

| | | | | | | | |
|---|---------|----------|-------------------|-------|-------|-------|-------|
| 2 | ATC_MWD | 14219599 | Gamma (single) | 2.75 | 12.93 | 7.000 | 3.250 |
| 2 | ATC_MWD | 14219599 | Directional (mag) | 12.27 | 22.45 | 7.000 | 3.250 |

Service and Tool Mnemonics

| Mnemonic | Name | Description |
|----------|----------|-------------------------------|
| ATC_SU | ATC_SU | Auto Trak Curve Steering Unit |
| ATC_MWD | ATC_MWD | Auto Trak Curve MWD |
| ATC_LCPM | ATC_LCPM | Auto Trak Curve LCPM |

Comments

- 1

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.
- 2


Baker Hughes LWD run 1 and 2 utilized a 6 3/4 inch Navigamma services (Gamma Ray, and Directional) behind a 8 1/2 inch bit and rotary steerable assembly from 1938 to 11085 feet MD (1938 to 6075 feet TVD).

Remarks

| Number | Measured Depth (ft) | Hole Section (in) | Run No. | Remark |
|--------|---------------------|-------------------|---------|---|
| 1 | 11073.00 | 8.500 | 2 | The interval from 11073 to 11085 feet MD (6075 feet TVD) due to sensor to bit offset at well TD. |

Curve Mnemonics

| Presented Curves | Description | Units |
|------------------|-------------------------------------|----------|
| ROPA | Depth Averaged ROP 3 ft Average | ft/h |
| TVD | True Vertical Depth | ft |
| WOBA | Weight On Bit, Average 1 ft Average | klb |
| 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 |



Company

Well

Interval

Created

Noble Energy

Freedom Federal LC21-630

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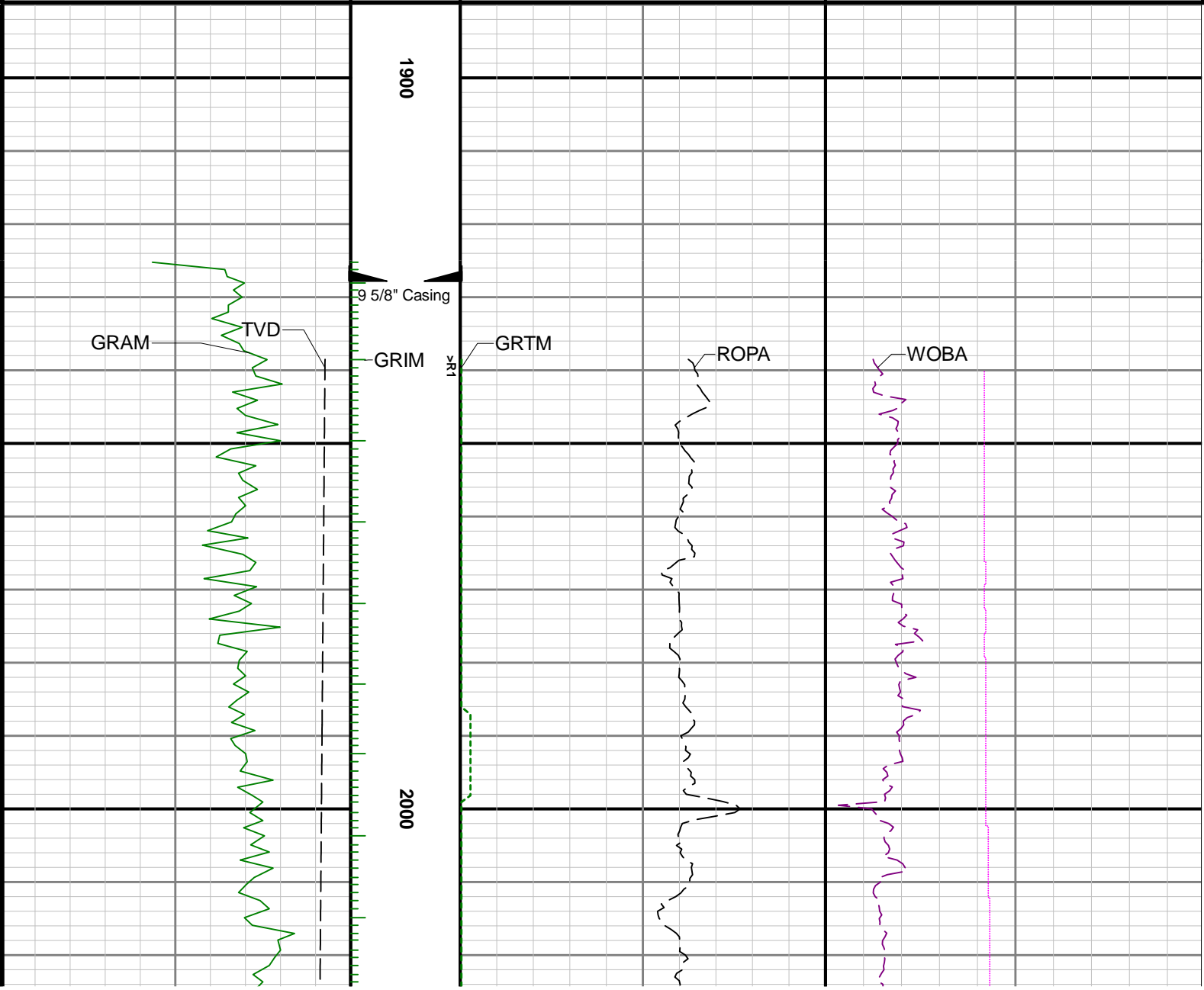
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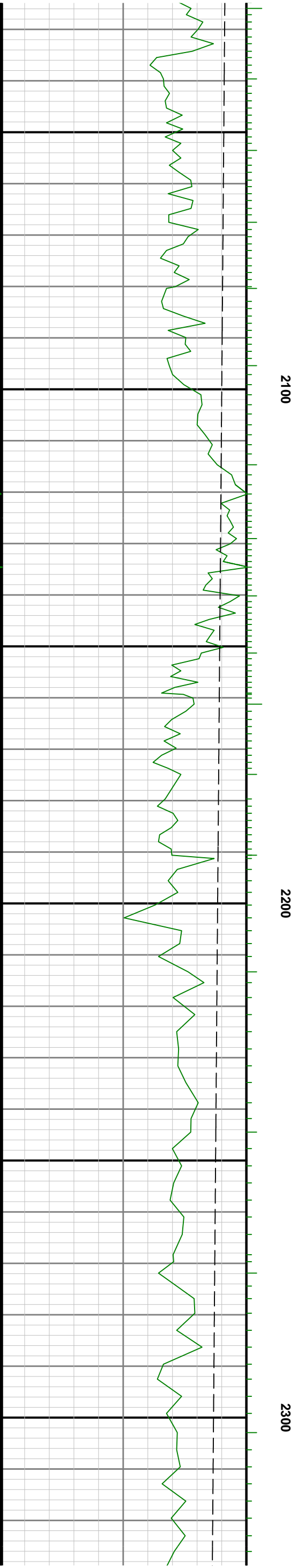
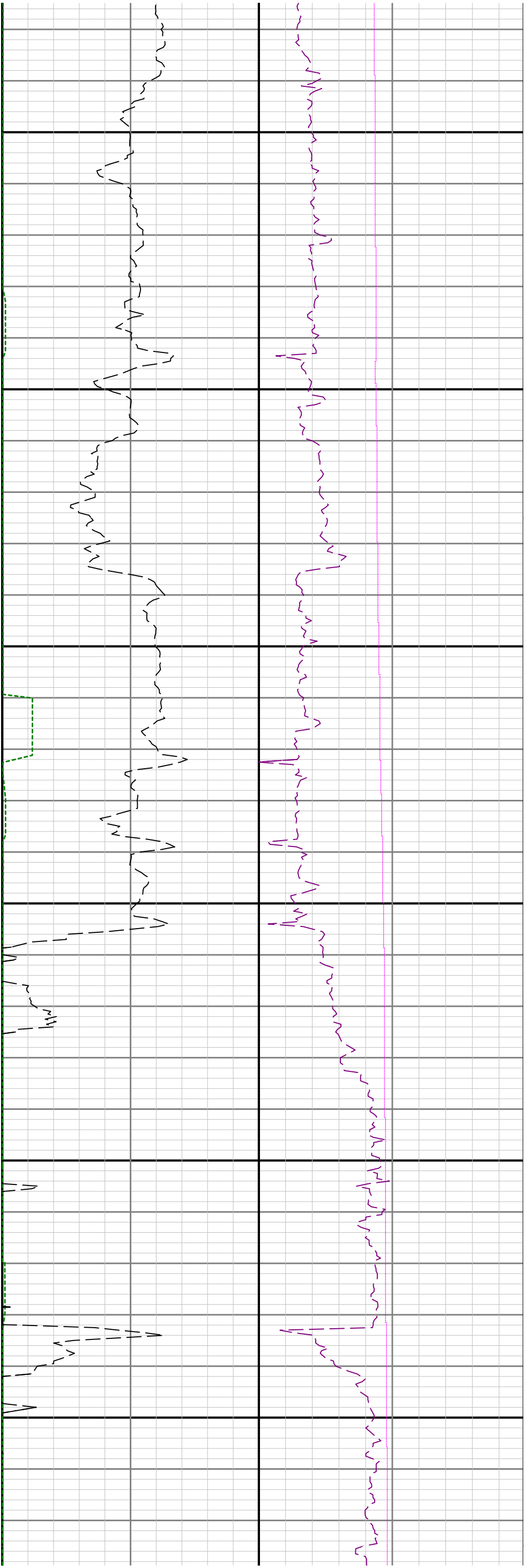
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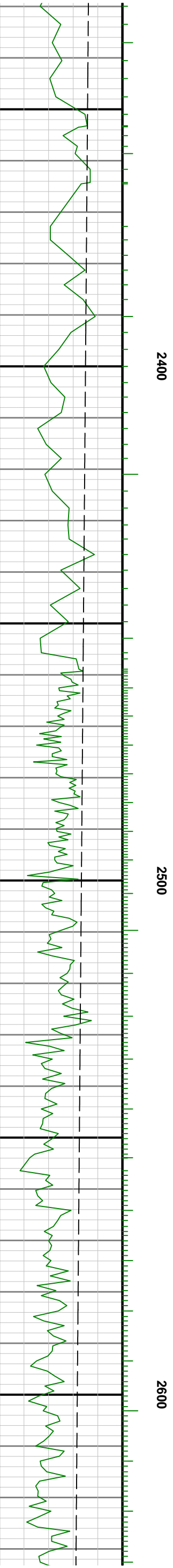
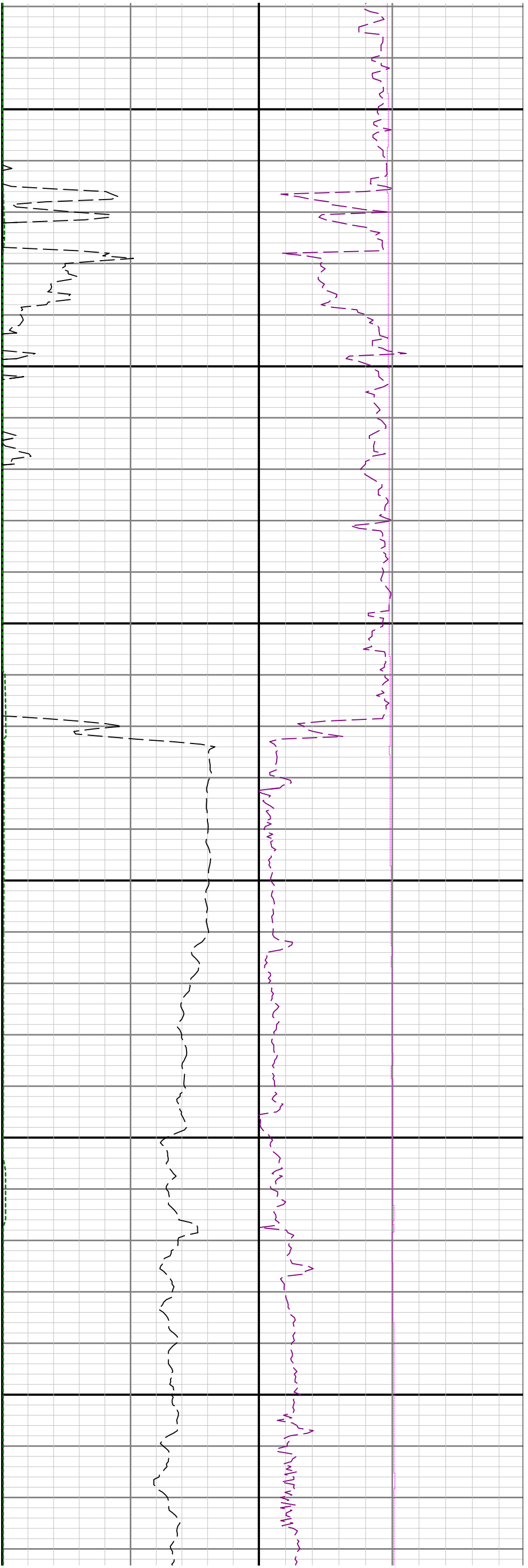
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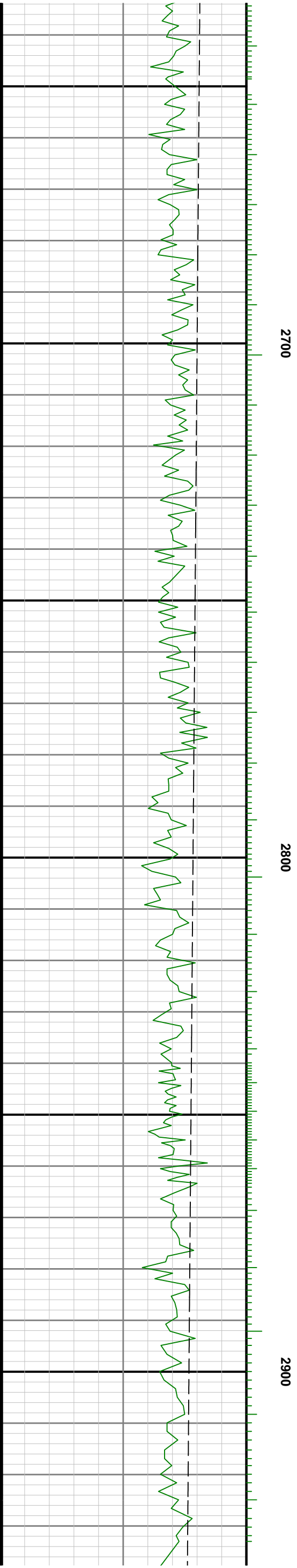
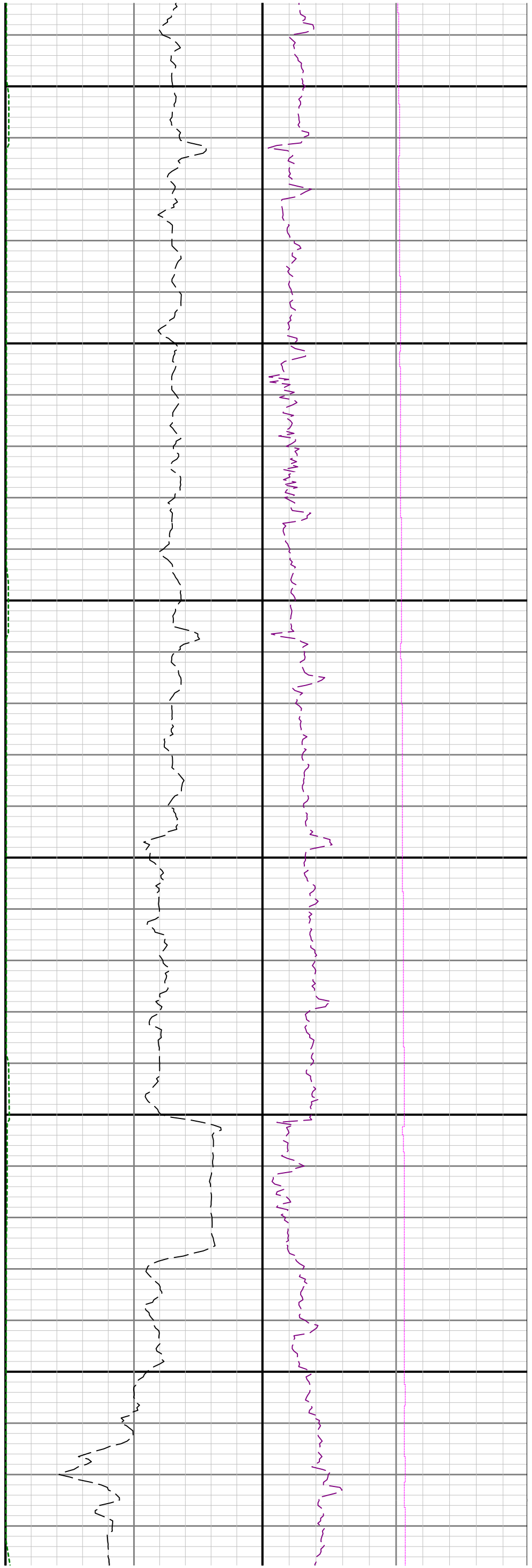
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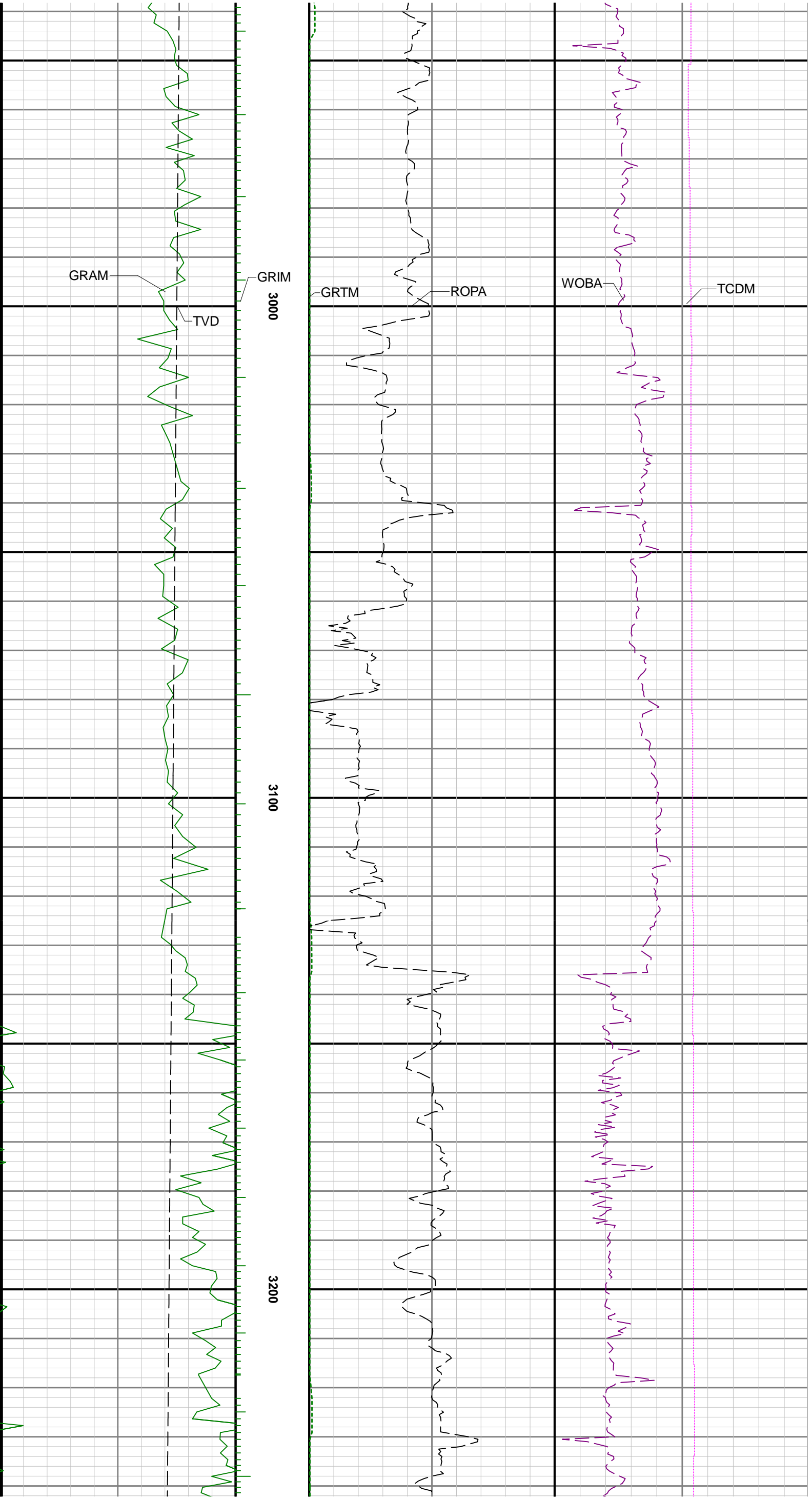
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|--|---------------|--------------------------------------|--|
| Gamma Ray - Apparent 0.5 ft Average GRAM | MD 1:240 feet | Gamma Time Since Drilled GRTM | Weight On Bit, Average 1 ft Average WOBA |
| 0150 | | 0600 | 050 |
| API | | min | klb |
| True Vertical Depth TVD | | Depth Averaged ROP 3 ft Average ROPA | Downhole Temperature TCDM |
| 75001500 | | 10000 | 0250 |
| ft | | ft/h | degF |

