



**Natural Formation Evaluation
Gamma Ray**

Realtime Log

Scale: **1:240**
Measured Depth

Company: **Anadarko**
 Well: **Hunziker 27C-4HZ**
 Field: **Weld County (Kerr McGee)**
 Region: **RMA** Country: **United States**

Status: **Final Print**
 API Number: **05123408870000**

Permanent Datum (P.D.): Ground Level Elevation: **0.00 ft.**
 Log Measured From: Rig Floor **20.00 ft.** Above P.D.
 Depth Reference: Driller's Depth

Interval Logged **Dates** **Magnetic Field Reference**
 Top: **7019.0 ft.** Date From: **24 Apr 15** Dip Angle: **66.70 °** Azi Reference North: **True**
 Bottom: **13690.0 ft.** Date To: **29 Apr 15** Total **Mag to Reference**
 Spud Date: **24 Apr 15** Field Strength: **52737.0 nT** North Correction: **8.56 °**

Borehole Record			Casing Record			
Hole Size	From	To	Size	Weight	From	To
13.500 in.	Surface	1345.0 ft.	9.600 in.	36.00 lb/ft	Surface	1335.0 ft.
8.750 in.	1345.0 ft.	8105.0 ft.	7.000 in.	36.00 lb/ft	Surface	8095.0 ft.
6.125 in.	8105.0 ft.	13690.0 ft.				

Mud Record			Deviation Record			
Type	From	To	Hole Size	Interval	Inc / Az (Start)	Inc / Az (End)
Water Base	Surface	13690.0 ft.	13.500 in.	1345.0 ft.	0.0 ° / 0.0 °	0.4 ° / 38.6 °
			8.750 in.	6760.0 ft.	0.4 ° / 38.6 °	85.4 ° / 180.8 °
			6.125 in.	5585.0 ft.	85.4 ° / 180.8 °	89.6 ° / 174.8 °

Acquisition System		Software Version		Other	
Advantage	2.20U4	Rig / Contractor:	Precision #460	/ Precision Drilling	
PATS	6.4.1.34	Job No.:	7056056	/ D&E	

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Log Run Summary

LWD Run No.	BHA Run No.	Bit Run No.	Bit Size (in.)	Bit Type	Bit Gauge Length (in.)	Assembly Type	Logged Interval		Bit Depth Interval		Date / Time				Circ. Time (hrs.)
							Top (ft.)	Bottom (ft.)	From (ft.)	To (ft.)	Start	End			
1	1	1	8.750	PDC	2.000	Mud Motor	7019.0	8063.0	1345.0	8105.0	24 Apr 15	16:09	26 Apr 15	13:30	32.58
2	2	2	6.125	PDC		Mud Motor	8063.0	12926.0	8105.0	13690.0	27 Apr 15	11:45	29 Apr 15	01:56	31.74

Crew

Name	Arrive	Depart	Name	Arrive	Depart	Name	Arrive	Depart
	Wellsite	Wellsite		Wellsite	Wellsite		Wellsite	Wellsite
Adewale Adedeji	24 Apr 15	30 Apr 15	Shirley Arimah	29 Apr 15	30 Apr 15	Bryan Severson	24 Apr 15	29 Apr 15

Mud Properties Record

Date / Time	LWD Run No.	Measured Depth (ft.)	Mud Type	Density (sg)	Viscosity (cp)	pH	Fluid Loss (cc)	Oil / Water	Source	Total Chlorides (ppm)	K+ (%)
24 Apr 15 19:00	1	2246.0	Water-Based	8.6	29	9.0	24.0	0/98	Active Pits	1800	N/A
25 Apr 15 18:00	1	7391.0	Water-Based	10.0	50	9.5	4.7	2/90	Active Pits	1900	N/A
26 Apr 15 17:00	1	8105.0	Water-Based	10.0	51	9.2	4.6	3/89	Active Pits	1900	N/A
27 Apr 15 19:00	2	8260.0	Water-Based	9.7	52	8.9	4.9	3/90	Active Pits	2200	N/A
28 Apr 15 19:00	2	12825.0	Water-Based	9.7	51	9.7	5.0	4/89	Active Pits	1900	N/A

Mnemonics

Curve	Description	Units
GRAX	Gamma Ray Apparent, 0.5 ft. avg.	API
GRIX	Gamma Ray Density	Points
ROP_AVG	Rate of Penetration, 3.0 ft. avg.	ft/hr
TCDX	Downhole Temperature	deg F
TVD	True Vertical Depth	ft.
WOB_AVG	Surface Weight On Bit, 1.0 ft. avg.	kIbf

Equipment and Service Data

LWD Run No.	Tool	Serial Number	Measurement	Bit Offset (ft.)	Max O.D. (in.)	Min I.D. (in.)
1	DIR	11638000	Directional	47.08	6.750	0.000
1	SRIG	10595781	Gamma	43.71	6.750	0.000
2	DIR	12235763	Directional	53.30	4.750	0.000
2	SRIG	12131373	Gamma	49.88	4.750	0.000

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) Baker Hughes INTEQ run 1 utilized a 6.5 inch NaviGamma (Gamma Ray and Directional) tool behind a 8 3/4inch bit and steerable assembly from 1345 to 8105 ft. MD (1344 to 7689 ft. TVD).
- 2) Baker Hughes INTEQ run 2 utilized a 4.75 inch NaviGamma (Gamma Ray and Directional) tool behind a 6 1/8 inch bit and steerable assembly from 8105 to 13690 ft. MD (7689 to 7713 ft. TVD).

Remarks

Number	Measured Depth (ft.)	Hole Section (in.)	LWD Run No.	Remark
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1	7019	8.750	1	The interval from surface to 7019 feet MD (7000 feet TVD) was not logged due to gamma logging services beginning at the start of the curve.
2	8063	8.750	2	The interval from 8063 to 8105 feet MD (7687 to 7689 feet TVD) was logged up to 27.5 hours after drilling due to tripping out of the hole for casing and cement operations. Gamma data is attenuated due to logging behind casing.
3	12926	6.125	2	The interval from 12926 to 13690 feet MD (7702 to 7713 feet TVD) was not logged due to sensor no longer working and could not be reset up to TD.

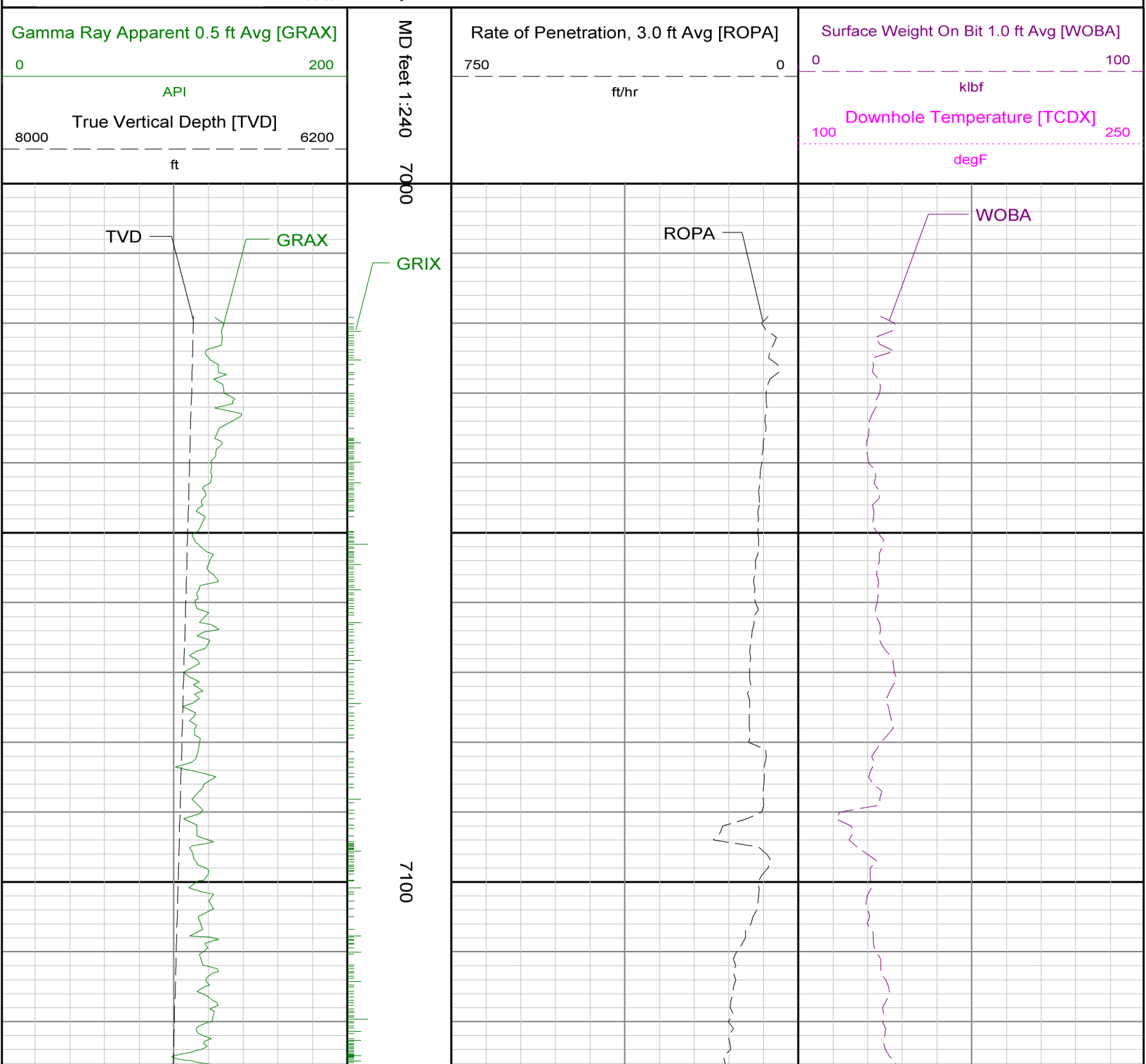


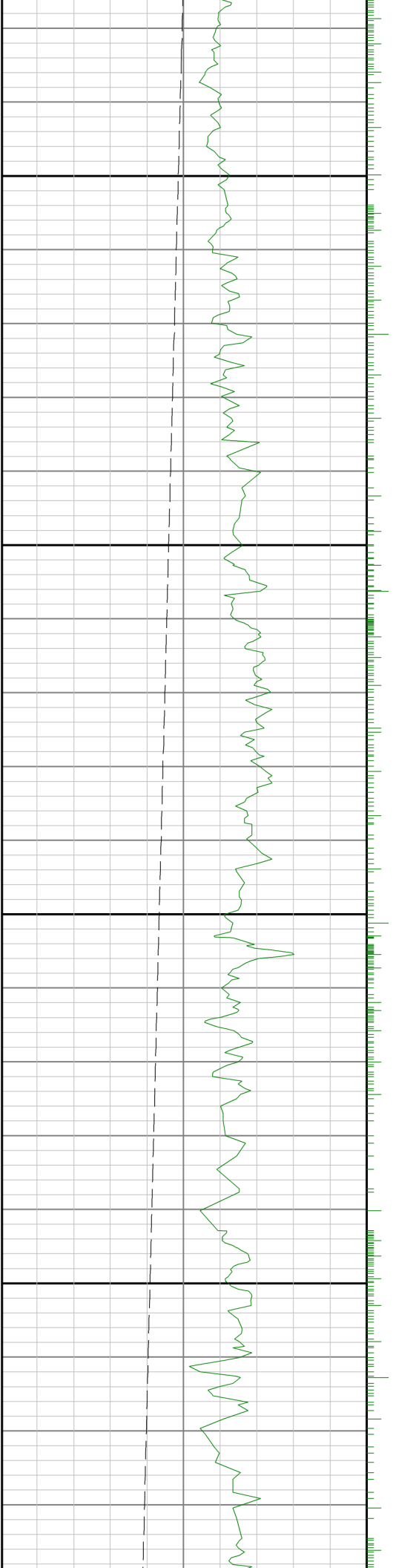
Company : Anadarko

Well : Hunziker 27C-4HZ

Interval : 7000.00 - 13700.00 feet

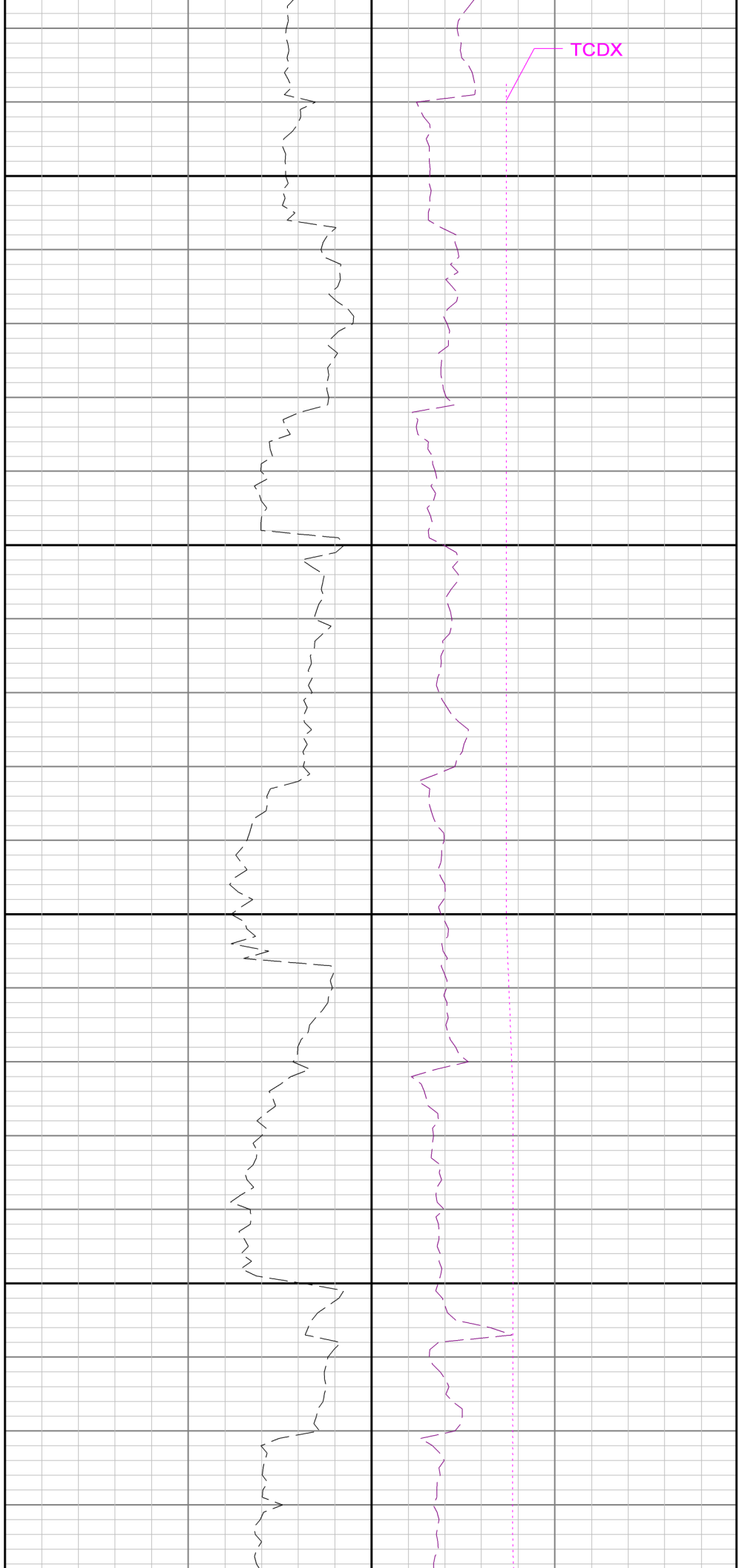
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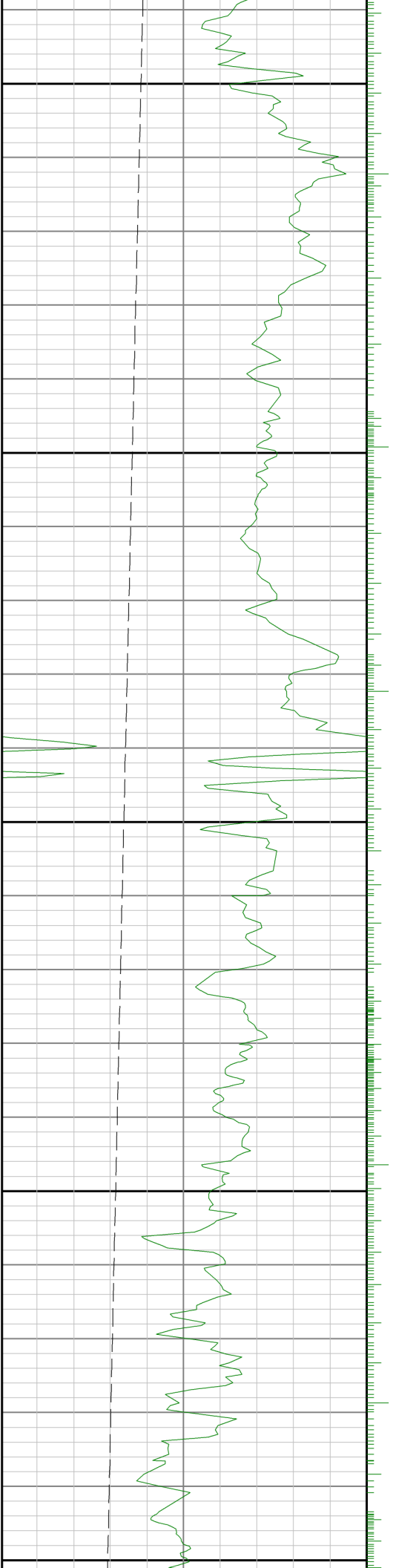


