

Adam Schlenz	18/Aug/2016	20/Aug/2016						
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Witness

Name	LWD Run Number
Kyle Renton	1,2,3,4
Mark Hicks	1,2,3,4

Mud Properties Record

Date / Time		LWD Run No.	Measured Depth (ft.)	Mud Type	Density (ppg)	Viscosity (cp)	pH	Fluid Loss (cc)	Oil / Water	Source	Total Chlorides (mg/L)	K+ (%)
16/Aug/2016	5:23	2	6681.0	Water Based	9.9	25	9.1	7.8	2 / 88.6	Suction	1500	0.0
17/Aug/2016	16:33	4	8186.0	Water Based	10.2	42	9.4	7.2	1/99	Suction	1400	0.0

Mnemonics

Curve	Description	Units
GRAX	Gamma Ray Apparent 0.5 ft Avg	API
GRIX	Gamma Ray Density	unitless
GRSI	Gamma Ray Sliding Indicator	unitless
GRTX	Gamma Ray Time Since Drilled	min
ROPA	Rate Of Penetration 3.0 ft Avg	ft/hr
TCDX	Downhole Temperature	deg F
TVD	True Vertical Depth	ft
WOBA	Surface Weight on Bit 1.0 ft Avg	klbs

Equipment and Service Data

LWD Run No.	Tool	Serial Number	Measurement	Bit Offset (ft.)	Max O.D. (in.)	Min I.D. (in.)
1	DIR	12131653	Directional	50.37	8.250	3.250
1	SRIG	12600749	Gamma	46.95	8.250	3.250
2	DIR	11954358	Directional	45.07	8.250	3.250
2	SRIG	12216996	Gamma	41.66	8.250	3.250
3	DIR	12479865	Directional	45.17	8.250	3.250
3	SRIG	13646899	Gamma	41.76	8.250	3.250
4	DIR	11824678	Directional	44.44	8.250	3.250
4	SRIG	13118485	Gamma	41.03	8.250	3.250

Service and Tool Mnemonics

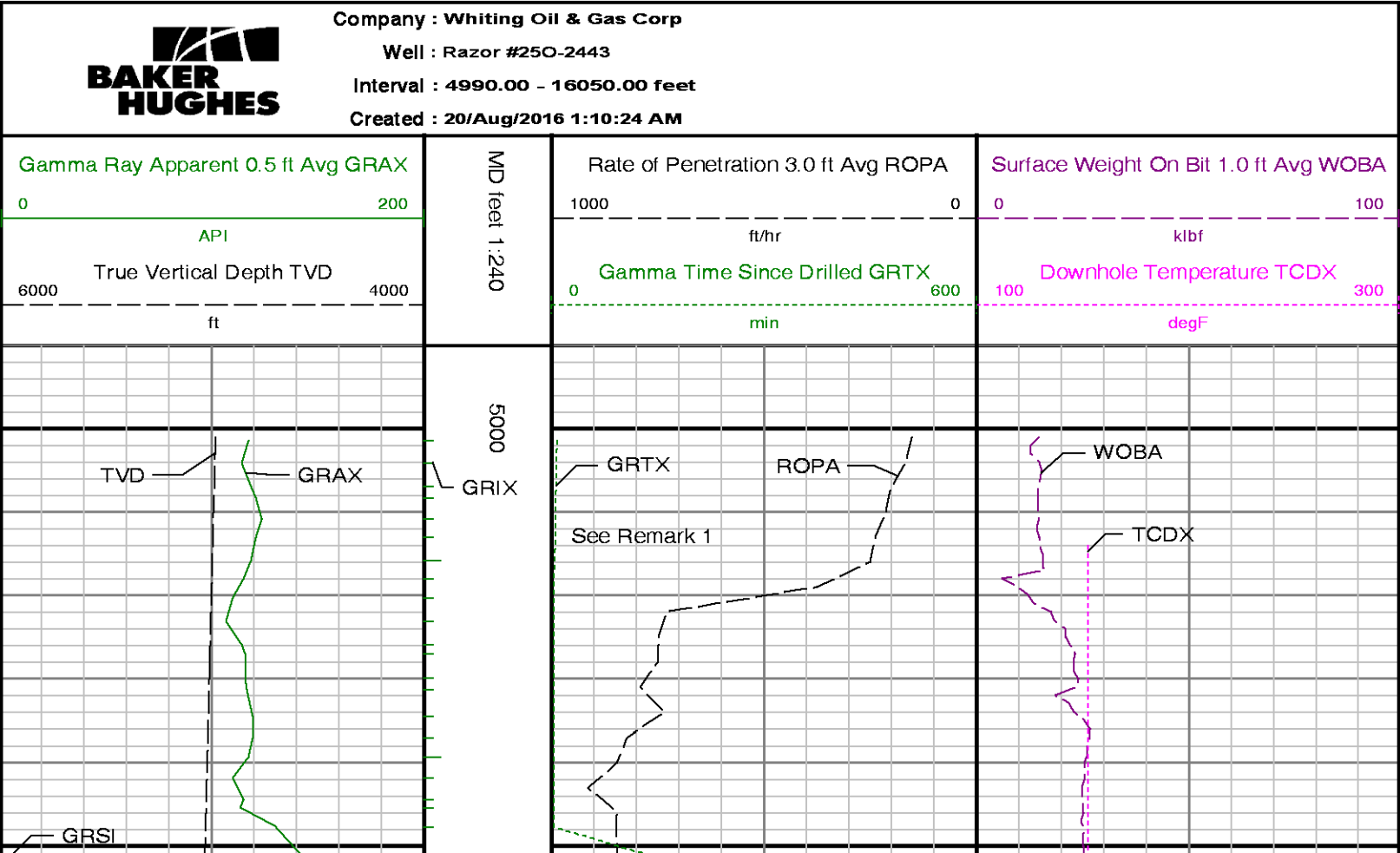
Mnemonic	Name	Description
DIR	Directional	Wellbore directional survey
SRIG	Inclination and Gamma	Probe based gamma ray and inclination module

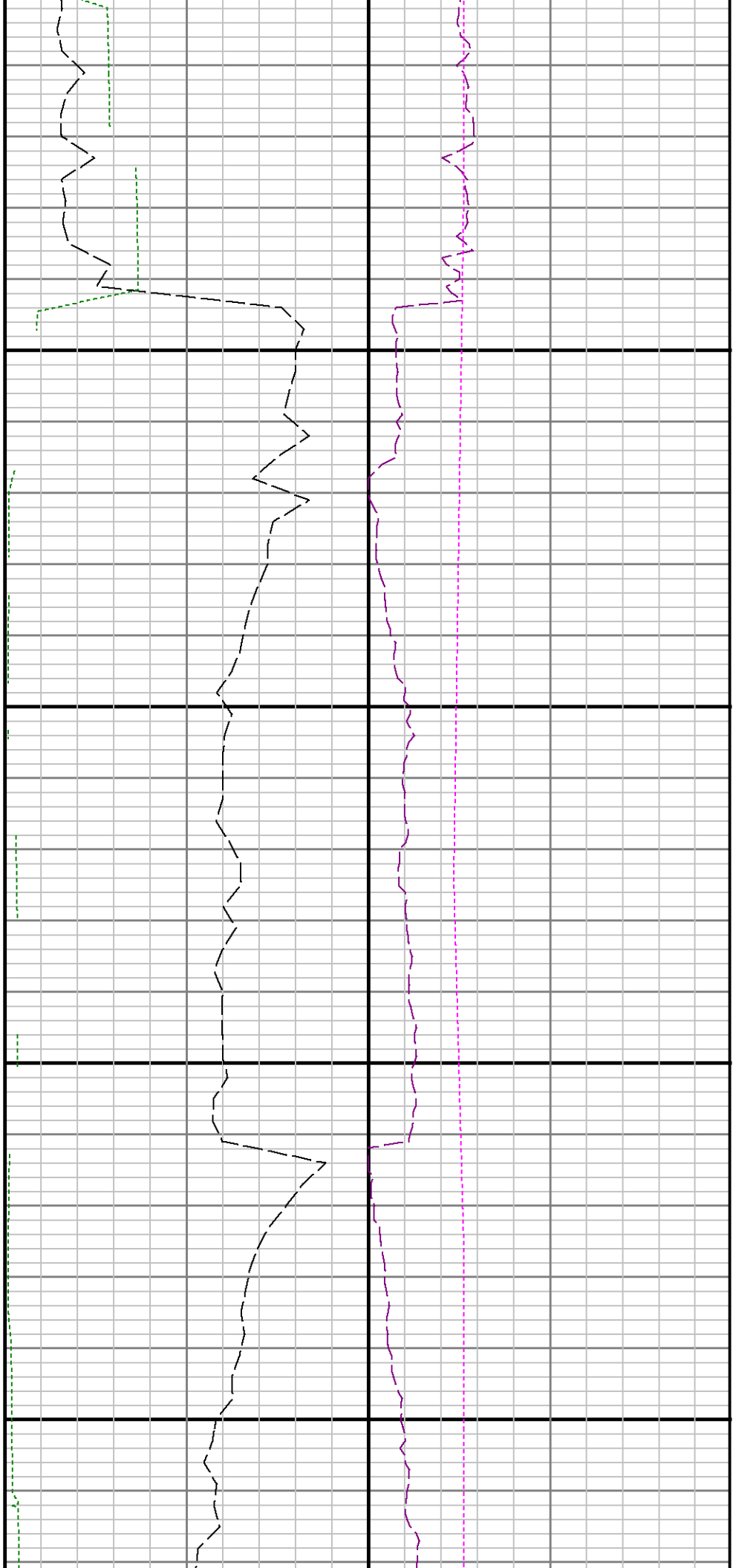
Comments

- 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 LWD logging engineers, depth calibrations and measurements could not be independently verified and the unverified depths as supplied to Baker Hughes are being used to present logging data.
- 2.) Baker Hughes LWD runs 2 and 4 utilized 6 3/4 inch NaviGamma services (Gamma Ray and Directional) behind an 8 1/2 inch bit and steerable assembly from 2106 to 16040 ft MD (2101 to 5831 ft TVD).
- 3.) Baker Hughes LWD Run 3 did not drill any footage.
- 4.) A sliding indicator shown on the left side of track 1 as a heavy line. This indicator has been shifted to the Gamma Ray sensor offset to correspond to Gamma Ray data acquired while sliding.
- 5.) All surveys were corrected by Surcon Survey Management Services.

Remarks

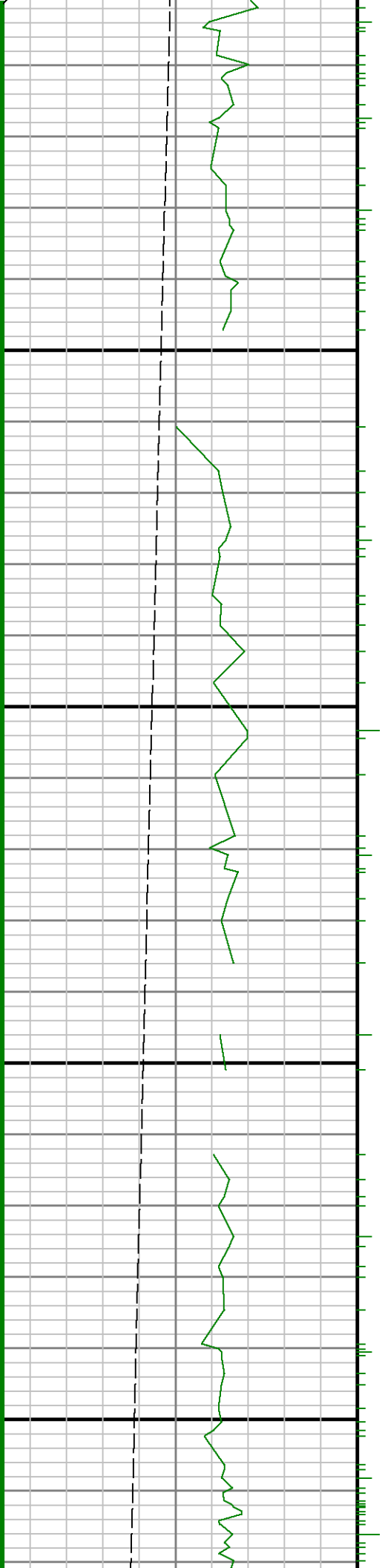
Number	Measured Depth (ft.)	Hole Section (in.)	LWD Run No.	Remark
1	5000	8.500	2	Gamma ray logging operations began at 5000 ft MD (4984 ft TVD).
2	6800	8.500	4	The interval from 6665 to 6823 ft MD (5821 to 5823 ft TVD) was logged 23.8 hours after being drilled due to an MWD failure.
3	16010	8.500	4	There is no gamma ray data from 15999 to 16040 ft MD (5831 ft TVD) due to sensor to bit offset at well TD.

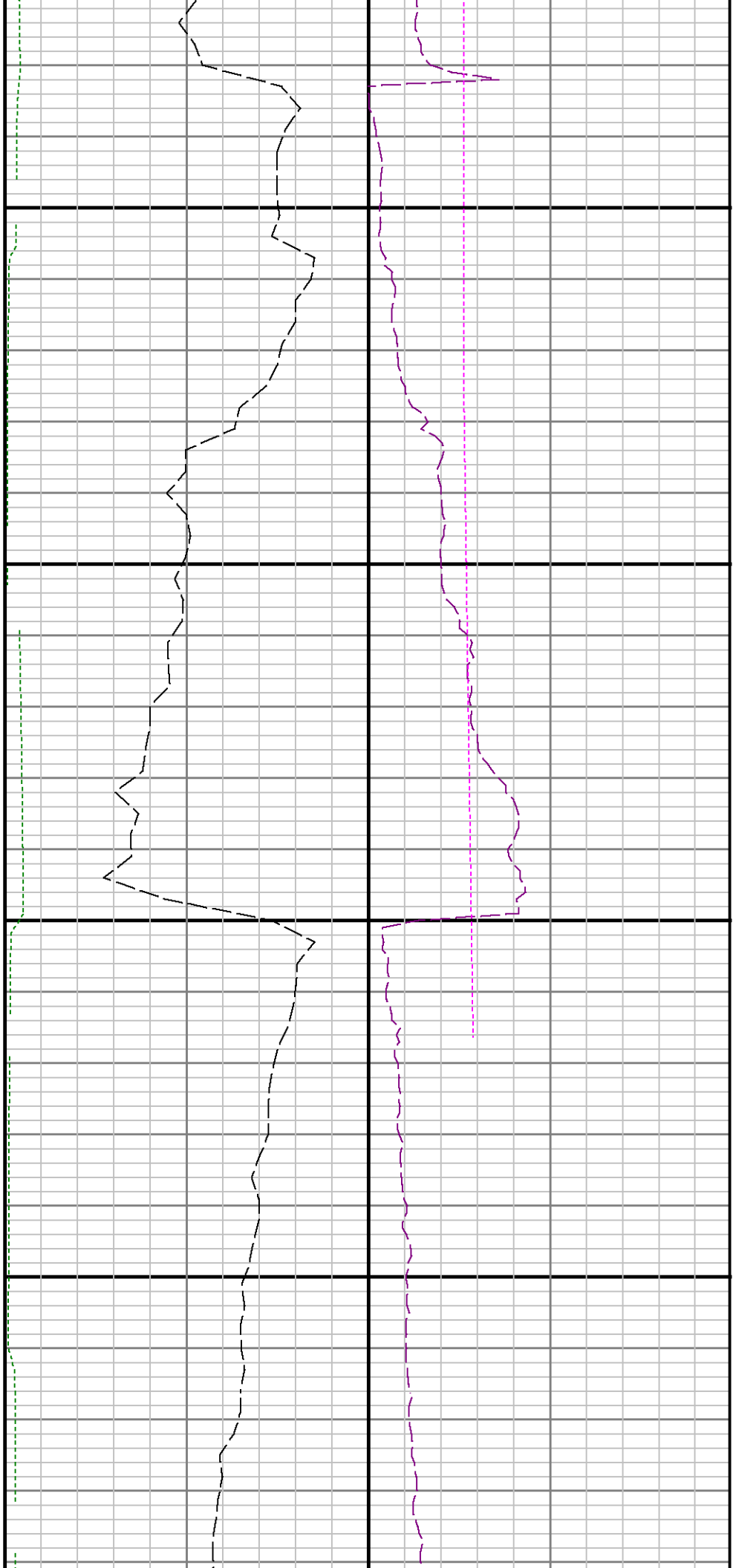




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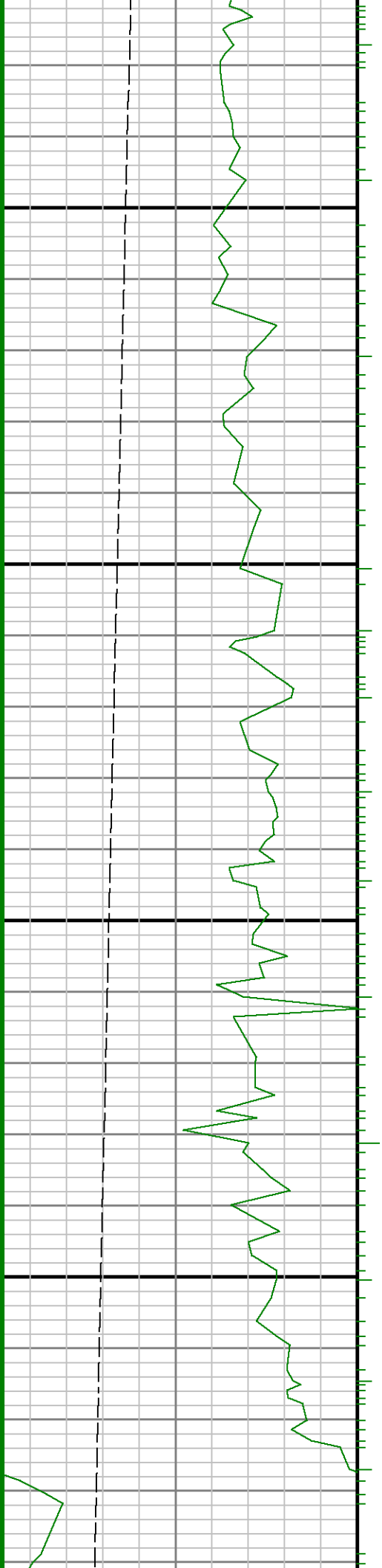
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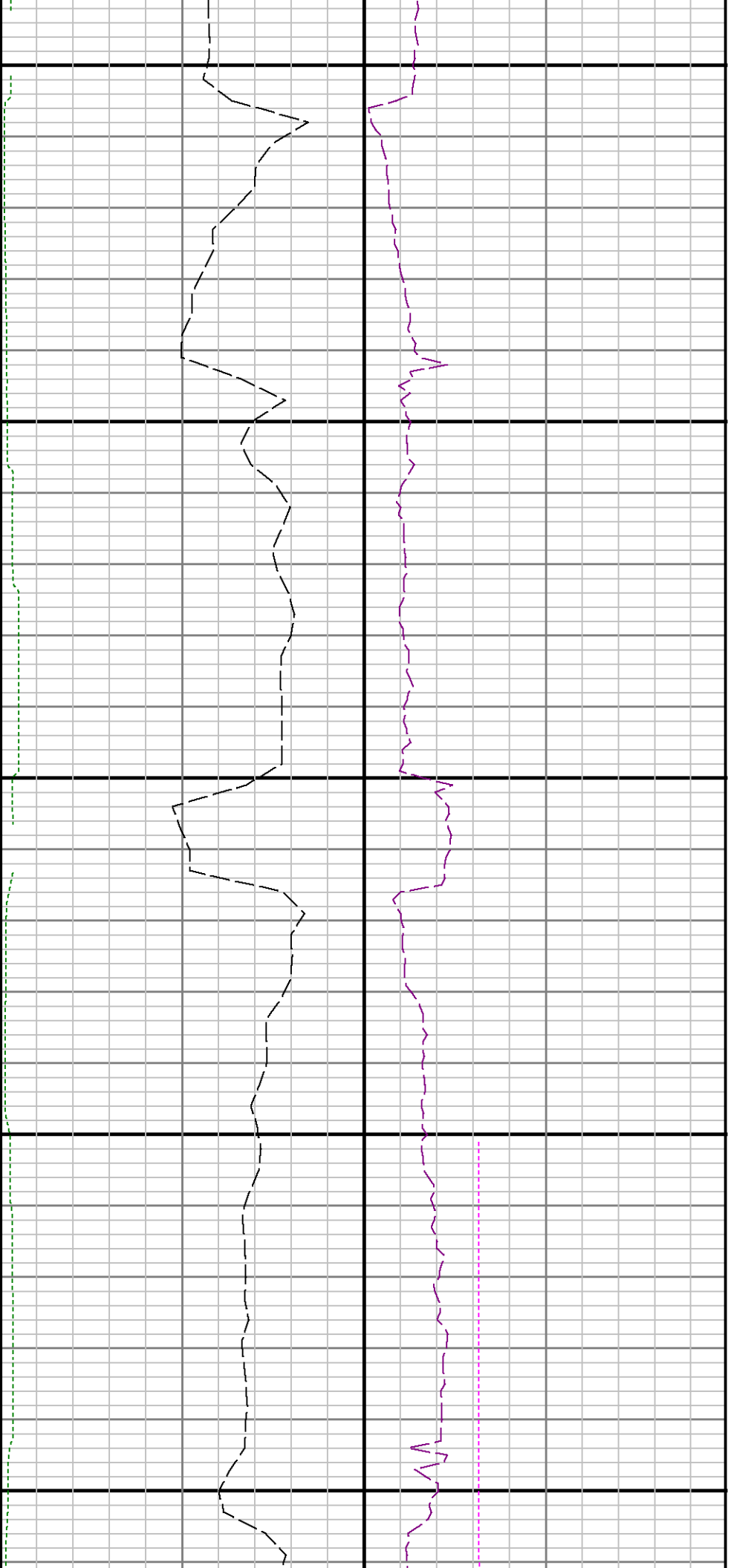




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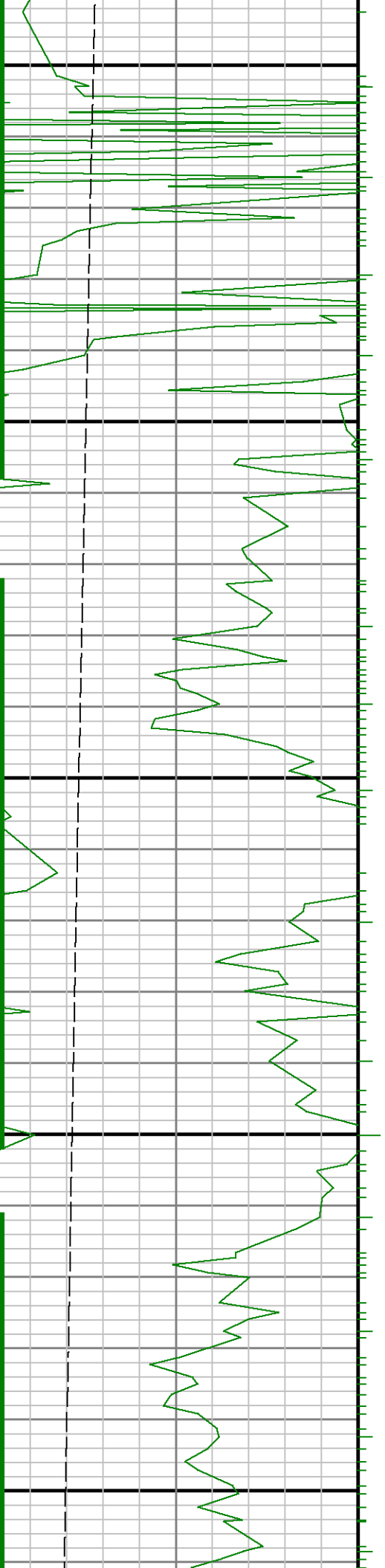


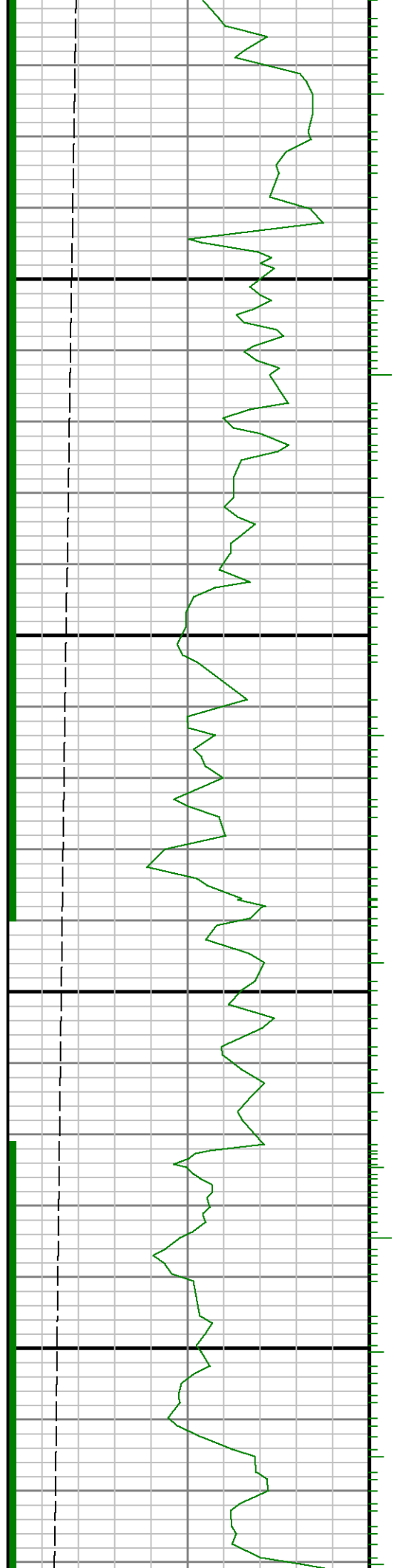


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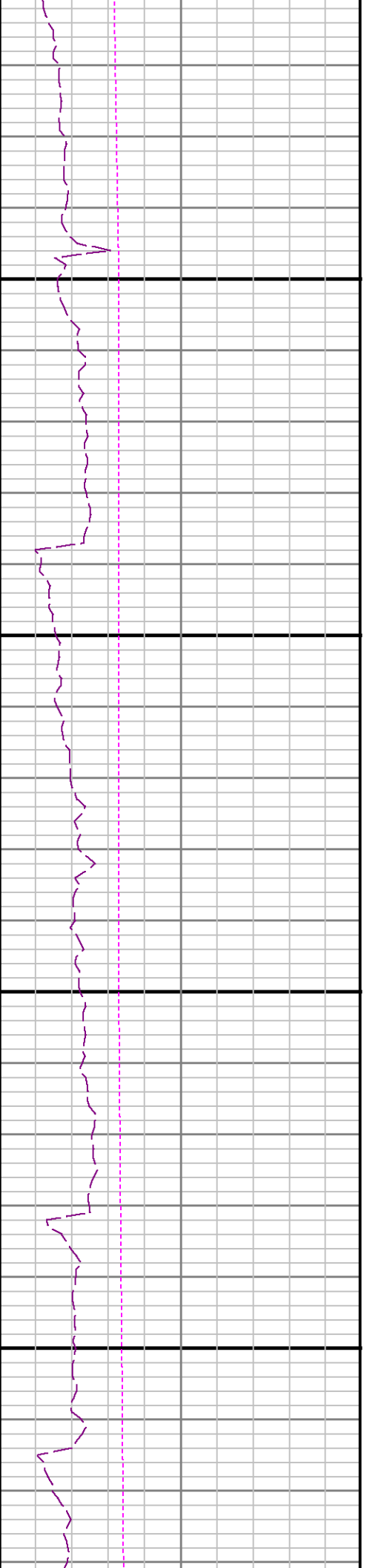
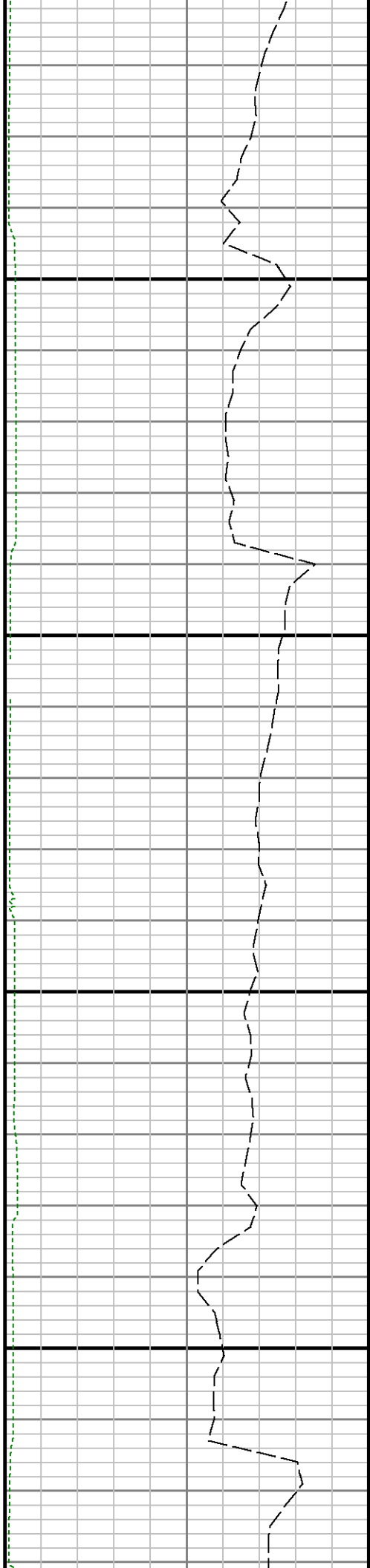
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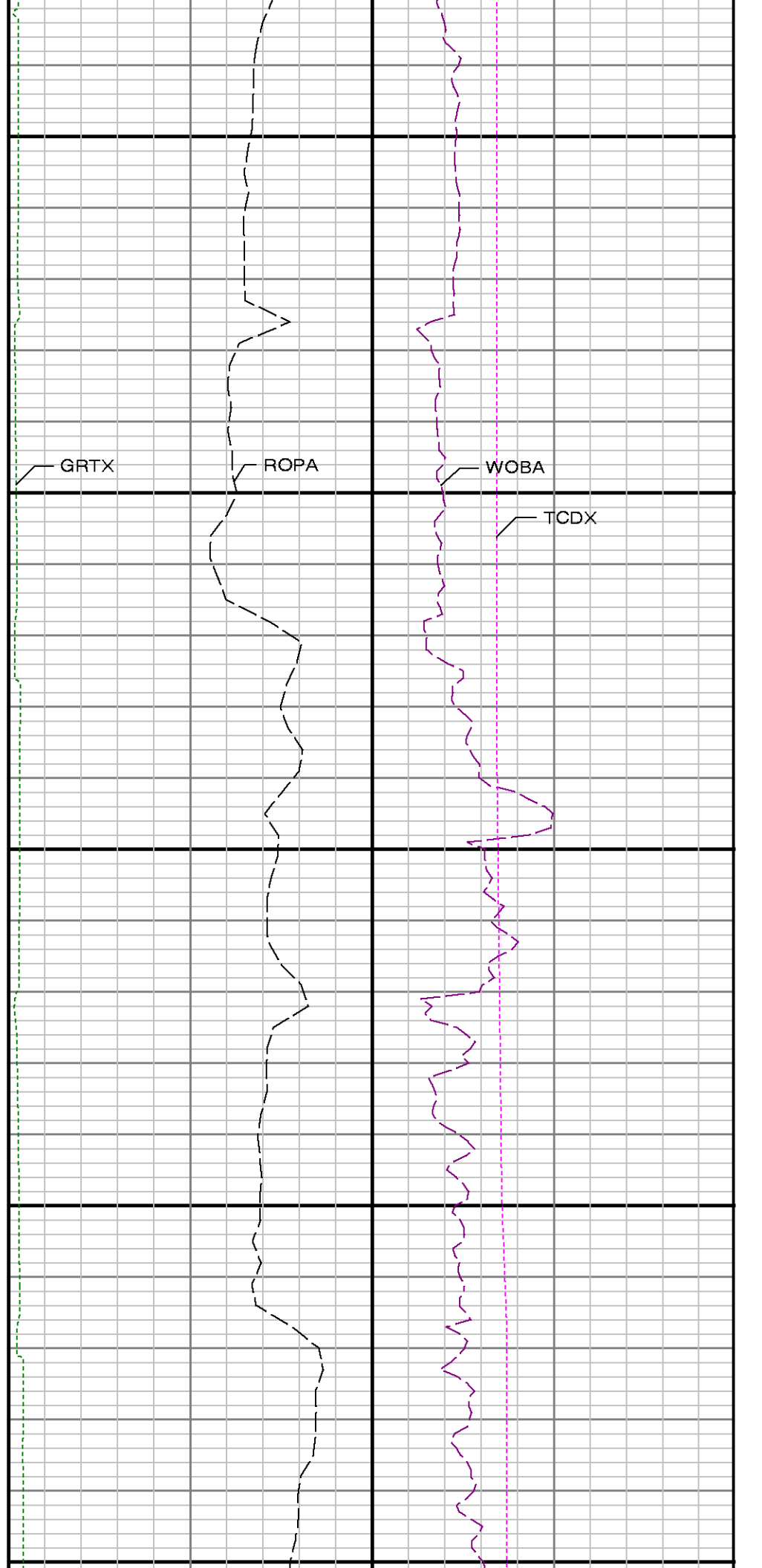
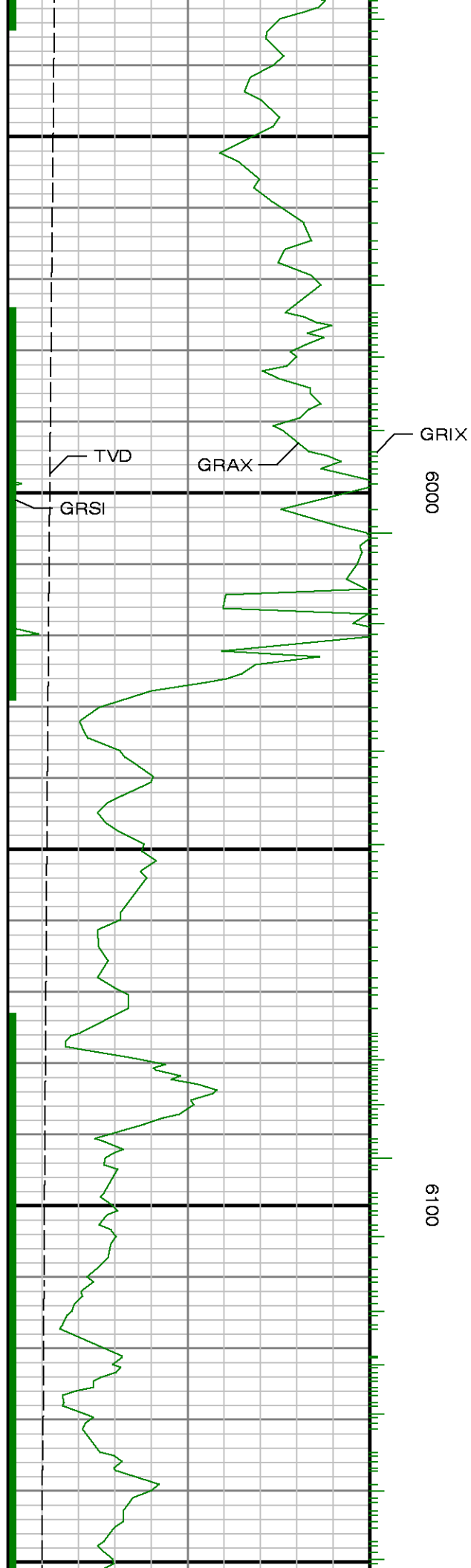