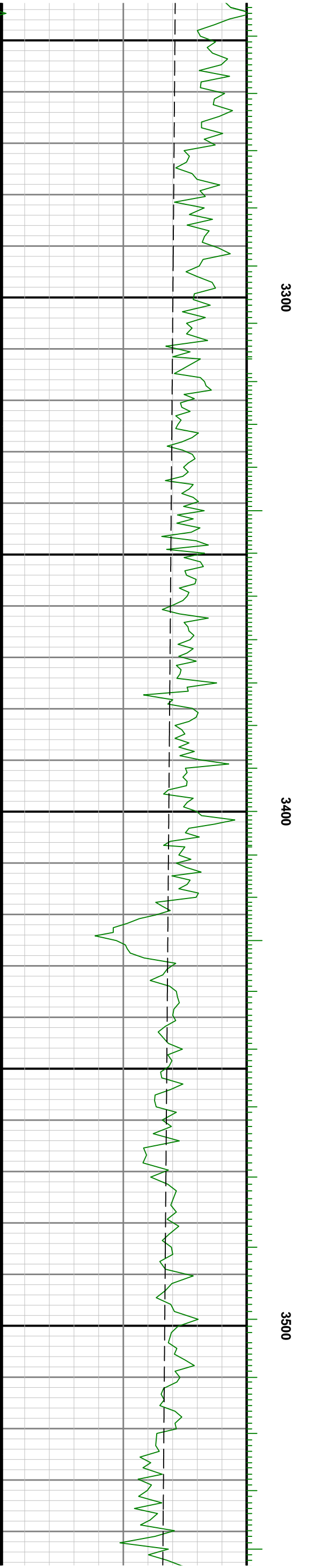
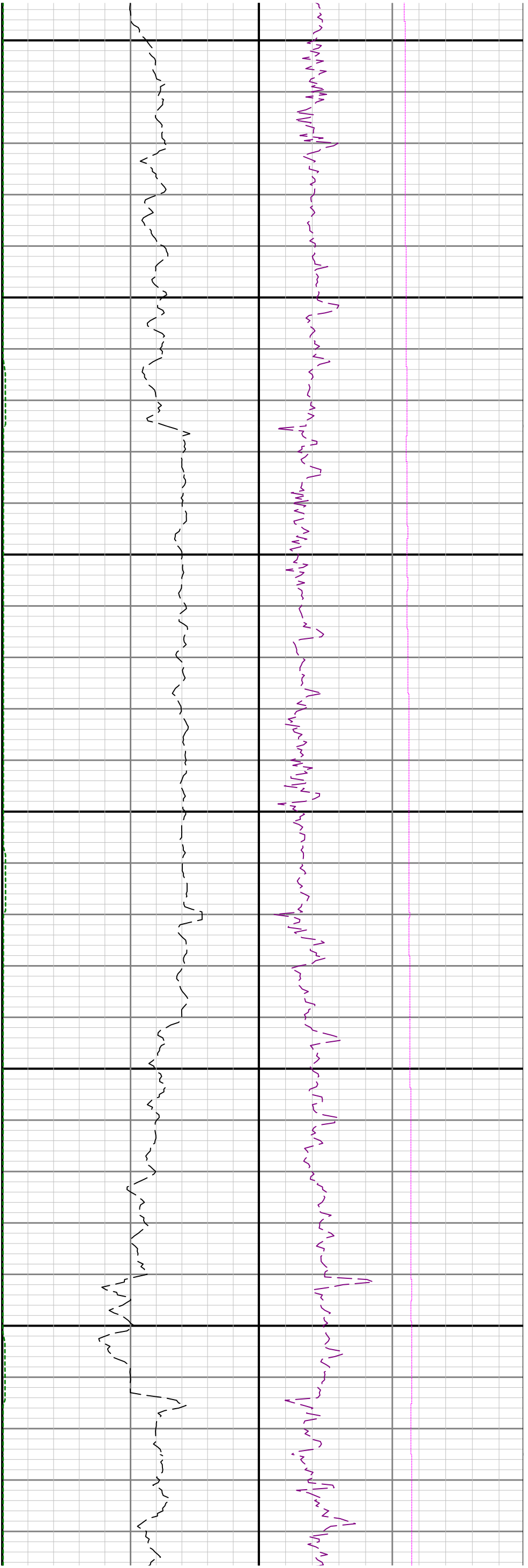