7200

7300

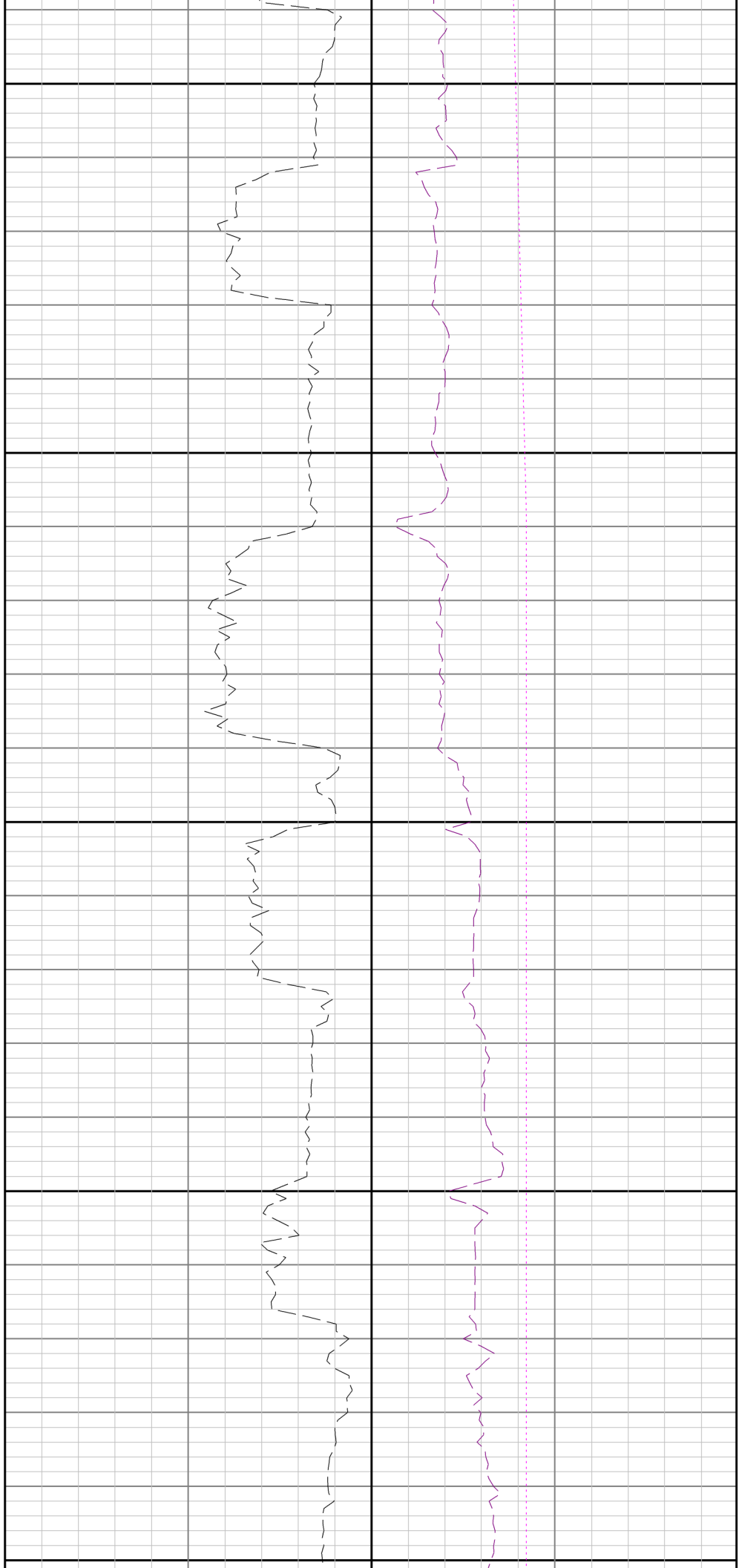


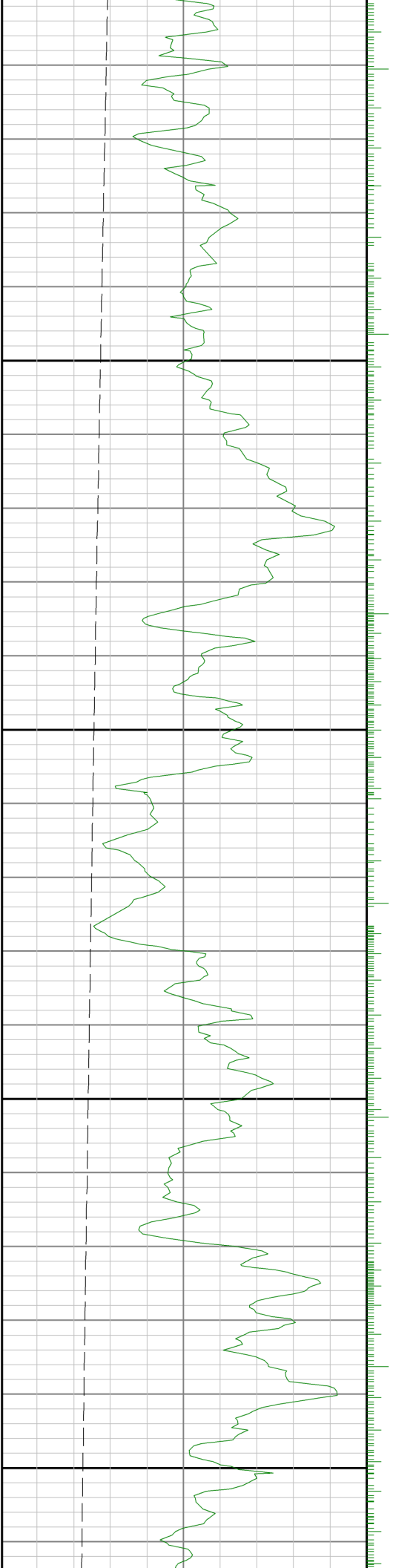
TCDX



7400

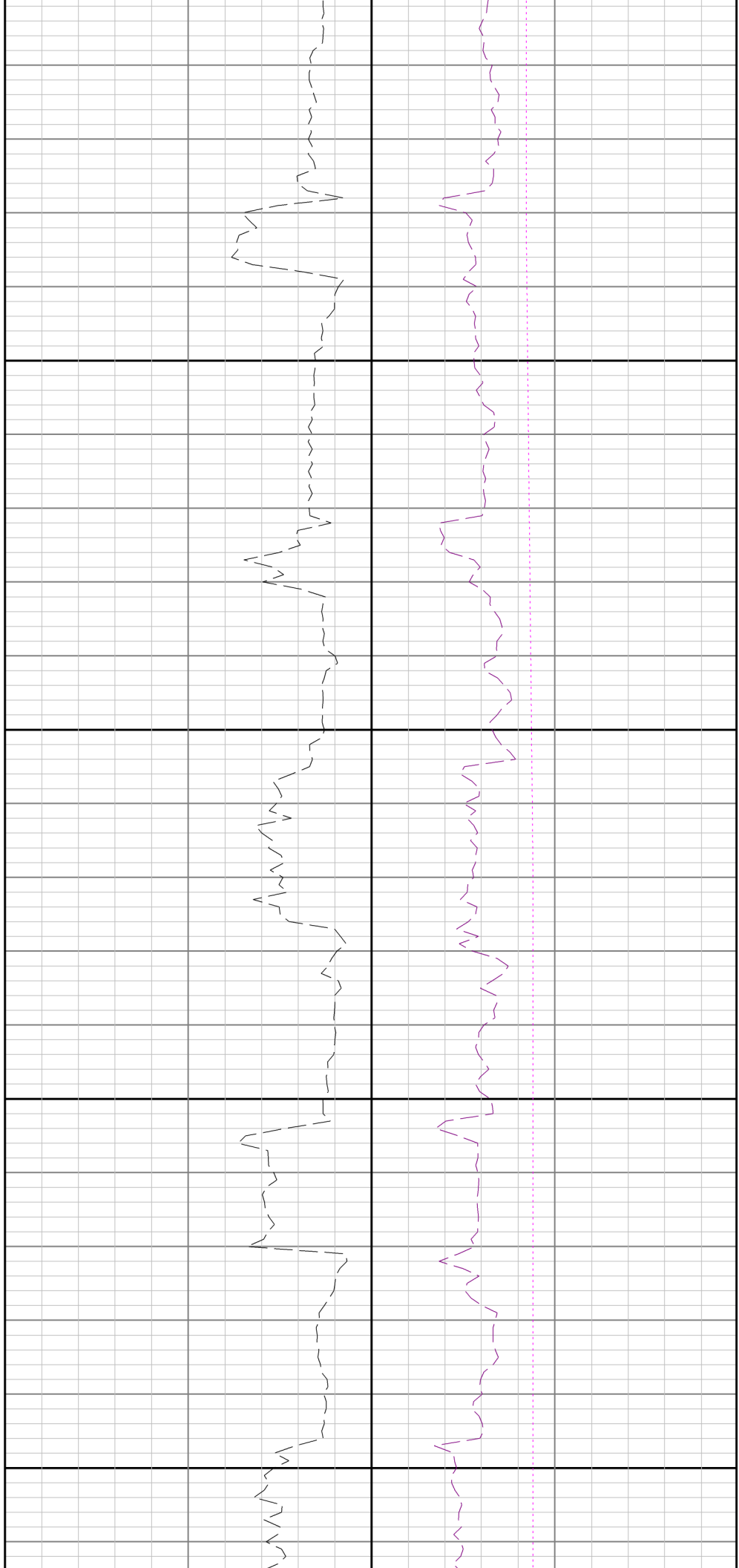
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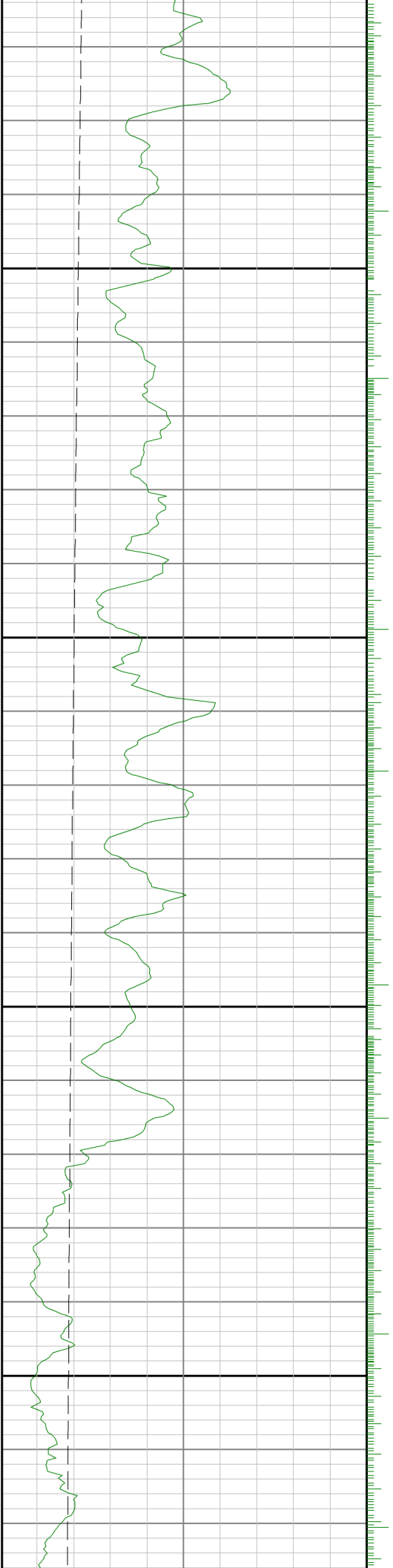




