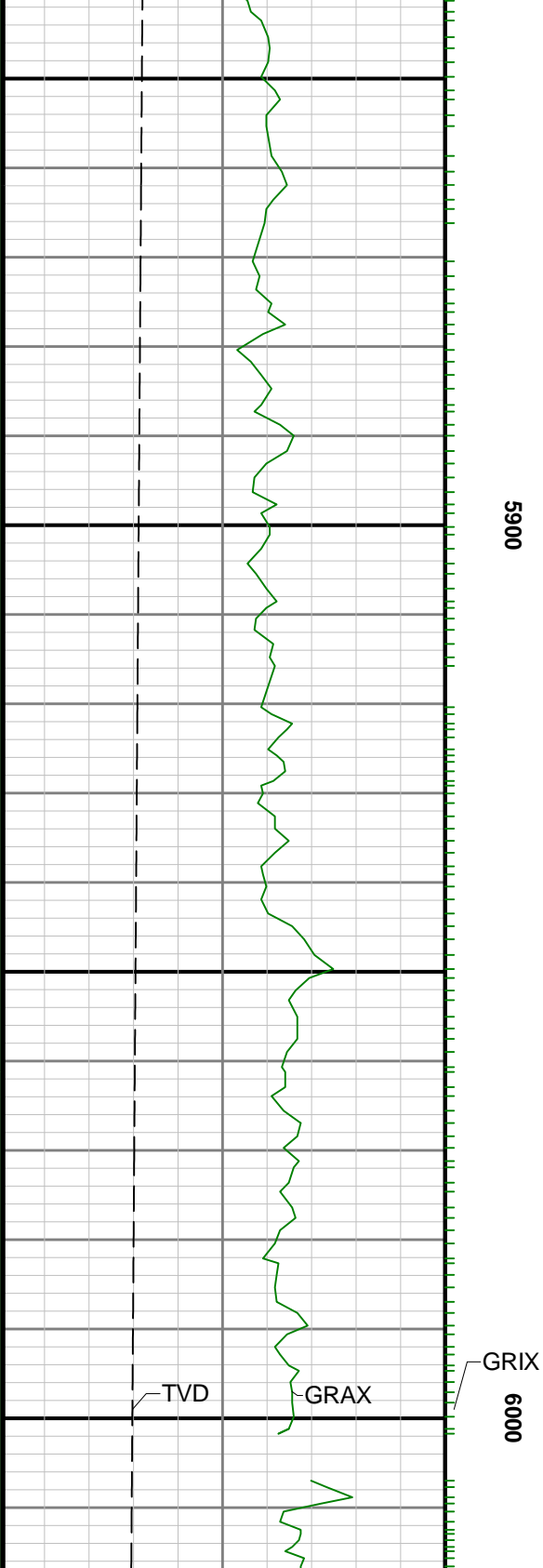


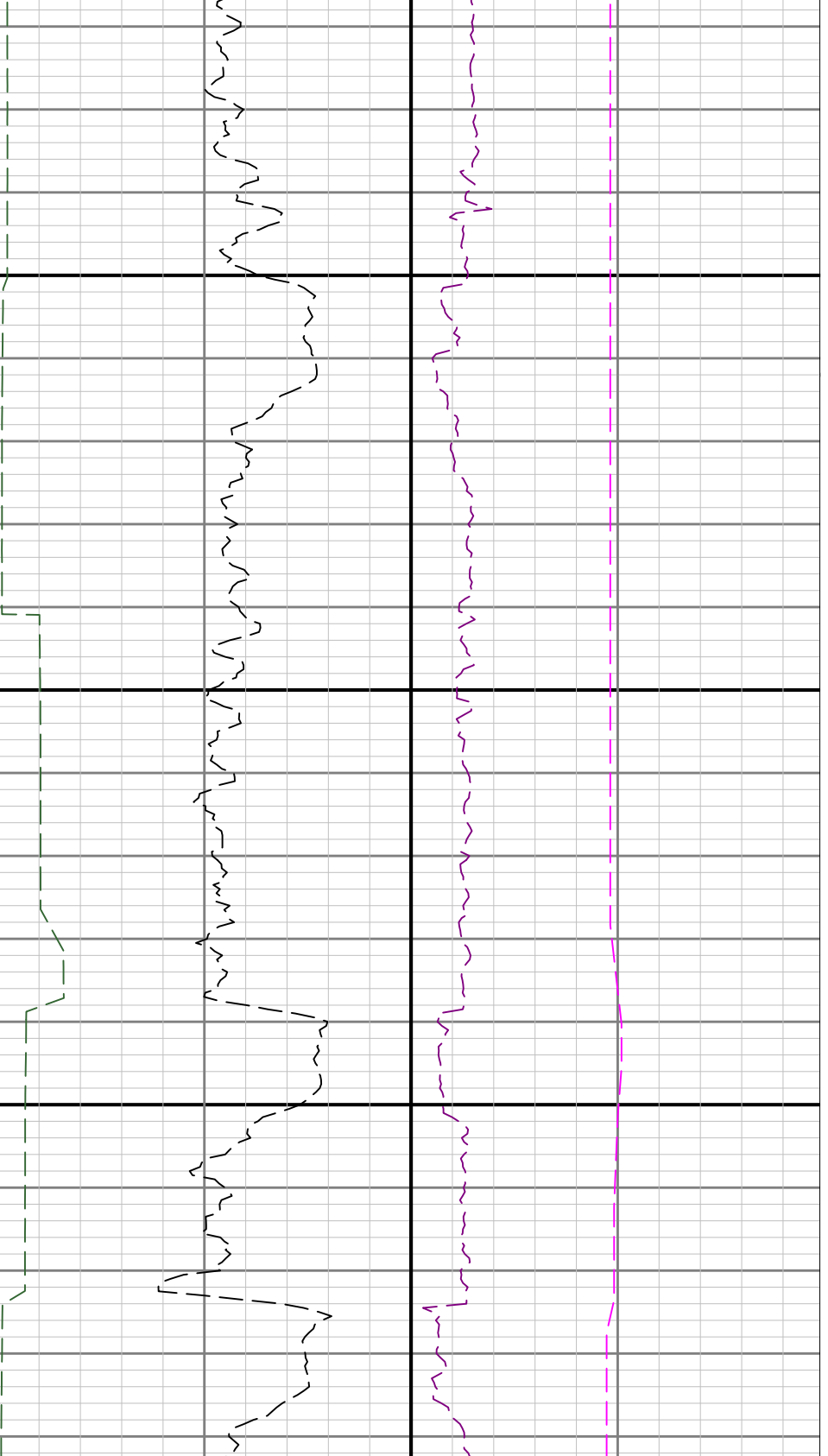


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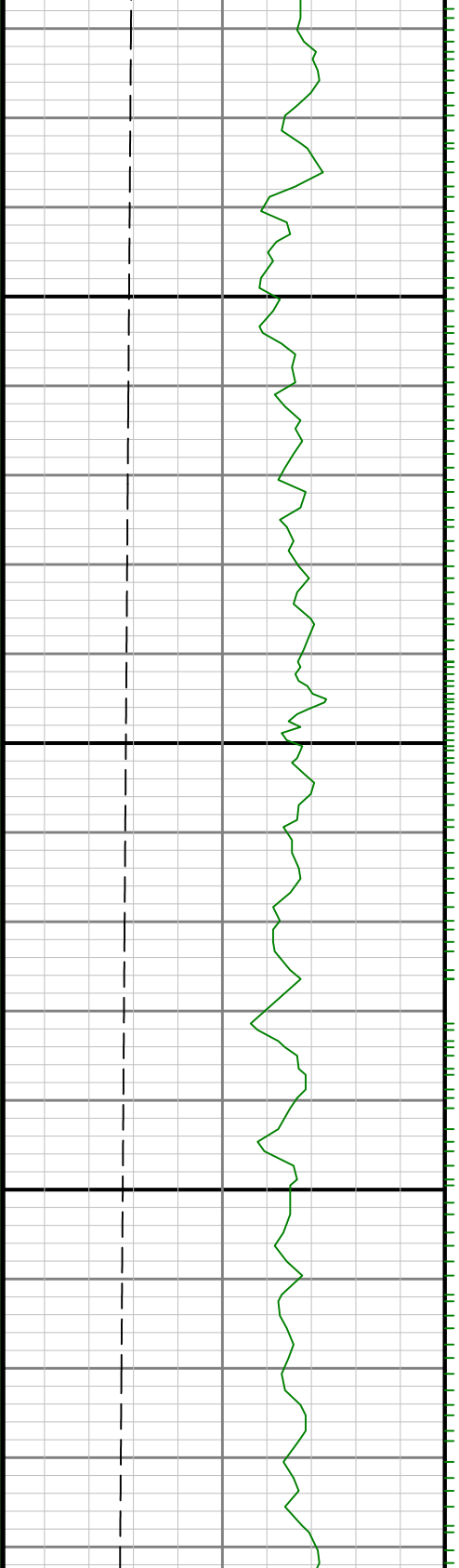
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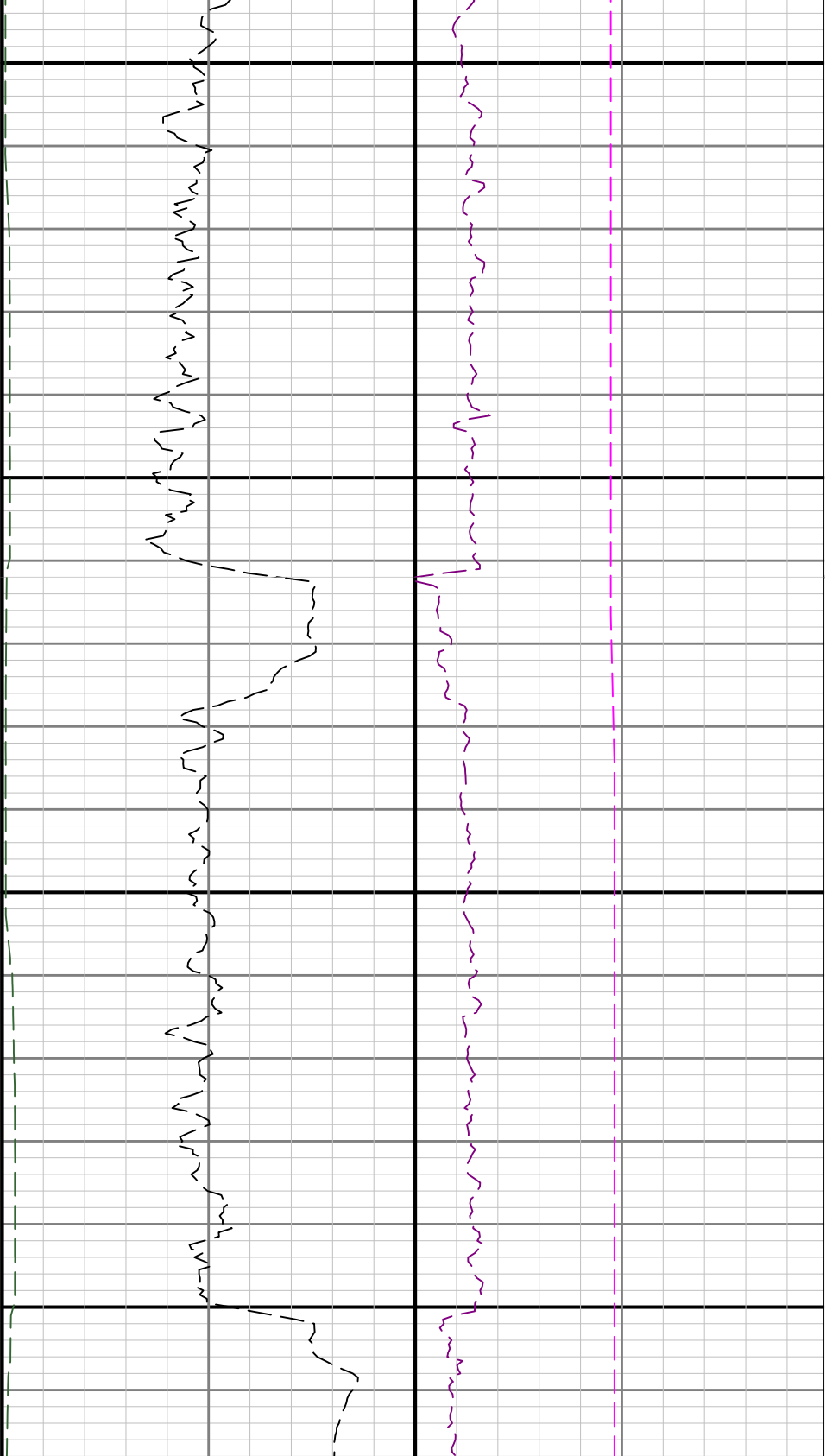




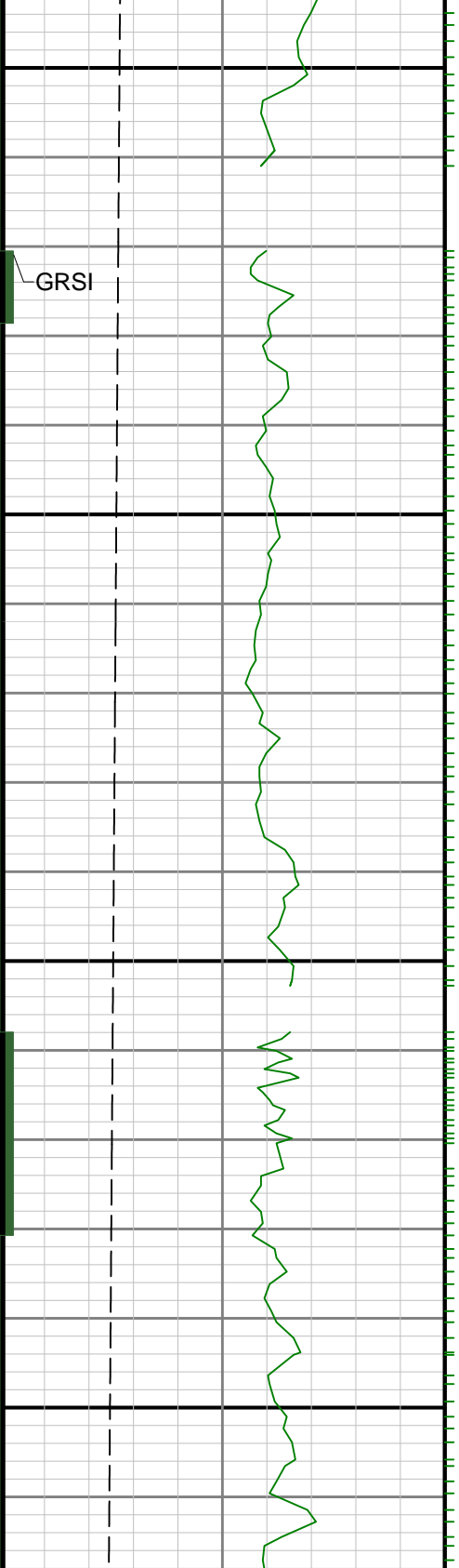


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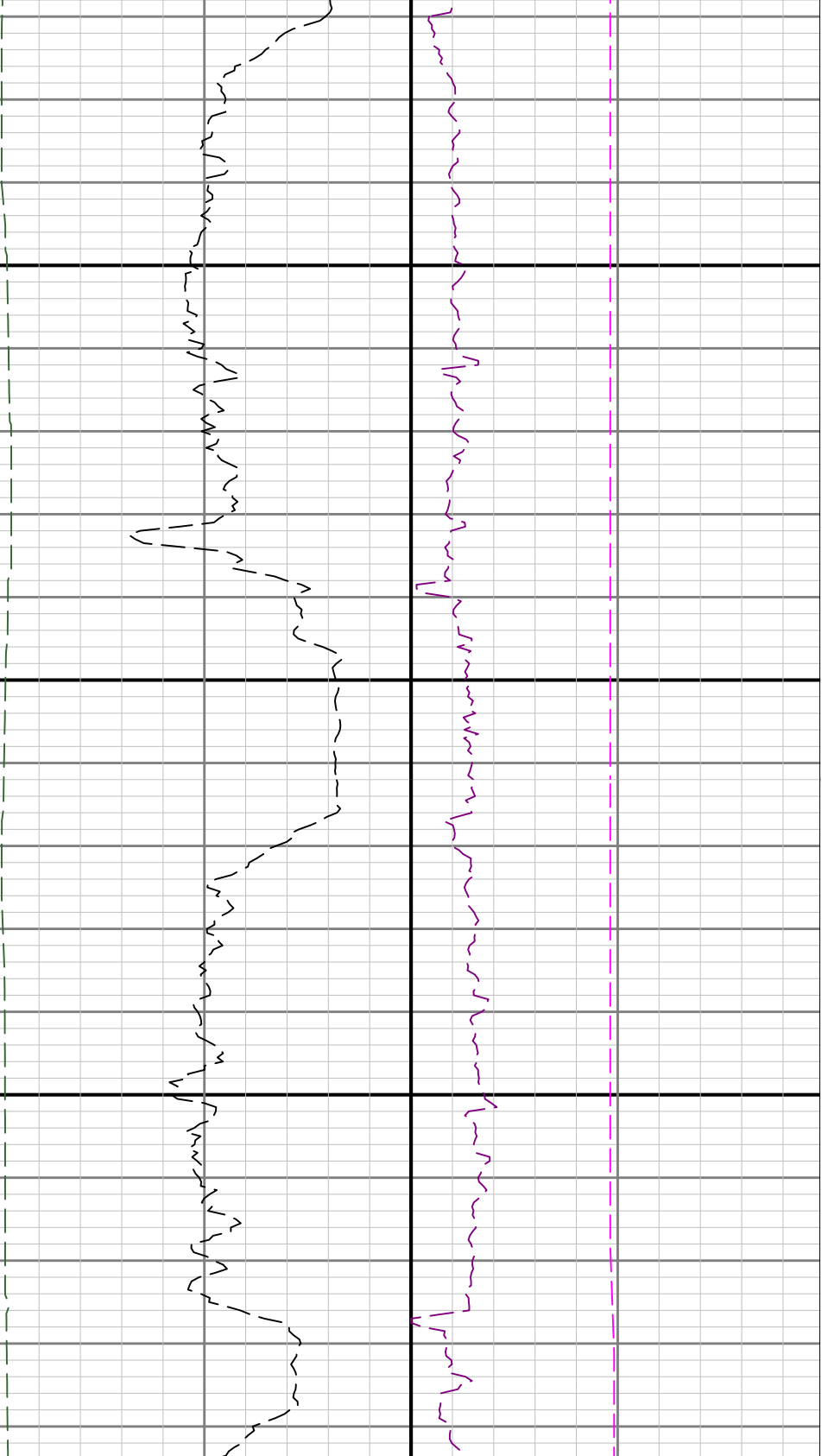




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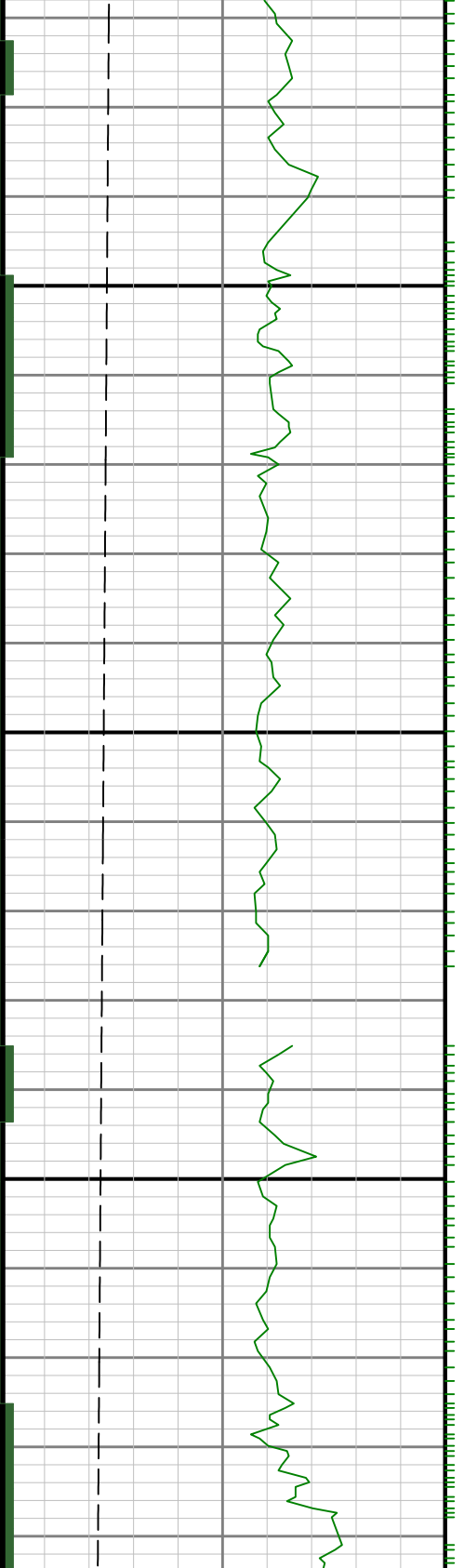


