



Natural Formation Evaluation  
Gamma Ray

Scale:

1:240 MD

Company: Anadarko

Well: English Farms 15C-8HZ

Depth Reference:

Field: Weld County

Driller's Depth

County: Weld County State: Colorado

Status:

Final Print

Surface Location:

Latitude:

Longitude:

Other Services:

Directional & VSS

API No: 05123415050000

Job ID: 7307348

SEC: 8

TWN: 1N

RGE: 65W

Permanent Datum (P.D.): Ground Level

Elevation:

4948.00 ft

KB:

N/A

Log Measured From: Rig Floor

Above P.D.

16.00 ft

DF:

4964.00 ft

GL:

4948.00 ft

Dates

Interval Logged

Magnetic Field Reference

Date From: 2015-06-23 Top: (ft) 6810.00

Azi Reference North: True

Dip Angle: (deg)

66.57

Date To: 2015-06-25 Bottom: (ft) 13378.00

Total Magnetic Field Strength: (nT)

52678

Spud Date: 2015-06-04

Mag to Reference North Correction: (deg)

8.09 E

Borehole Record

Casing Record

Hole Size (in) From (ft) To (ft)

Size (in)

Weight (lb/ft)

From (ft)

To (ft)

13.500 16.00 1864.00

9.625

N/A

16.00

1853.00

0.000 0.00 0.00

Mud Record

Deviation Record

Type From (ft) To (ft)

Hole Size (in)

Interval (ft)

Inc | Az (Start)

Inc | Az (End)

Water Based Mud 16.00 1864.00

13.500

1848.00

0.00 | 257.38

21.20 | 18.27

Diesel-Oil Based Mud 1864.00 13378.13

7.875

11514.91

21.20 | 18.27

90.99 | 178.69

Acquisition System

Software Version

Other

Baker Hughes Cadence

1.0.6955.1

Rig: Xtreme 24

Prior Studio

1.0.7056.2

Contractor: Advance Drilling

Unit: D & E

District: RMD

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part of Baker Hughes. Unless other contract terms have been agreed to by the parties, each party's liabilities and qdnkicvkqpu"ujcnn"dg"iqxgtpgf"d{"Dcmgt"Jwi jgu"Kpeqtrqtcvgføu"Yqtnfykfg"Vgtou"cpf"Eqpfkvkqpu0\$""

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           | 13.500        | PDC      | 4.00                  | Steerable     | 41.39           | 1815.56  | 89.00              | 1863.17  | 2015-06-08 03:02 | 2015-06-08 13:43 | 8.12            |
| 2      | 2           | 4.000         | PDC      | 4.00                  | Steerable     | 1822.45         | 6227.93  | 1864.00            | 6269.48  | 2015-06-22 04:29 | 2015-06-22 19:54 | 13.34           |
| 3      | 3           | 7.875         | PDC      | 4.00                  | Steerable     | 6230.45         | 13336.58 | 6272.00            | 13378.13 | 2015-06-23 05:58 | 2015-06-25 08:06 | 45.58           |

Crew

| Name          |  | Arrive Wellsite | Depart Wellsite | Name             |  | Arrive Wellsite | Depart Wellsite | Name      |  | Arrive Wellsite | Depart Wellsite |
|---------------|--|-----------------|-----------------|------------------|--|-----------------|-----------------|-----------|--|-----------------|-----------------|
| Jason Cross   |  | 2015-06-07      | 2015-06-25      | Osagie Otoikhine |  | 2015-06-07      | 2015-06-25      | John Raia |  | 2015-06-21      | 2015-06-25      |
| Stefani Moore |  | 2015-06-21      | 2015-06-25      |                  |  |                 |                 |           |  |                 |                 |

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+ (%) |
|------------------|---------|---------------------|----------------------|---------------|----------------|-----|------------------|-------------|-------------|-----------------------|--------|
| 2015-06-21 18:27 | 1       | 1864.00             | Diesel-Oil Based Mud | 9.2           | 57             | N/A | 0.0              | 70.3/29.7   | Active Pits | 55000                 | 0.00   |
| 2015-06-22 22:21 | 2       | 6269.48             | Diesel-Oil Based Mud | 9.4           | 80             | N/A | 0.0              | 68.9/33.1   | Flowline    | 58000                 | 0.00   |
| 2015-06-23 00:04 | 2       | 7784.00             | Diesel-Oil Based Mud | 9.6           | 75             | N/A | 0.0              | 69.5/30.5   | Active Pits | 58000                 | 0.00   |
| 2015-06-24 00:05 | 3       | 11147.00            | Diesel-Oil Based Mud | 9.4           | 52             | N/A | 0.0              | 70.2/29.8   | Active Pits | 62500                 | 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 | 12235767      | Gamma (single)    | 11.51              | 47.61           | 6.750         | 3.375         |
| 1       | NaviGamma | 12235767      | VSS               | 14.89              | 50.99           | 6.750         | 3.375         |
| 1       | NaviGamma | 12235767      | Directional (mag) | 14.89              | 50.99           | 6.750         | 3.375         |
| 2       | NaviGamma | 11753275      | Gamma (single)    | 10.60              | 41.55           | 6.500         | 2.938         |
| 2       | NaviGamma | 11753275      | VSS               | 13.94              | 44.89           | 6.500         | 2.938         |
| 2       | NaviGamma | 11753275      | Directional (mag) | 13.94              | 44.89           | 6.500         | 2.938         |
| 3       | NaviGamma | 12738921      | Gamma (single)    | 10.59              | 41.55           | 6.750         | 2.063         |
| 3       | NaviGamma | 12738921      | Directional (mag) | 13.93              | 44.89           | 6.750         | 2.063         |
| 3       | NaviGamma | 12738921      | VSS               | 13.93              | 44.89           | 6.750         | 2.063         |

Comments


- 1 Baker Hughes Run 1 utilized a 6 1/2 inch NaviGamma ( Directional and Gamma Ray ) tool behind a 13.5 inch bit and steerable assembly from 0 feet to 18646 feet MD.
- 2 Baker Hughes Runs 2 & 3 utilized a 6 3/4 inch Navigamma ( Directional and Gamma Ray ) tool behind a 7 7/8 bit and steerable assembly from 6268 feet to 13375 feet MD
- 3 A sliding indicator is shown on the left side of track 1 as a heavy line. This indicator has been depth-shifted to the Gamma Ray sensor offset to correspond with Gamma Ray acquired while sliding.

Remarks

| Number | Measured<br>Depth<br>(ft) | Hole<br>Section<br>(in) | Run<br>No. | Remark  |
|--------|---------------------------|-------------------------|------------|---|
| 1      | 13375.83                  | 7.875                   | 3          | The interval from 13330 feet MD to 13375 feet MD was not logged due to bit sensor offset at TD. |

Curve Mnemonics

| Presented Curves | Description                         | Units    |
|------------------|-------------------------------------|----------|
| ROPA             | Depth Averaged ROP 3 ft Average     | ft/h     |
| GRAX             | Gamma Ray - Apparent 0.5 ft Average | API      |
| GRIX             | Gamma Ray - Data Point Indicator    | unitless |
| GRTX             | Gamma Time Since Drilled            | min      |
| GRSI             | Sliding Indicator Flag              | unitless |
| TCDX             | Downhole Temperature                | degF     |
| TVD              | True Vertical Depth                 | ft       |
| WOBA             | Weight On Bit, Average 1 ft Average | klb      |



Company

Well

Interval

Created

Anadarko

English Farms 15C-8HZ

Date From:2015-06-23 08:46

Date To:2015-06-25 08:05

2015-06-25 11:11

Top:6810.00

Bottom:13378.00

Gamma Ray Apparent 0.5 ft Average GRAX

0150

API

True Vertical Depth TVD

80006400

ft

MD 1 :240 feet

680

Rate of Penetration 3 ft Average ROPA

10000

ft/h

Gamma Ray Time Since Drilled GRTX

0600

min

Surface Weight On Bit 1 ft Average WOBA

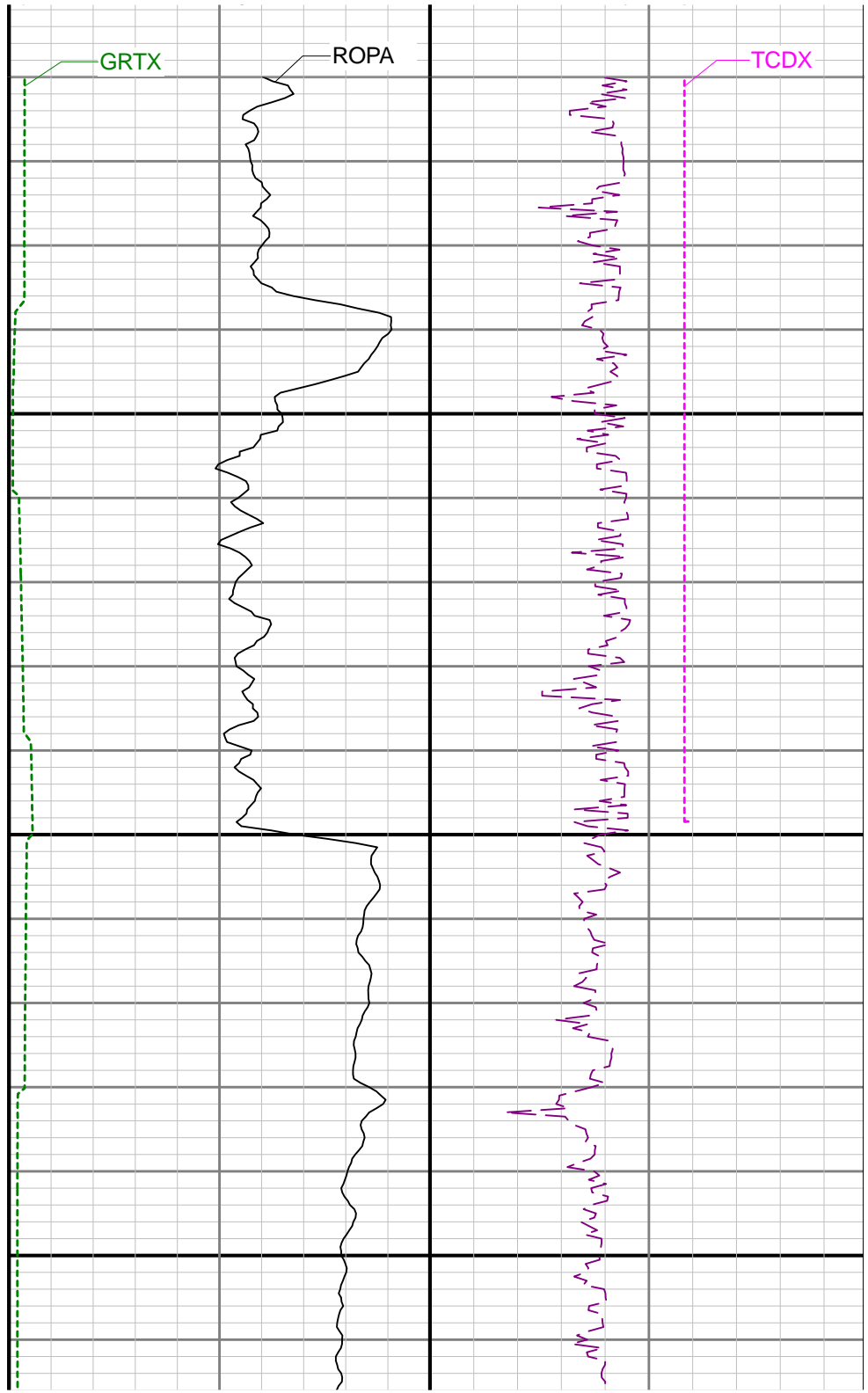
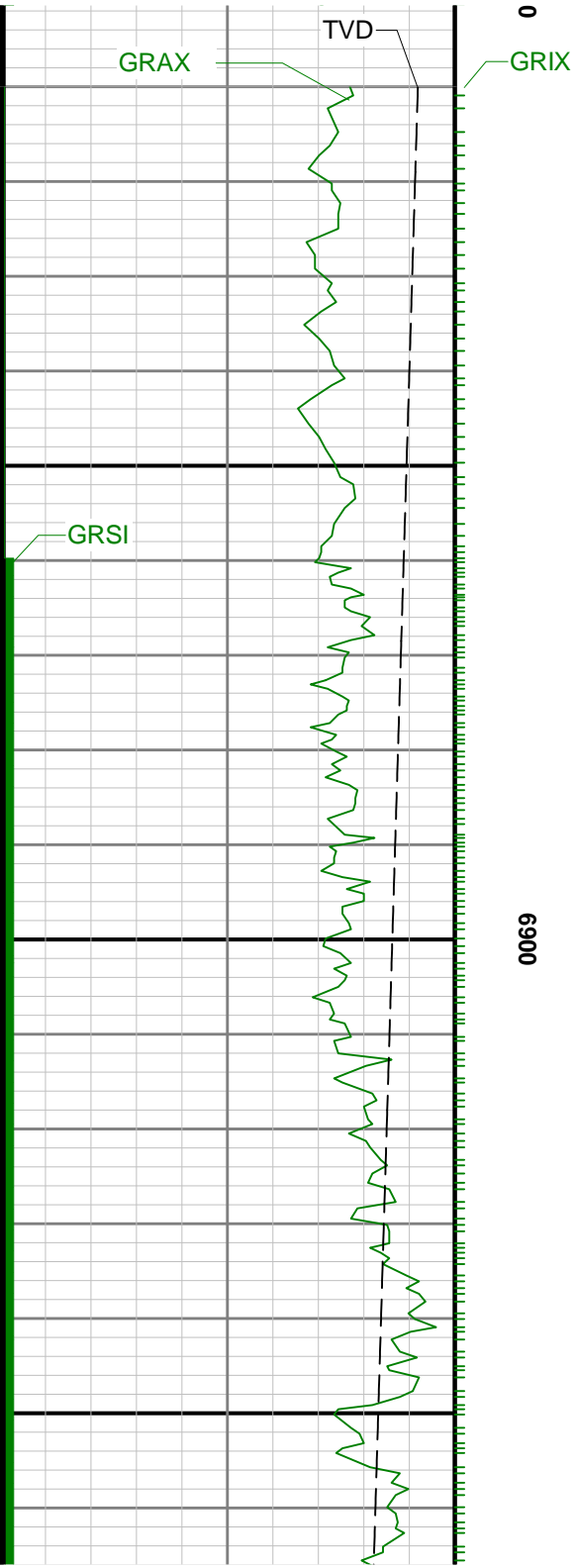
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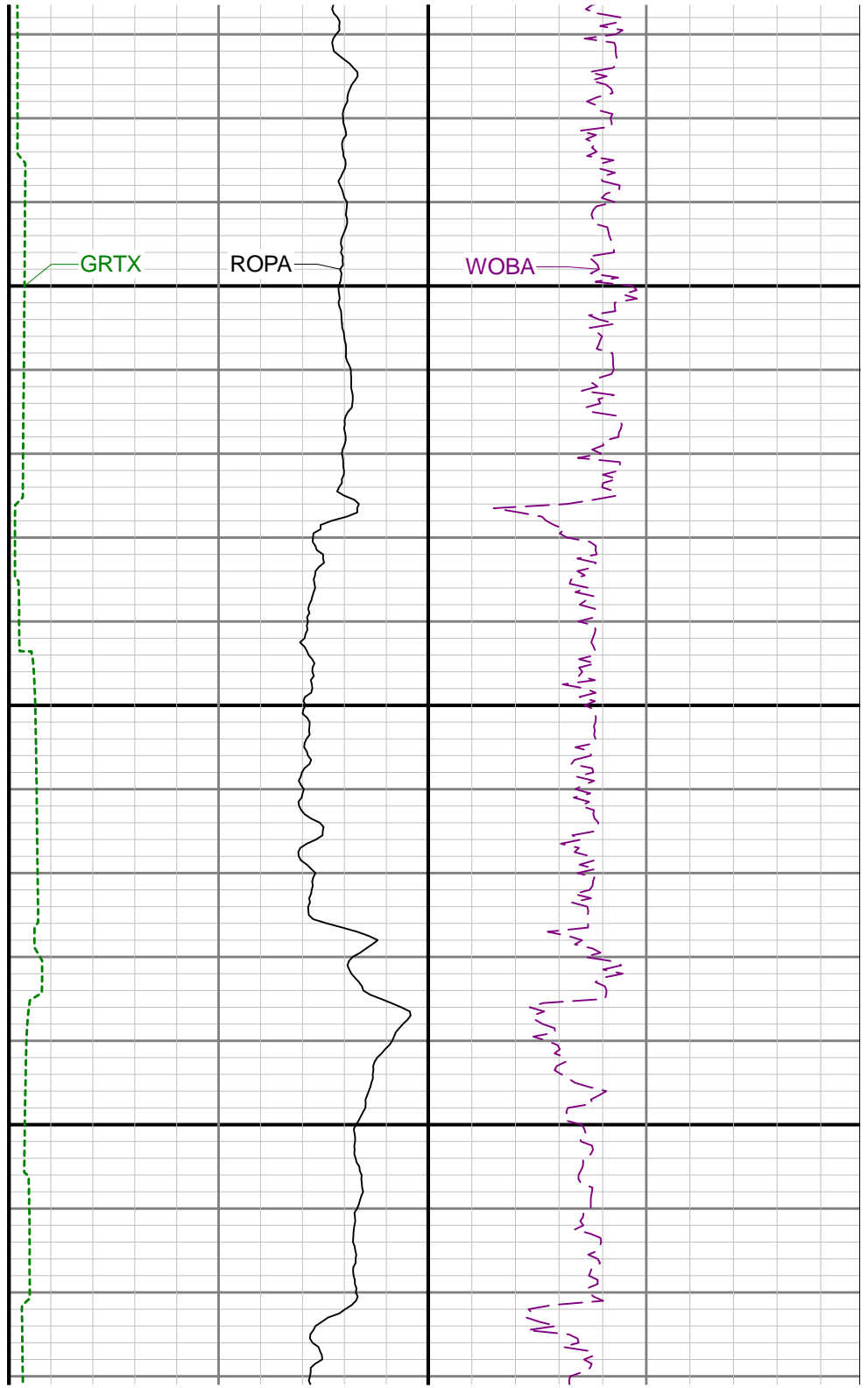
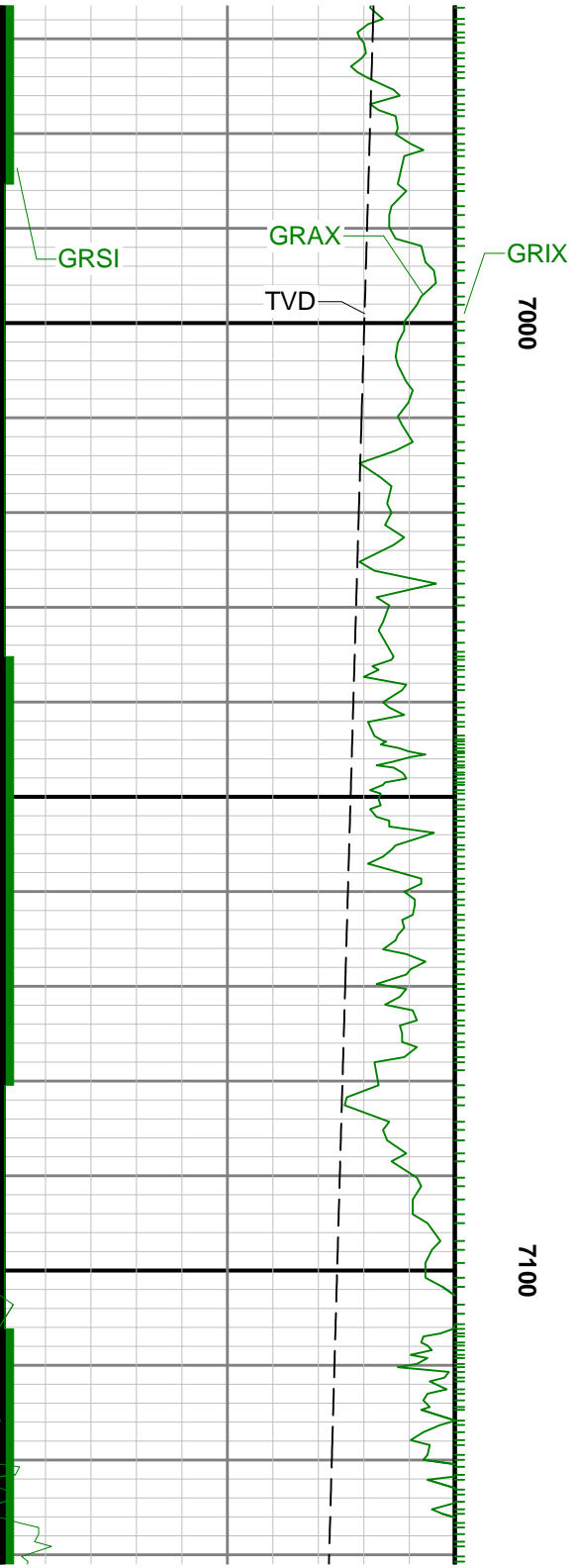
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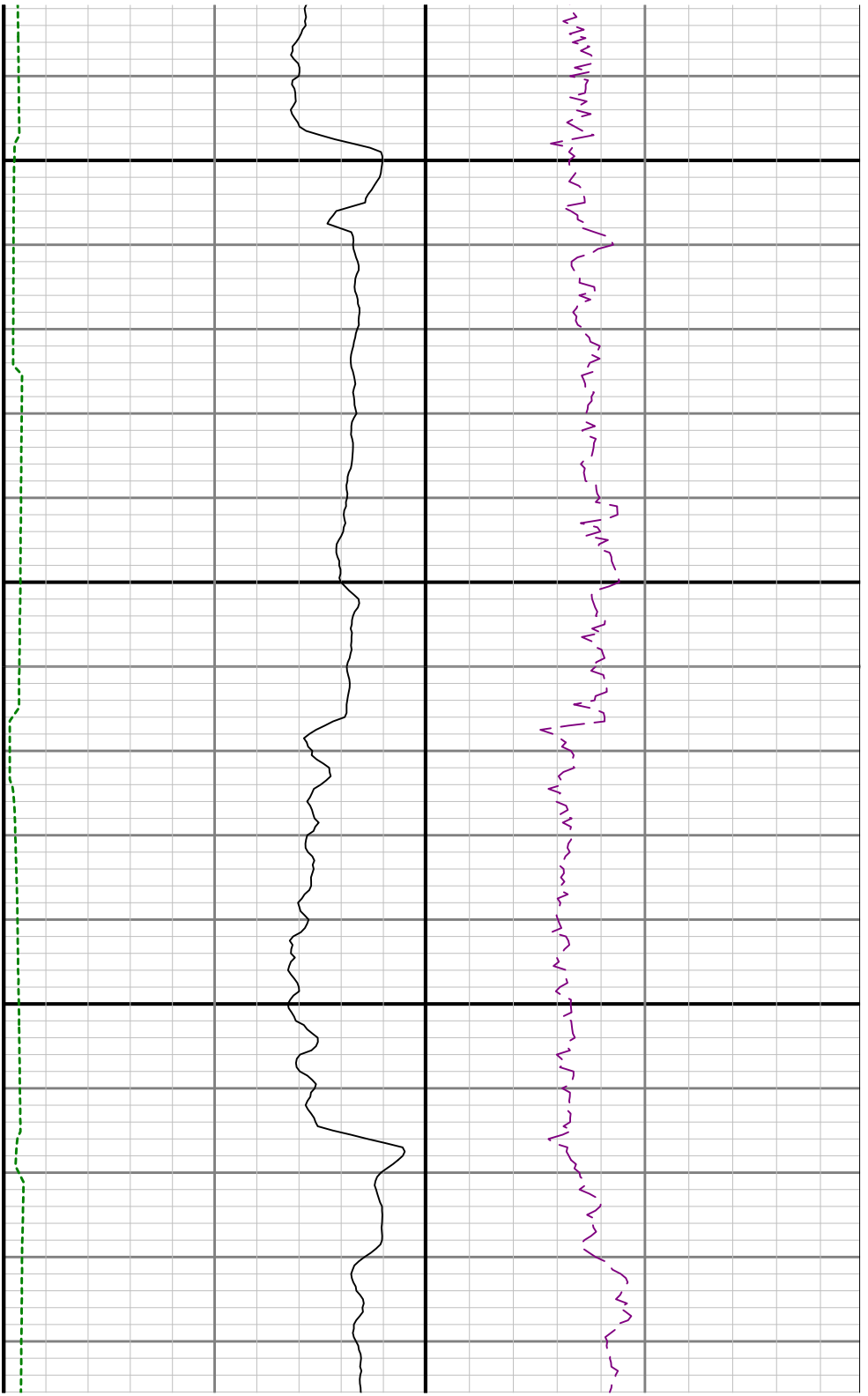
Downhole Temperature TCDX

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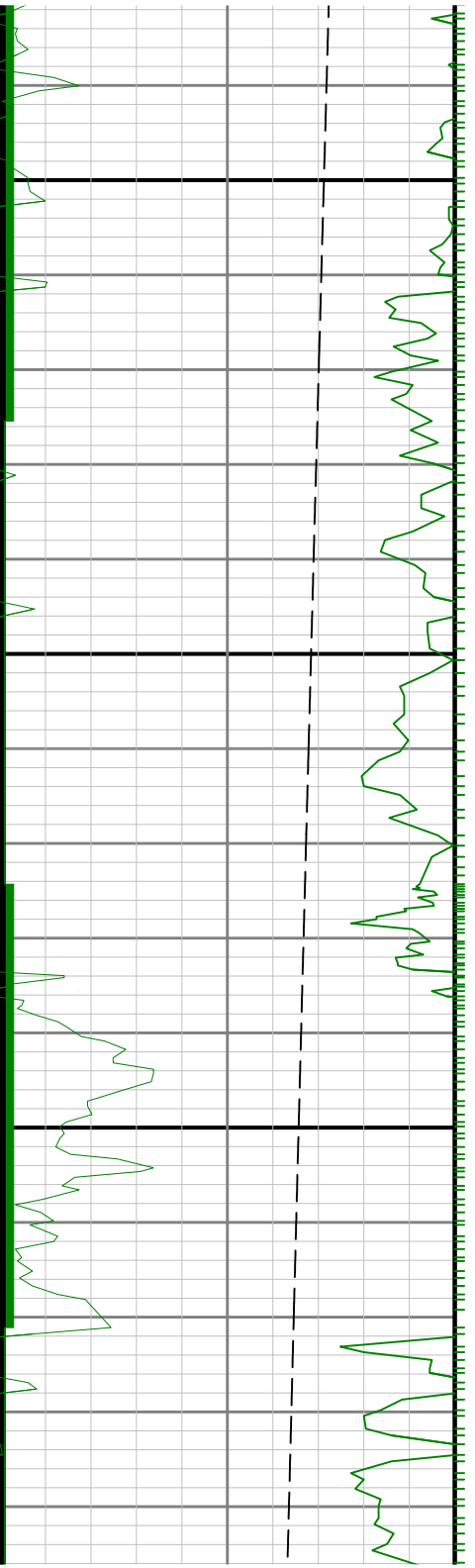
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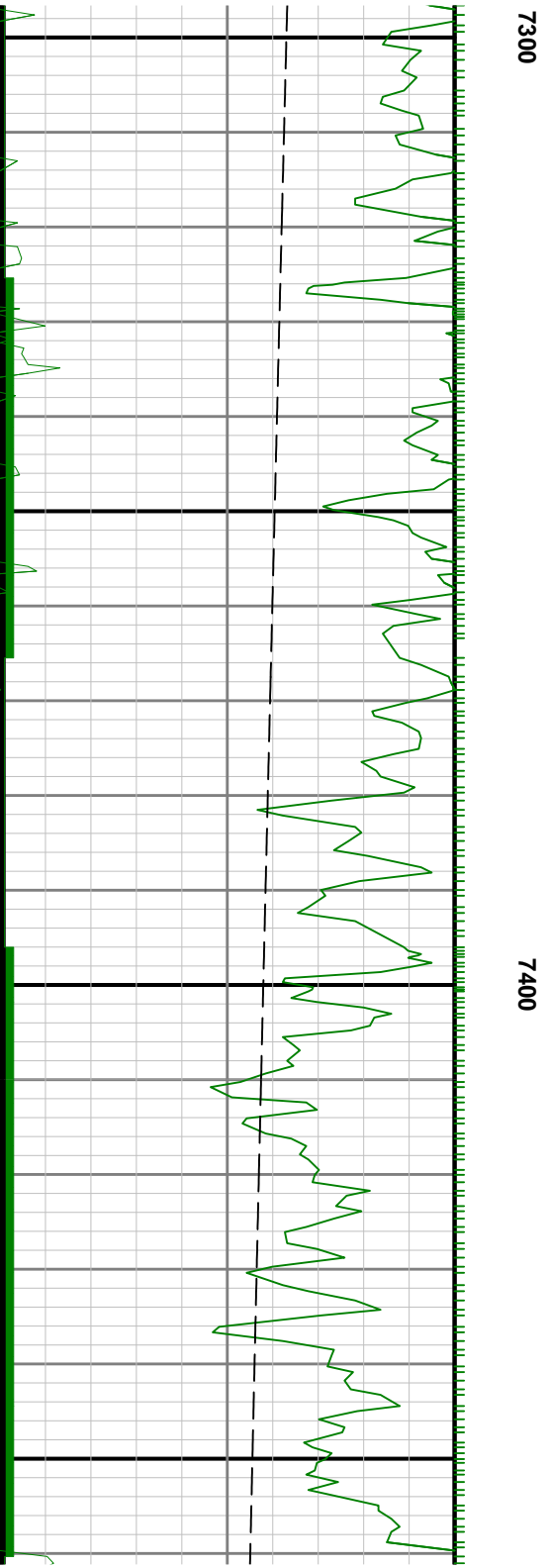