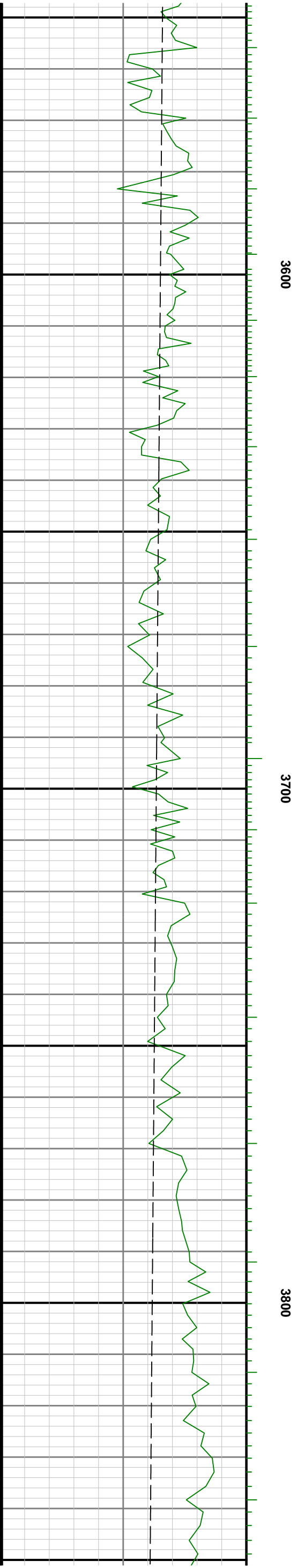
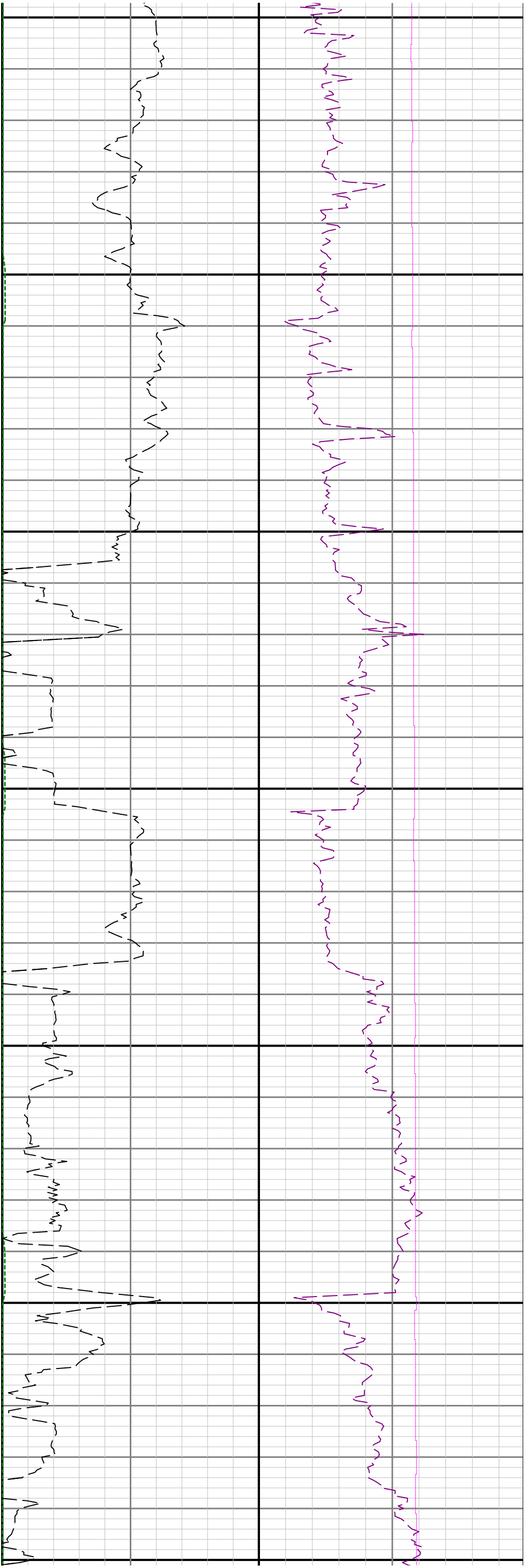


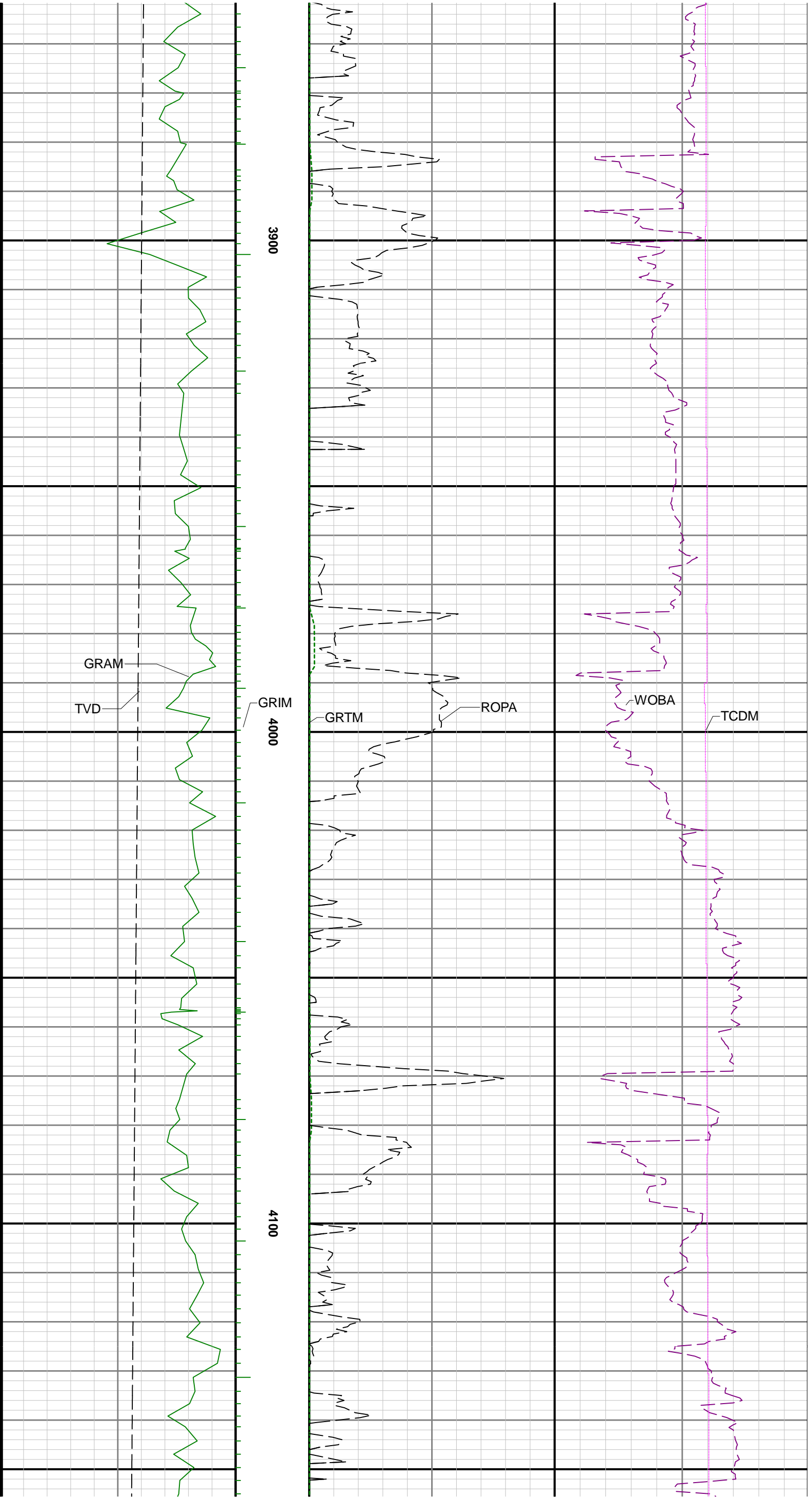


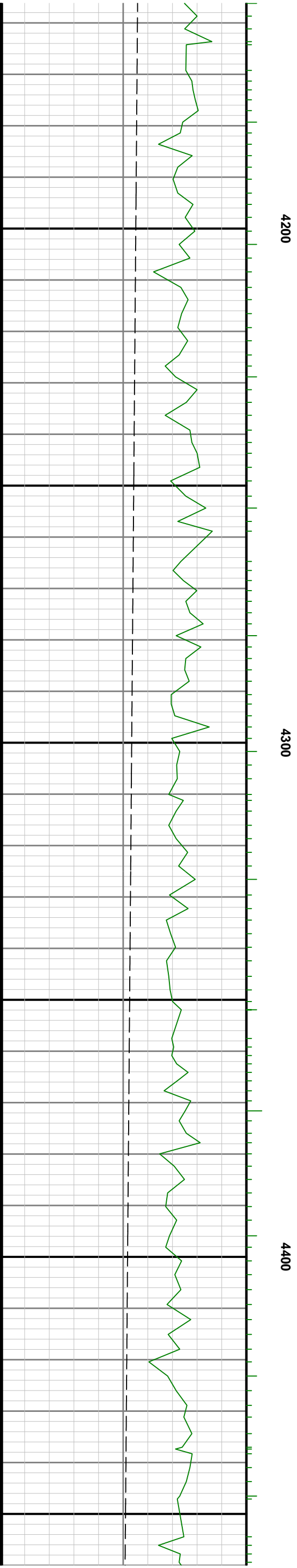
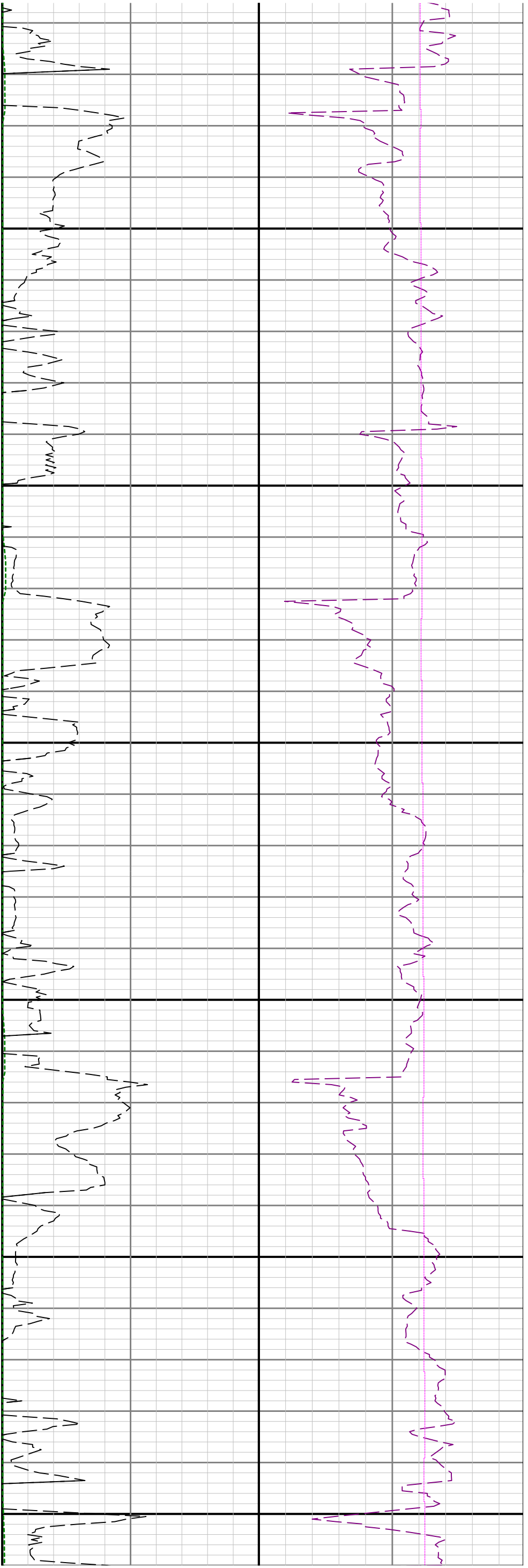