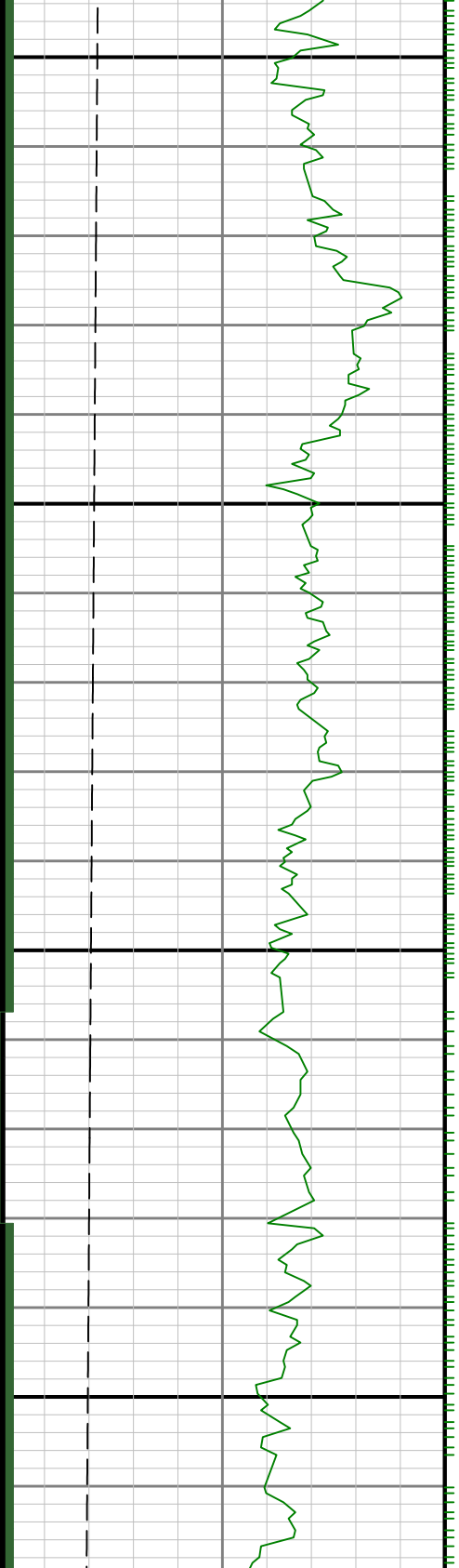
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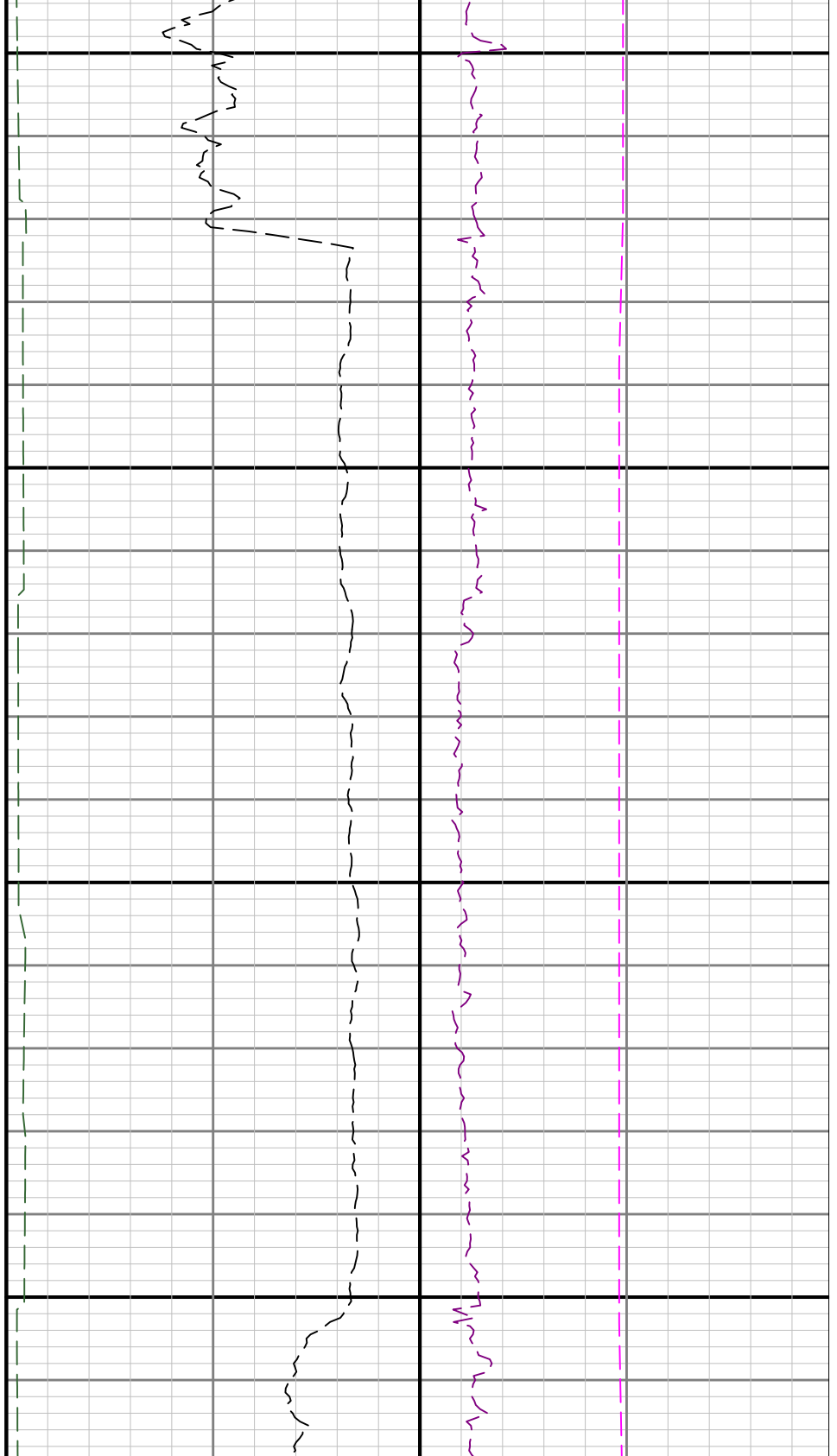
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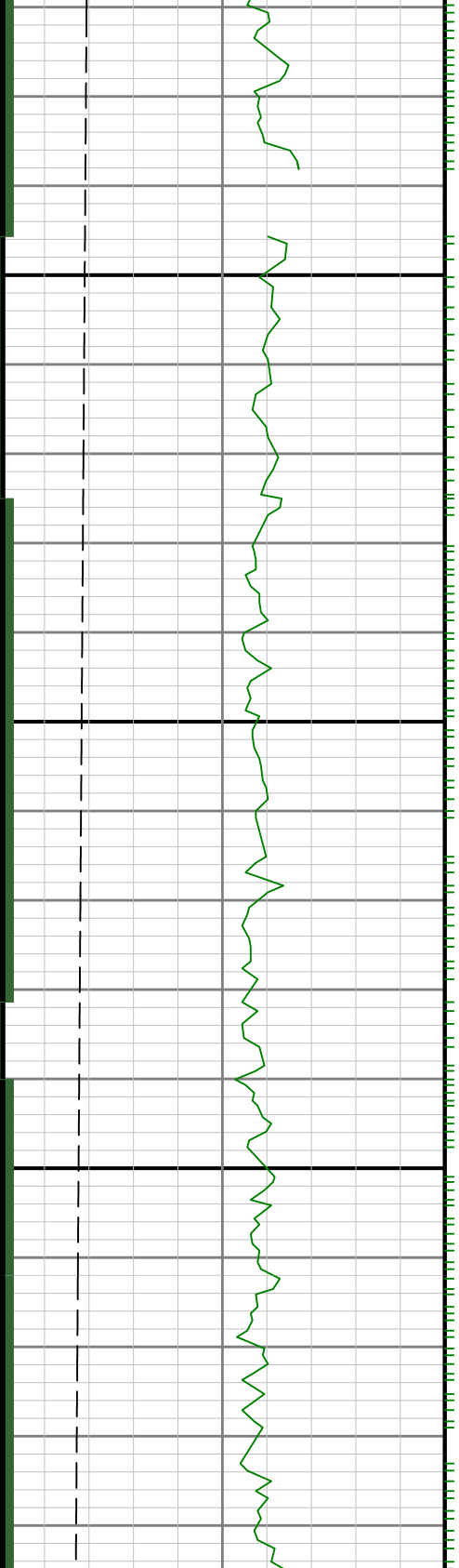




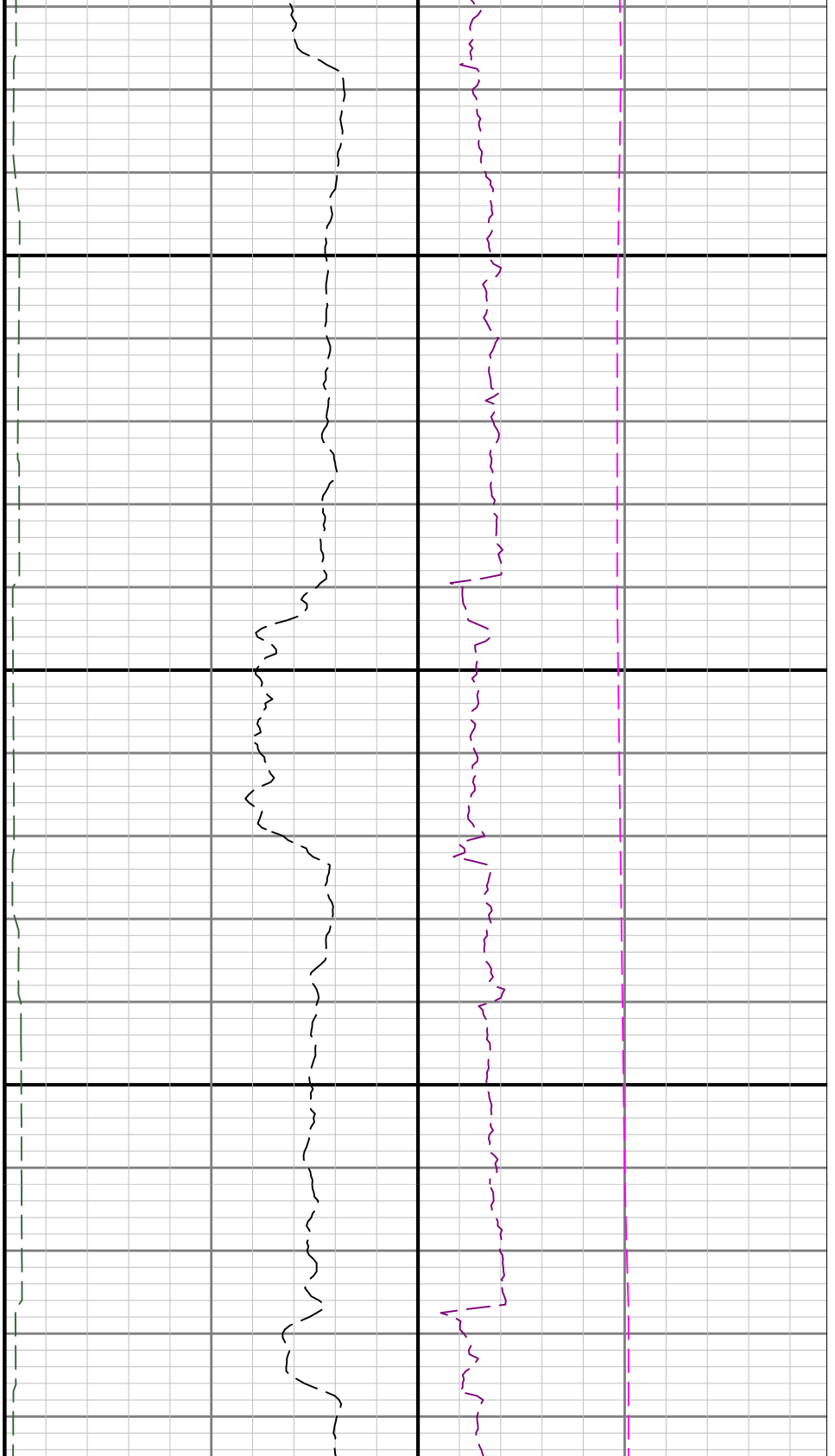
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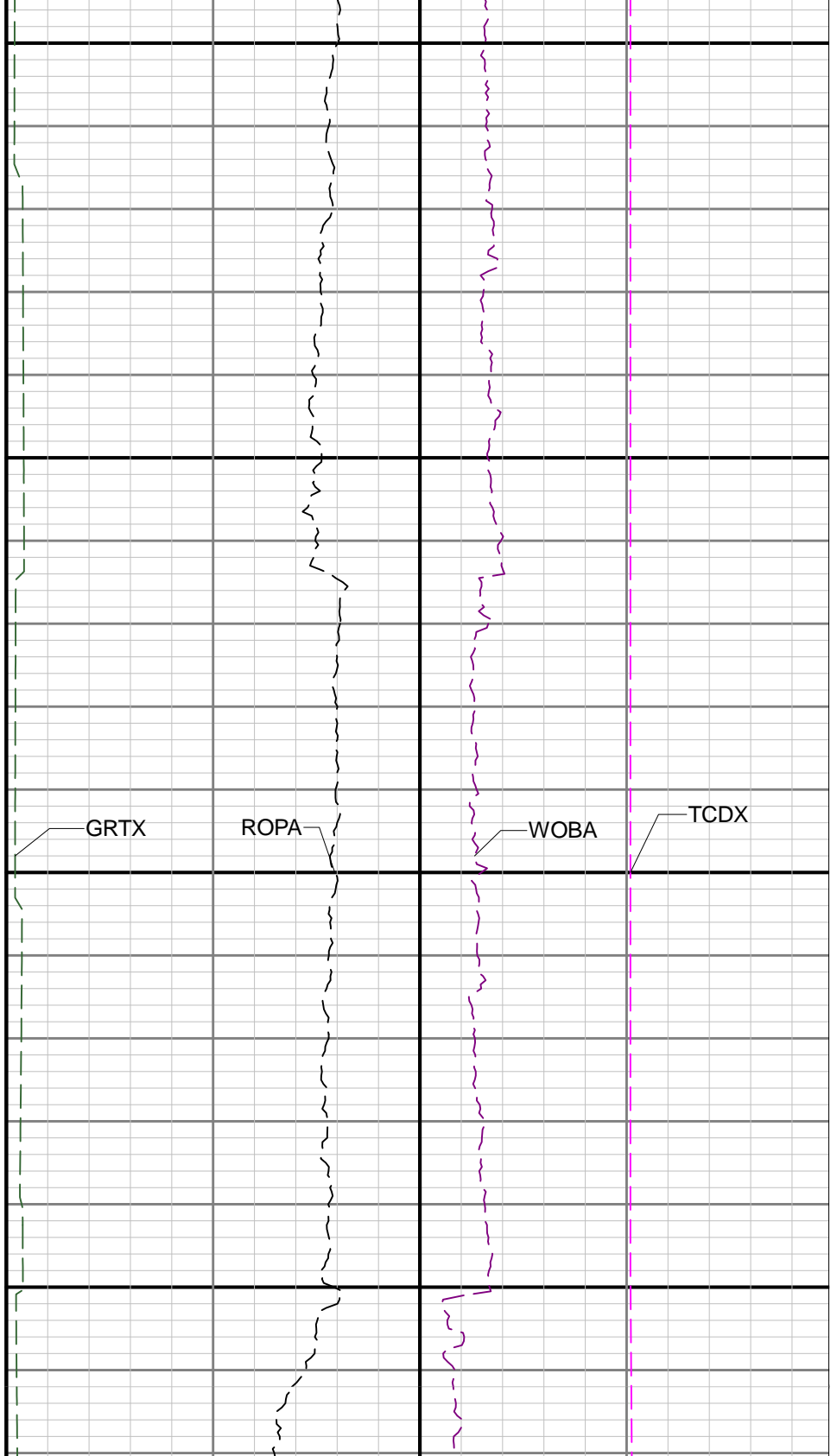
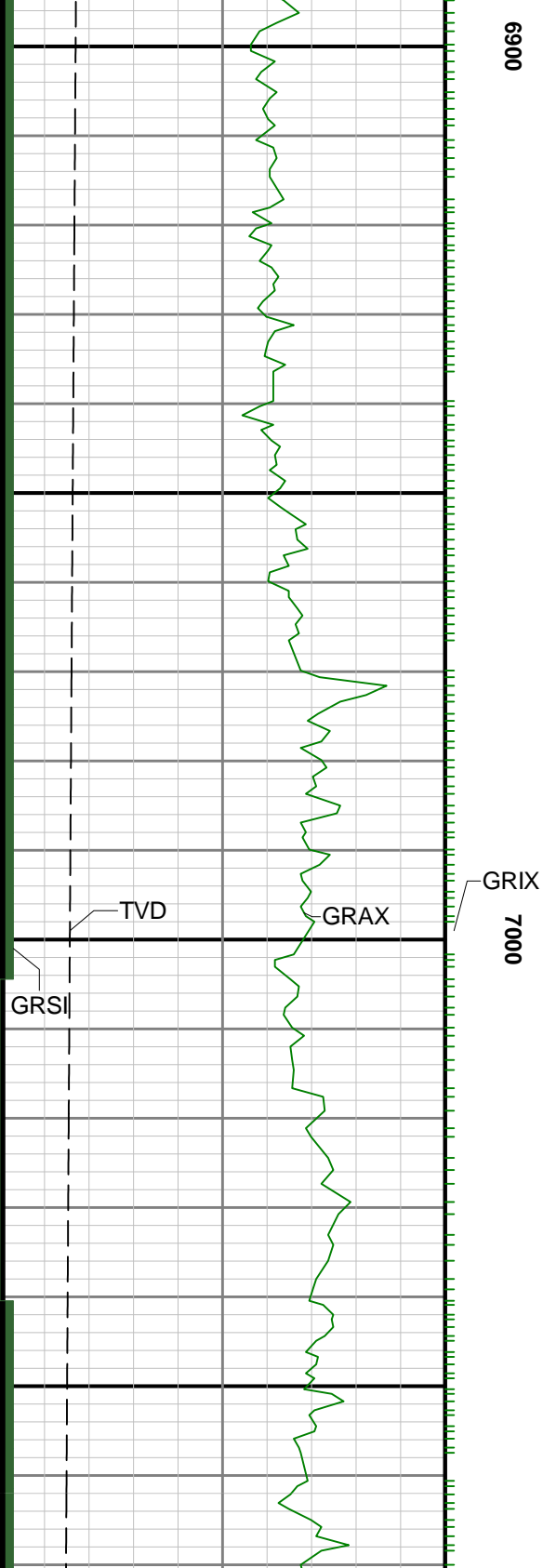
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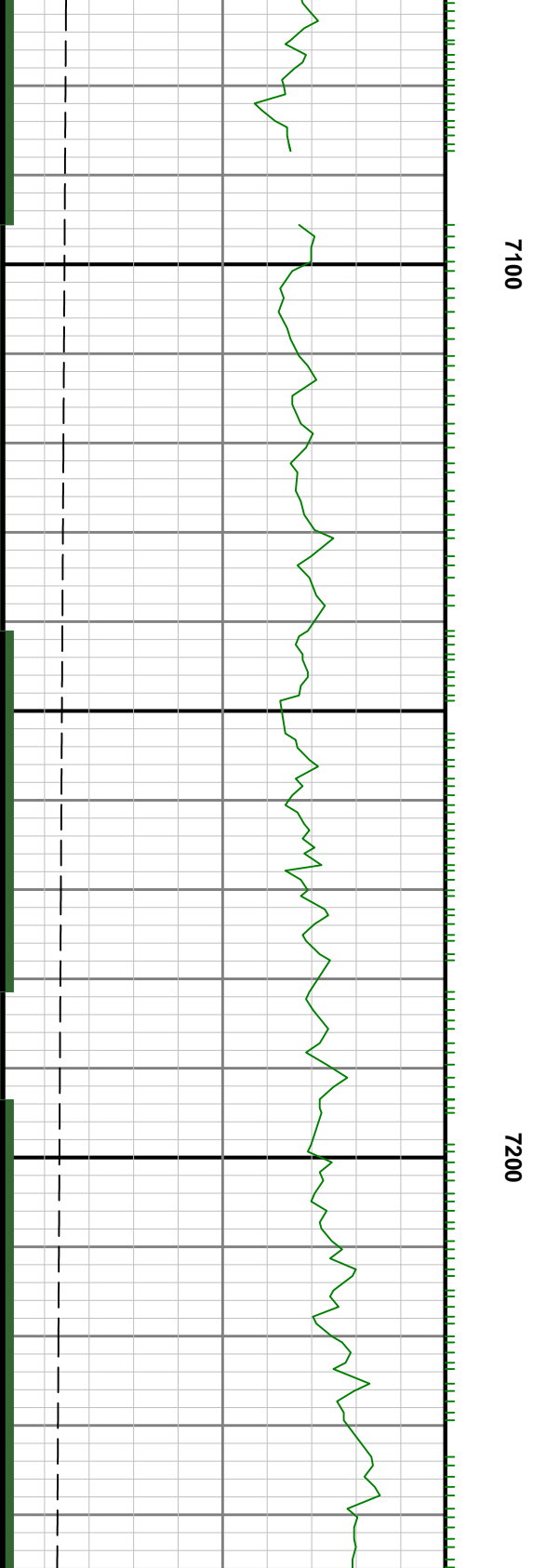
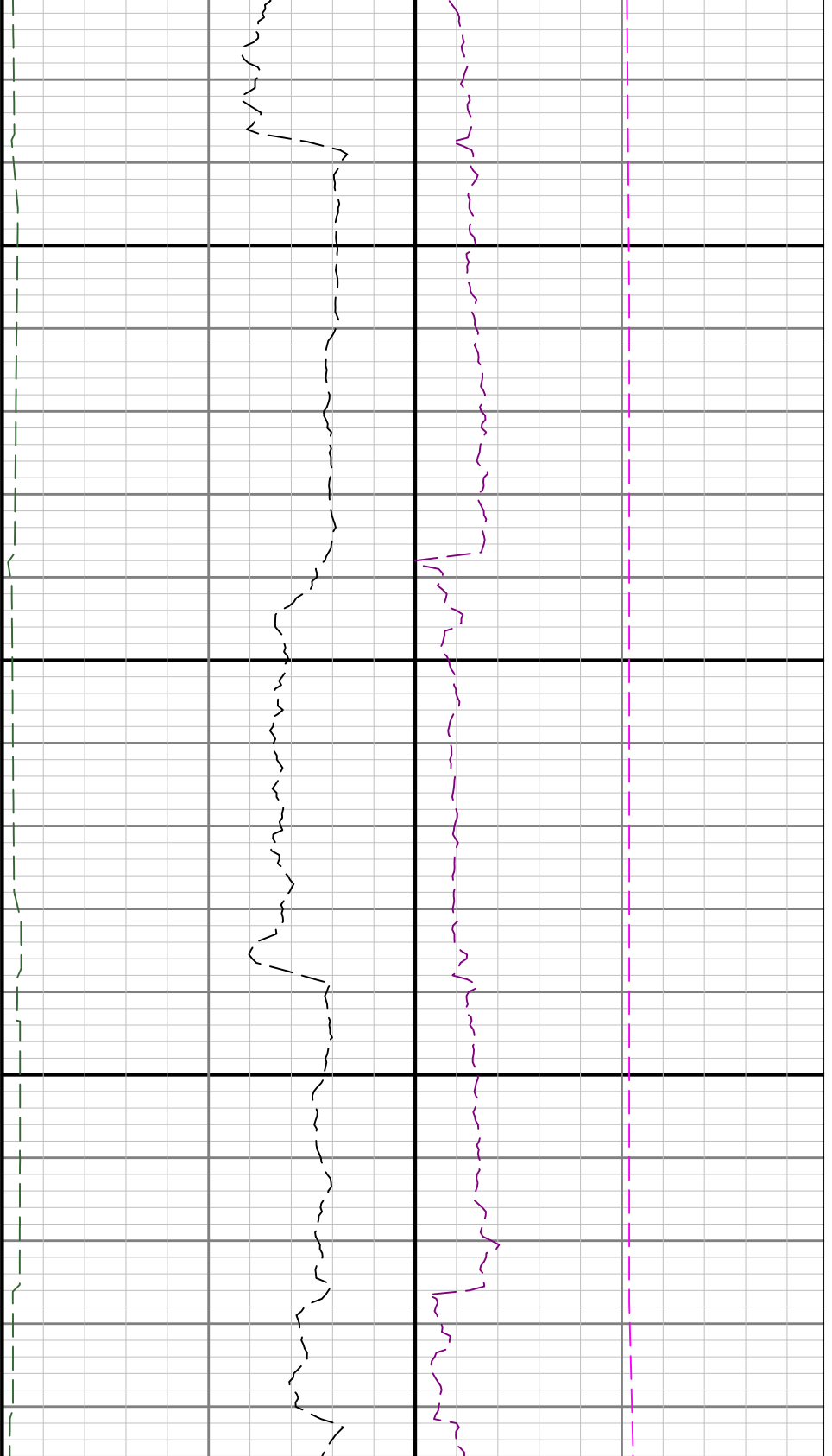