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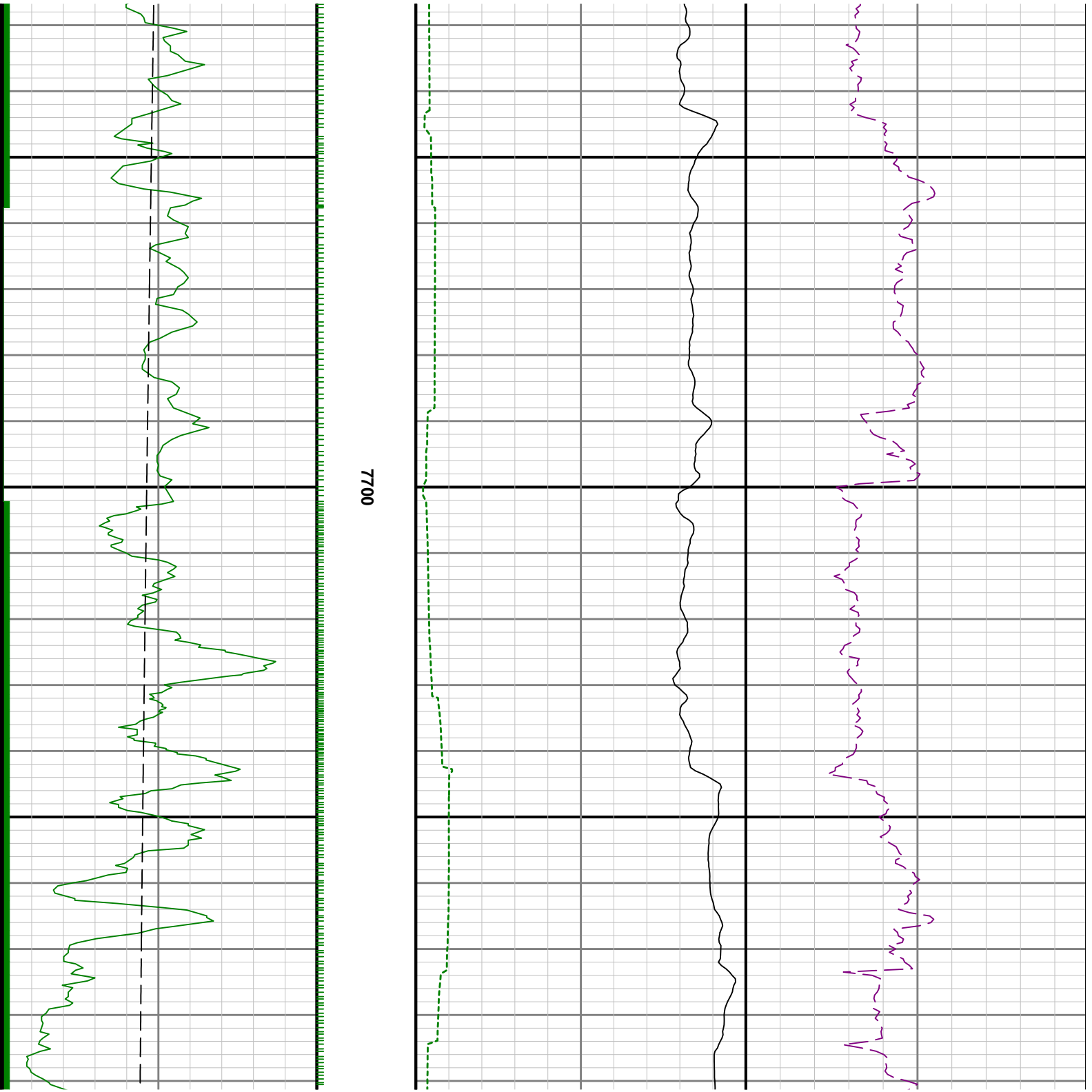


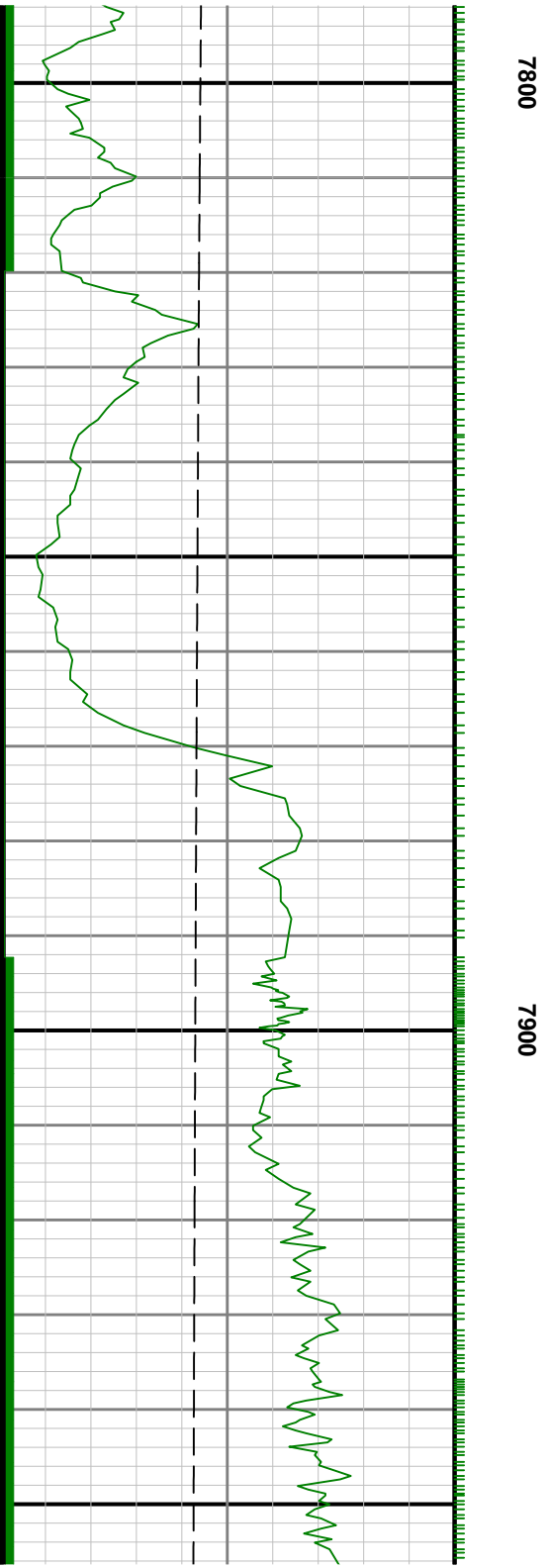
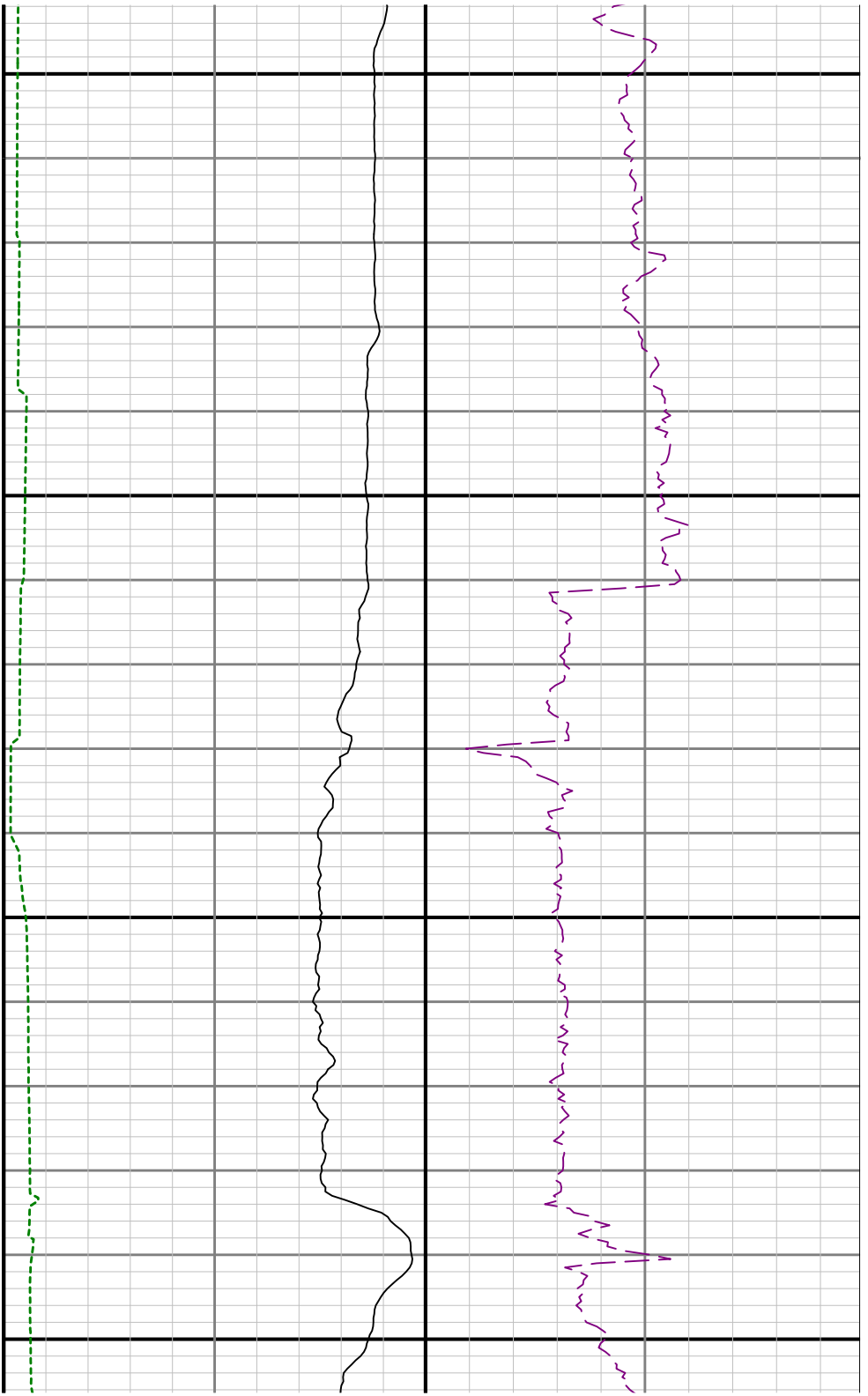
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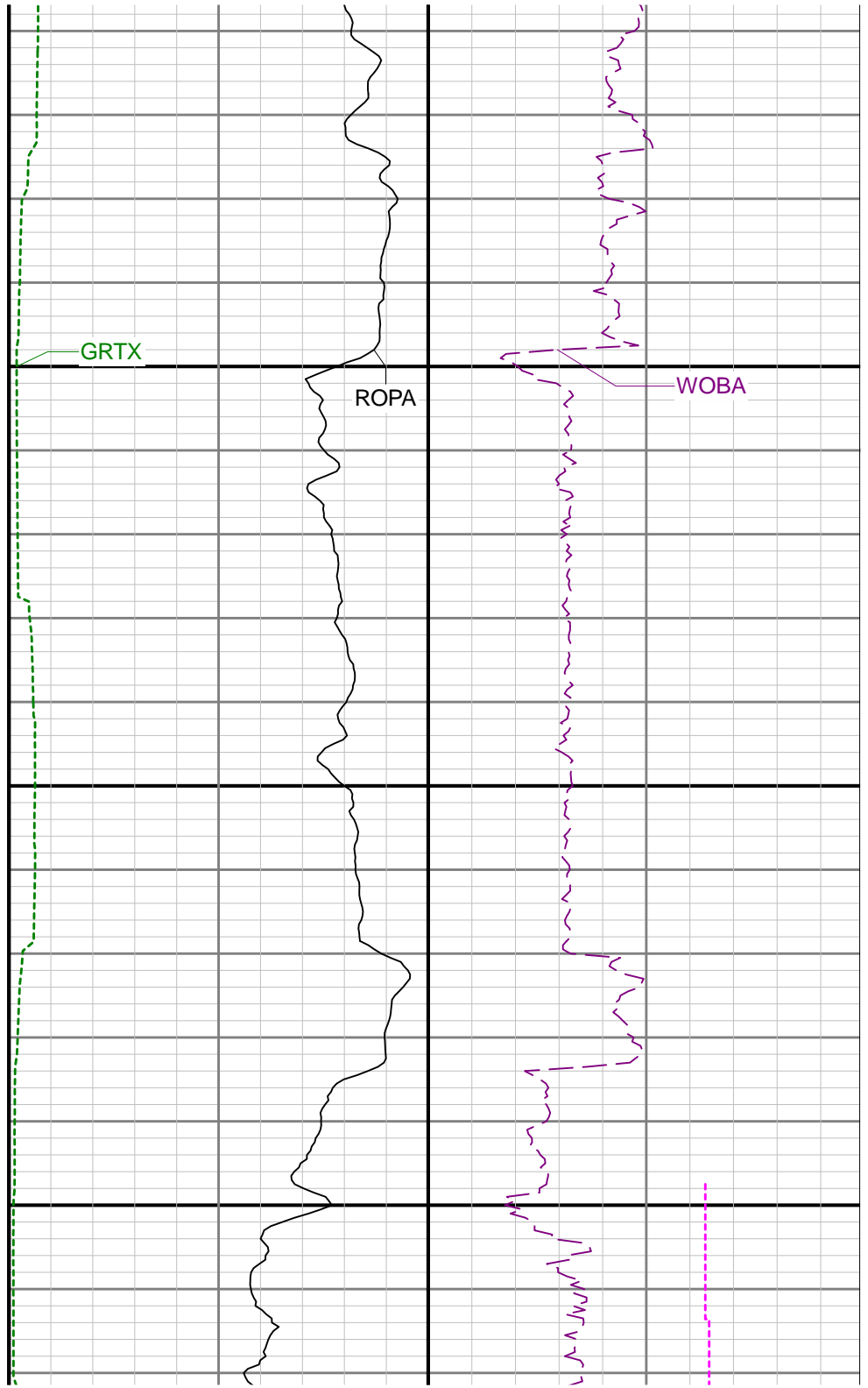
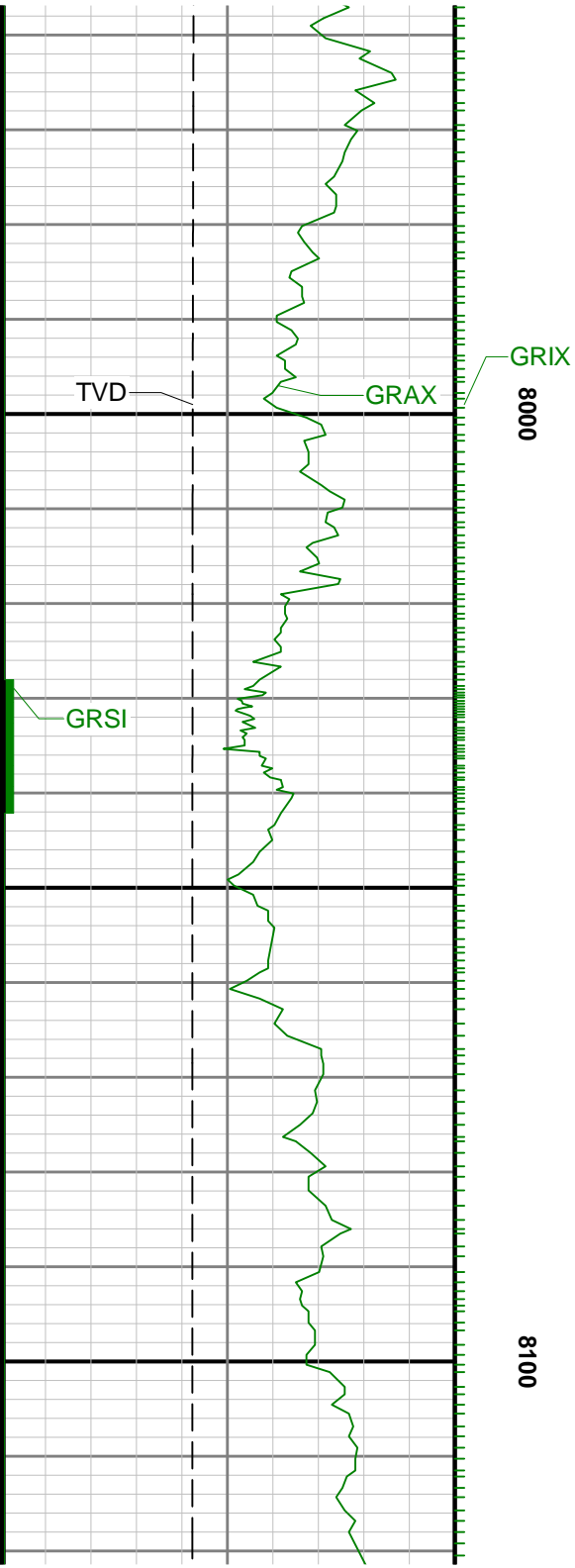
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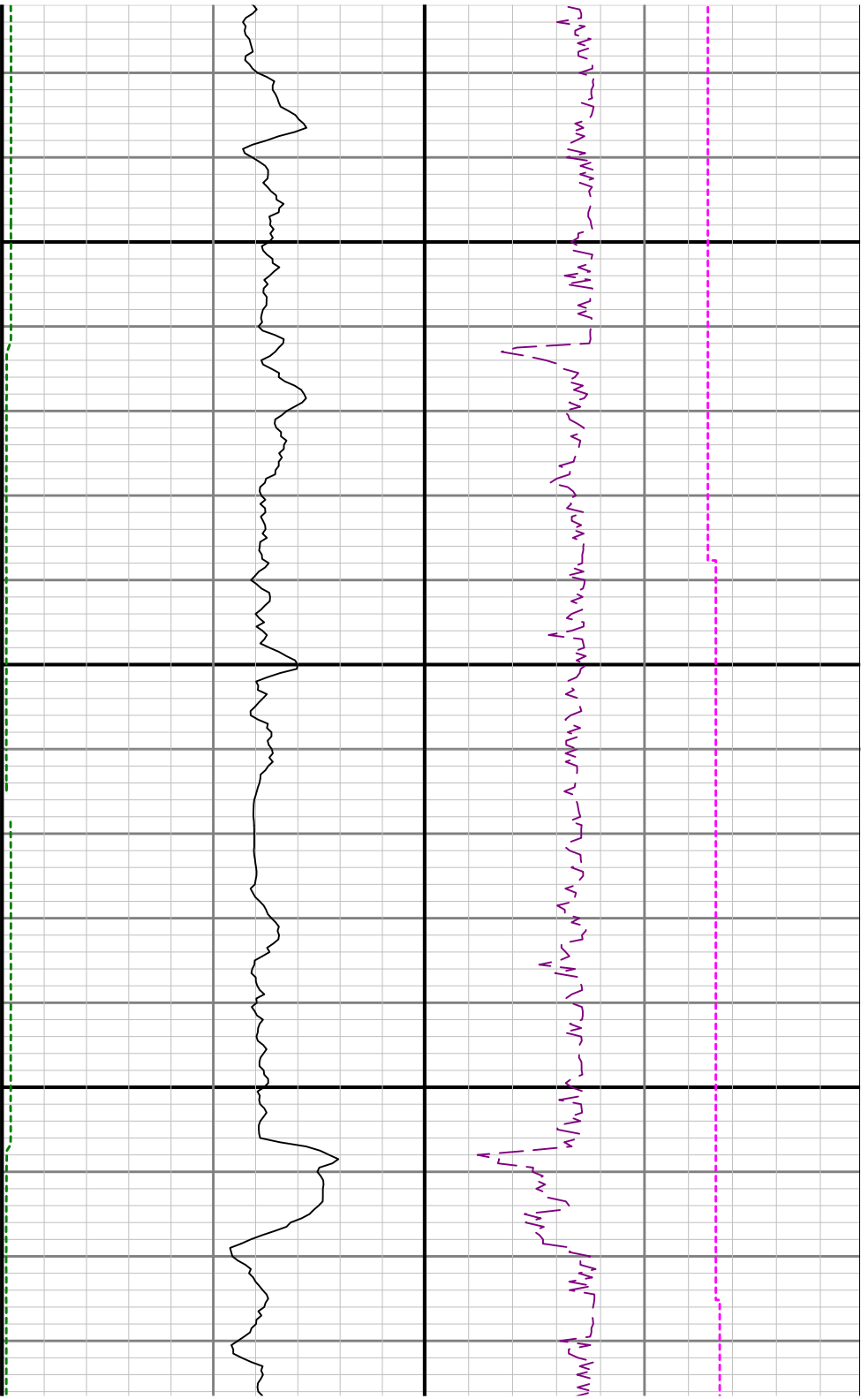




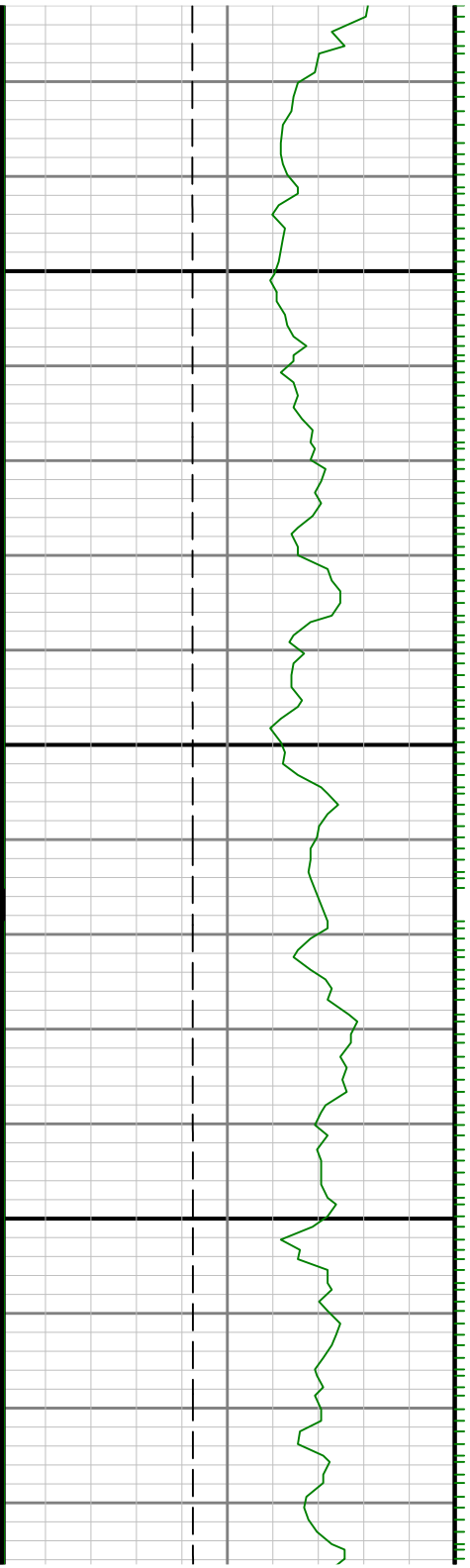


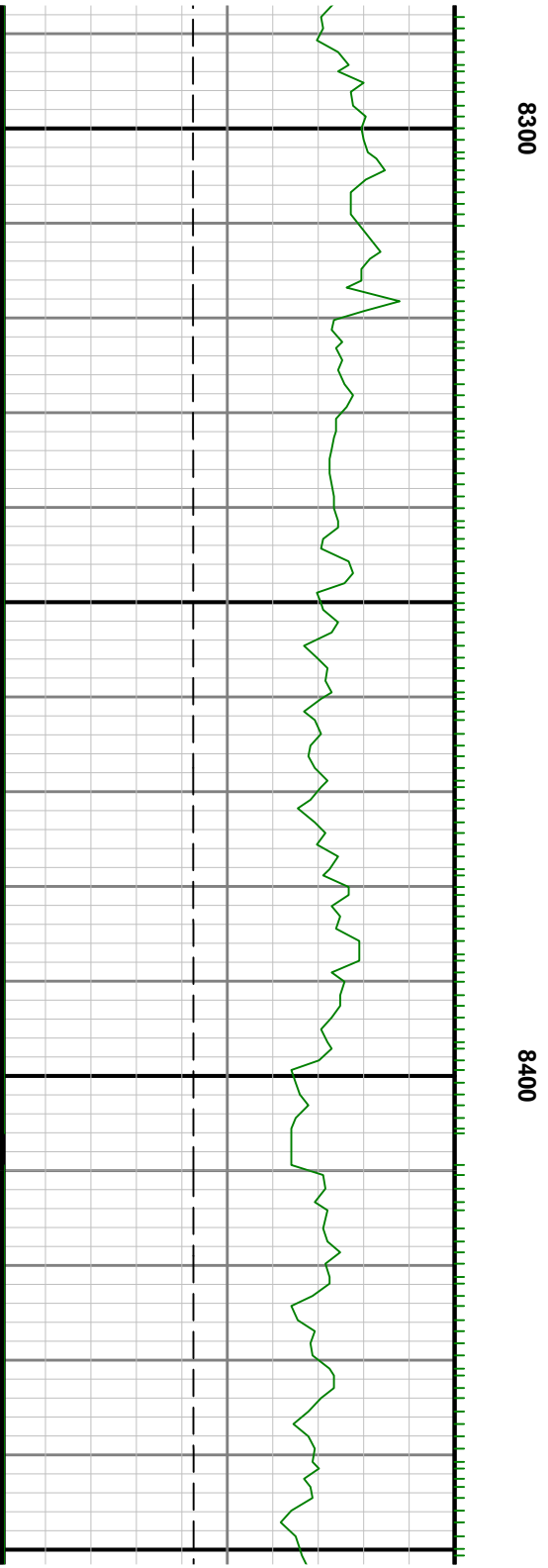
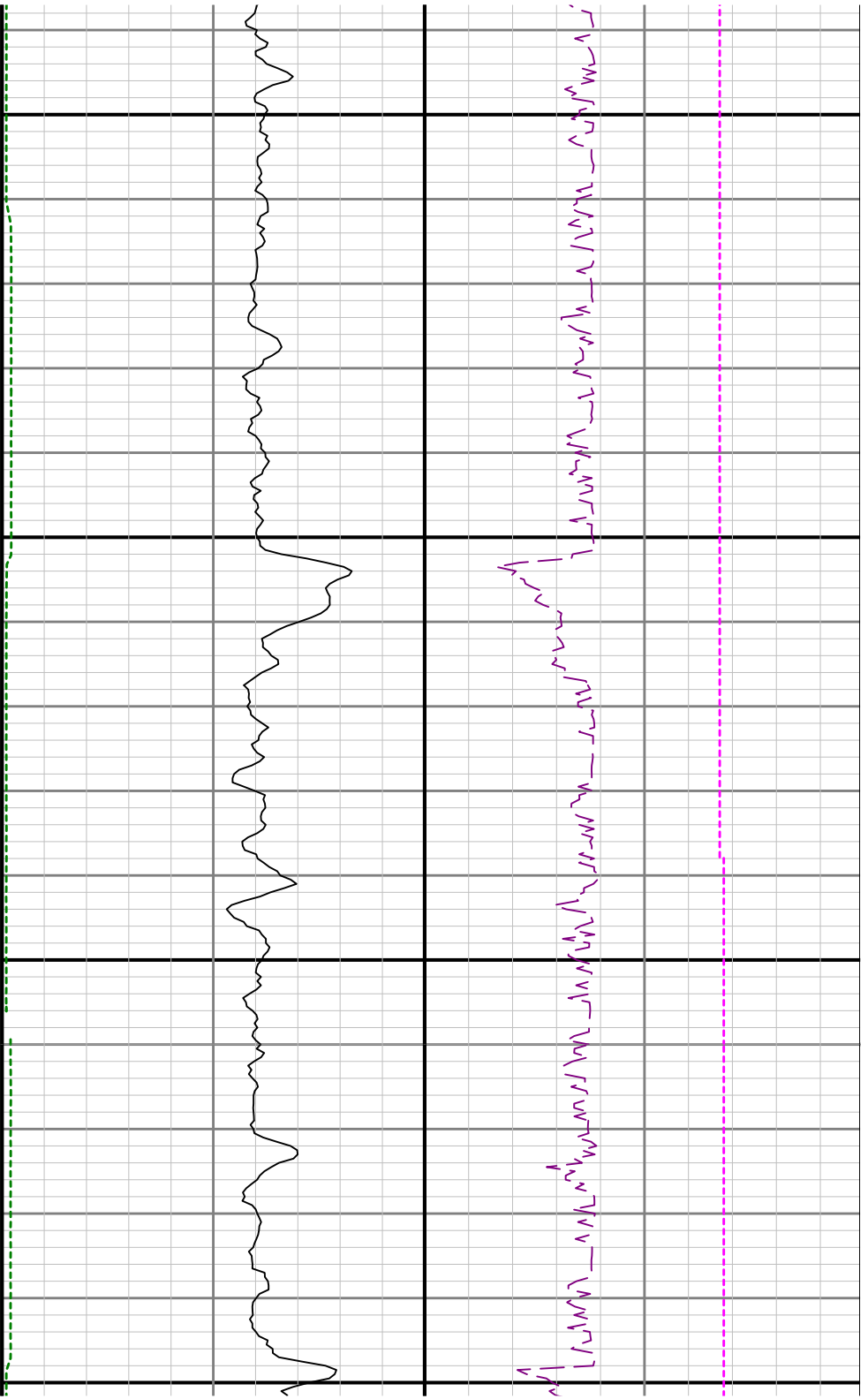