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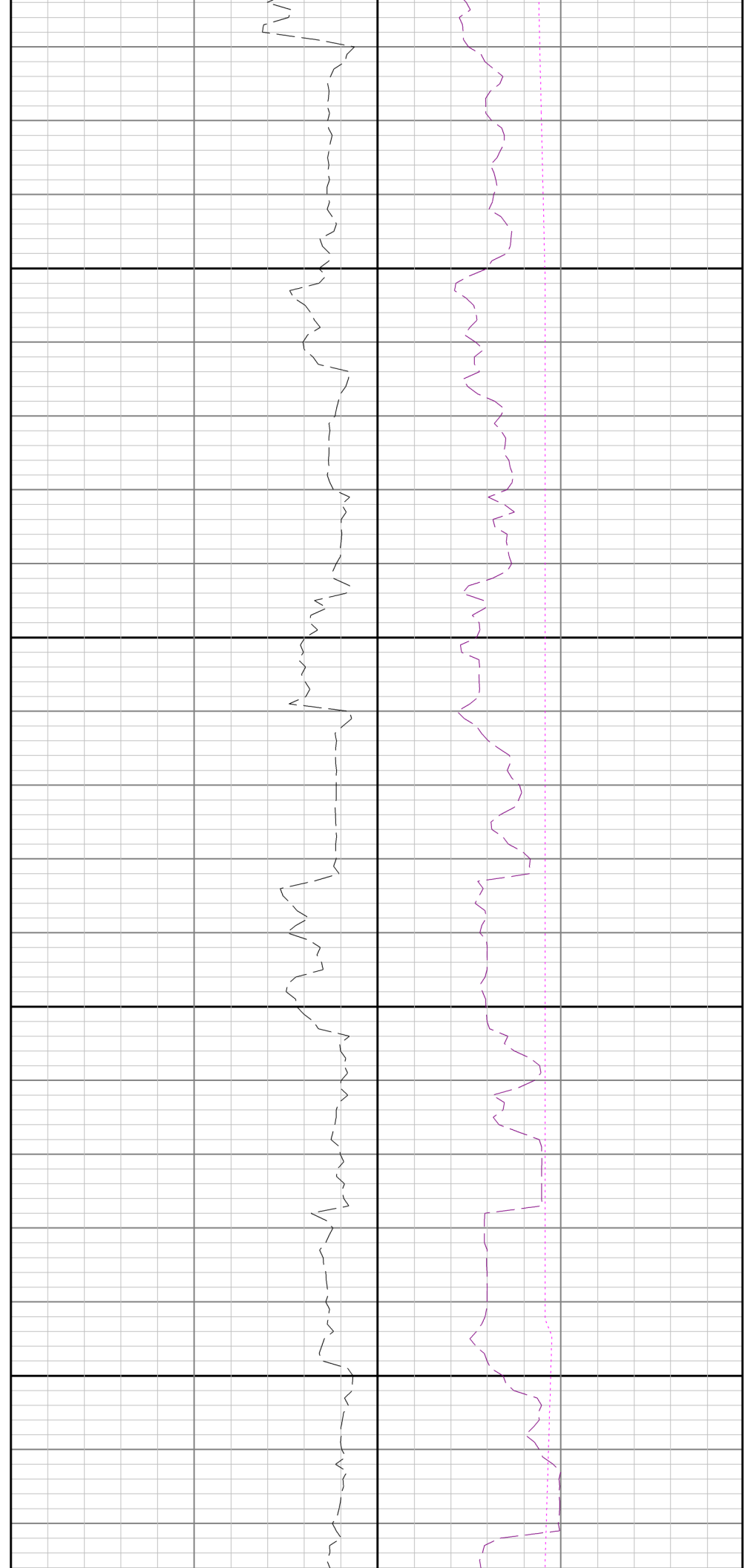
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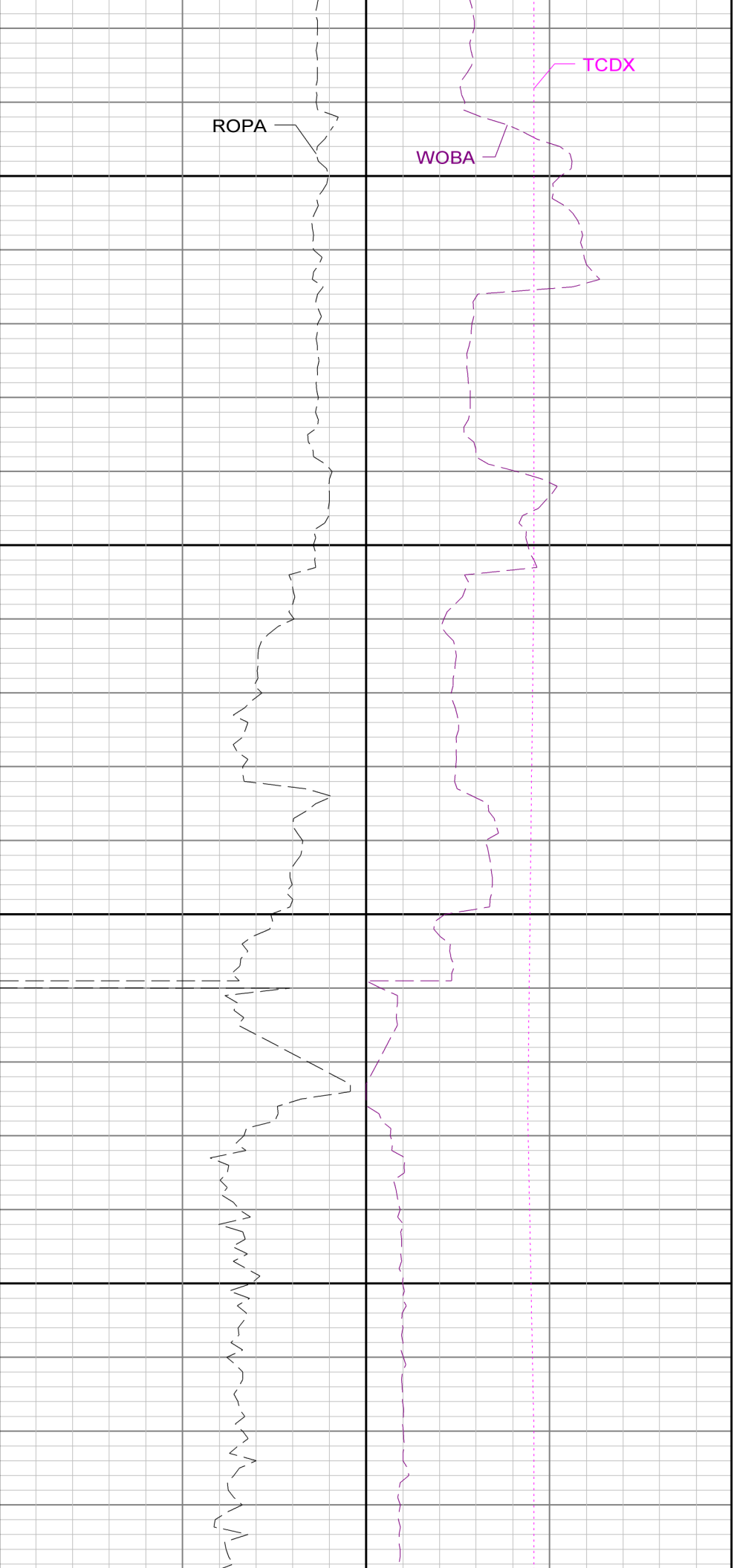
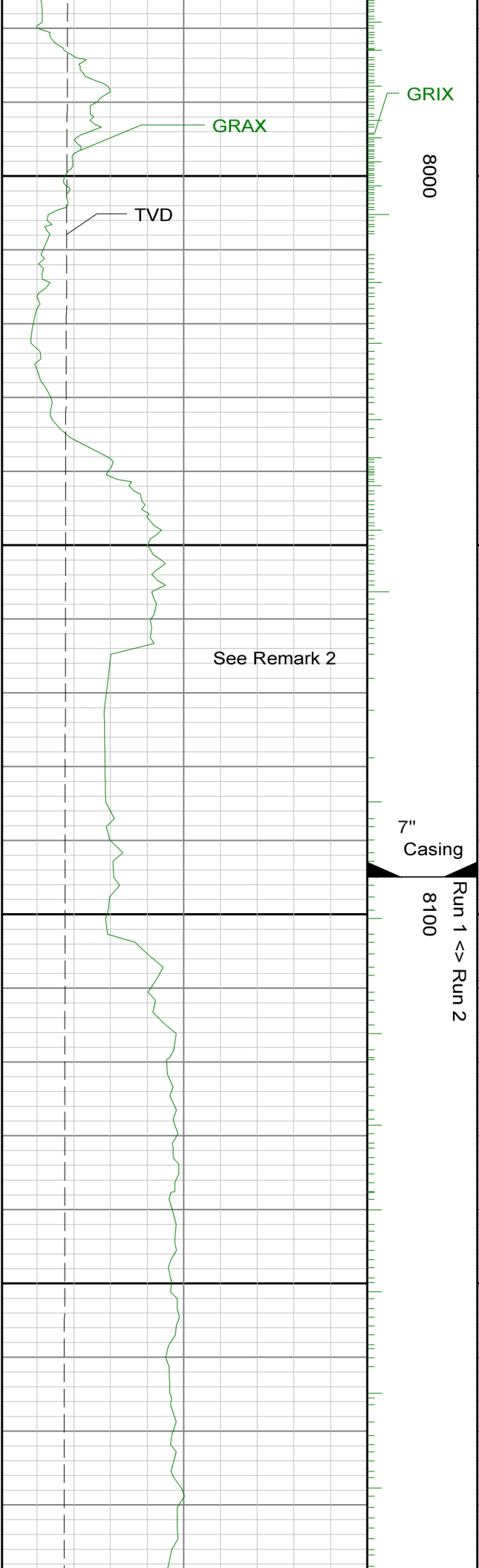