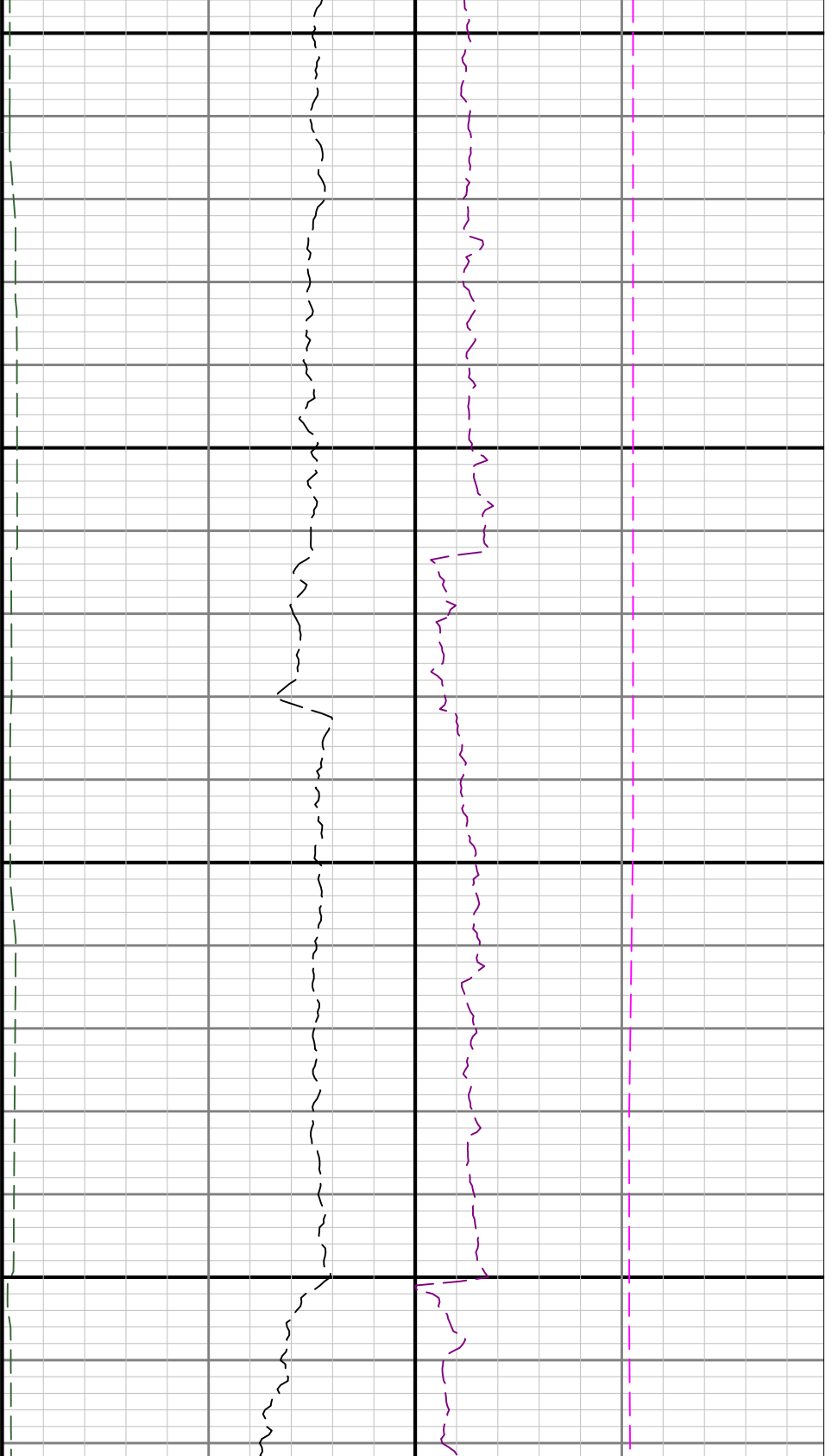


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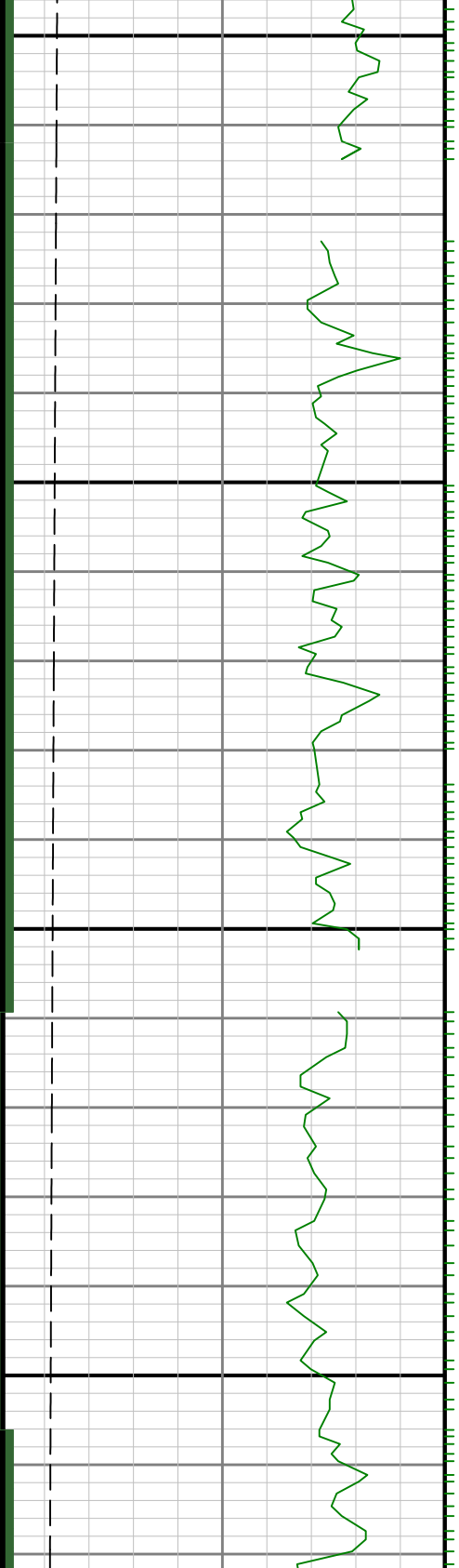


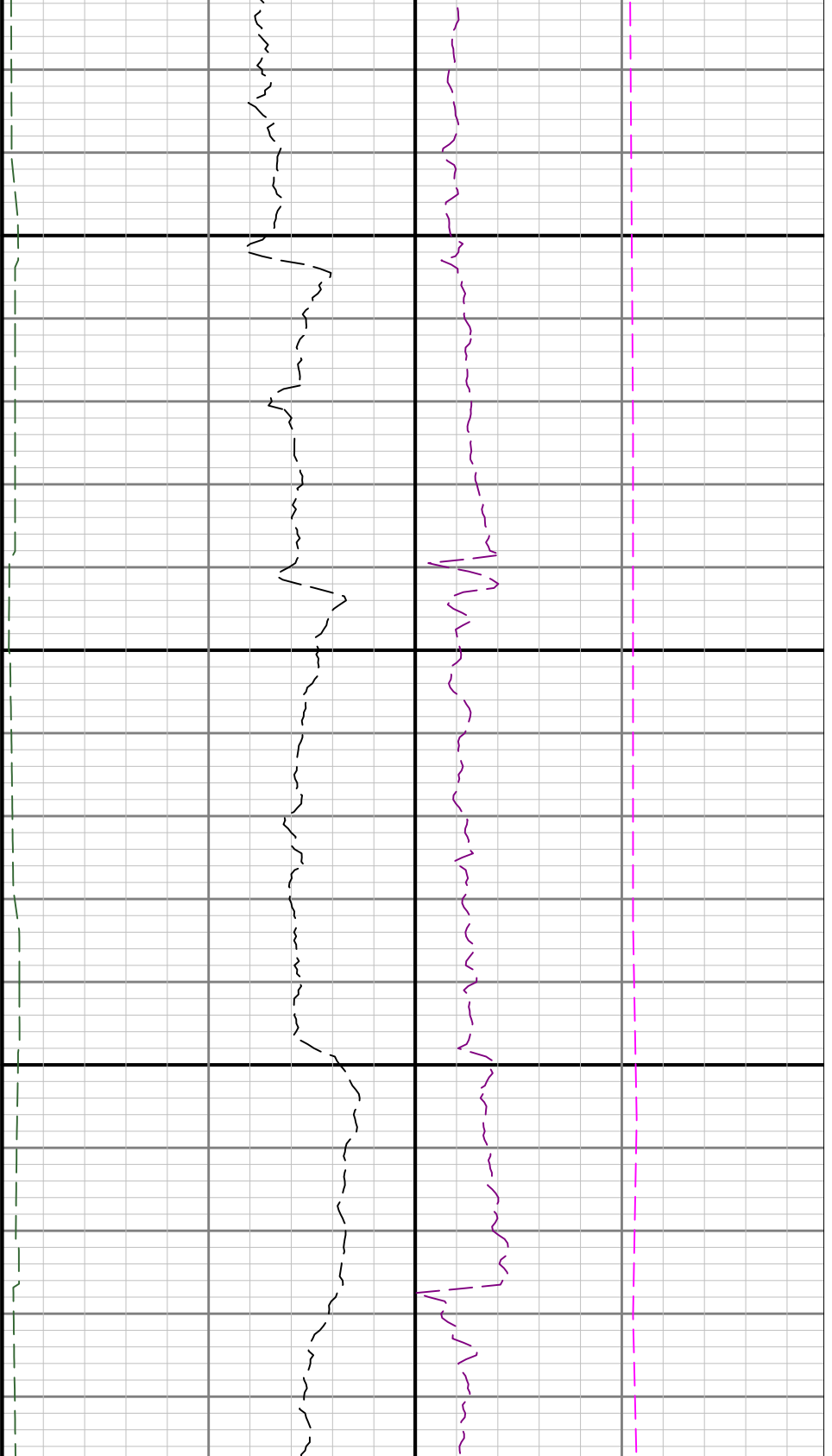




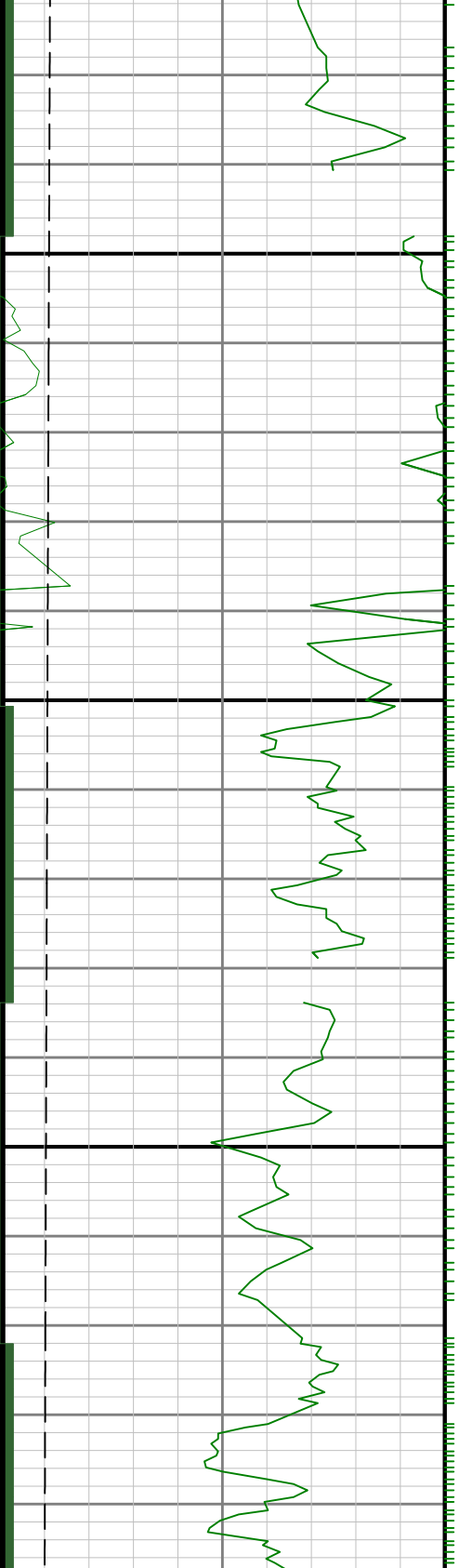
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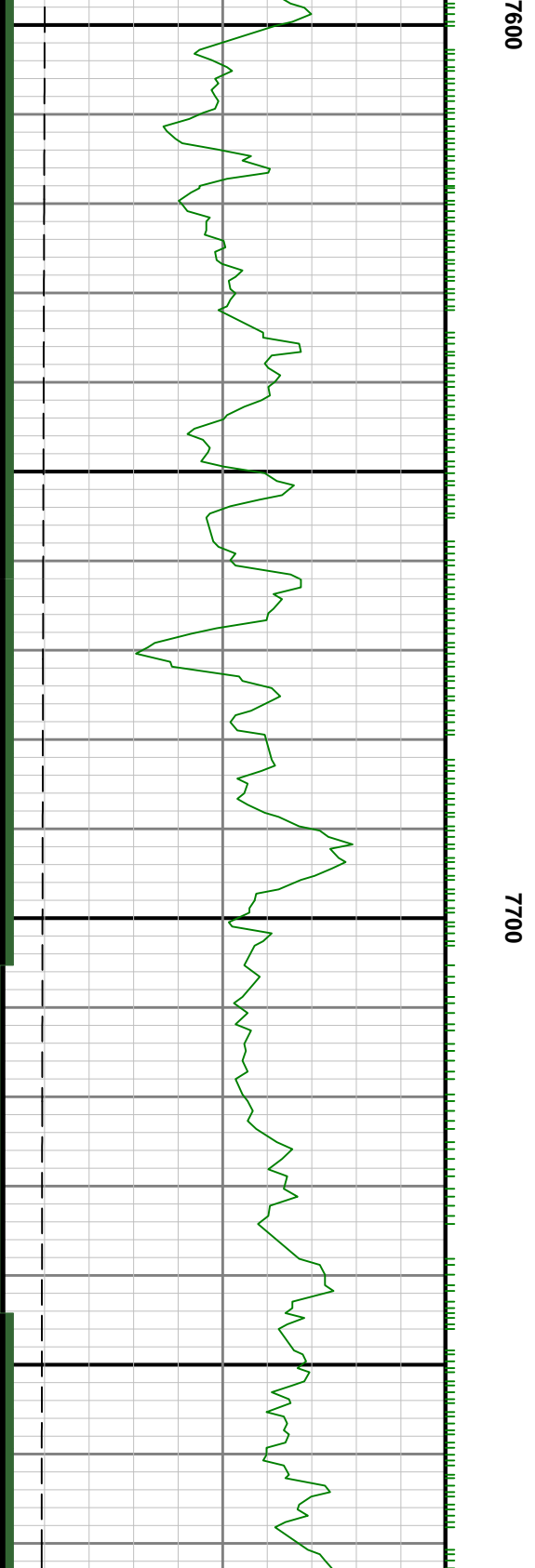
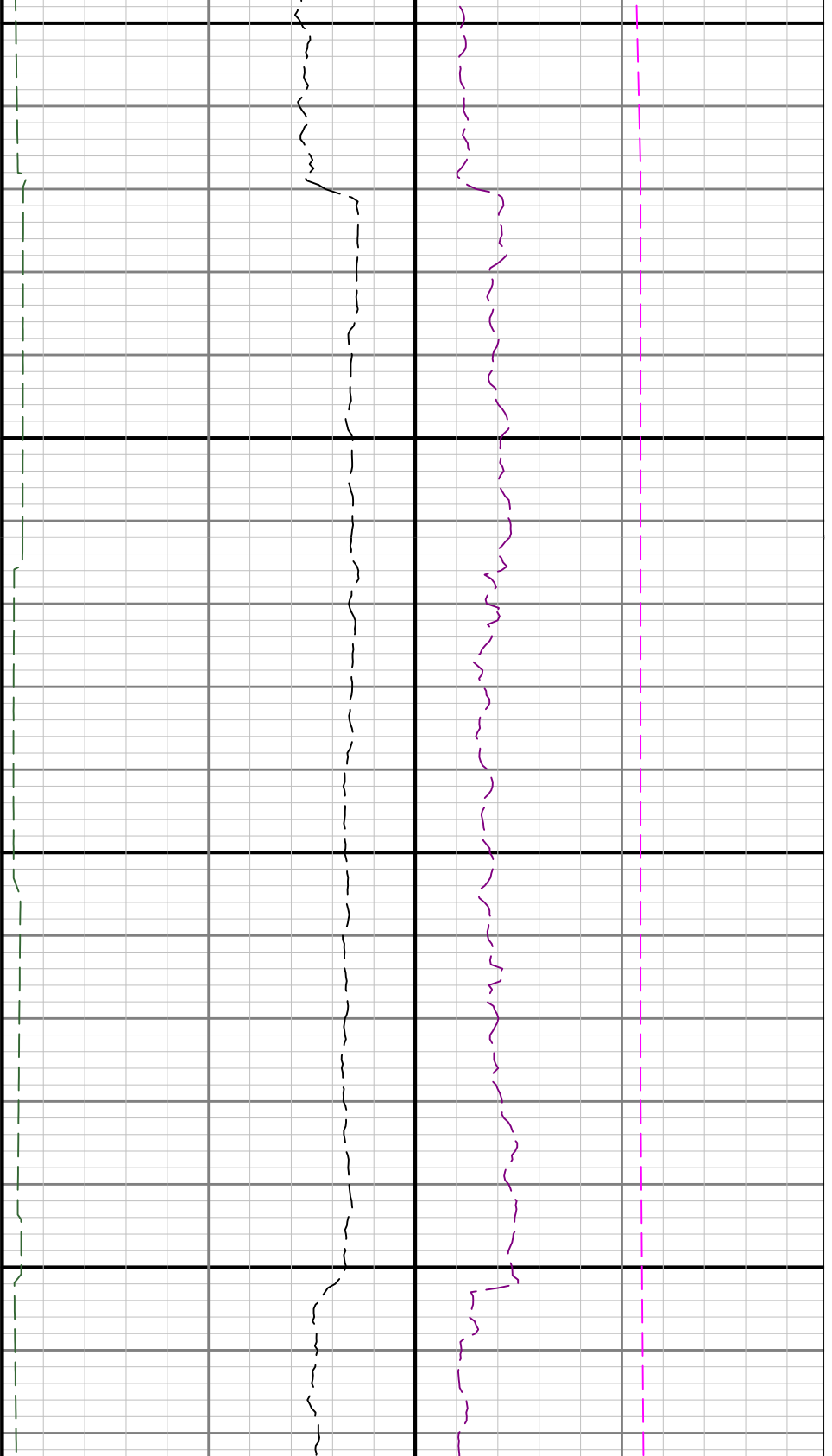
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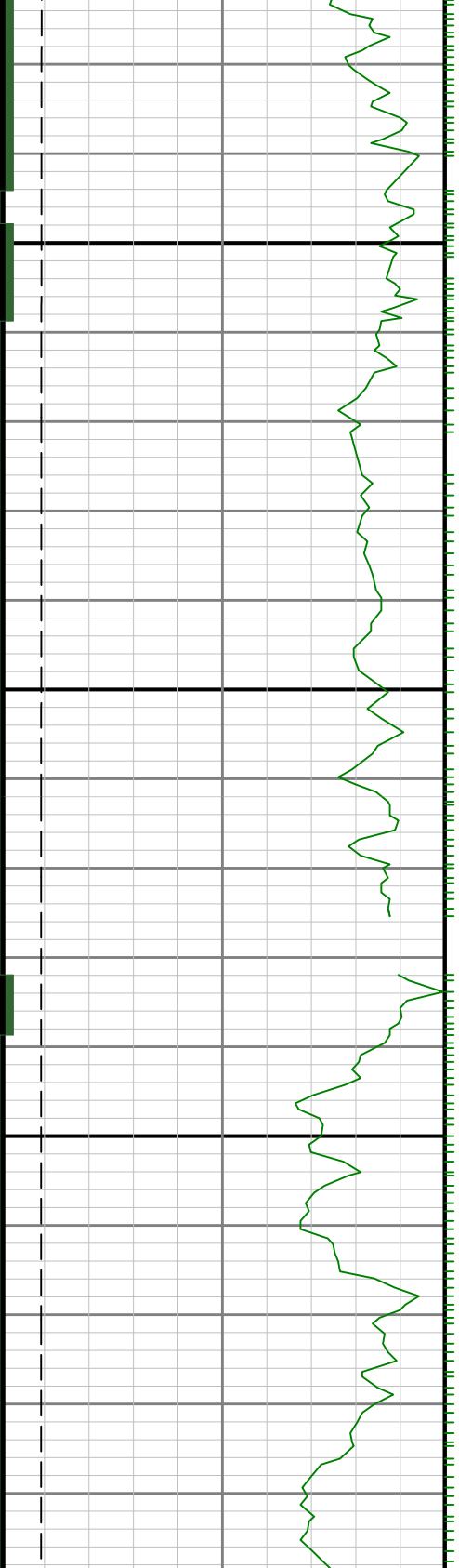




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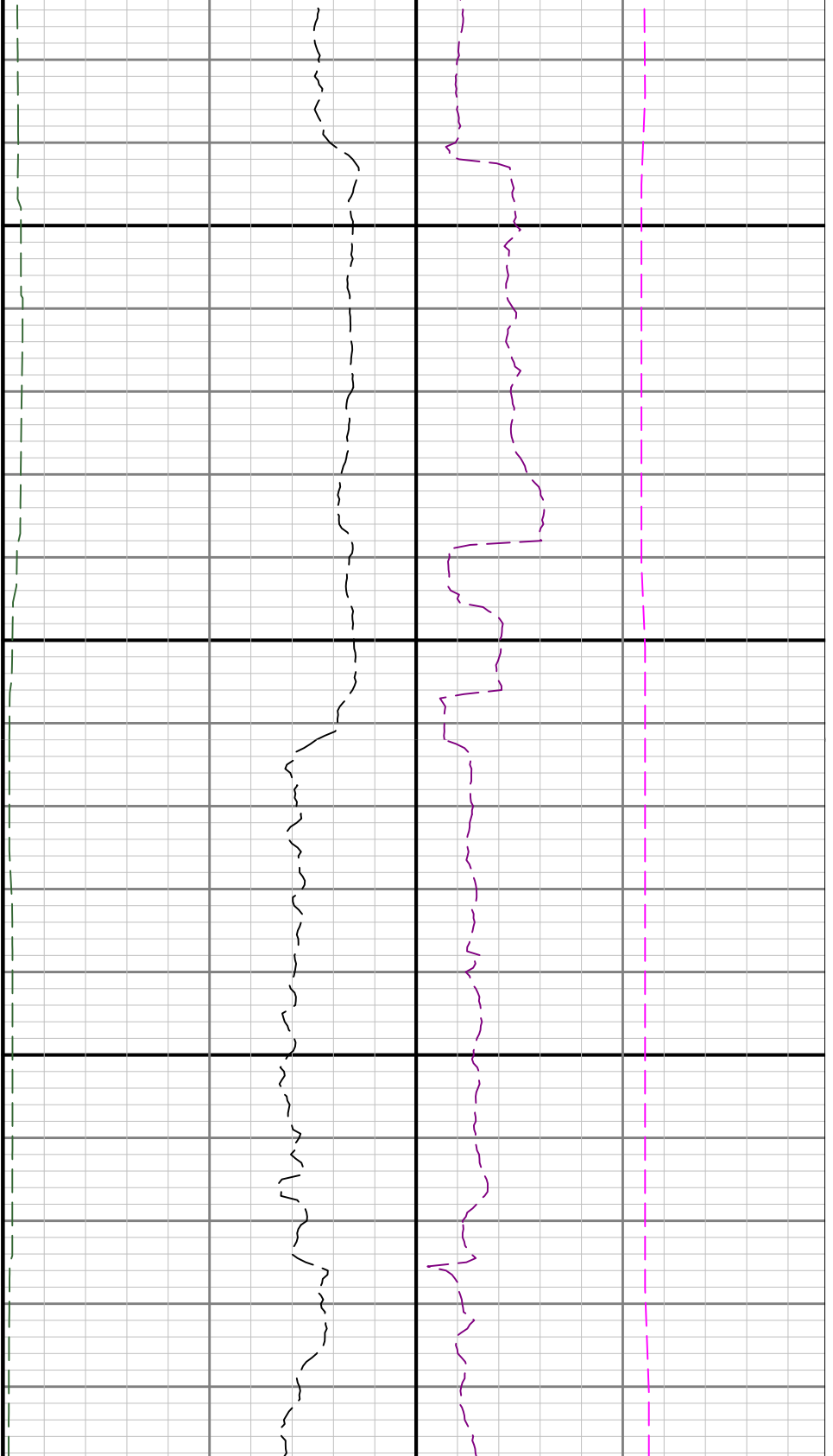