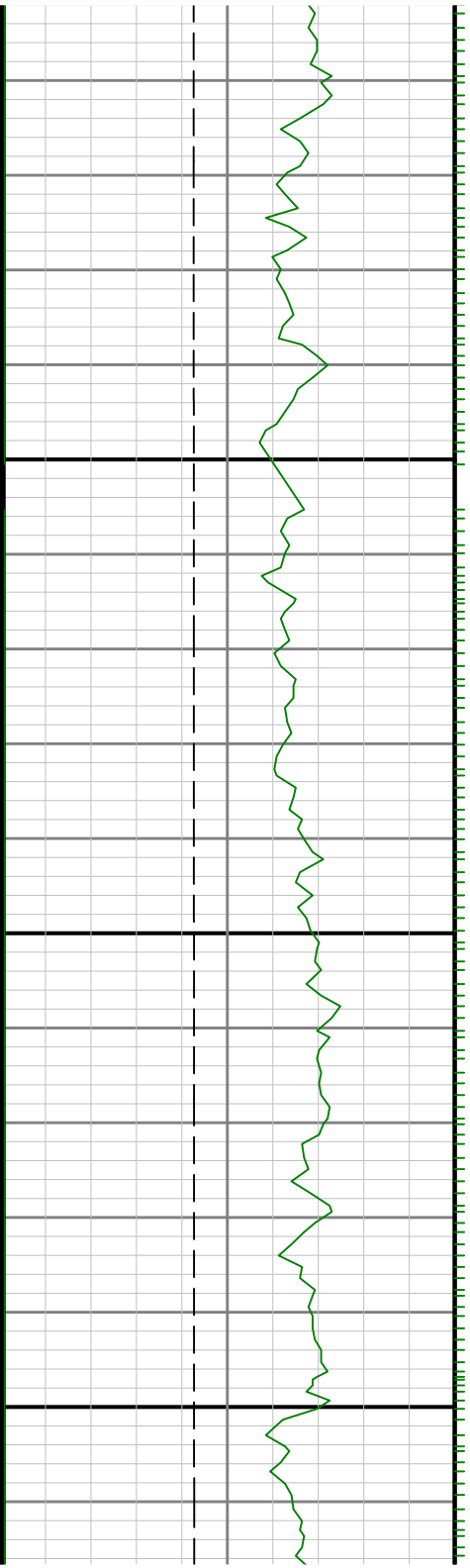




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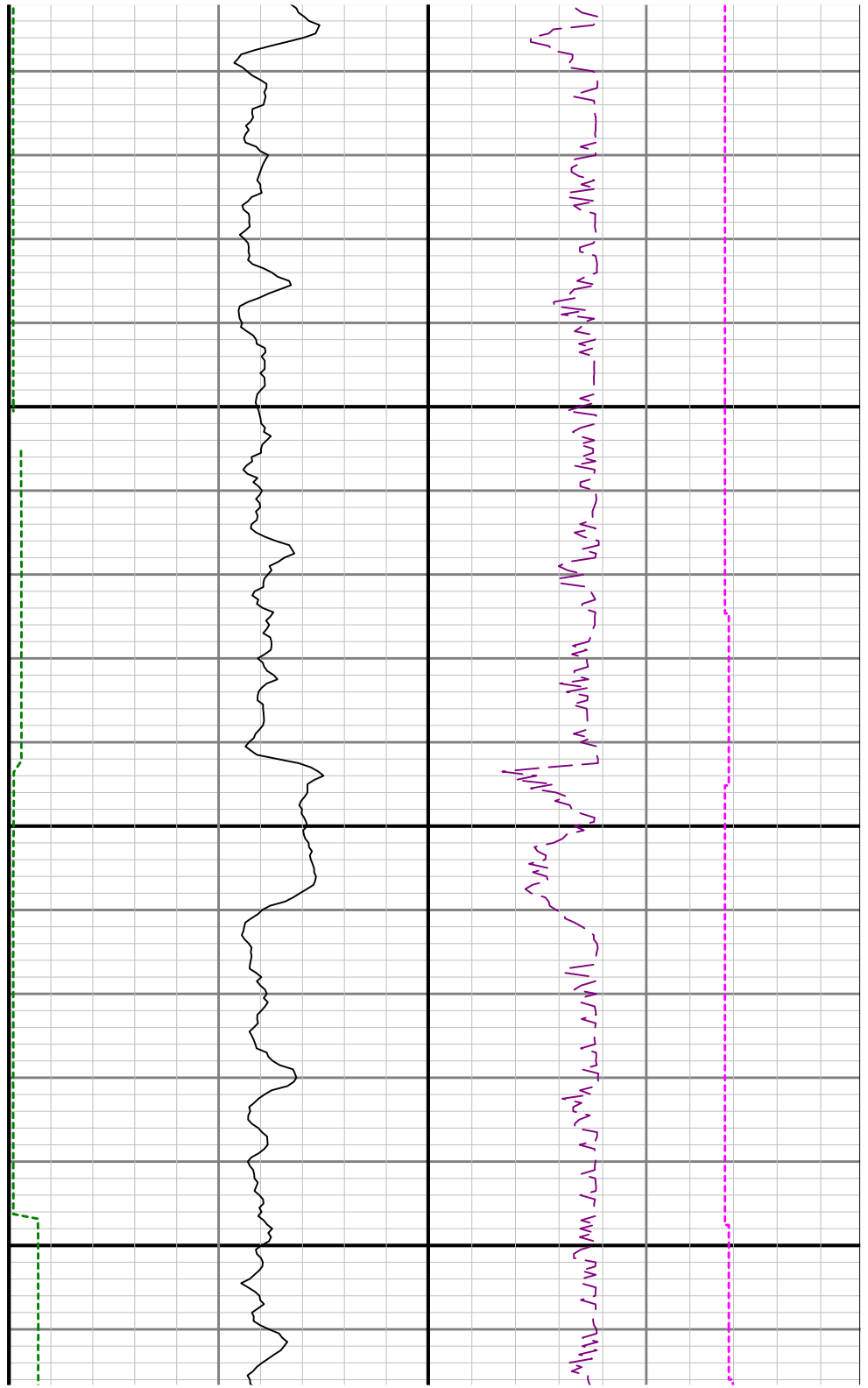


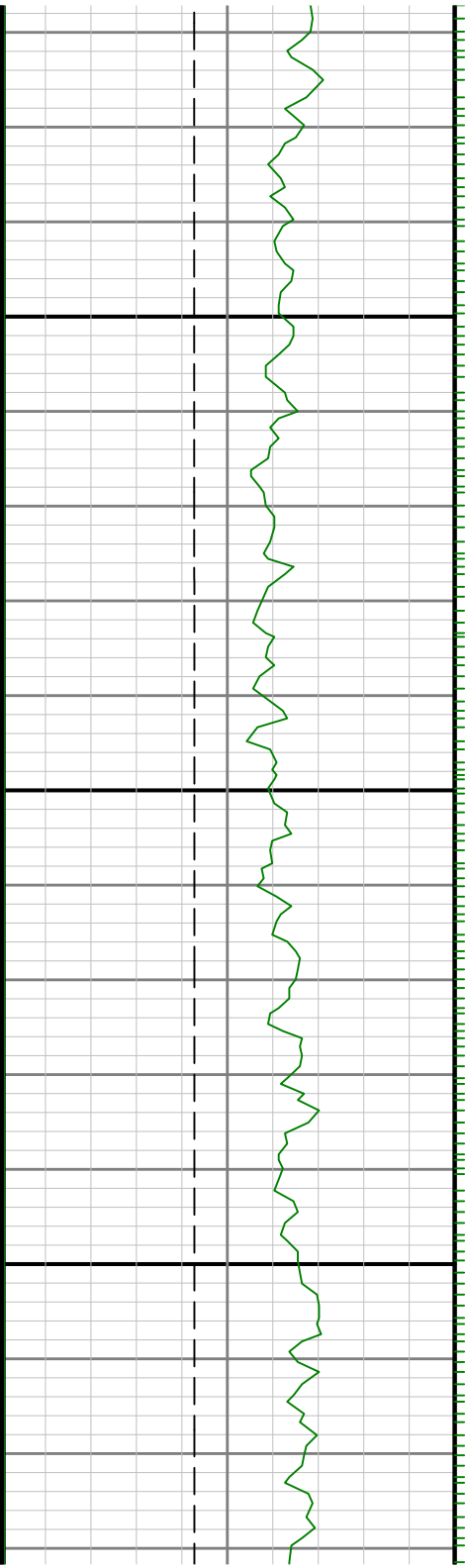




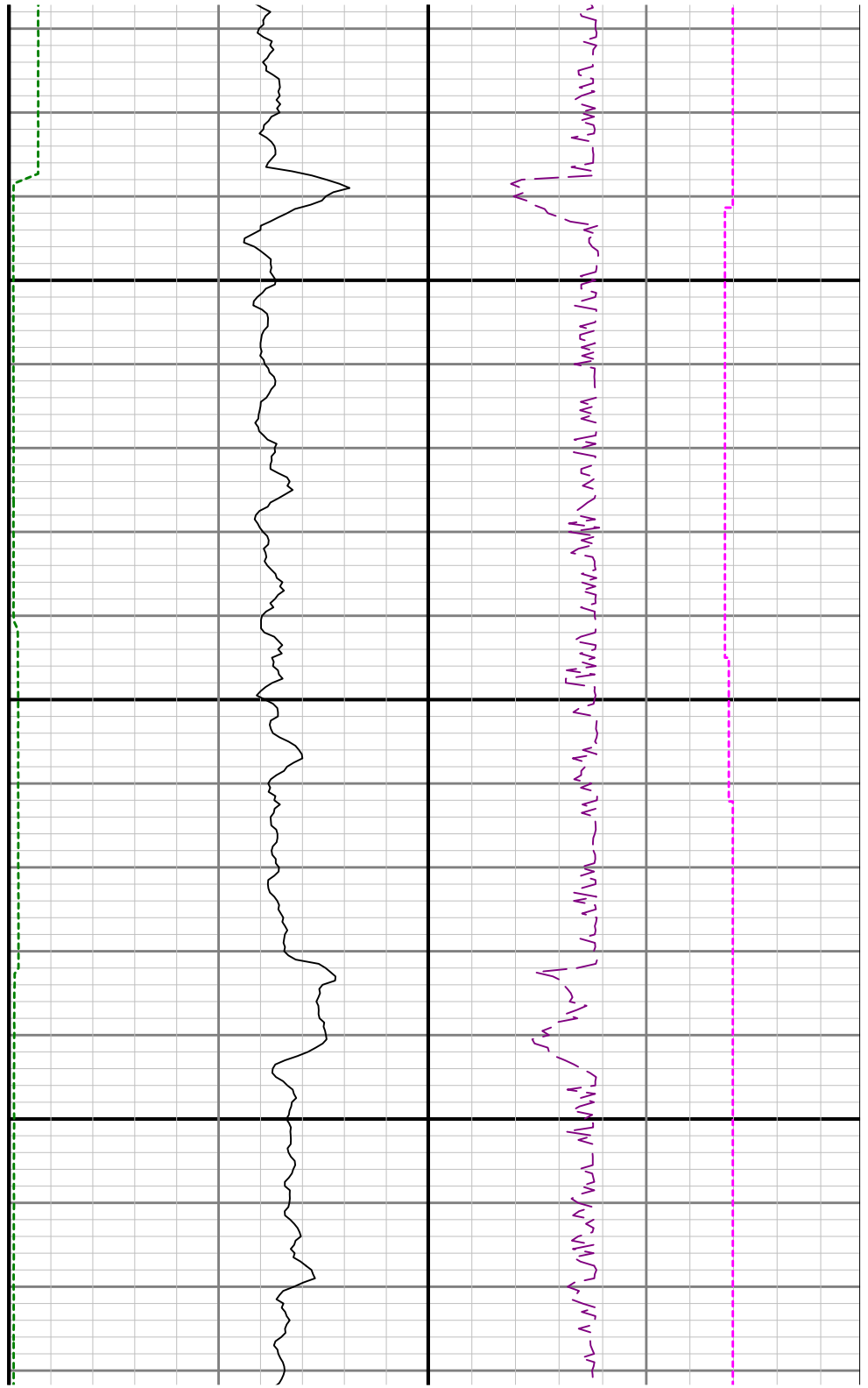
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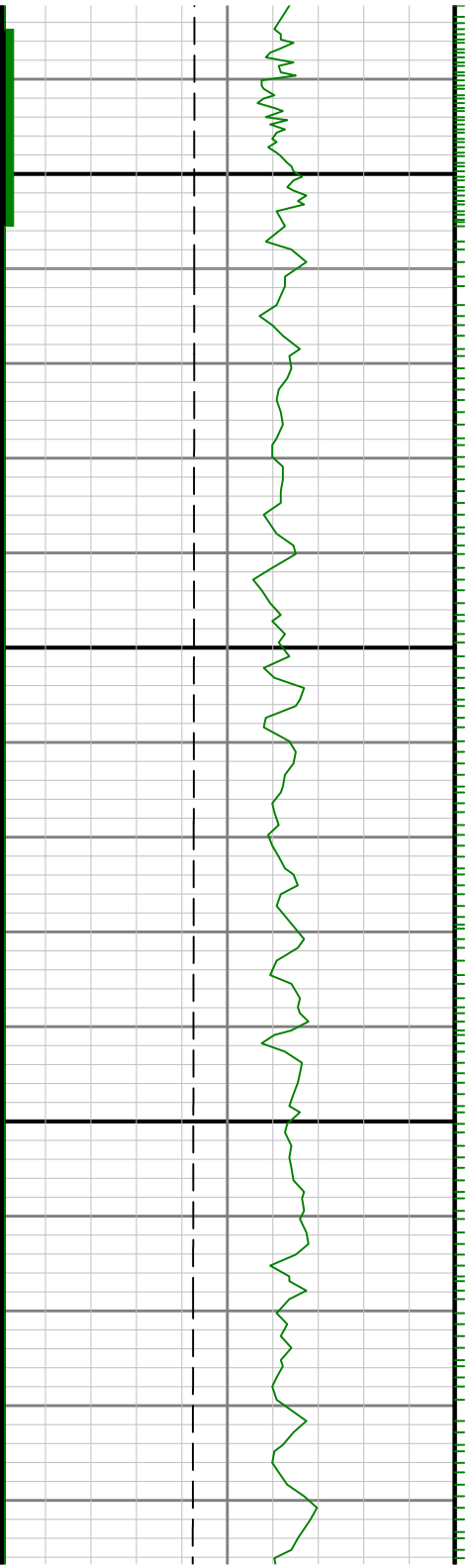
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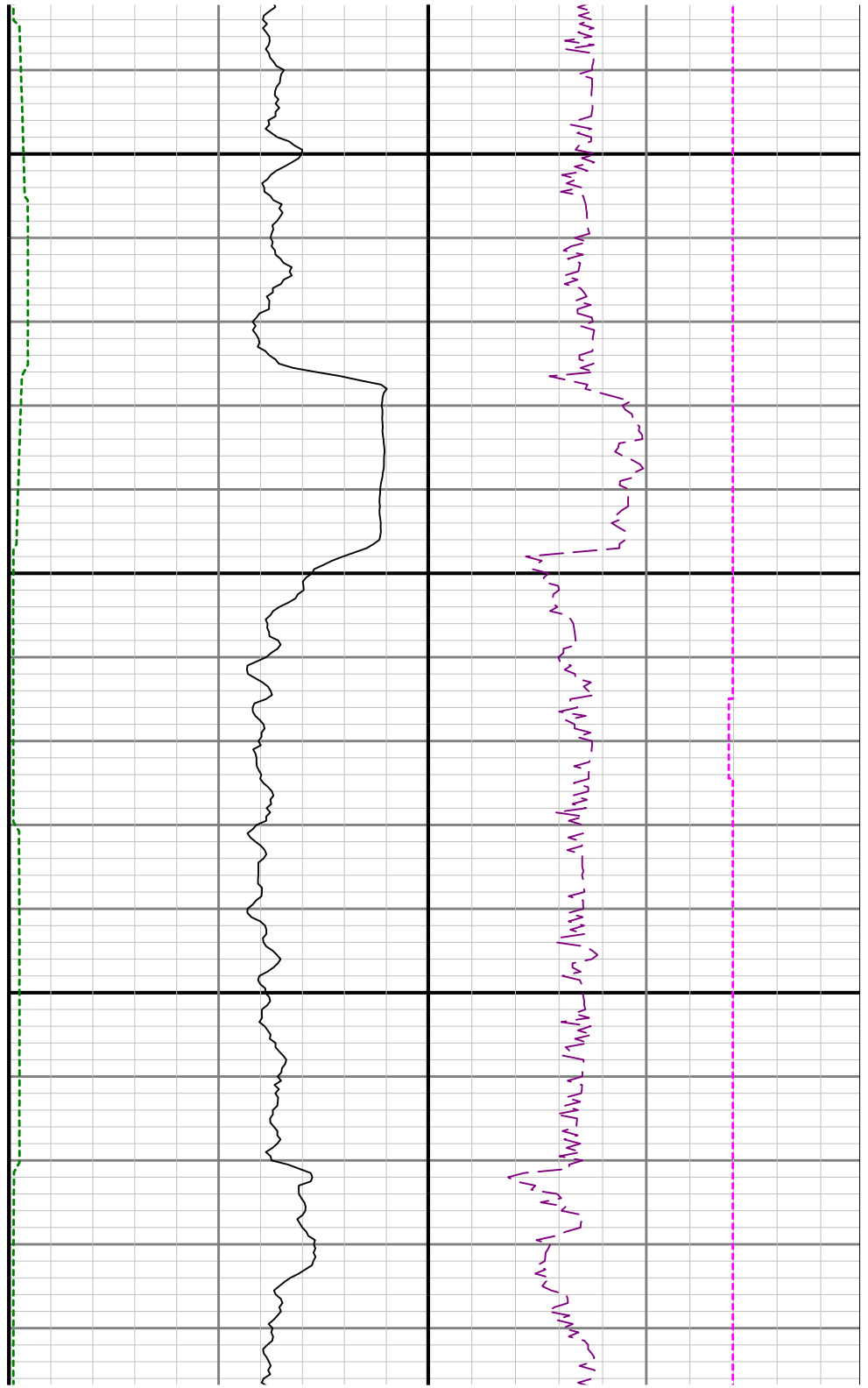
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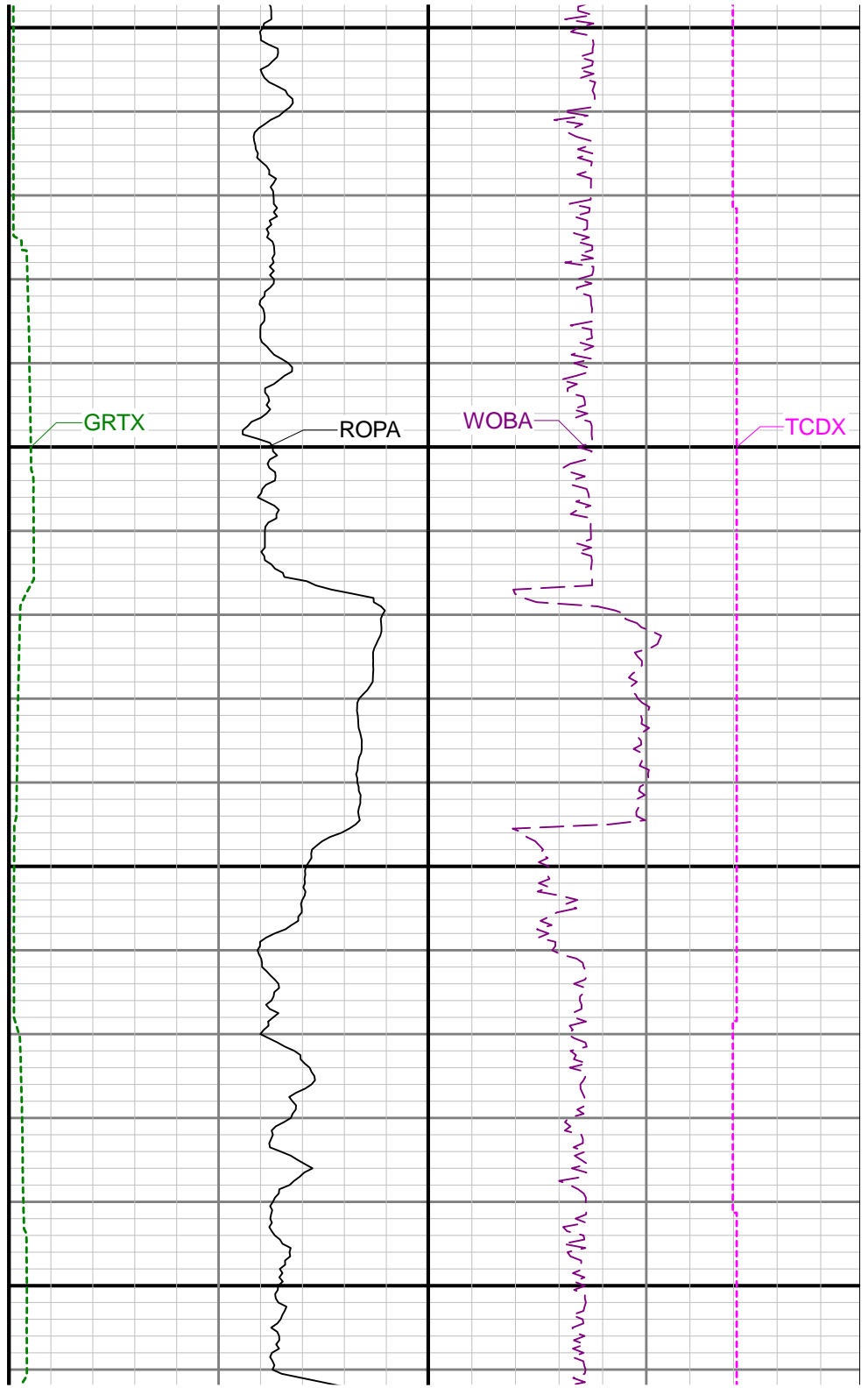
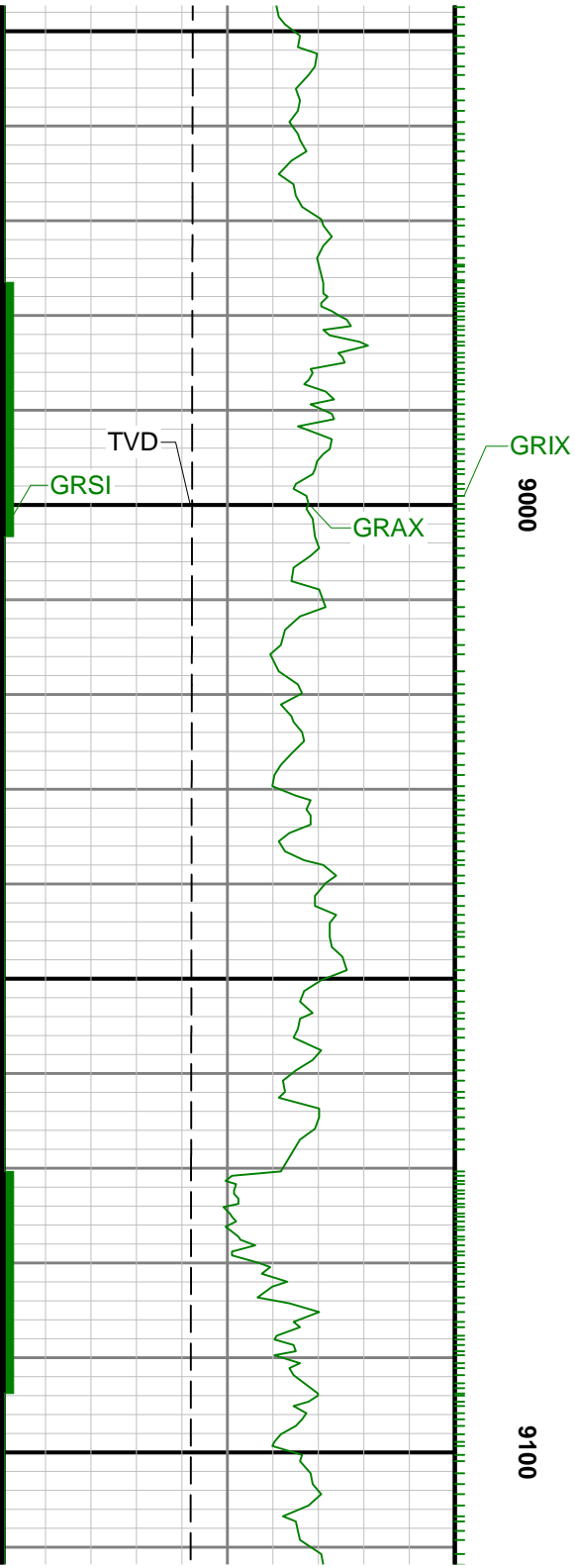