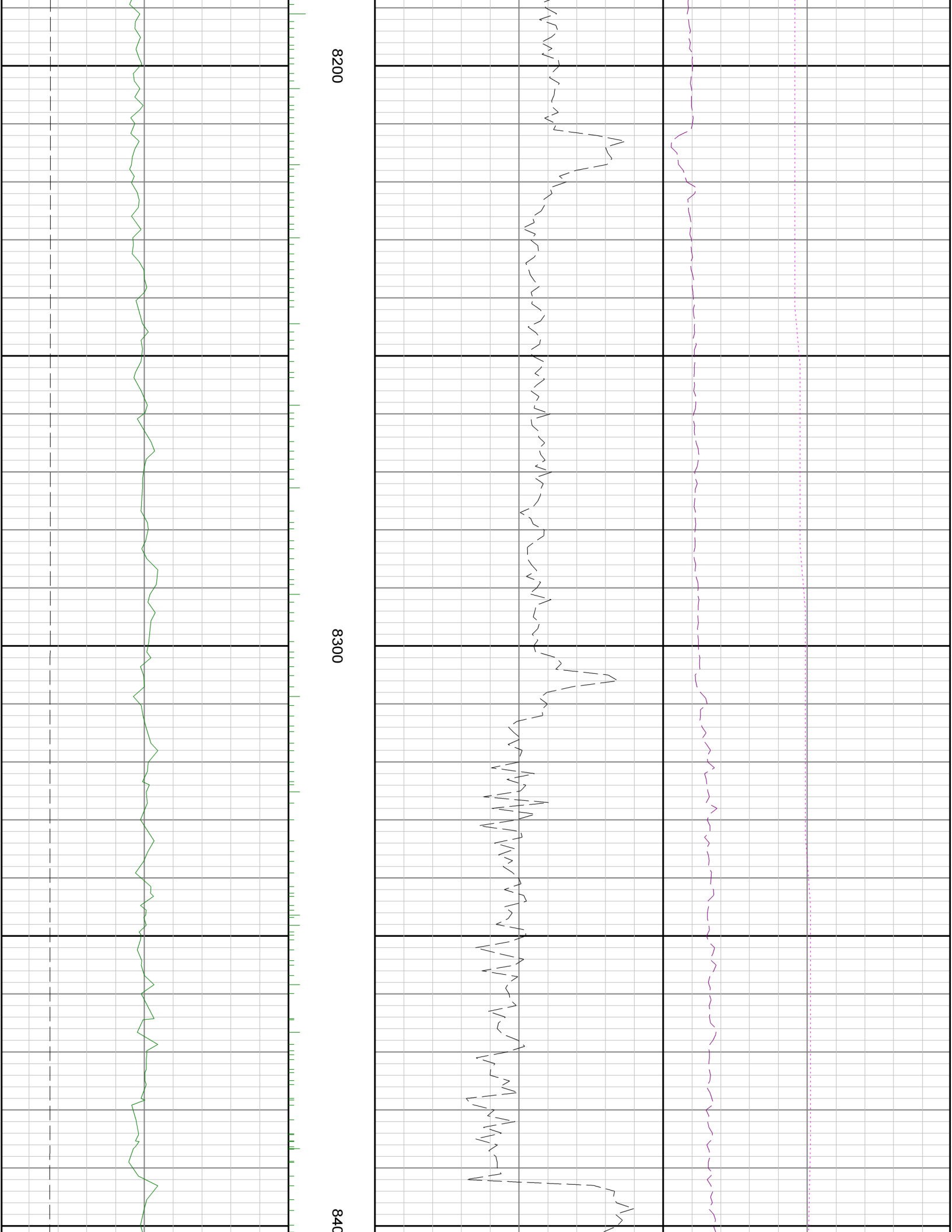


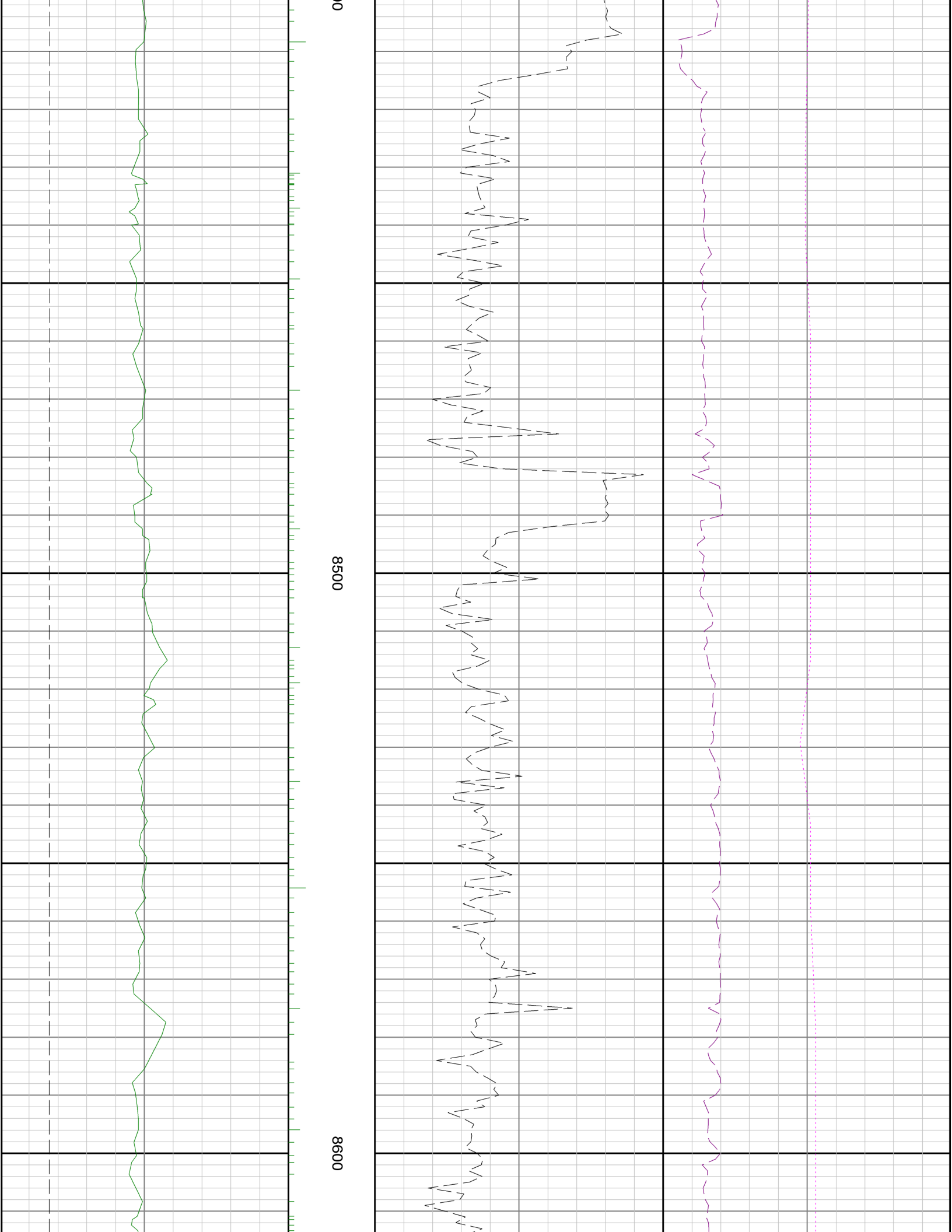
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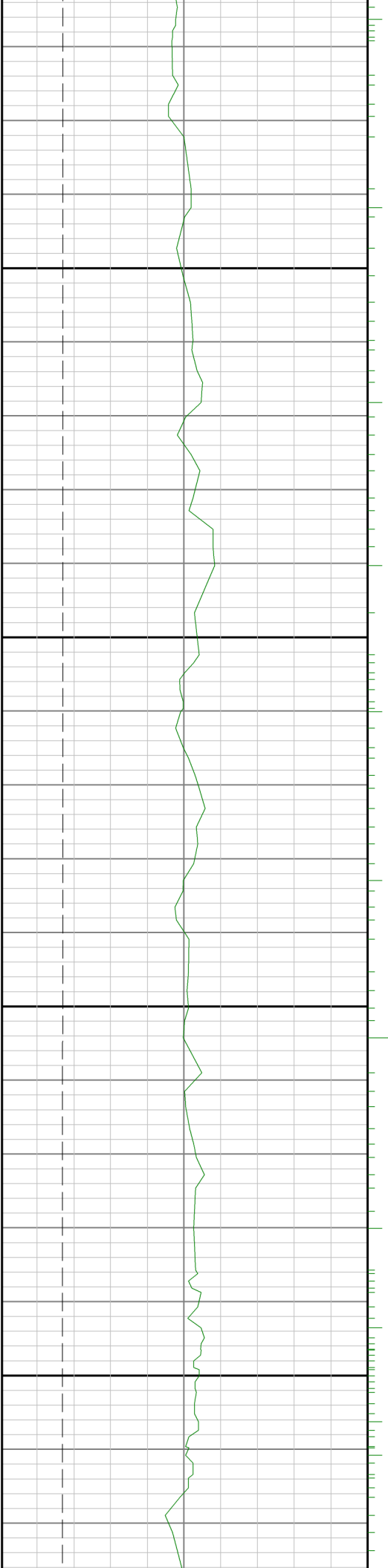
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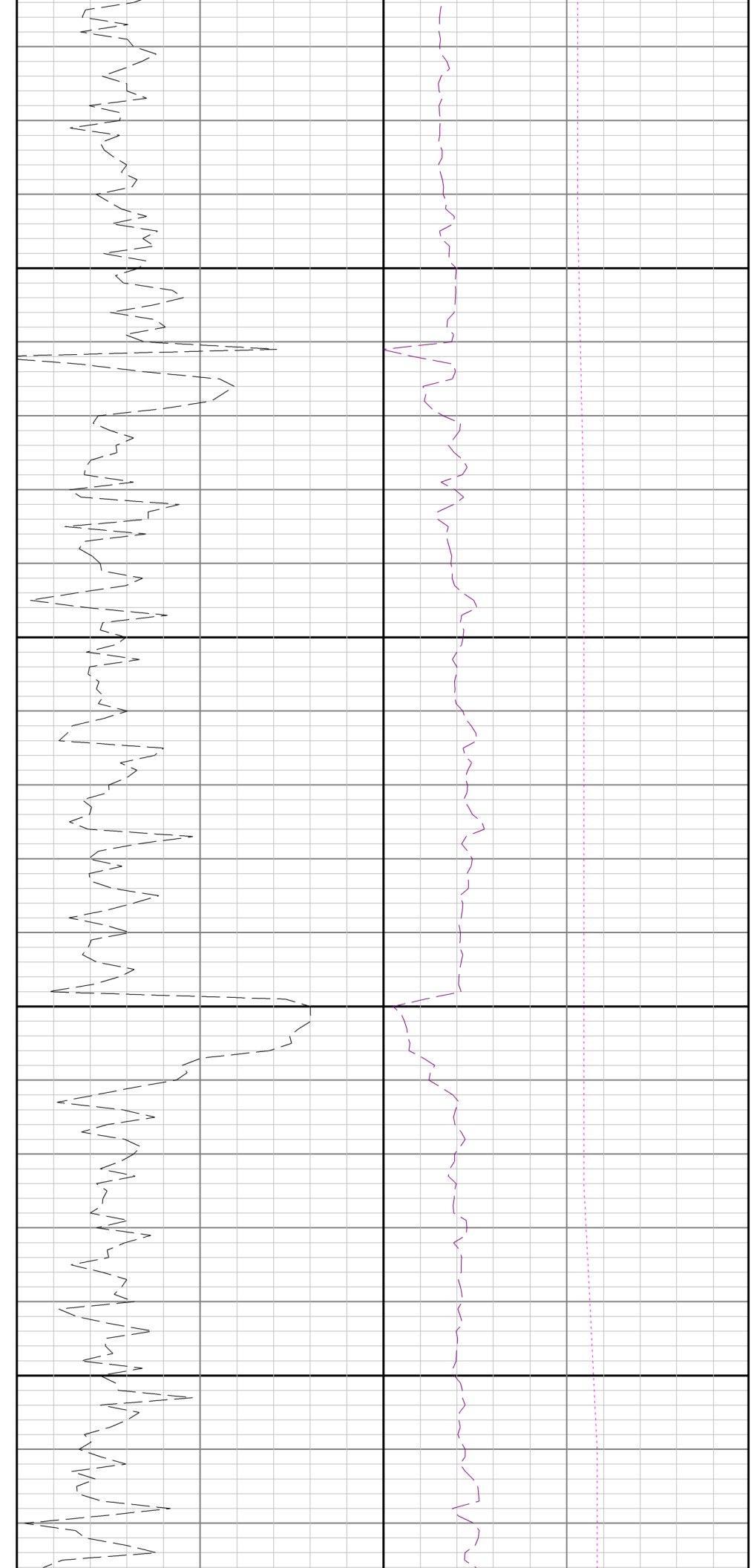


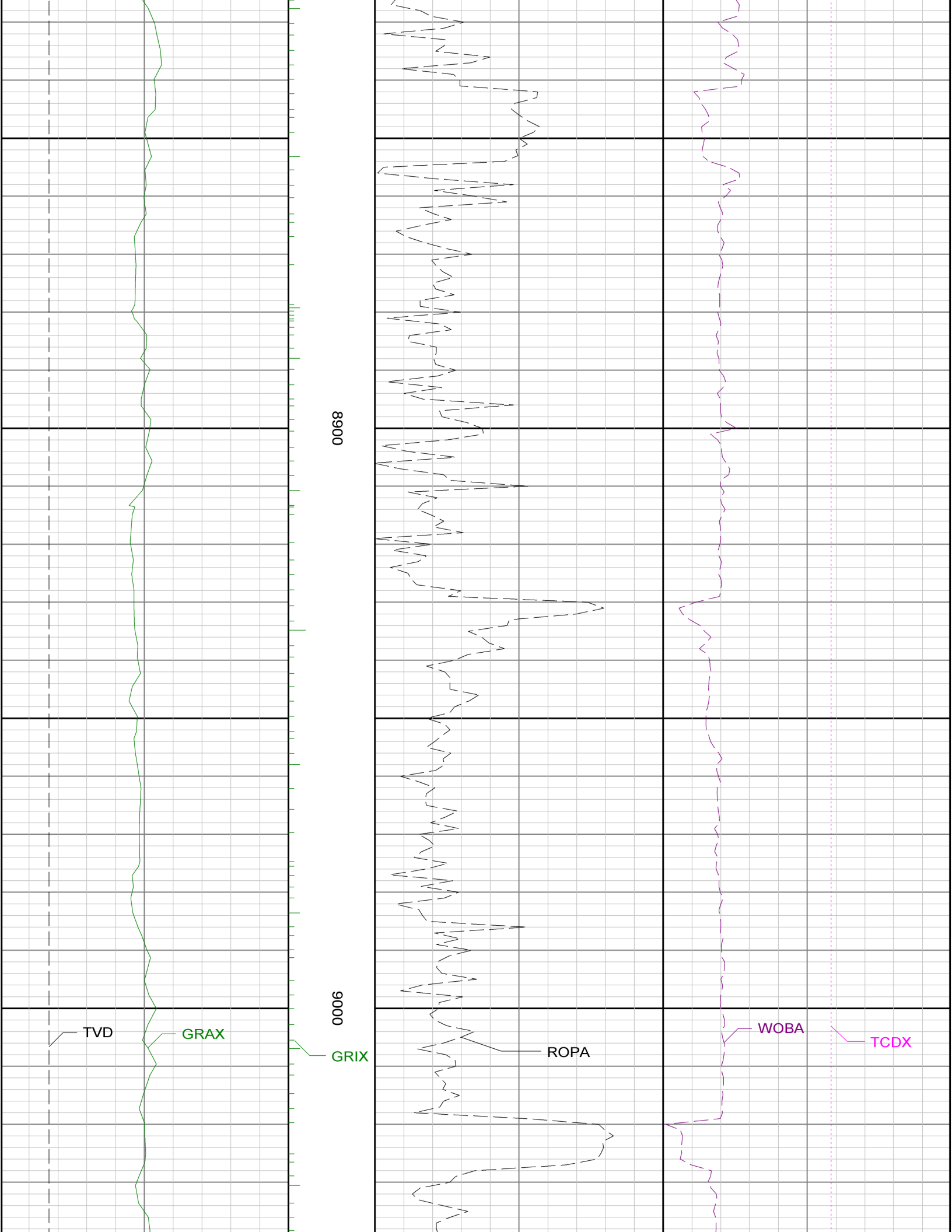




8700

8800





TVD

GRAX

GRIX

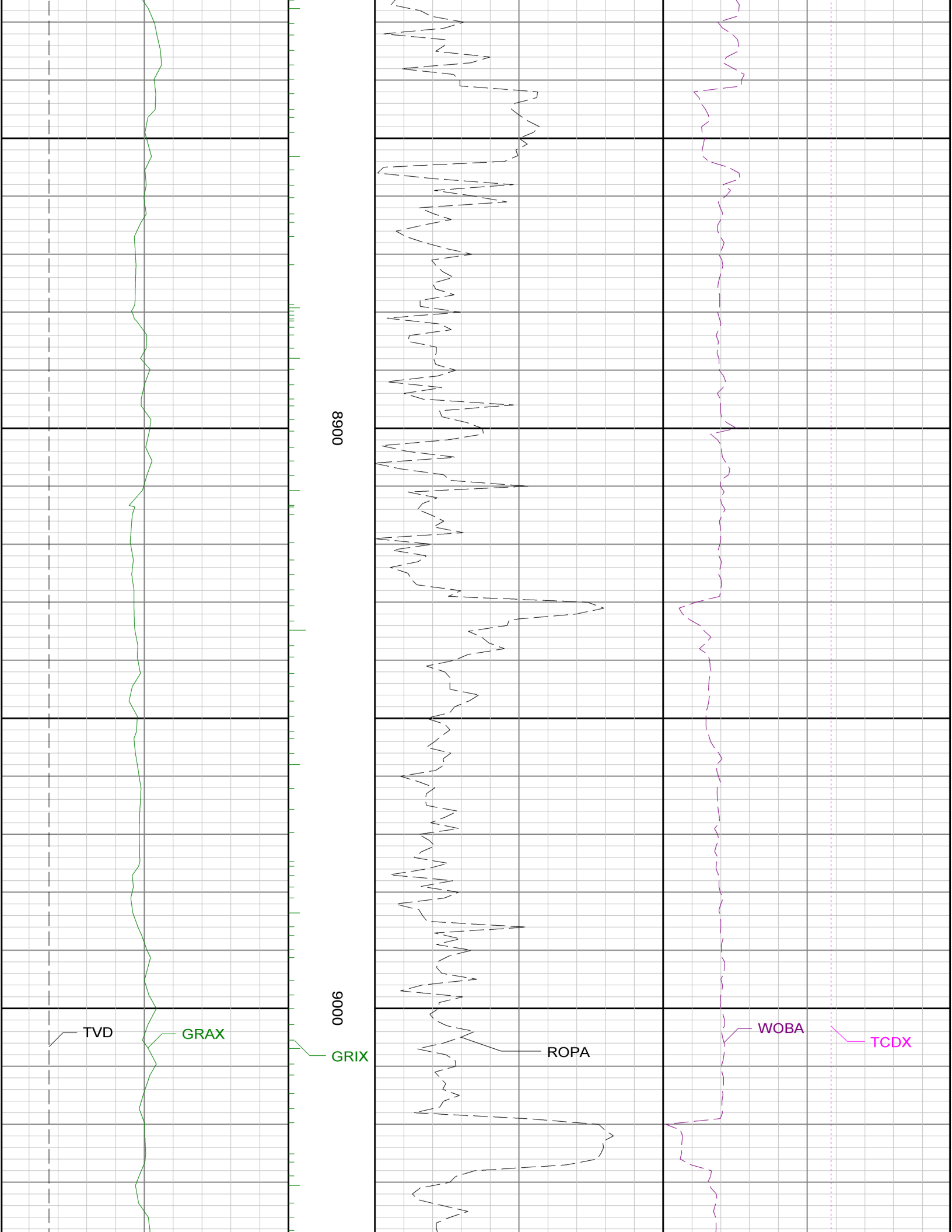
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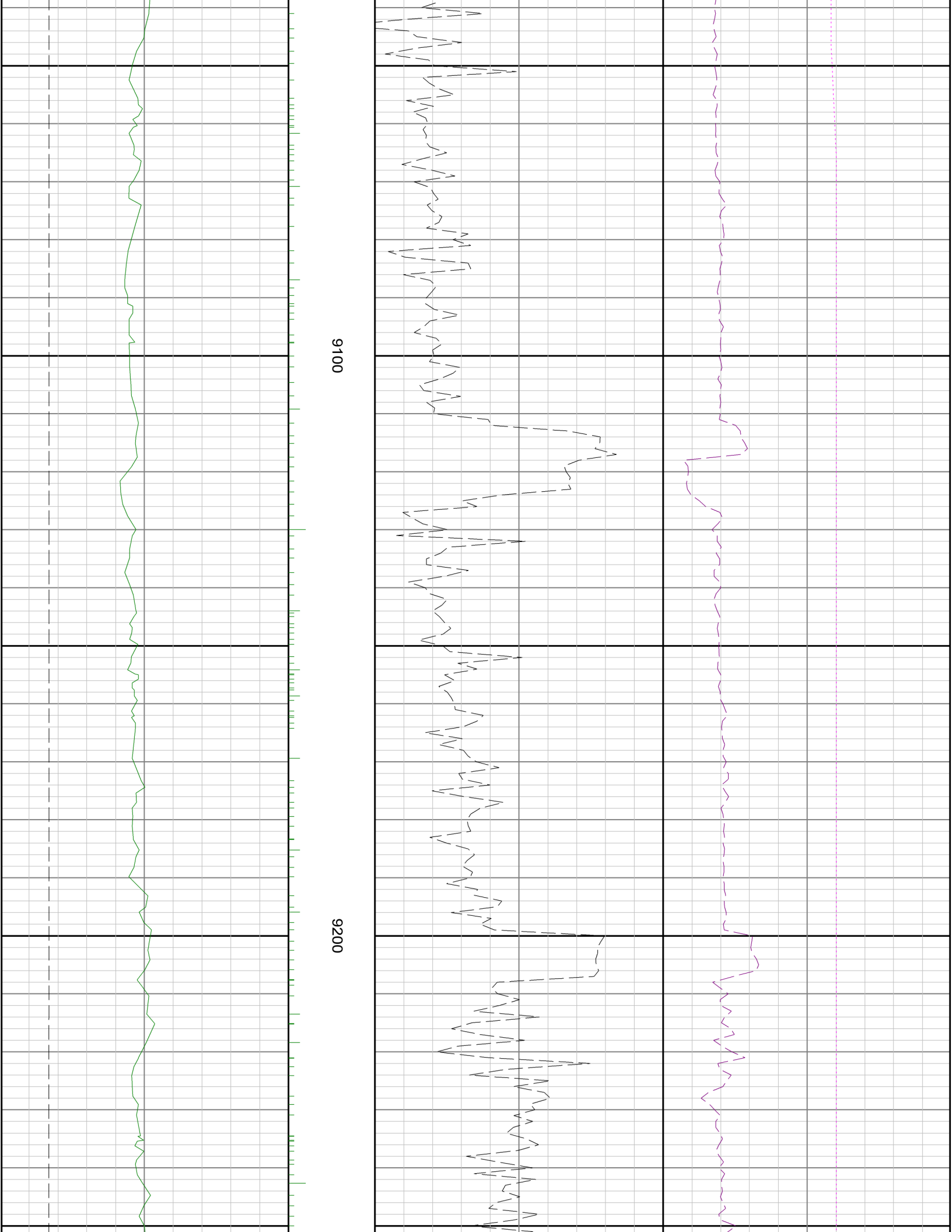
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ROPA