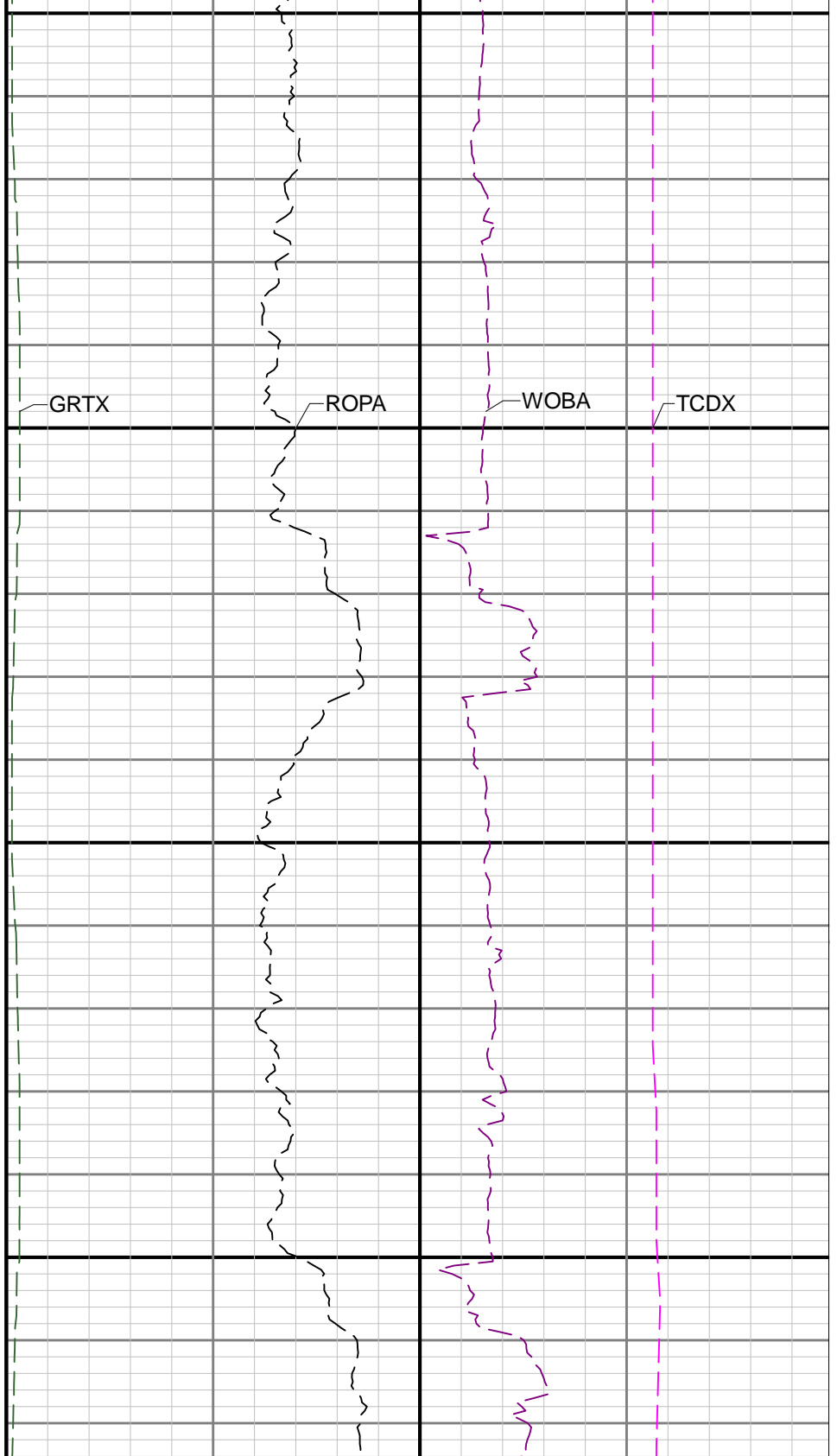
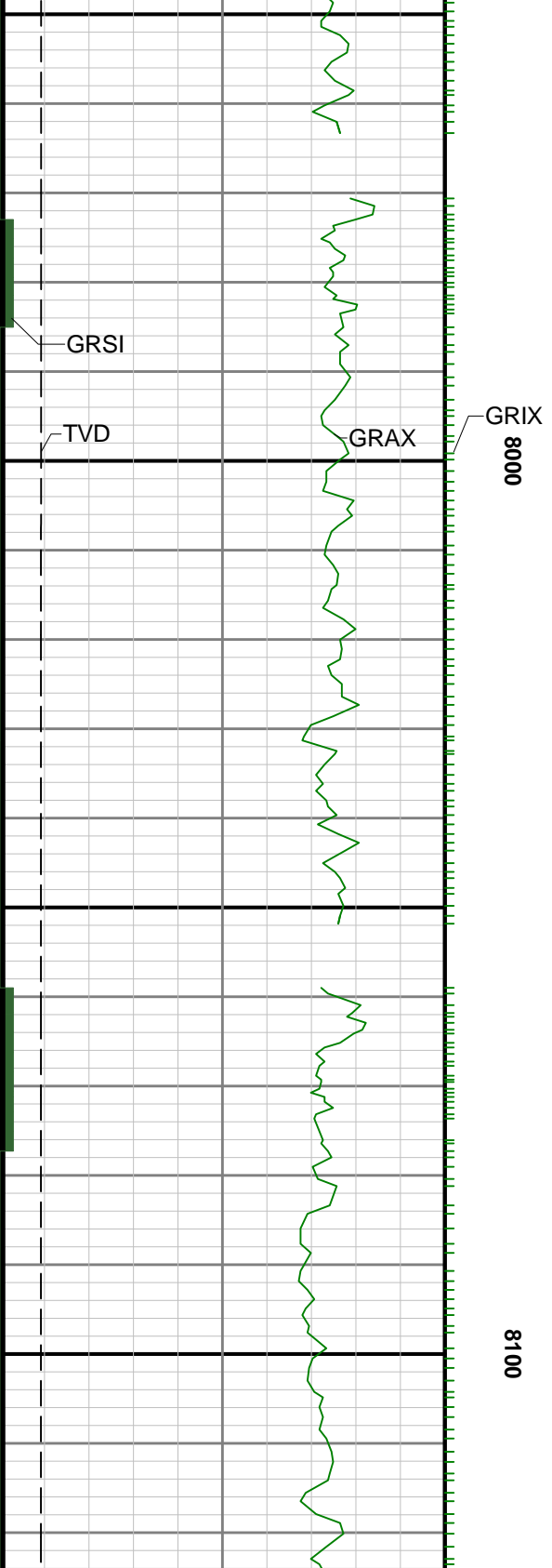


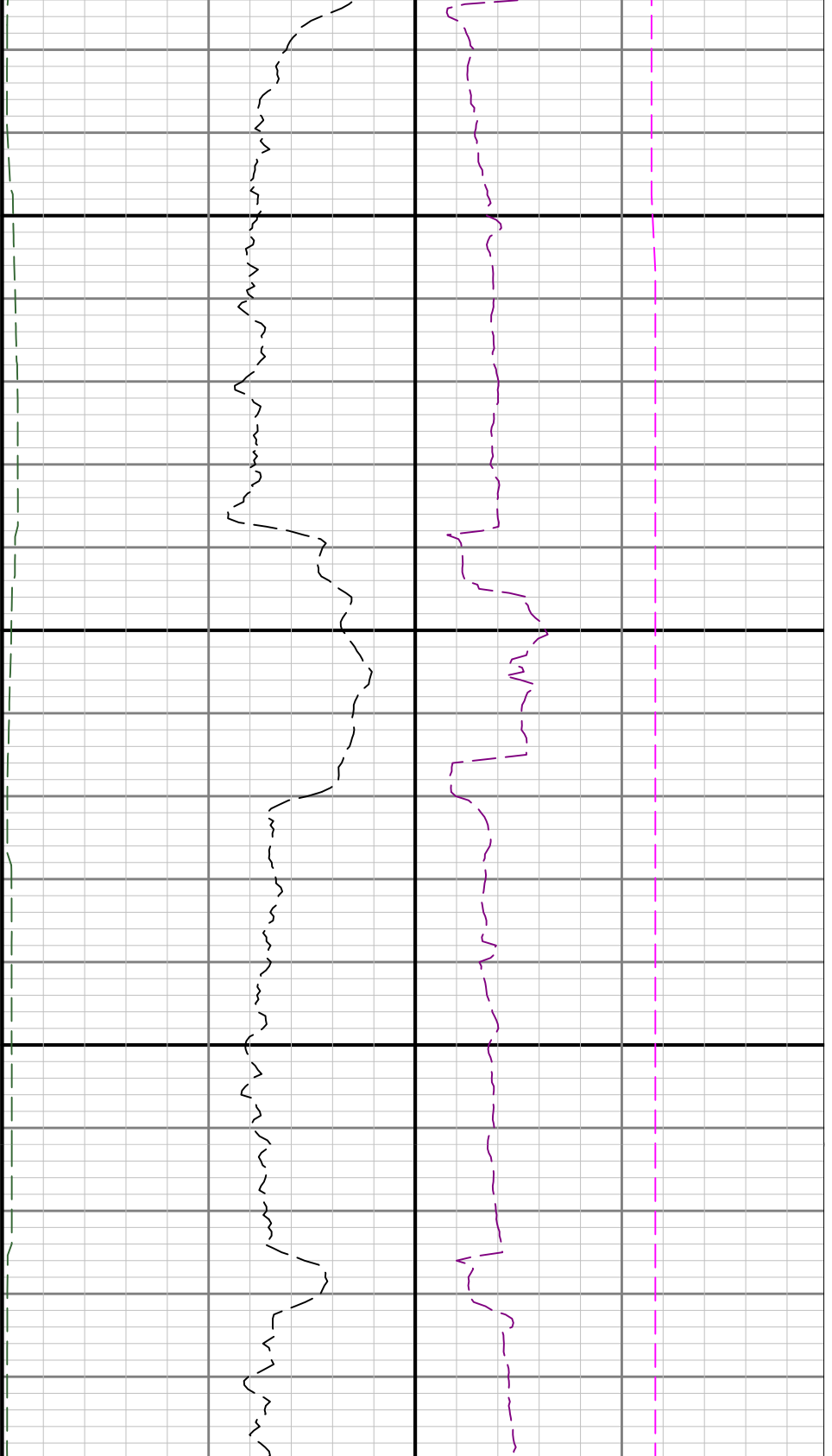


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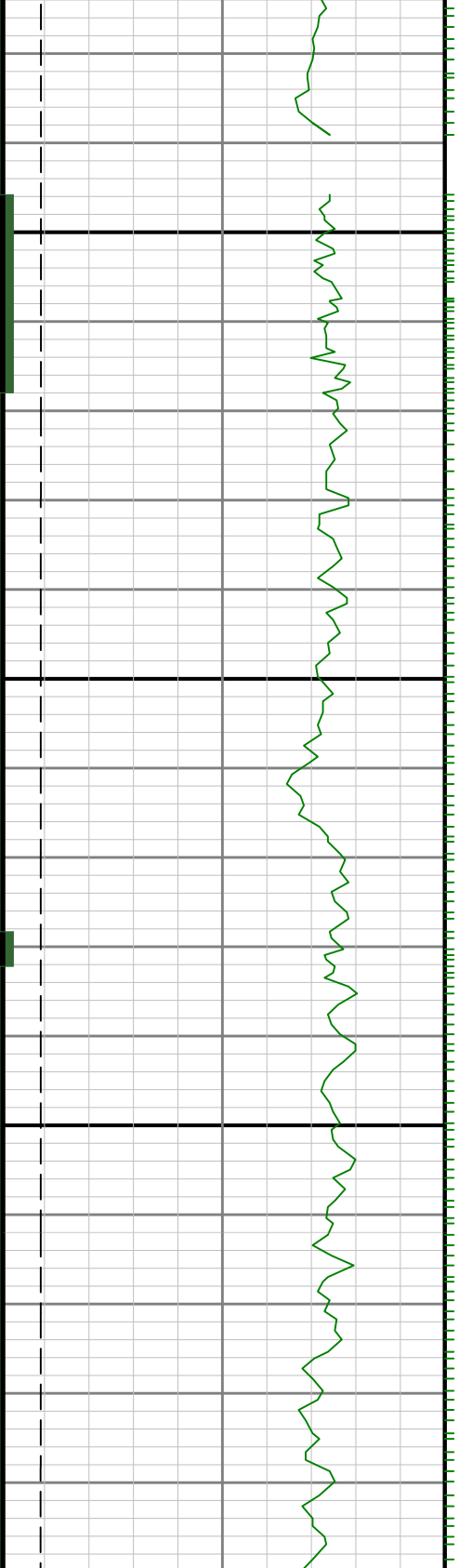


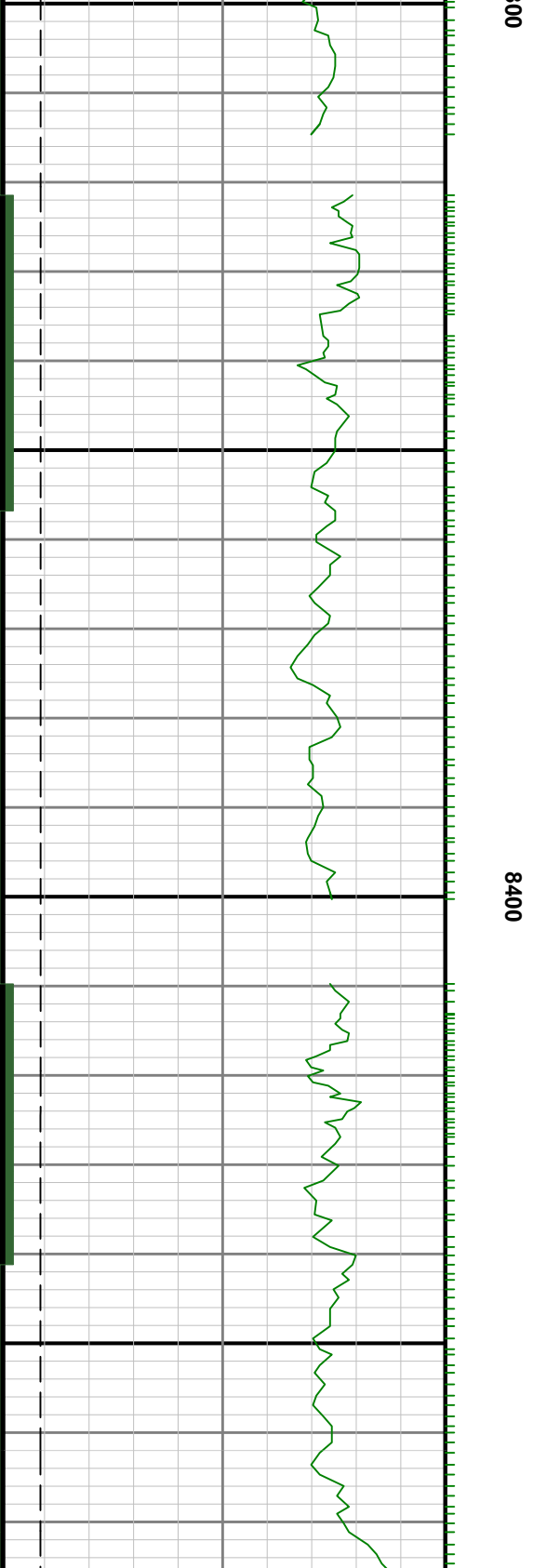
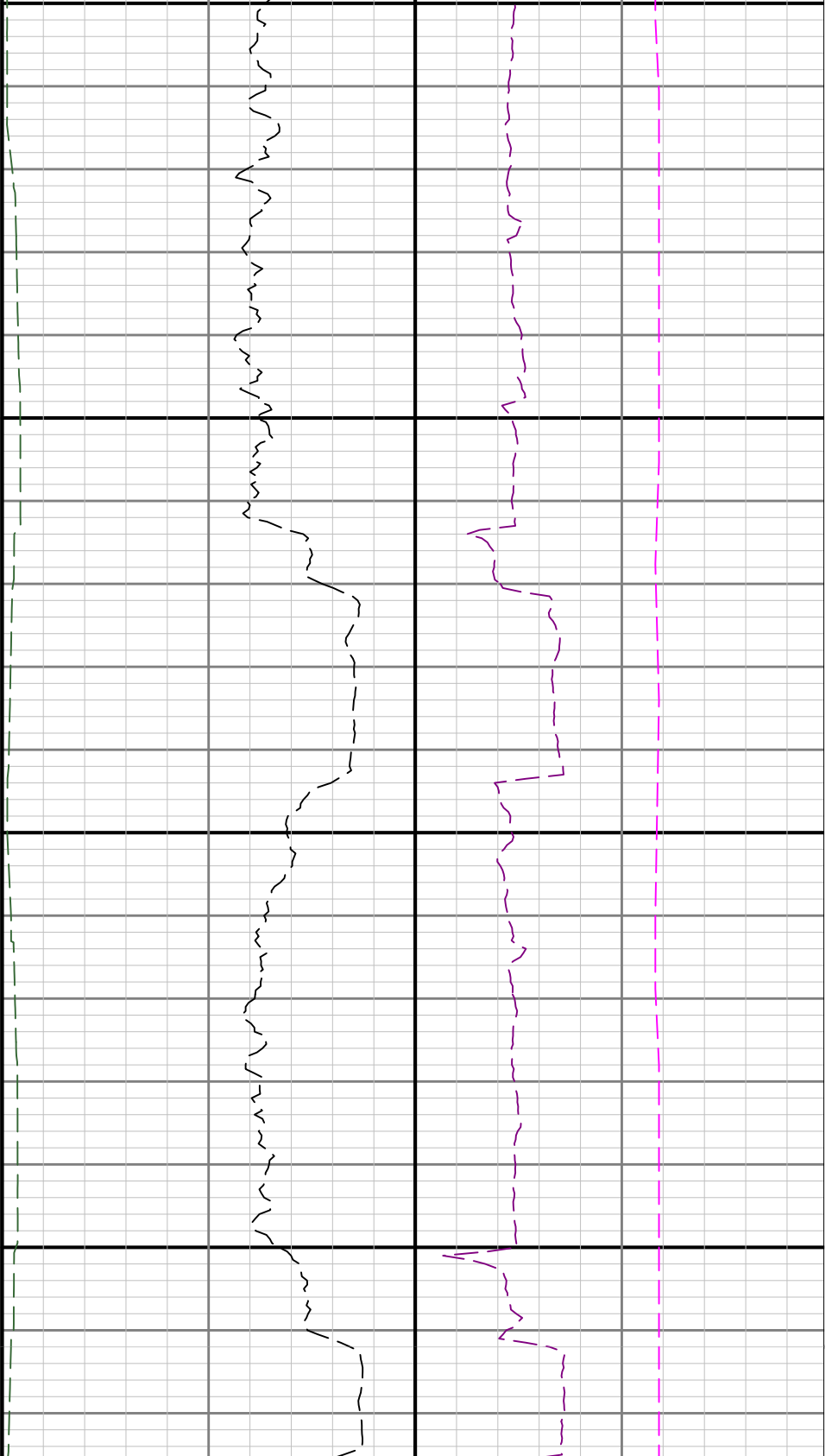


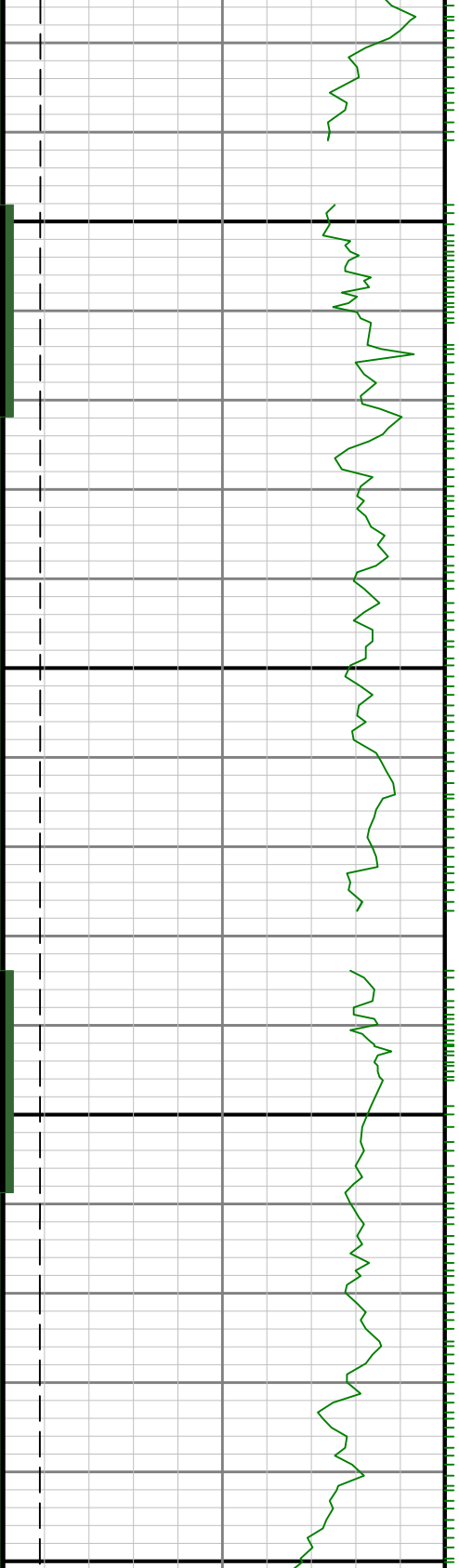


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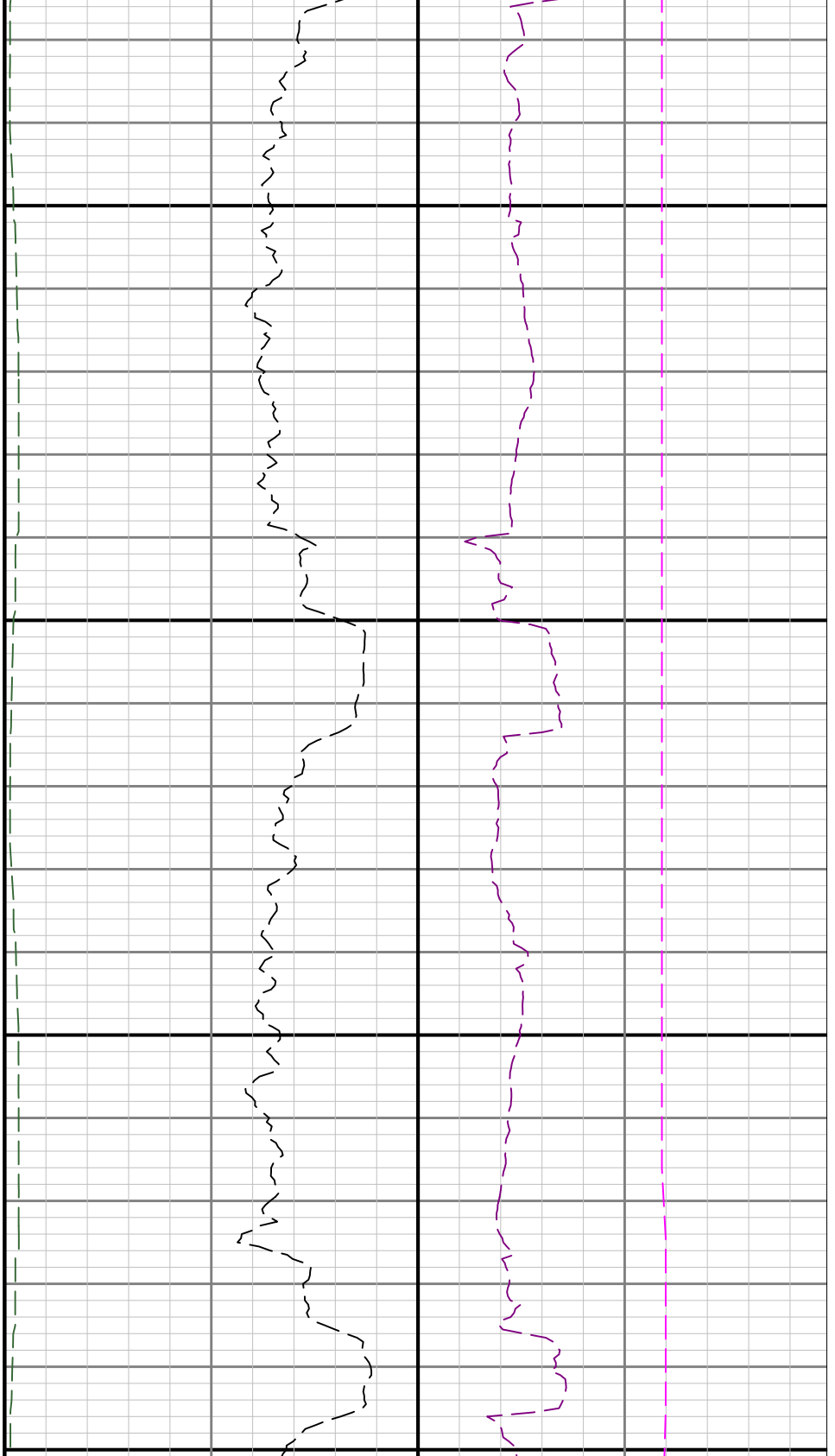