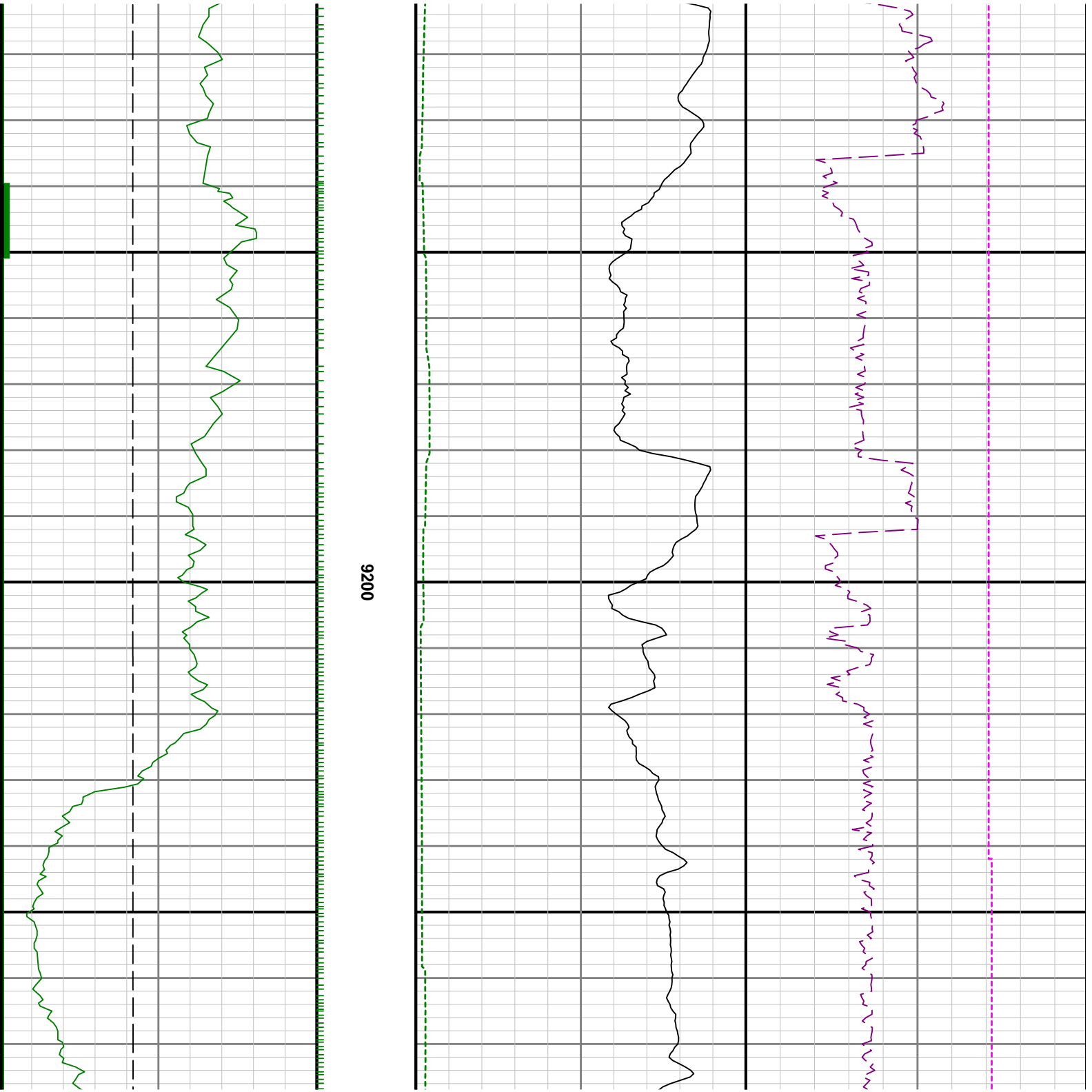
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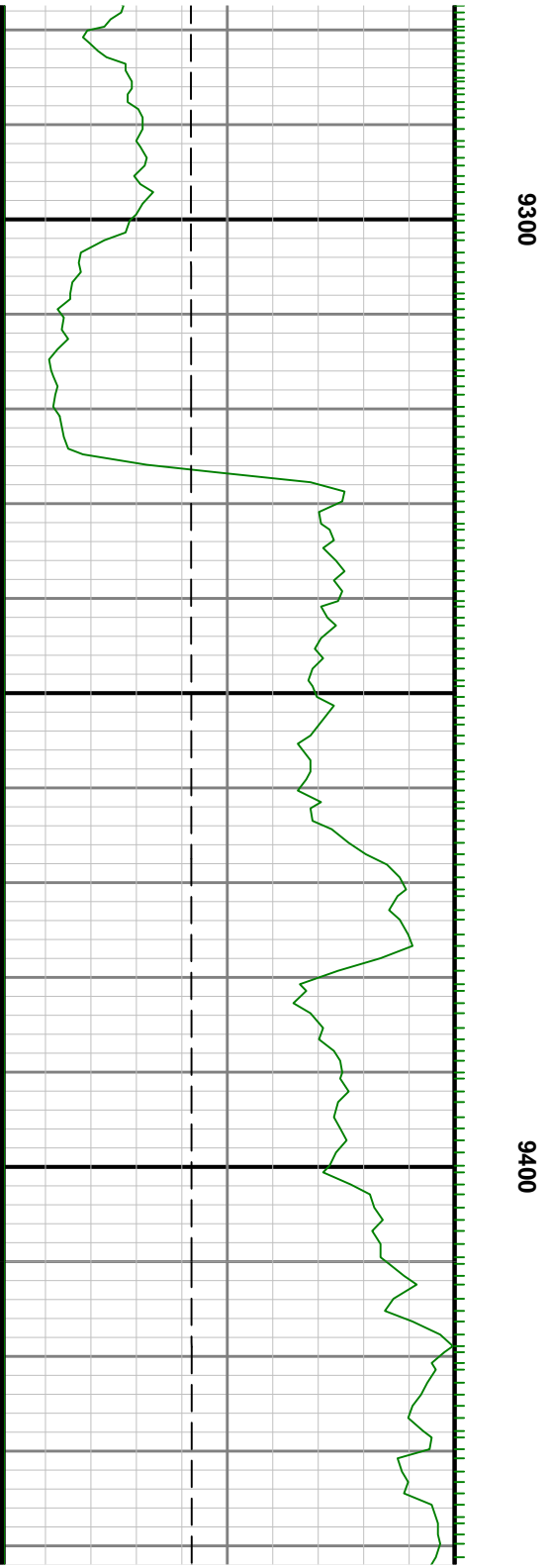
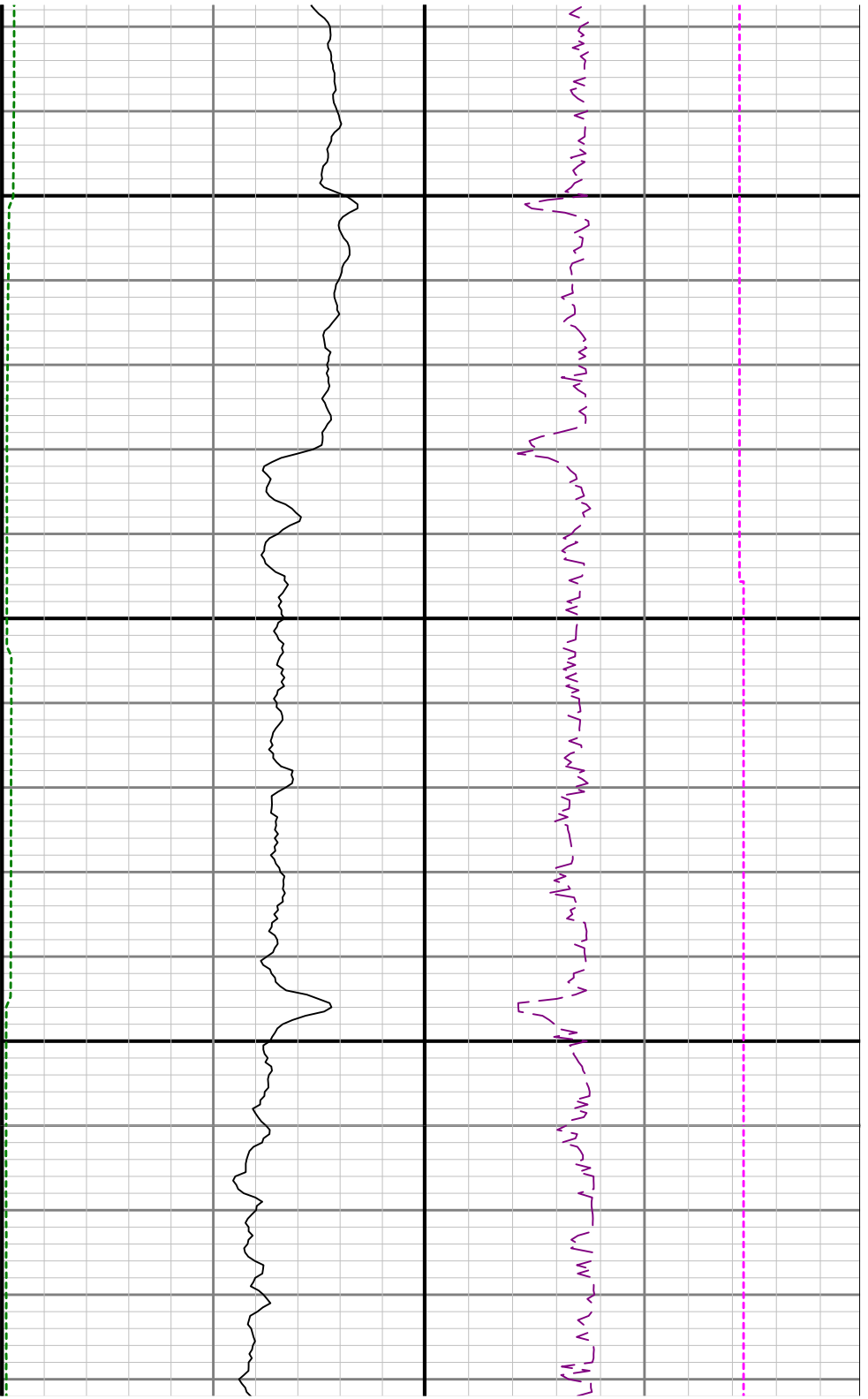
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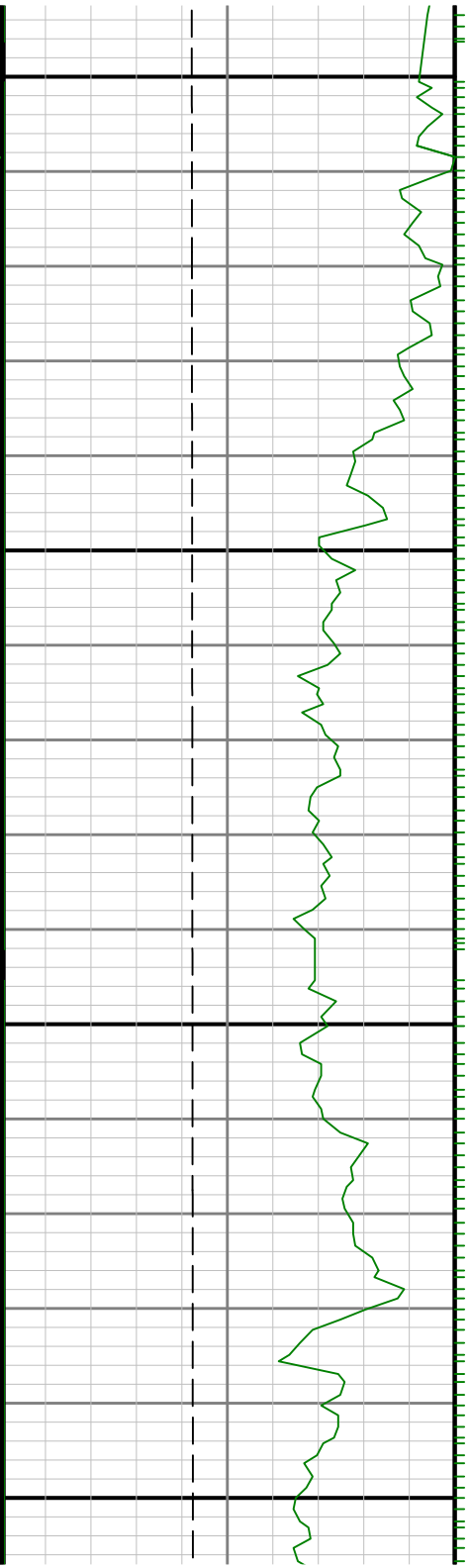






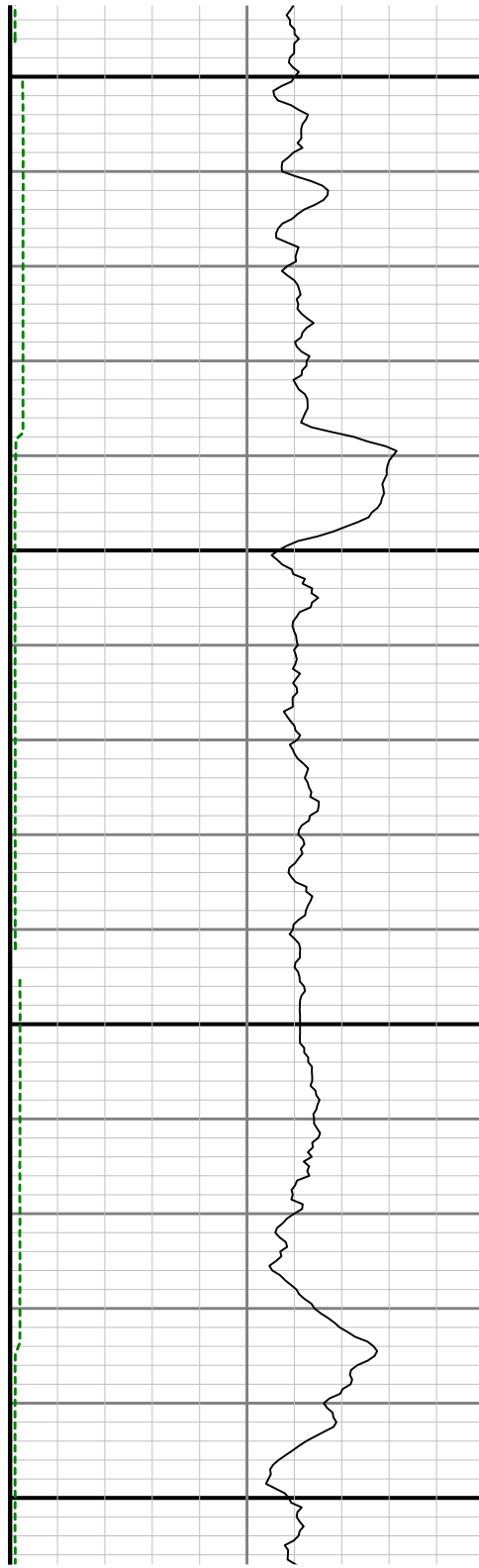


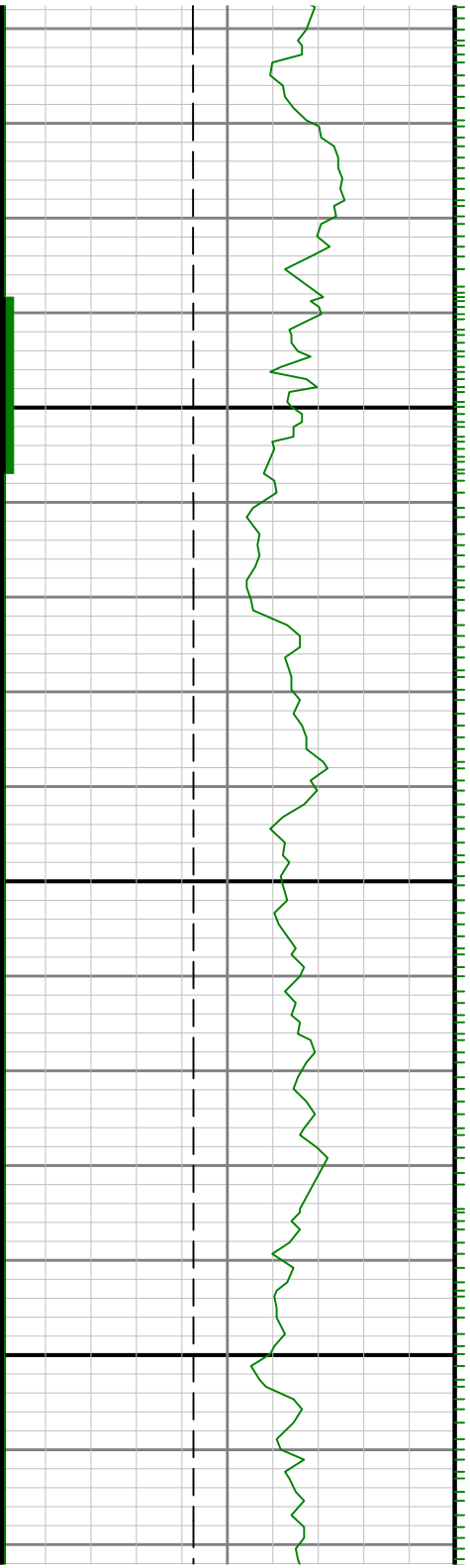




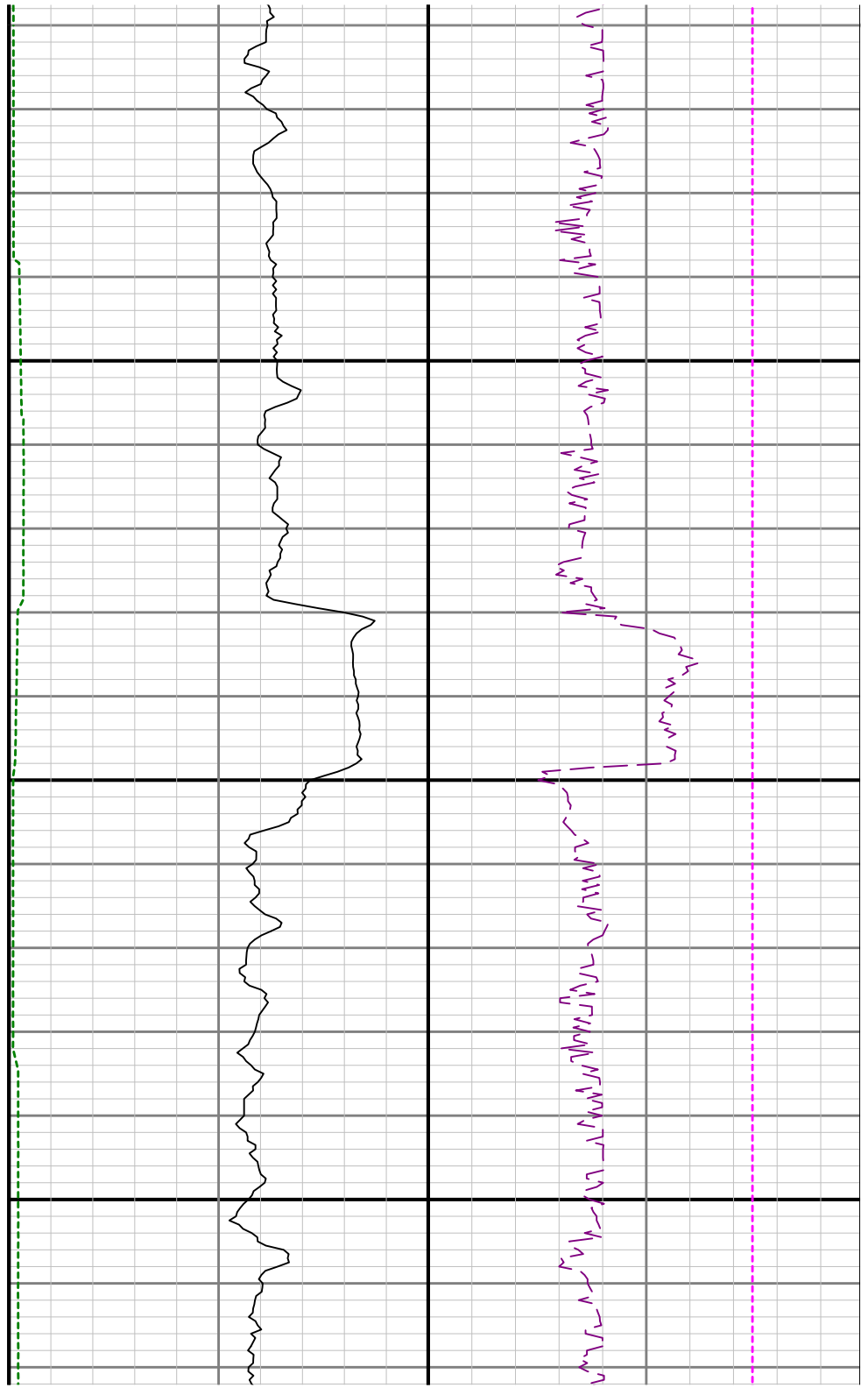
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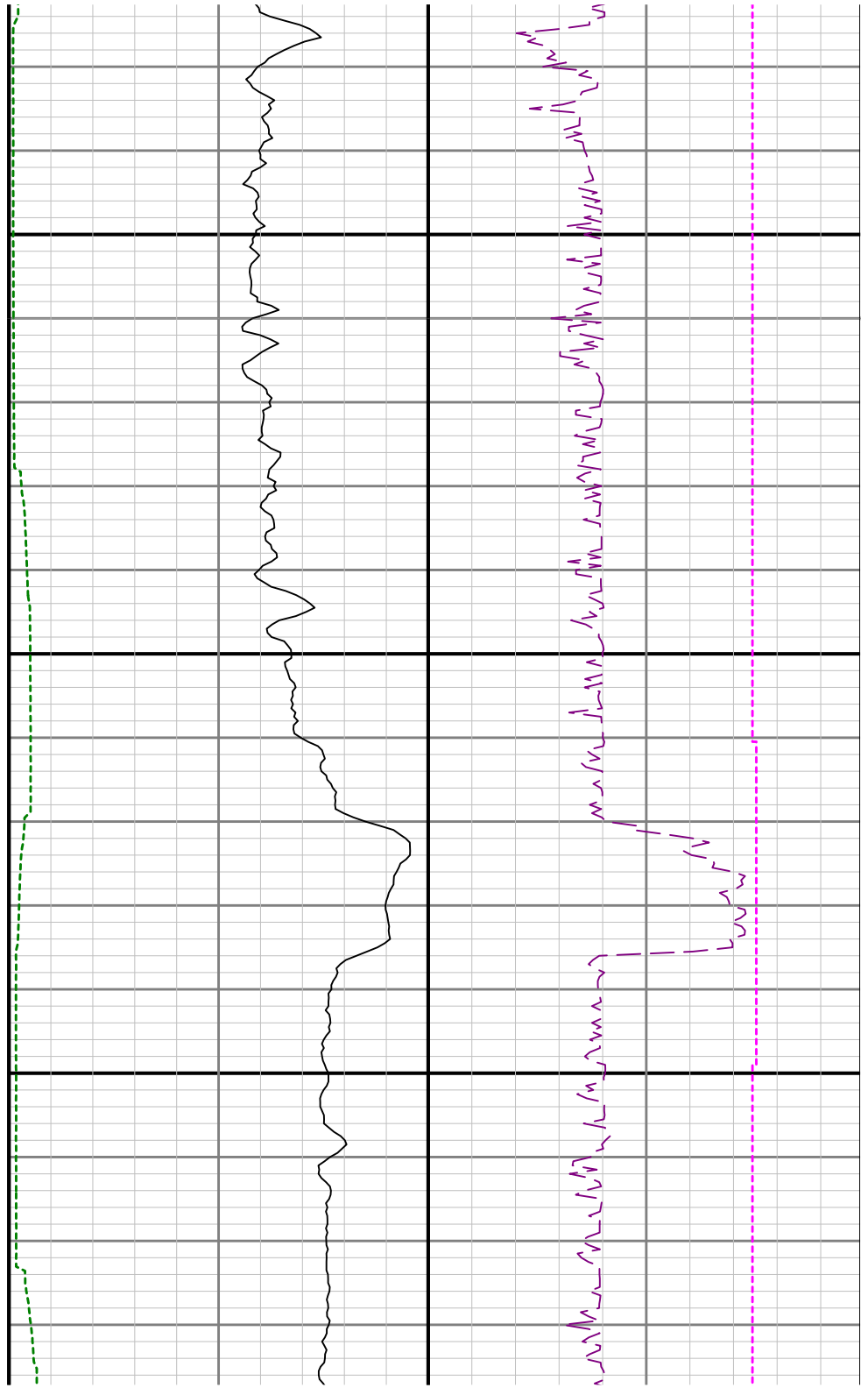
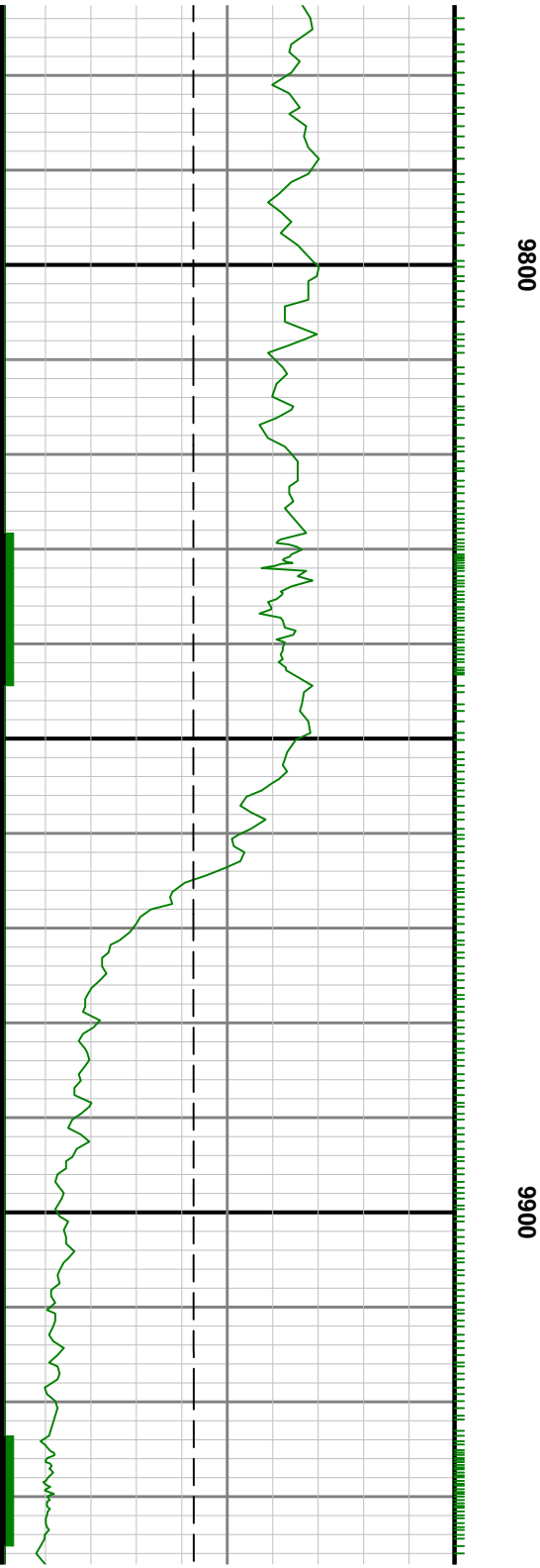
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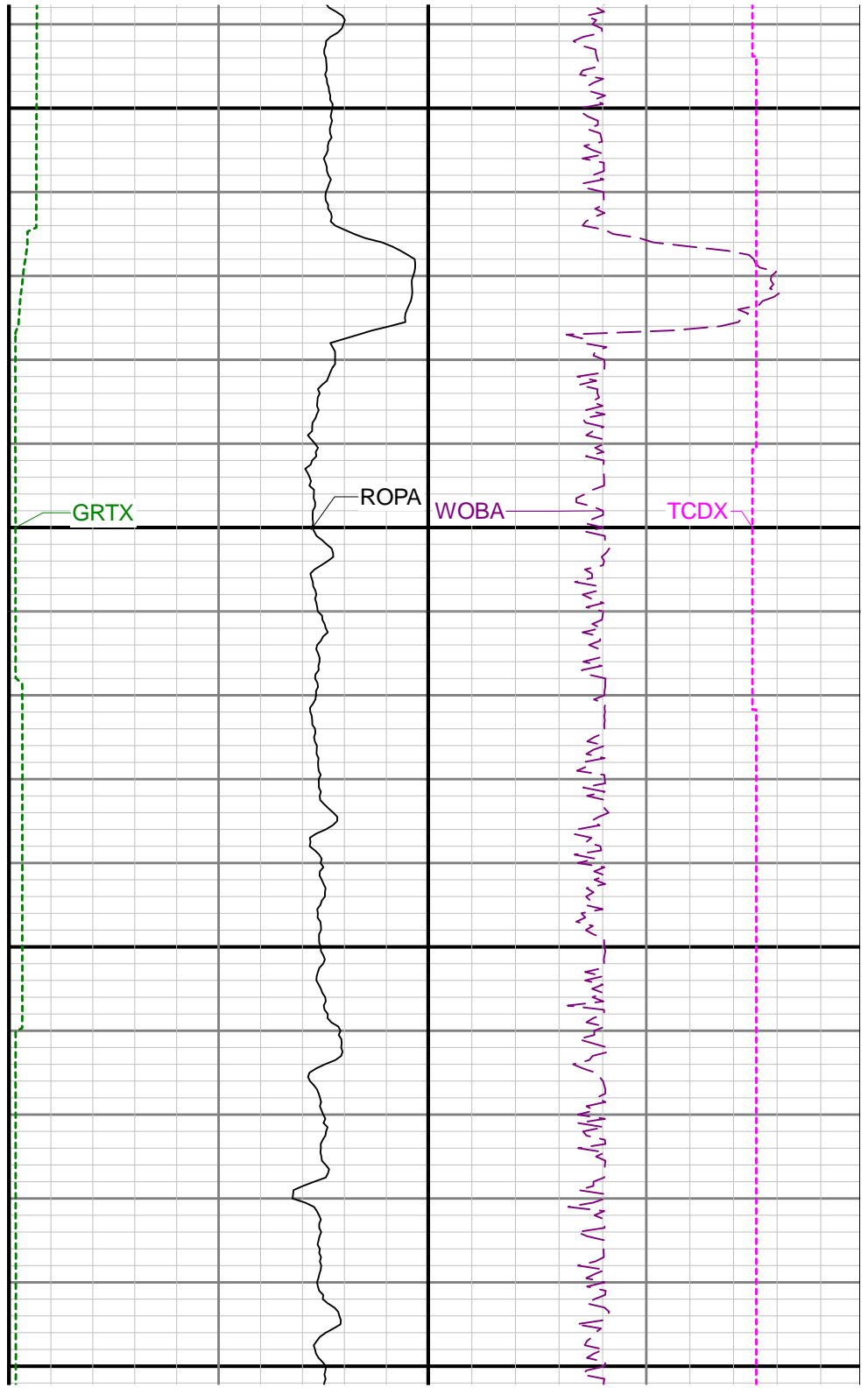
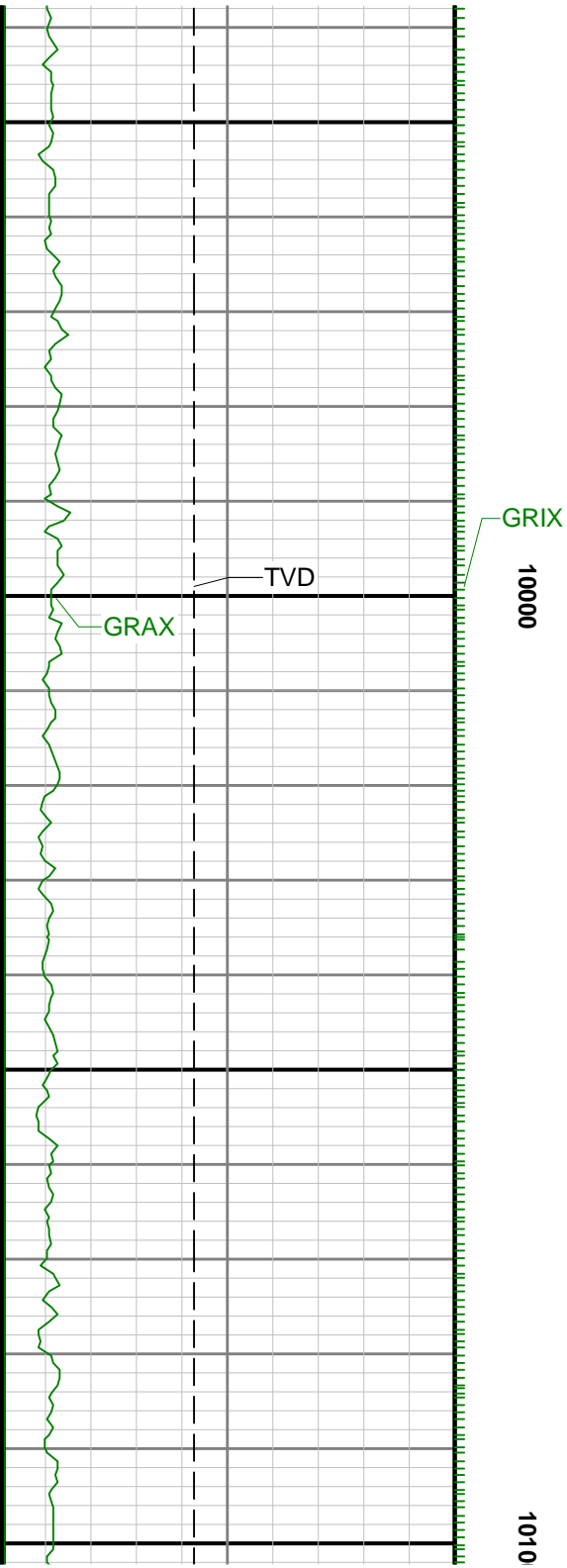