WOBA

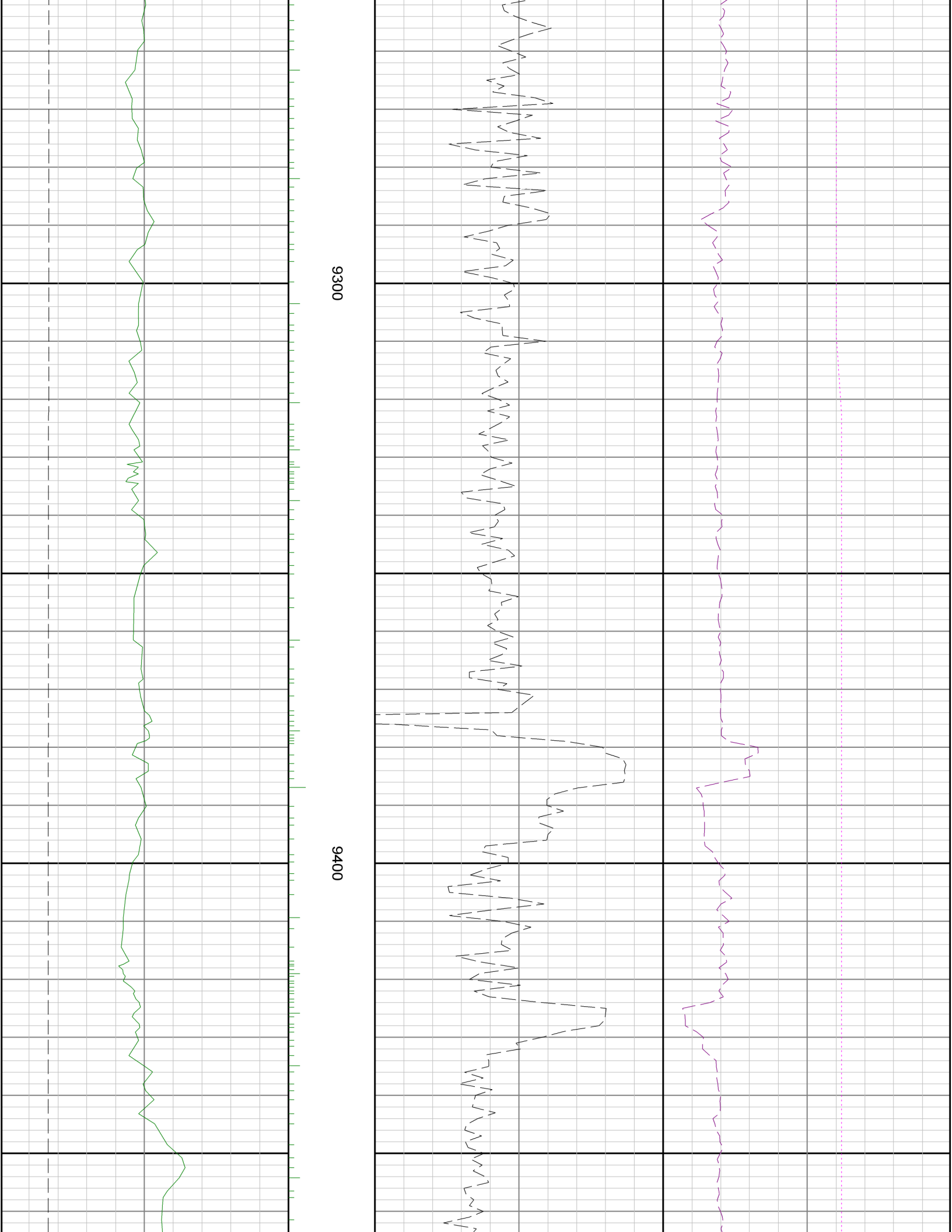
TCDX





9100

9200



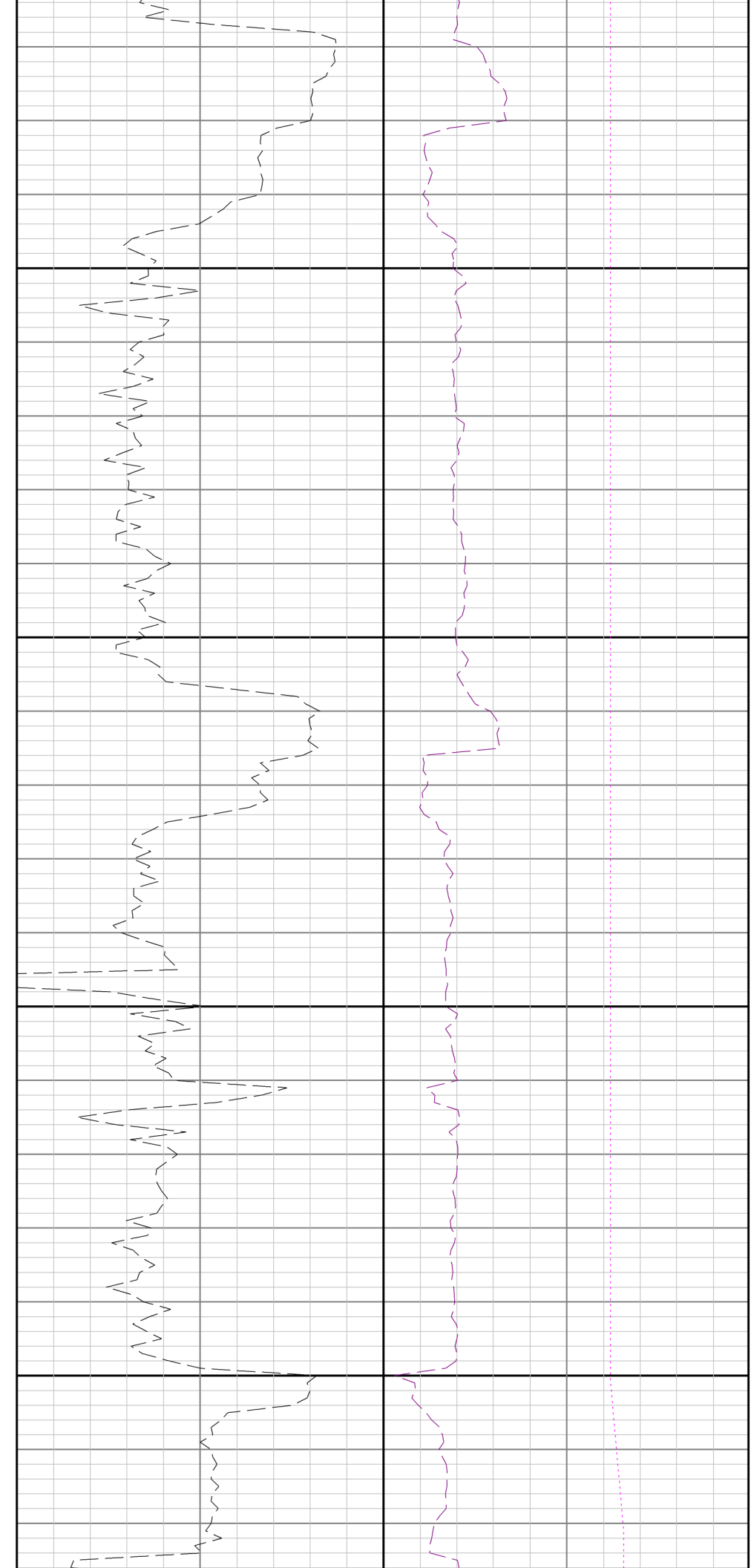
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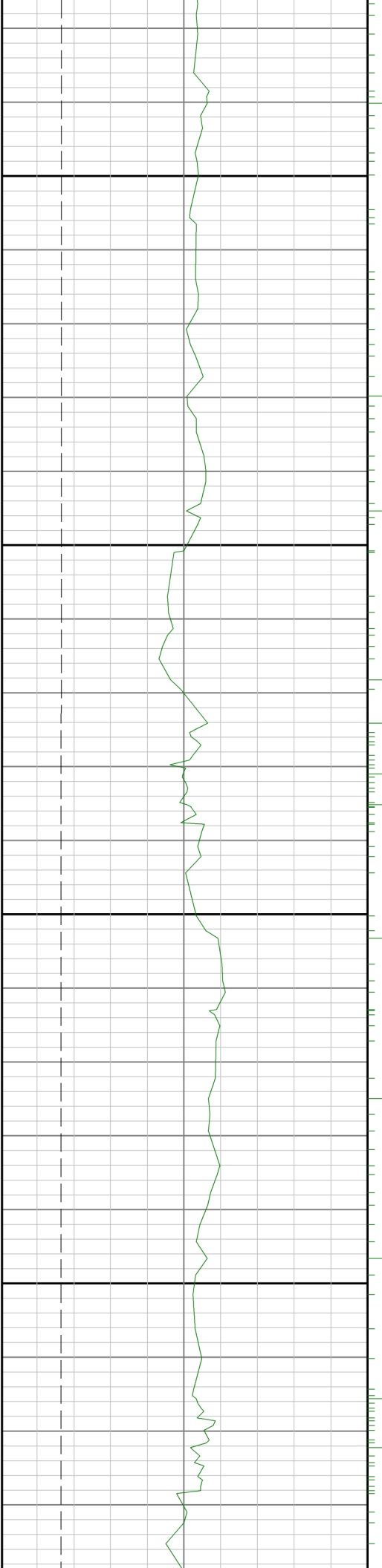
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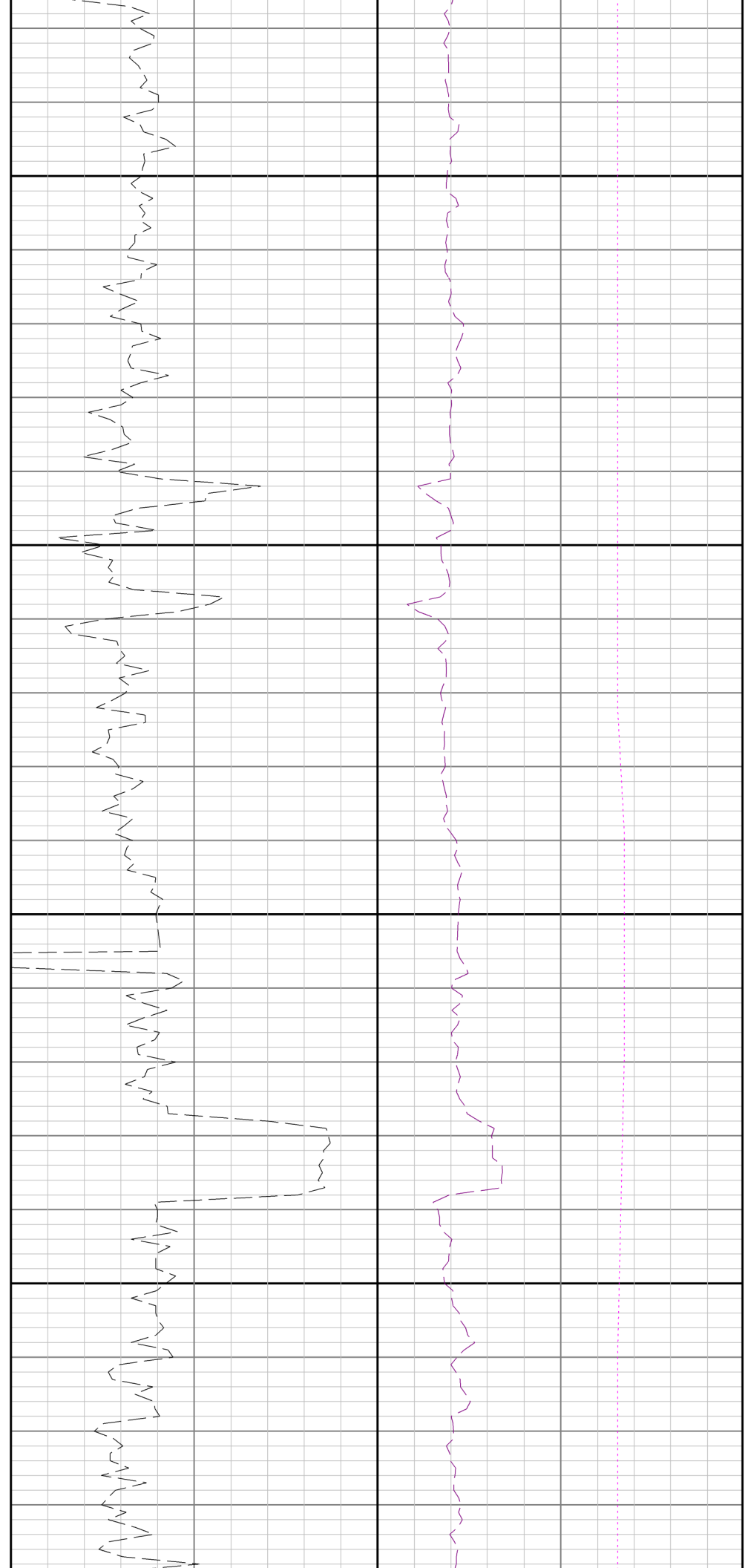
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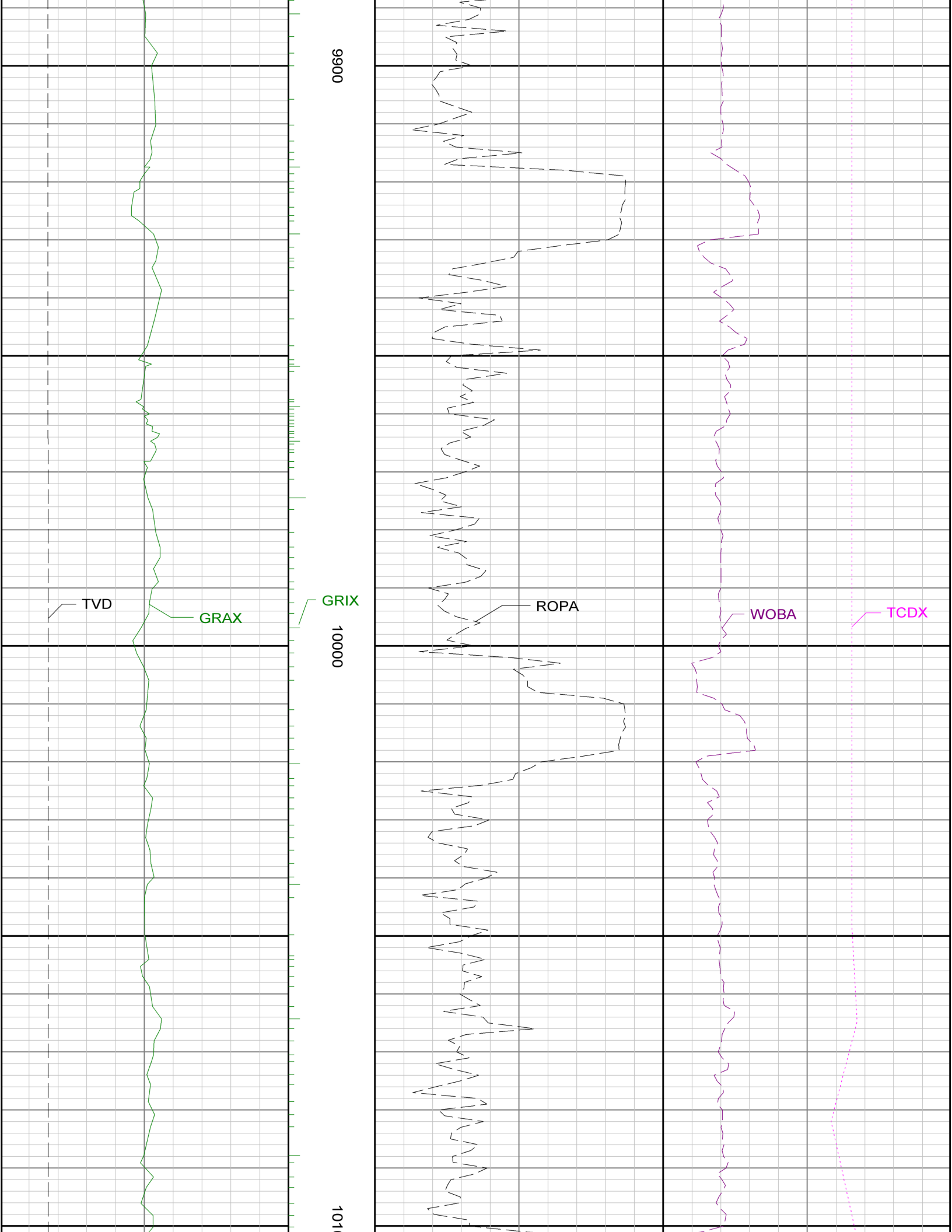