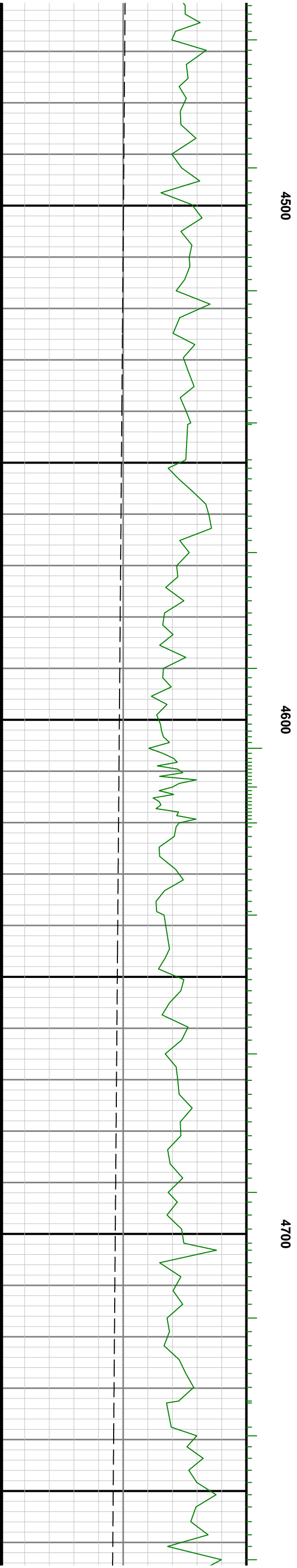
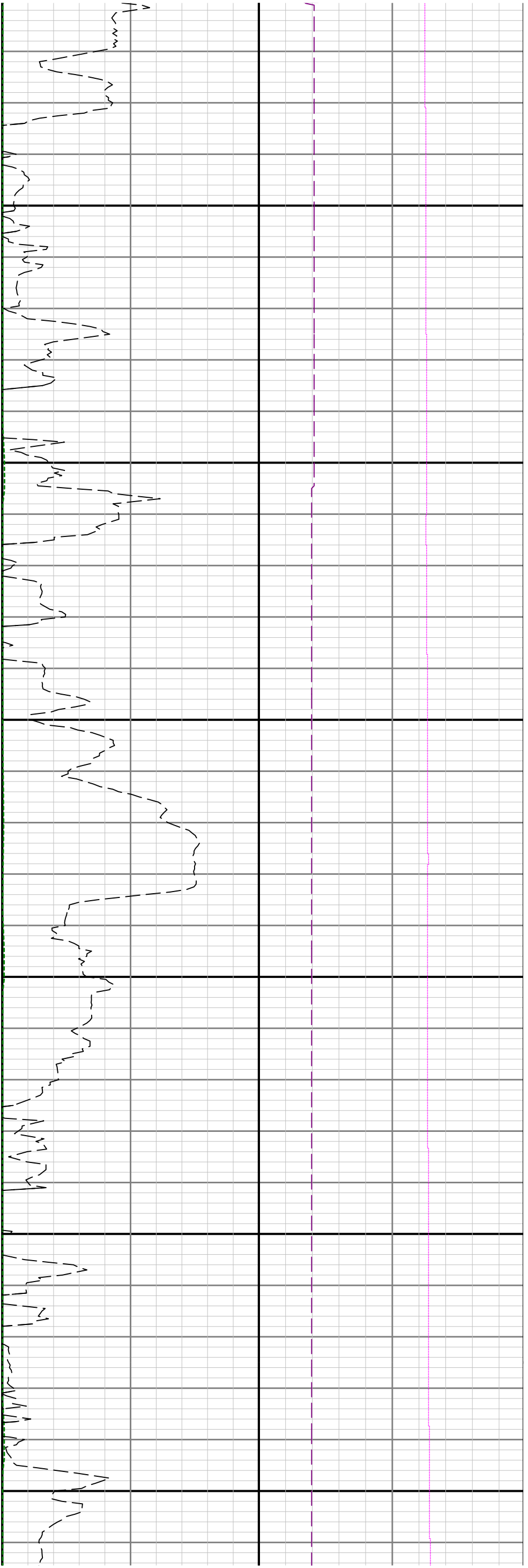