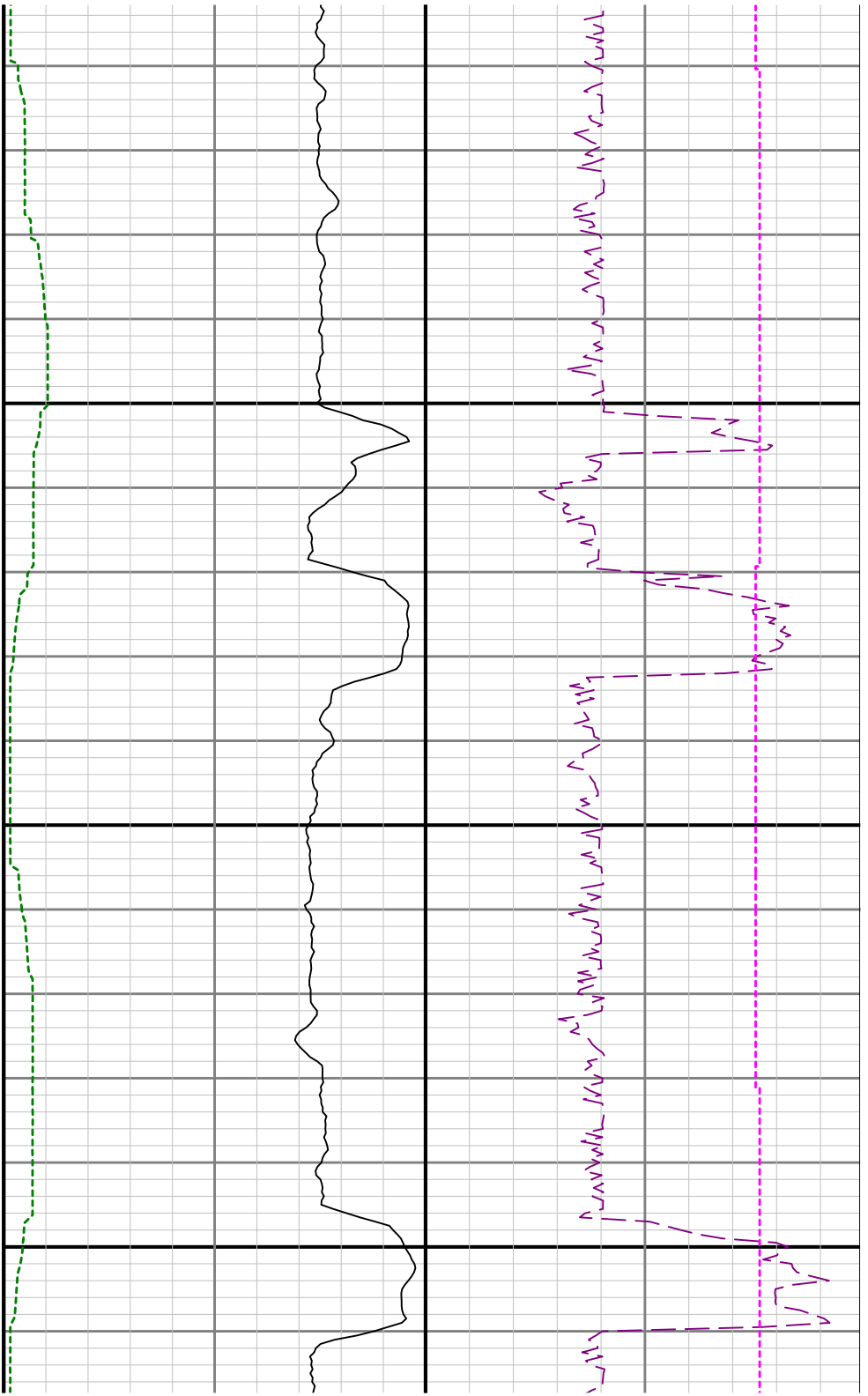


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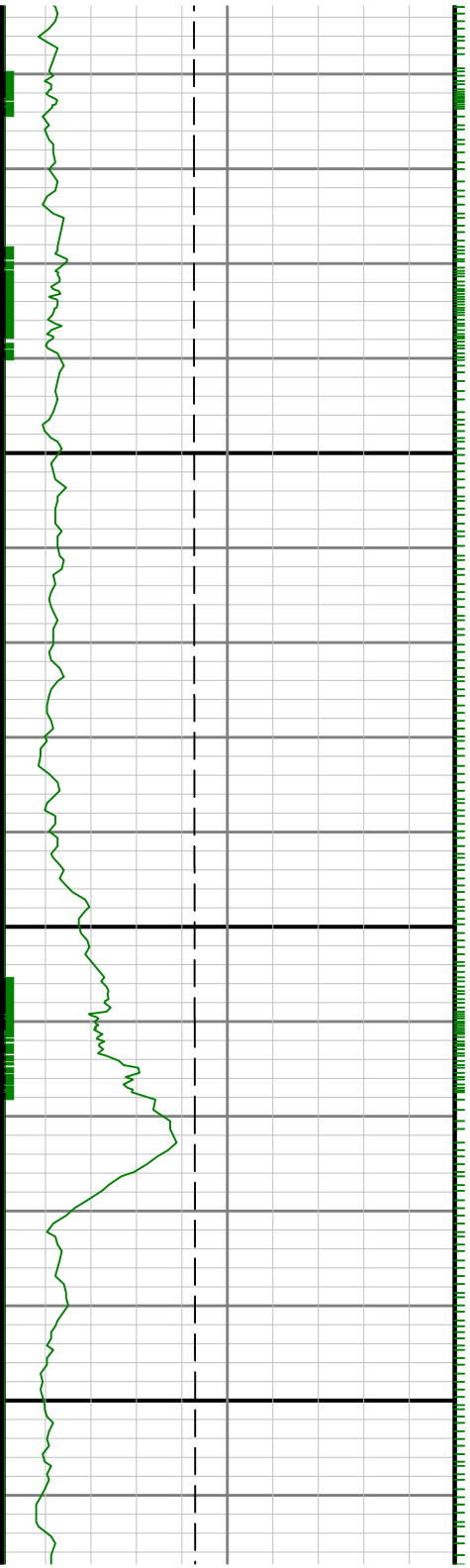




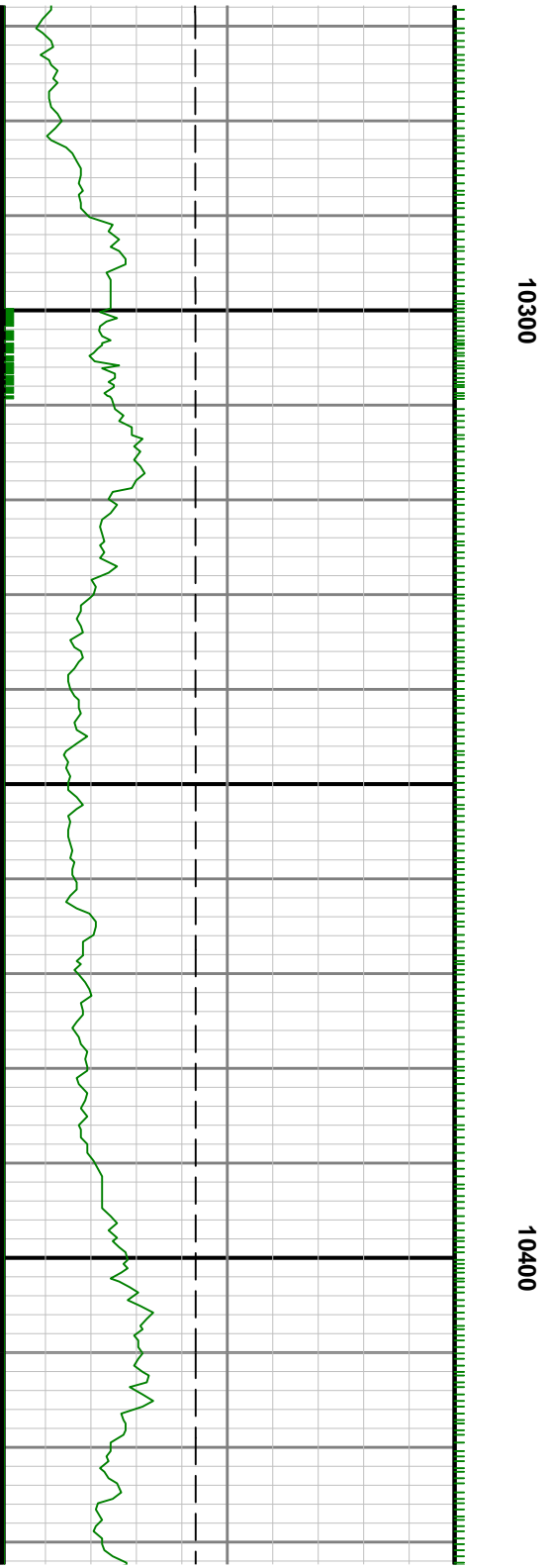
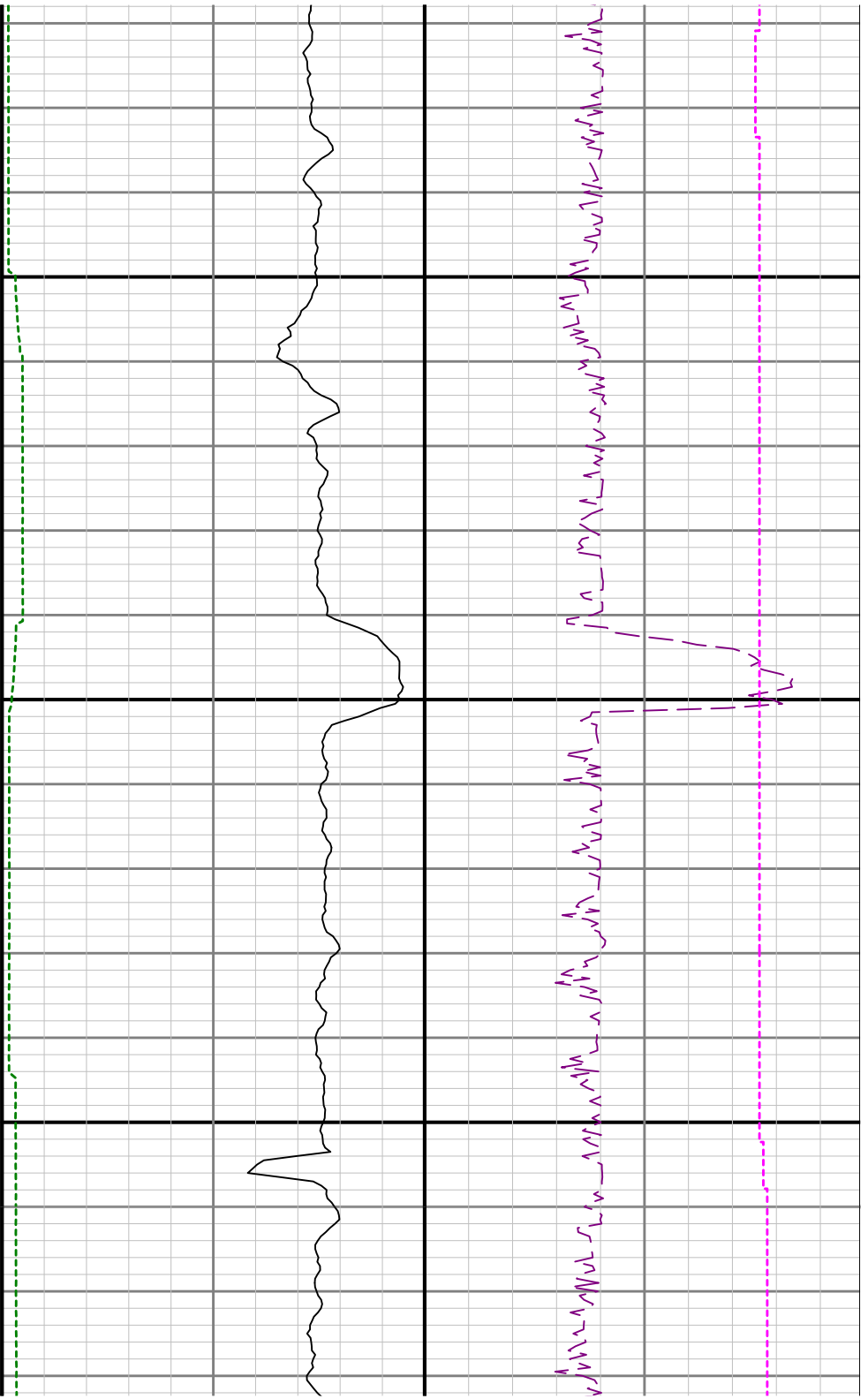




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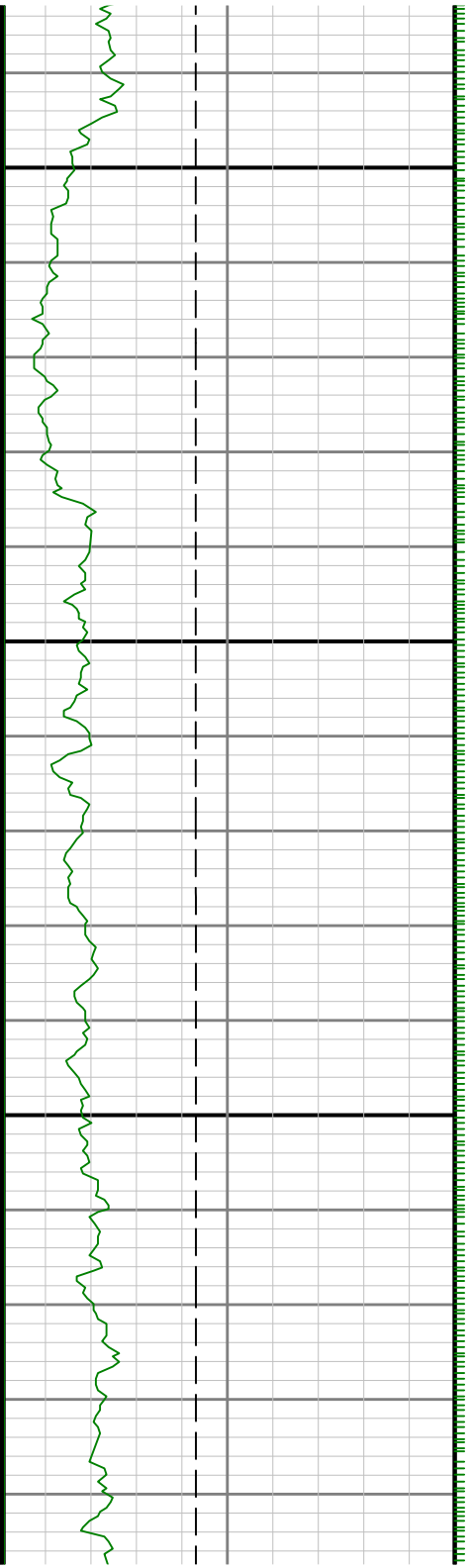


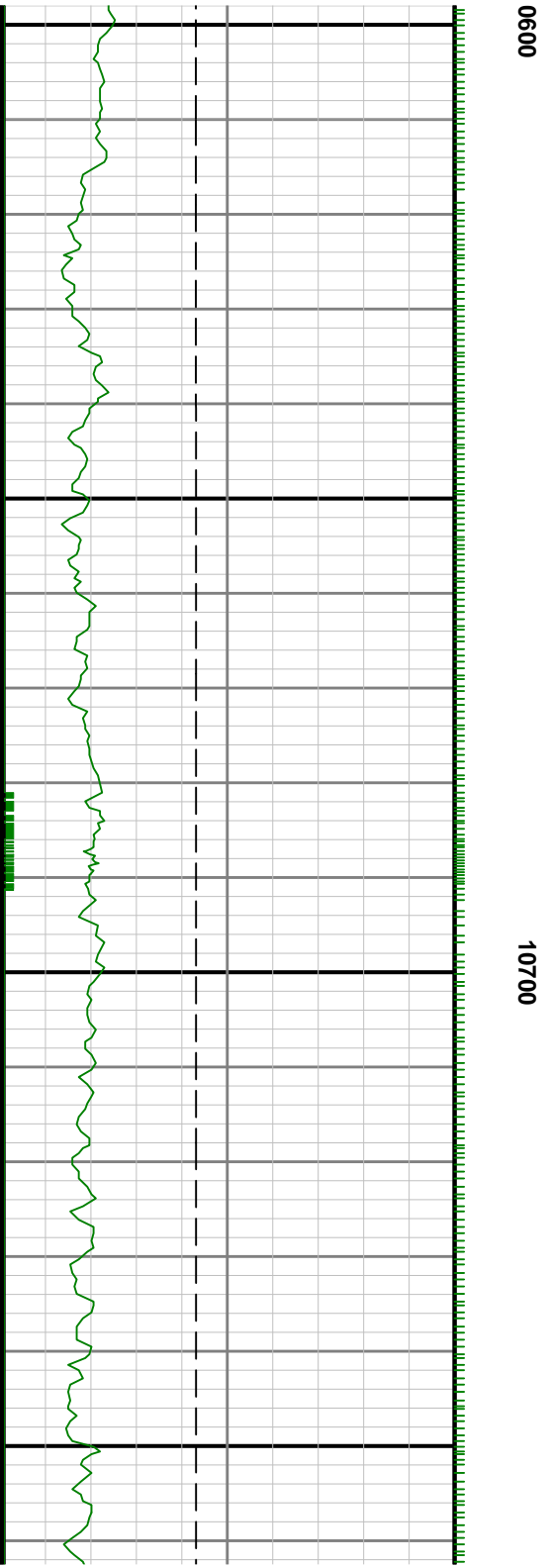
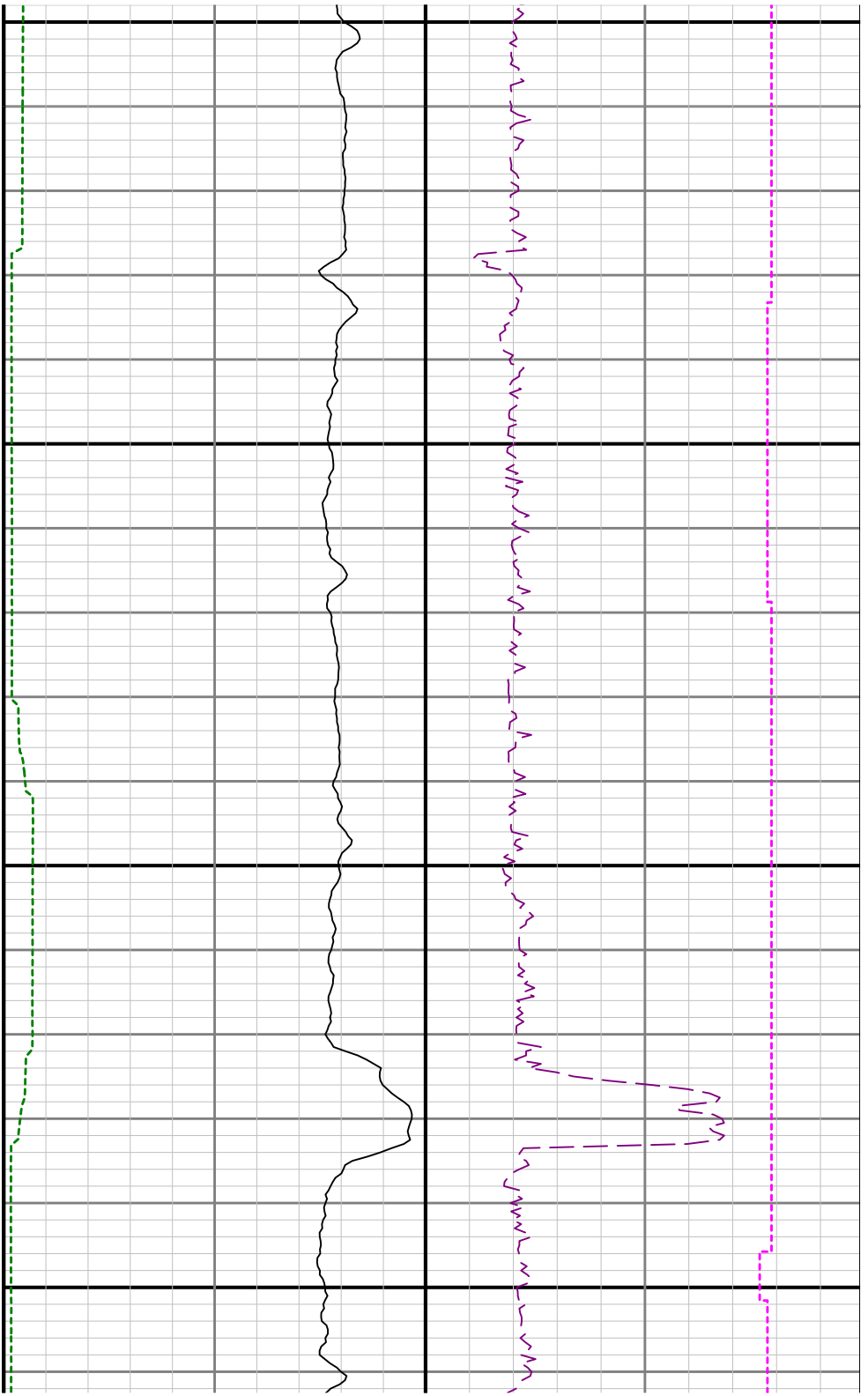