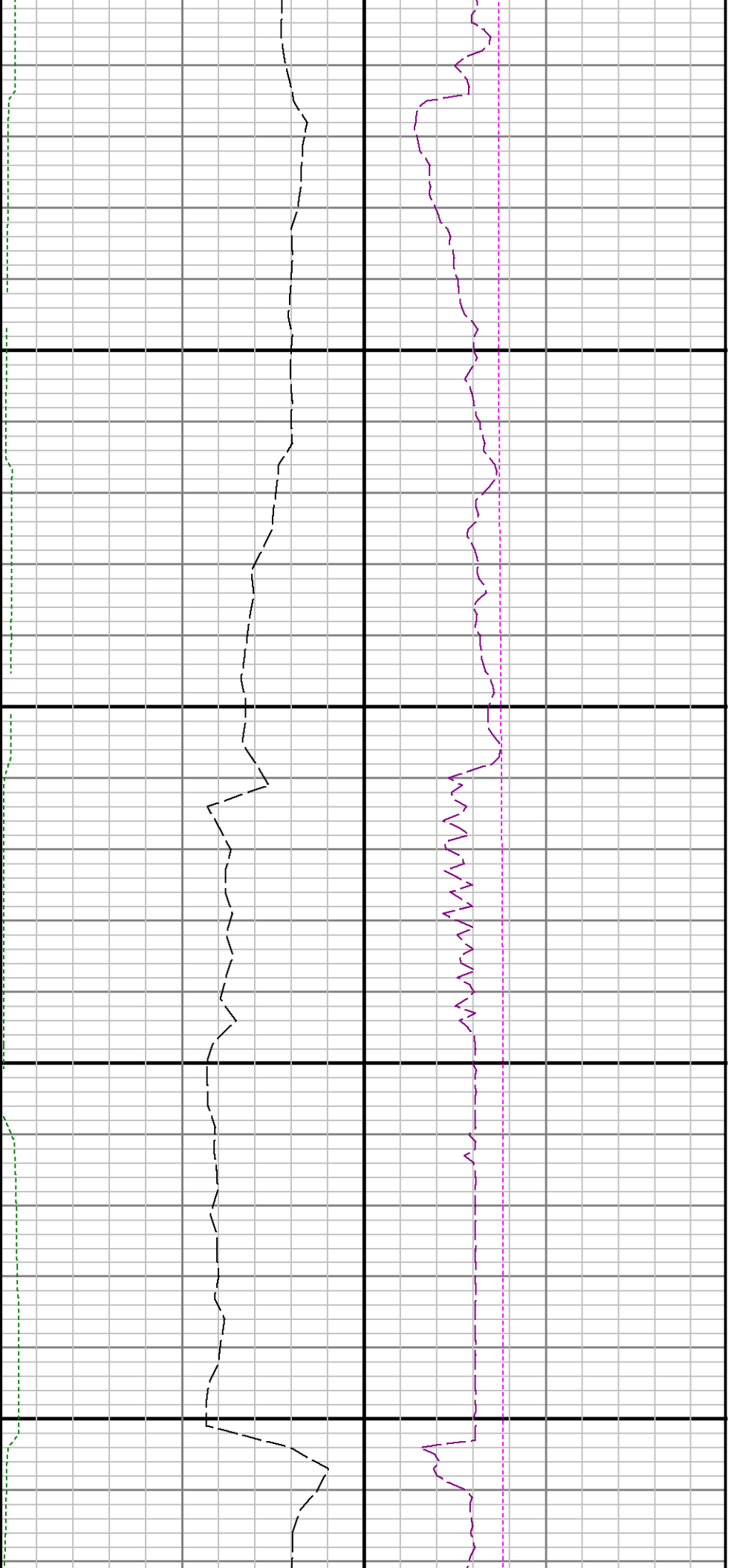


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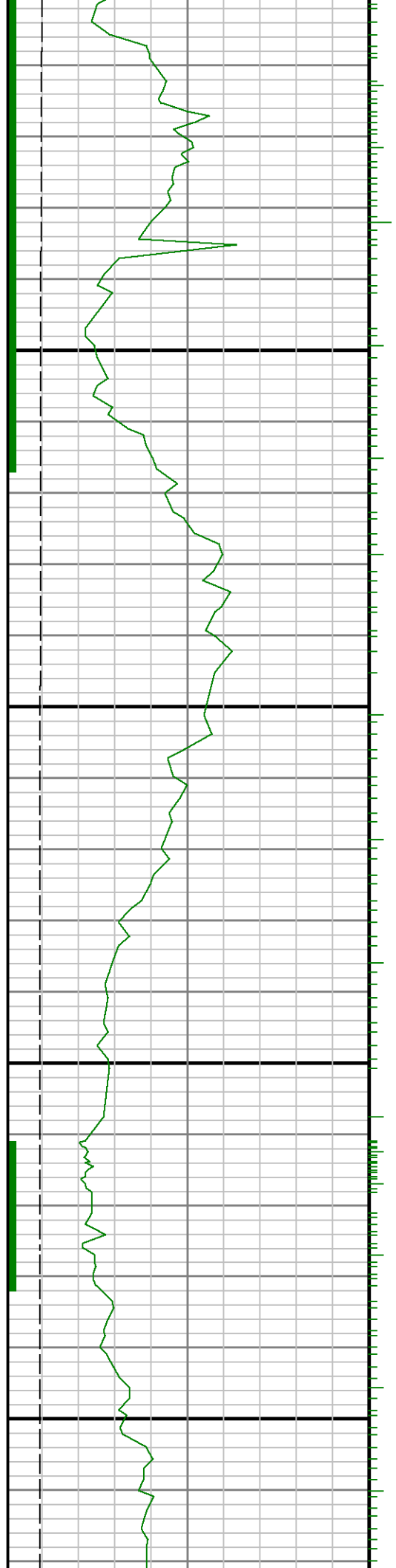






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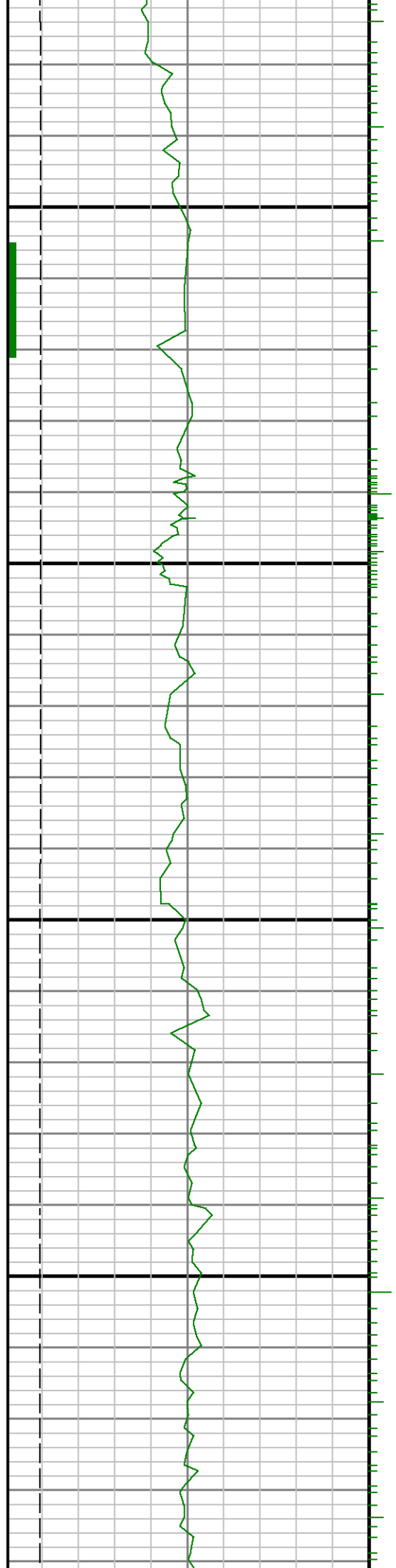
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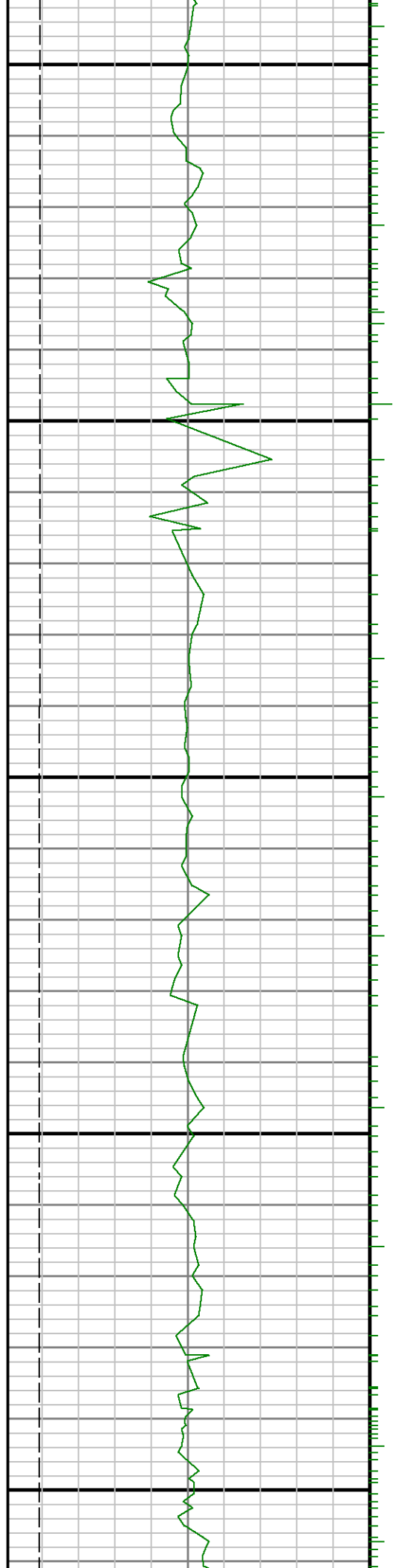




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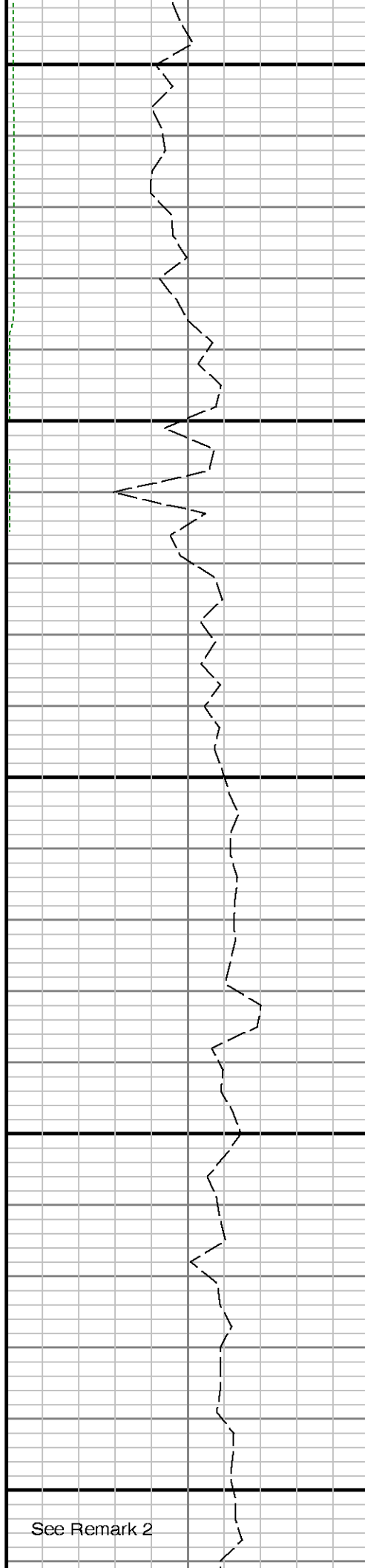




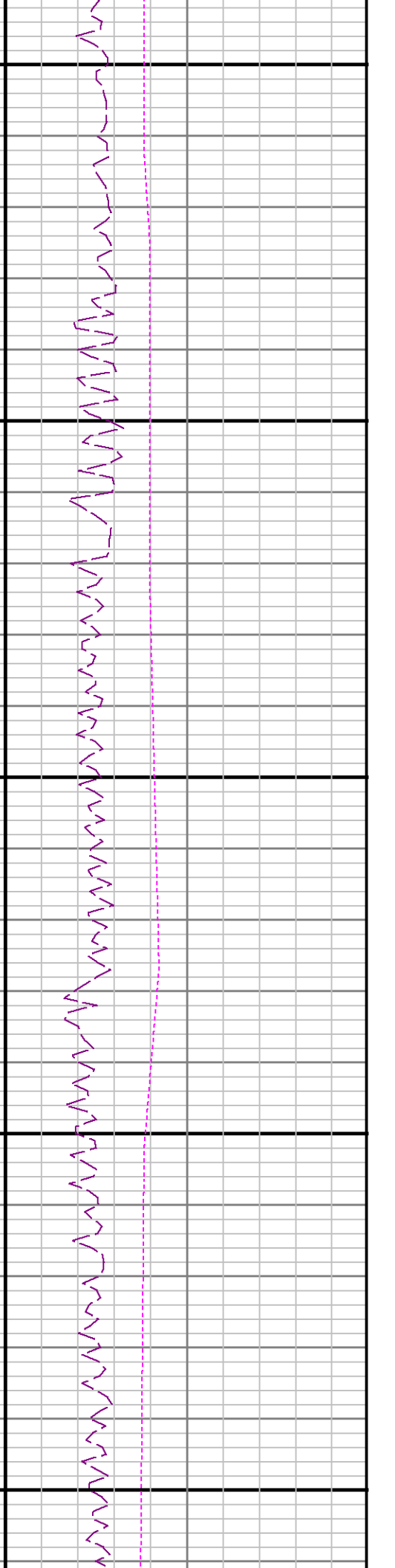
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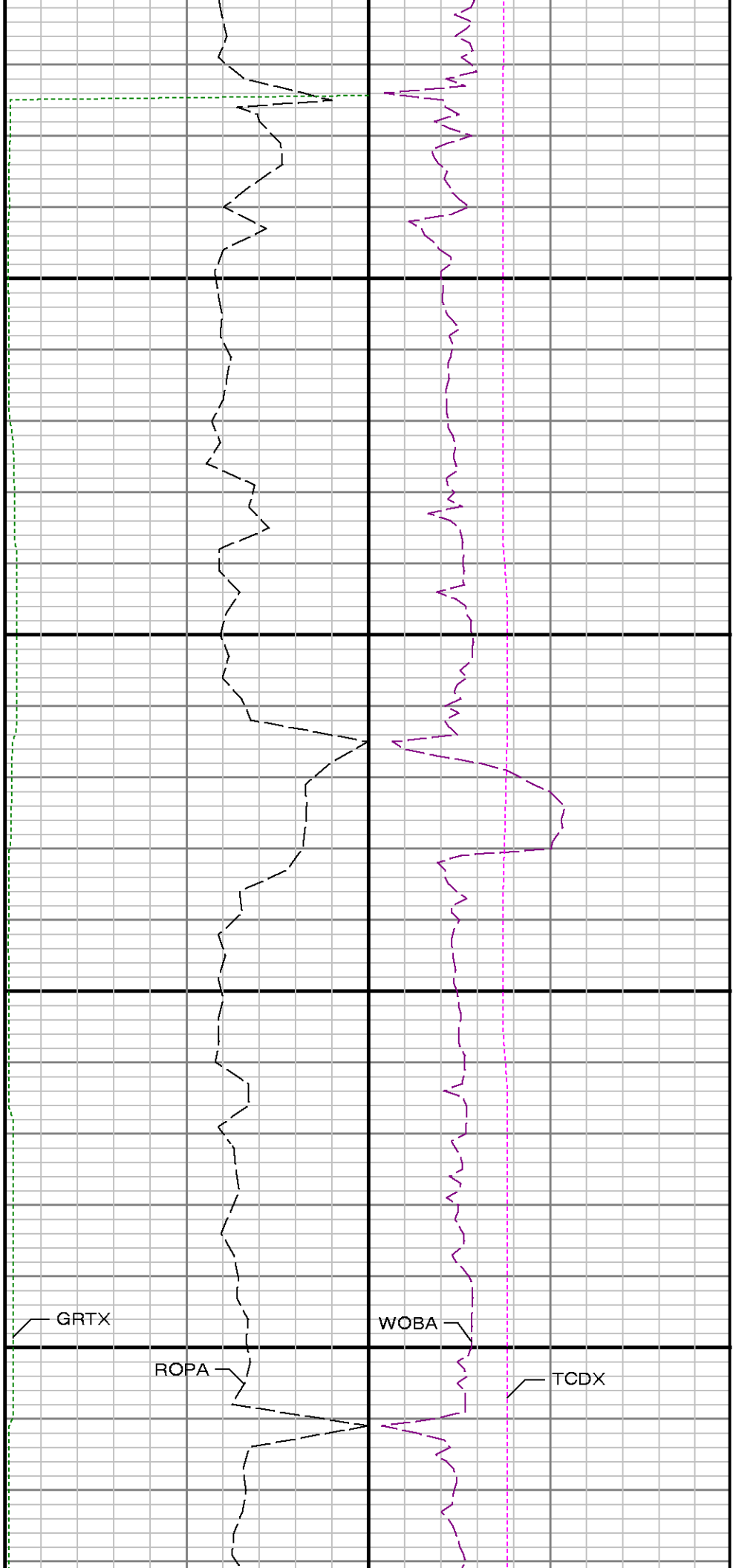
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See Remark 2

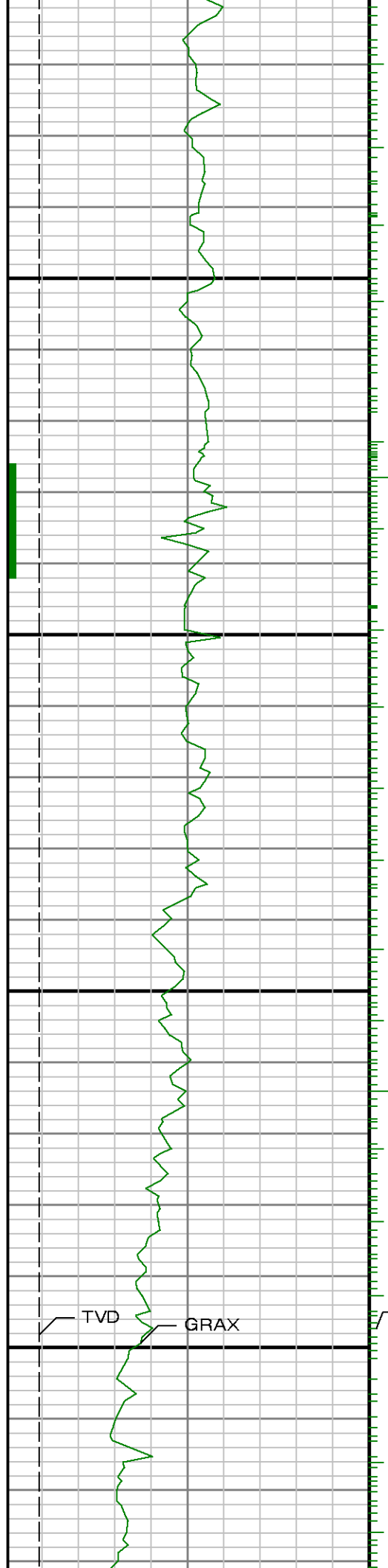


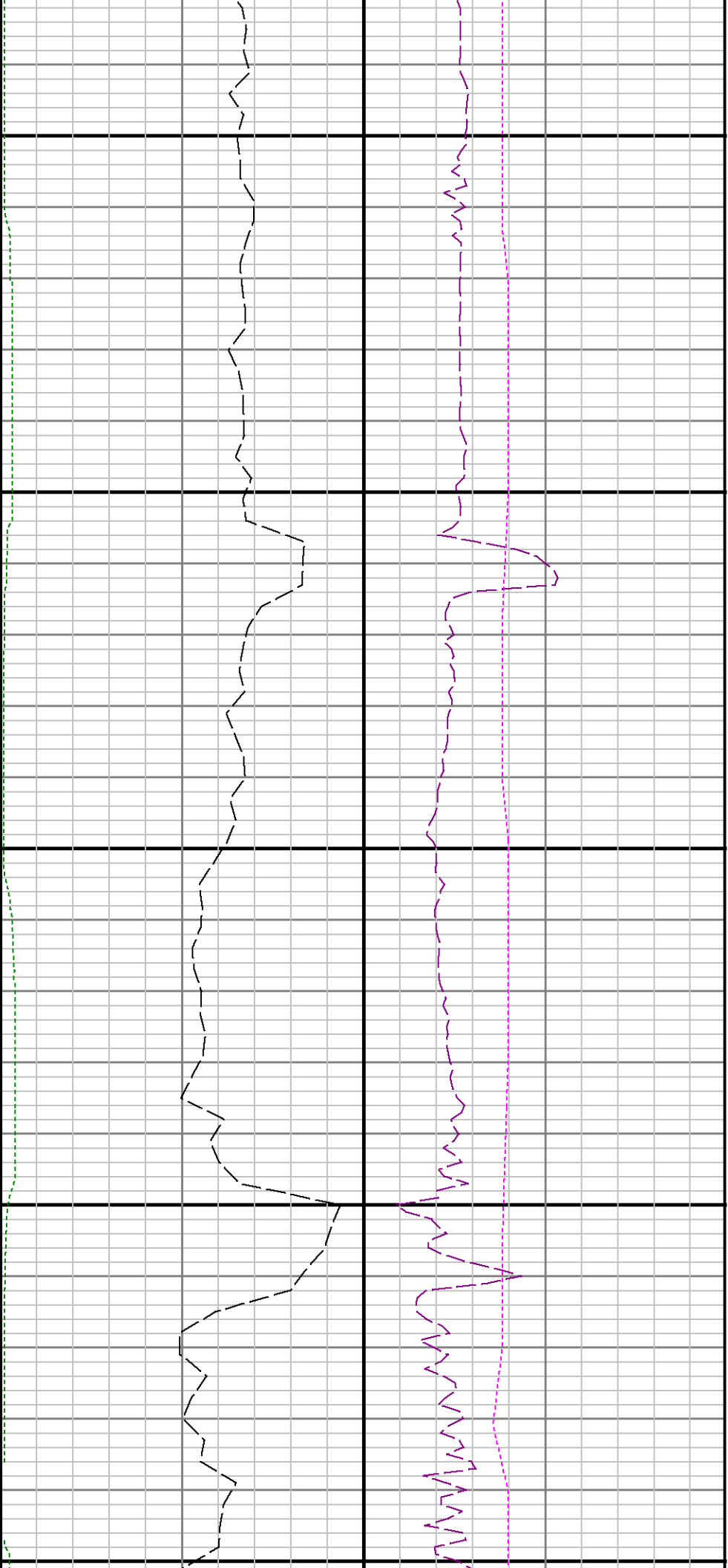


Run 2 < > Run 4

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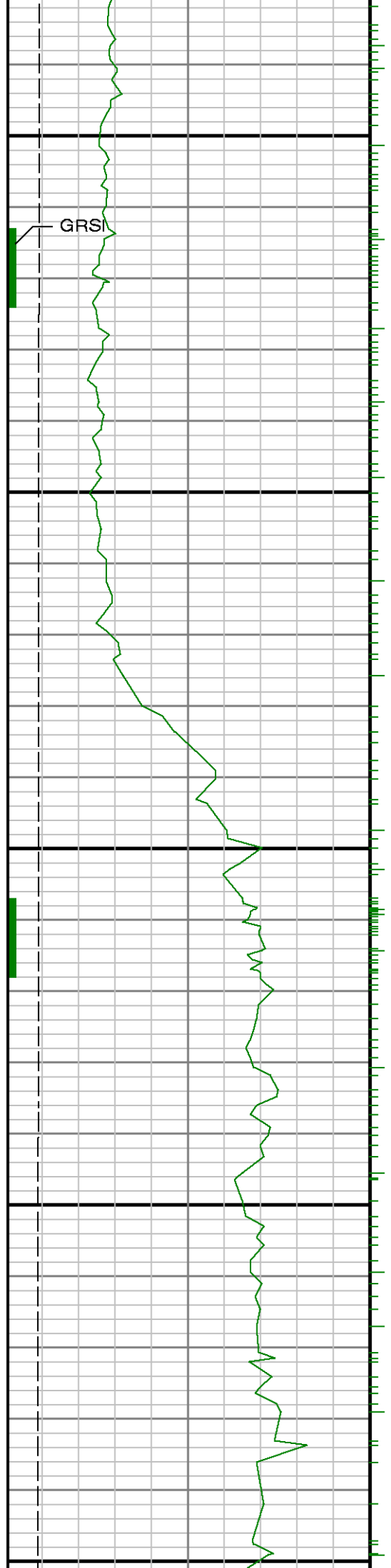
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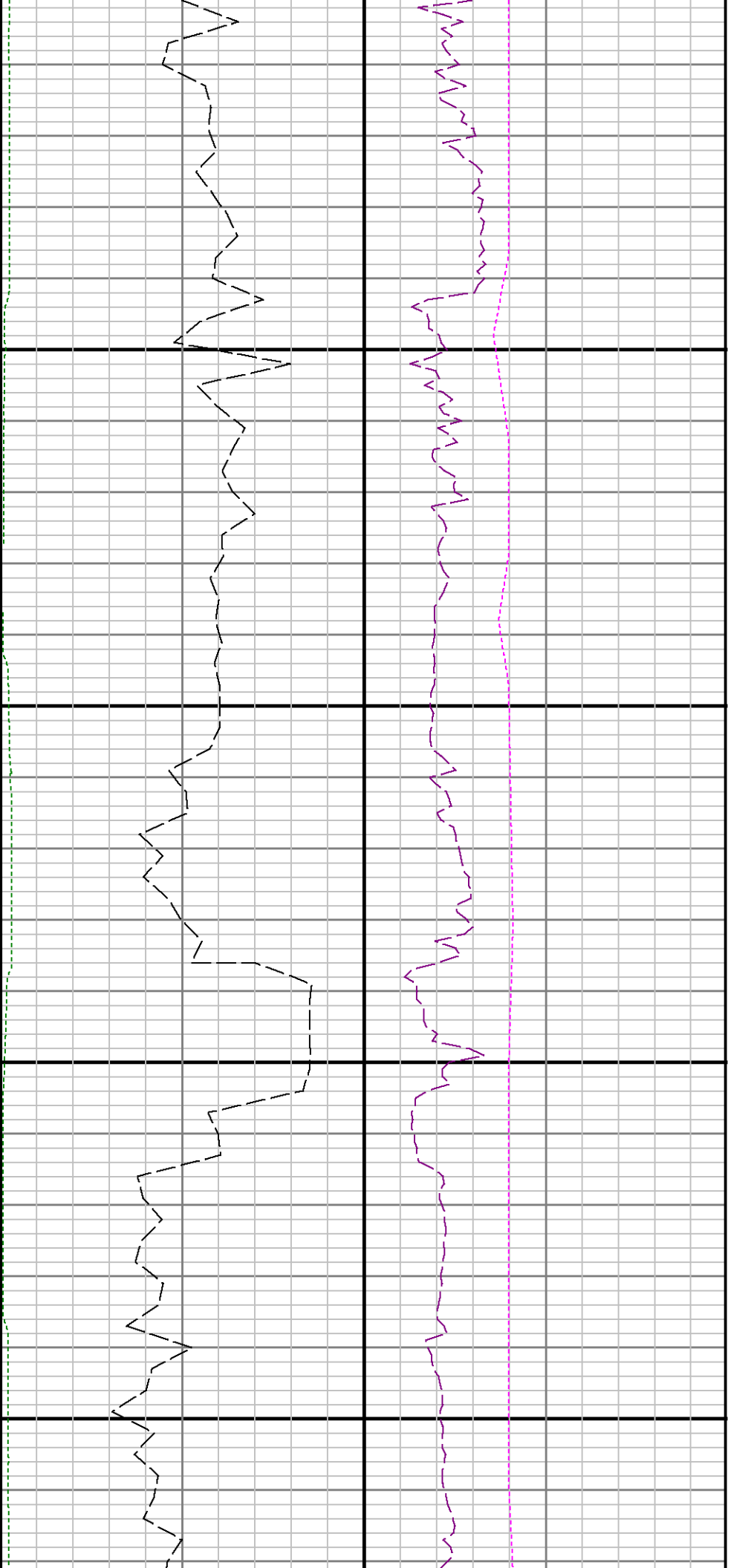