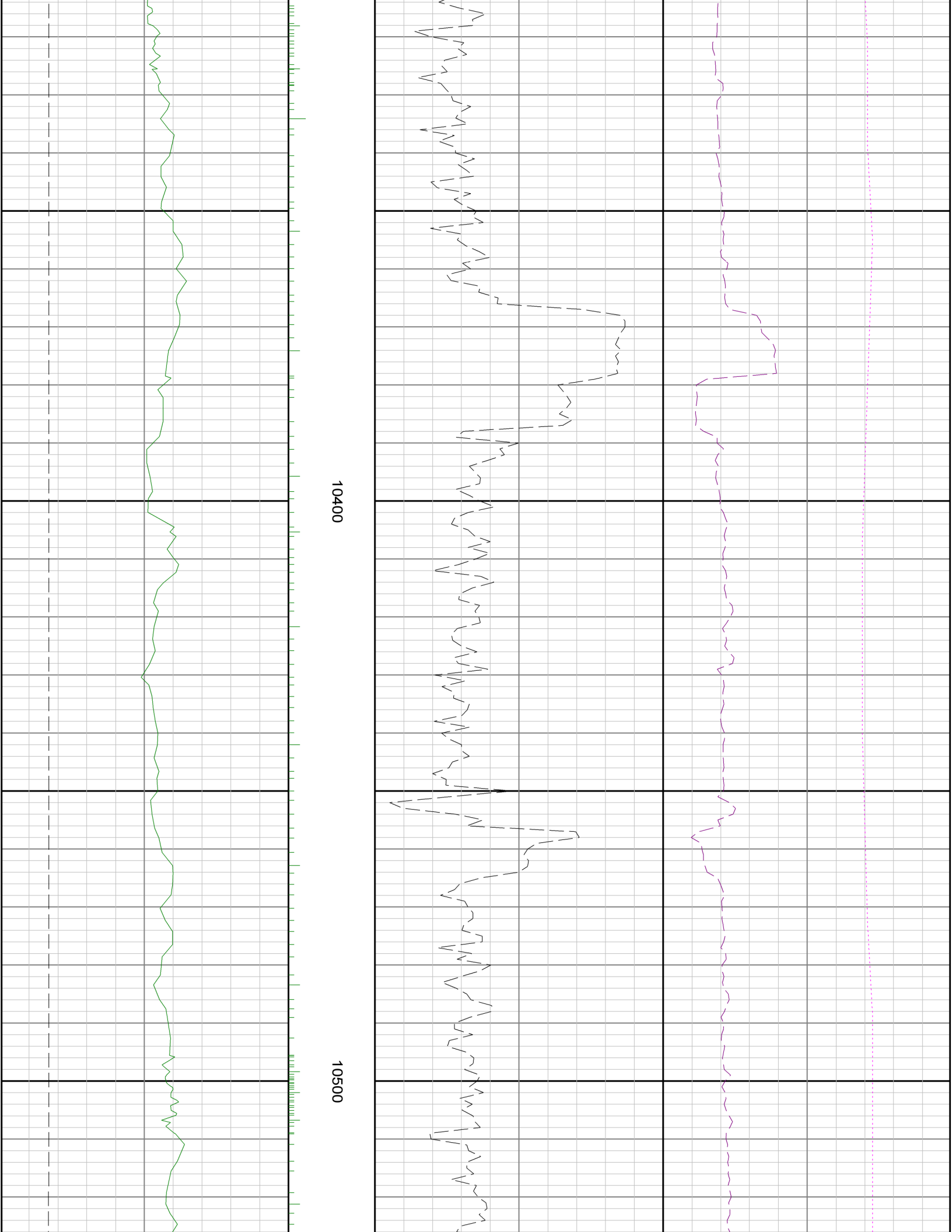
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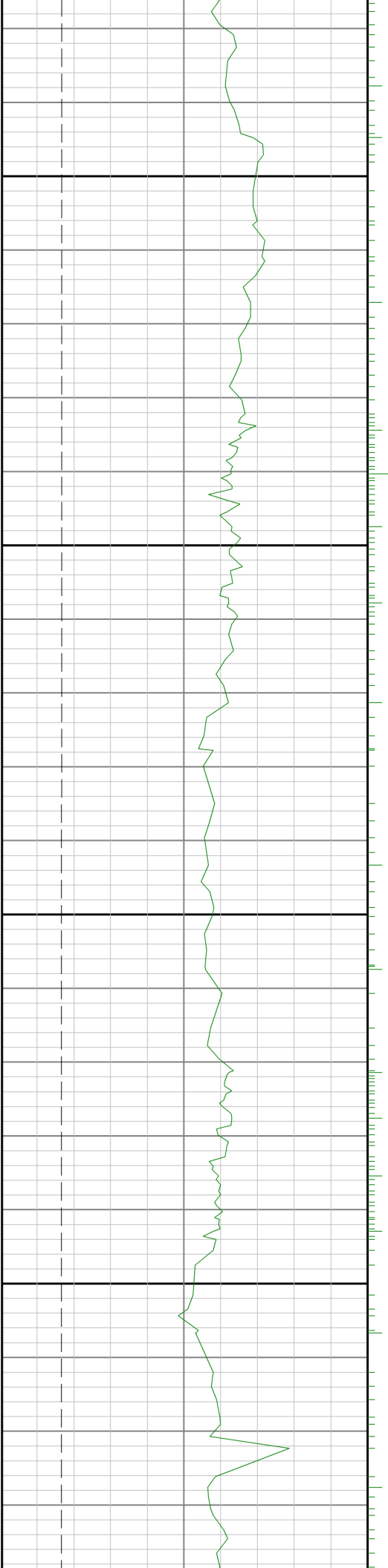
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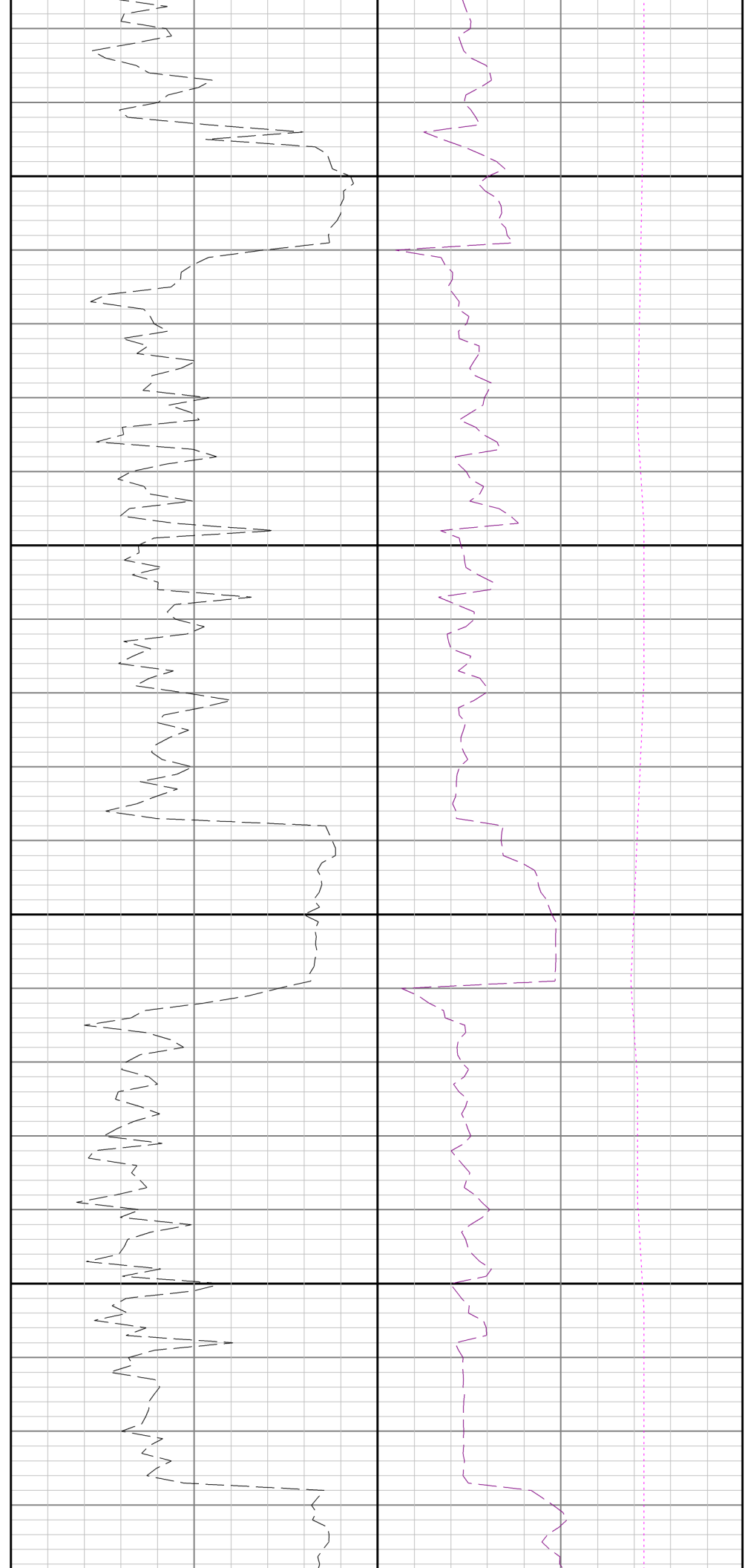