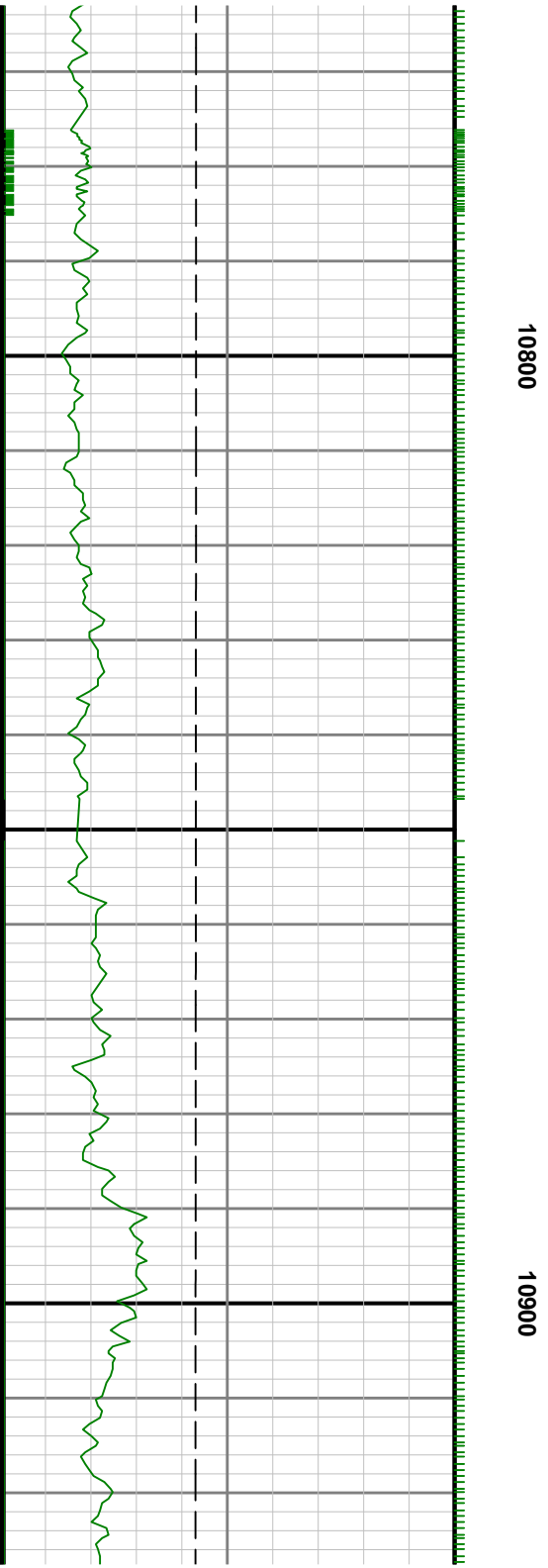


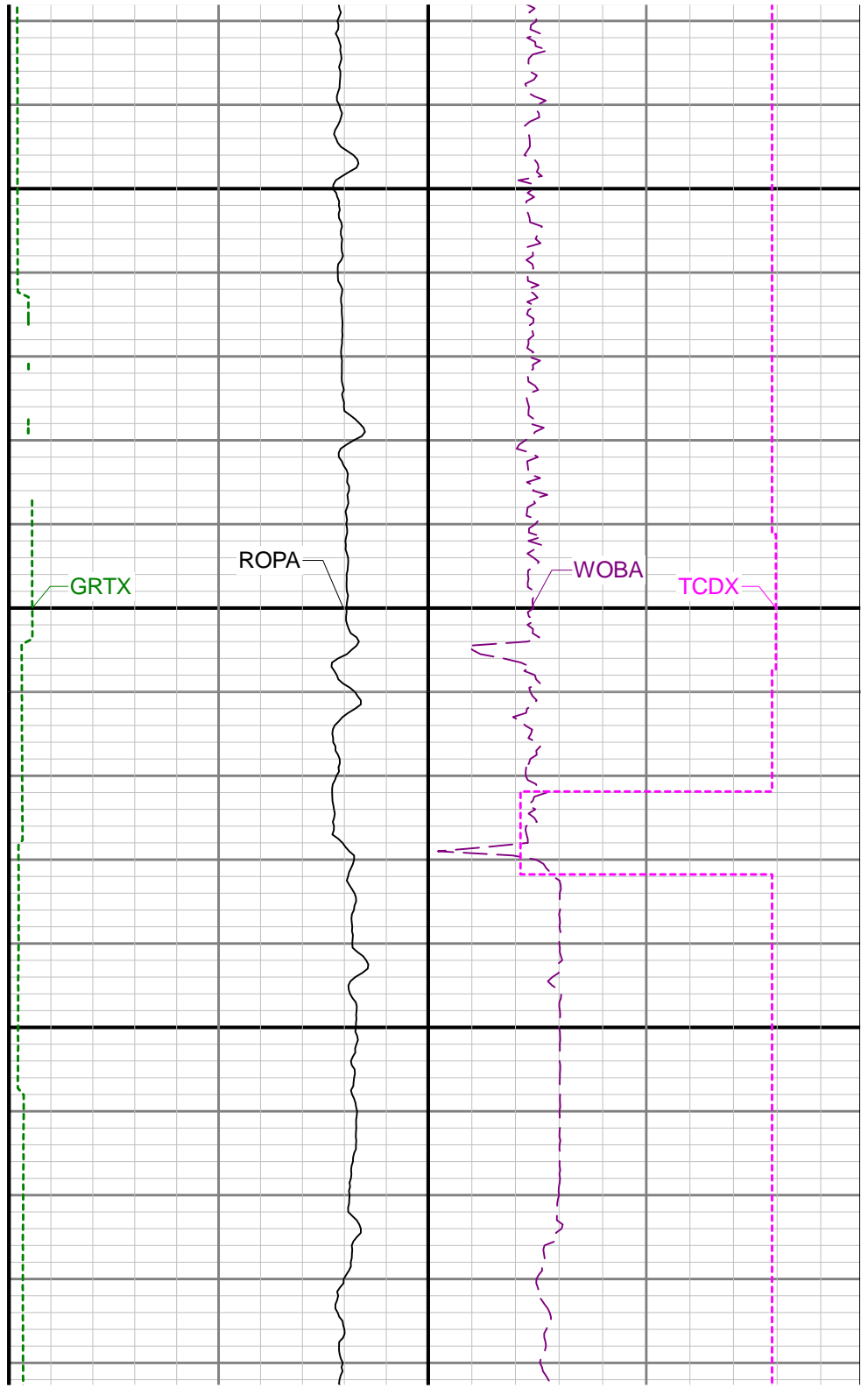
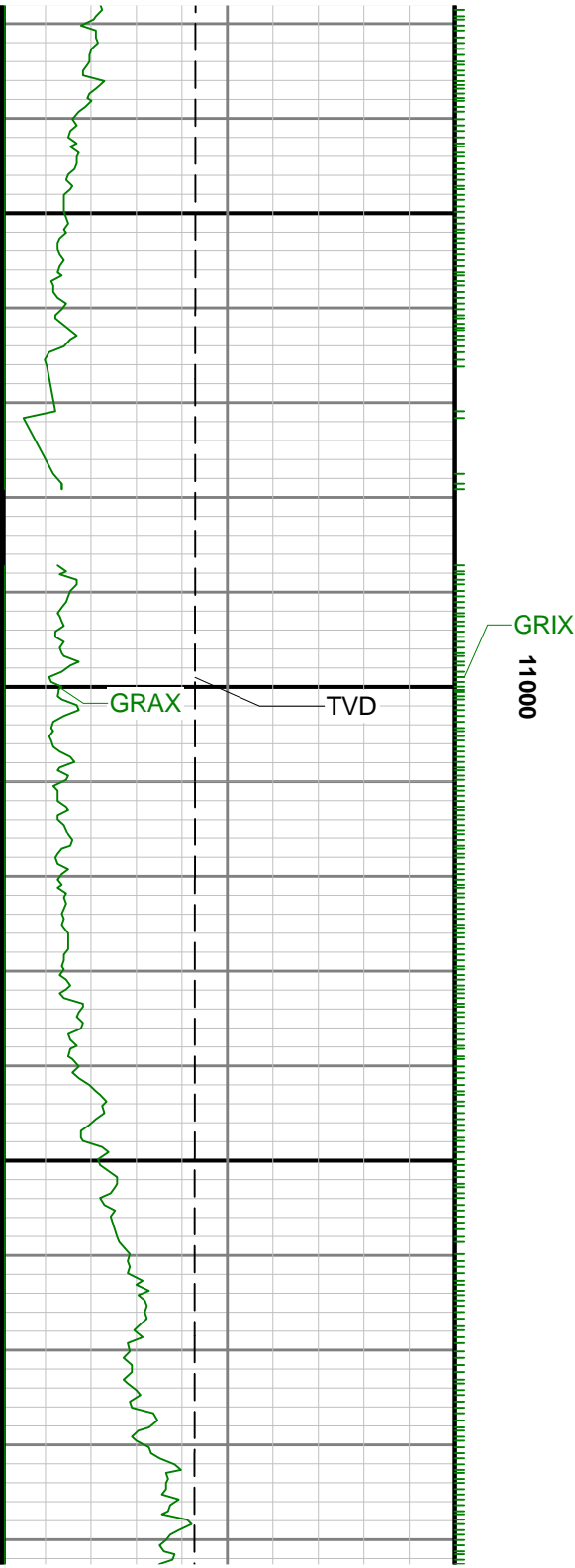
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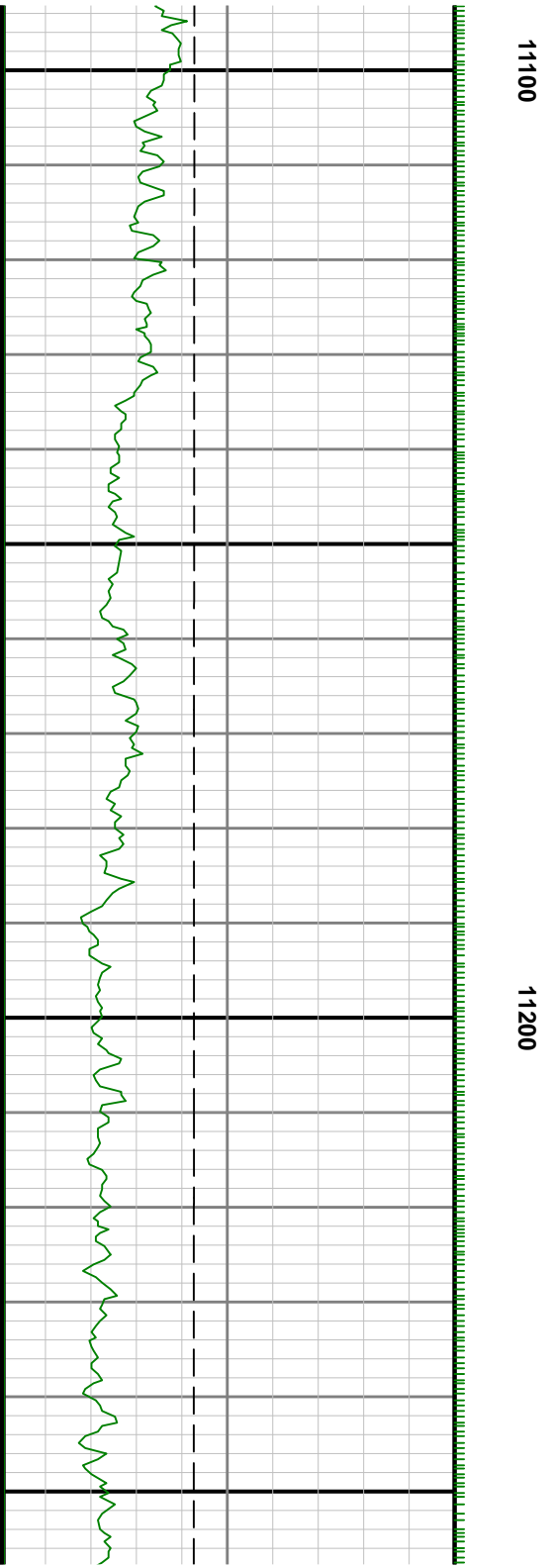
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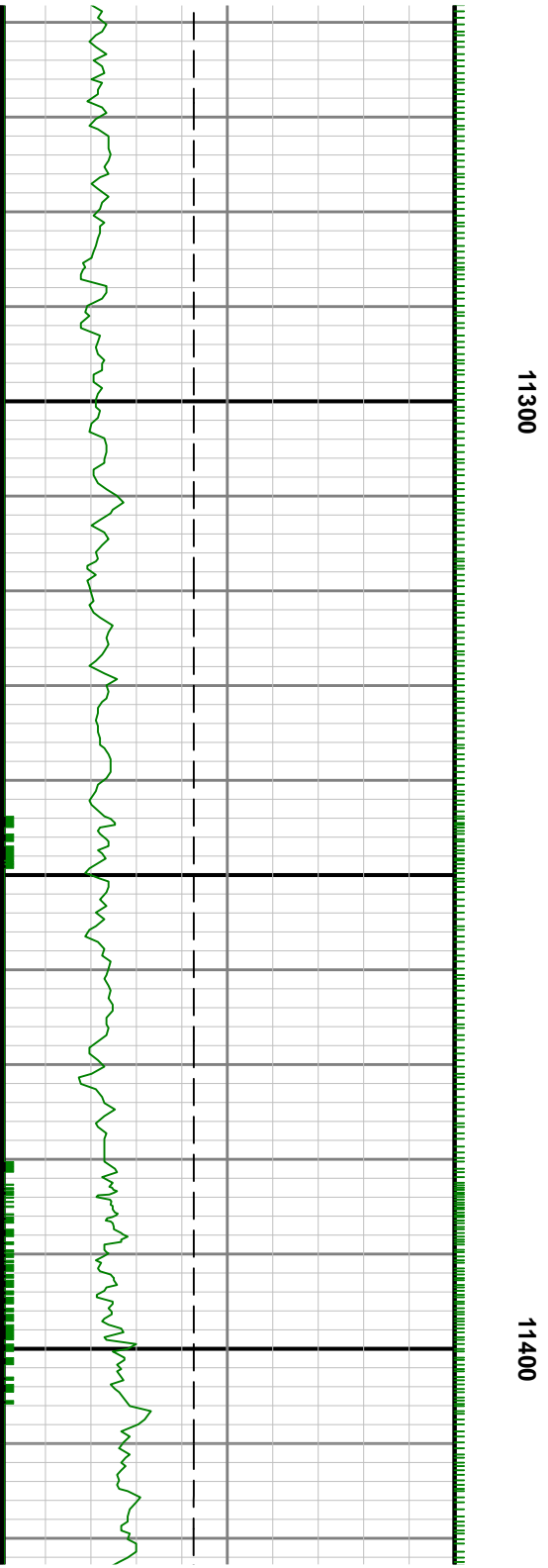


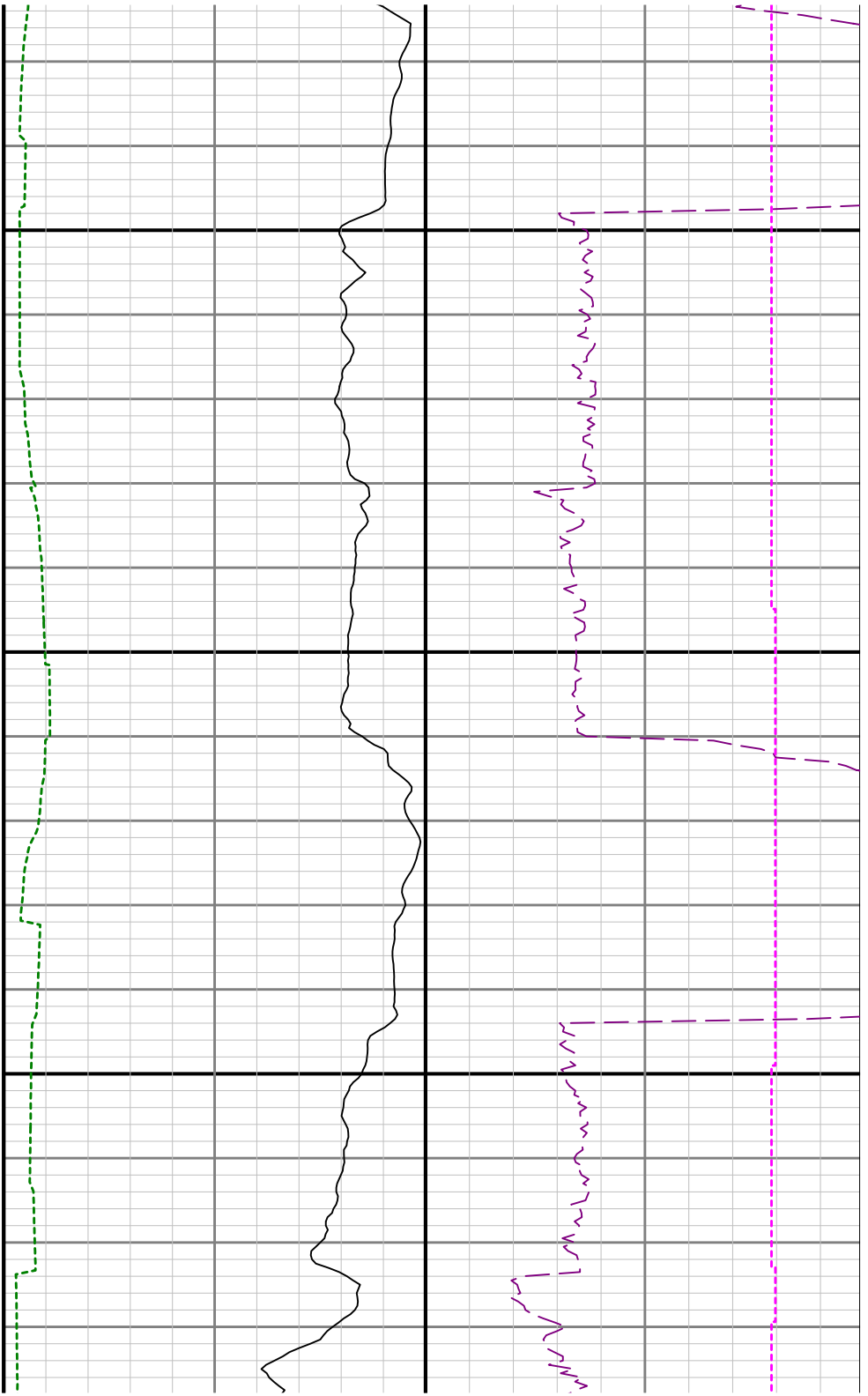




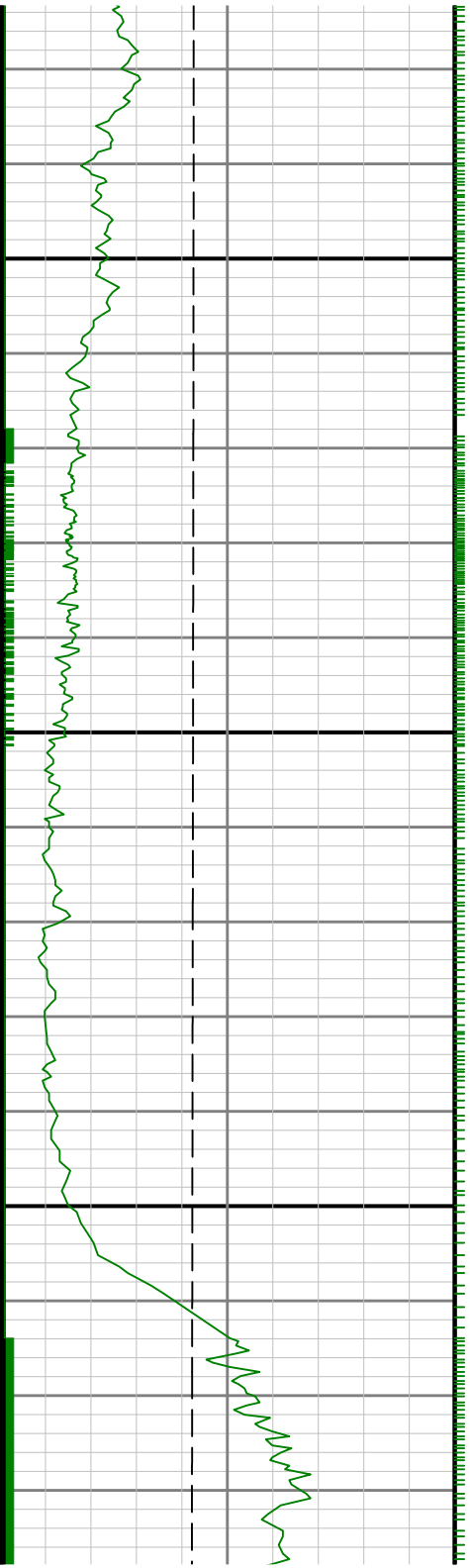




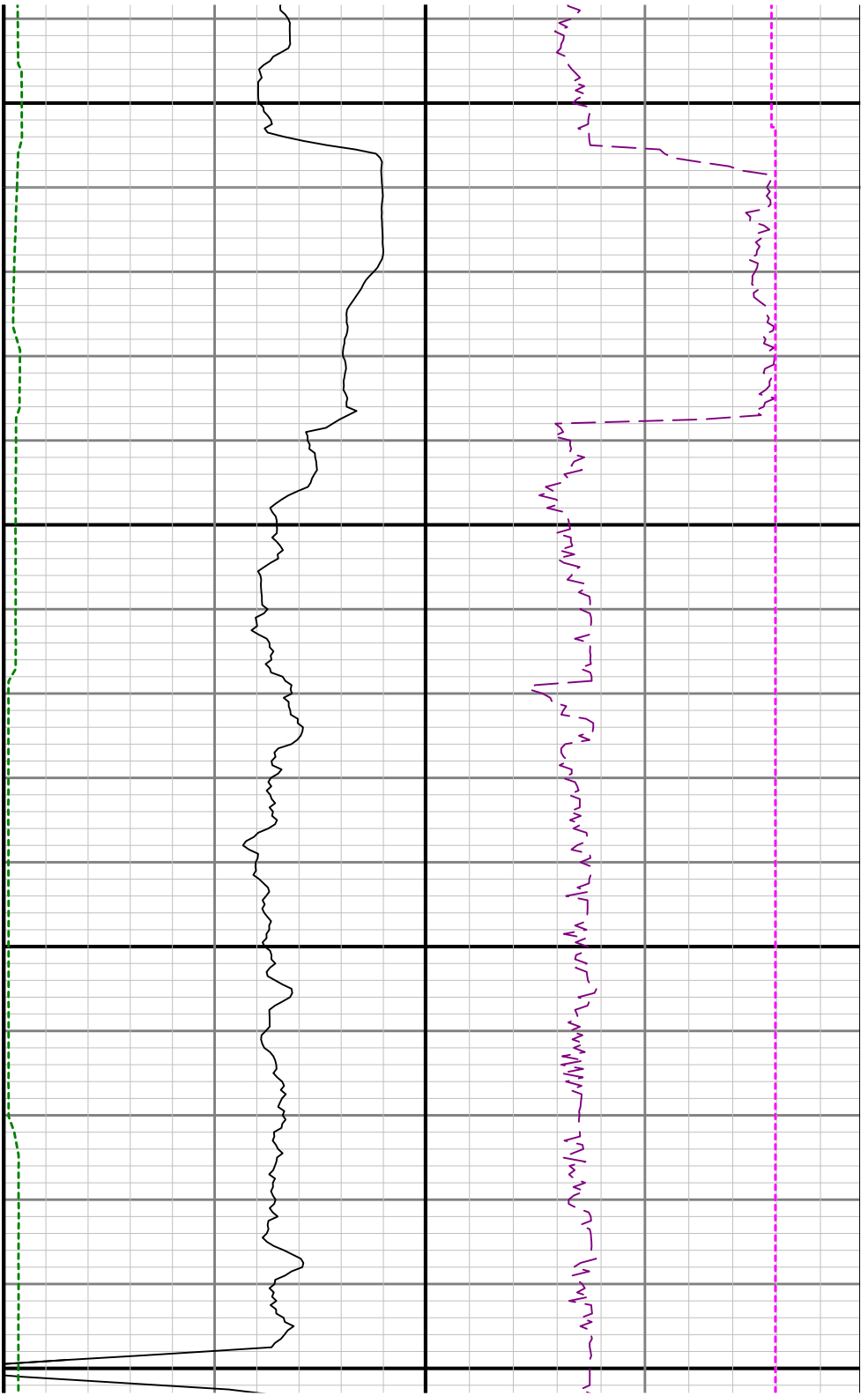




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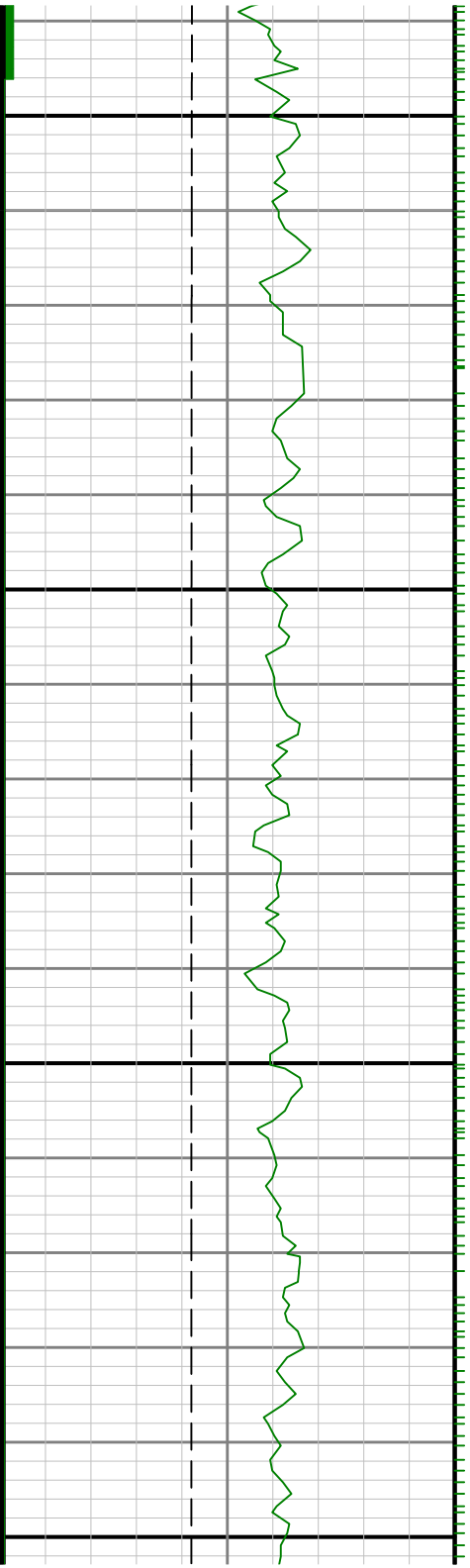