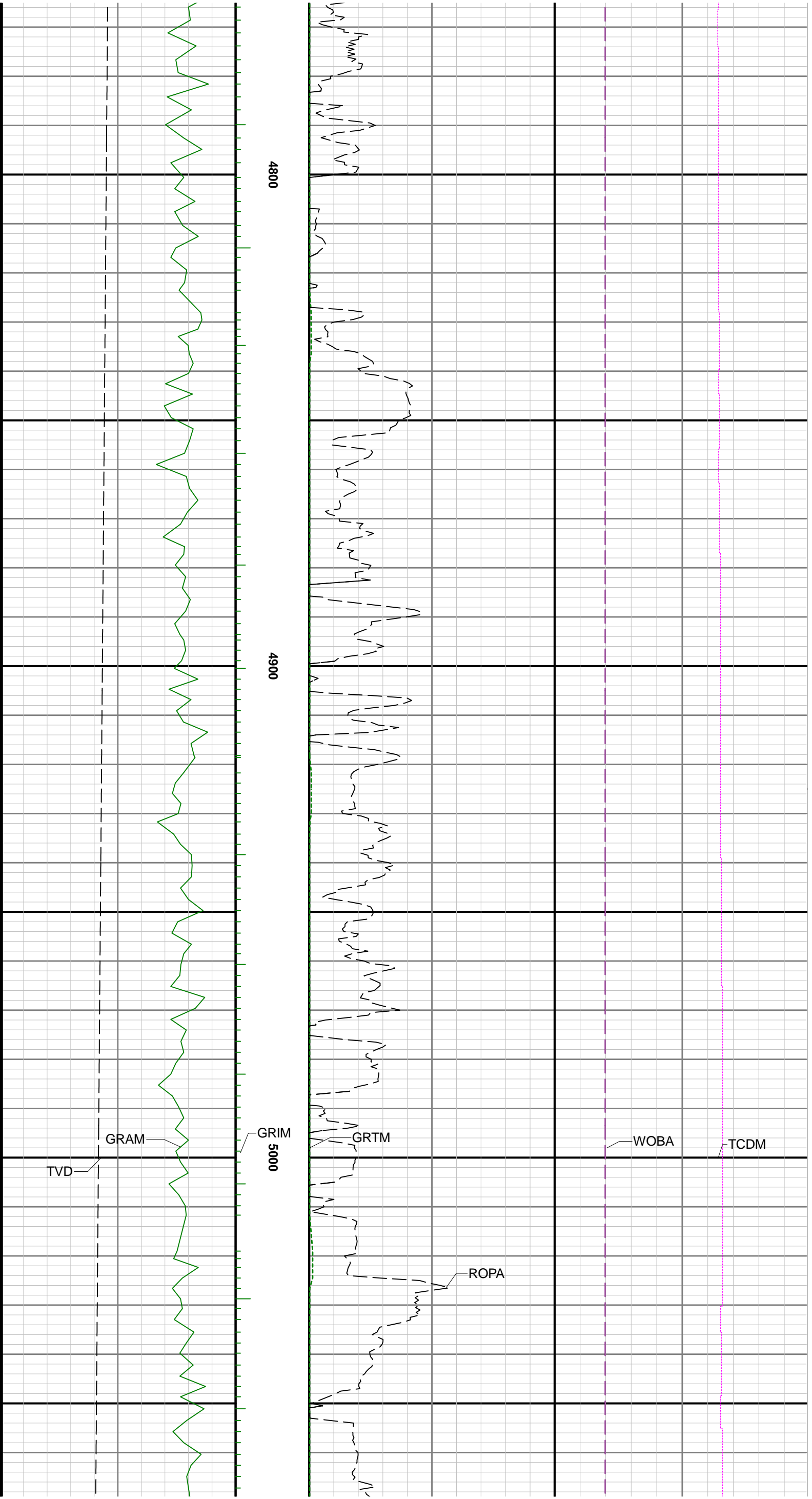


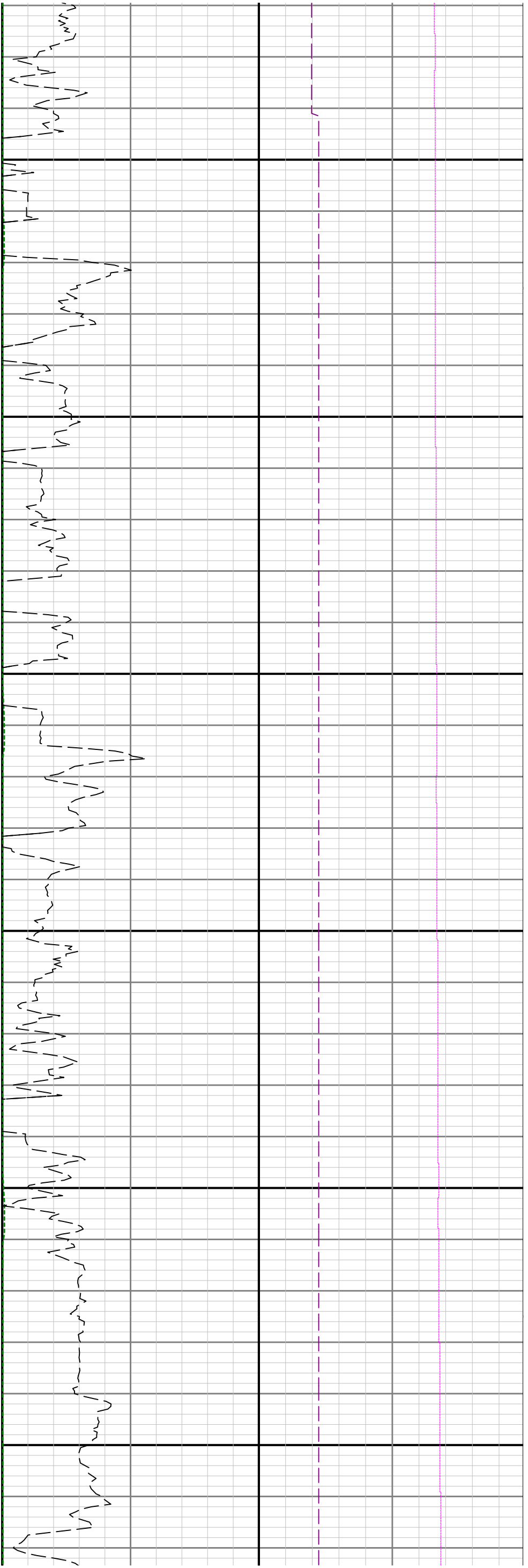








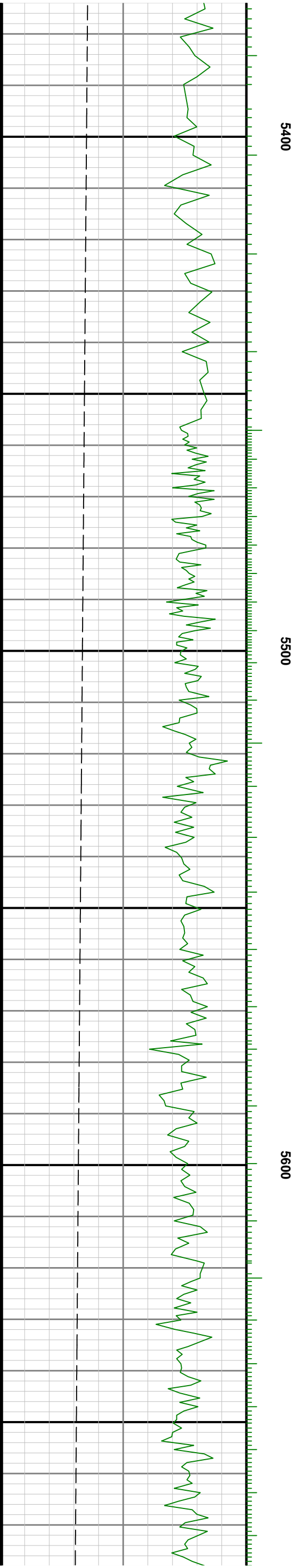
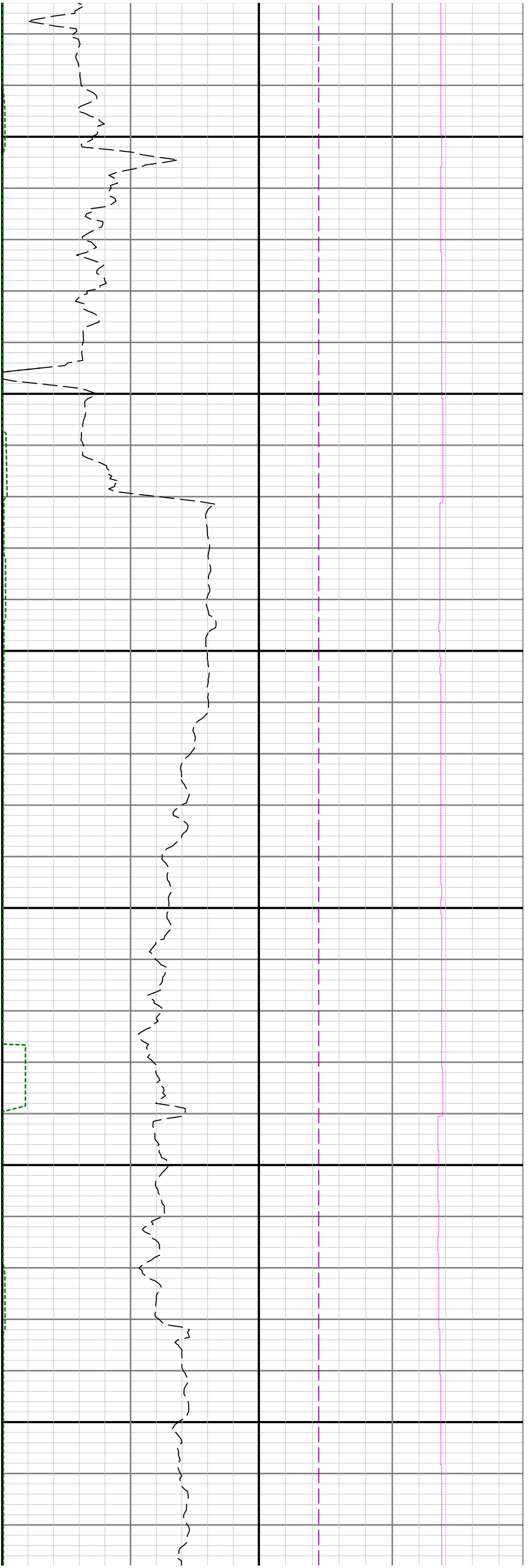


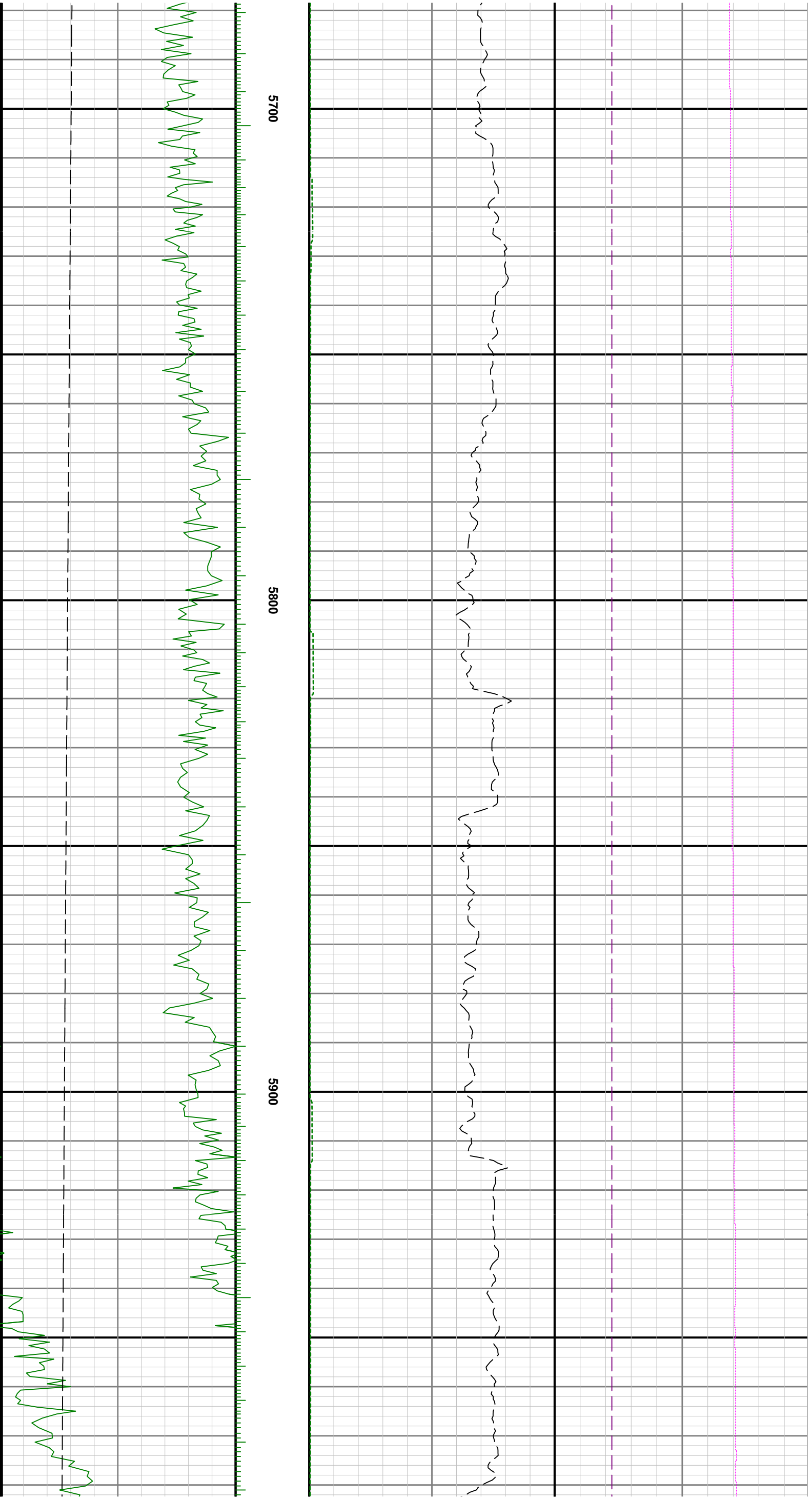


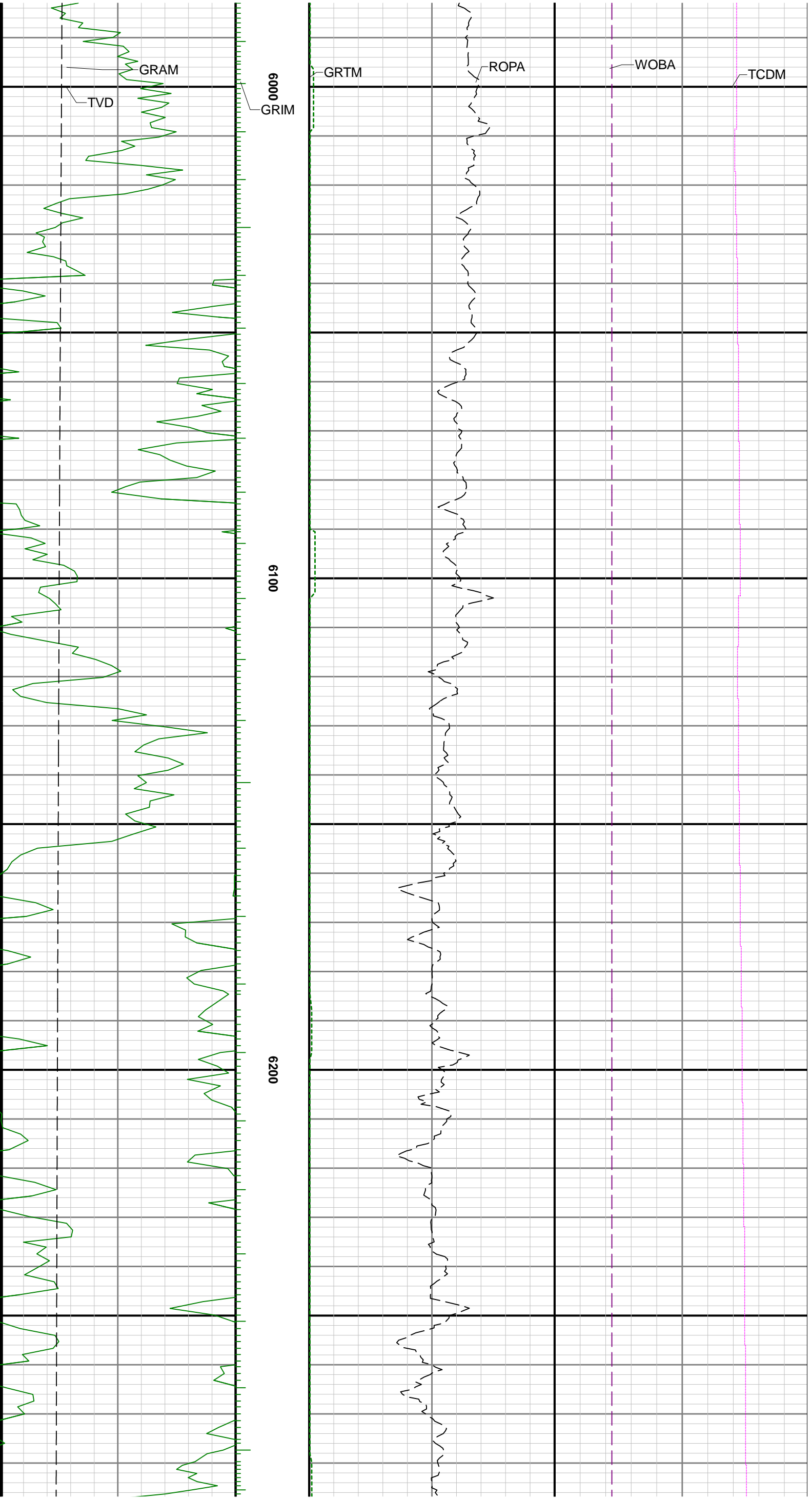
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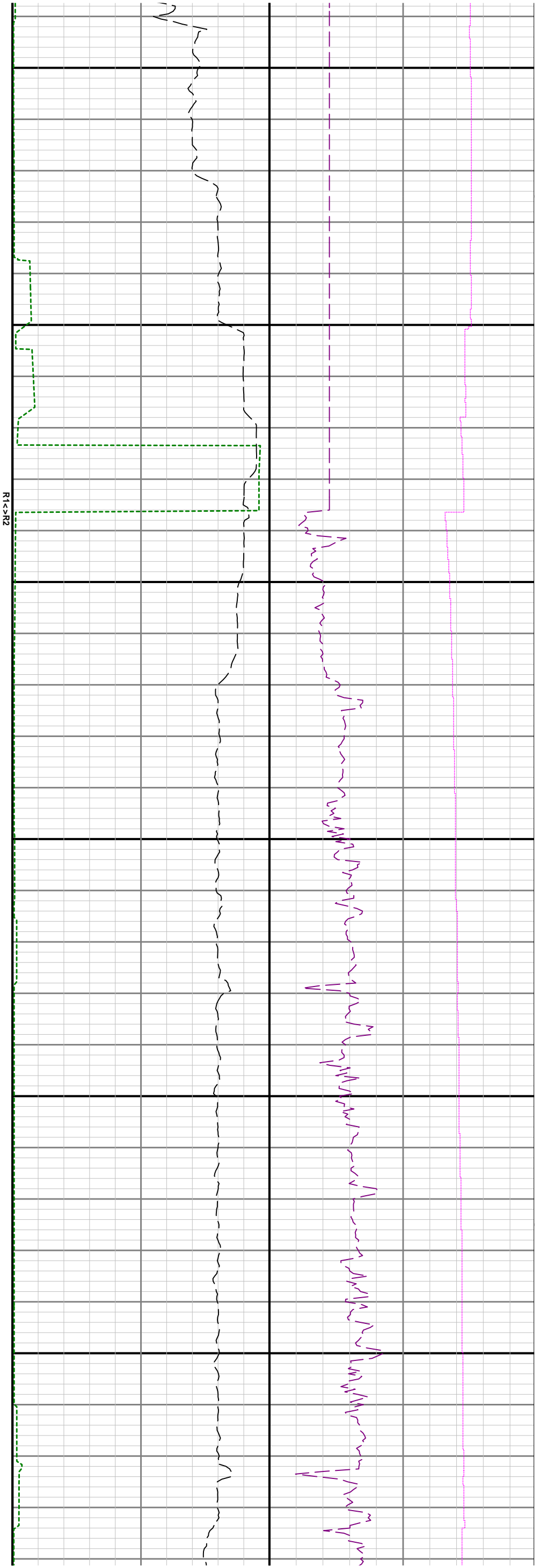
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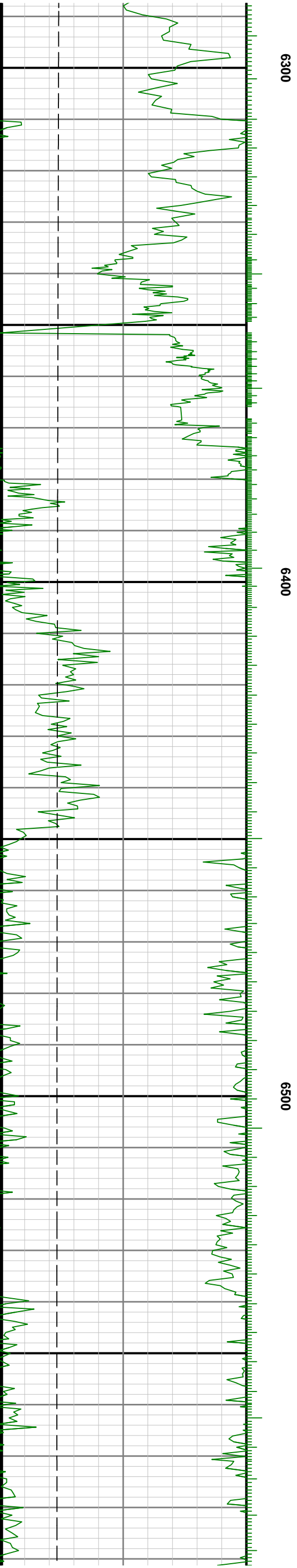