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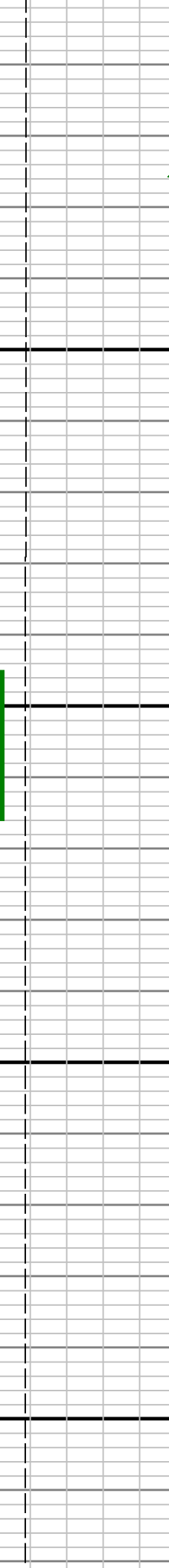
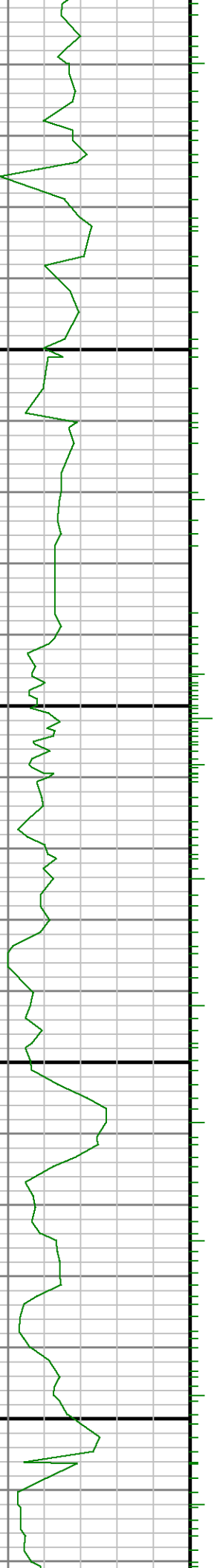
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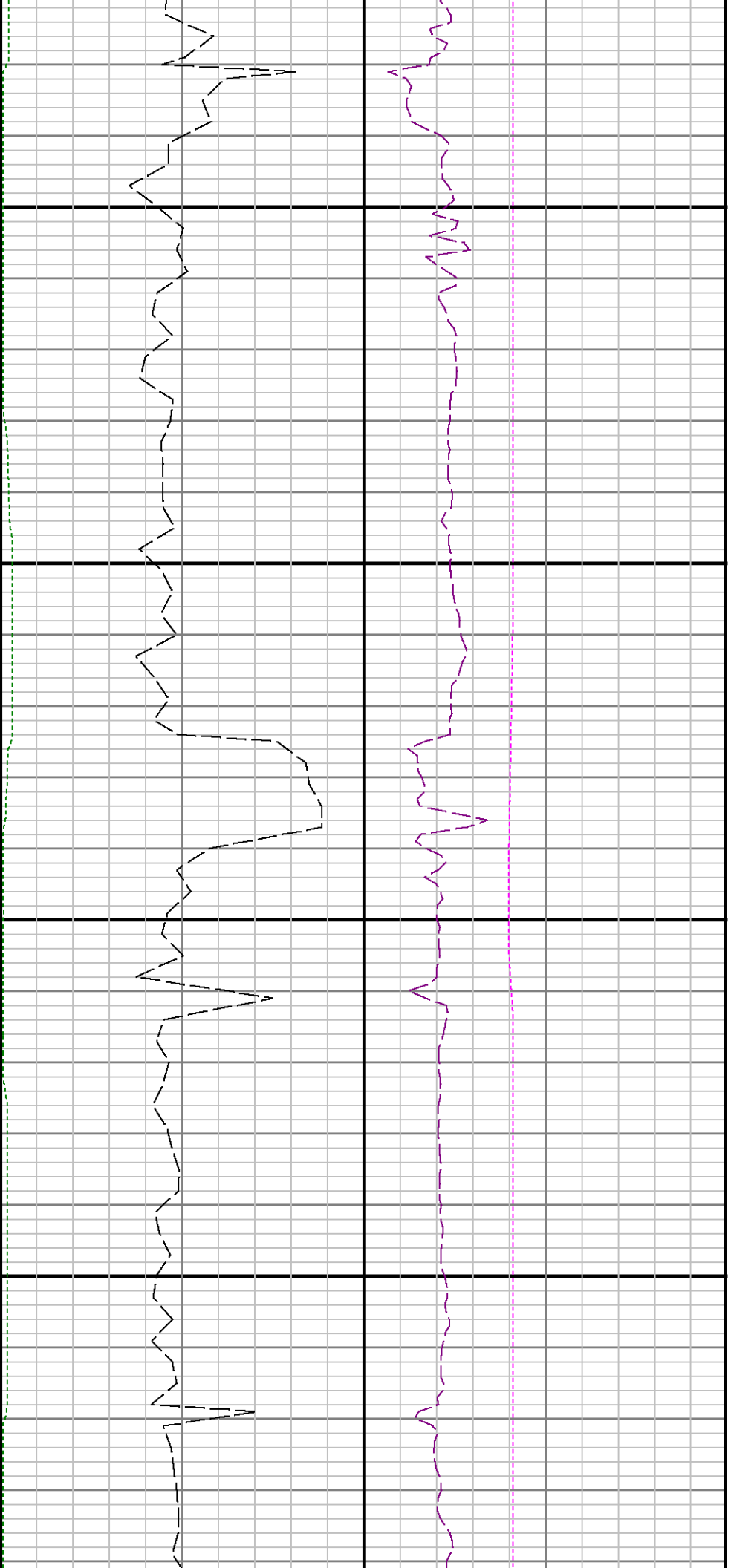




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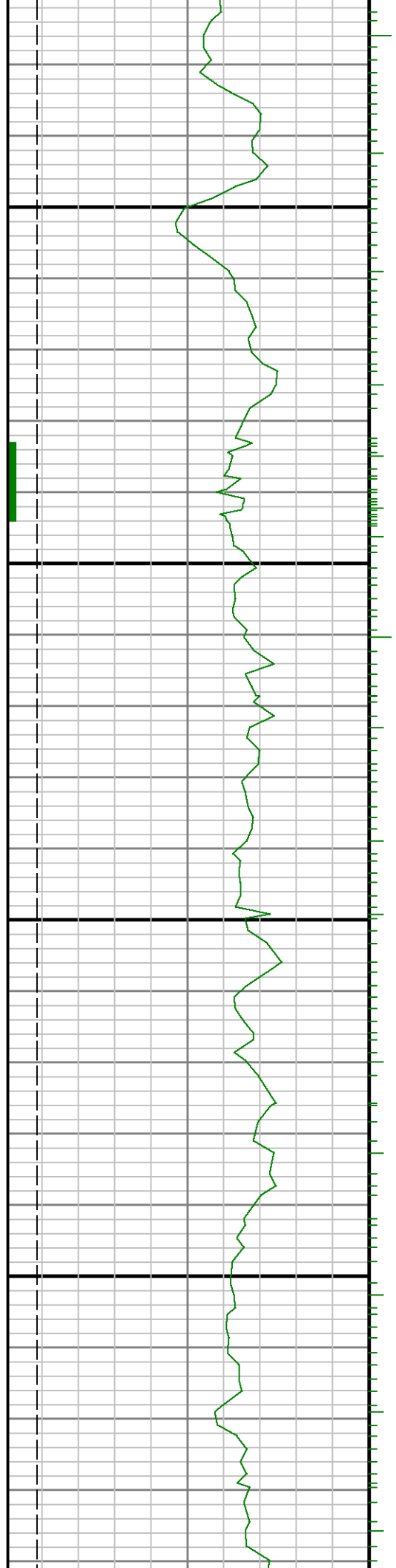
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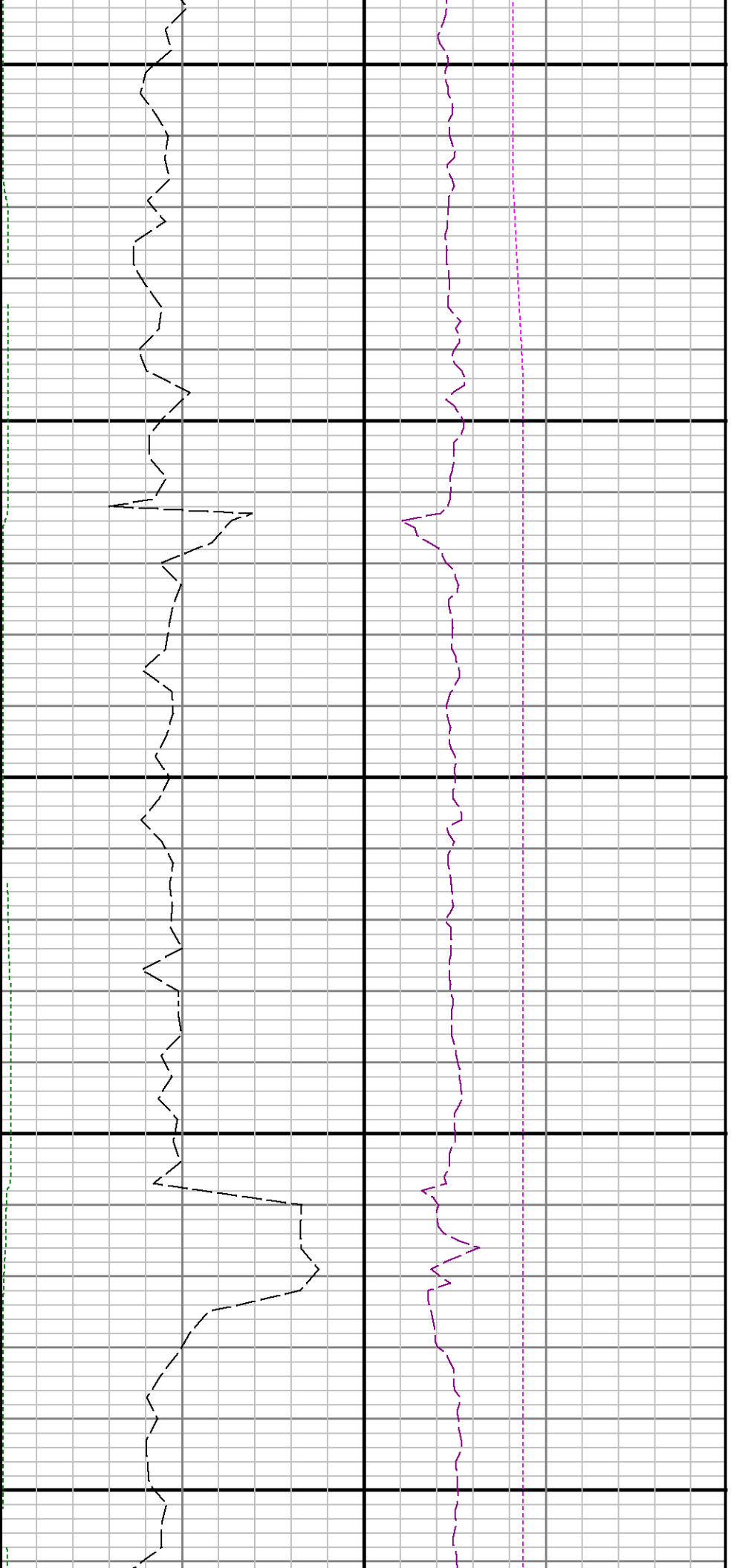




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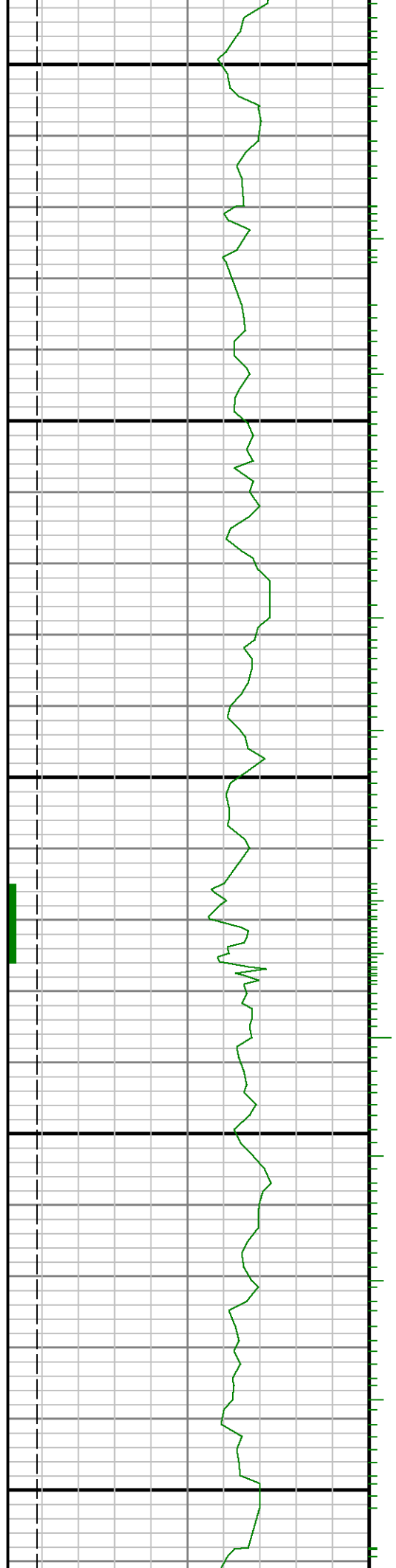


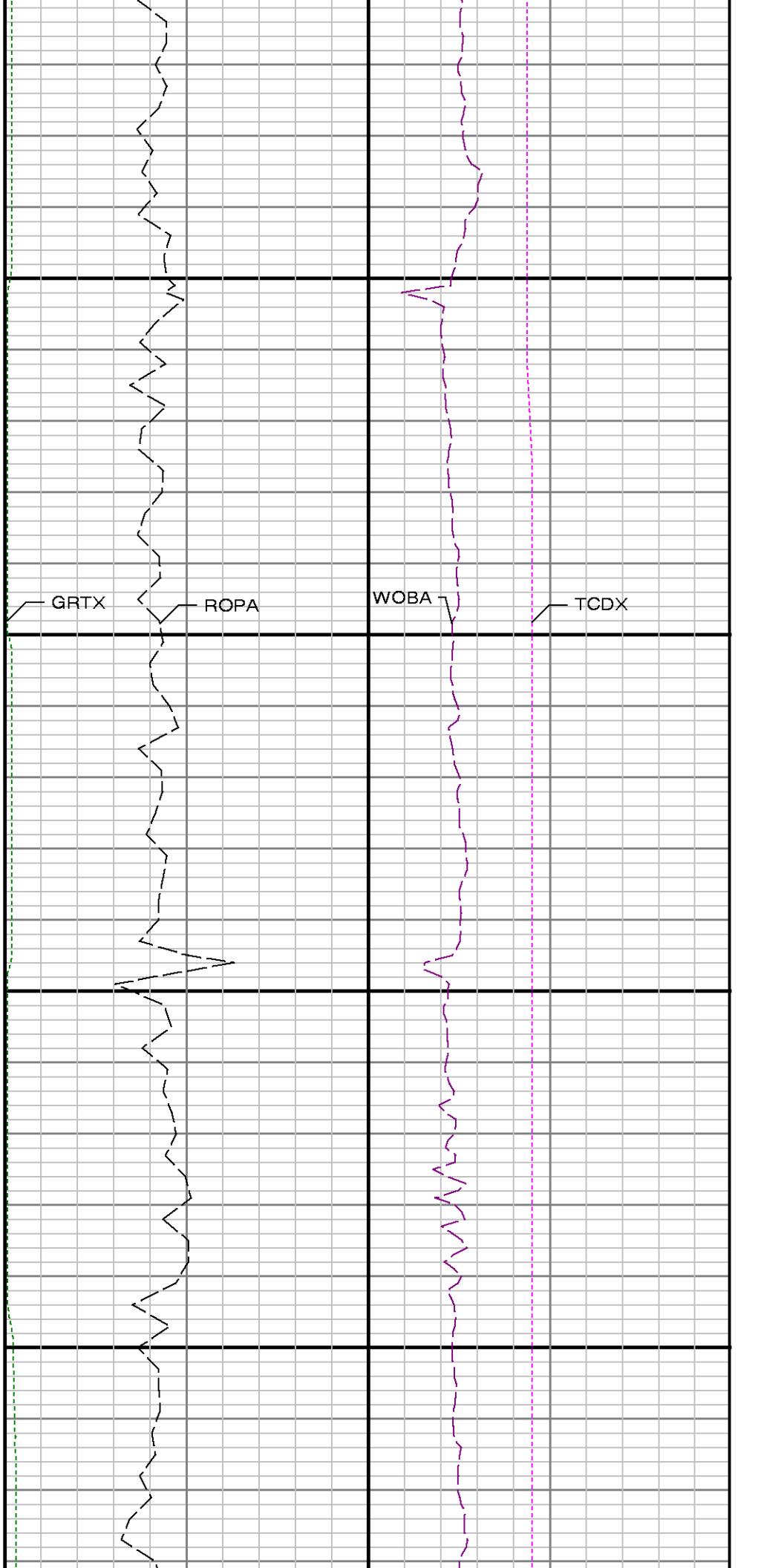
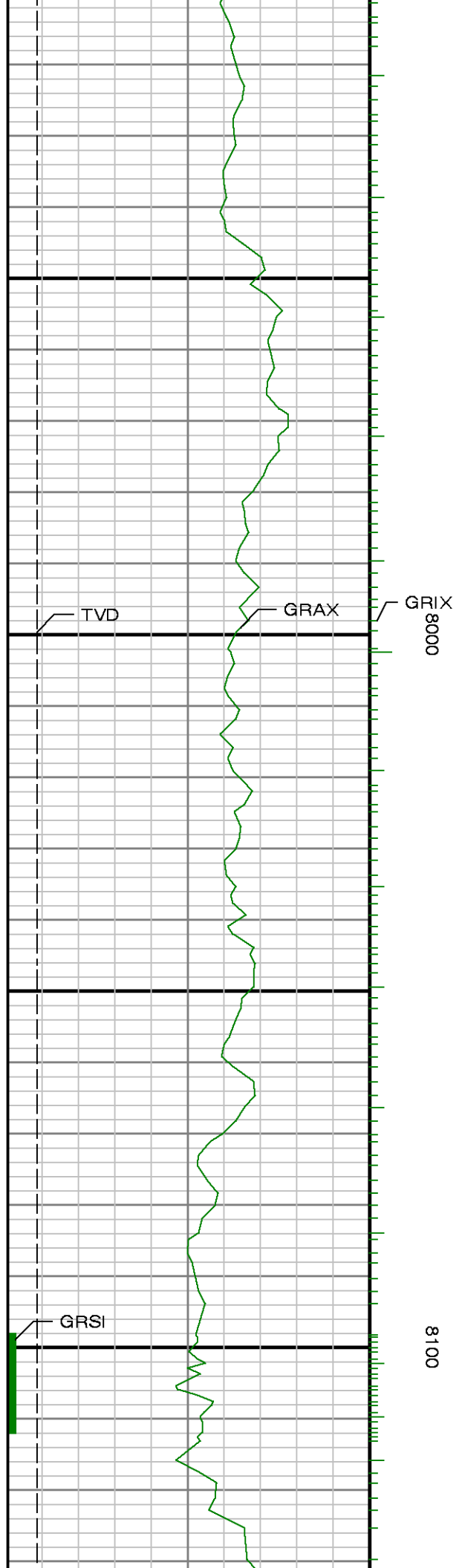


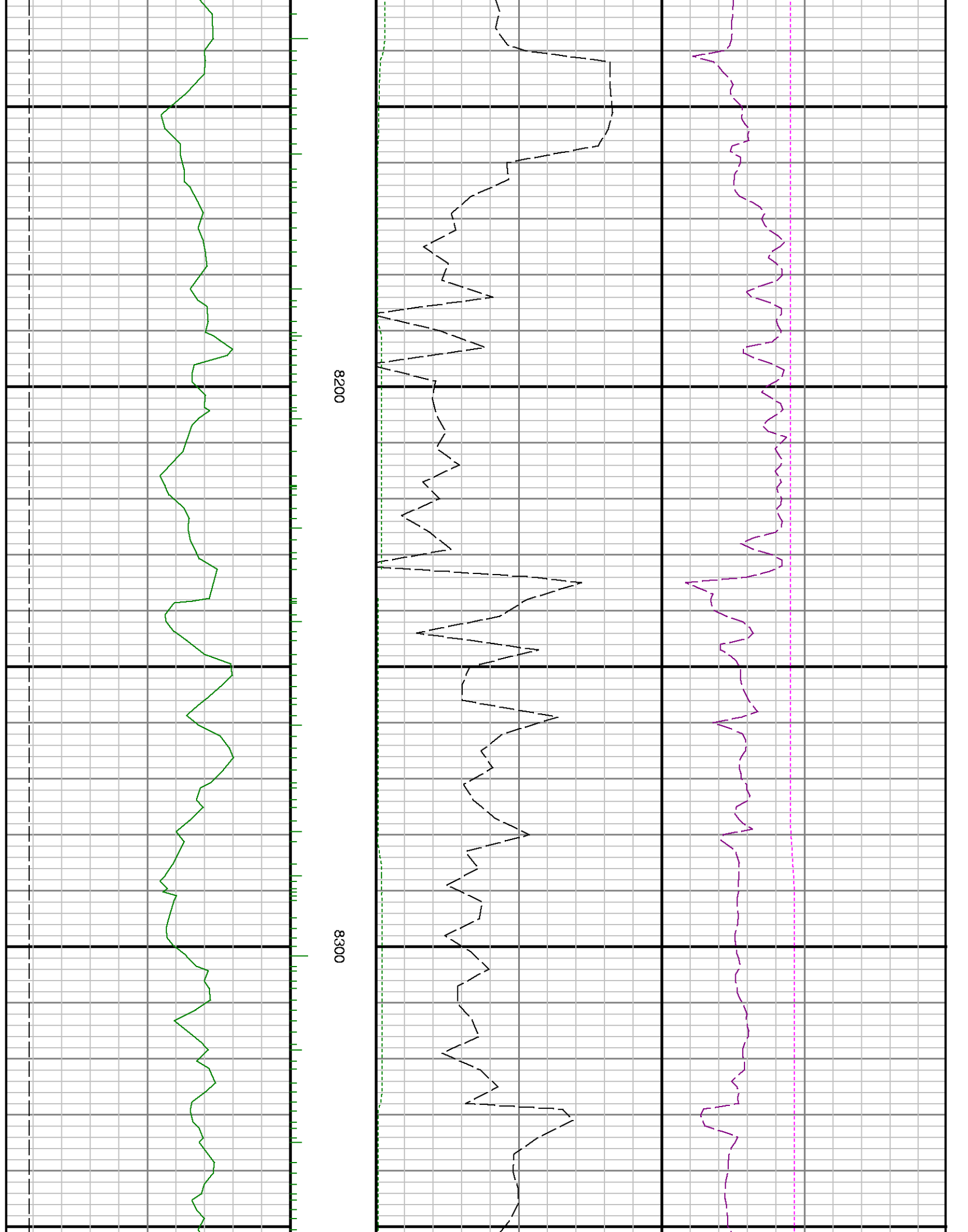
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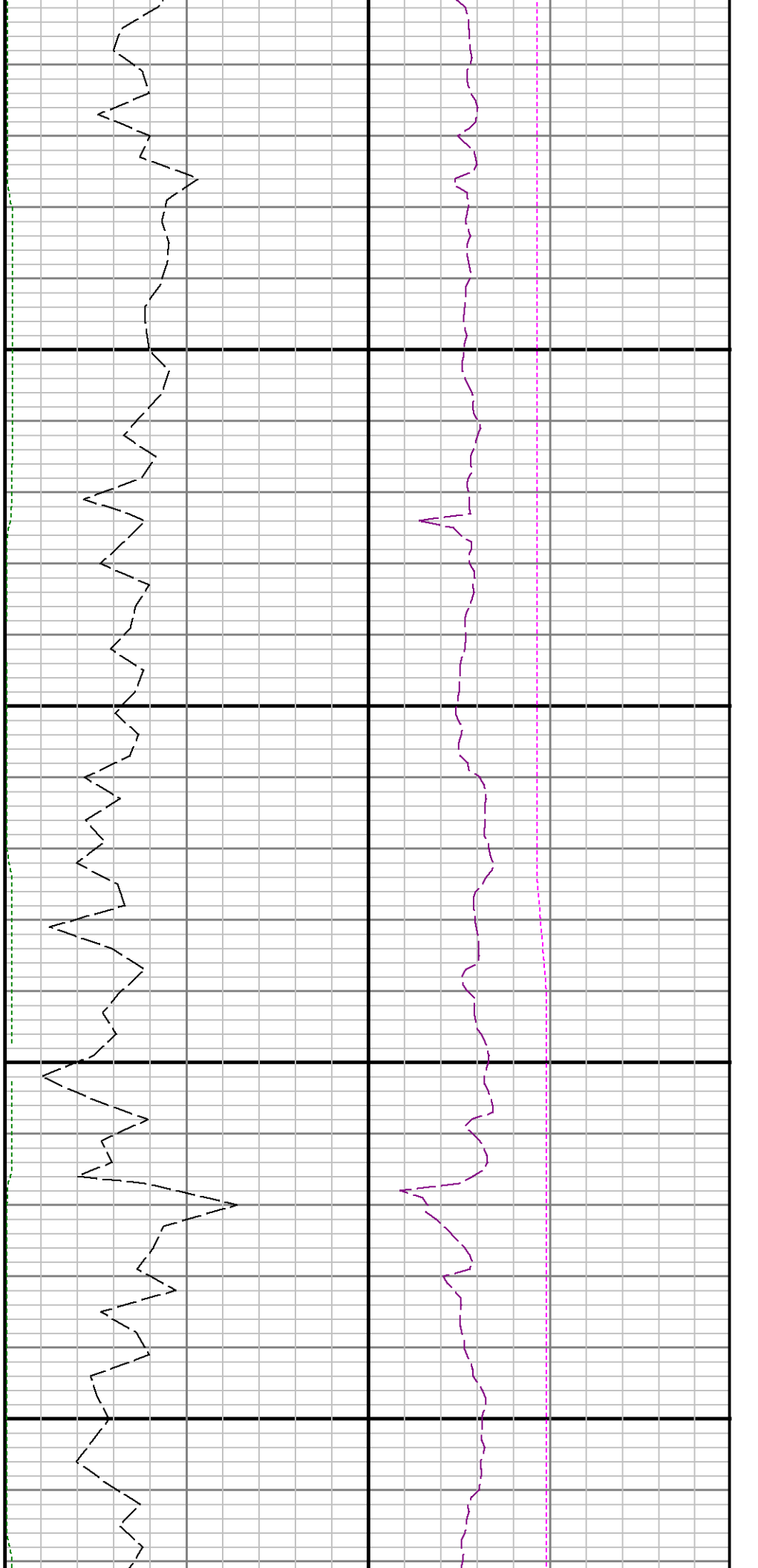
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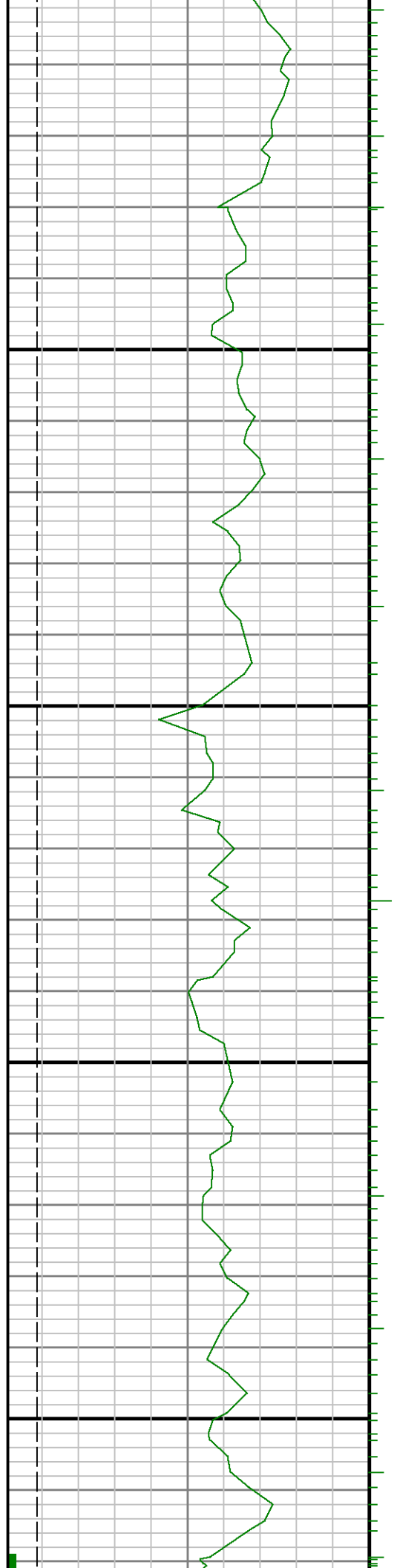