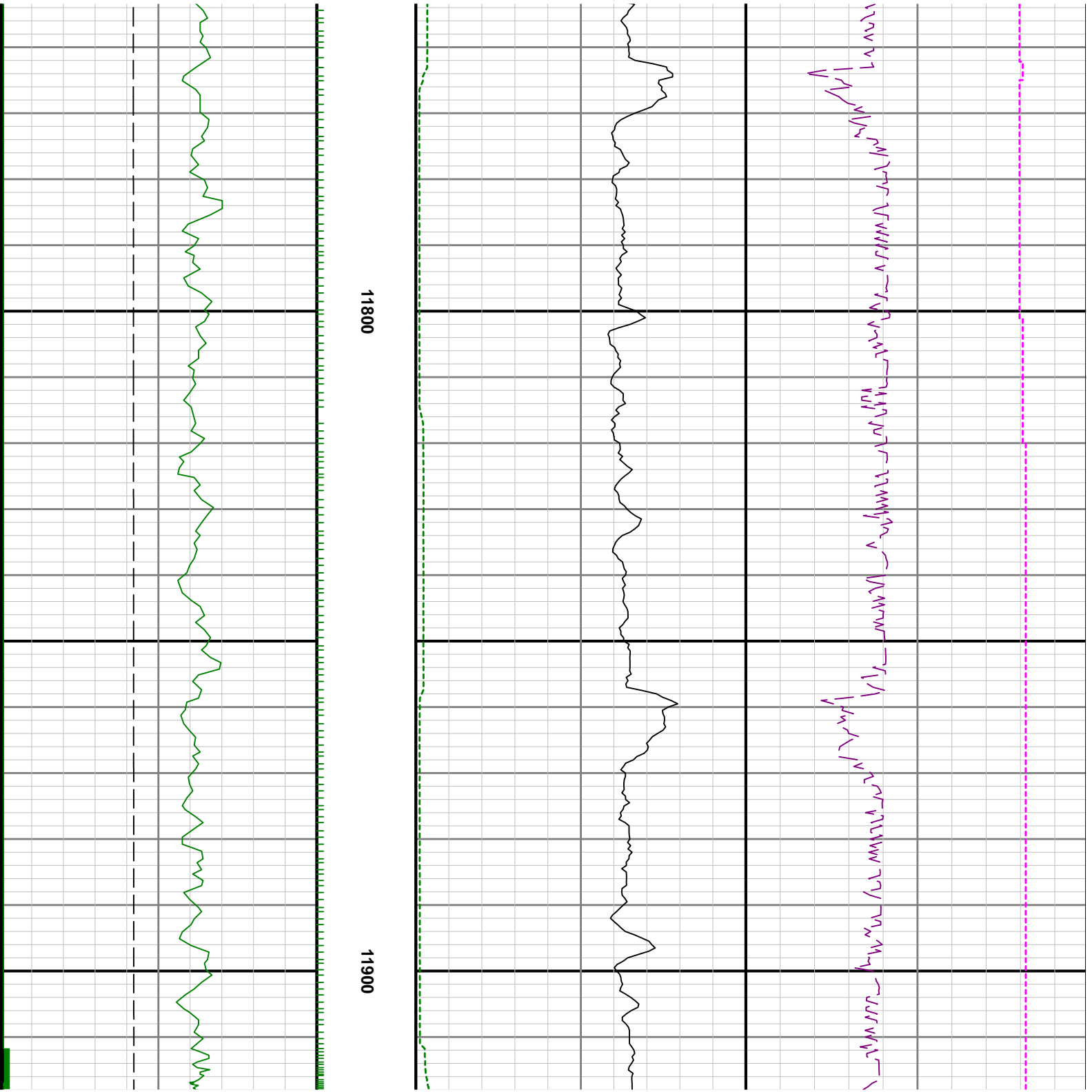


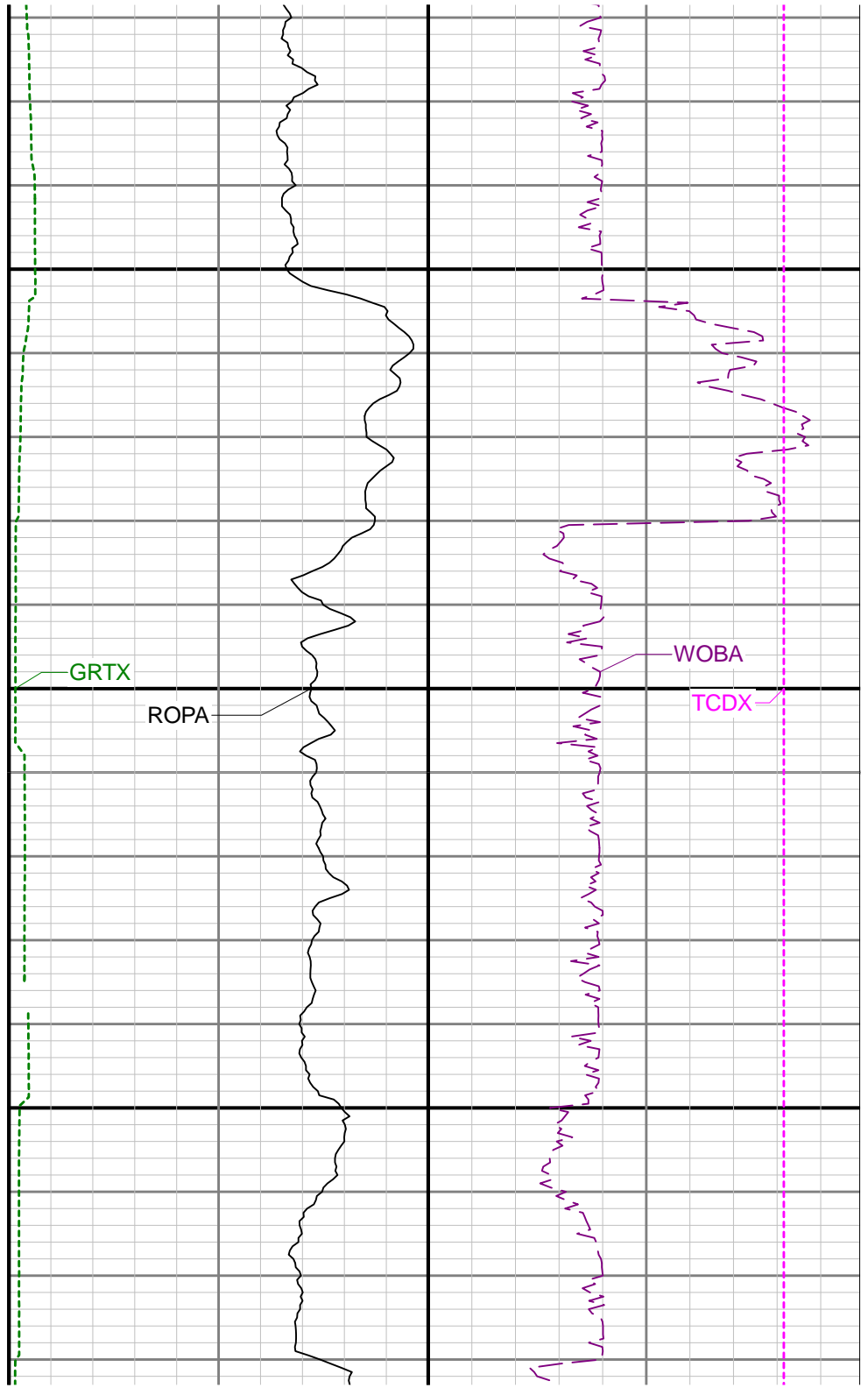
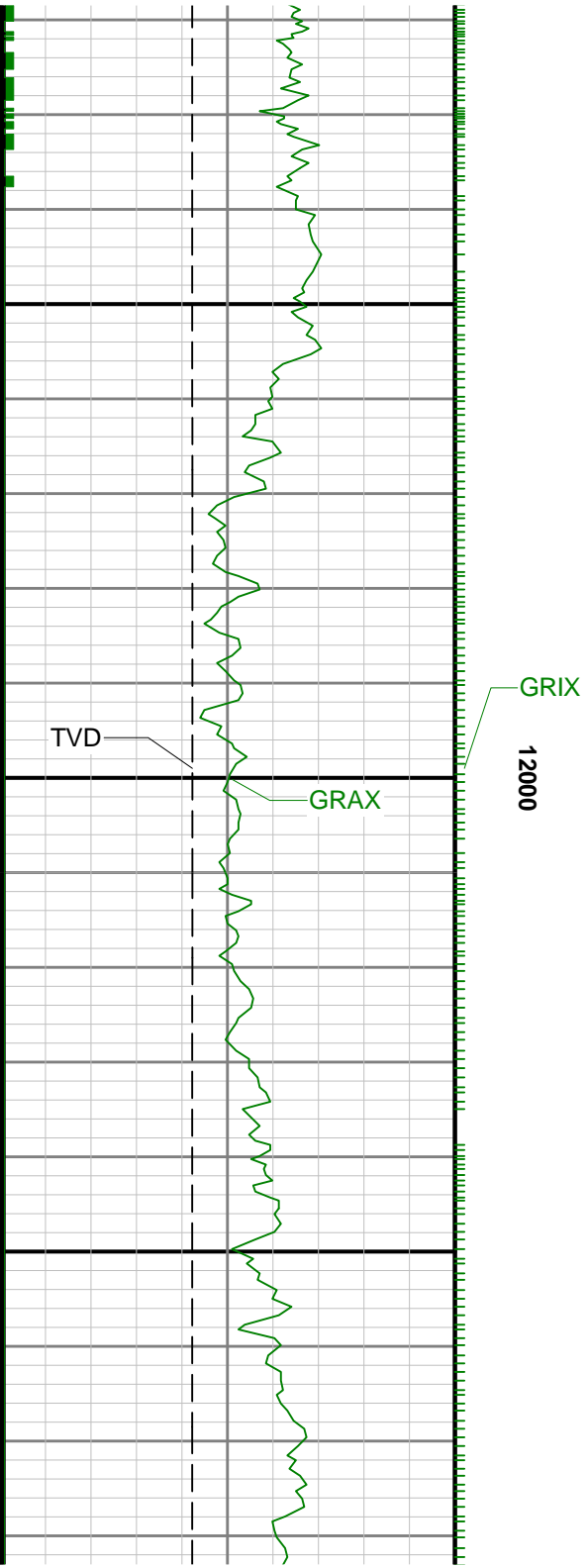


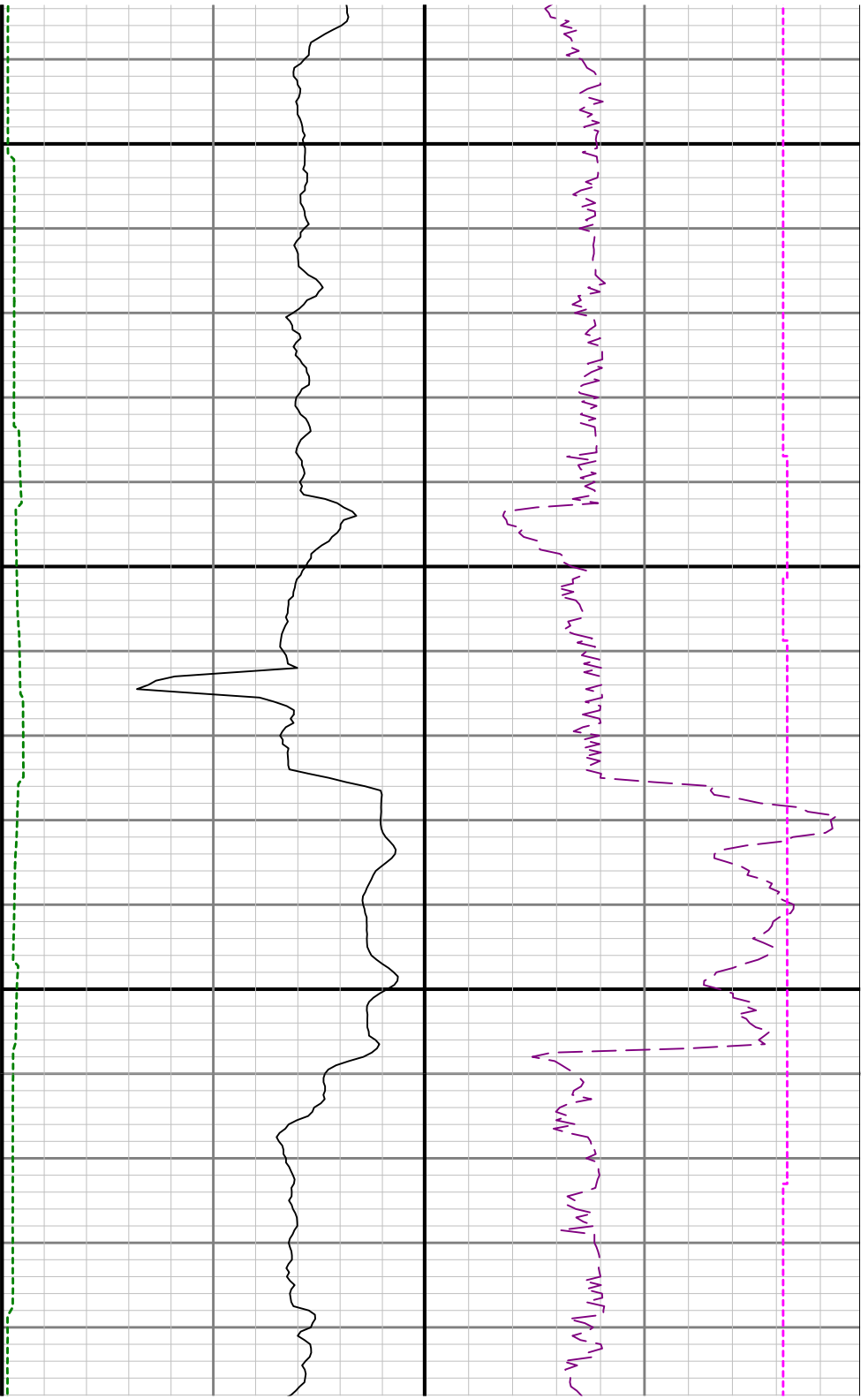
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11700