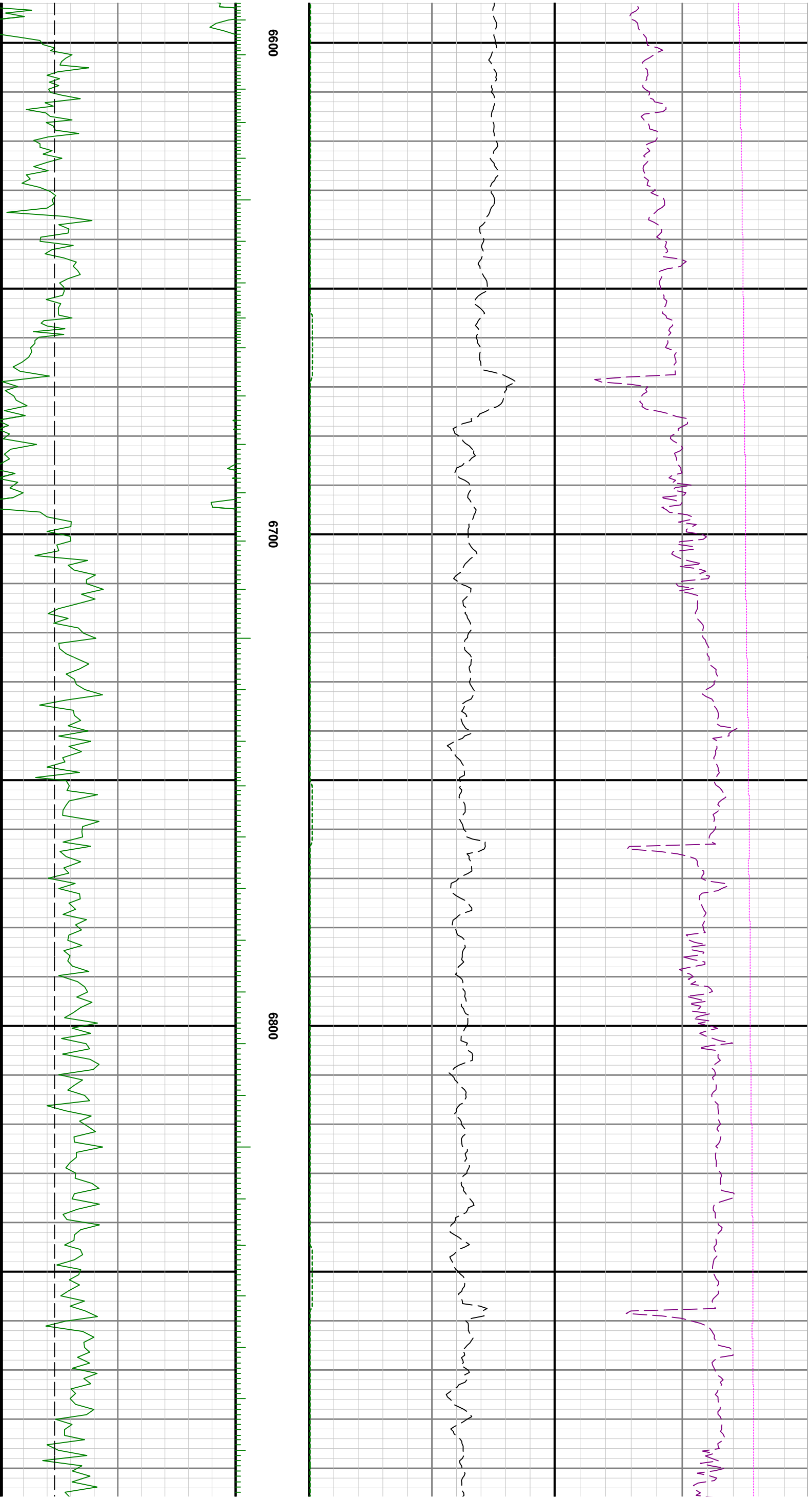


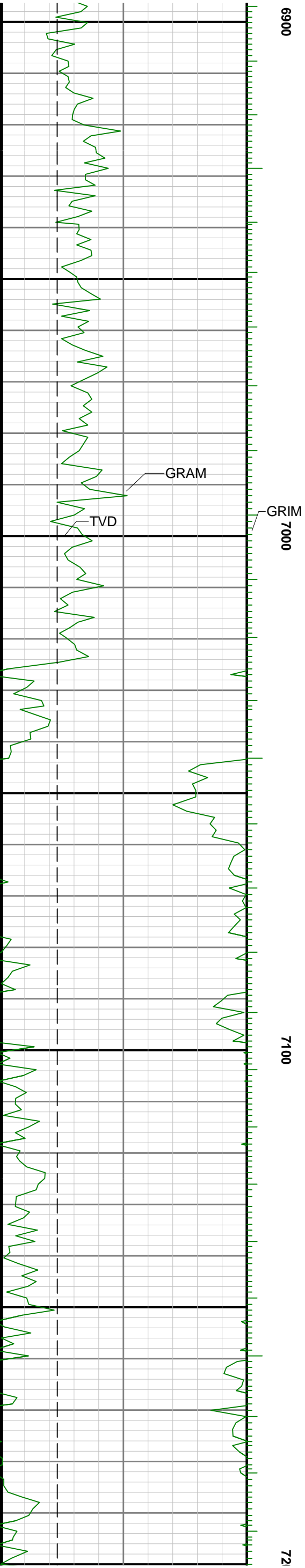
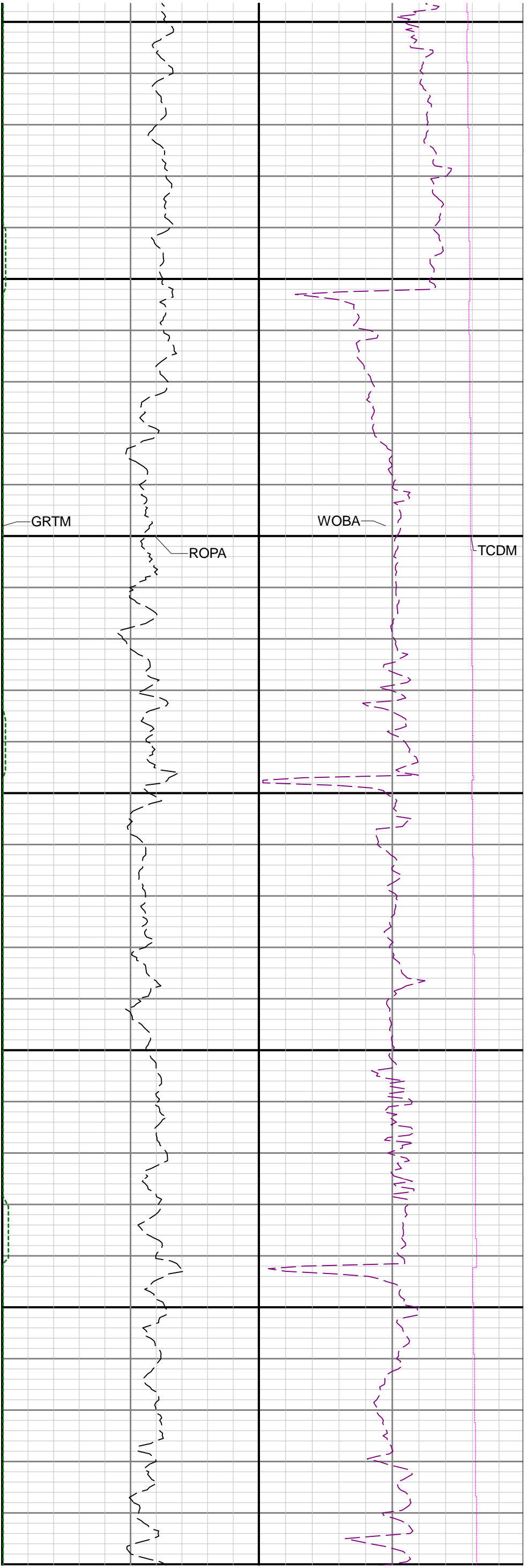