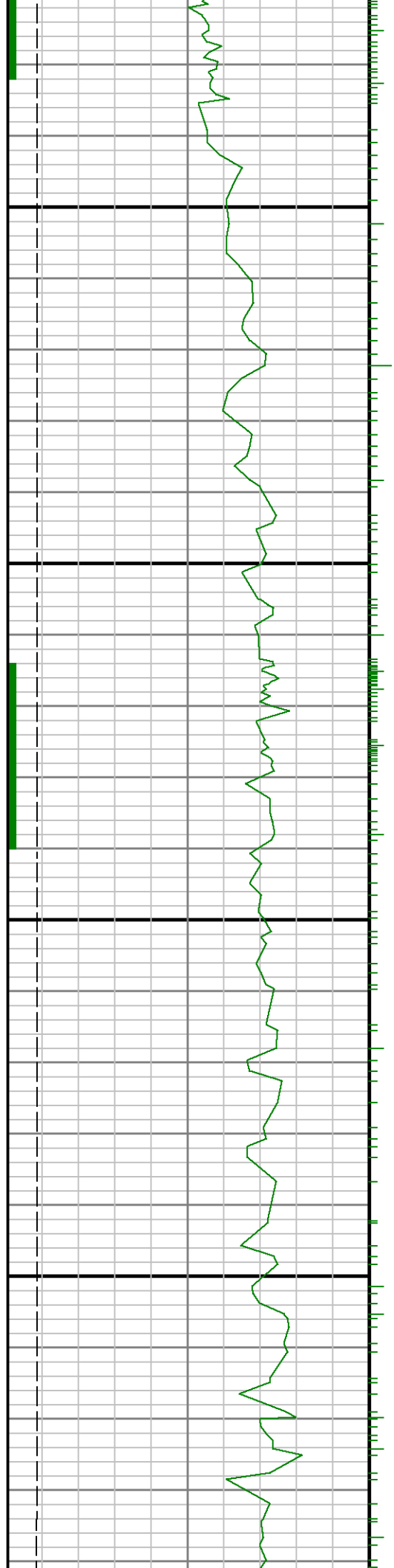




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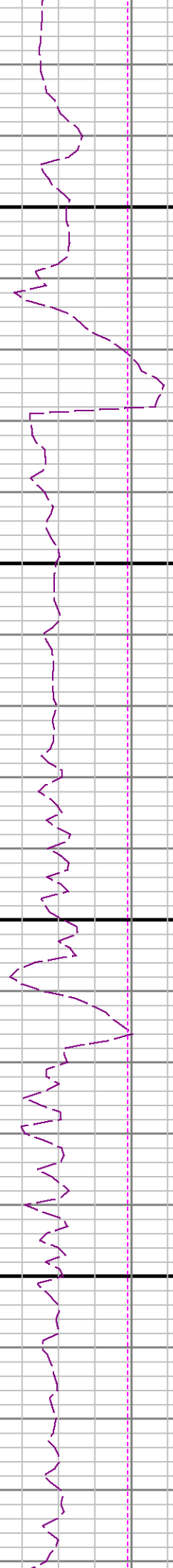
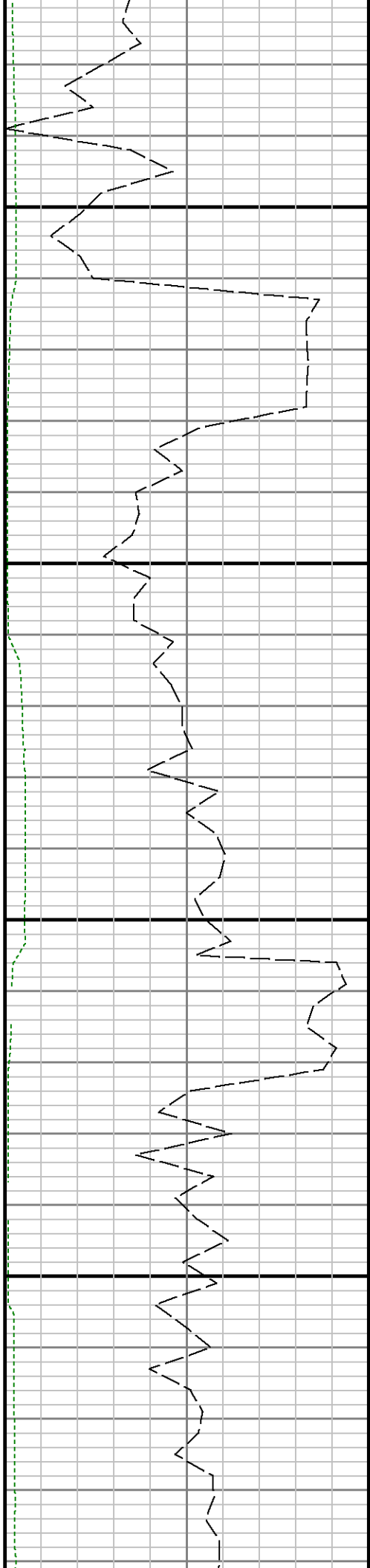
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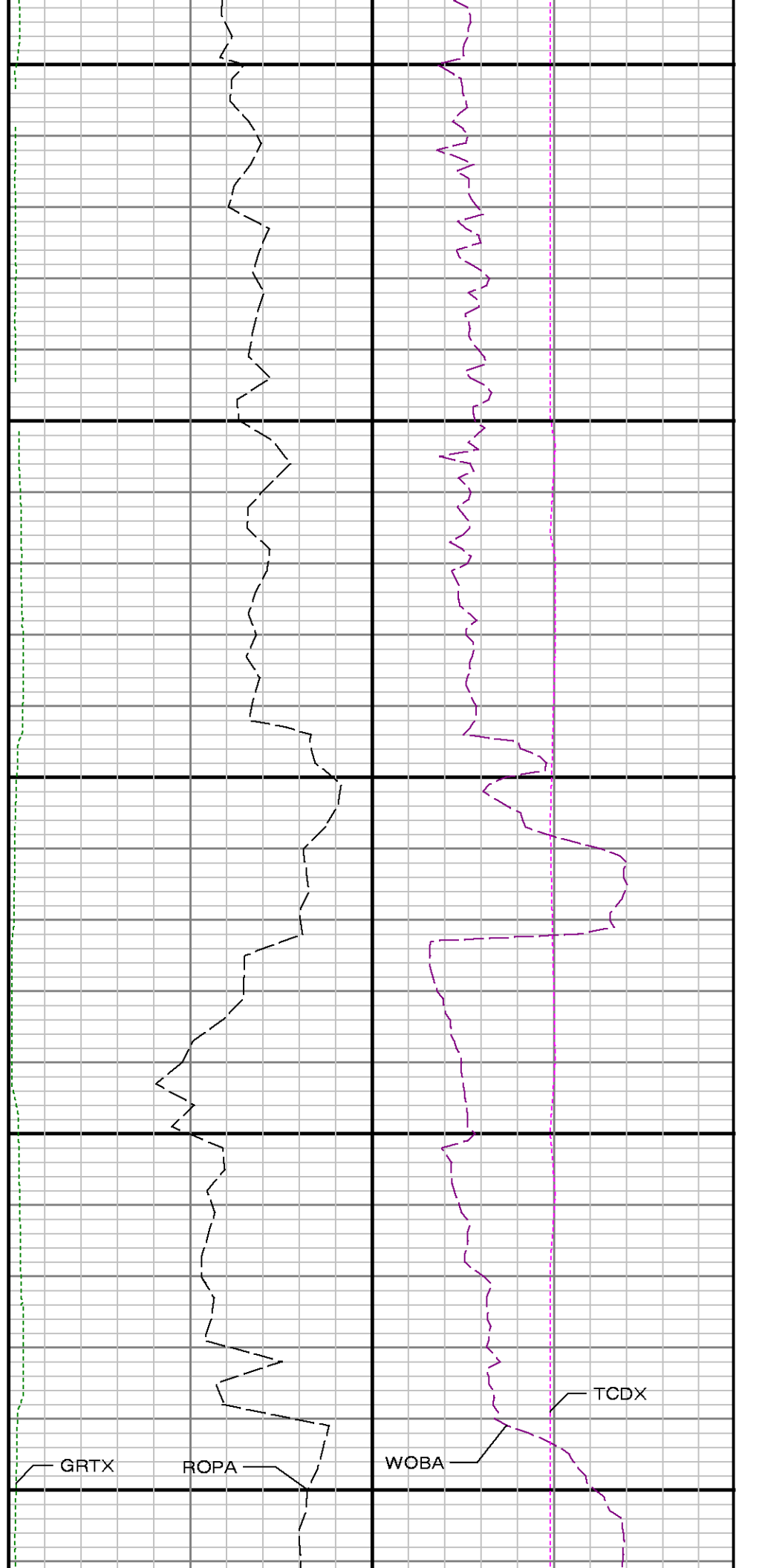
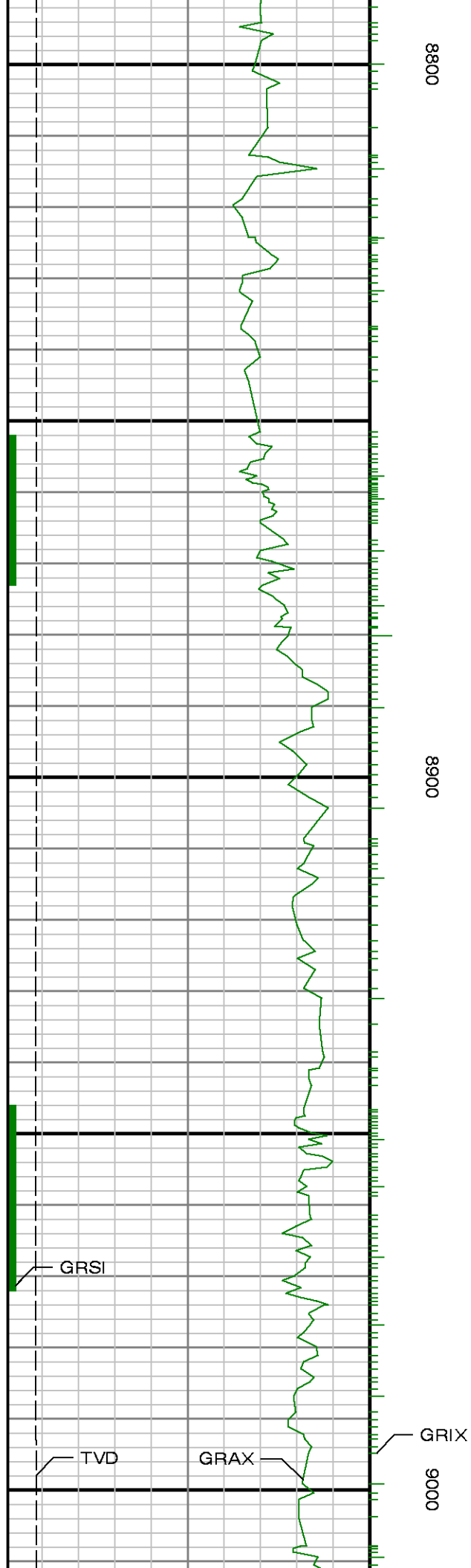


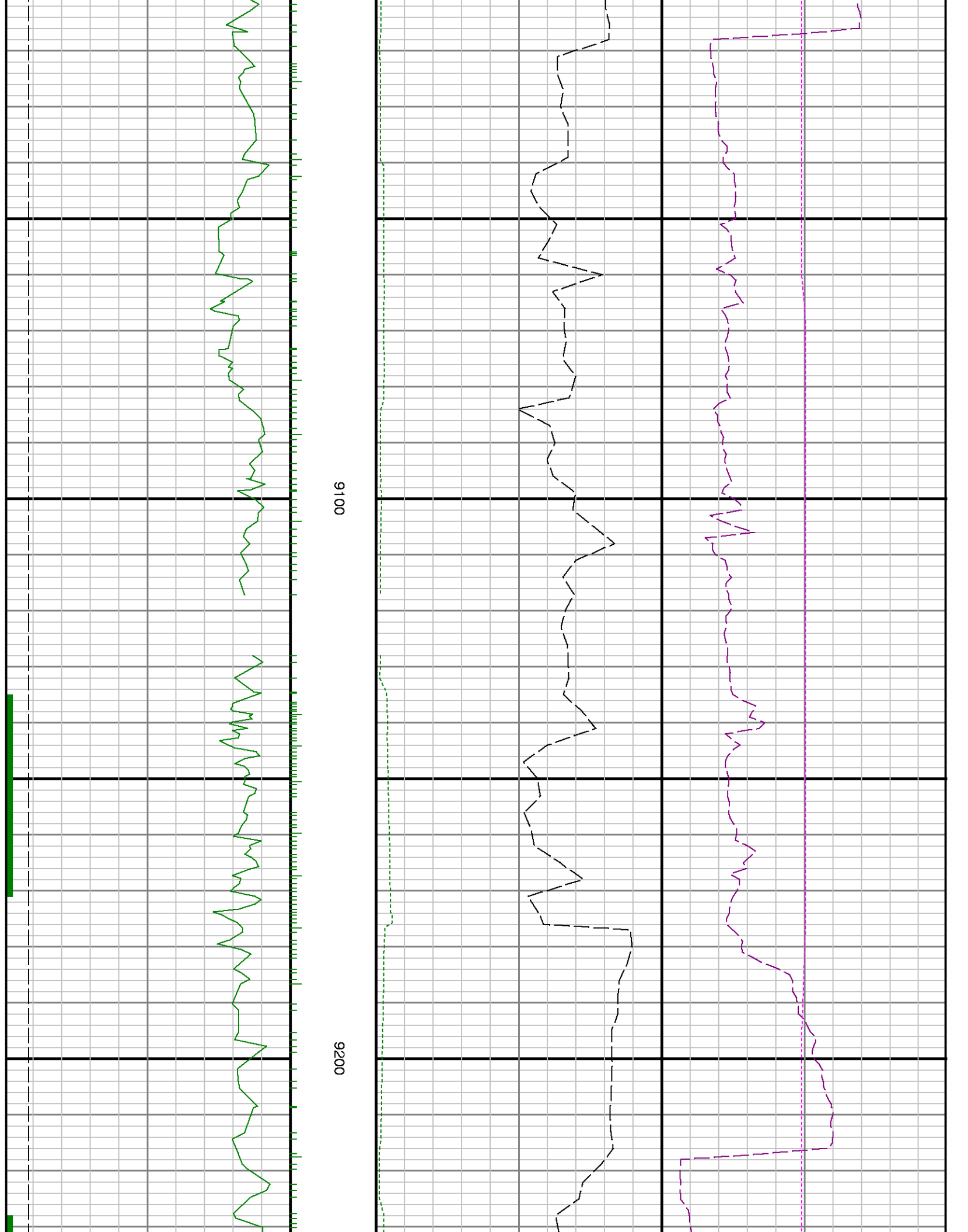


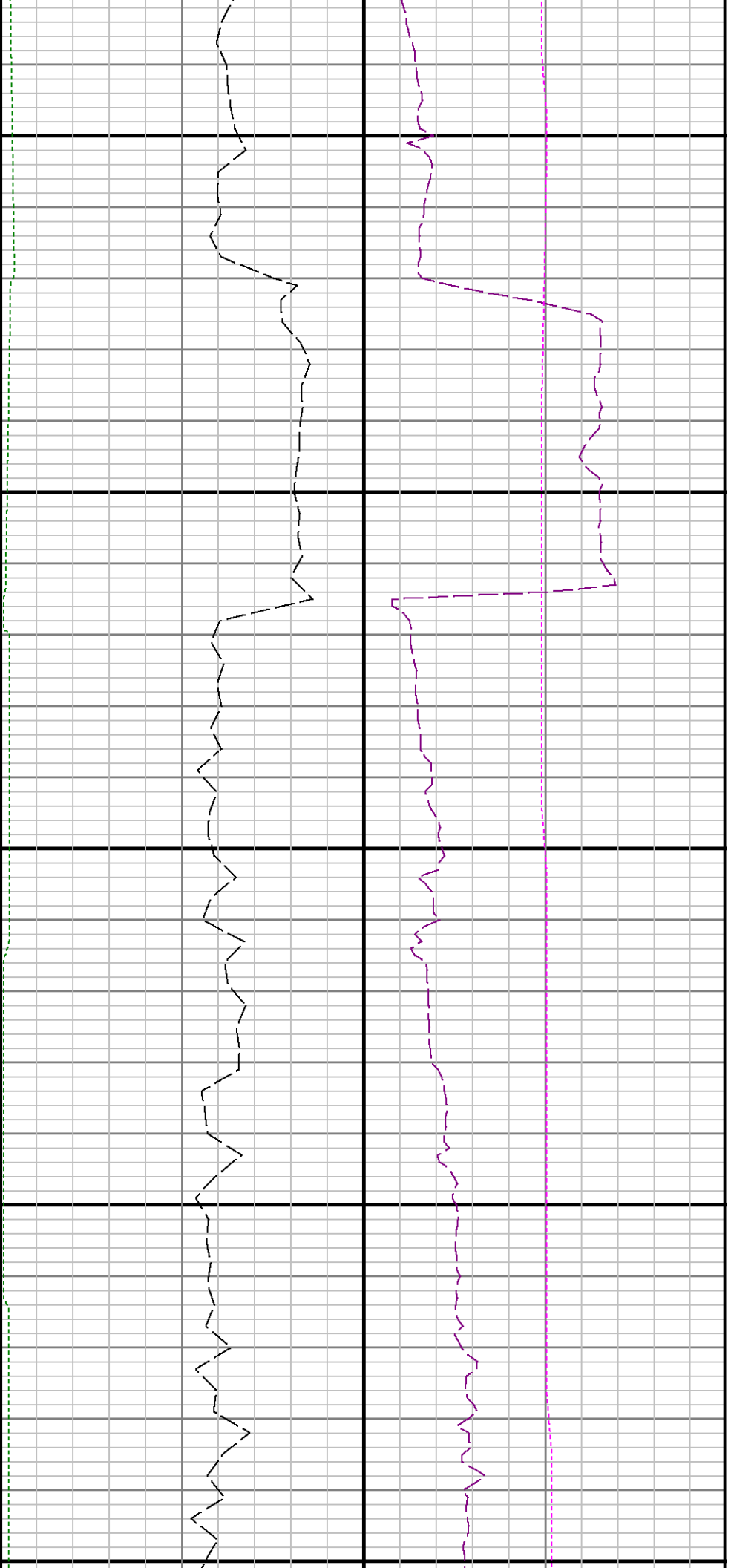
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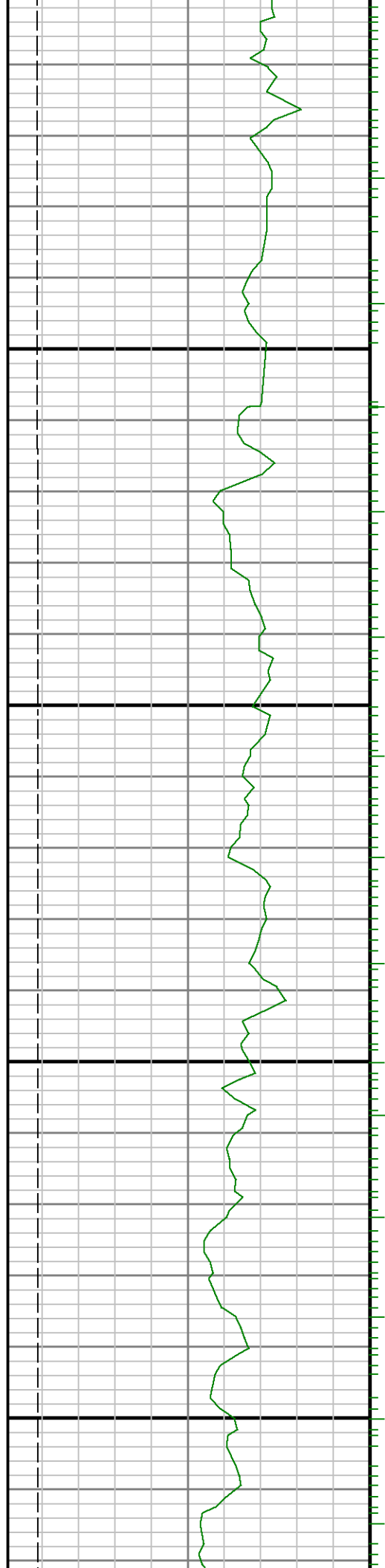
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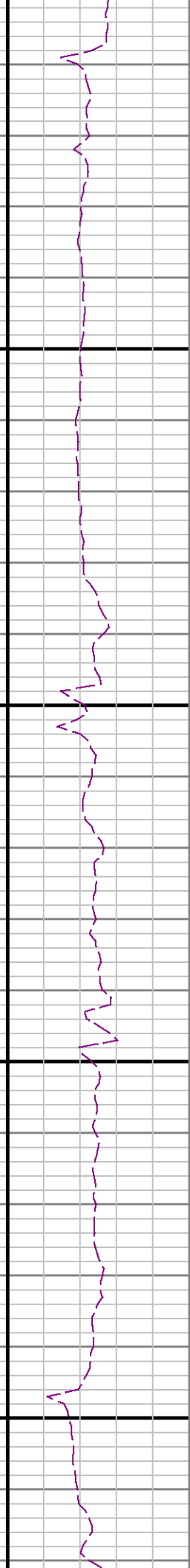
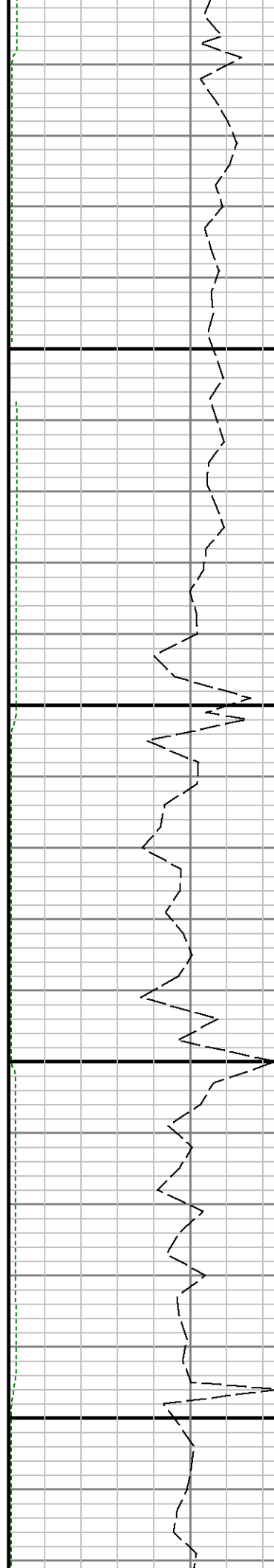


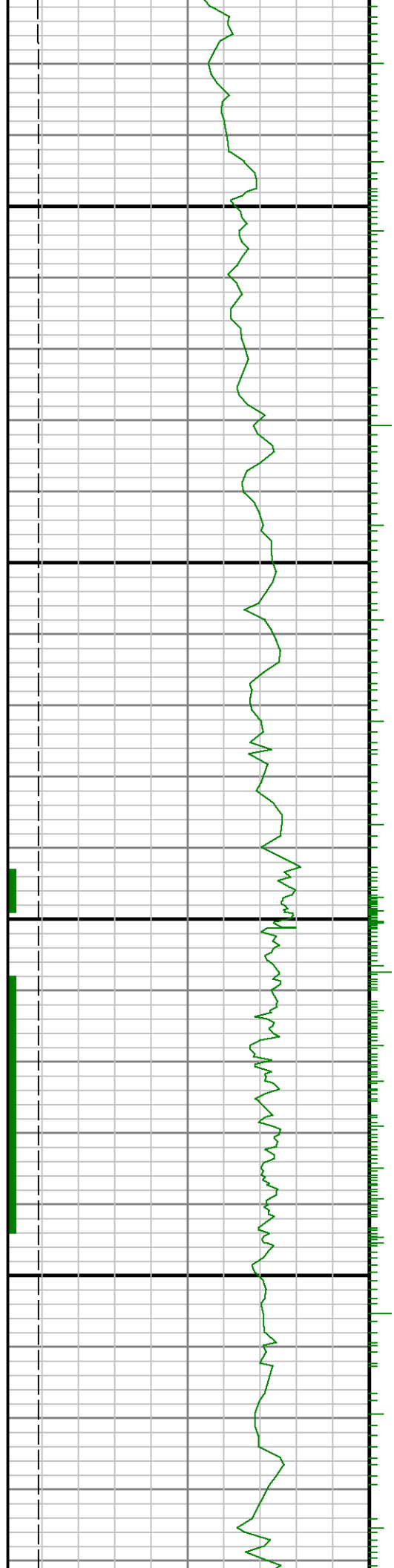




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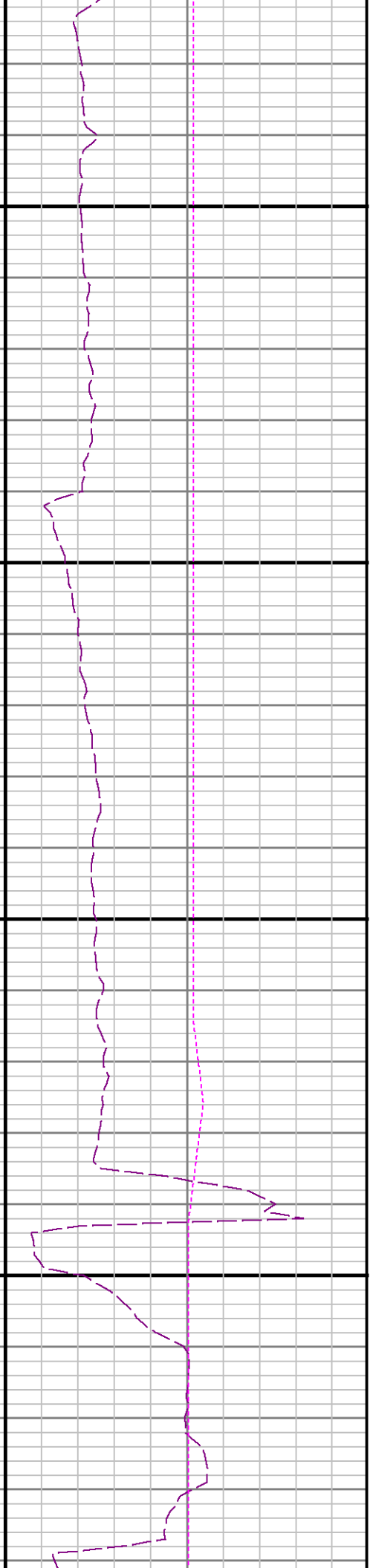
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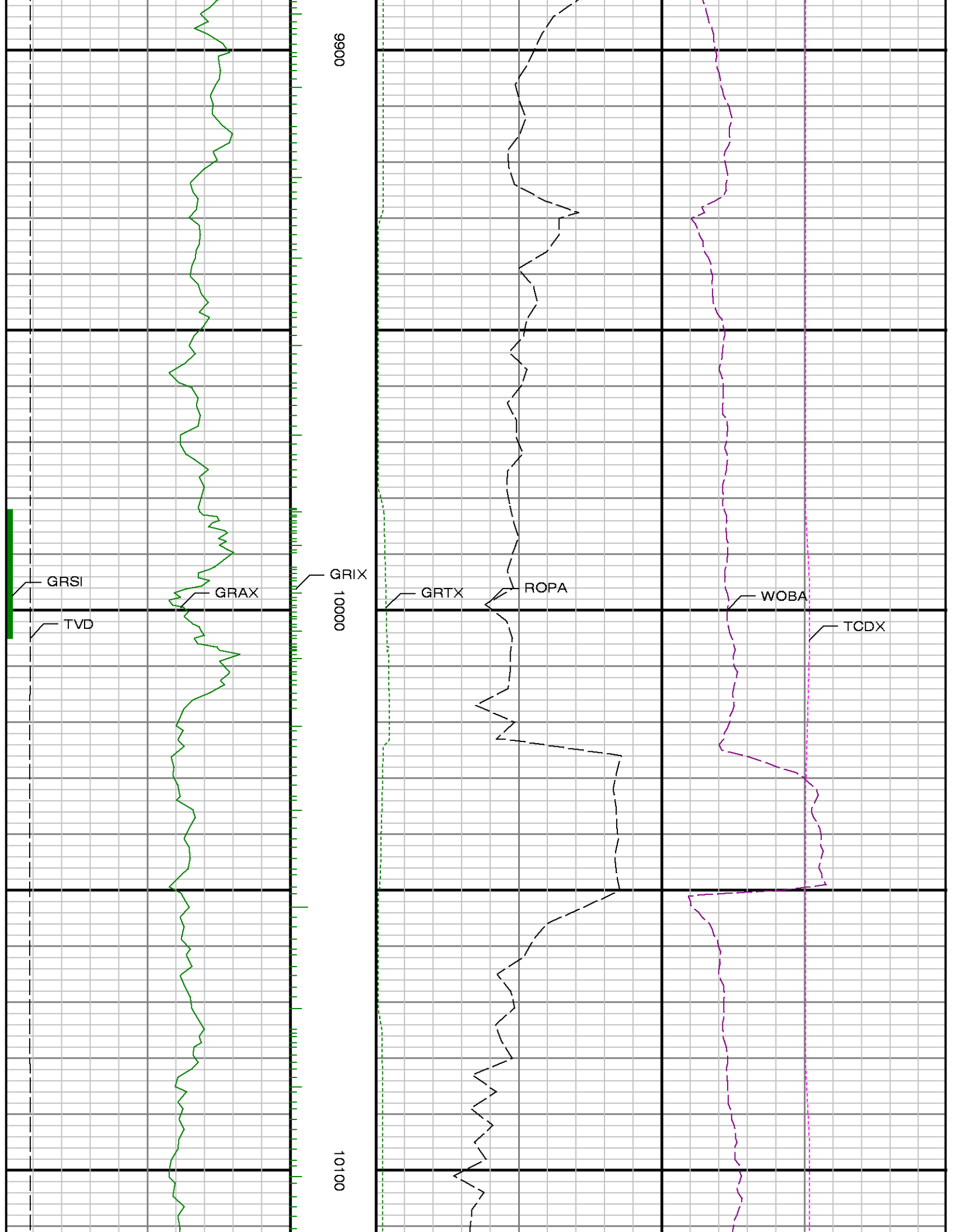