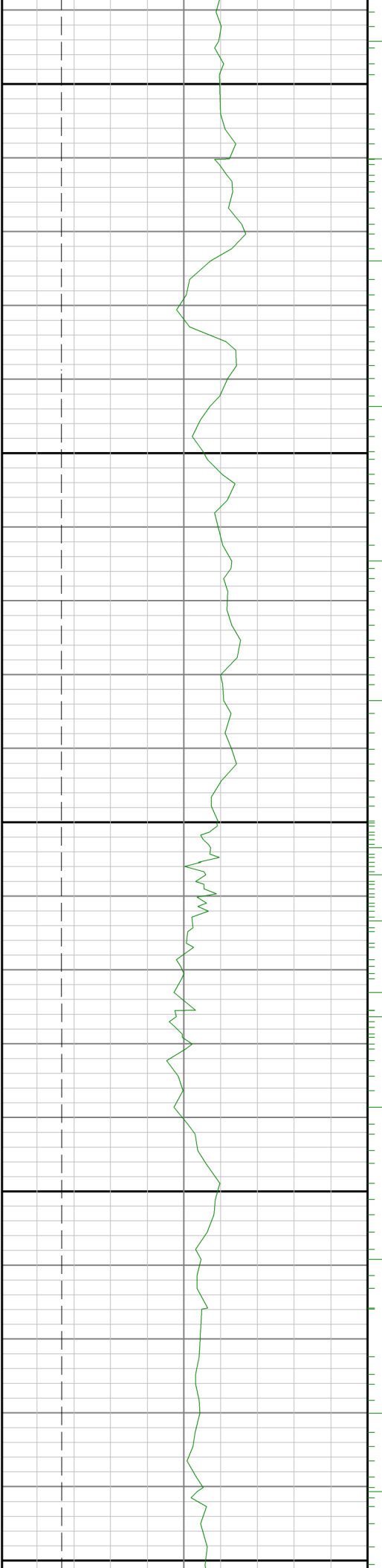




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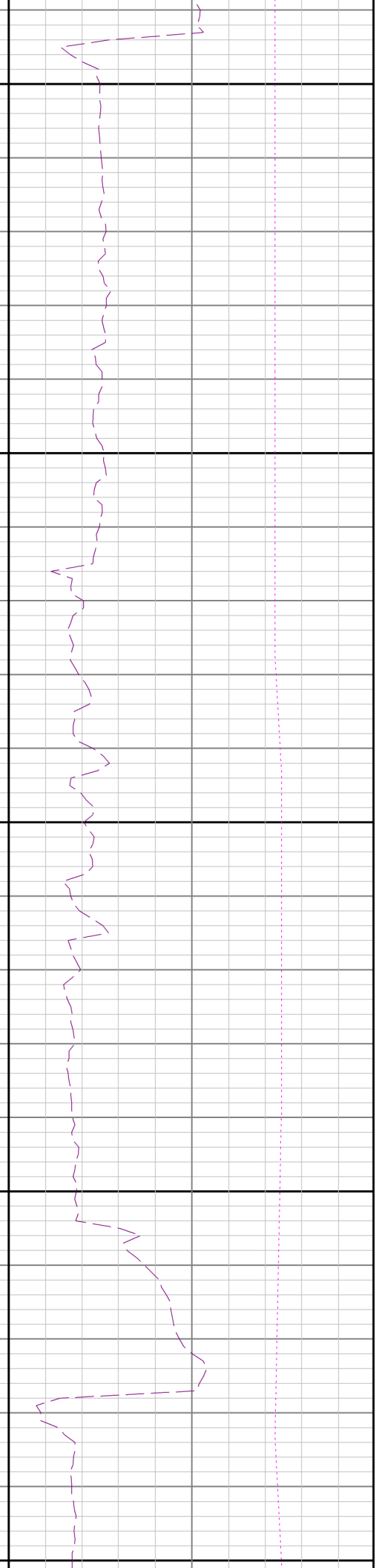
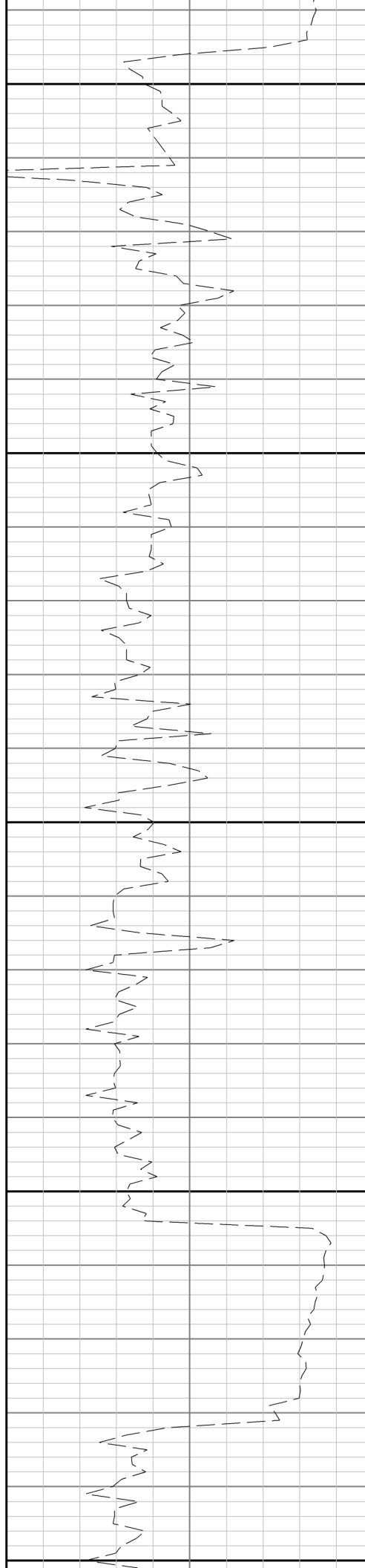
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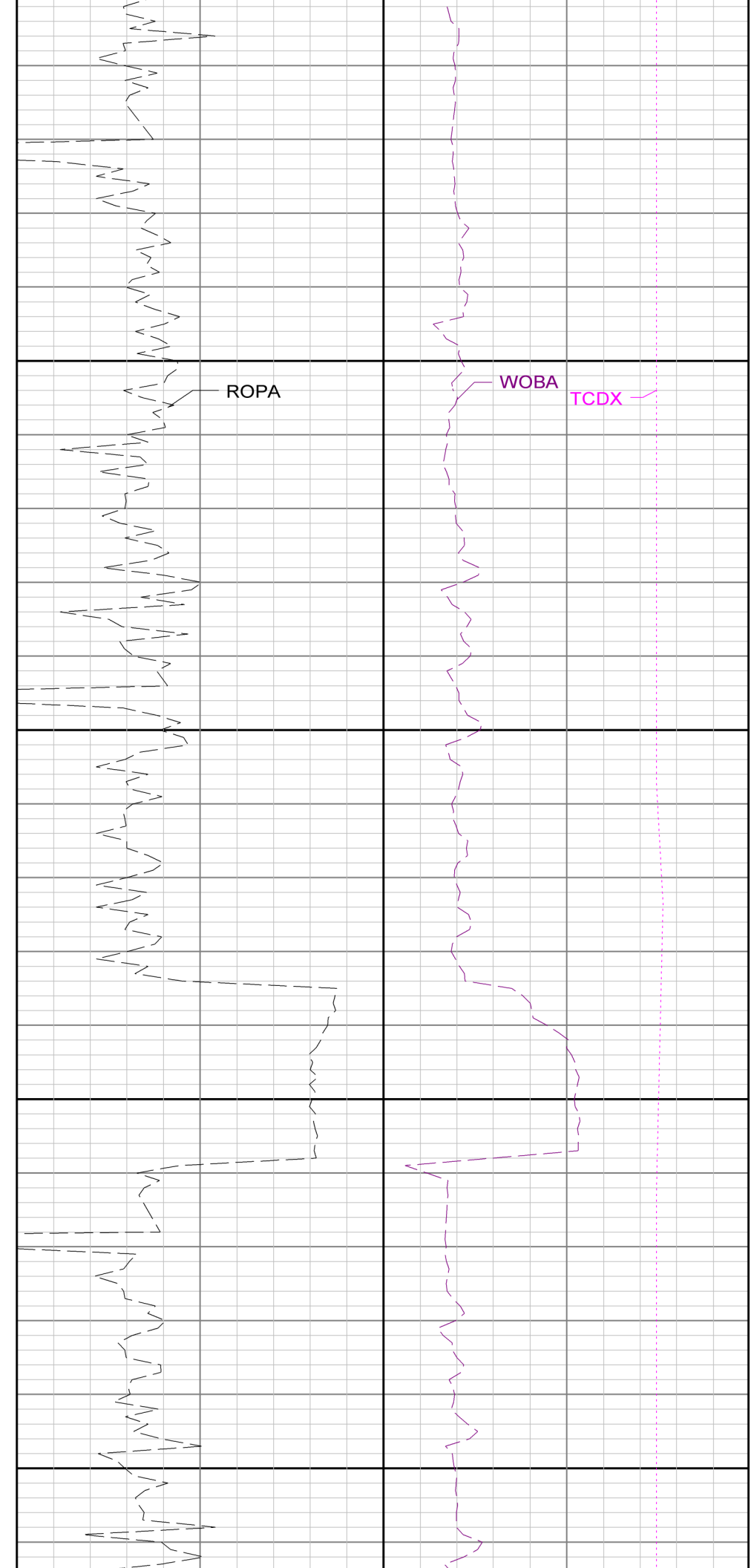
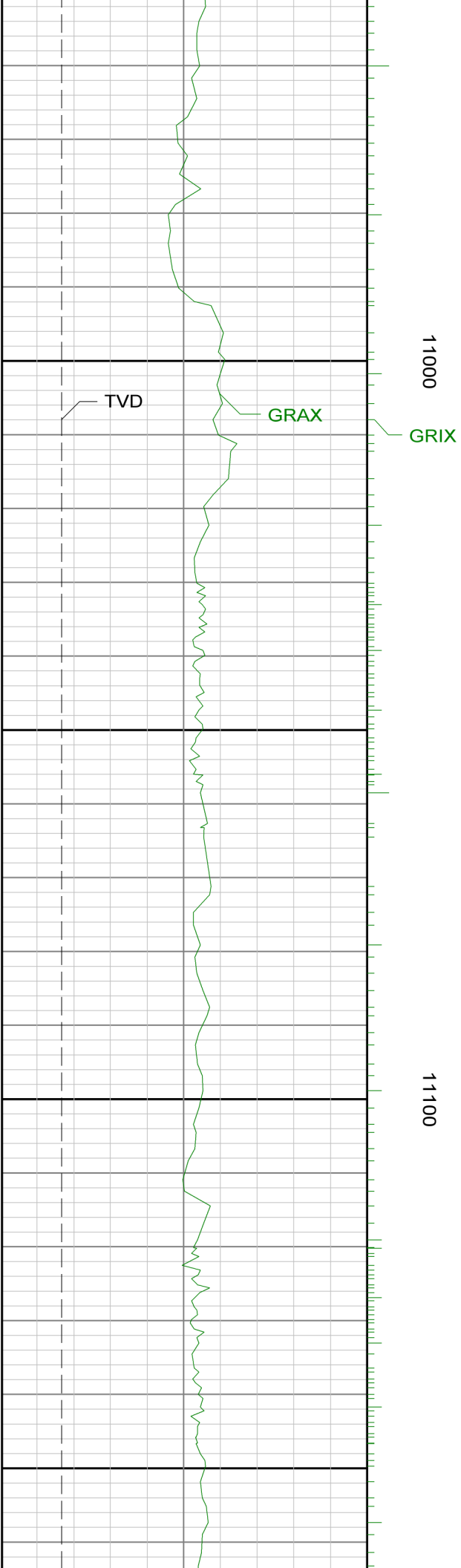