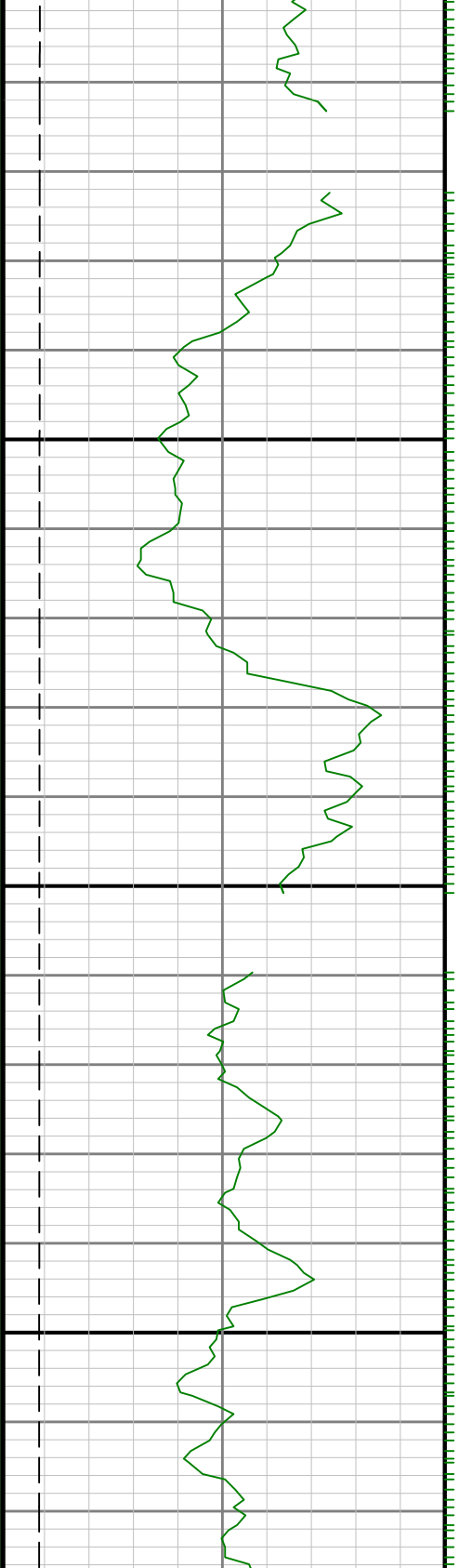




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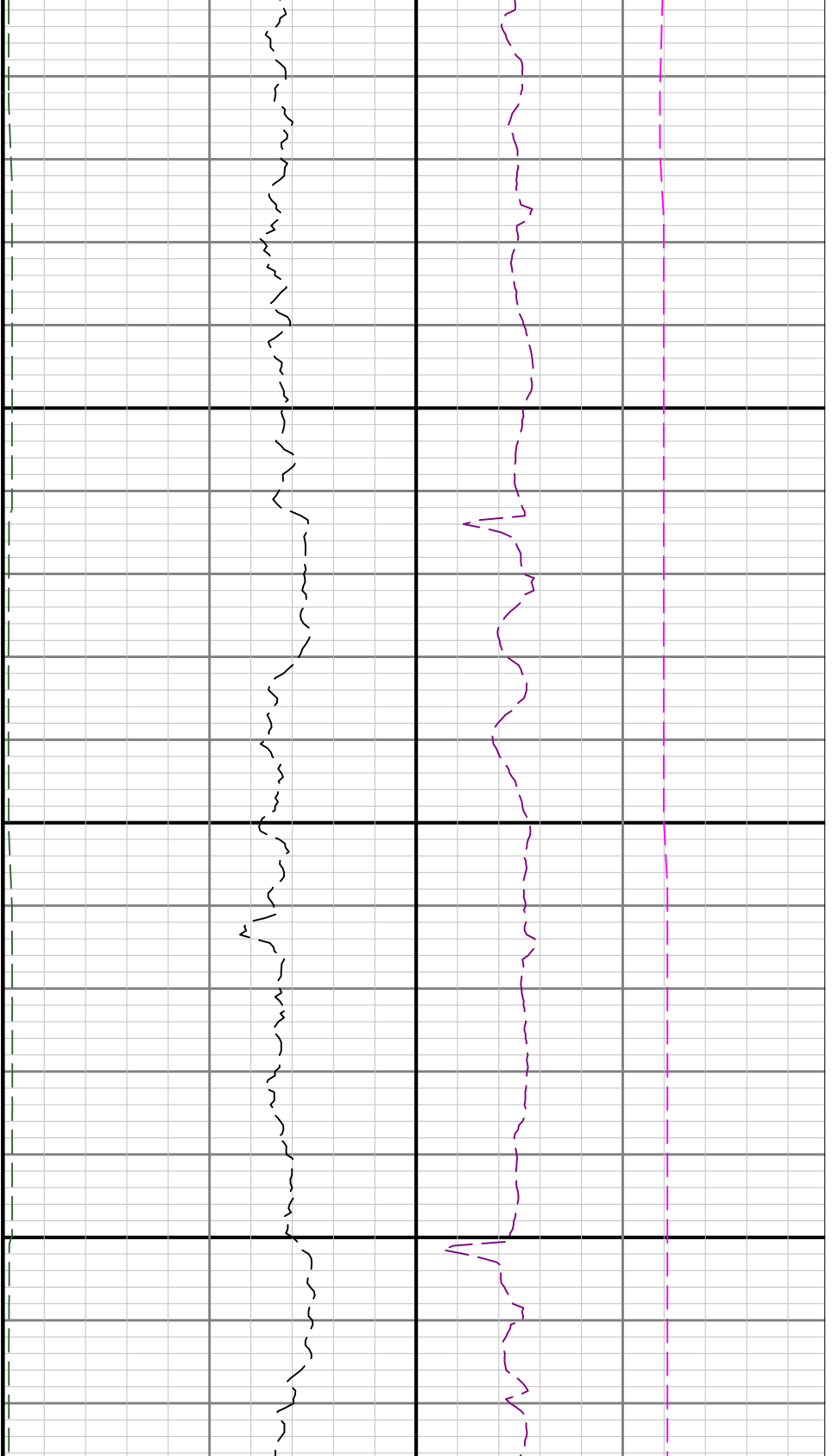
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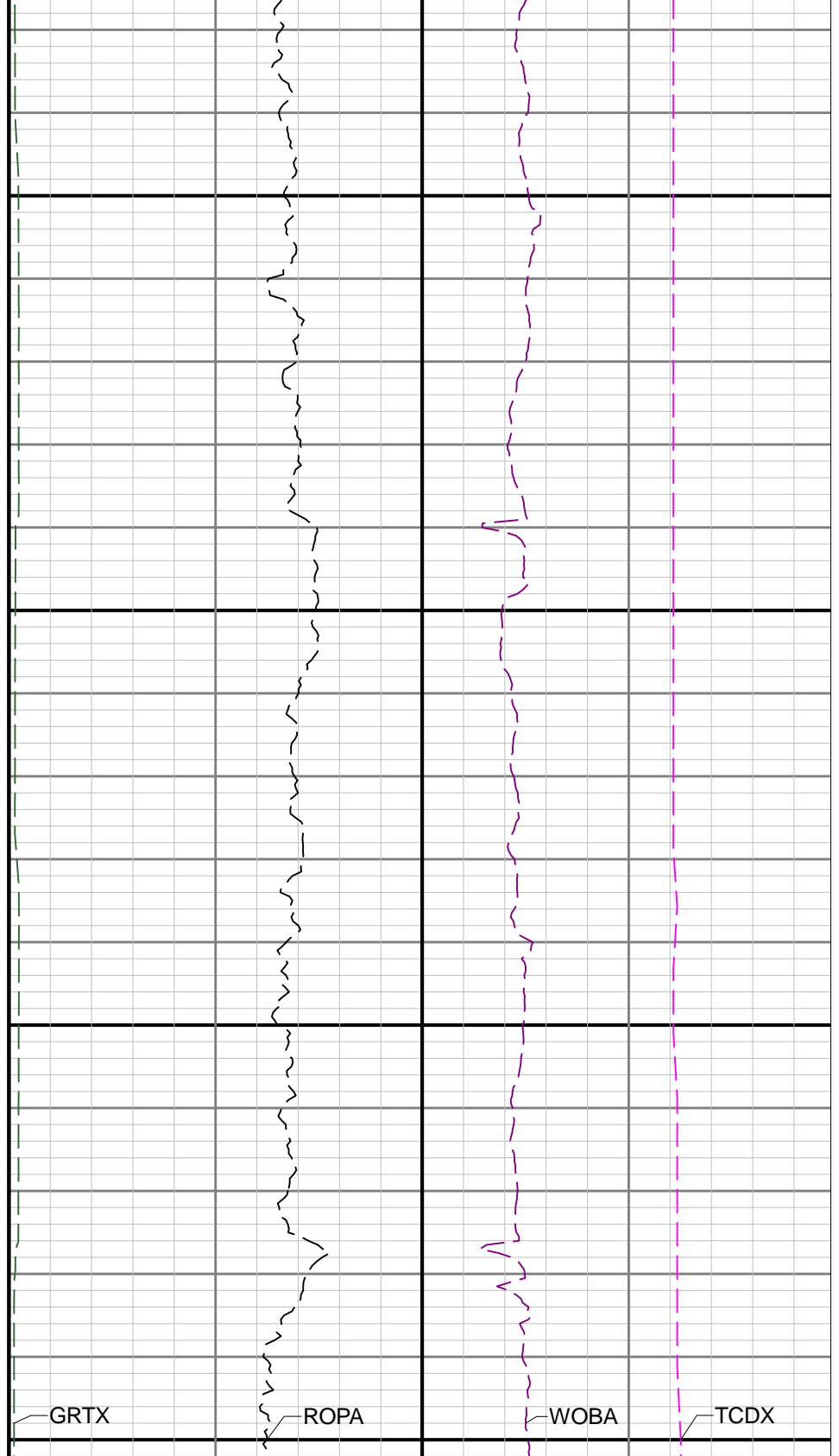
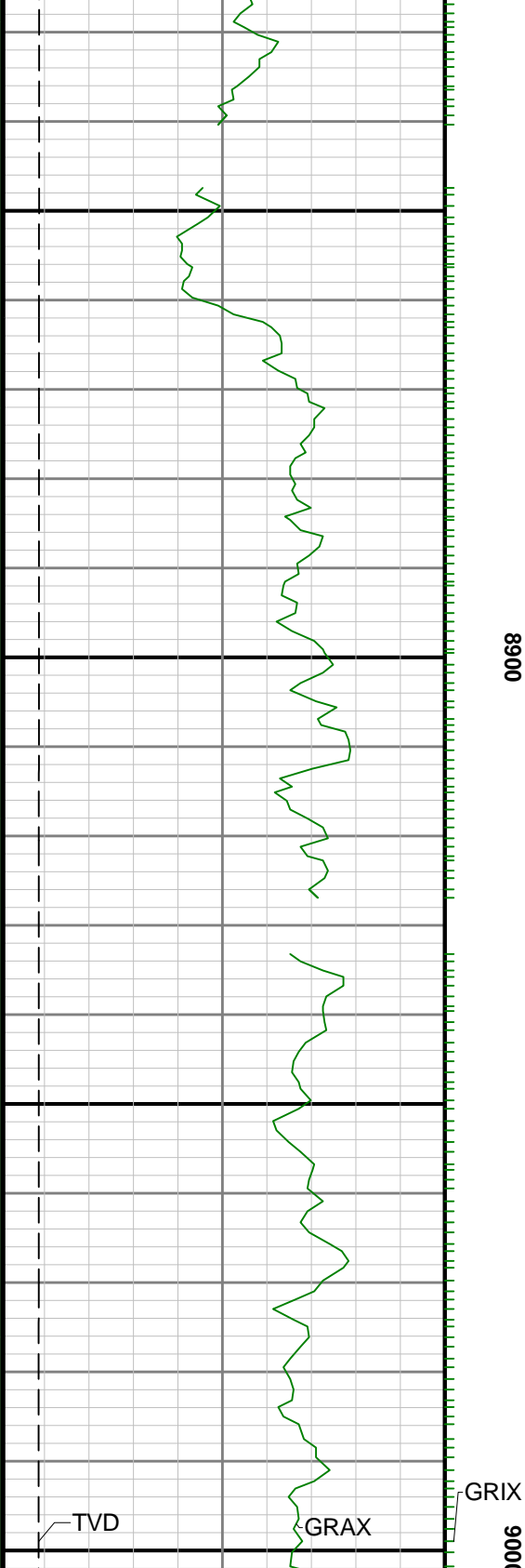


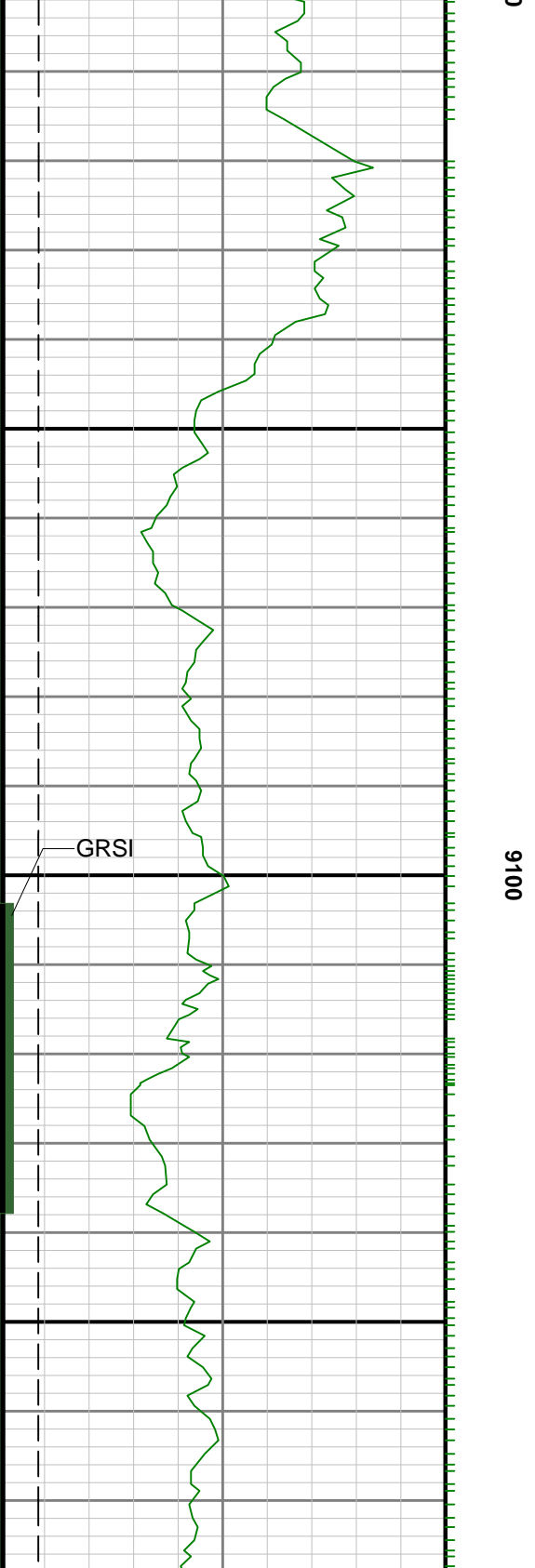
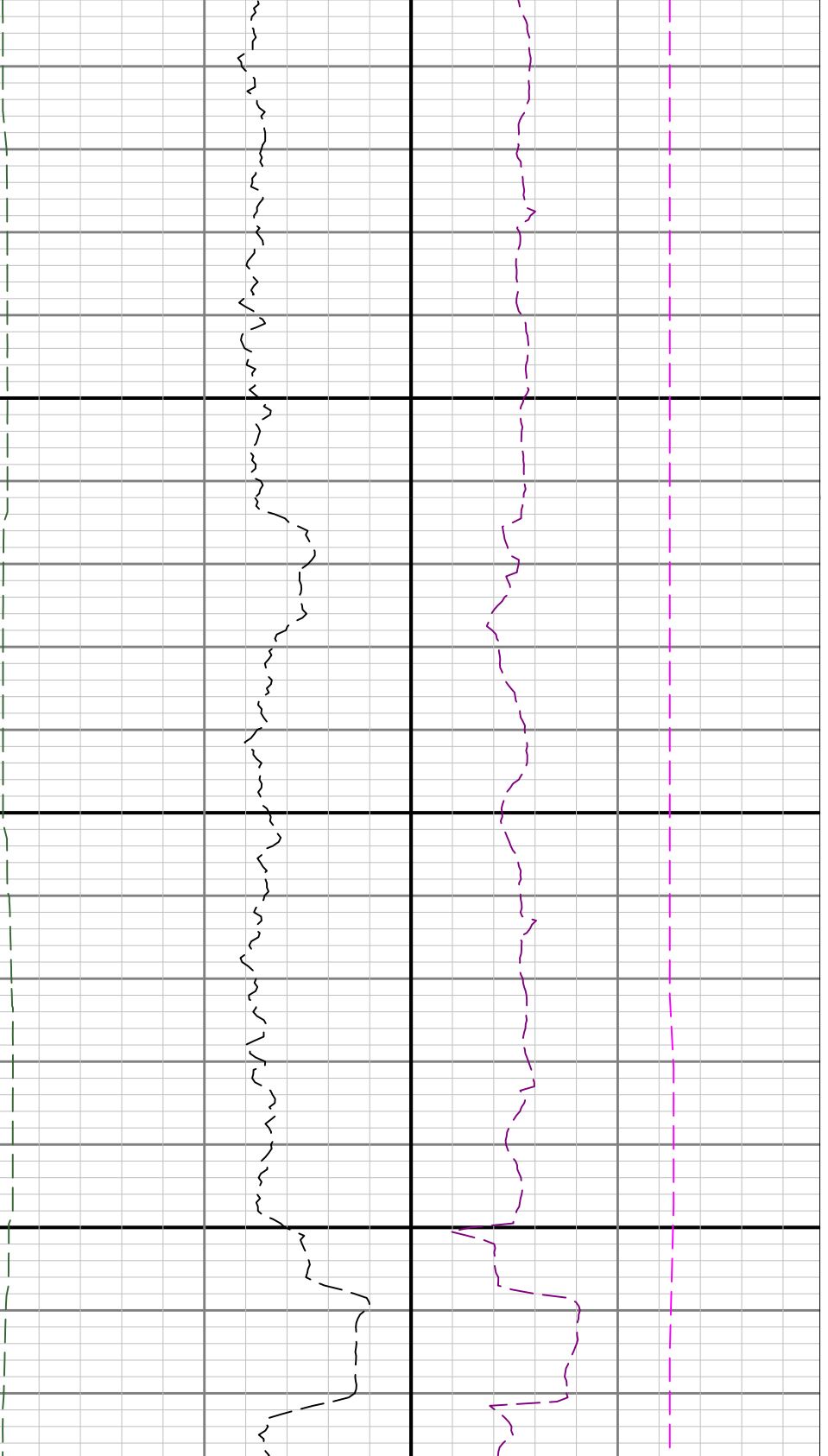


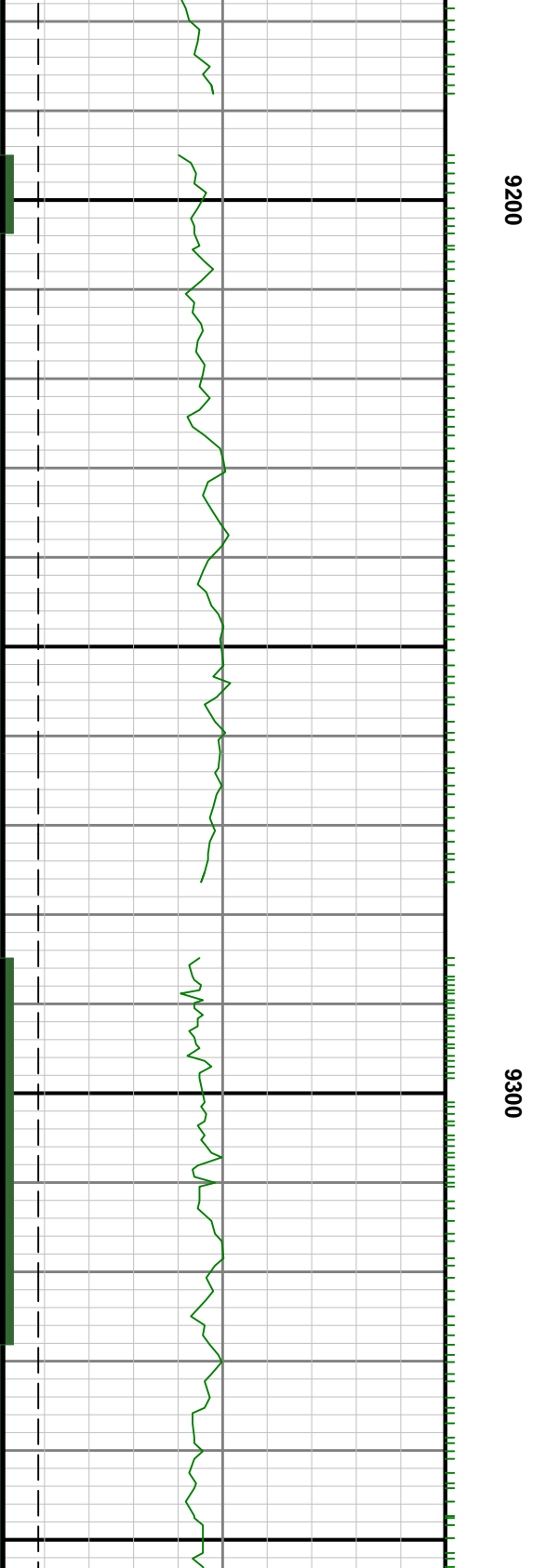
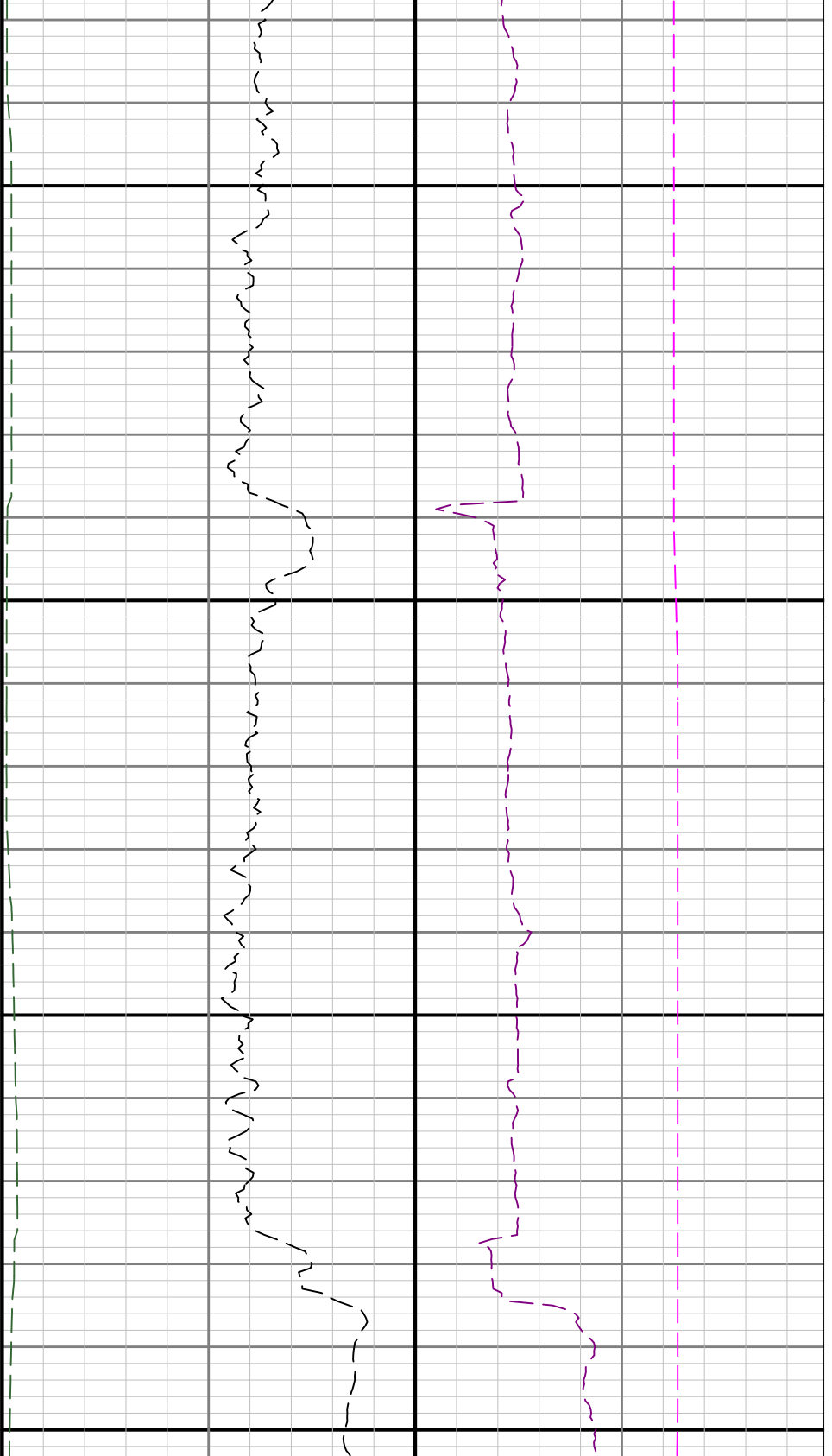
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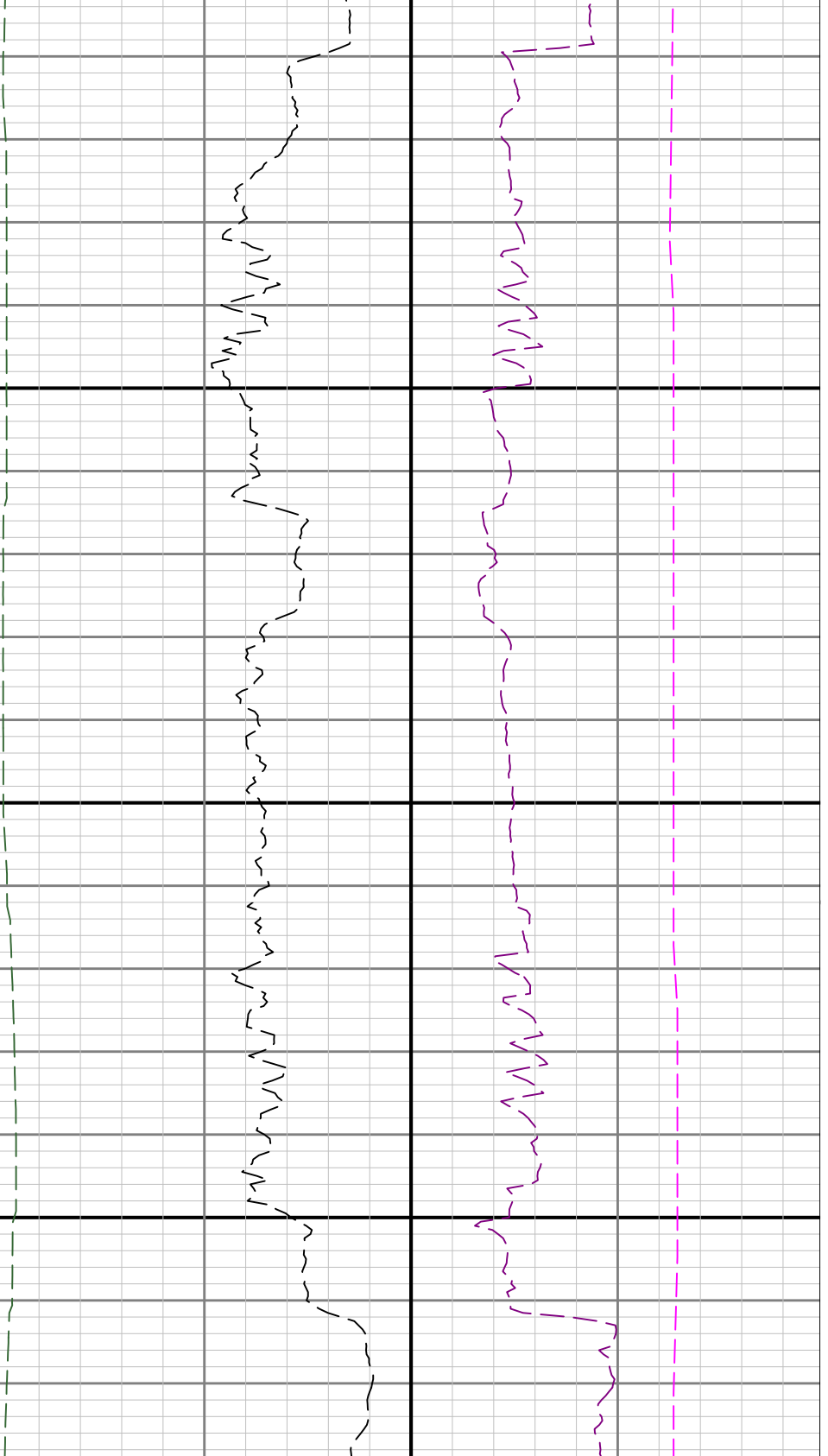
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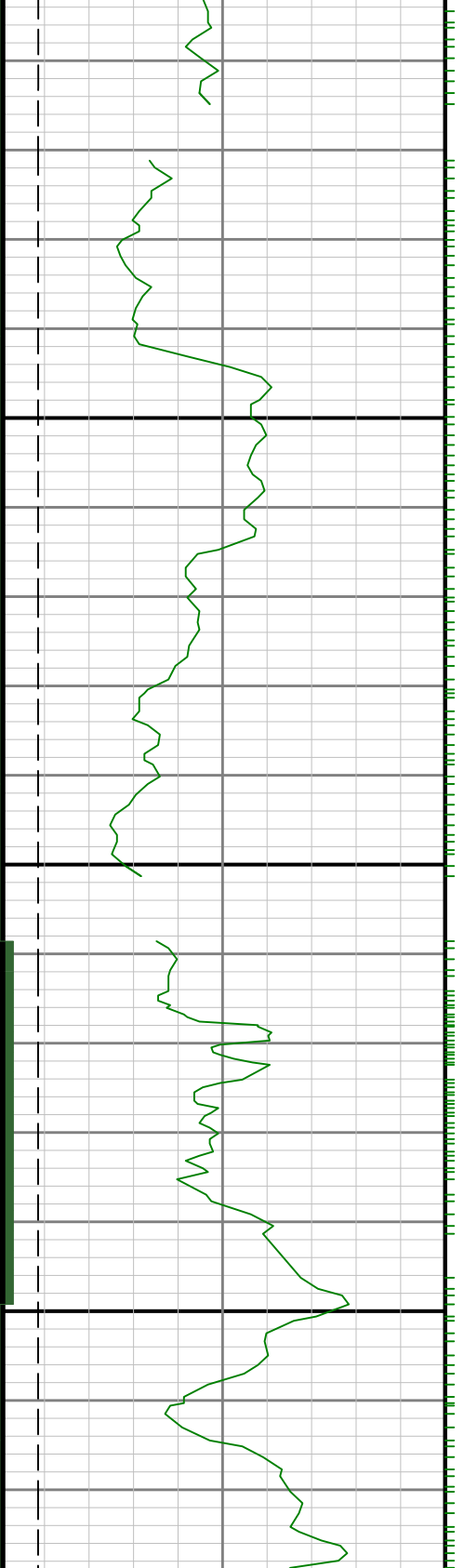