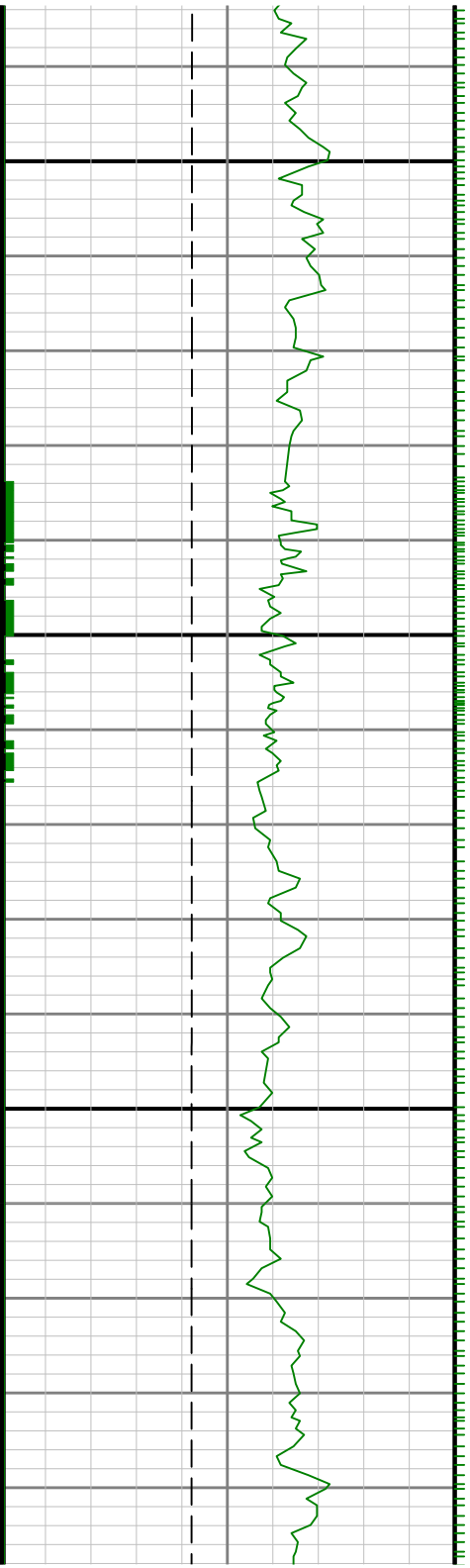


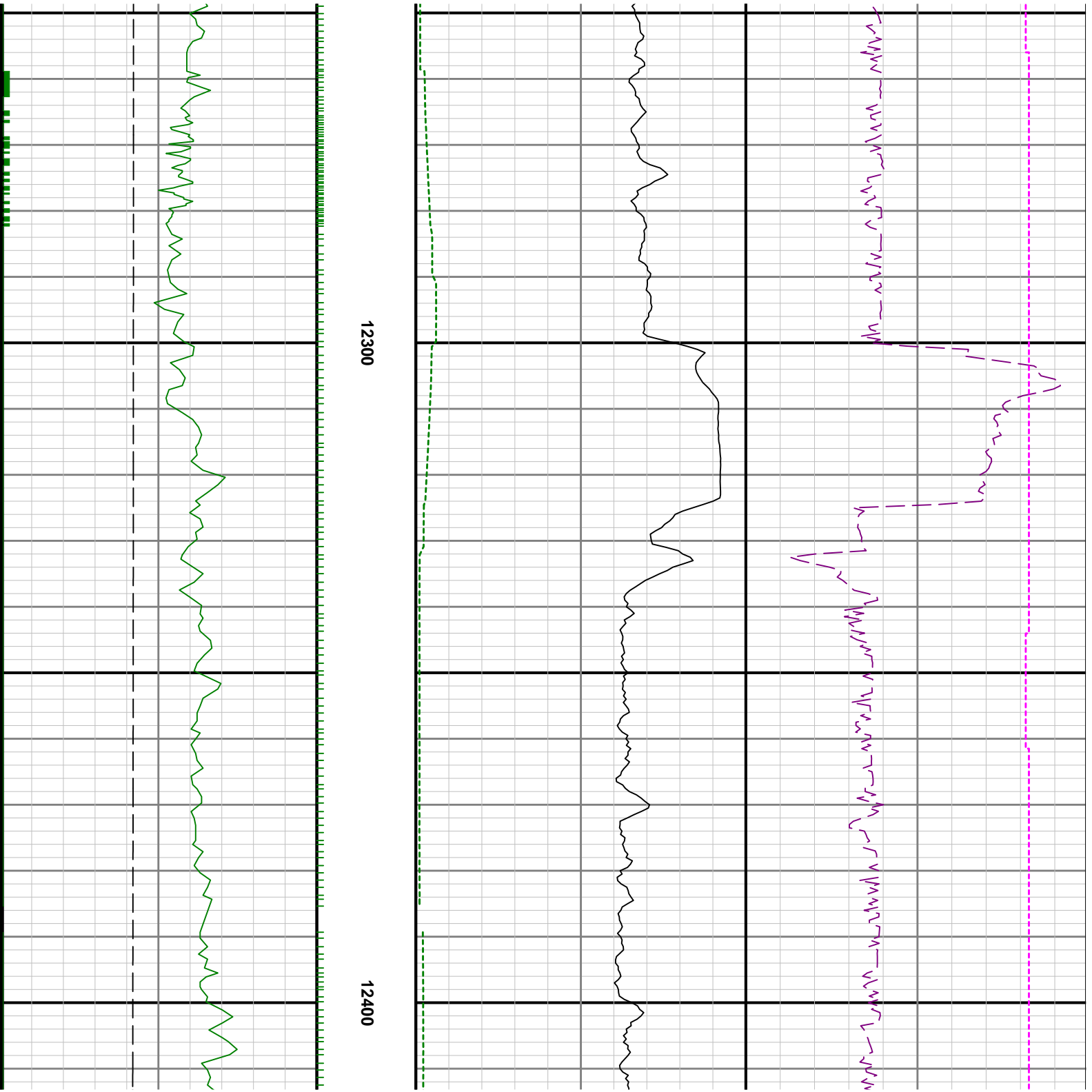


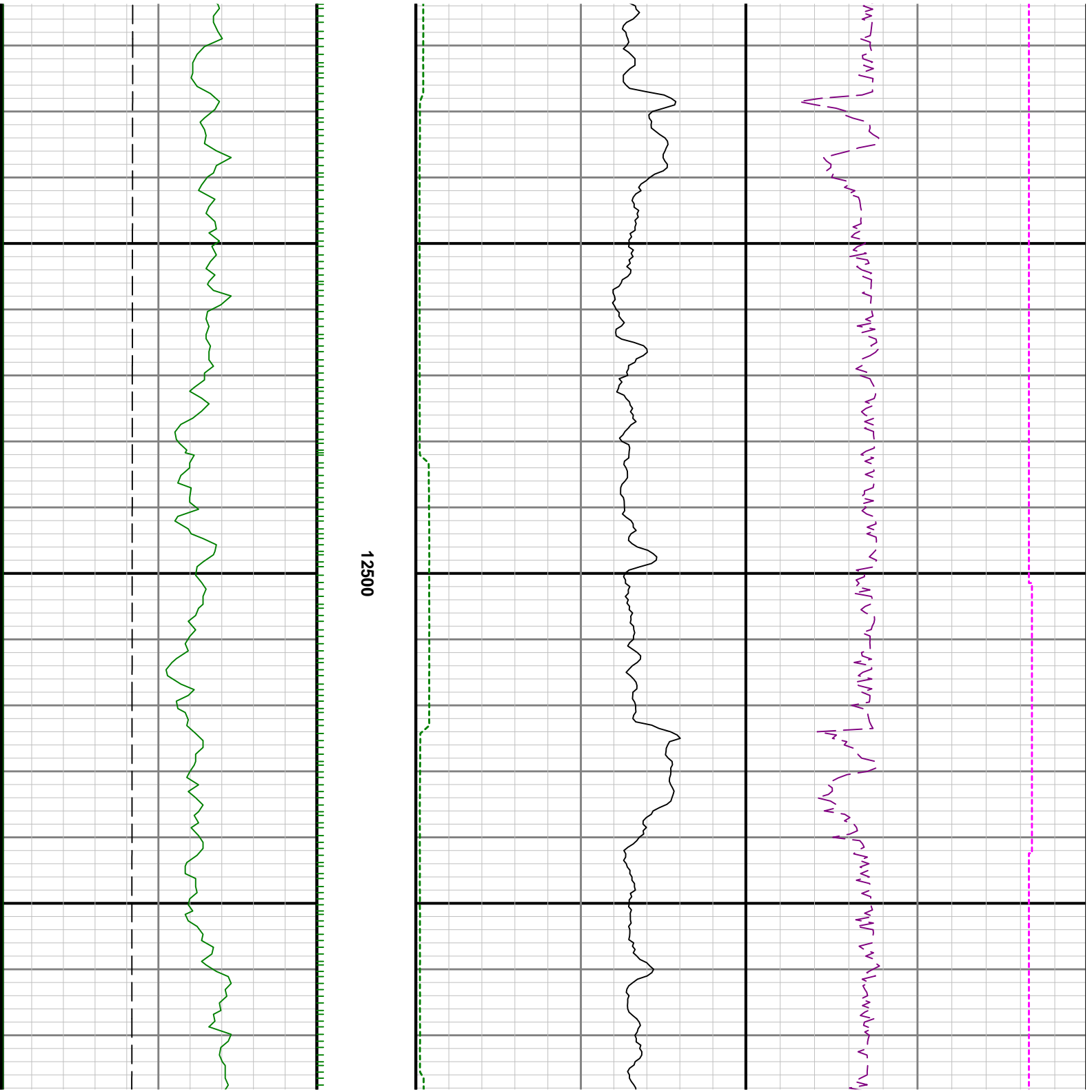


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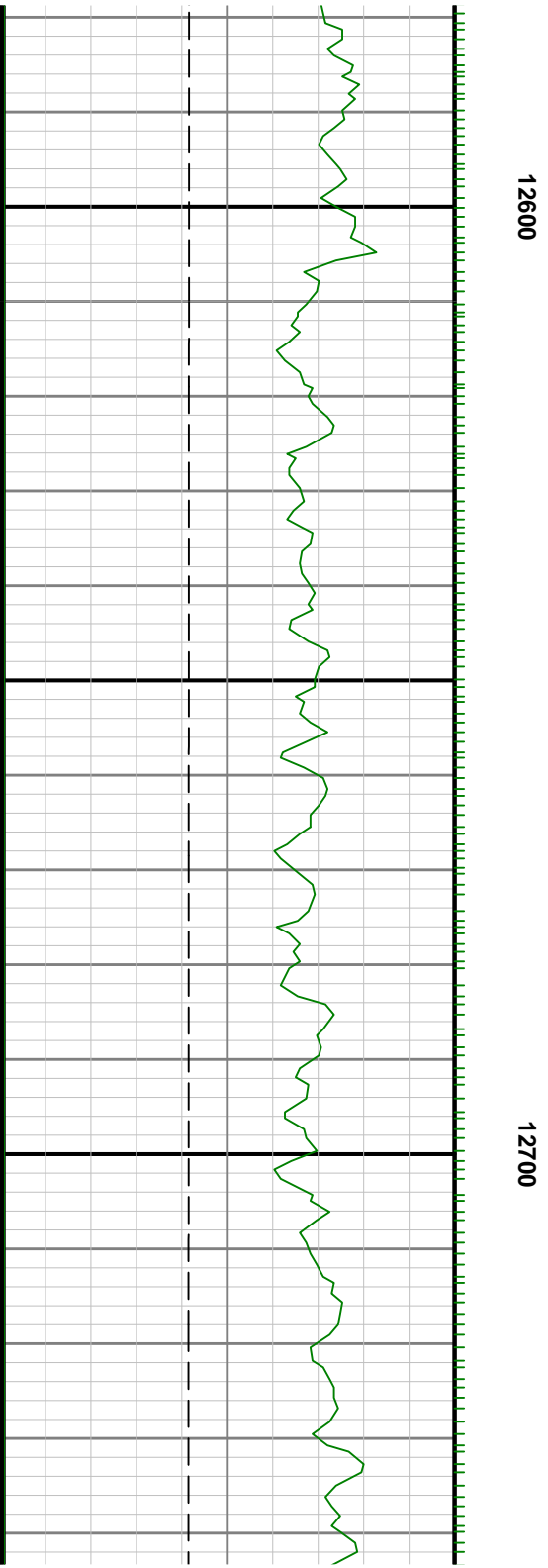
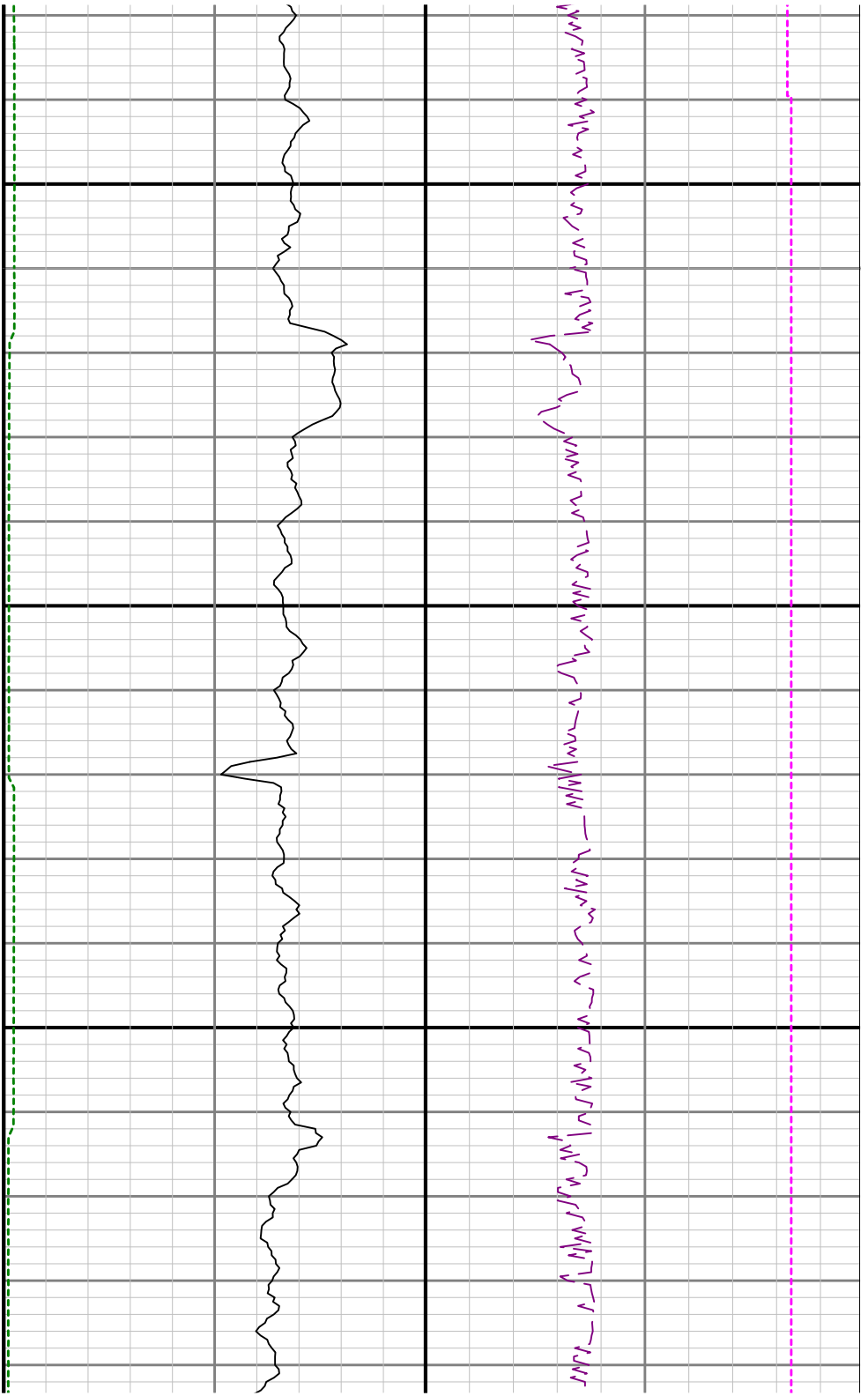
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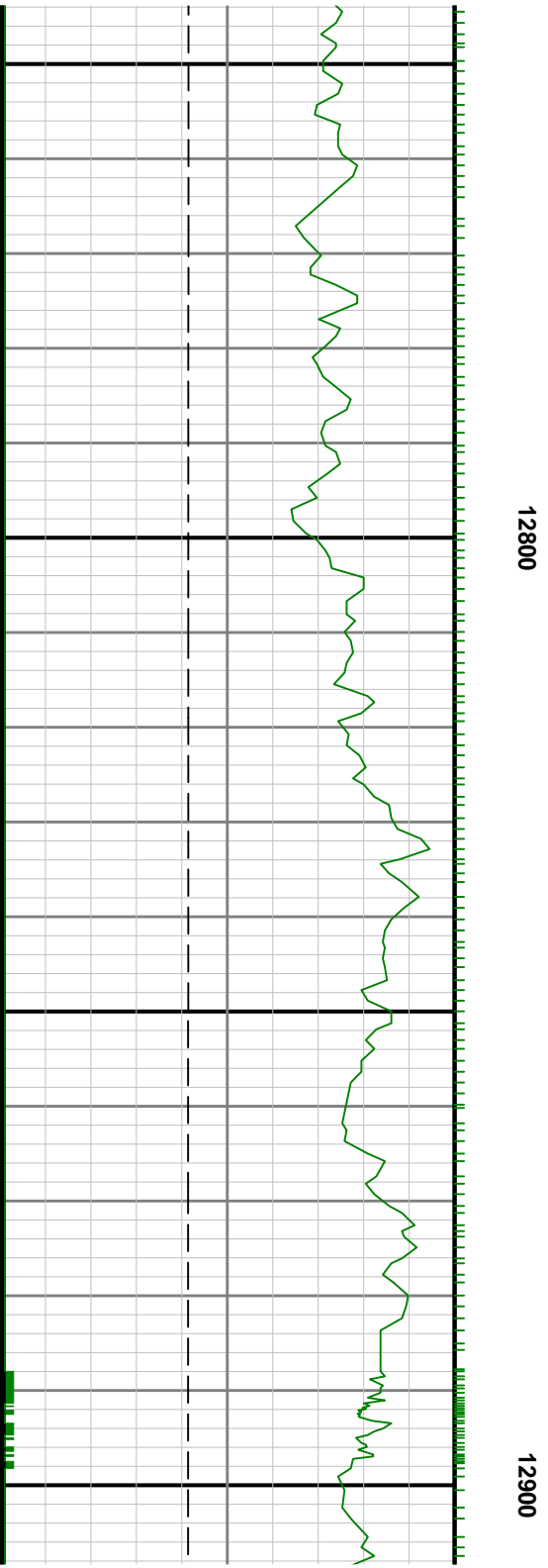
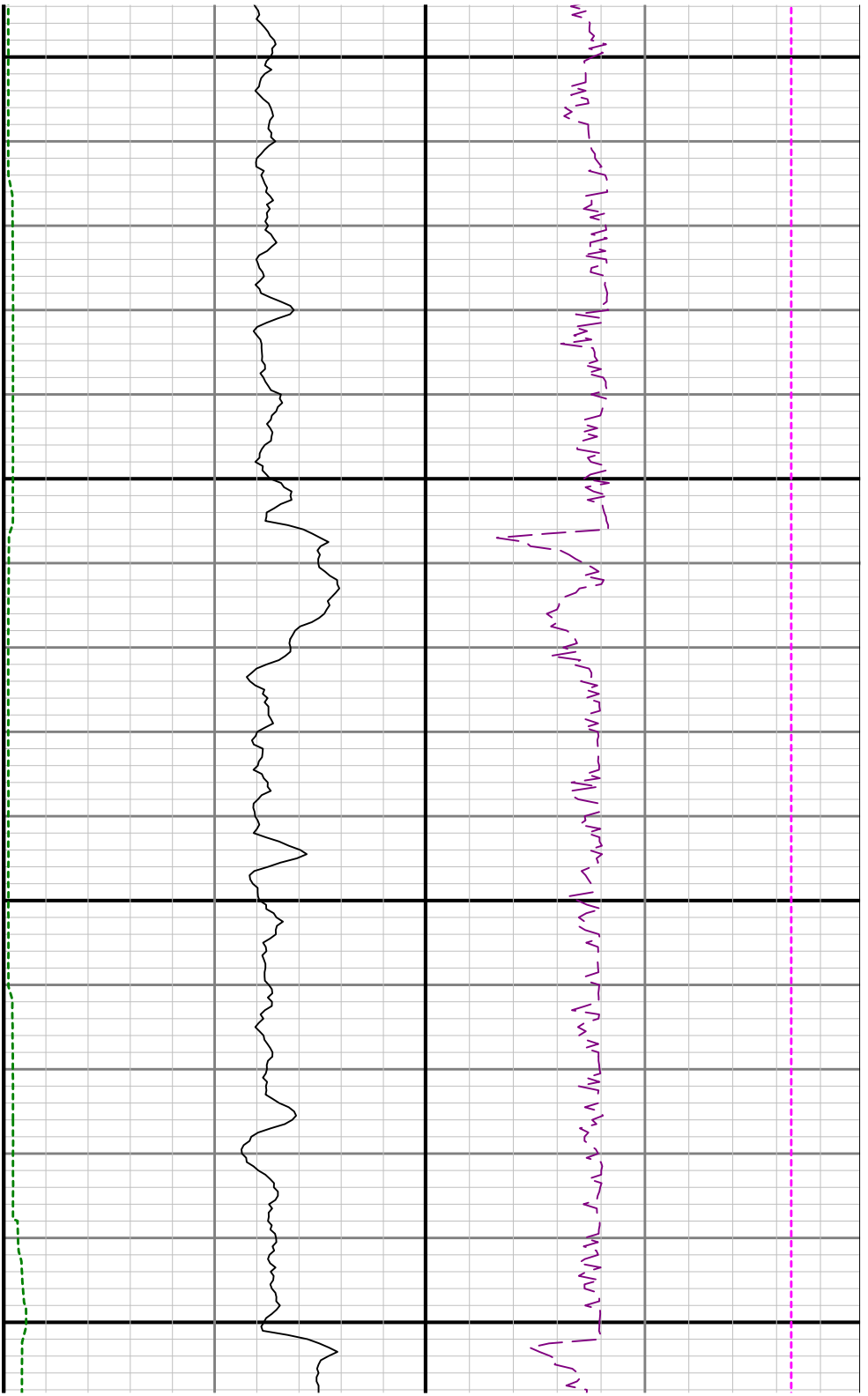




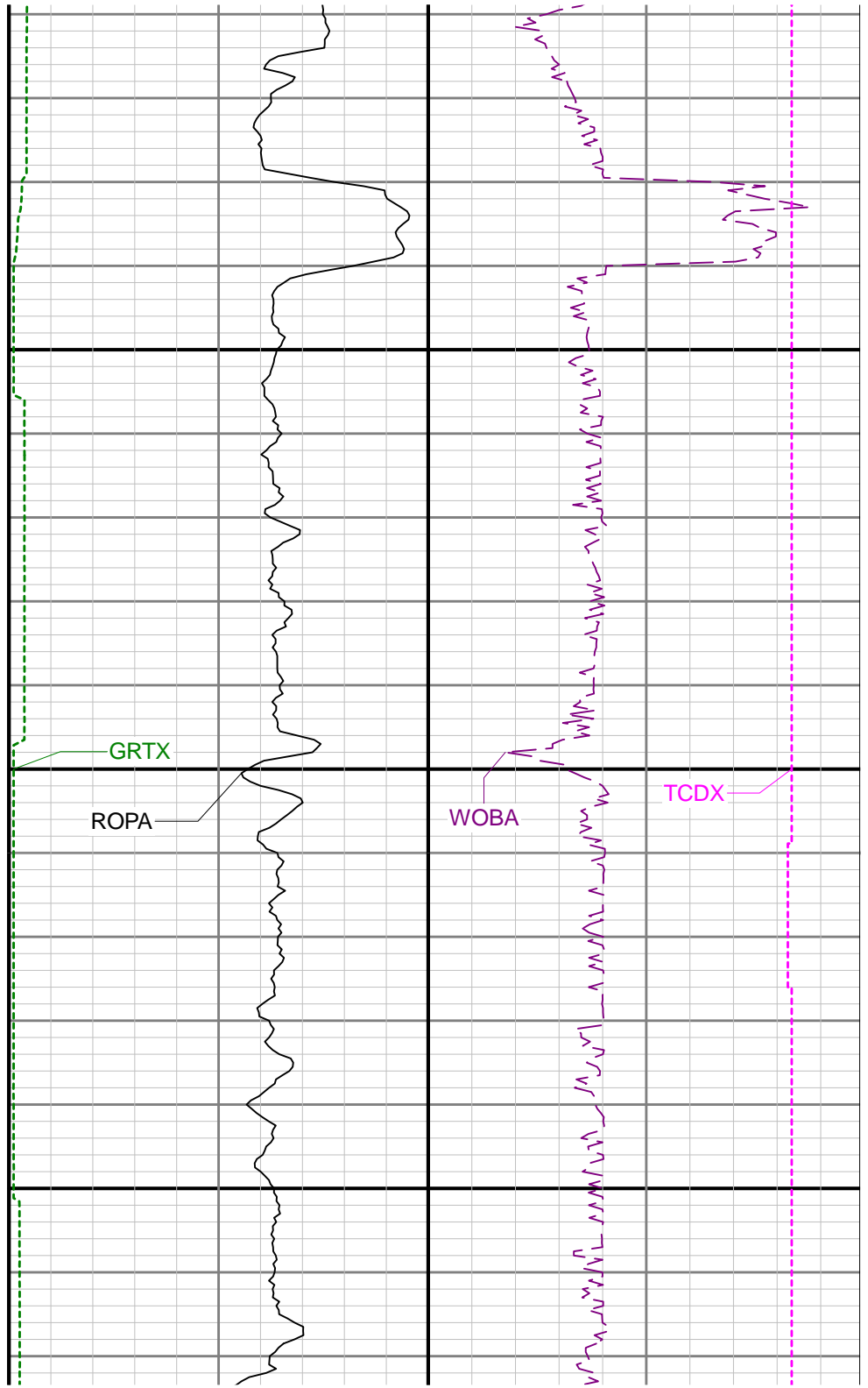
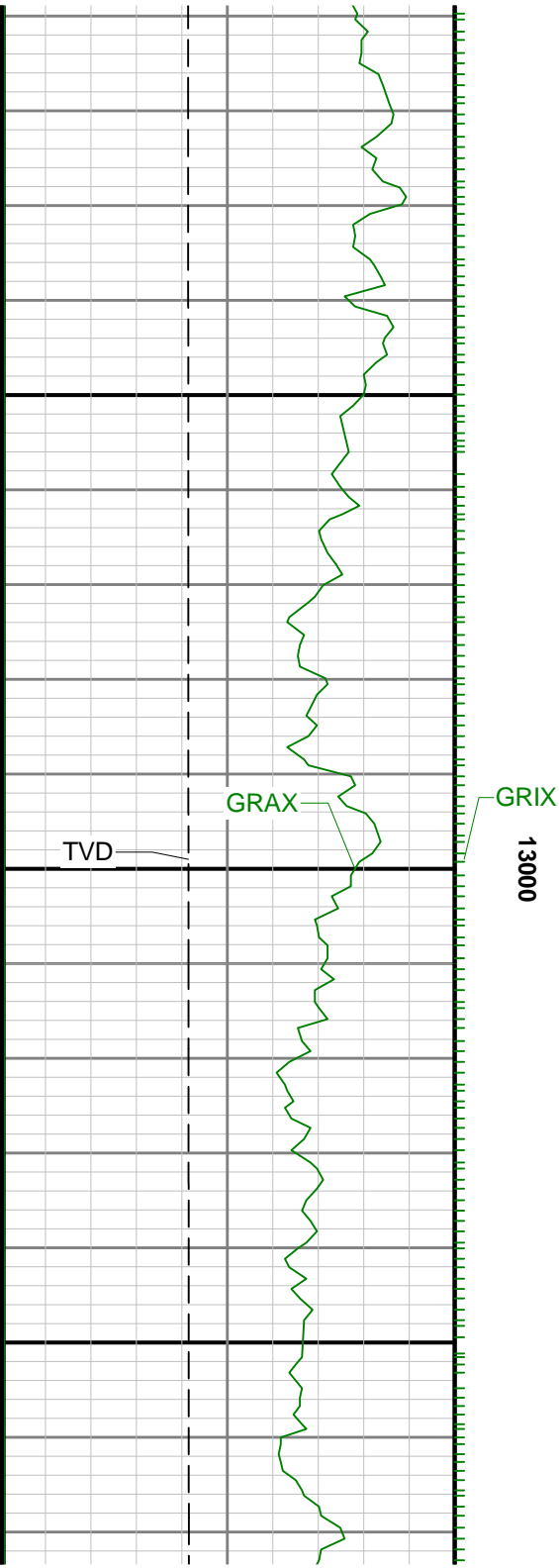


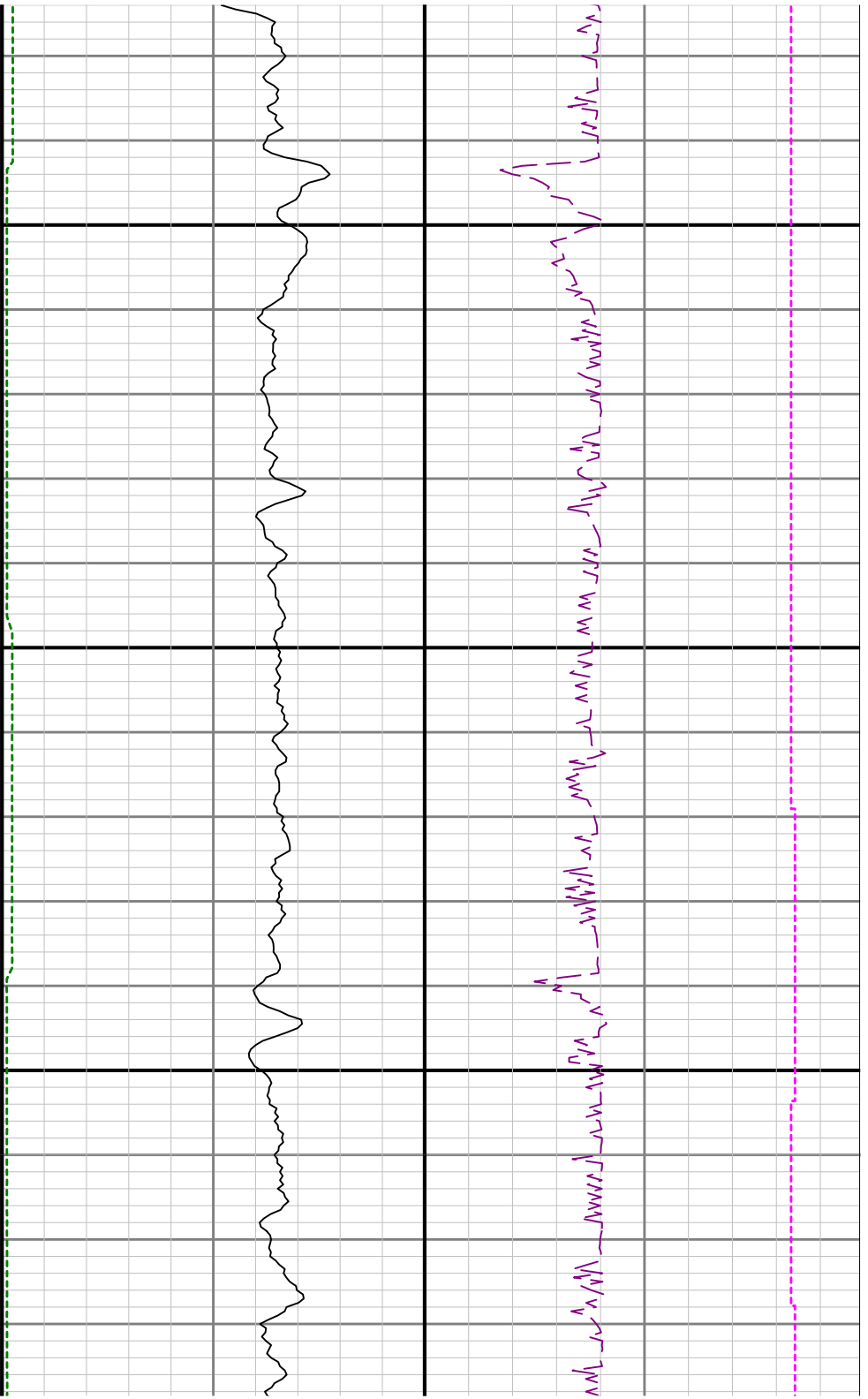
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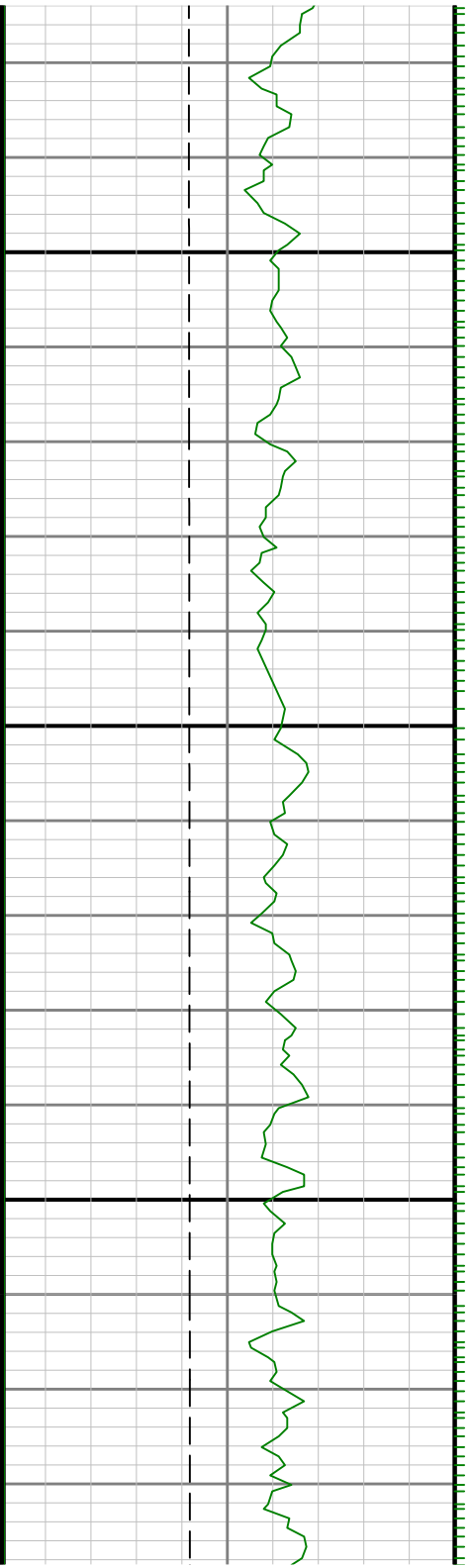


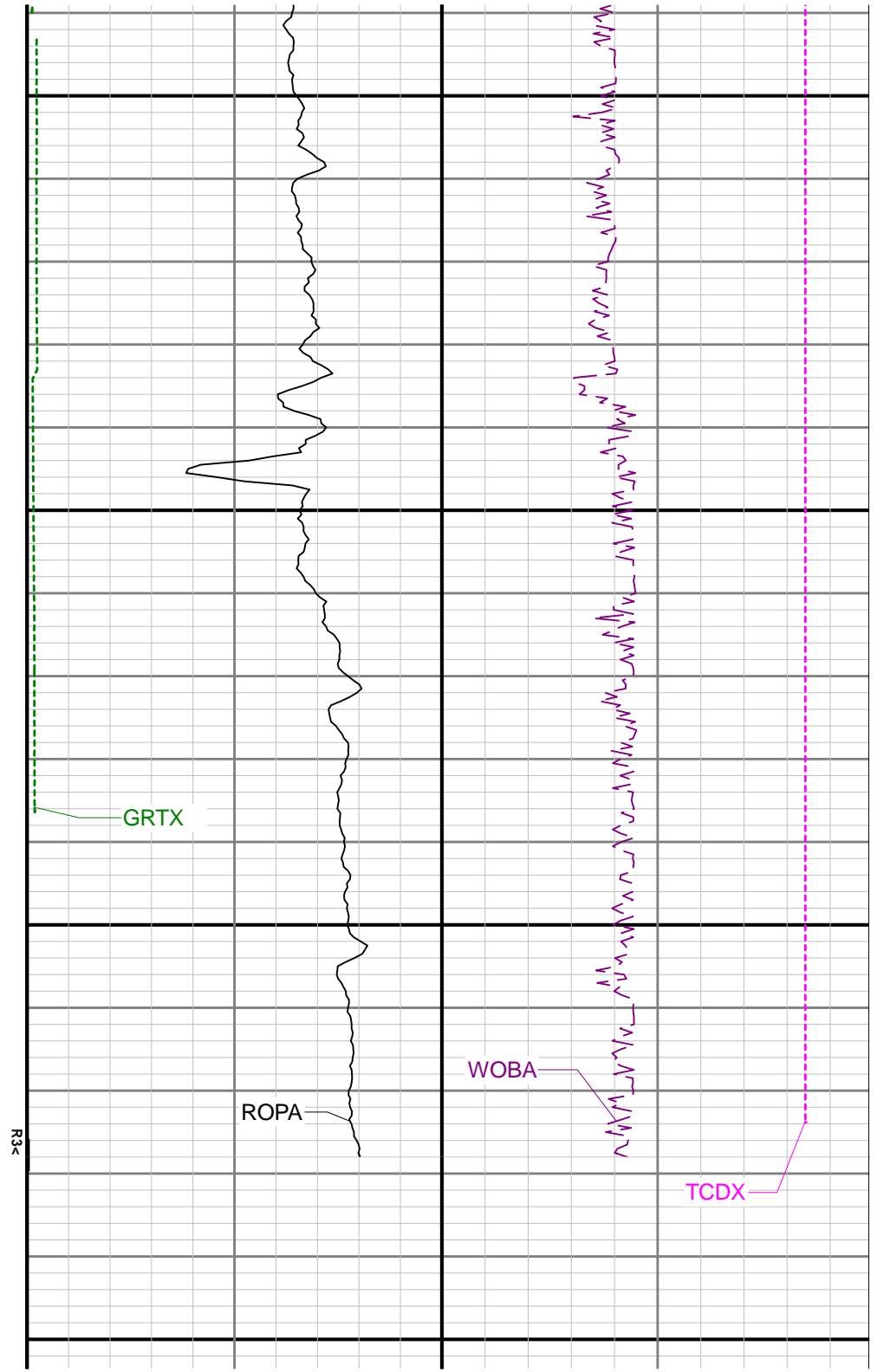
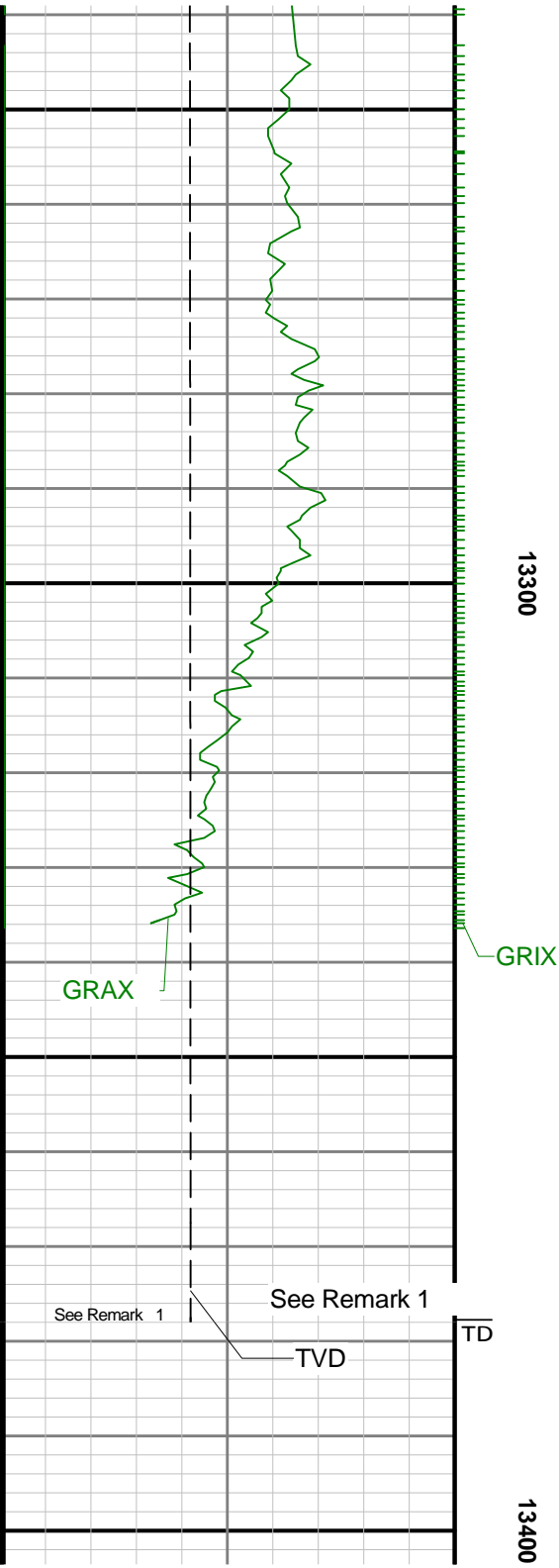




13100

13200





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