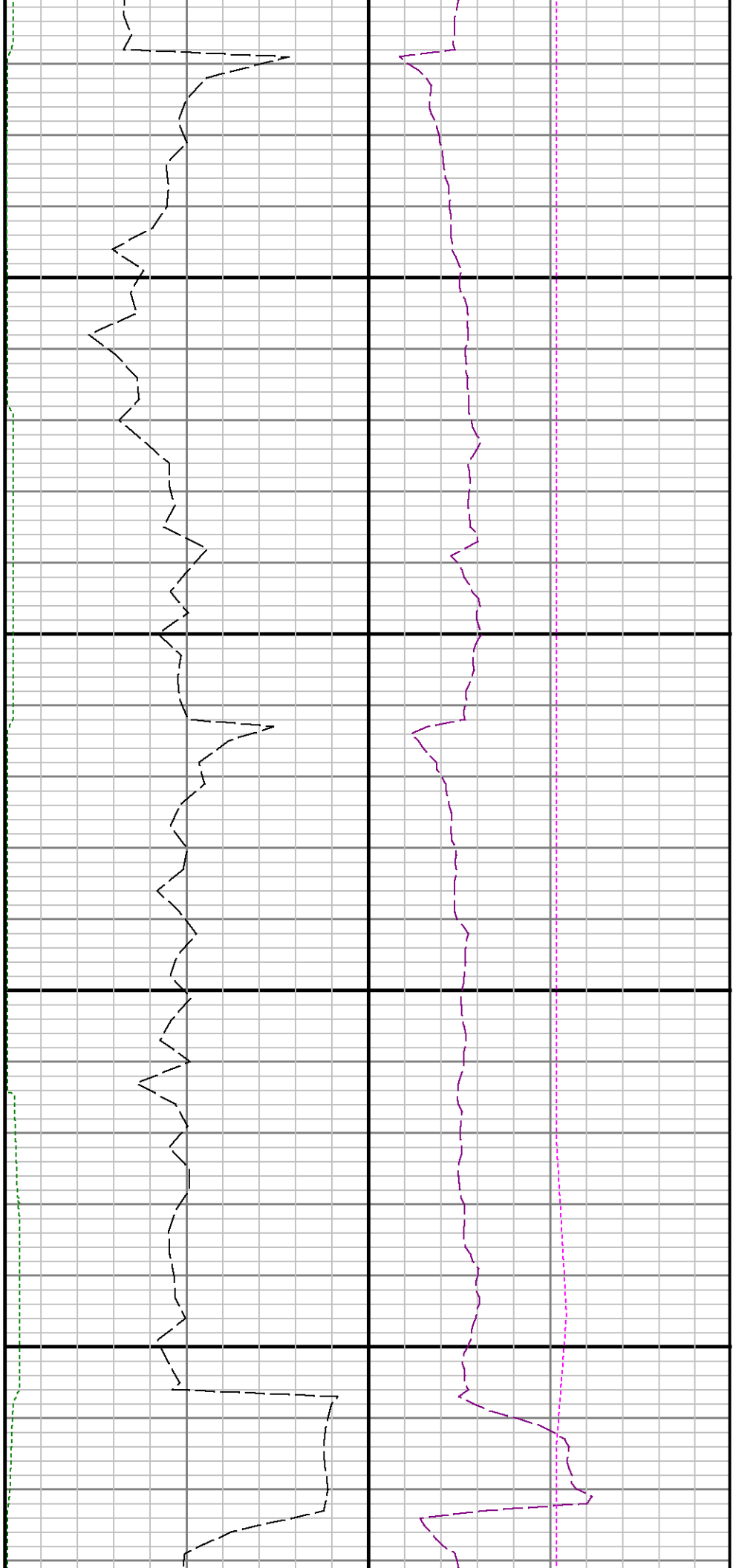


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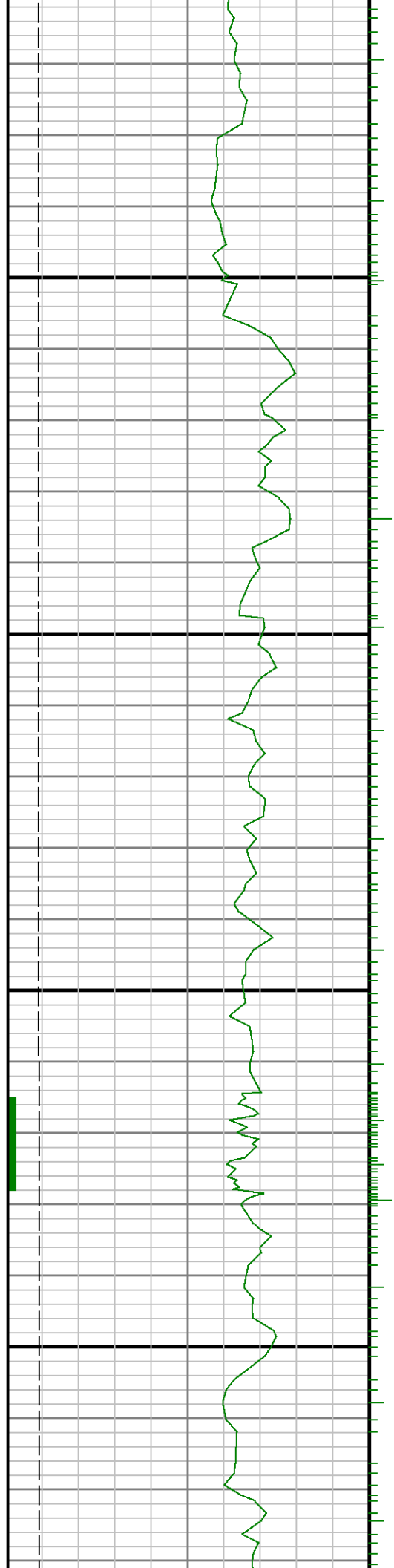


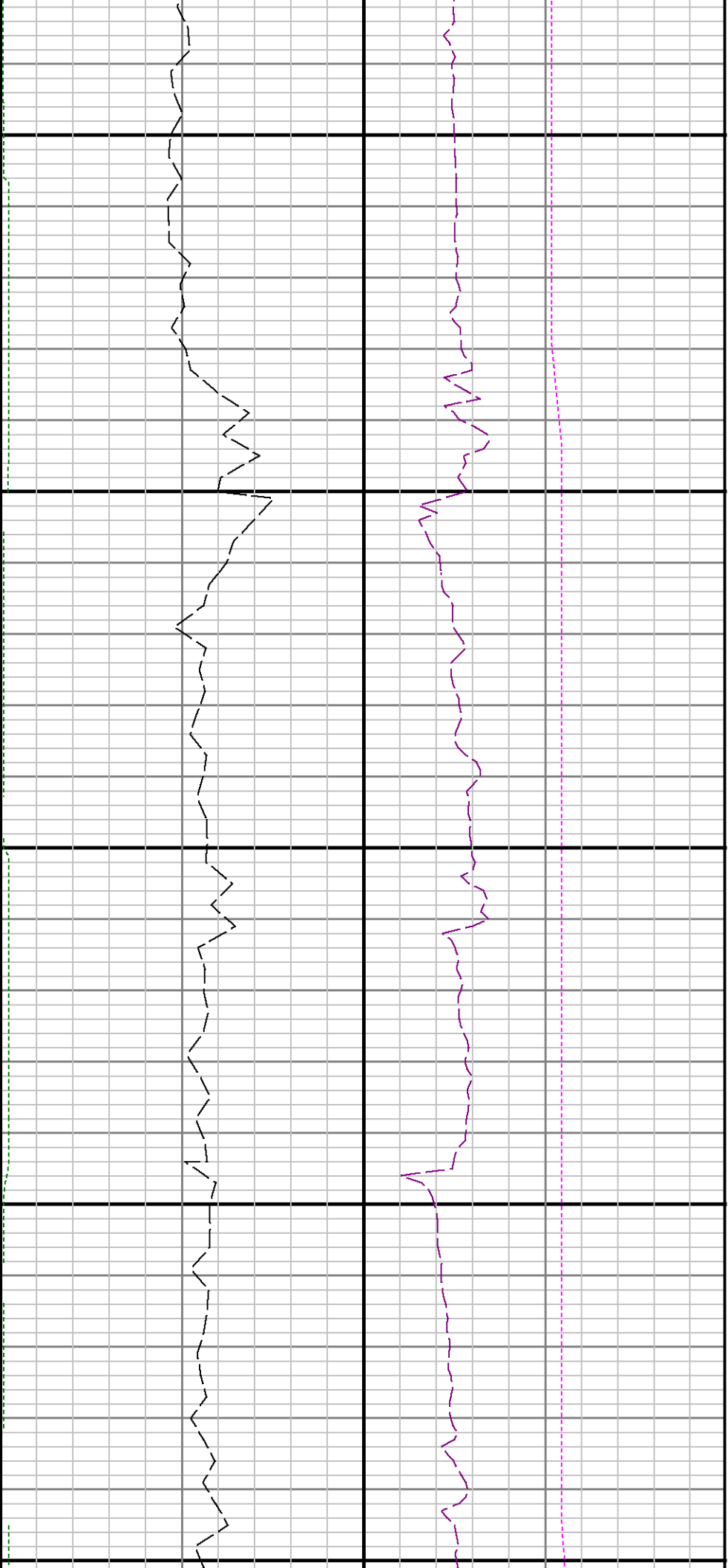




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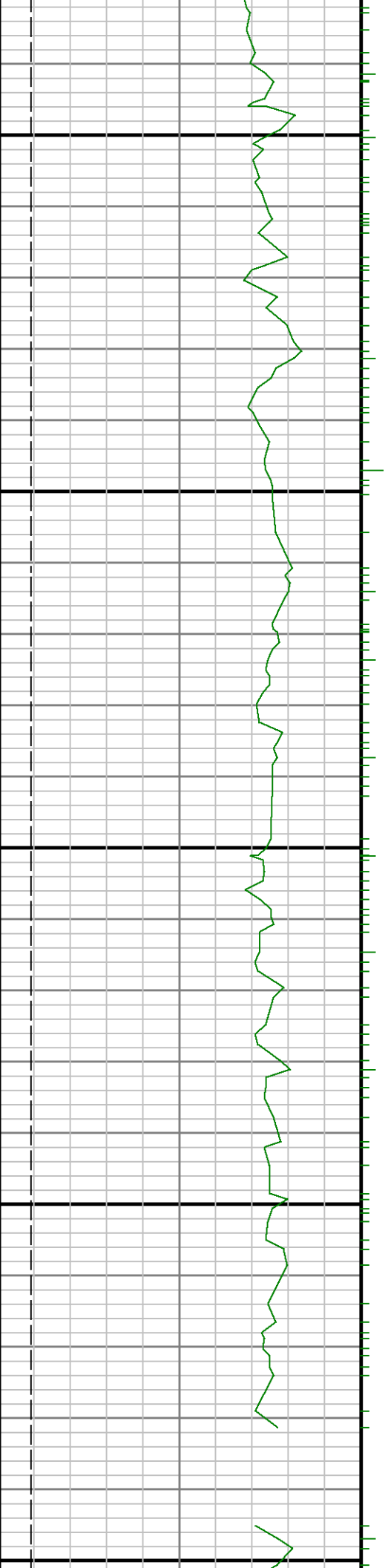
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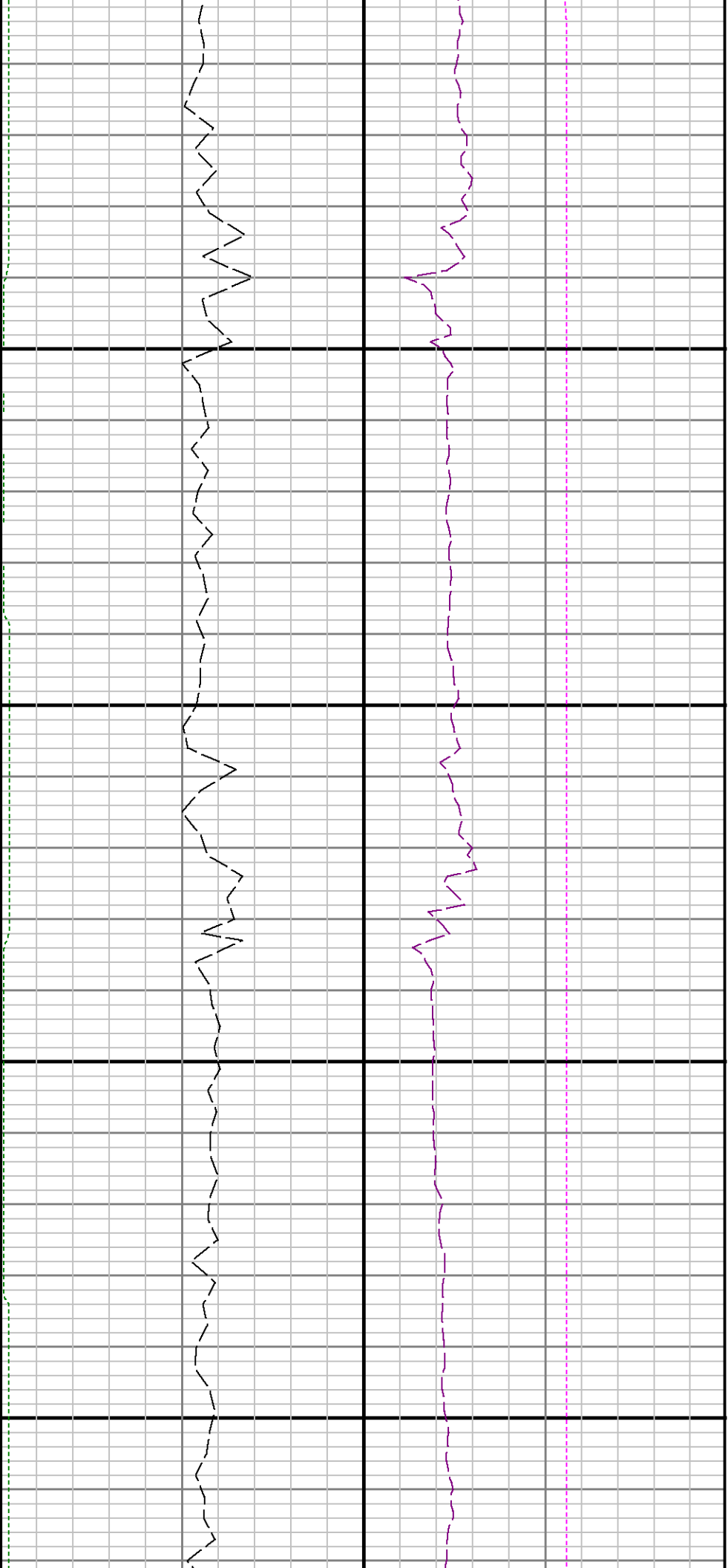




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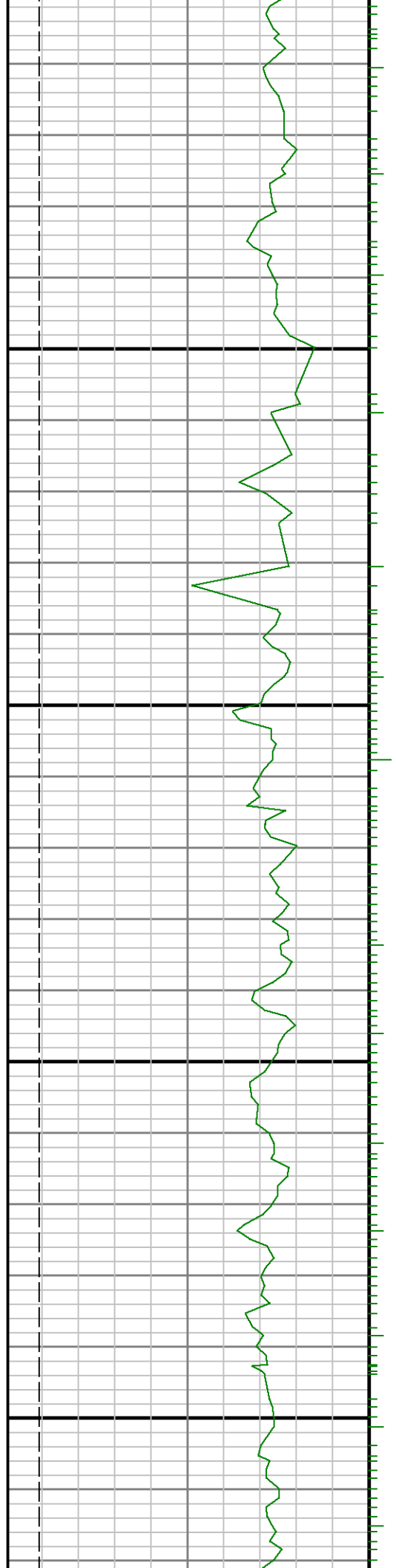
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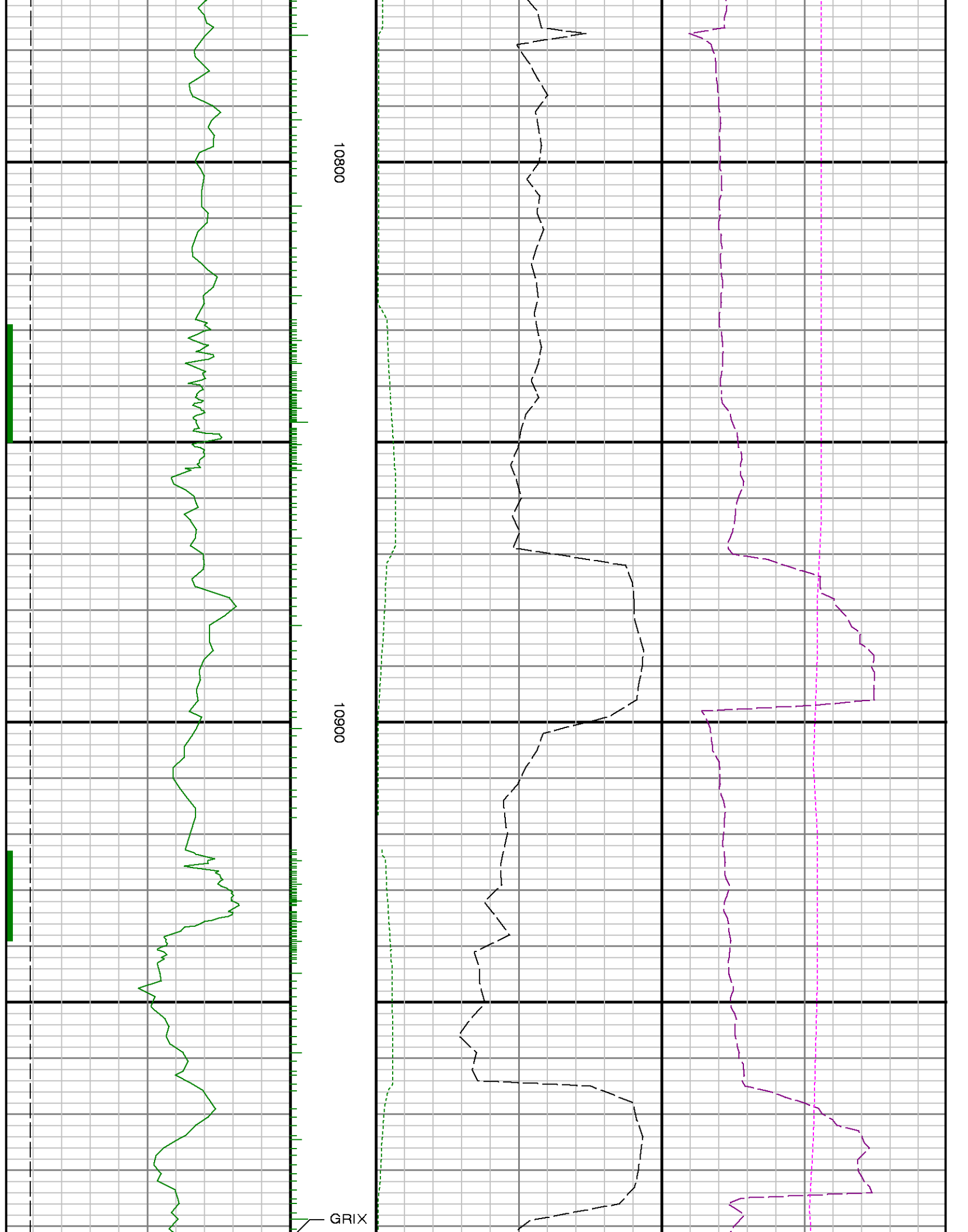


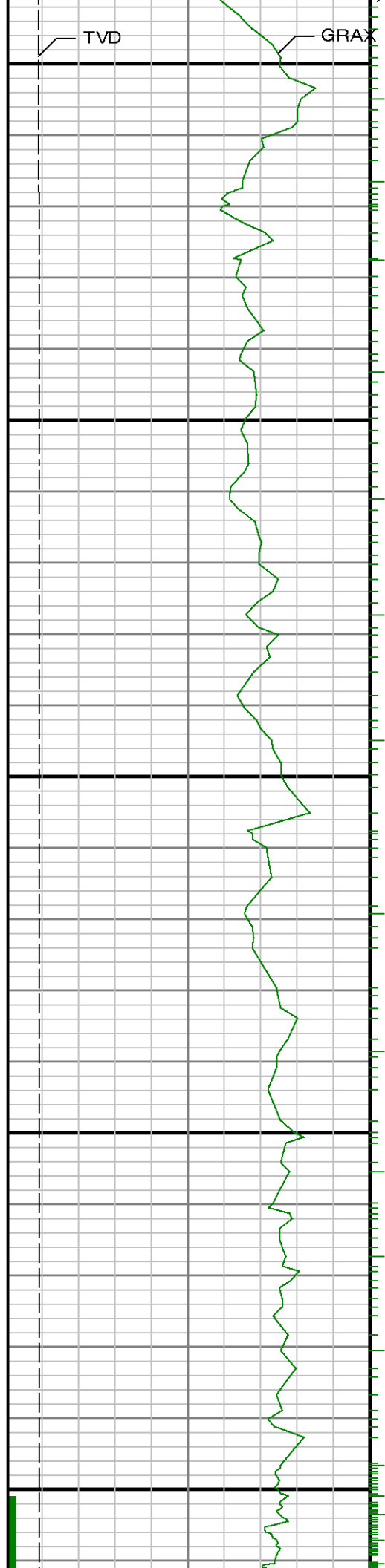


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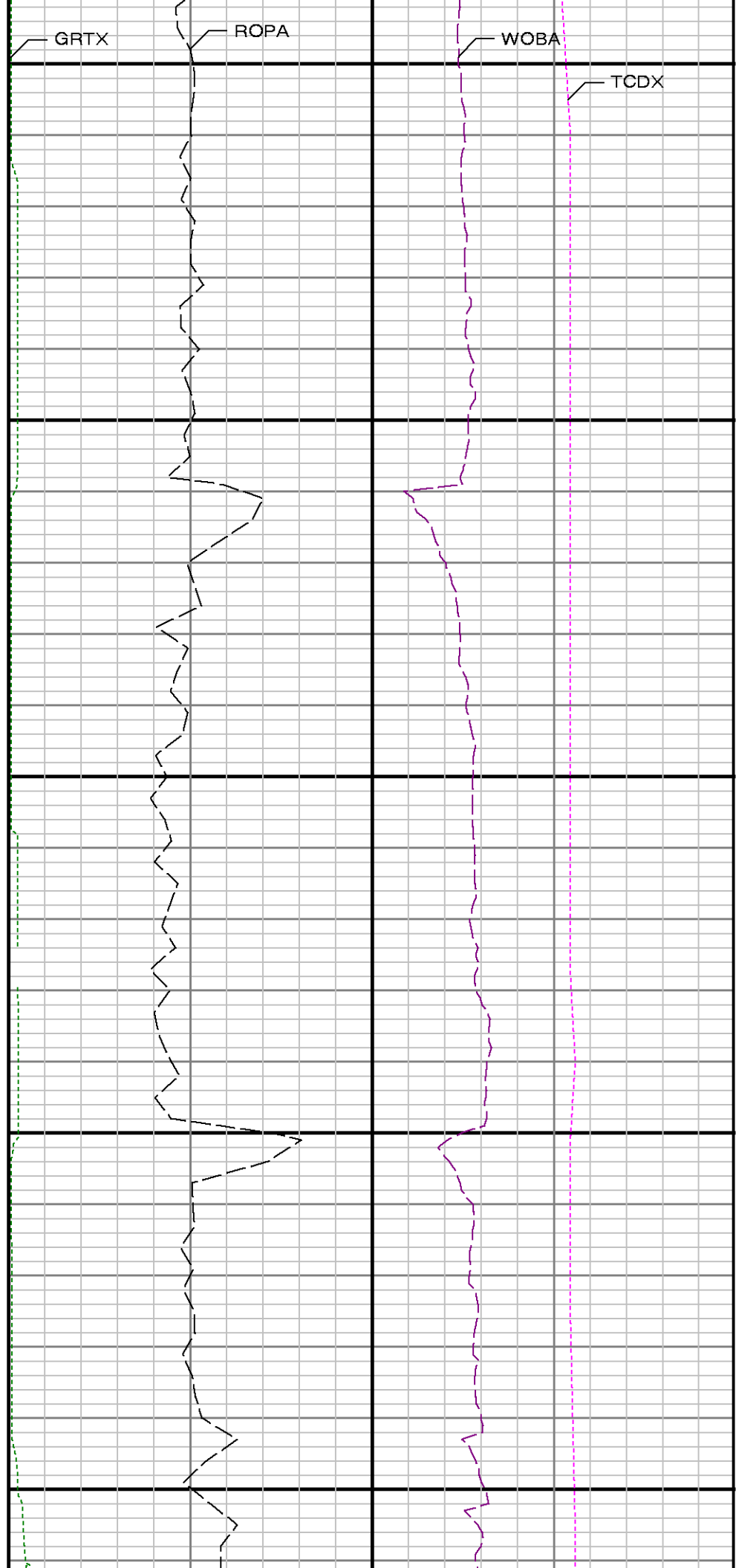