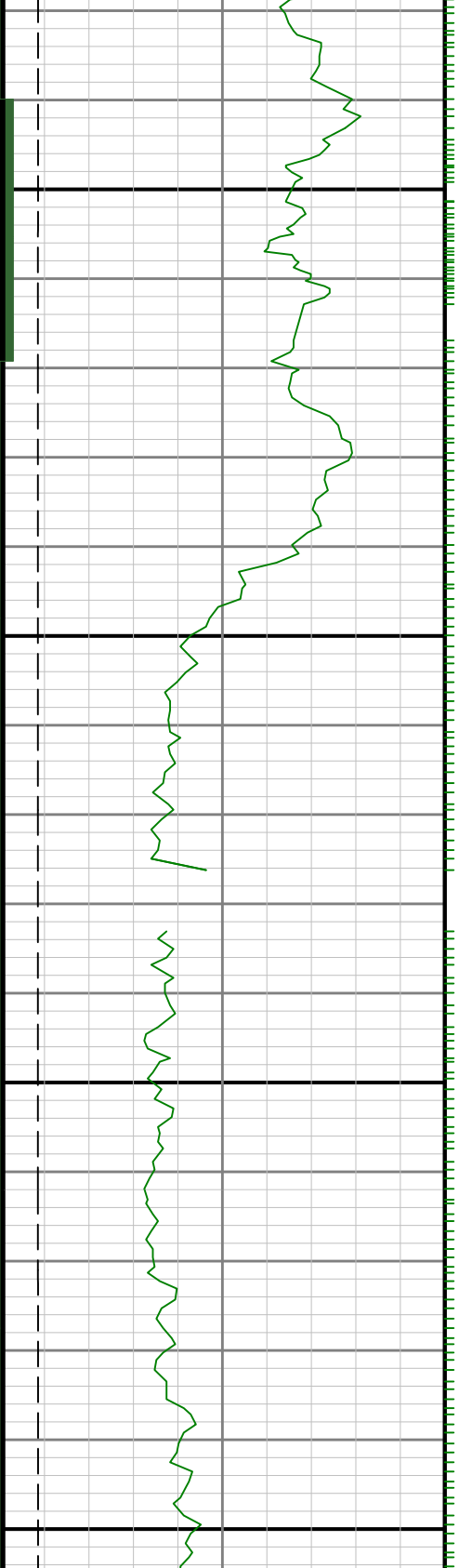




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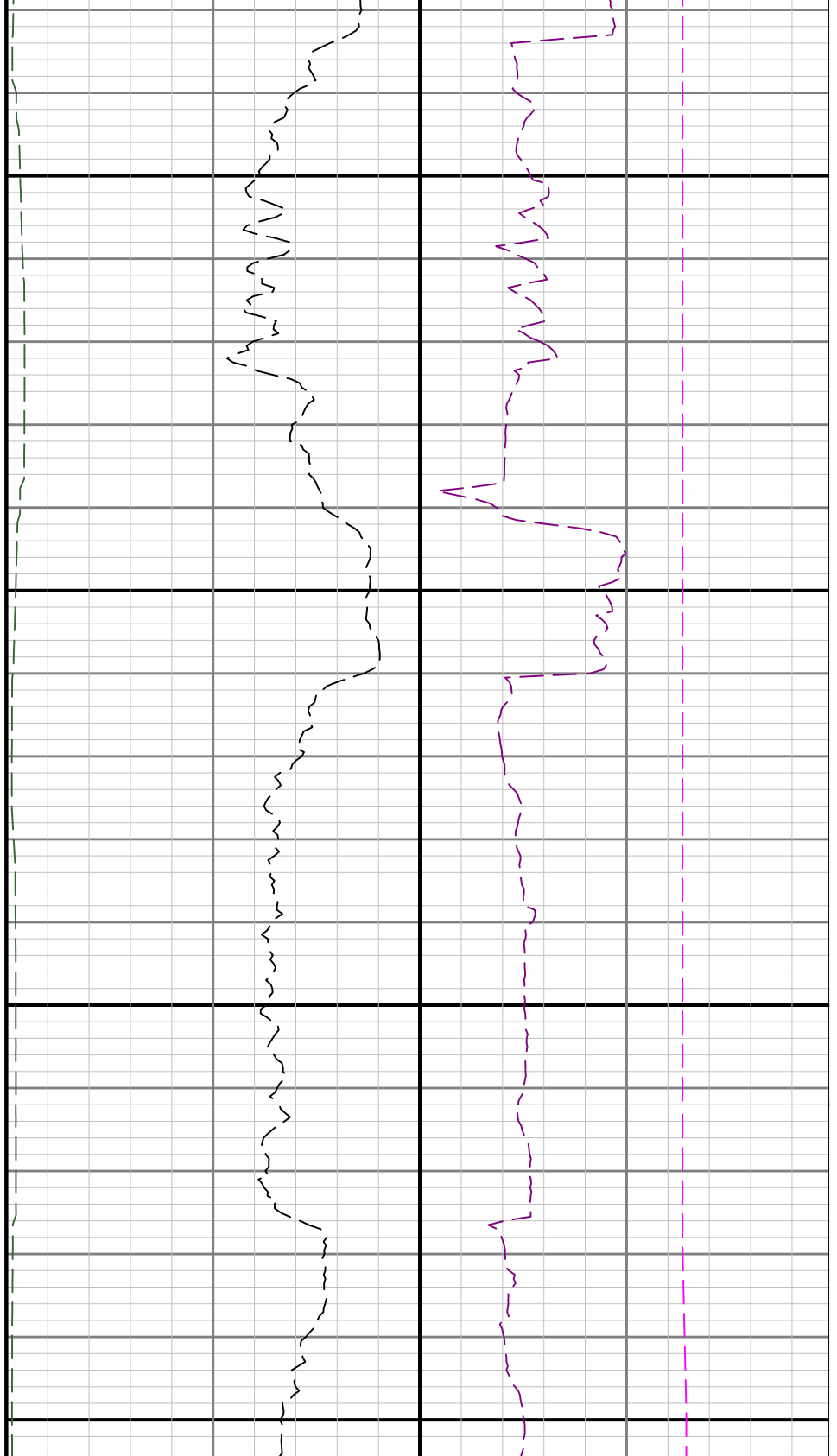
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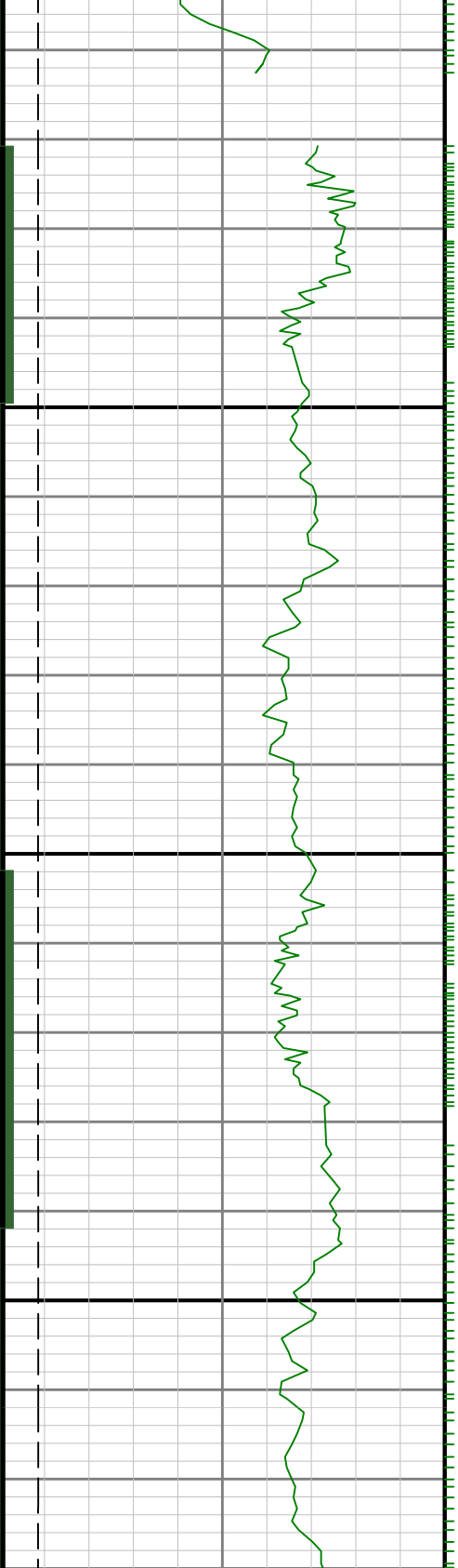




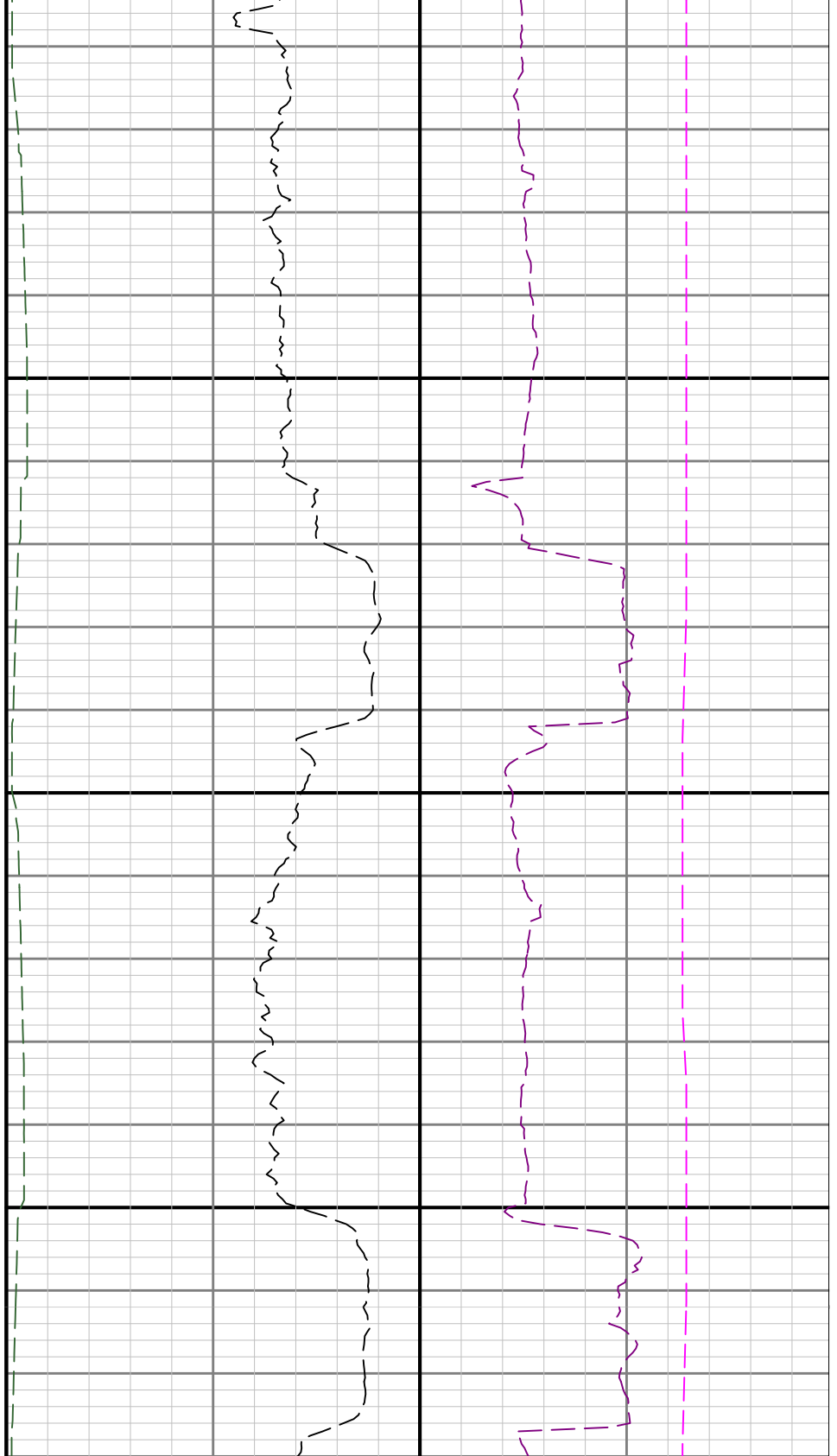
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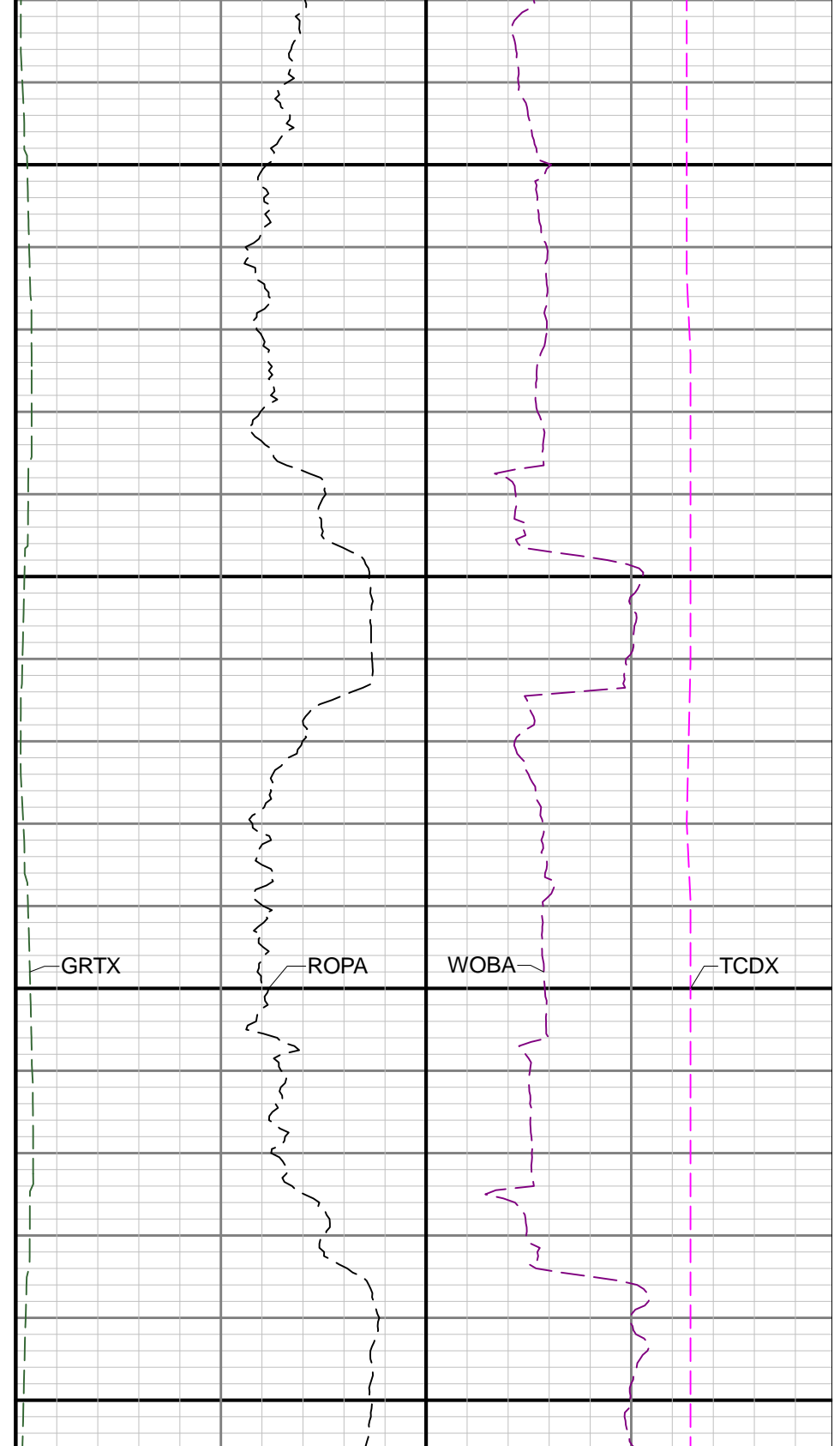
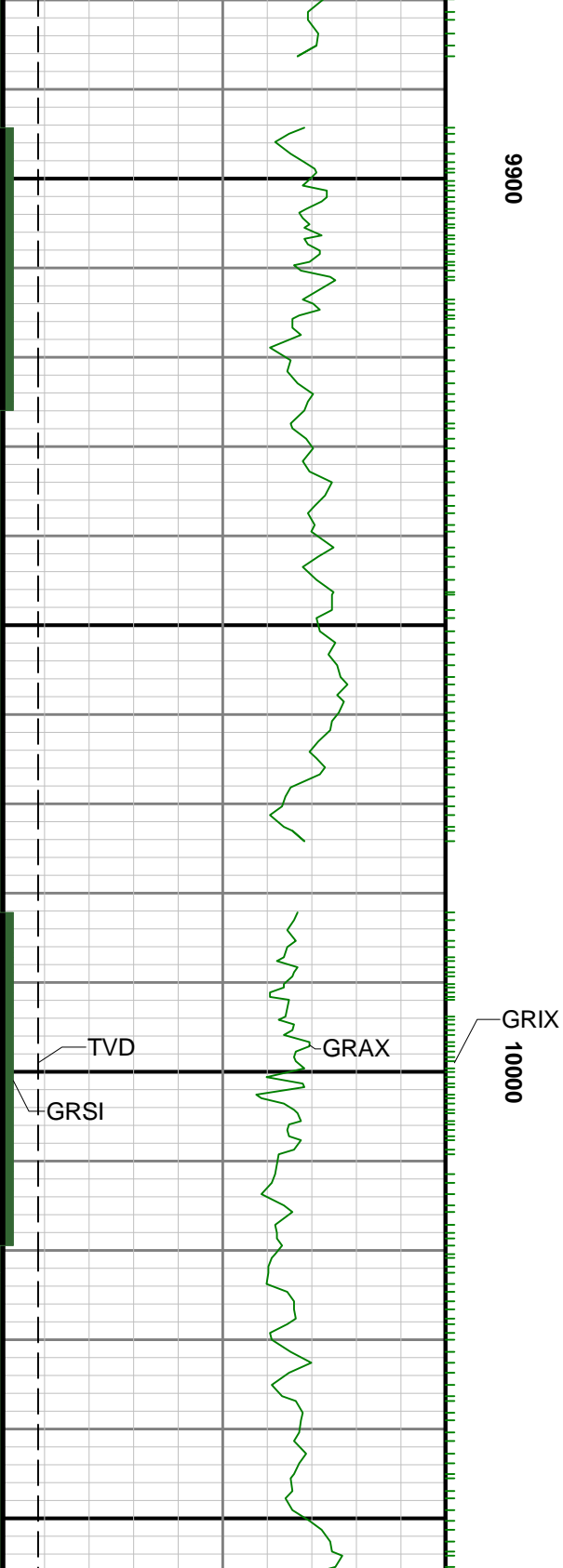
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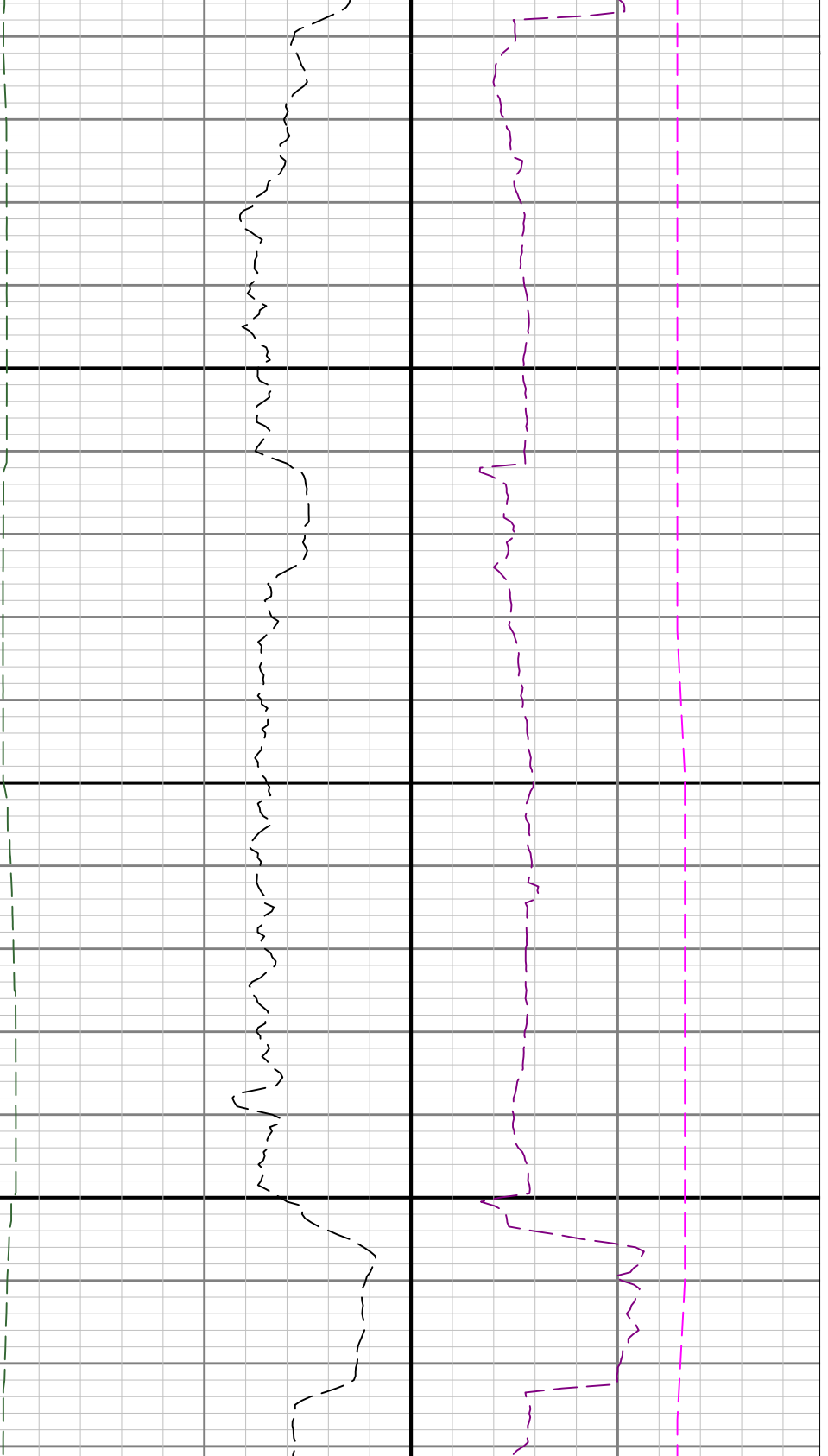