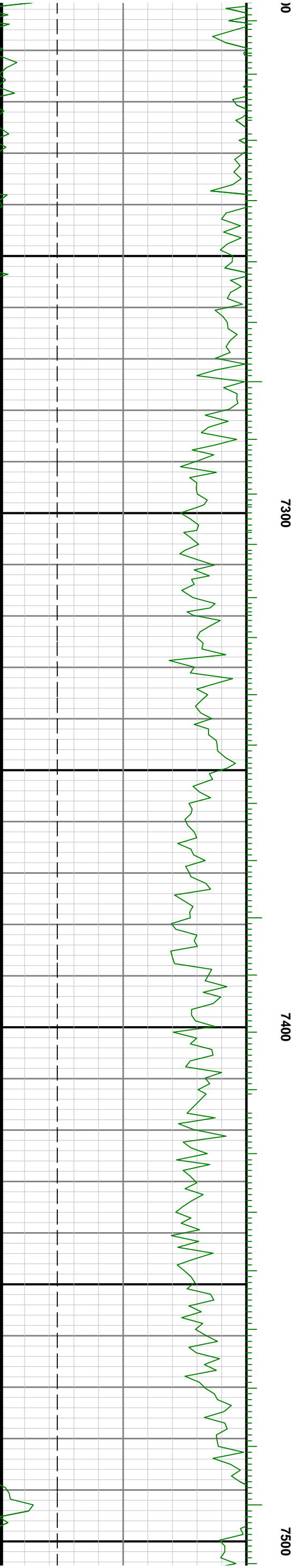
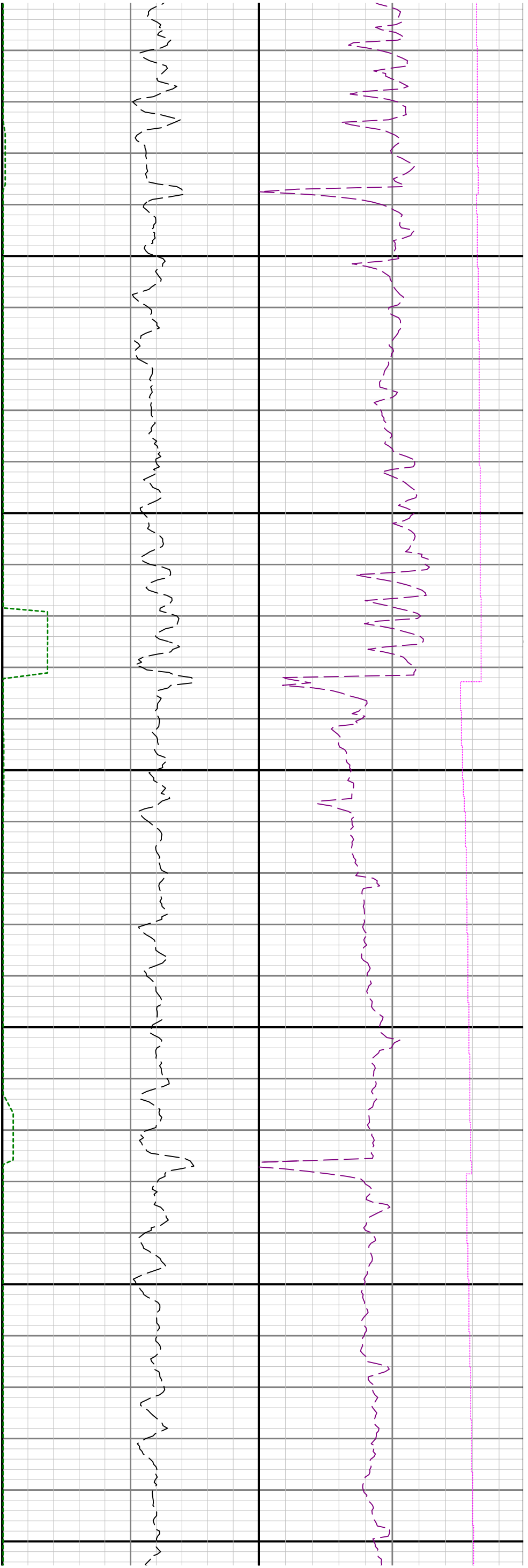


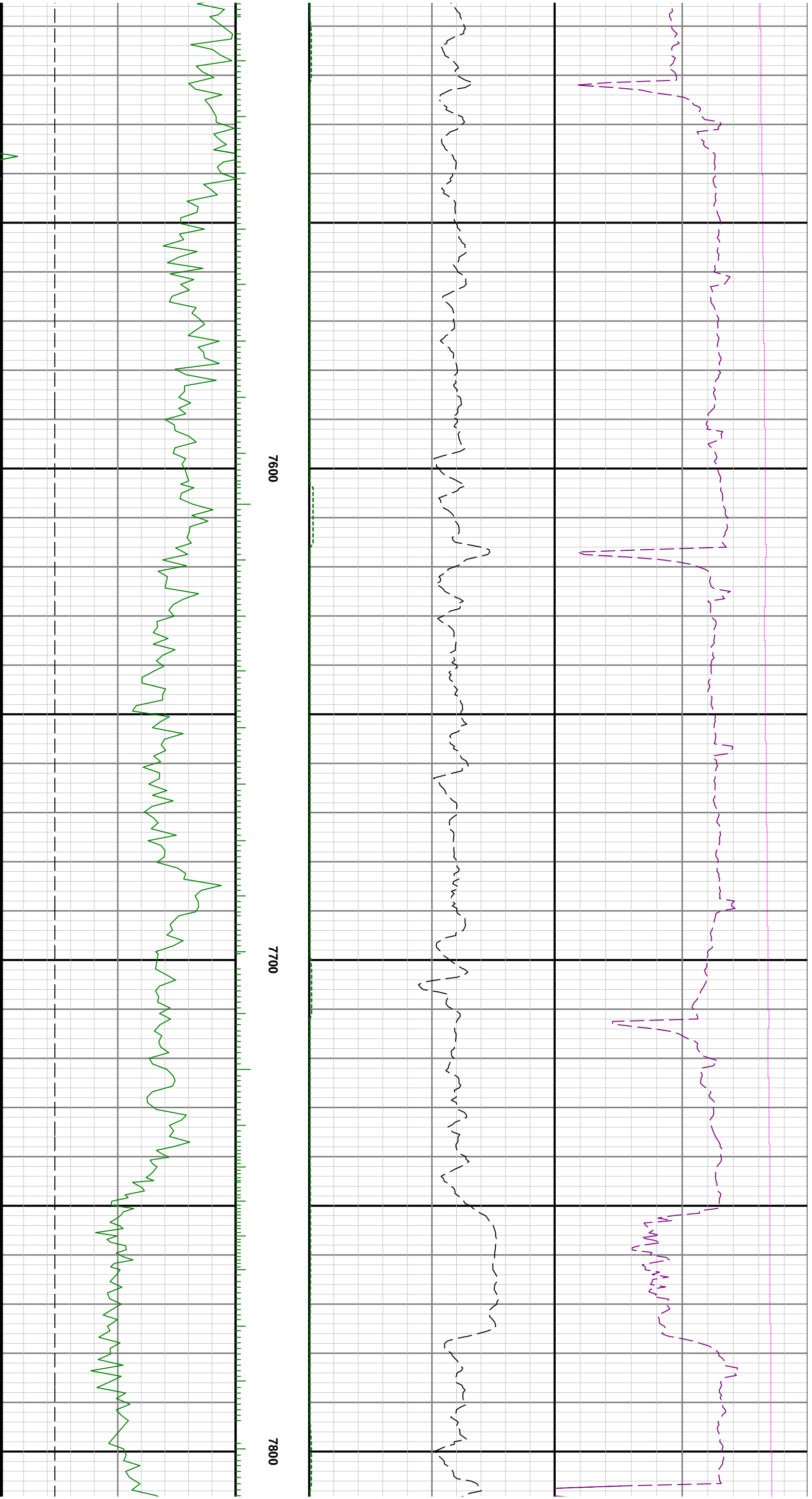
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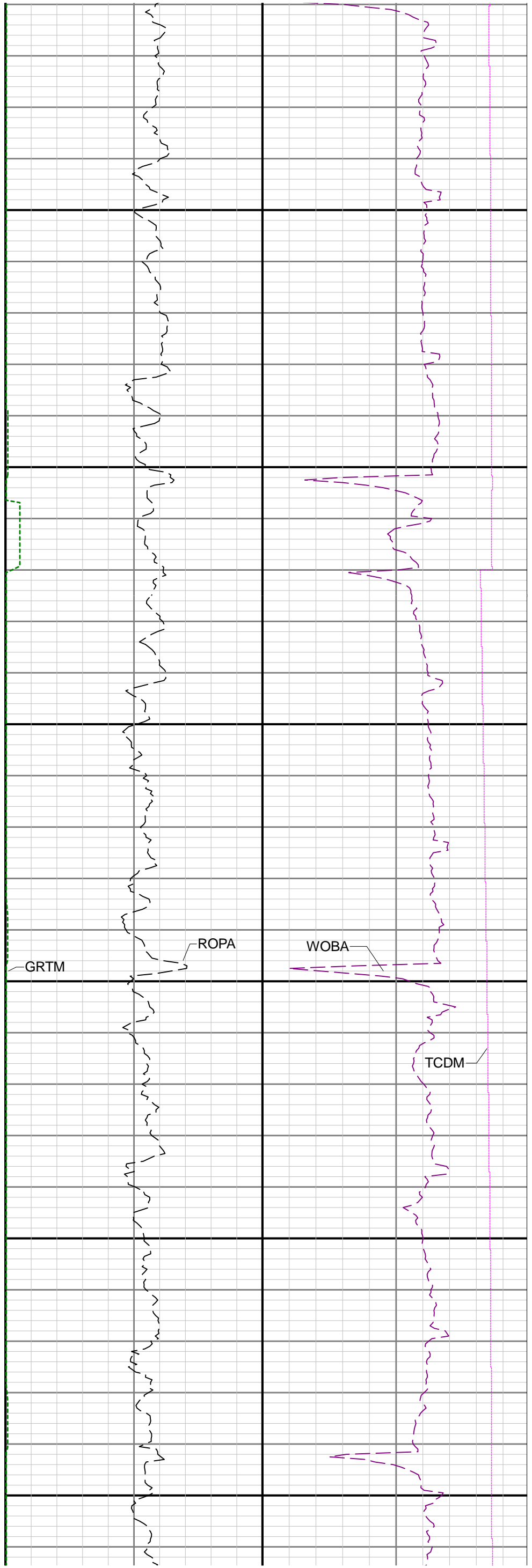
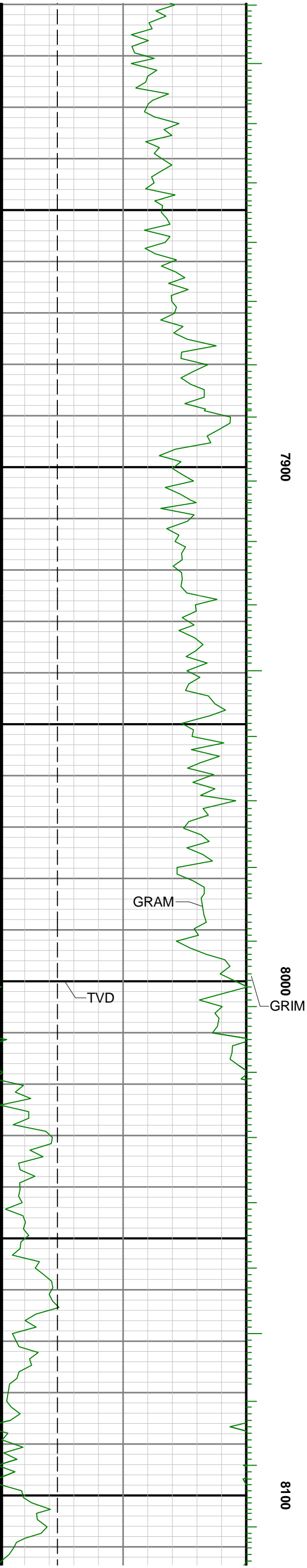