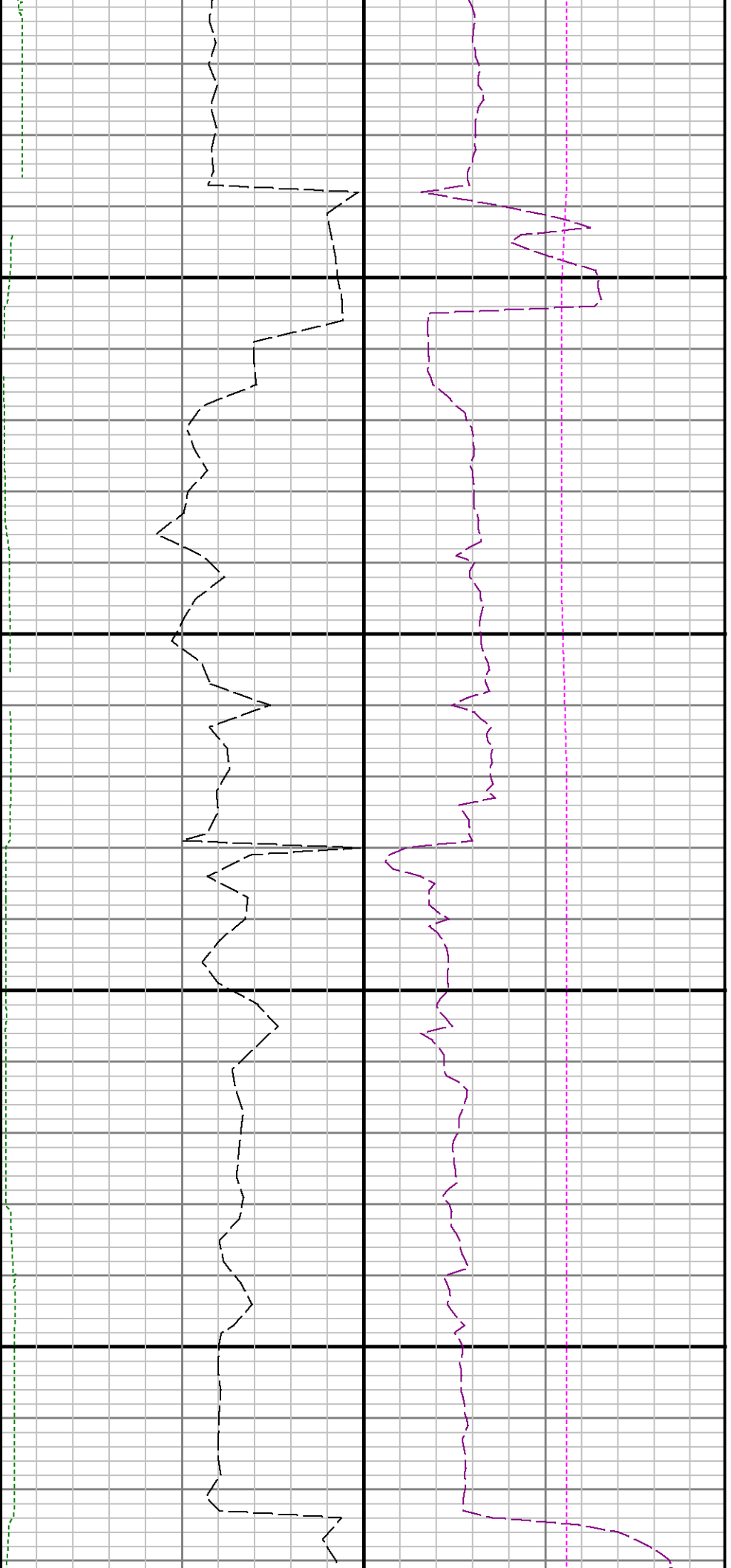


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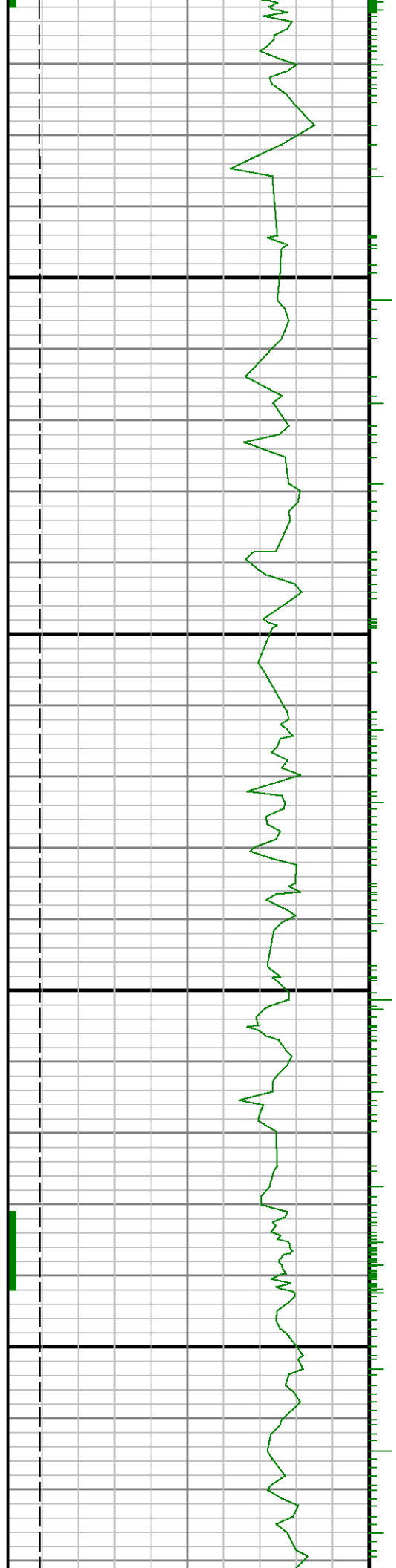
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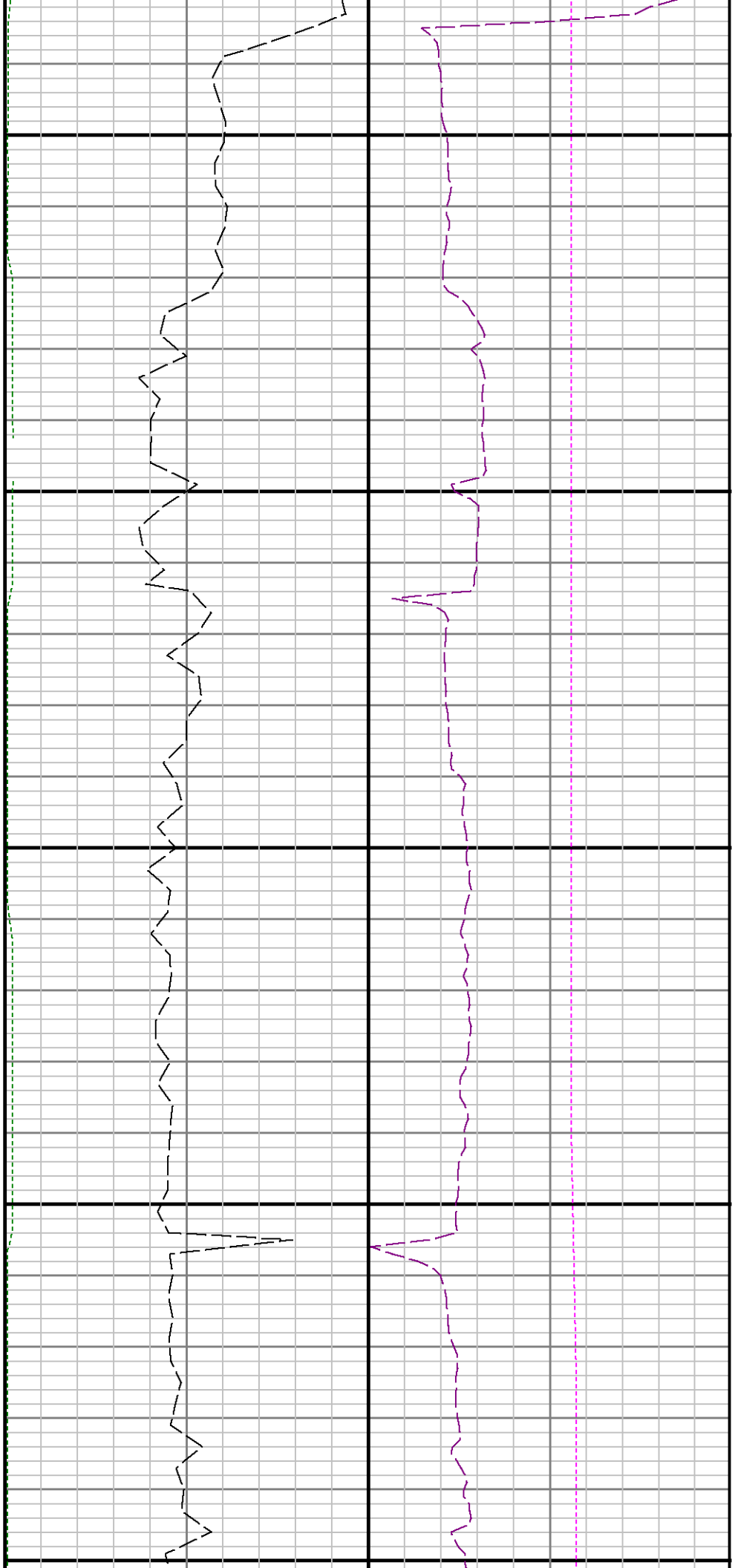




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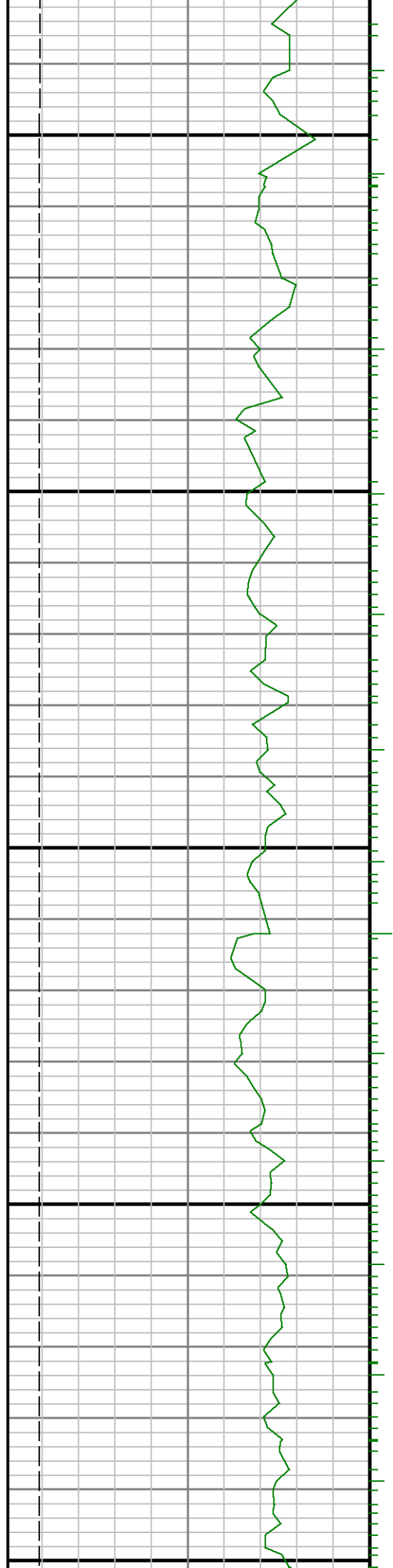
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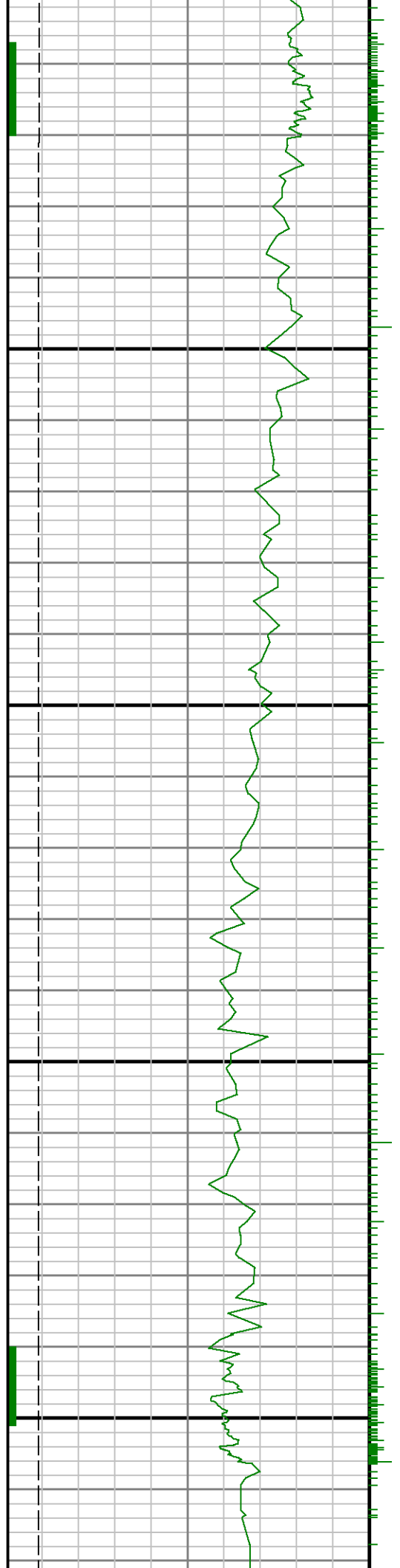
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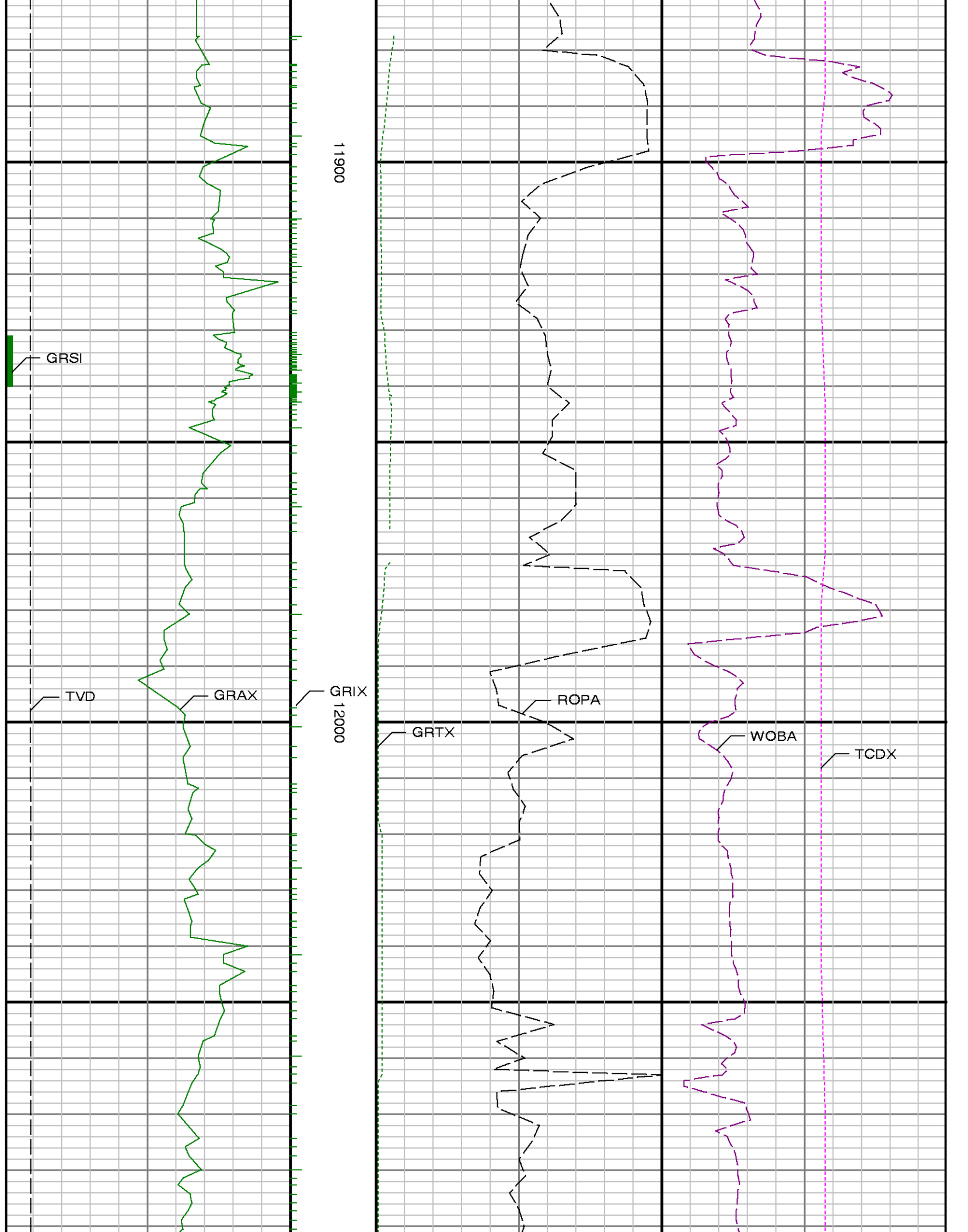


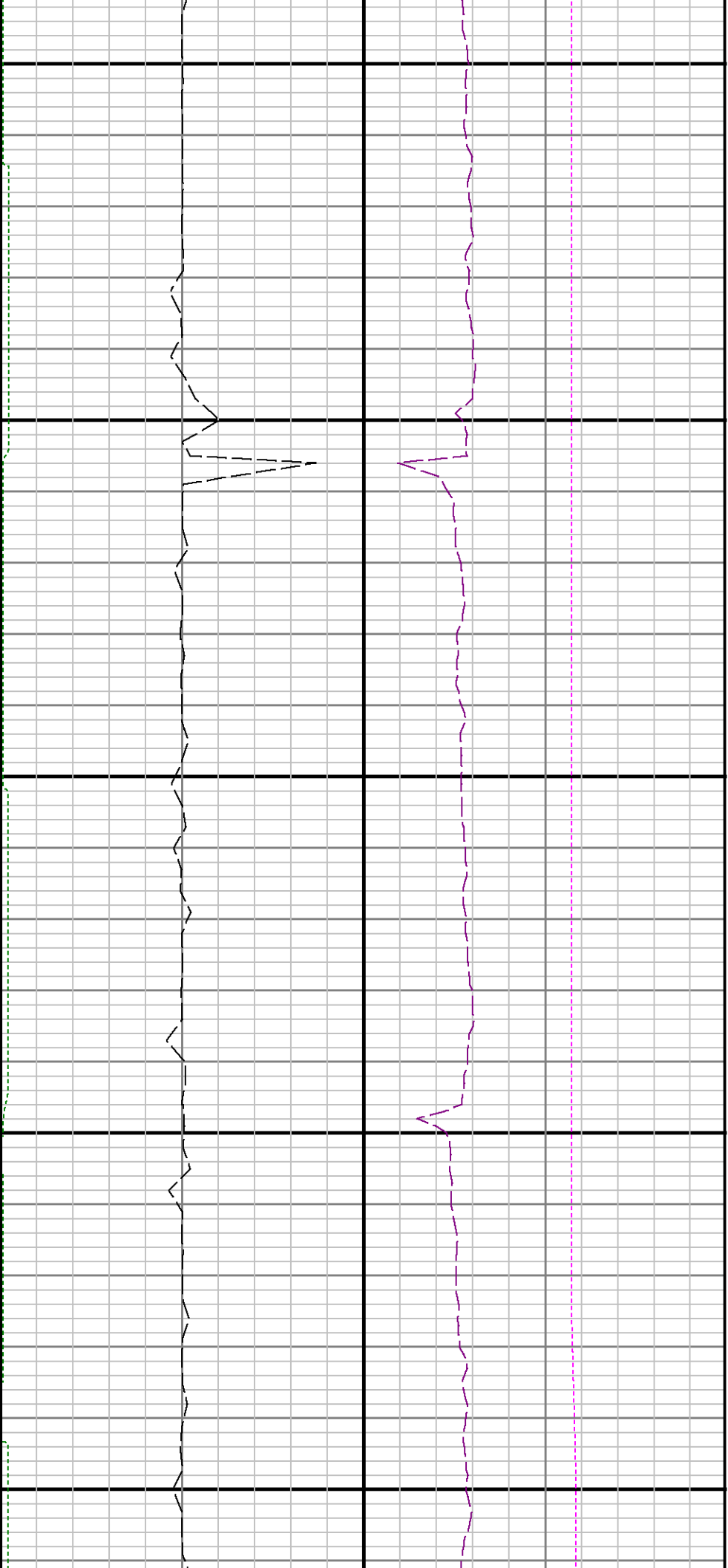


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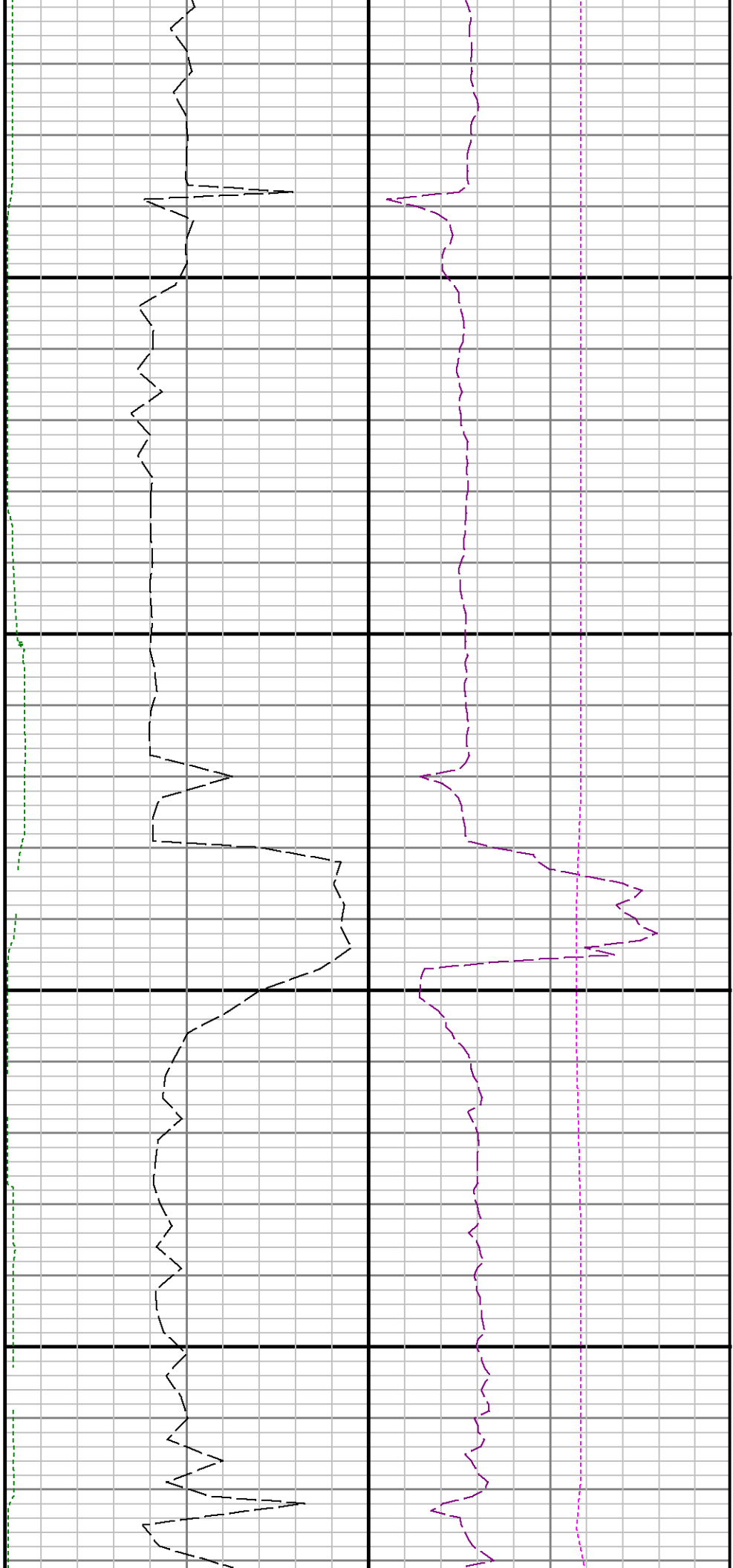




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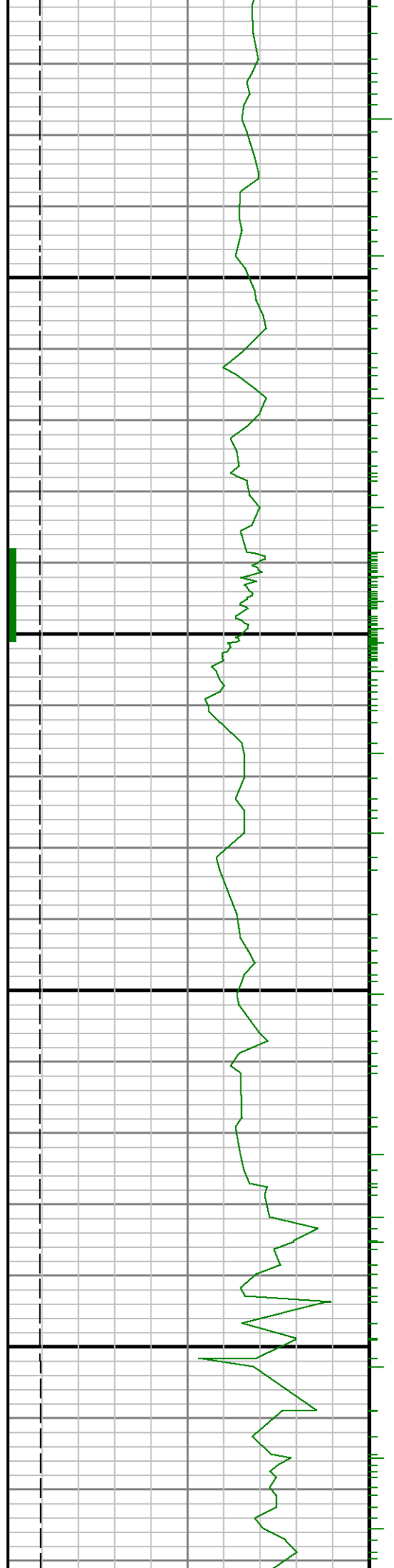
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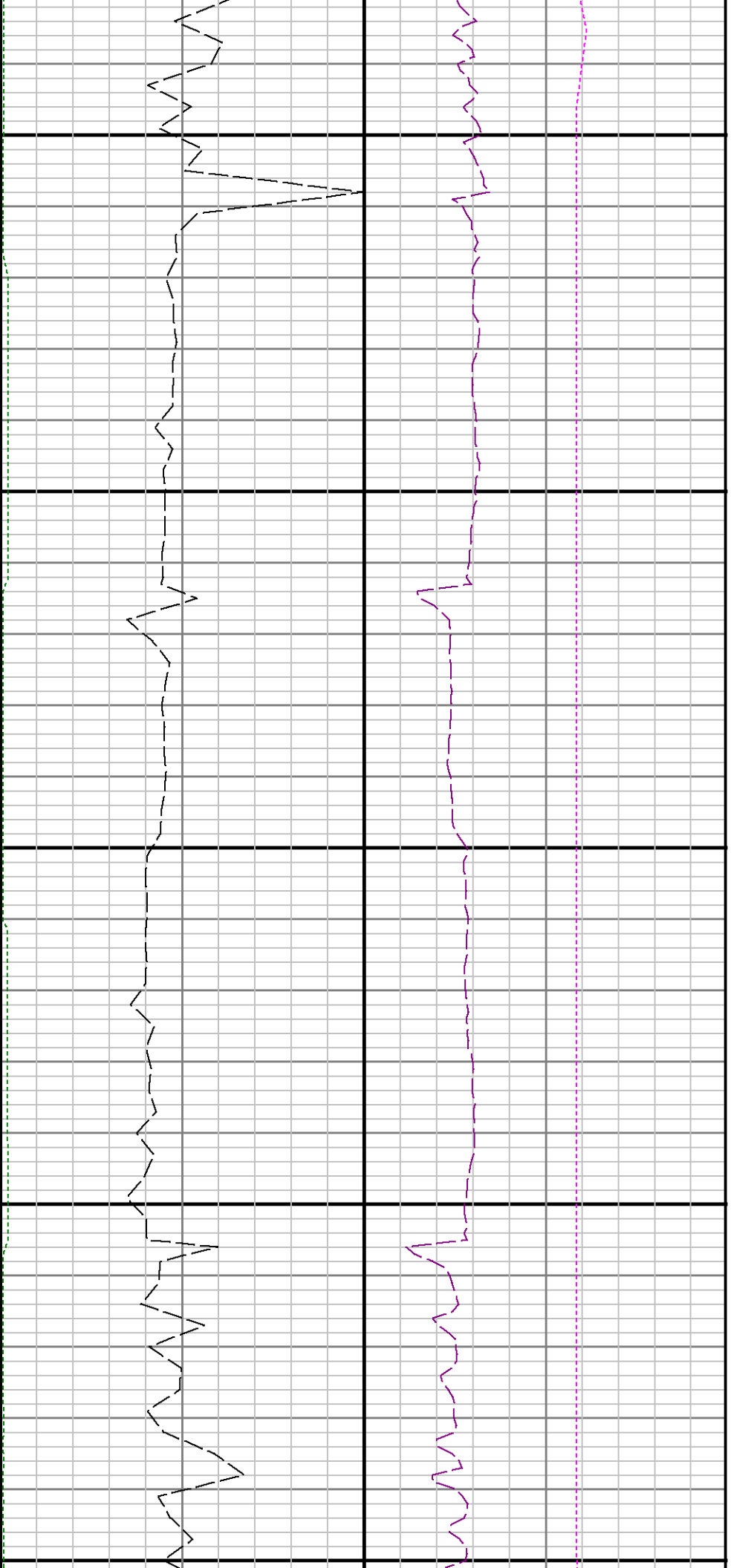
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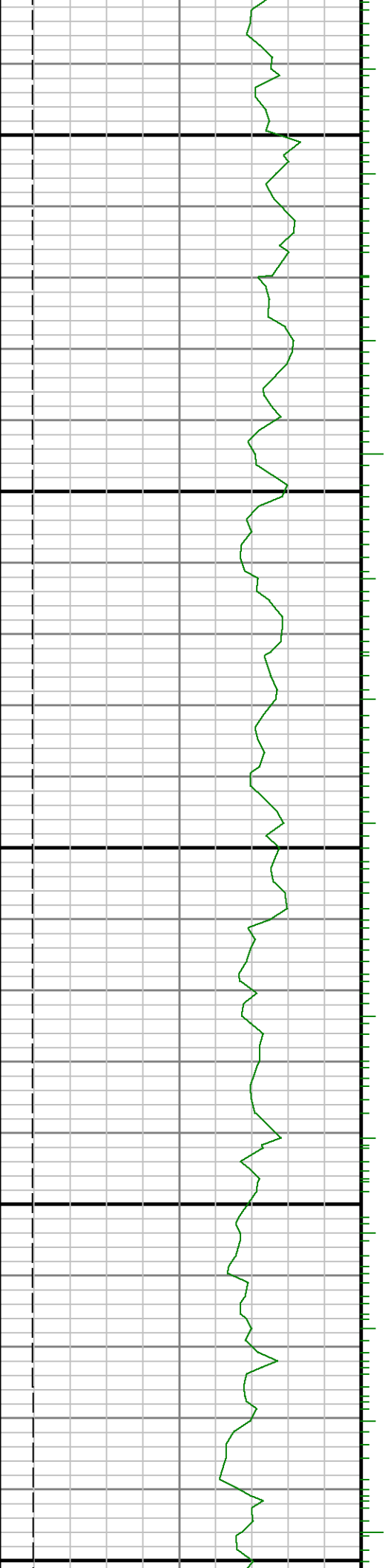
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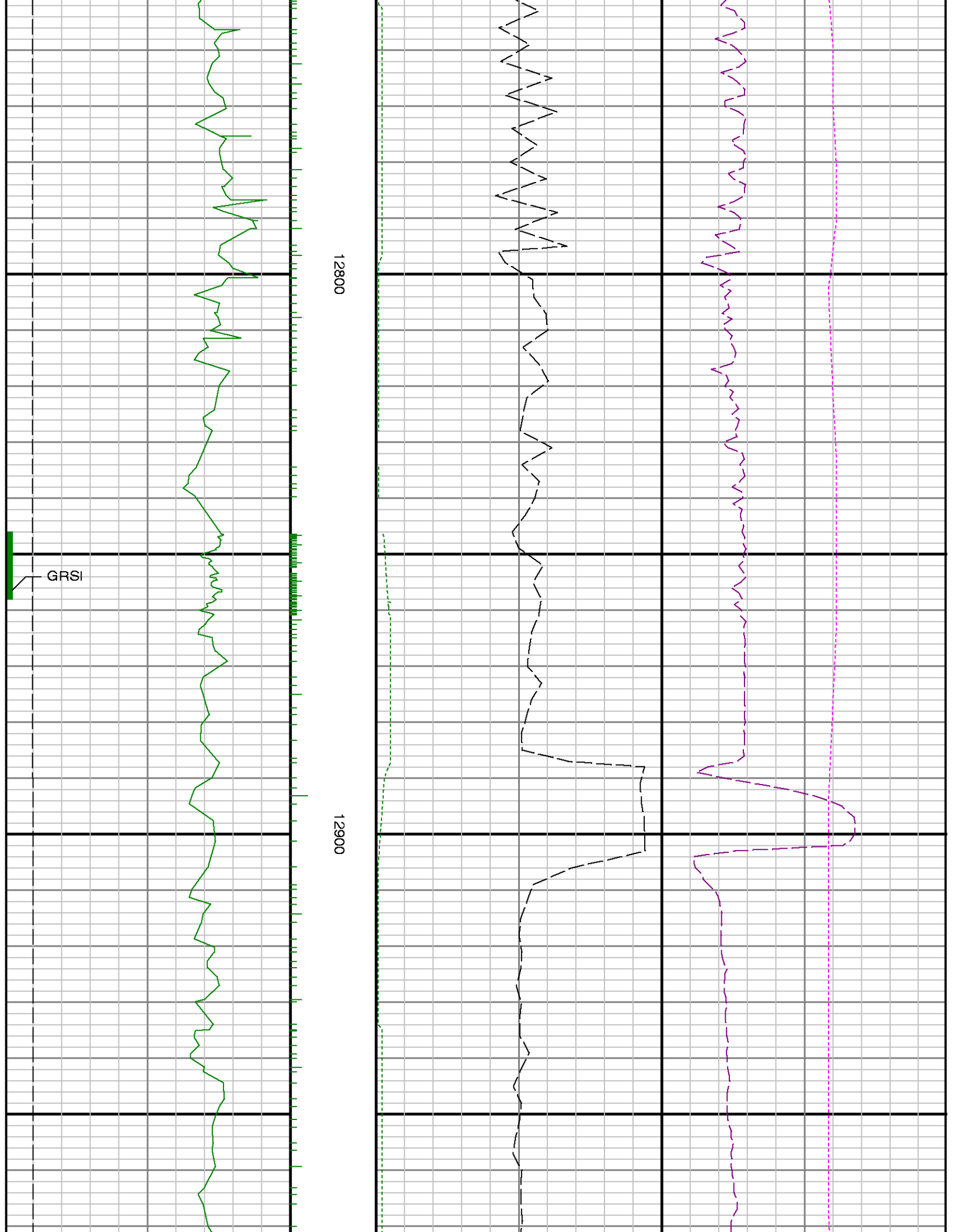