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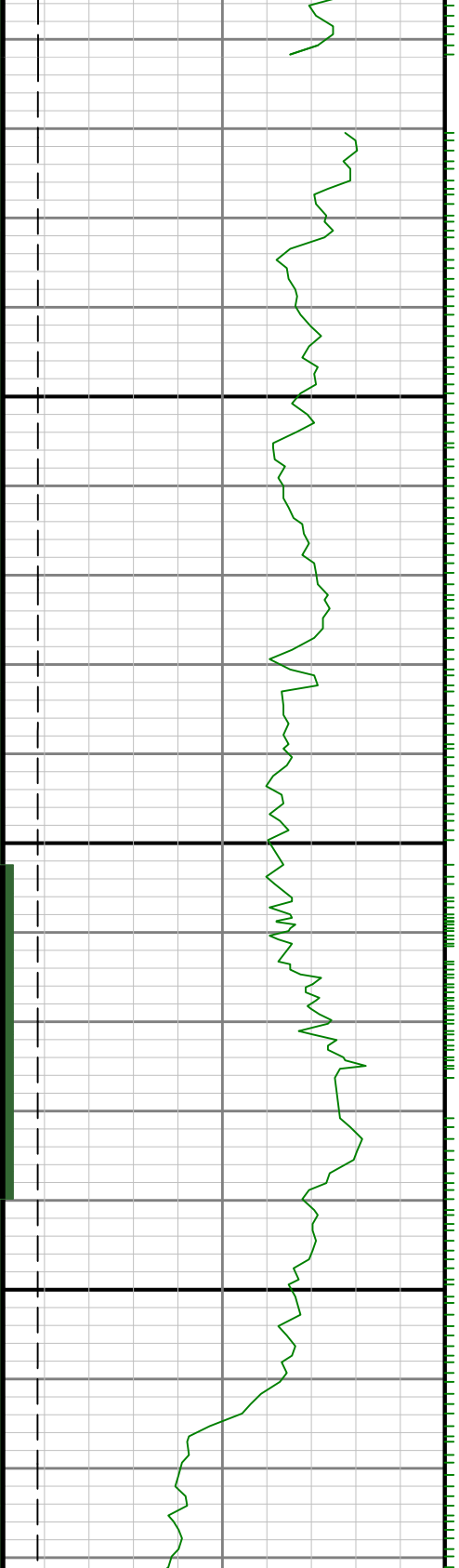


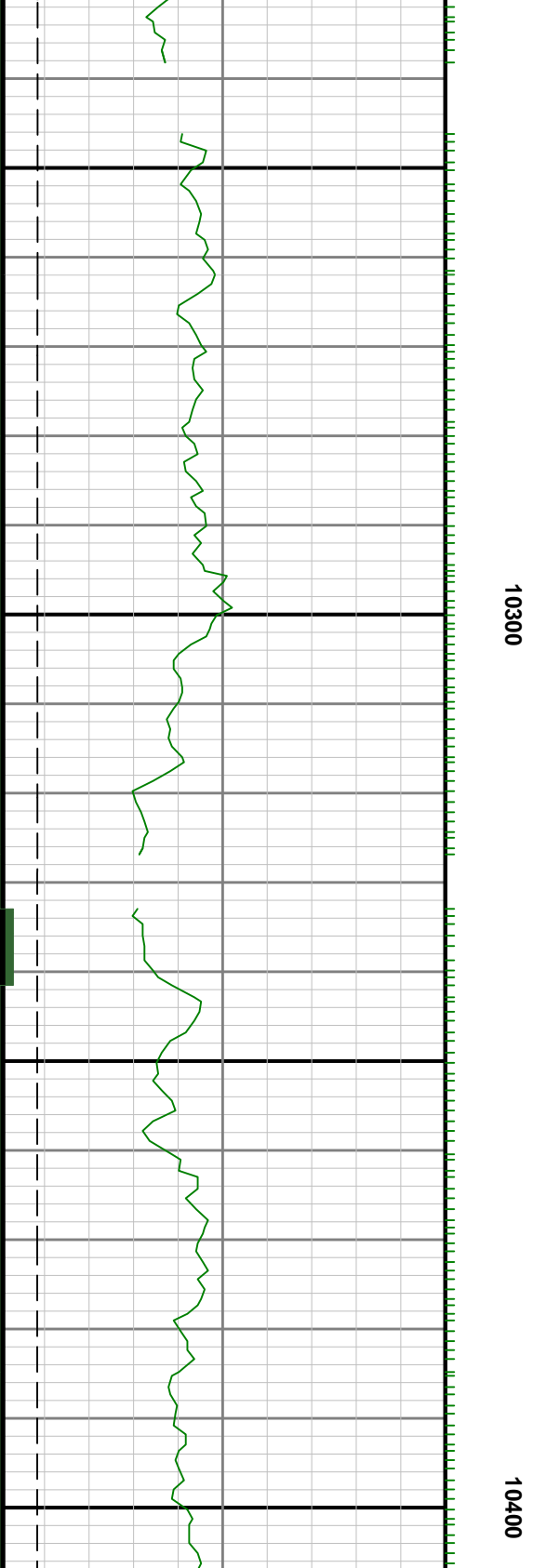
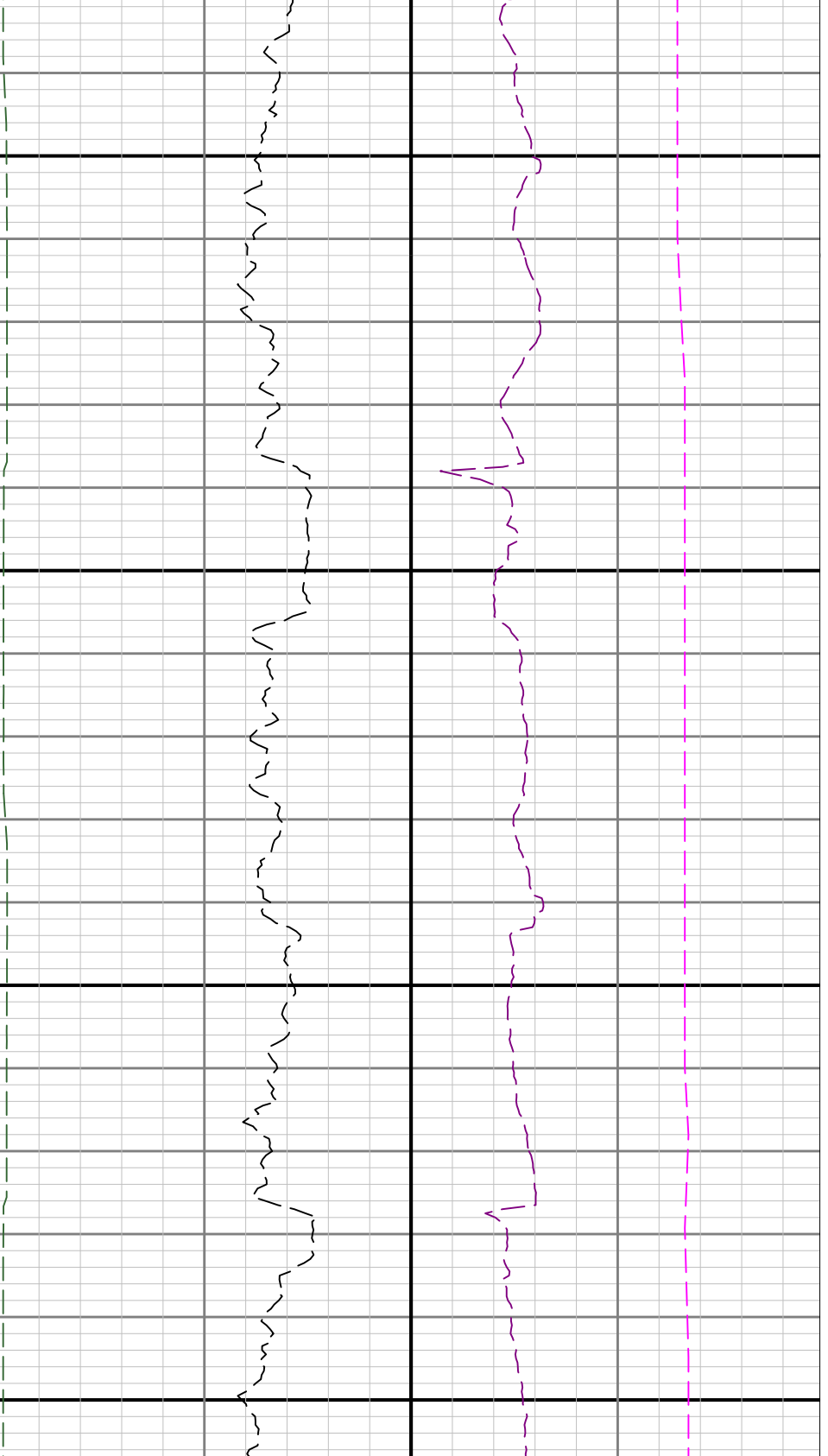


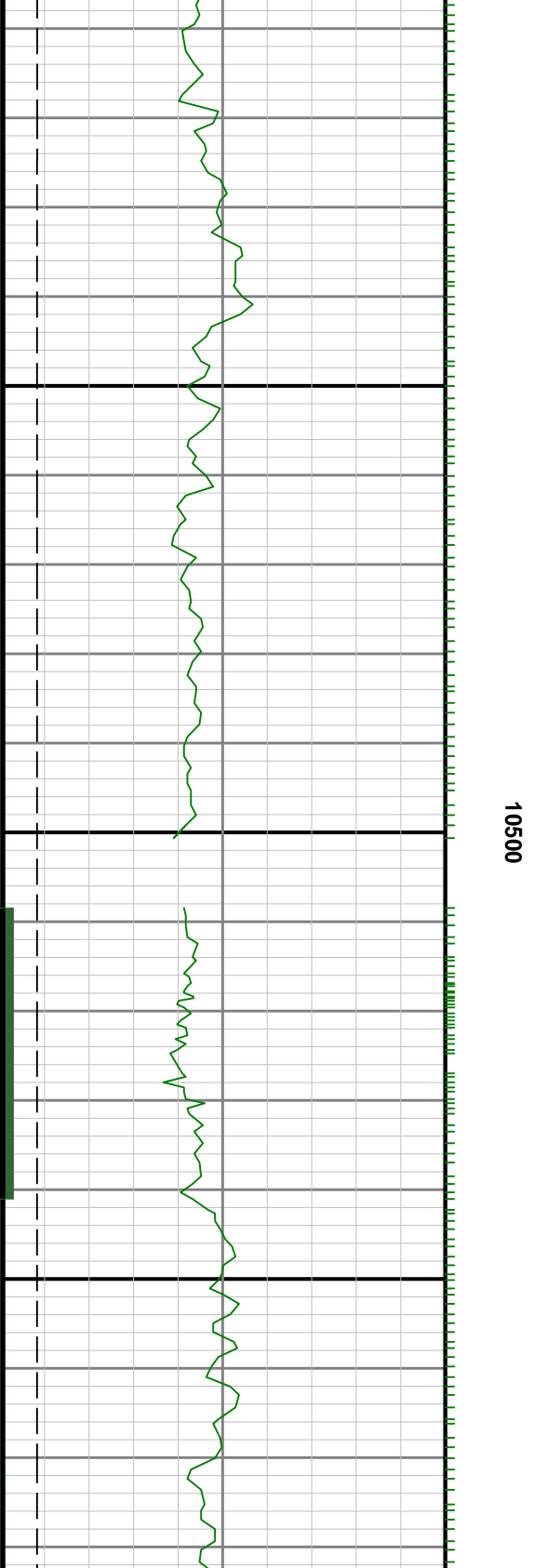
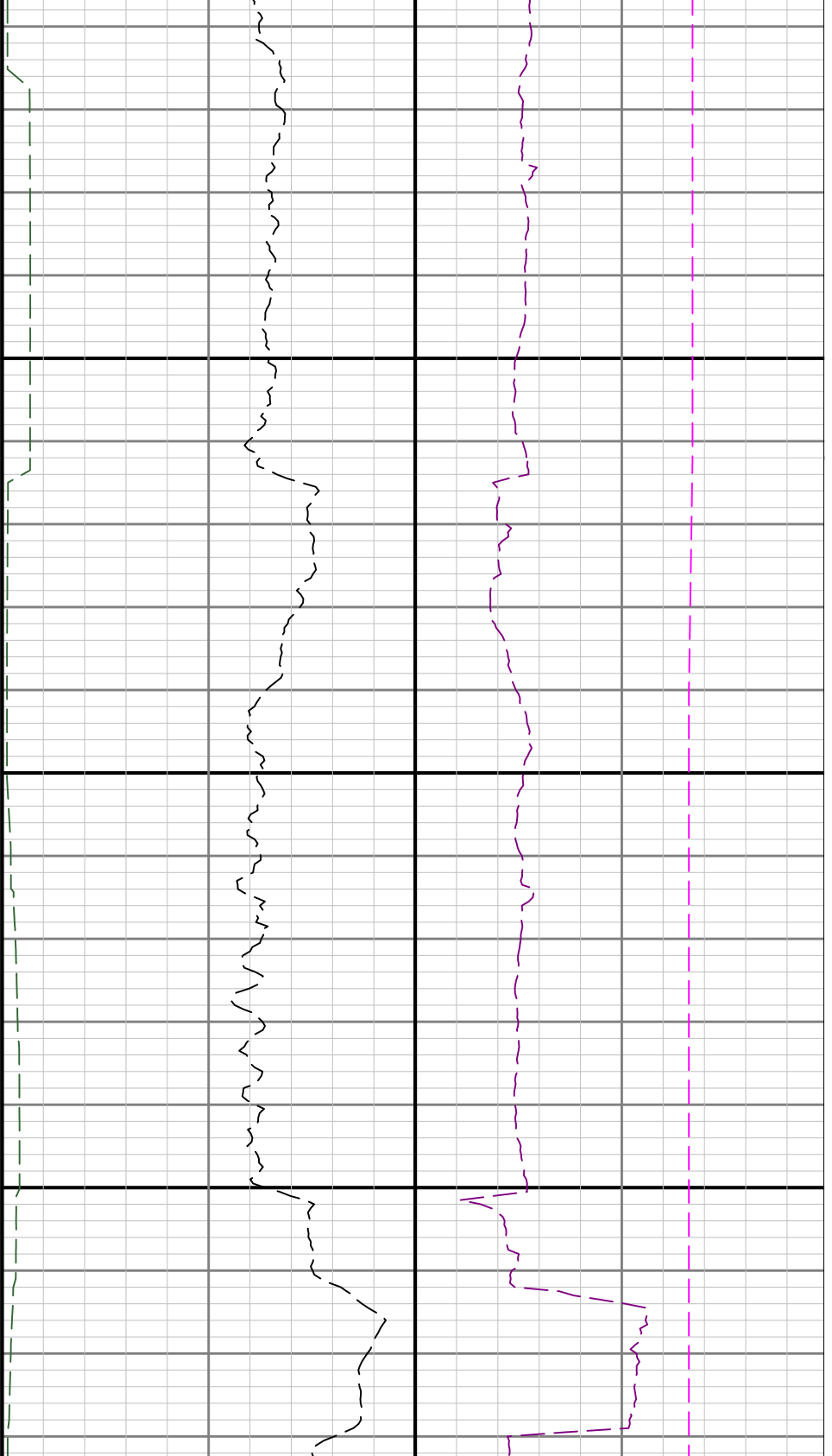