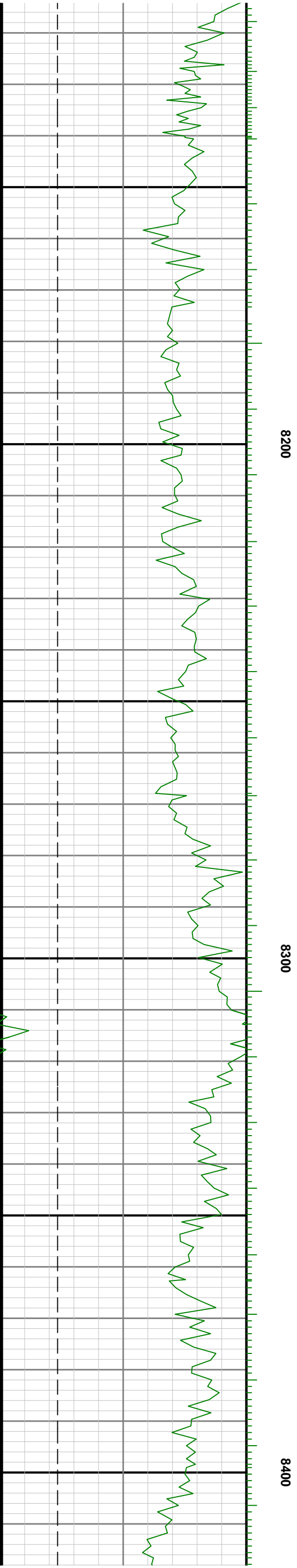


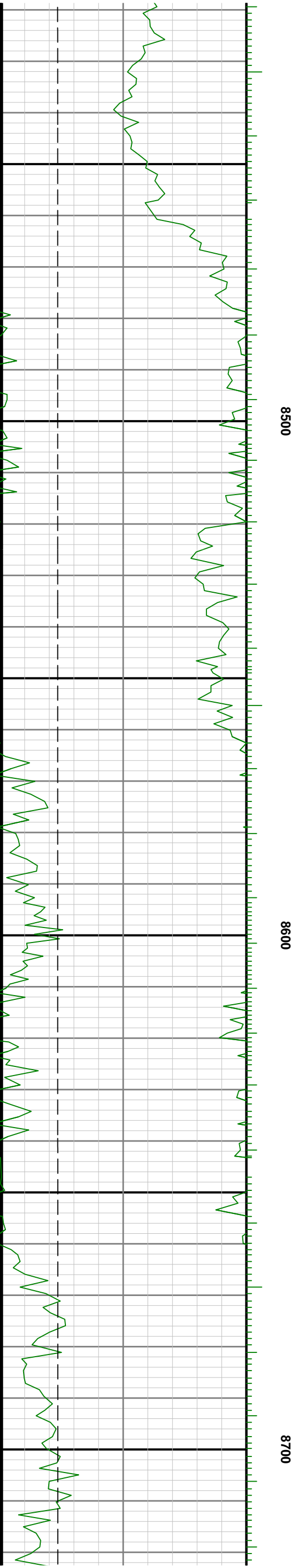
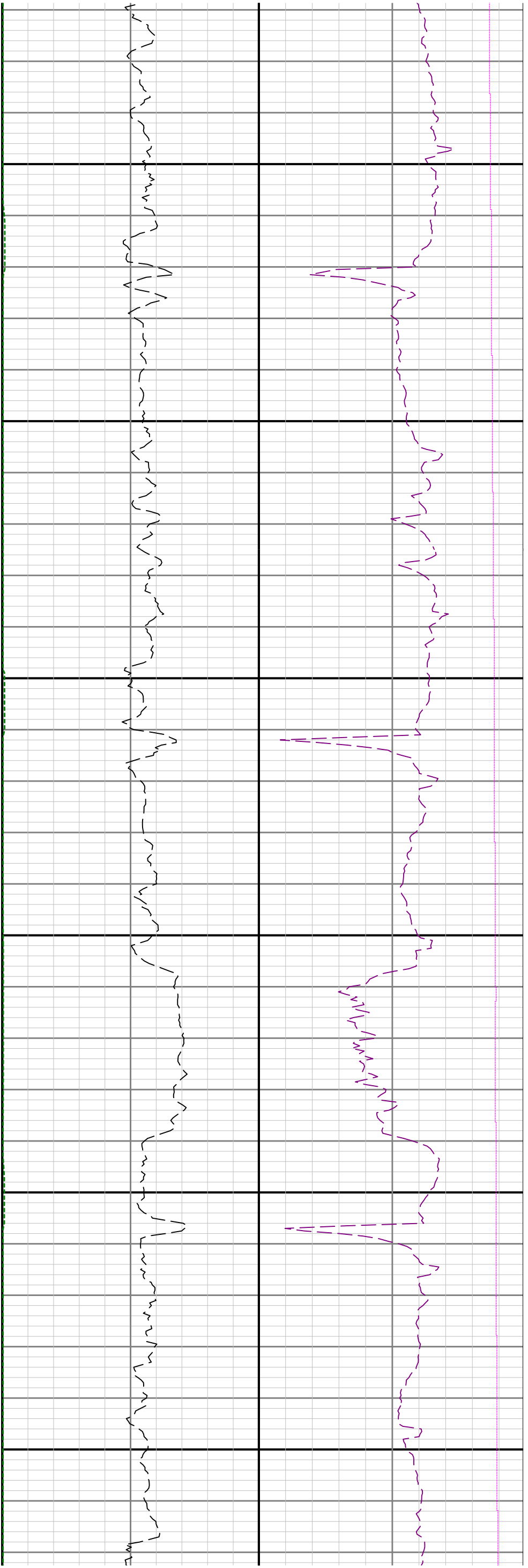


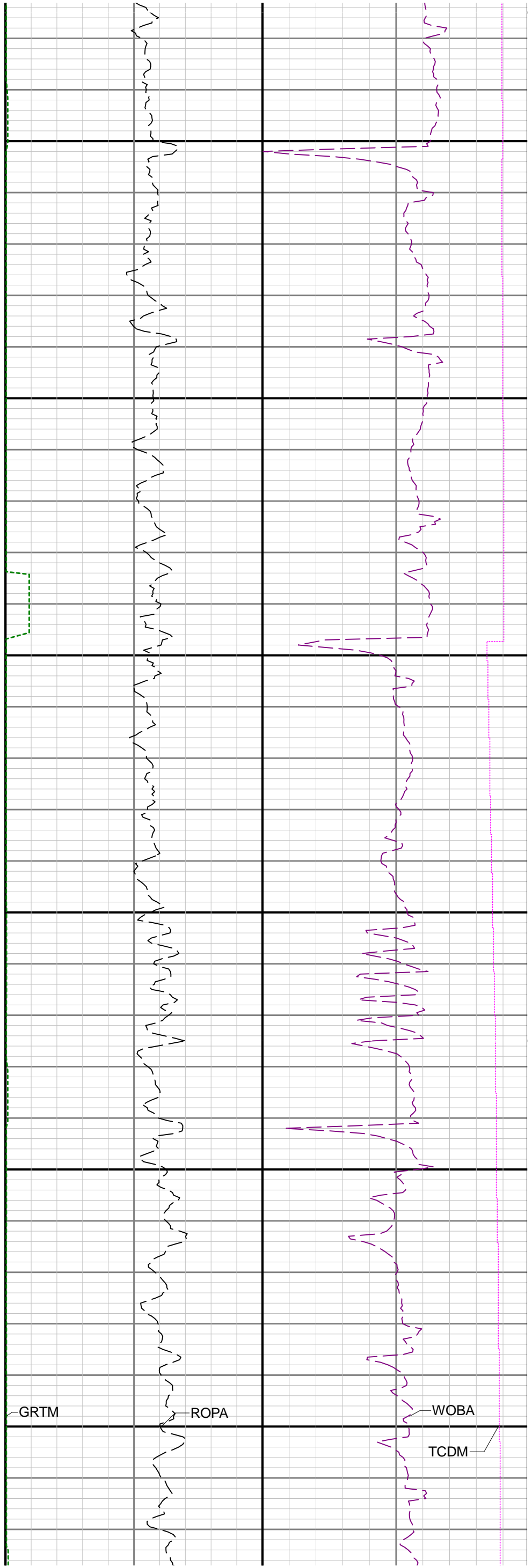
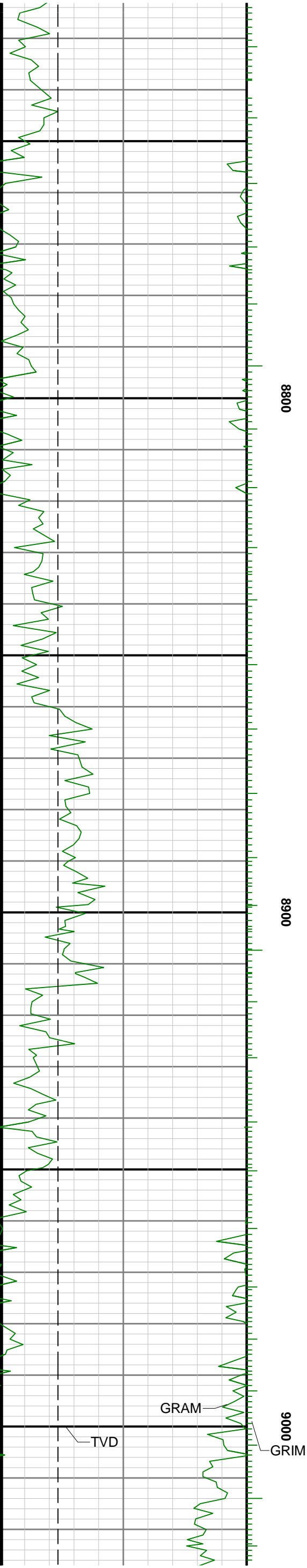


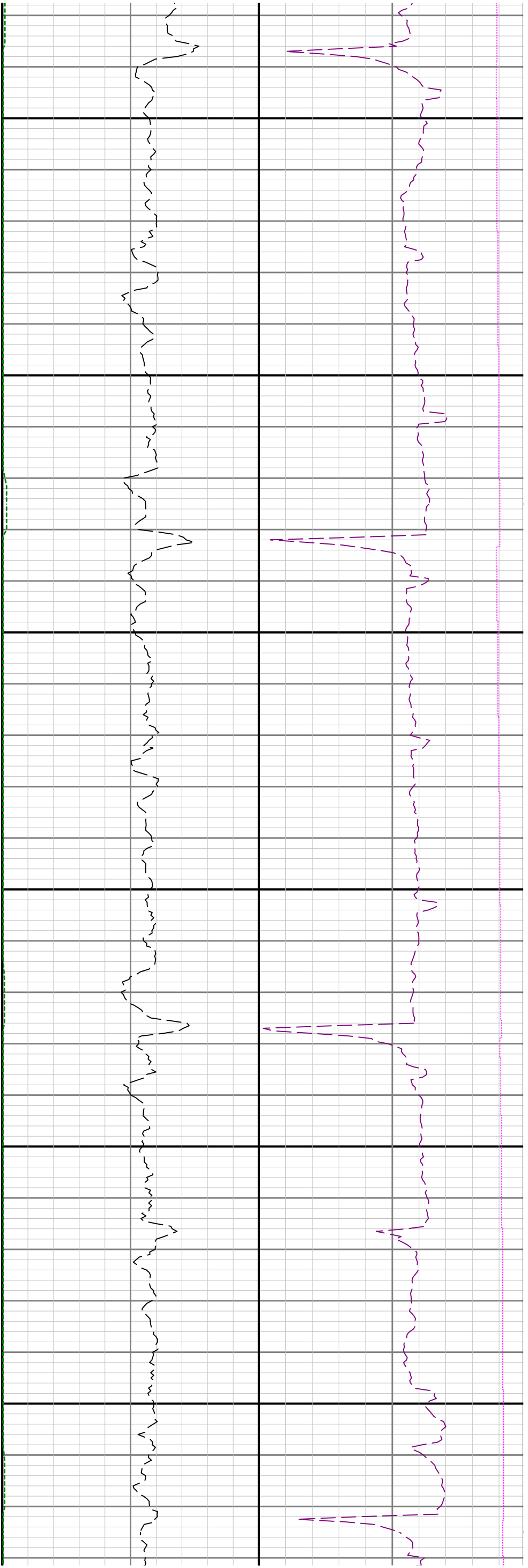












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