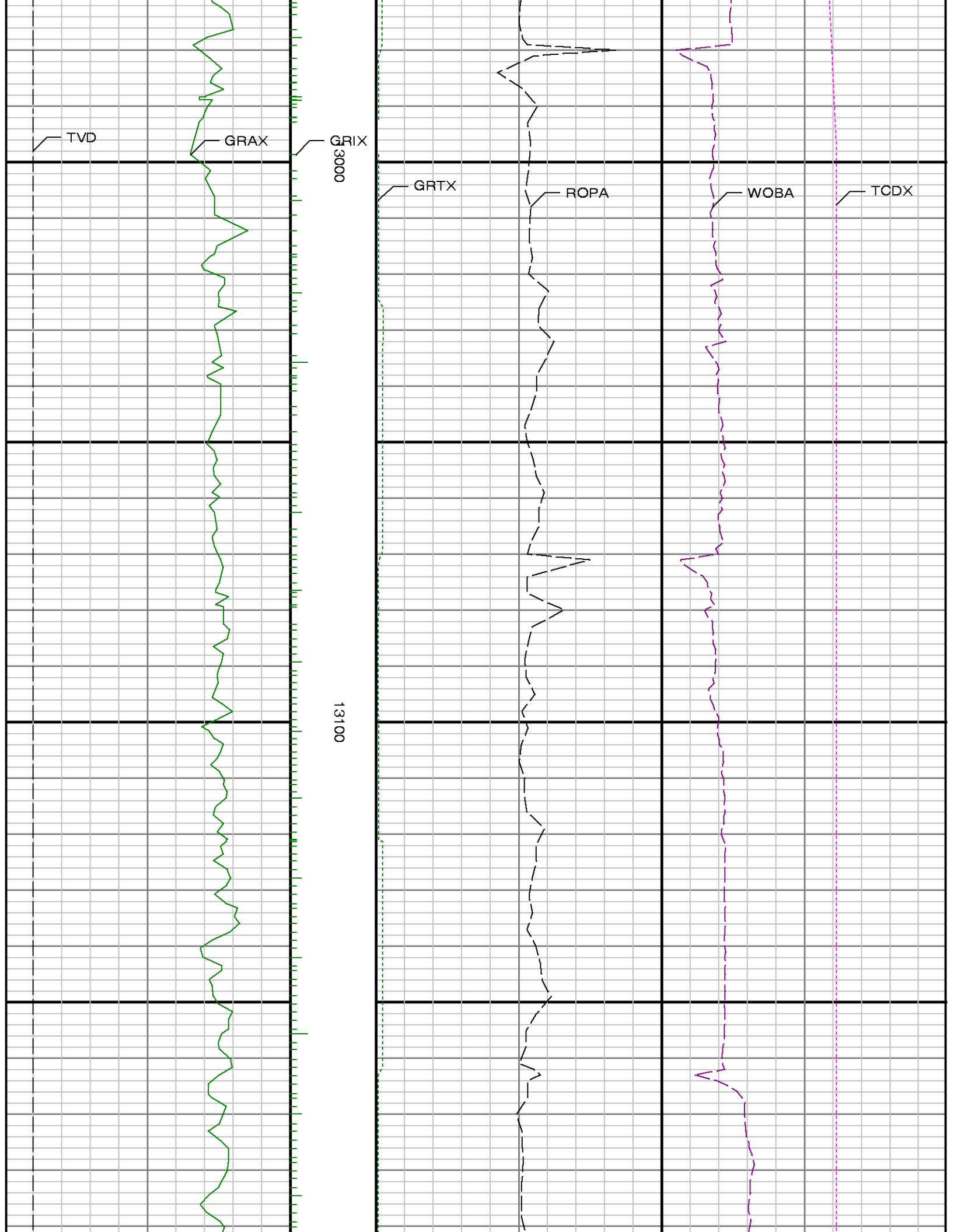


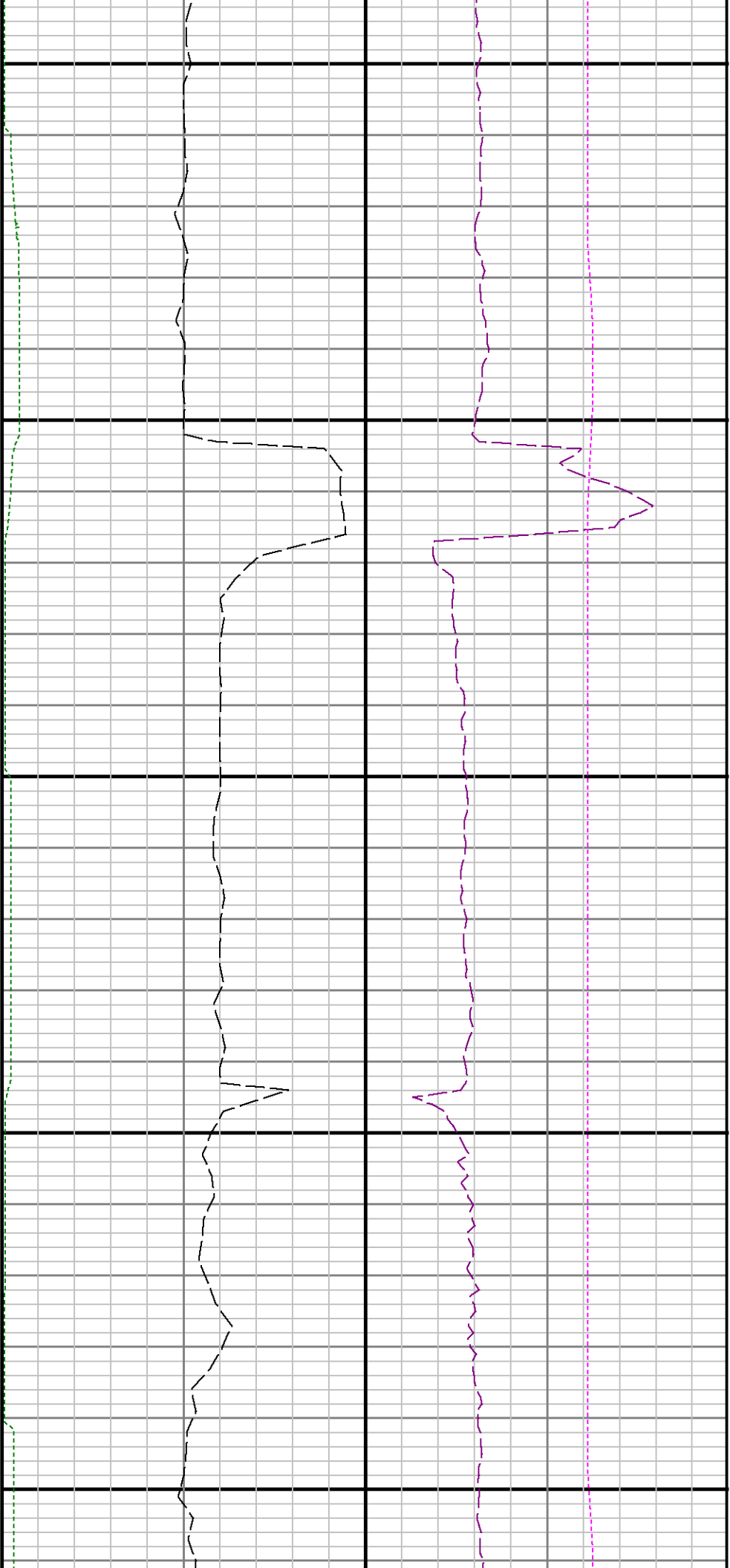
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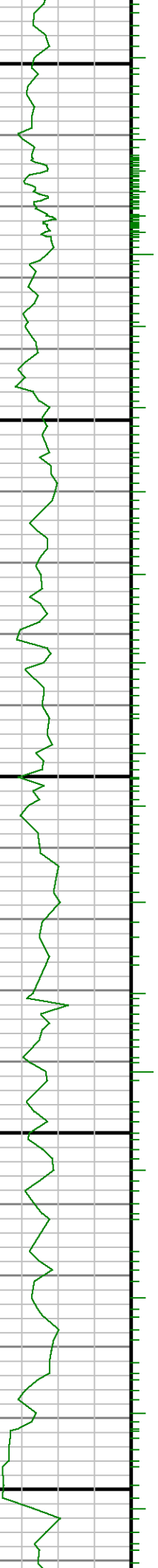


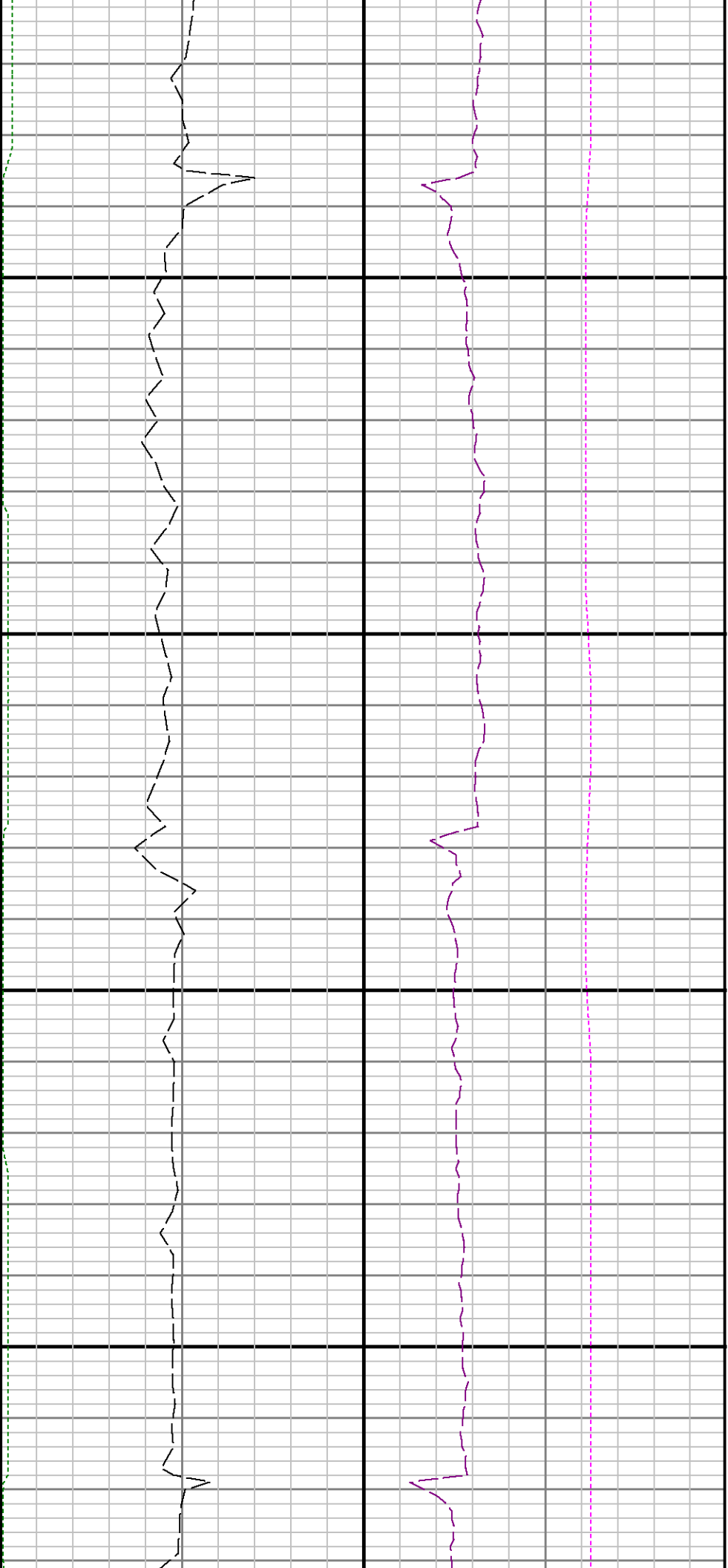


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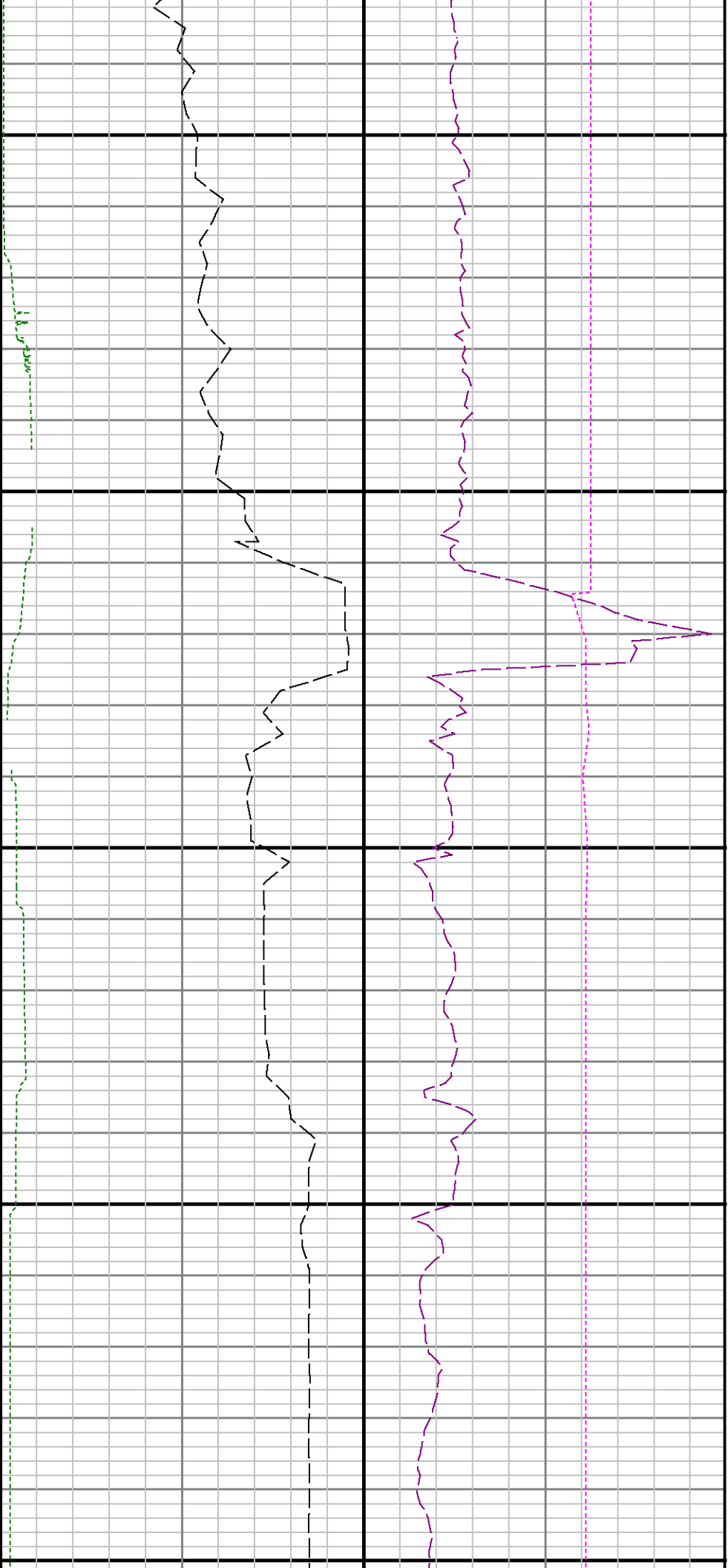
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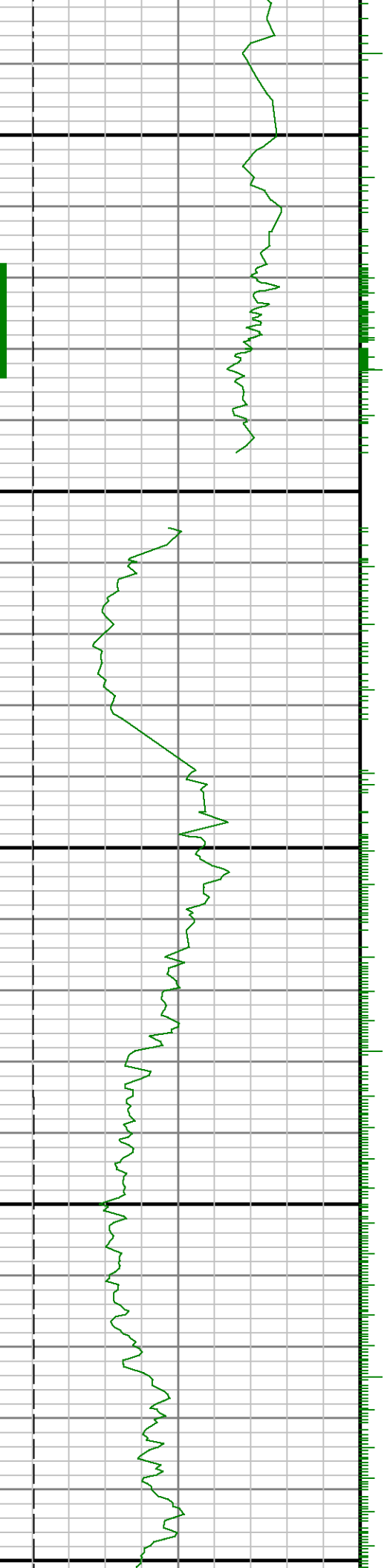
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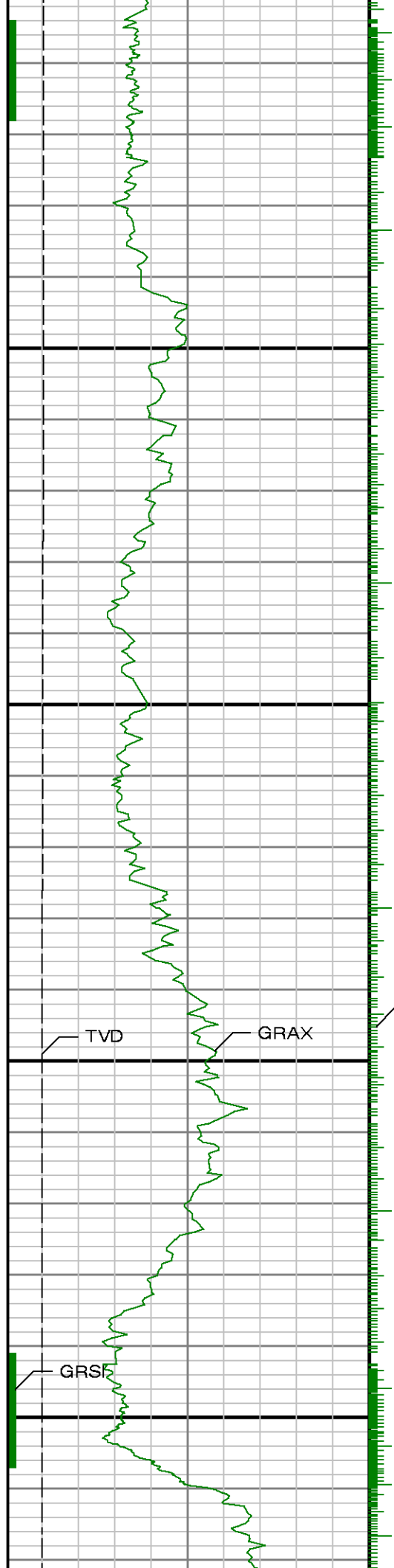
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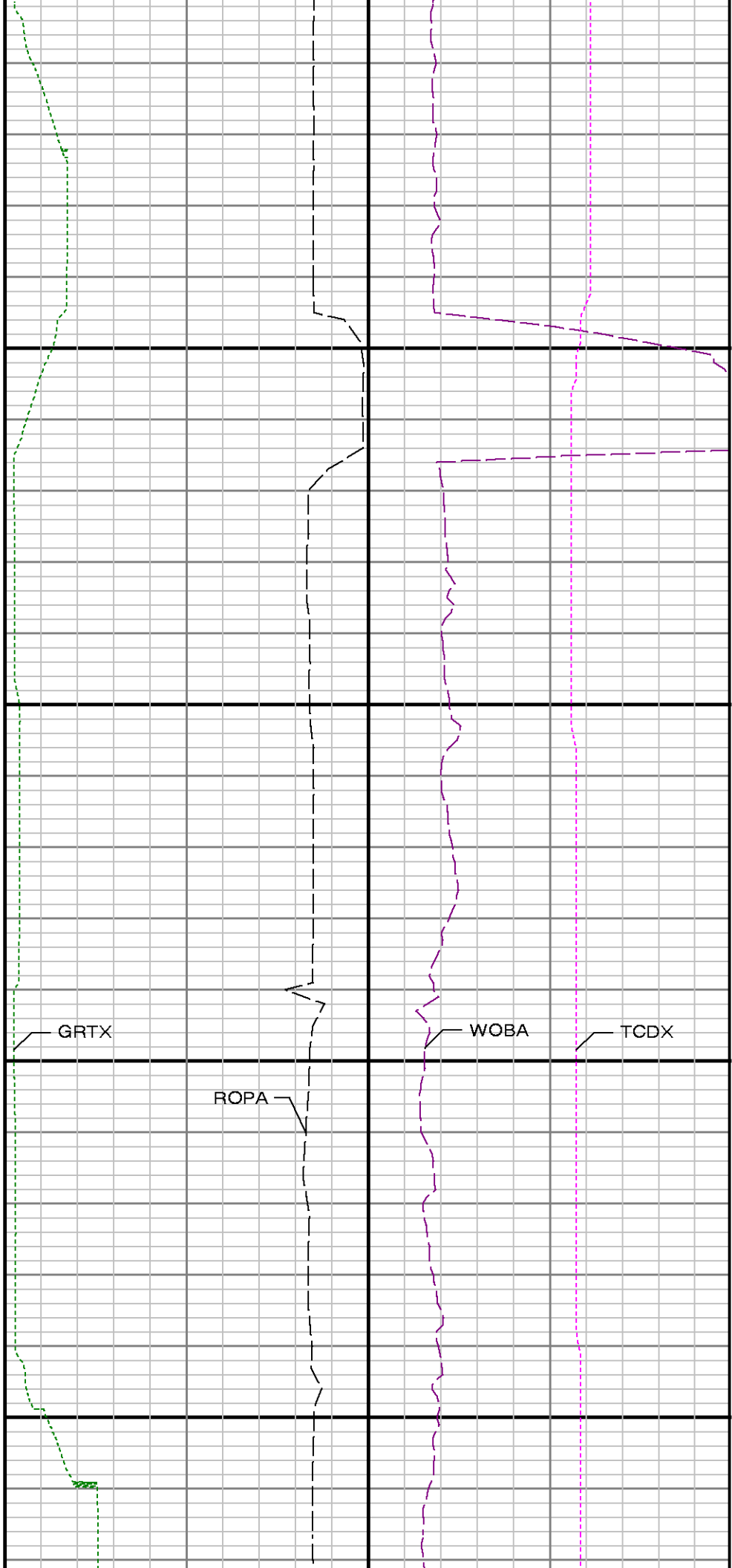
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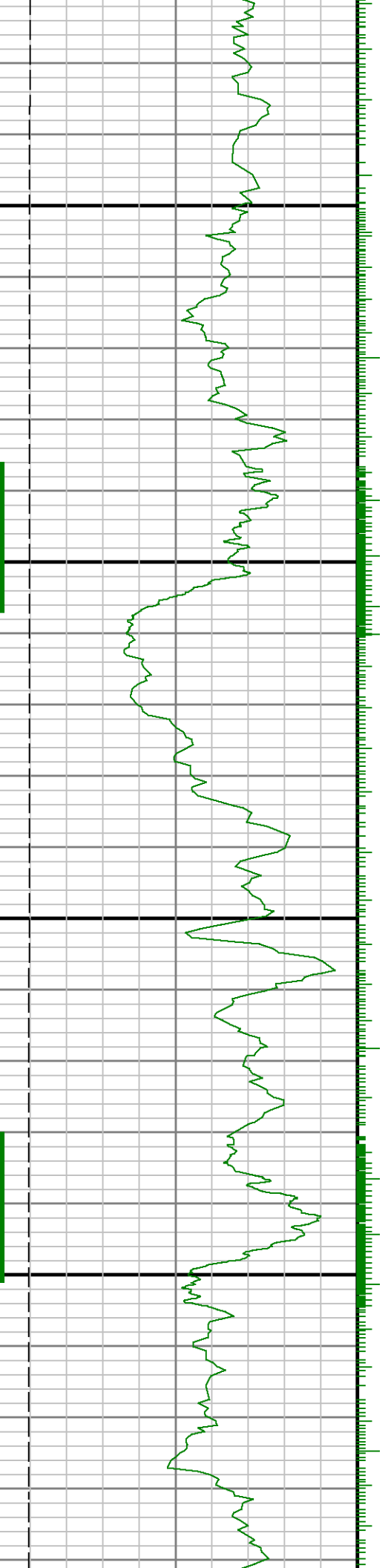
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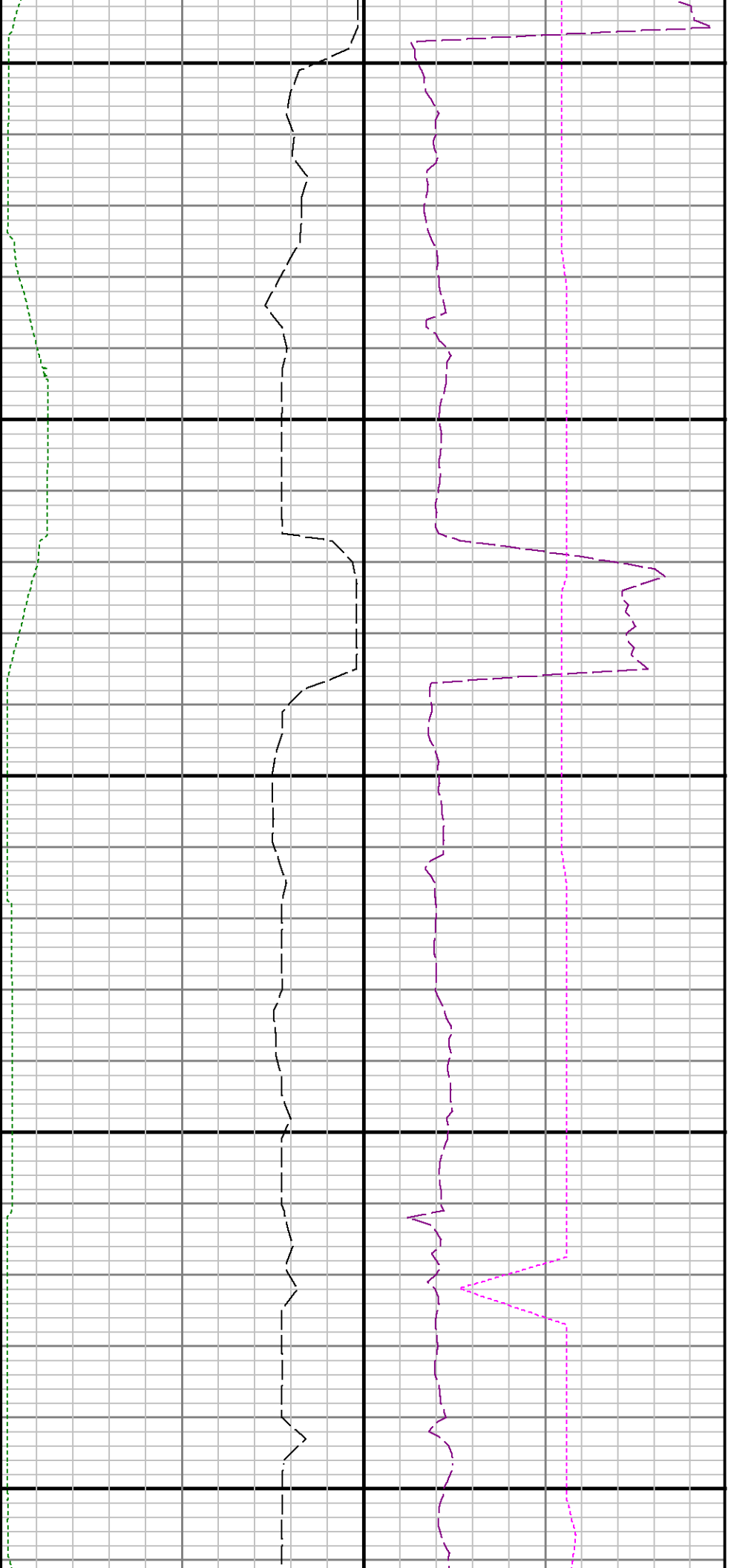




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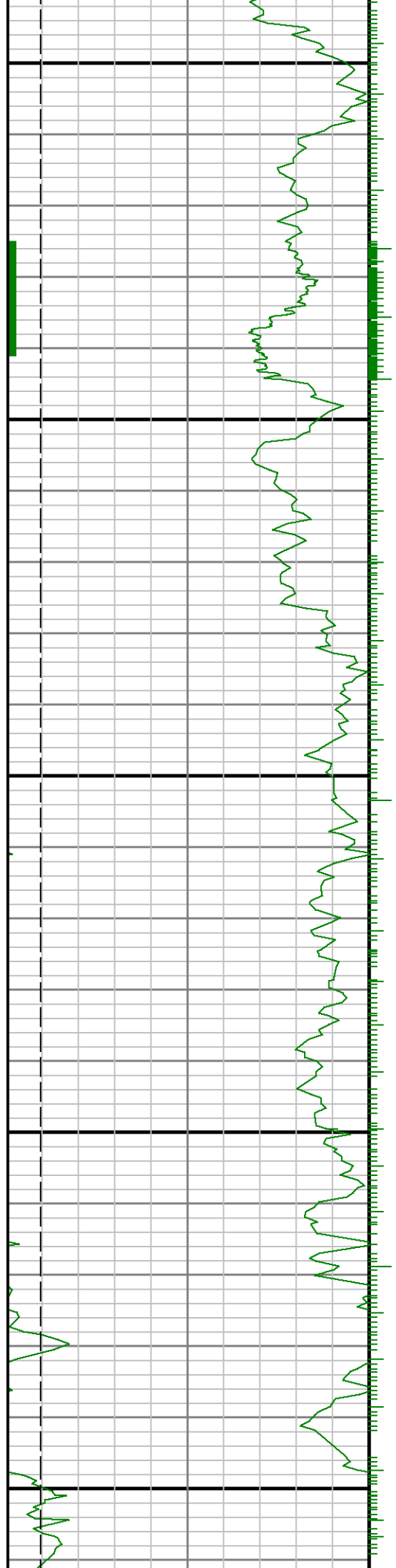