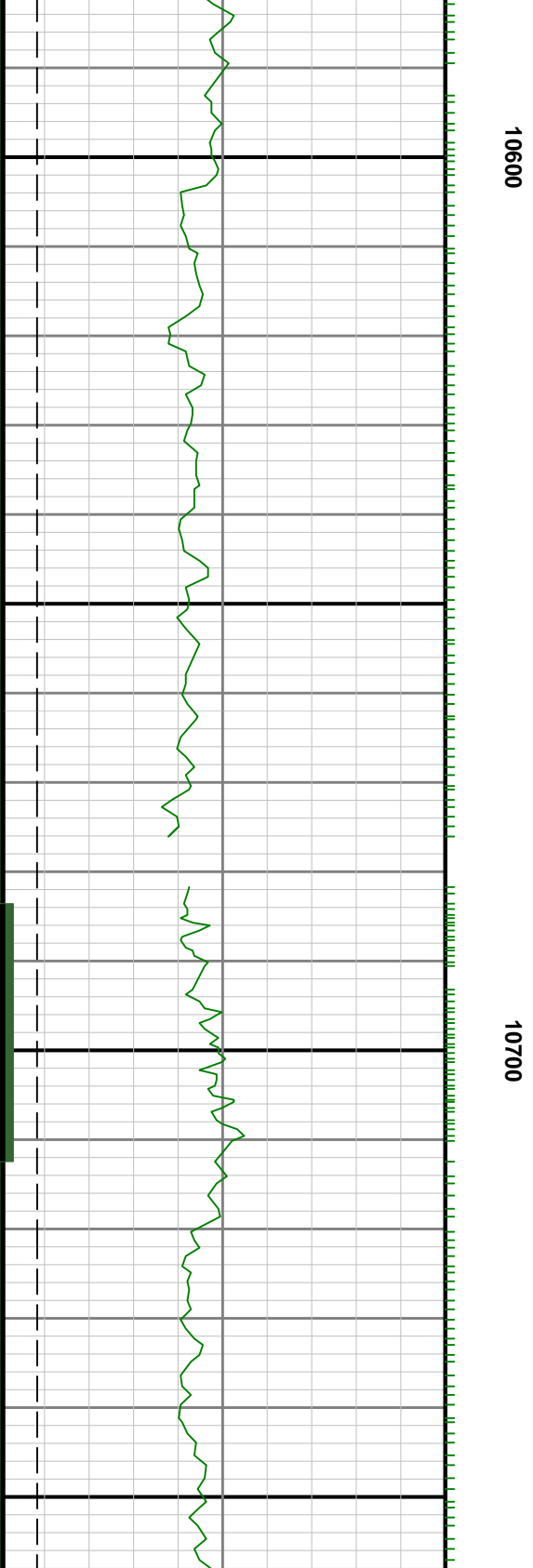
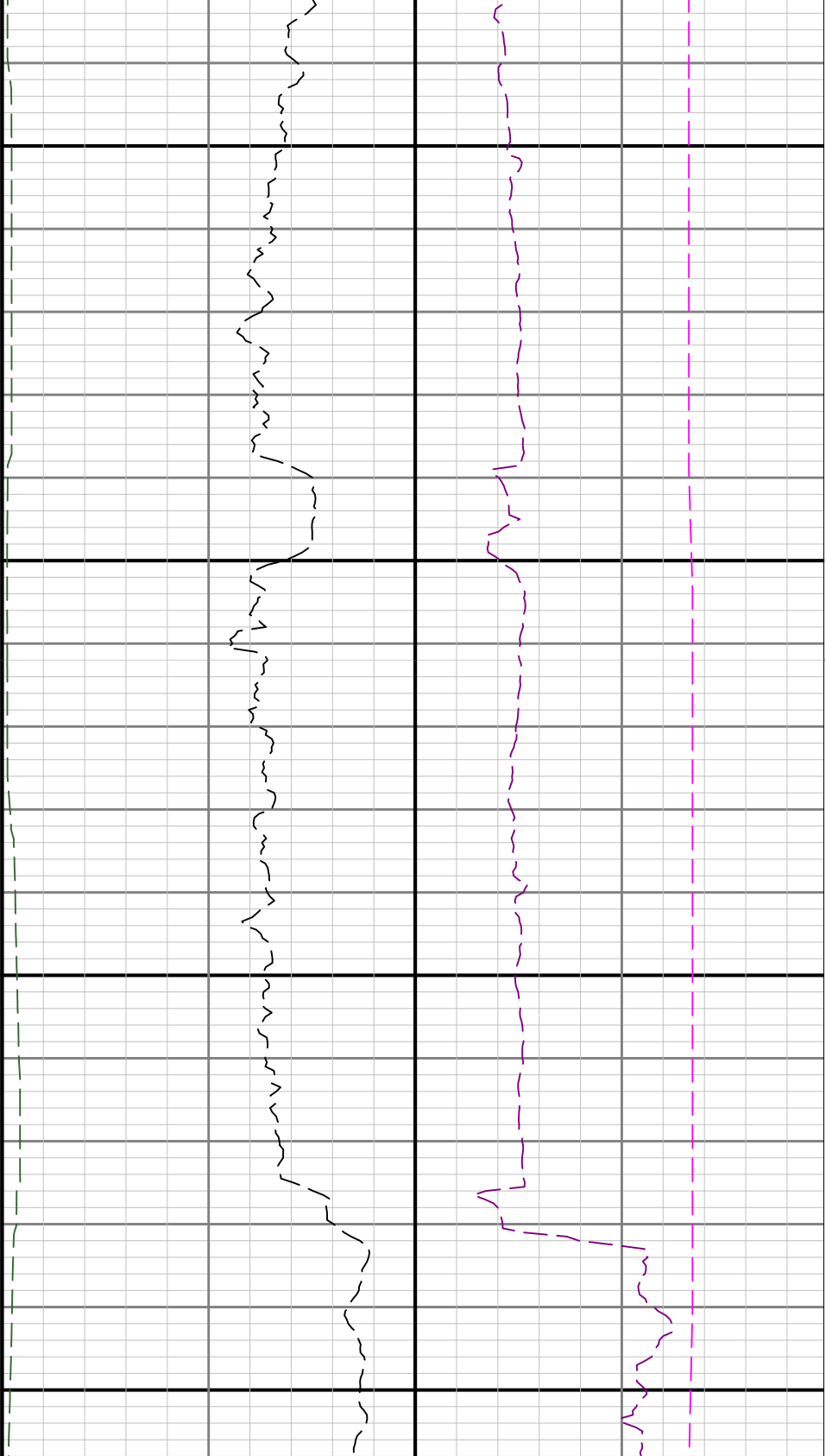
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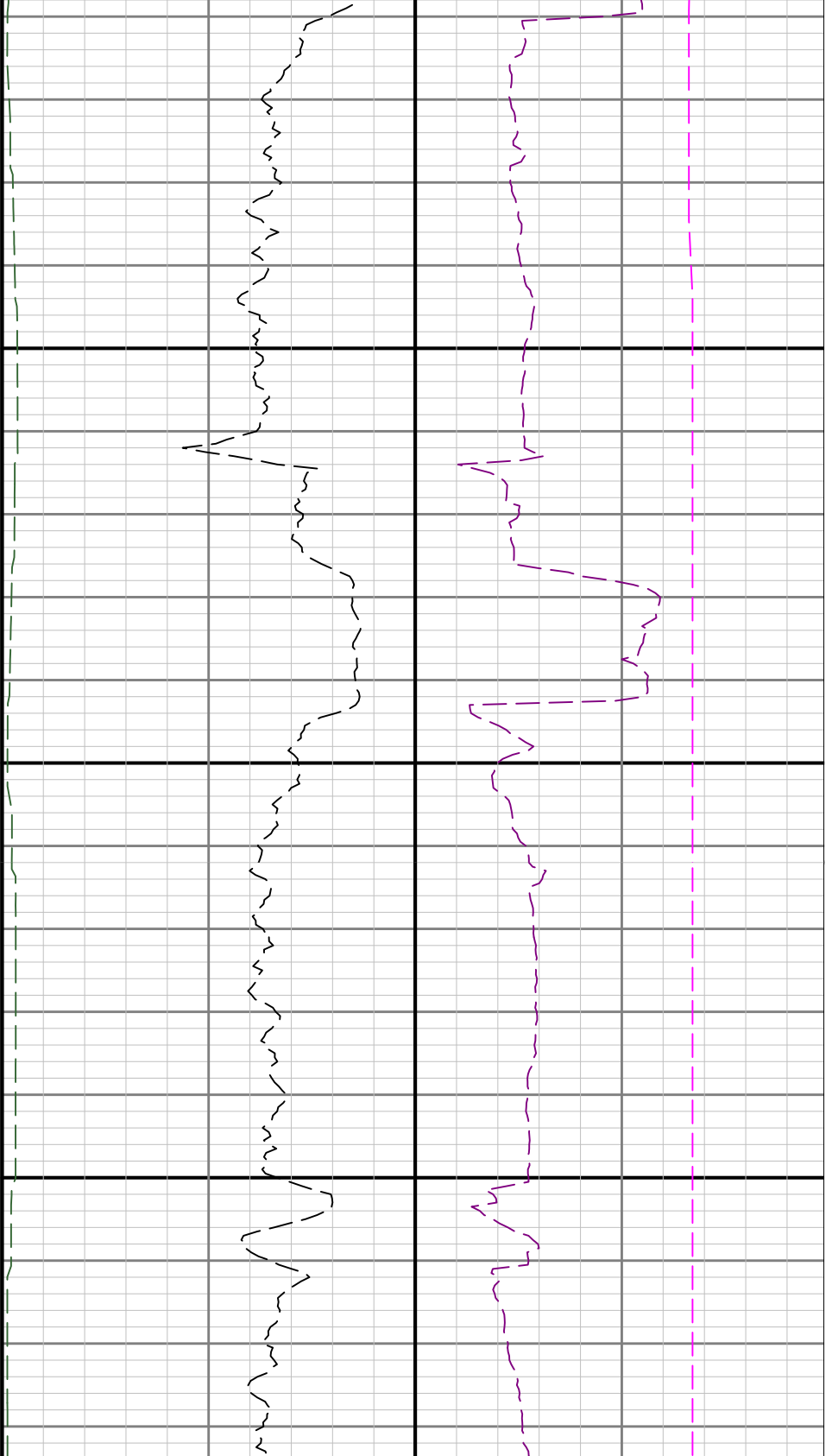
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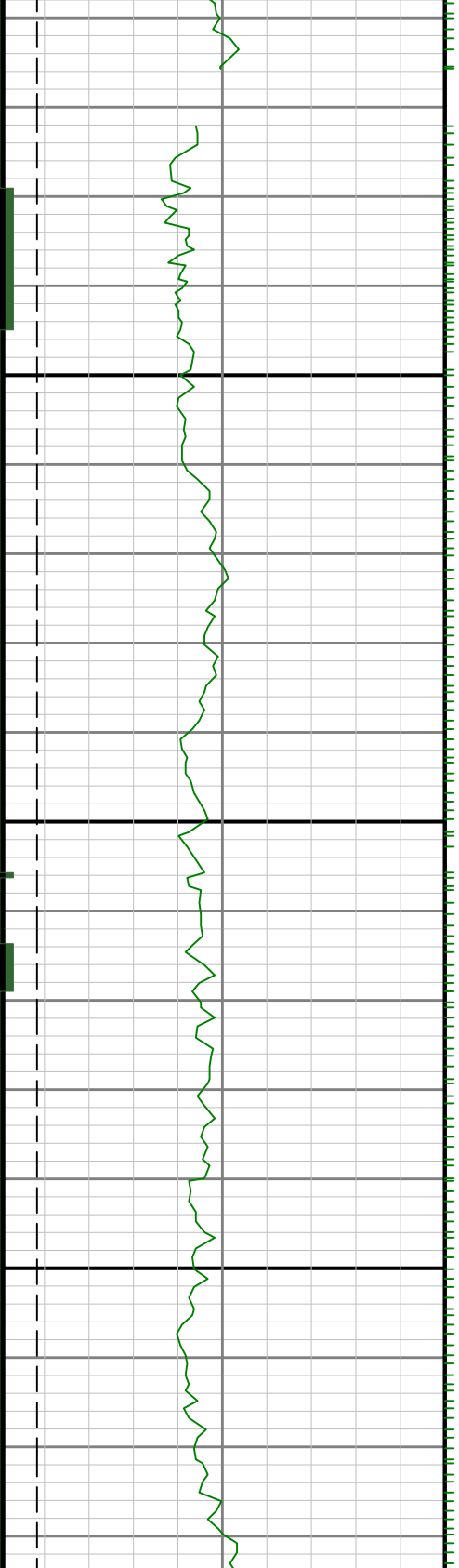


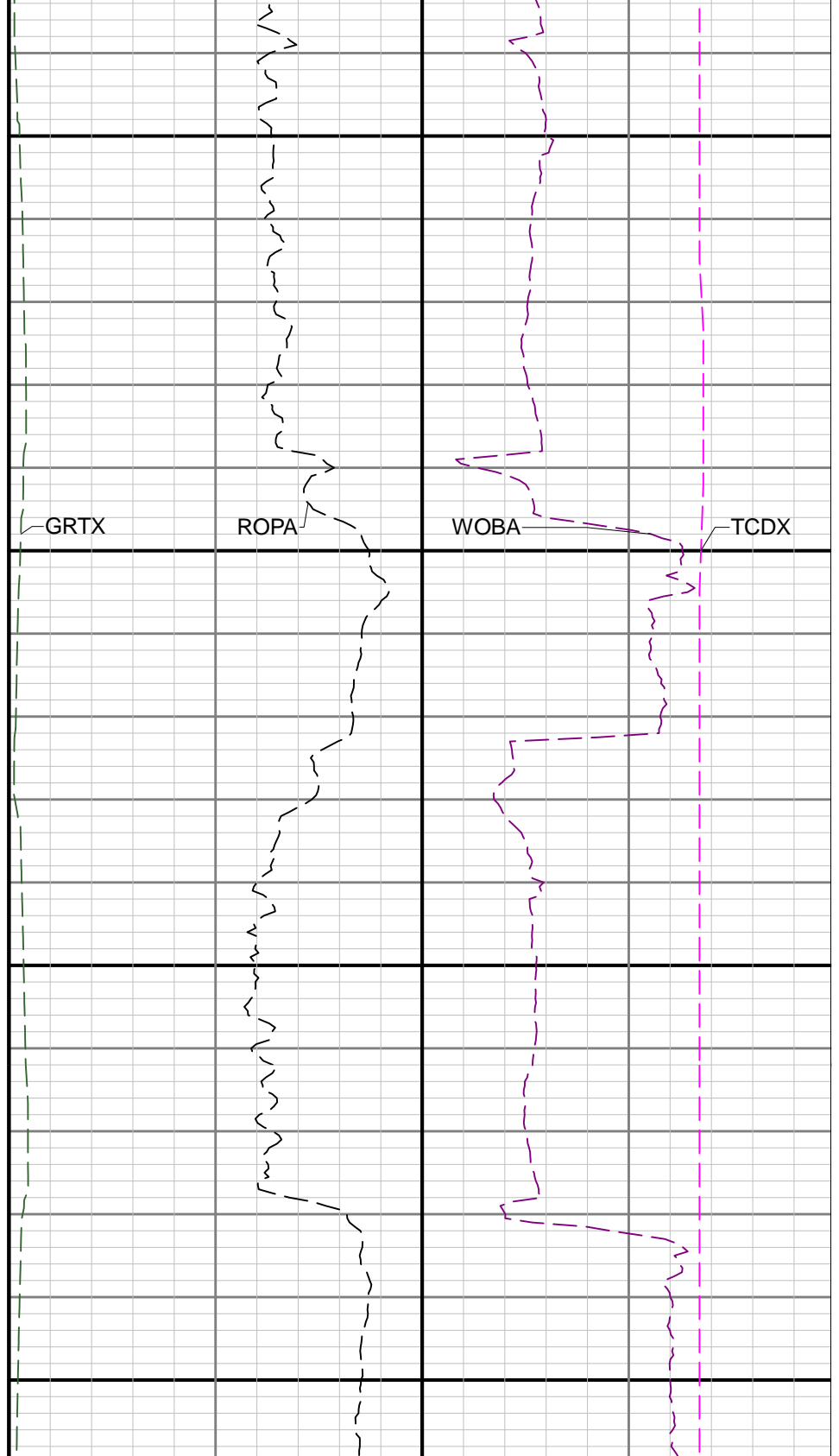
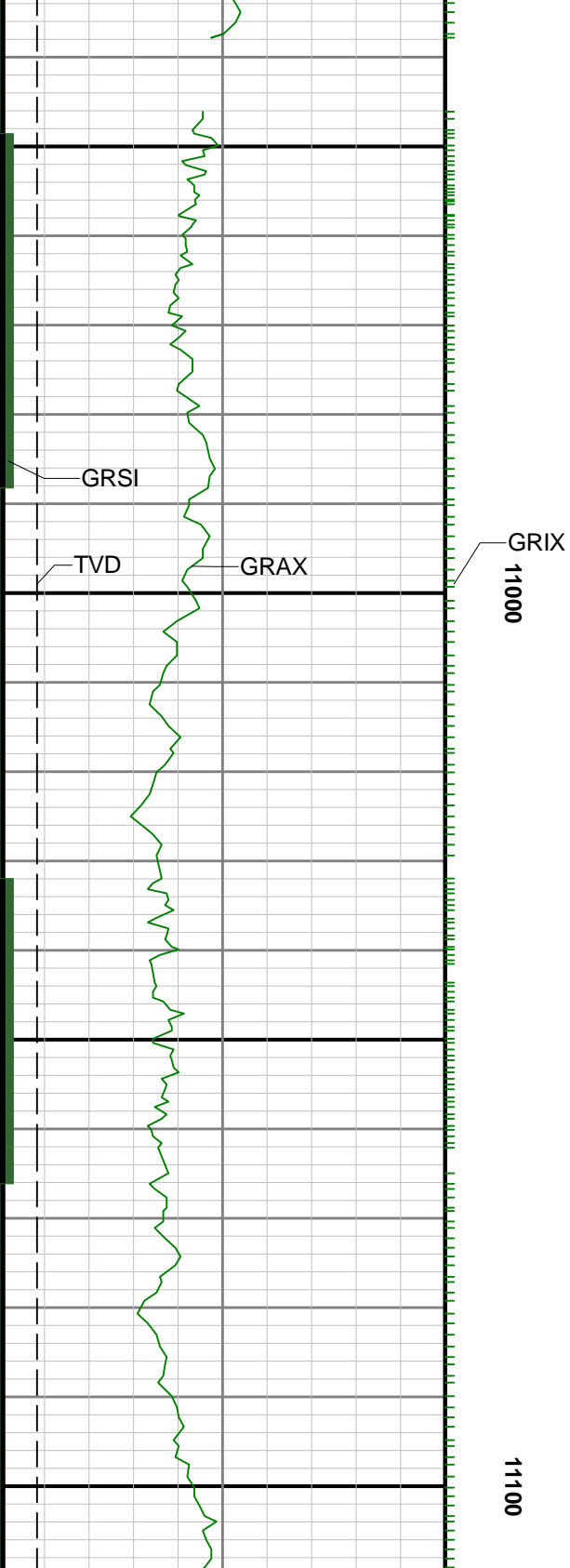


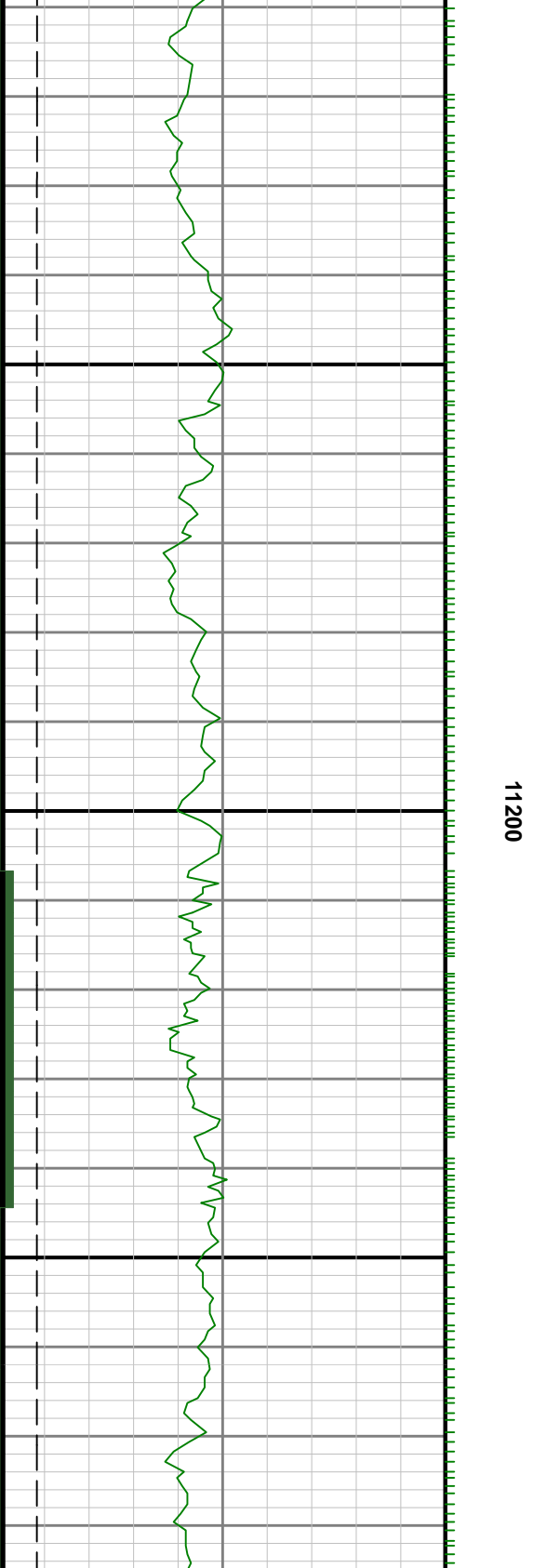
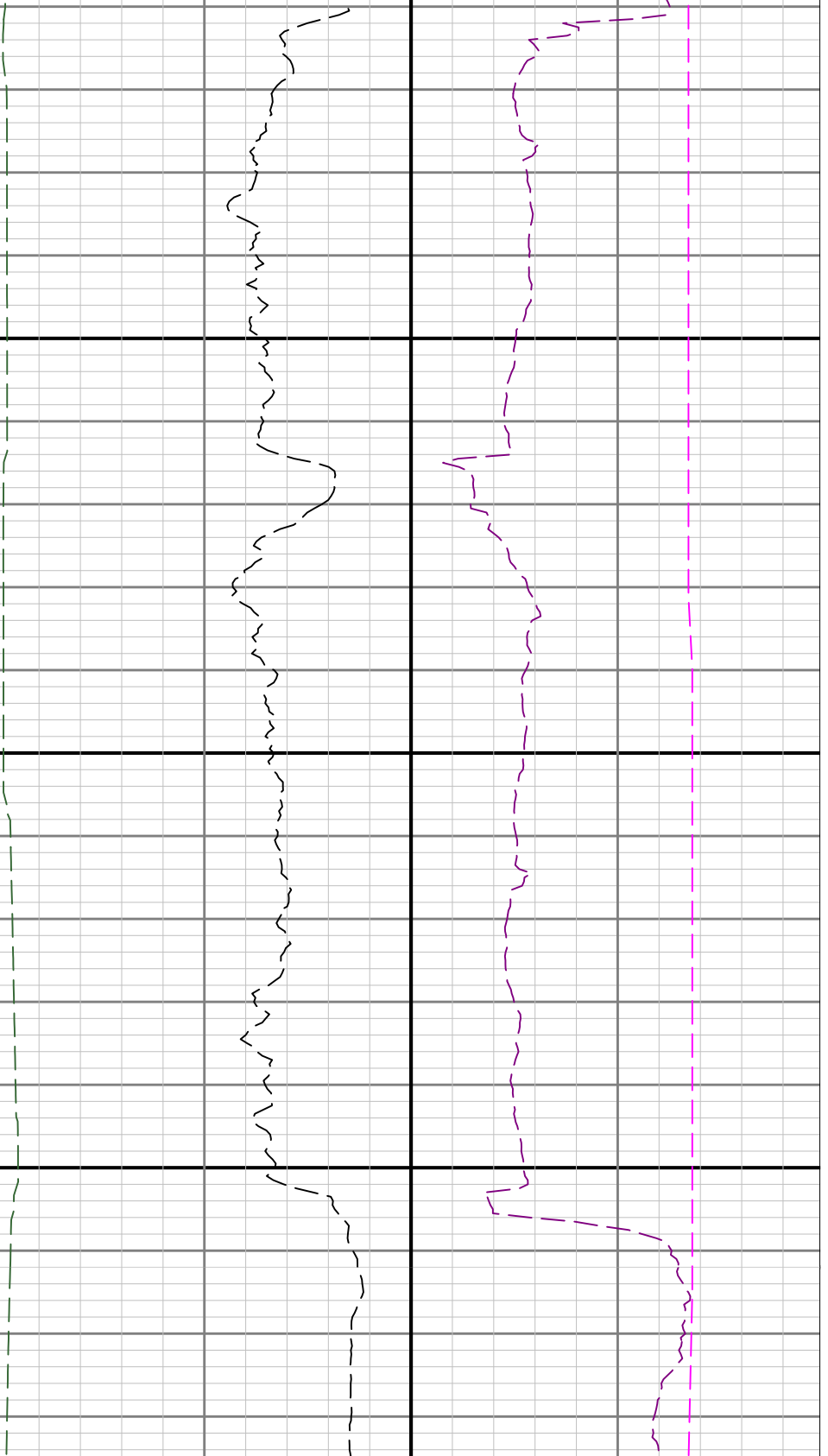


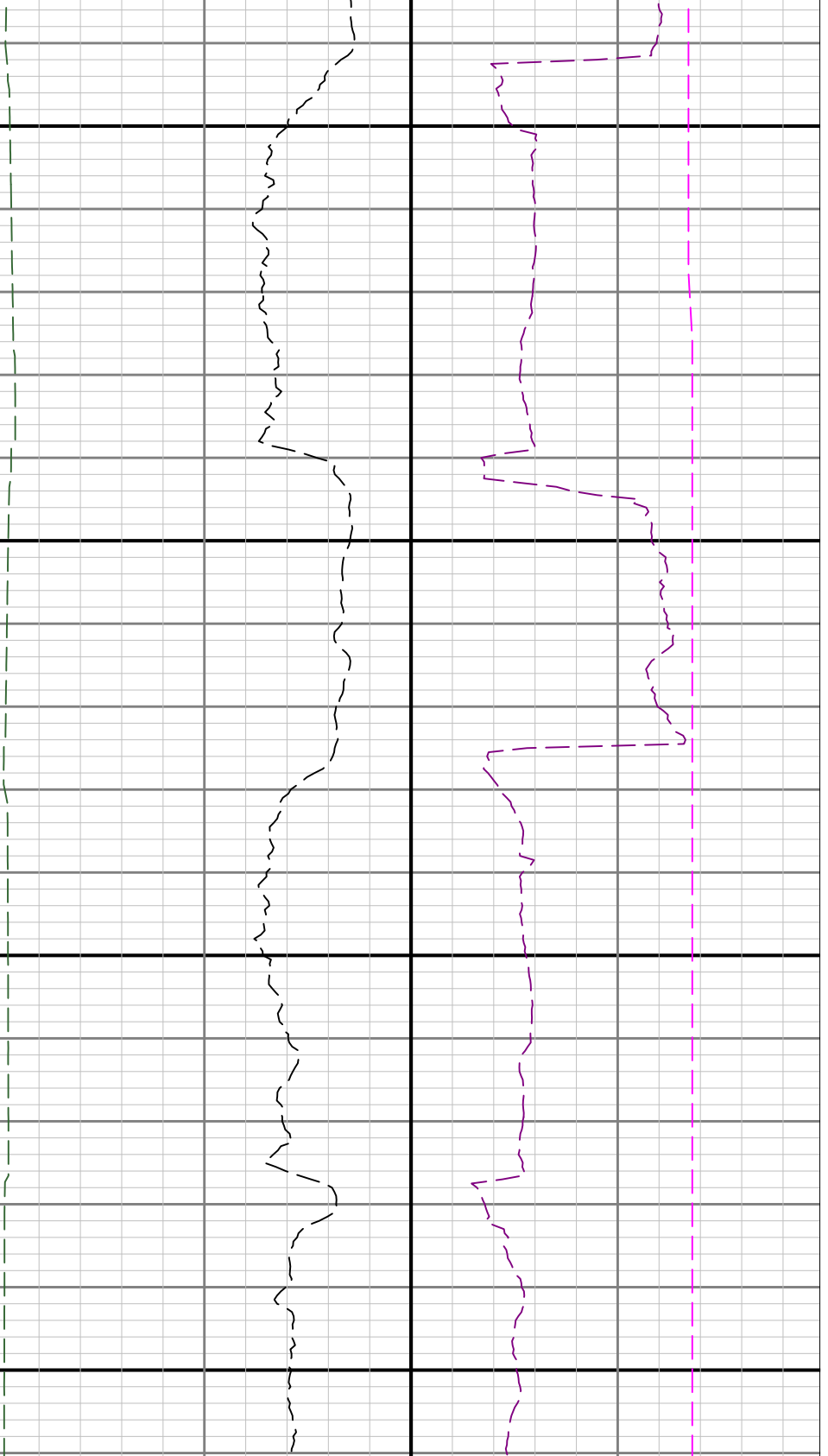
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