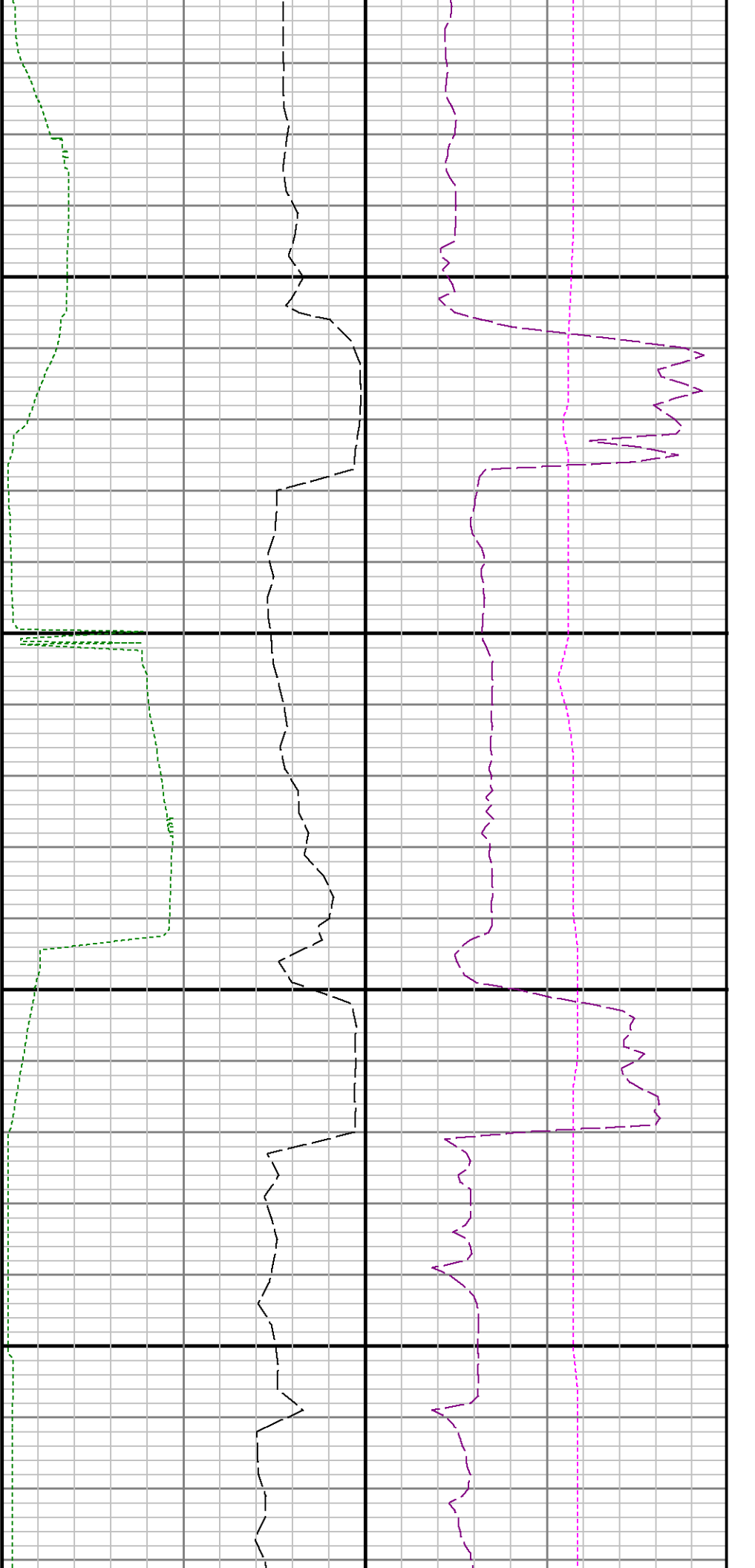


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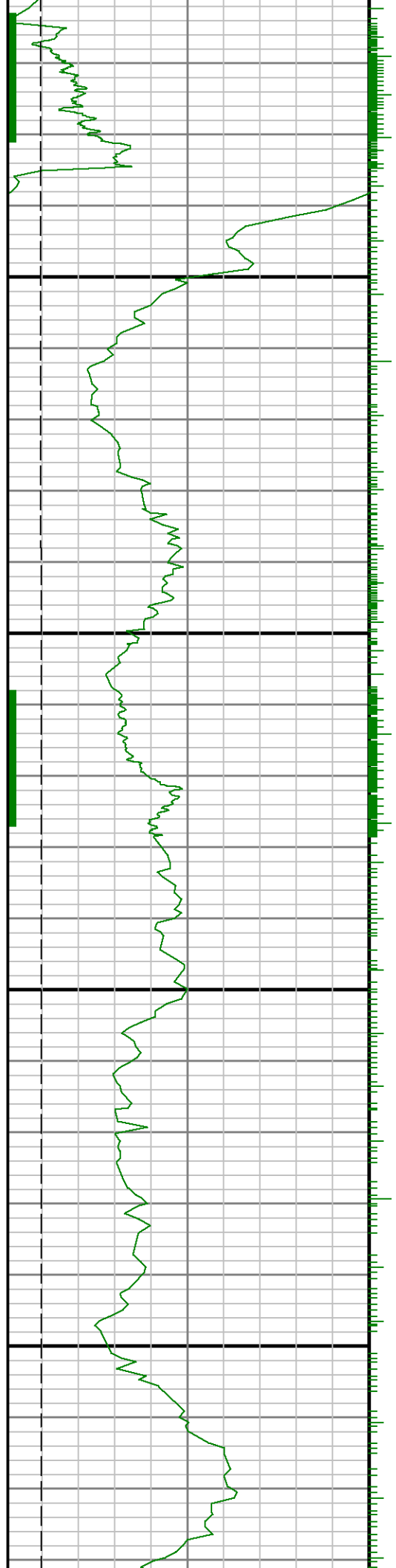
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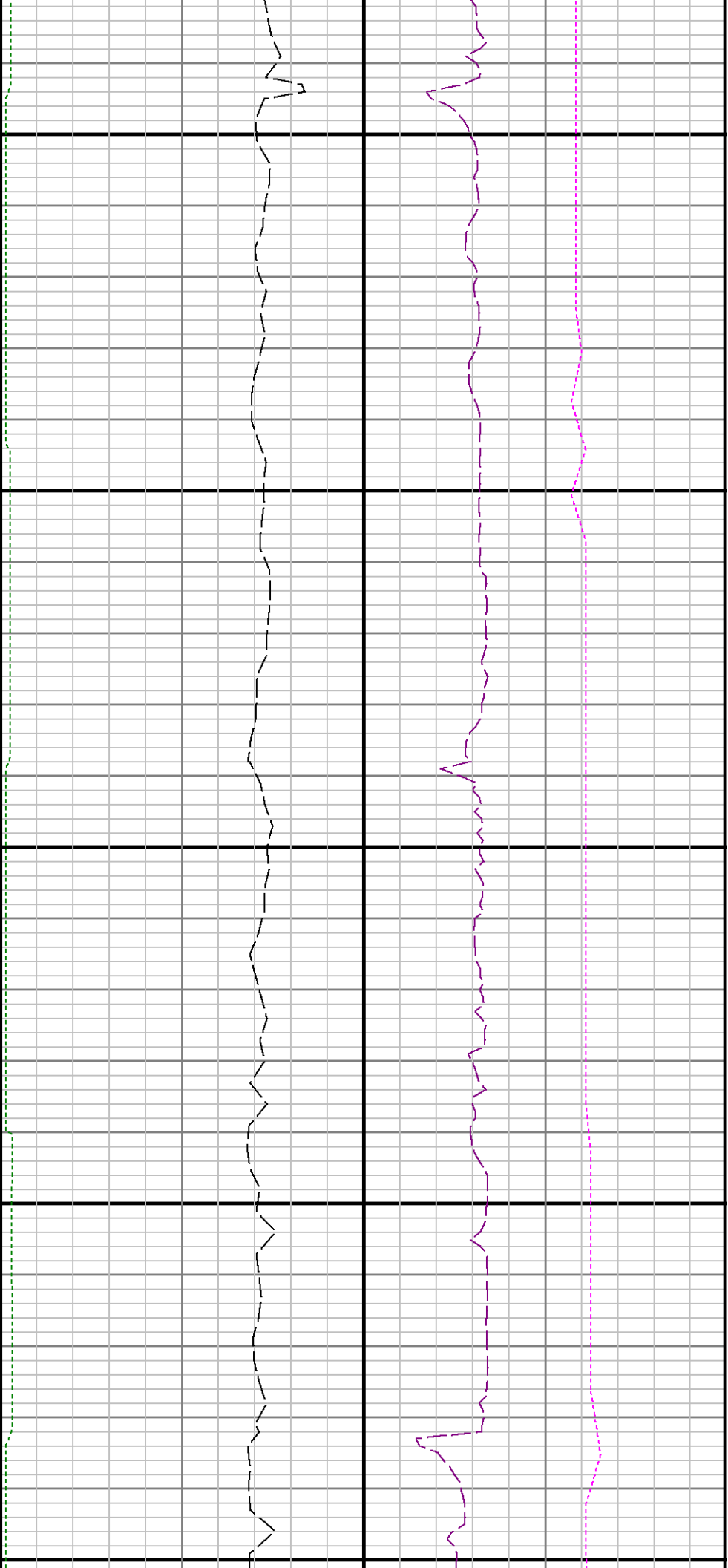




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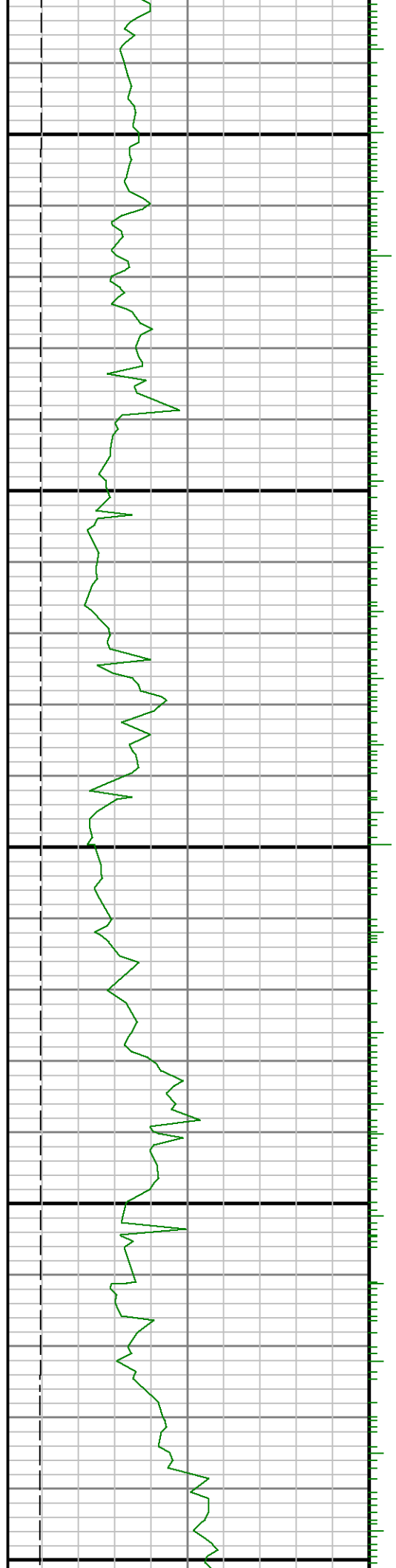
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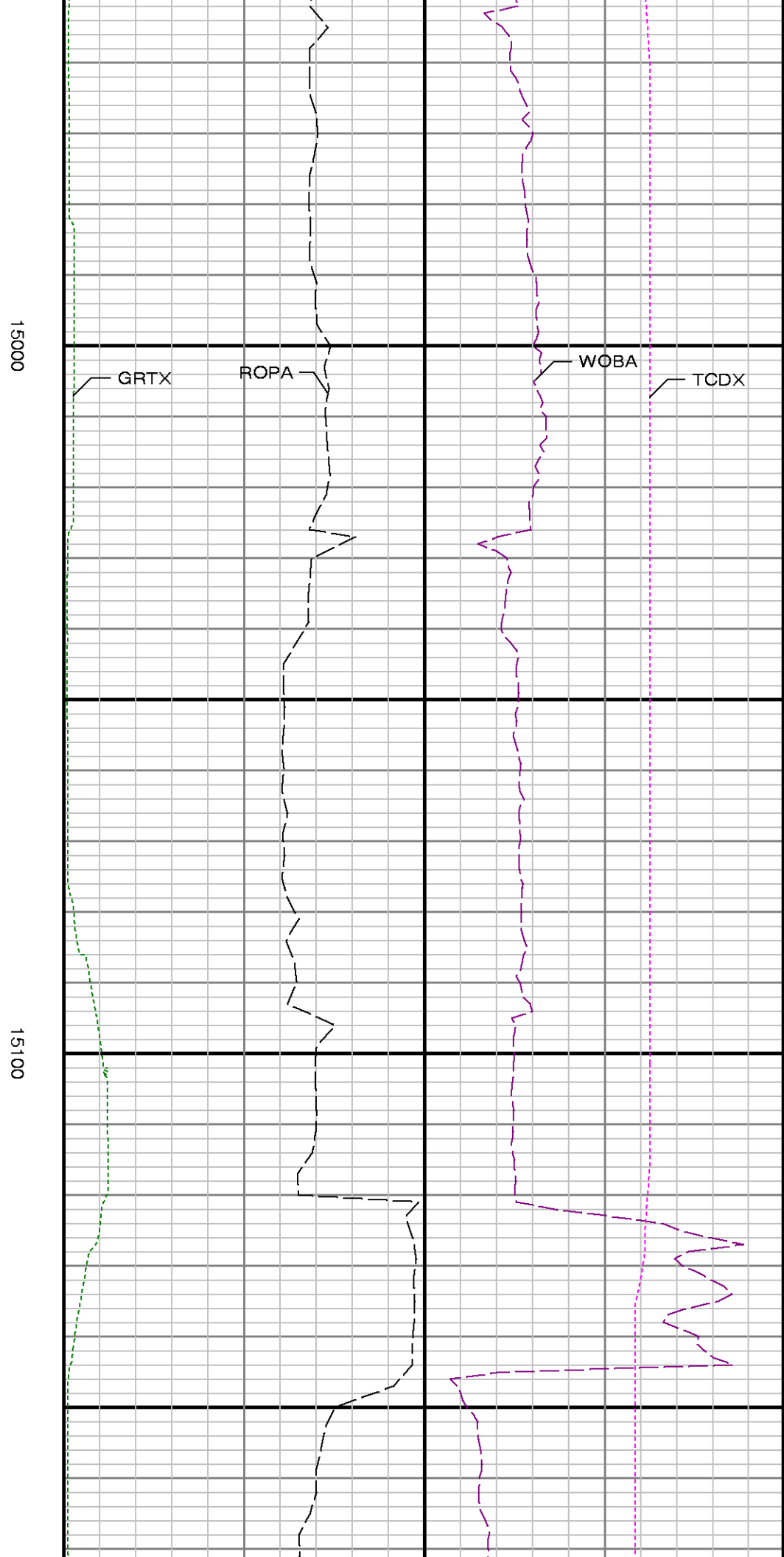
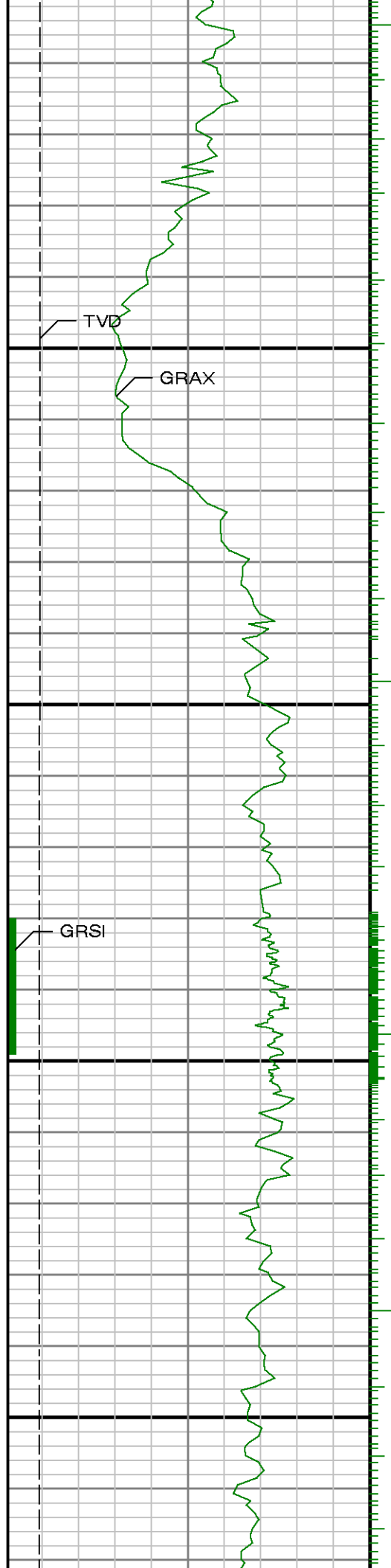


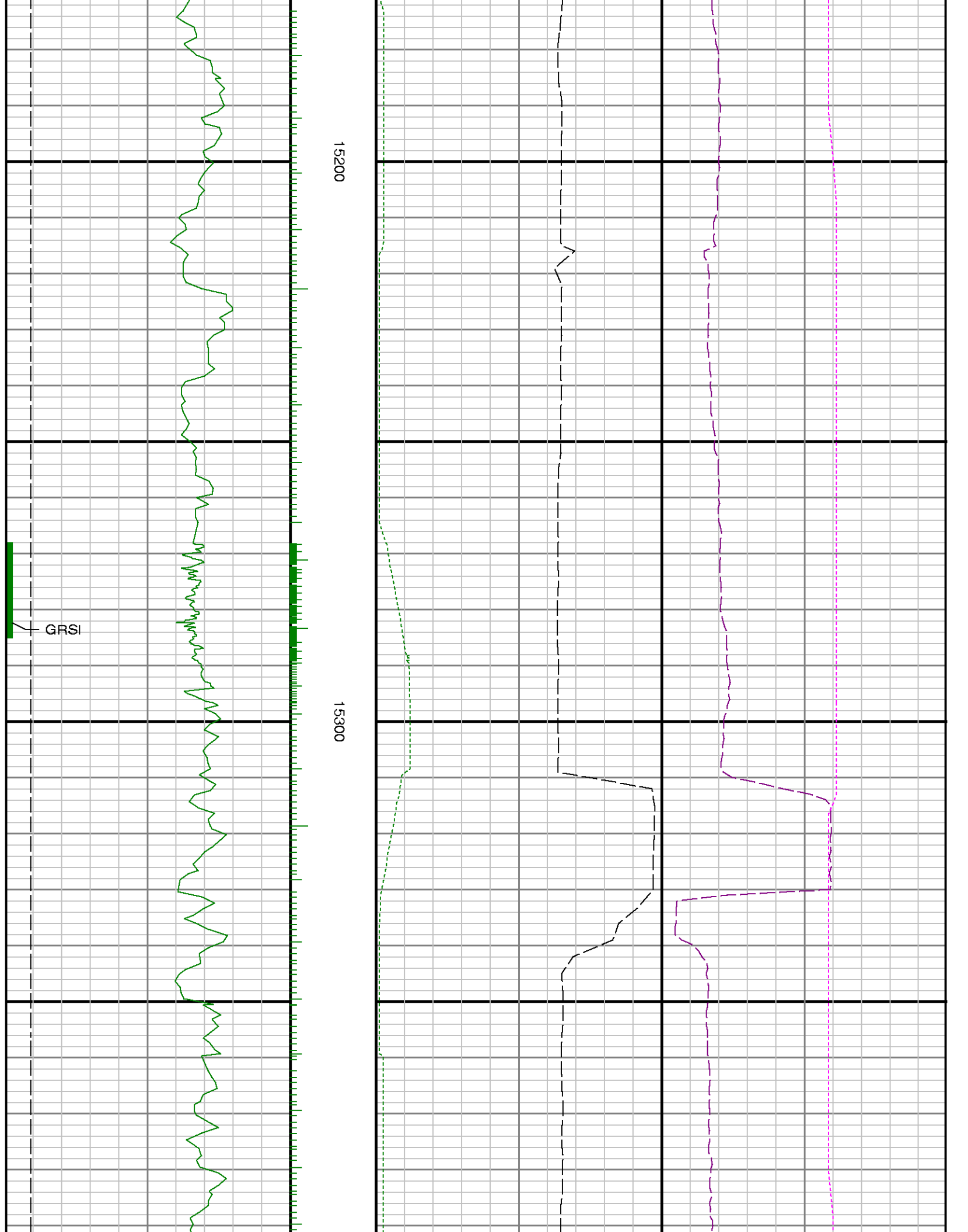


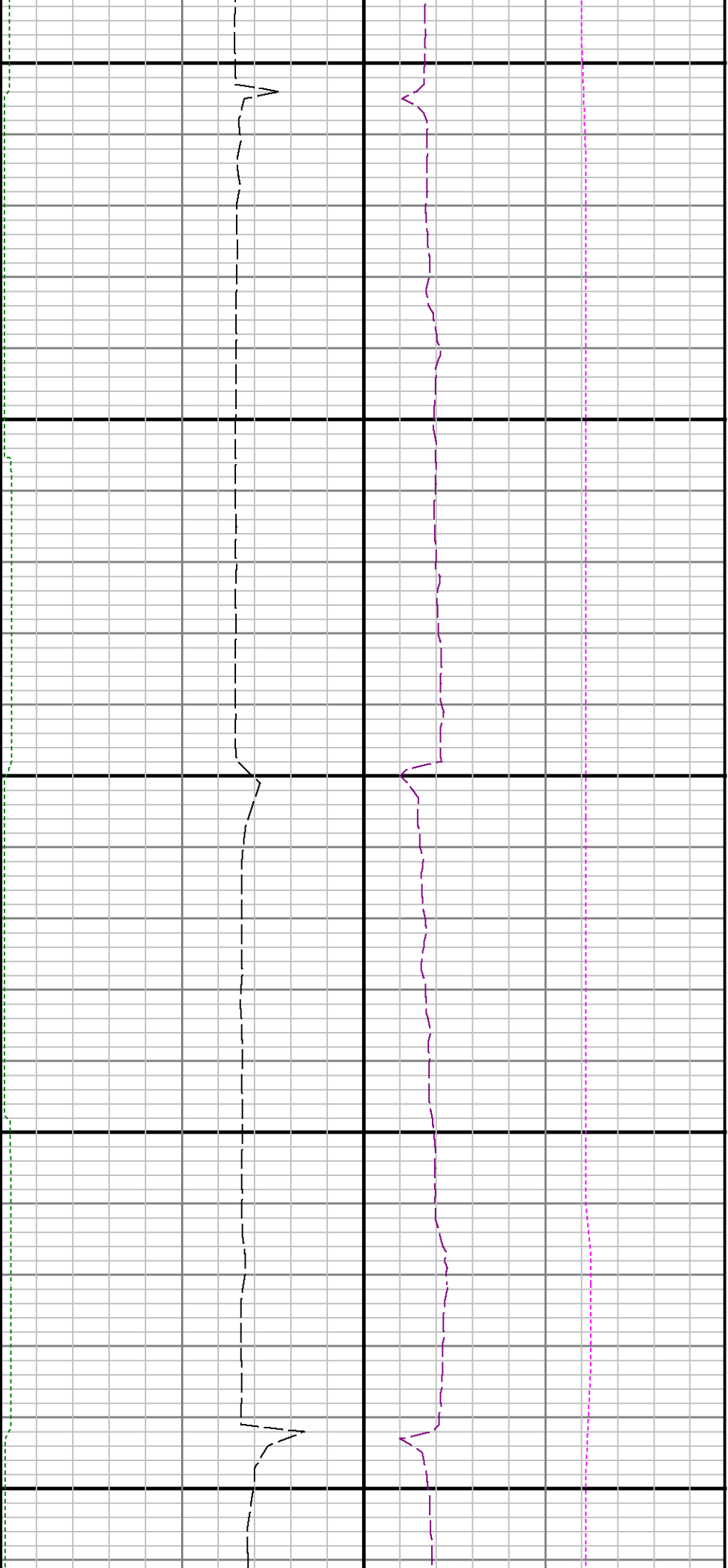
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14900









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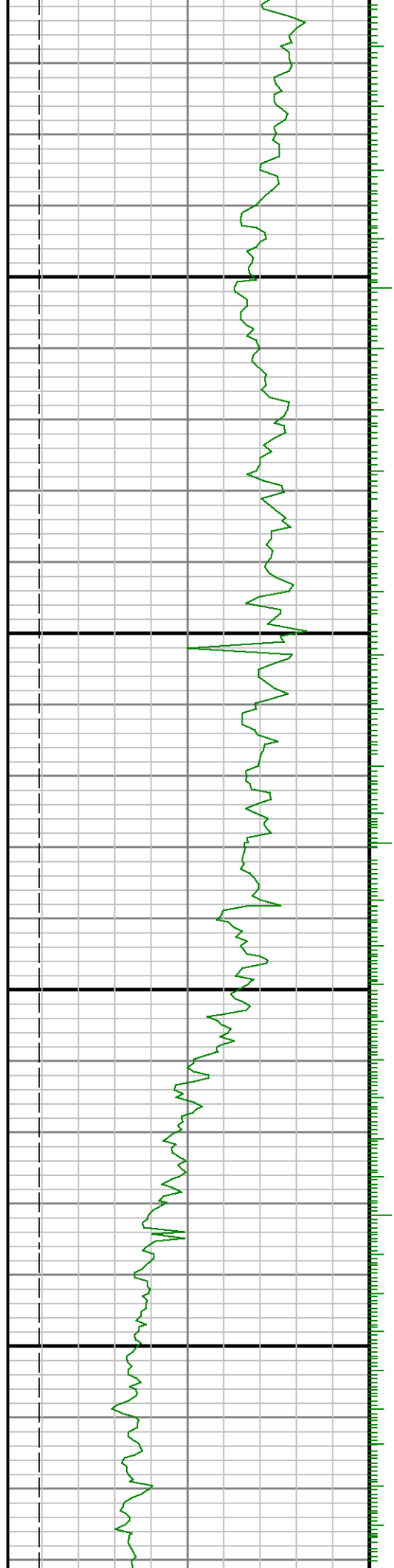
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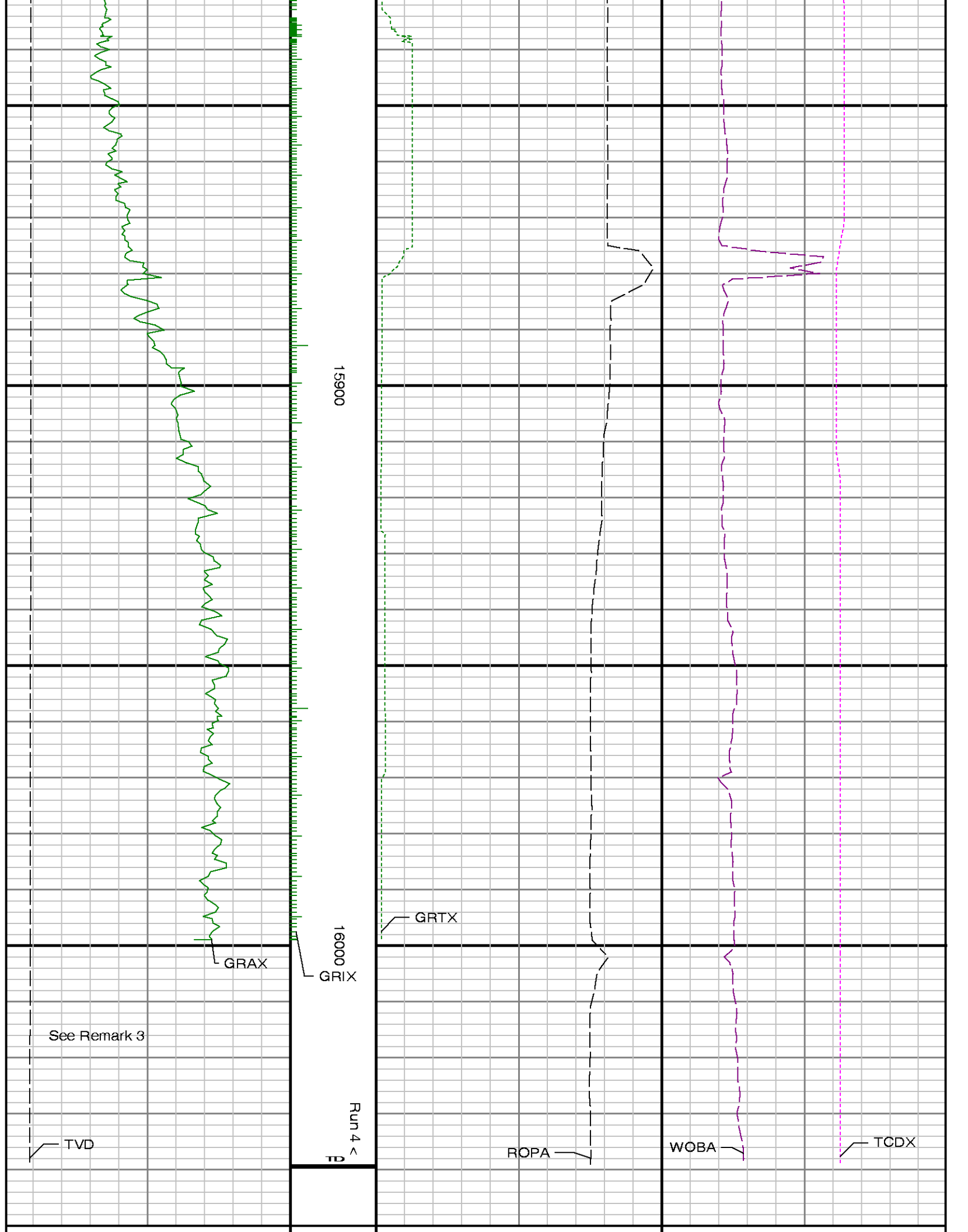
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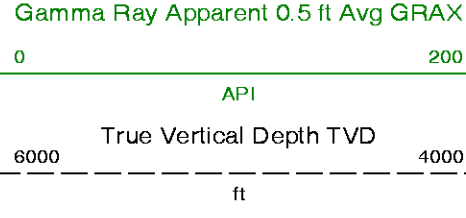


15700

15800







MD feet 1:240