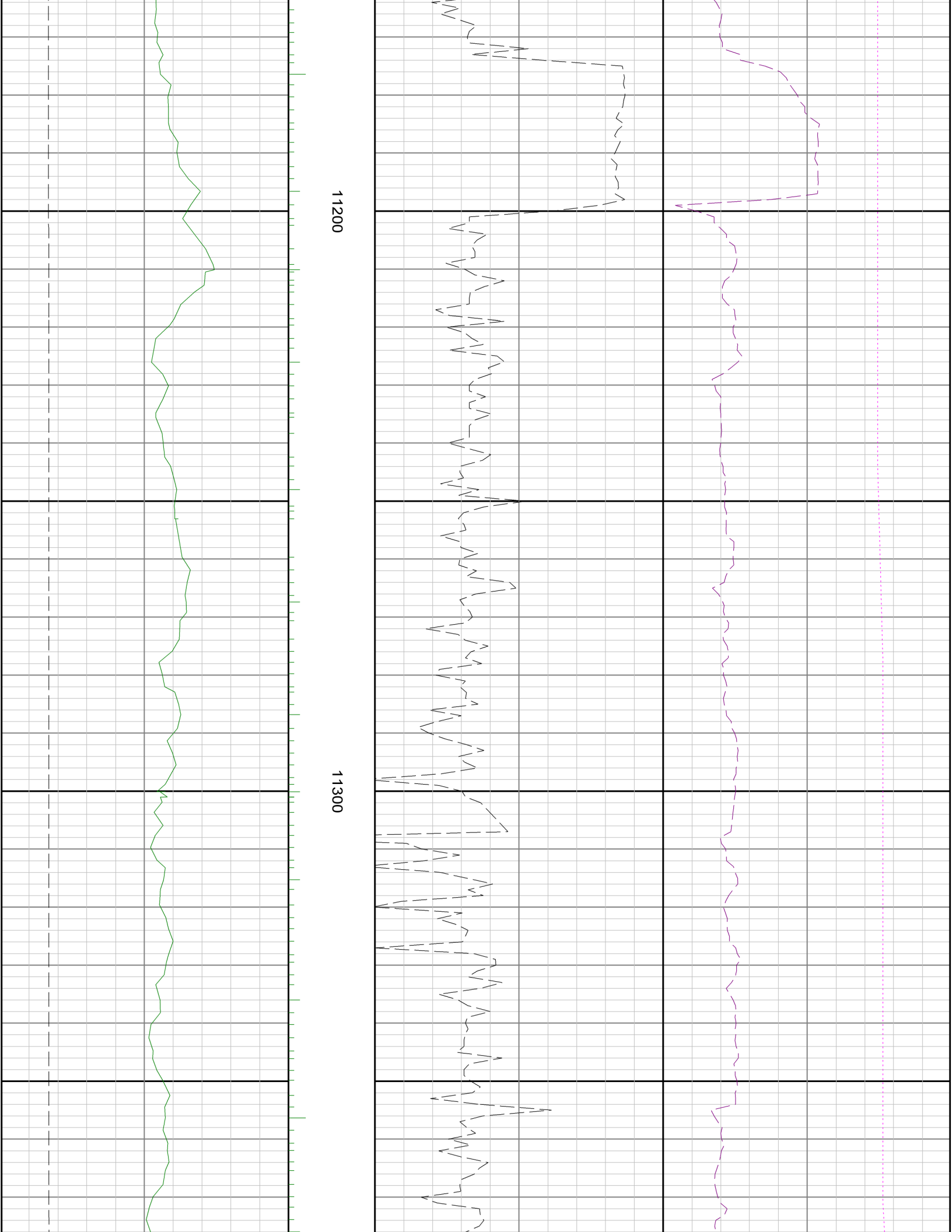


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10900



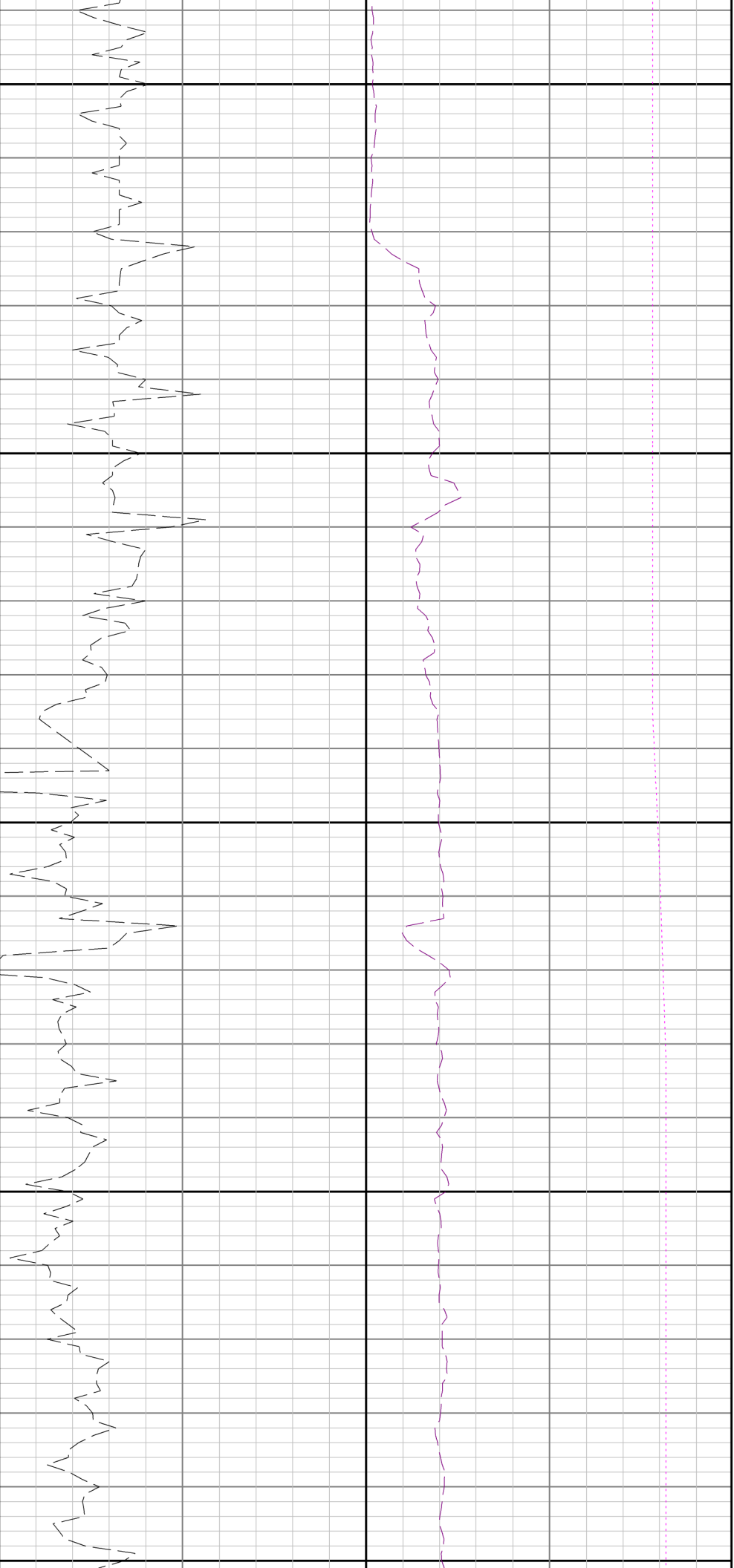






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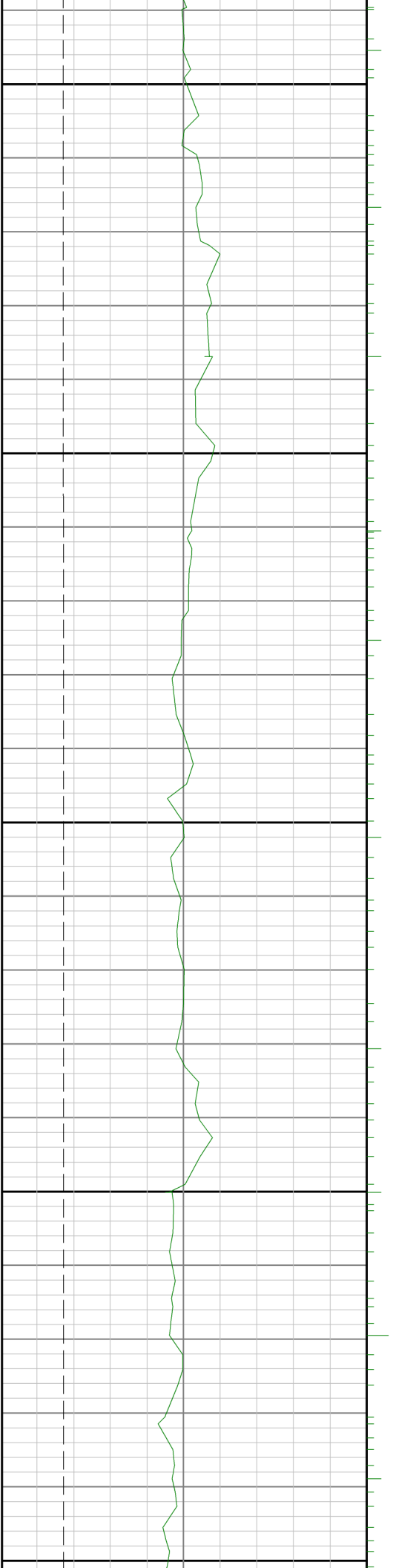
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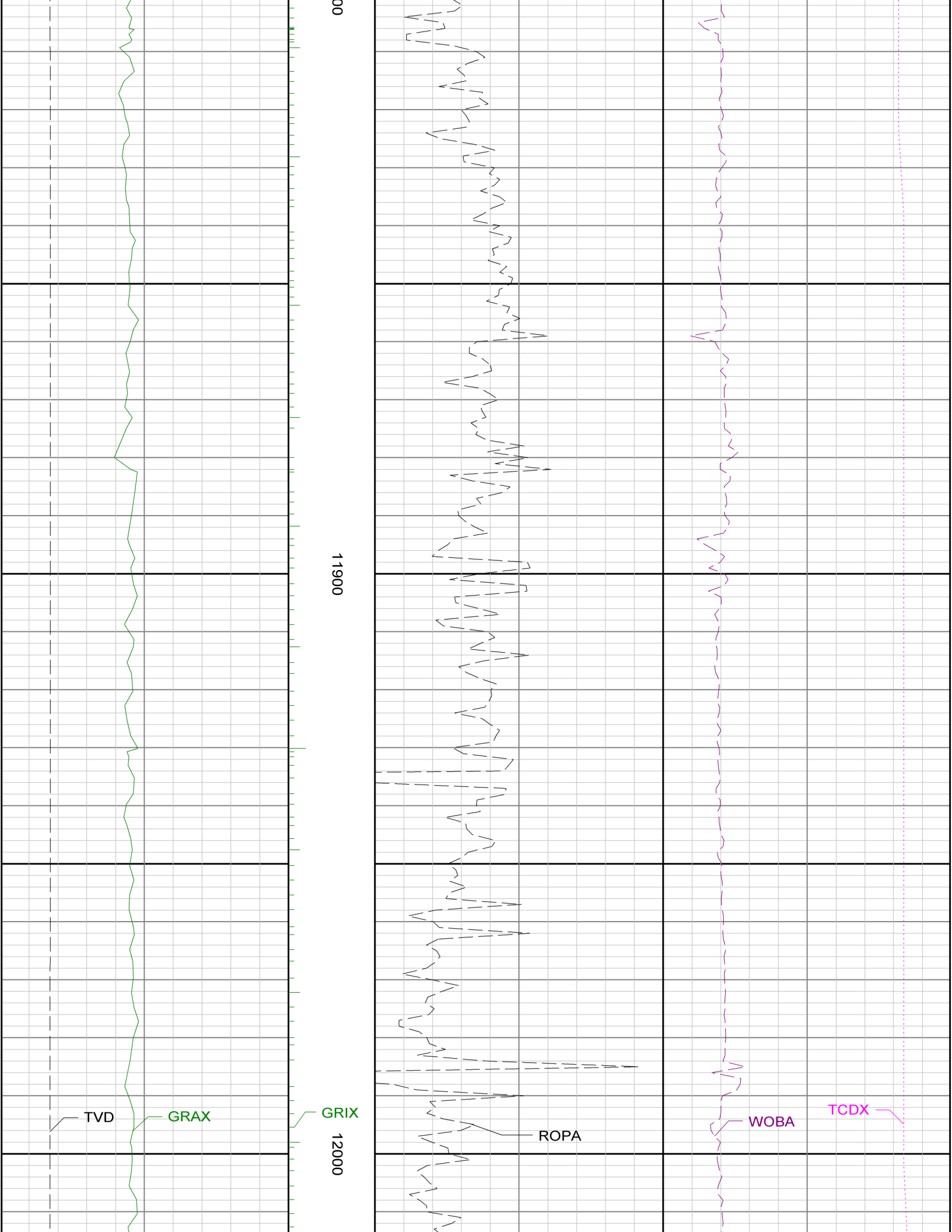


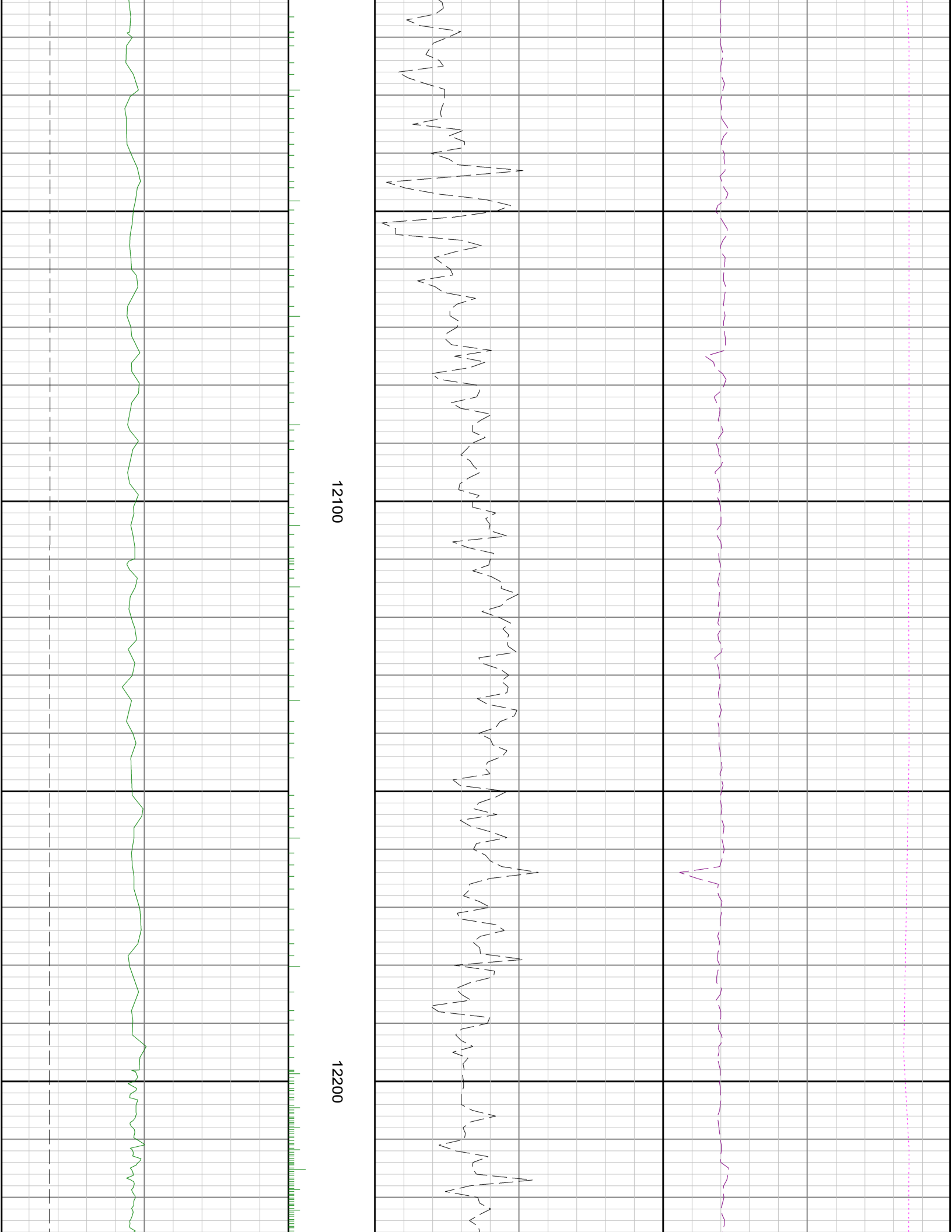
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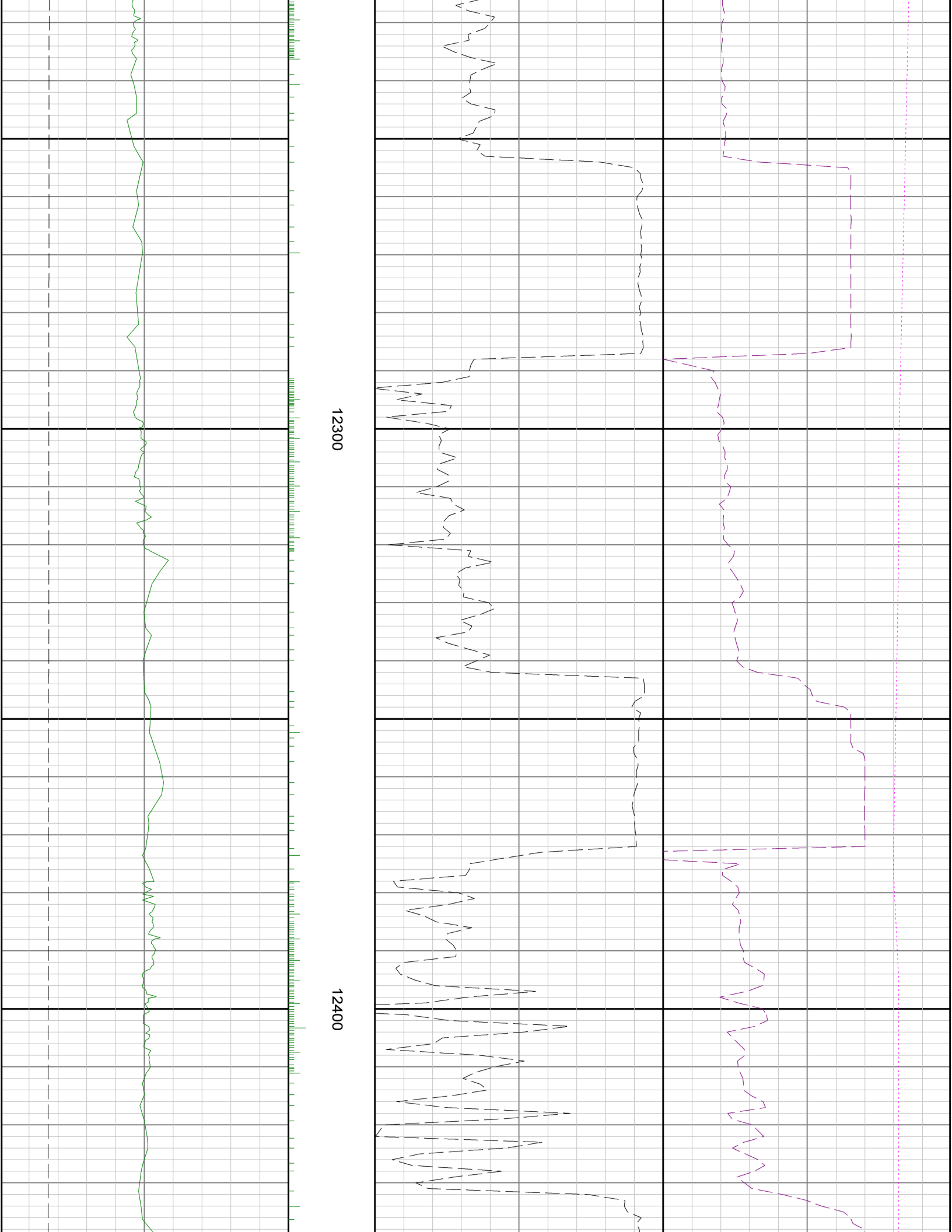






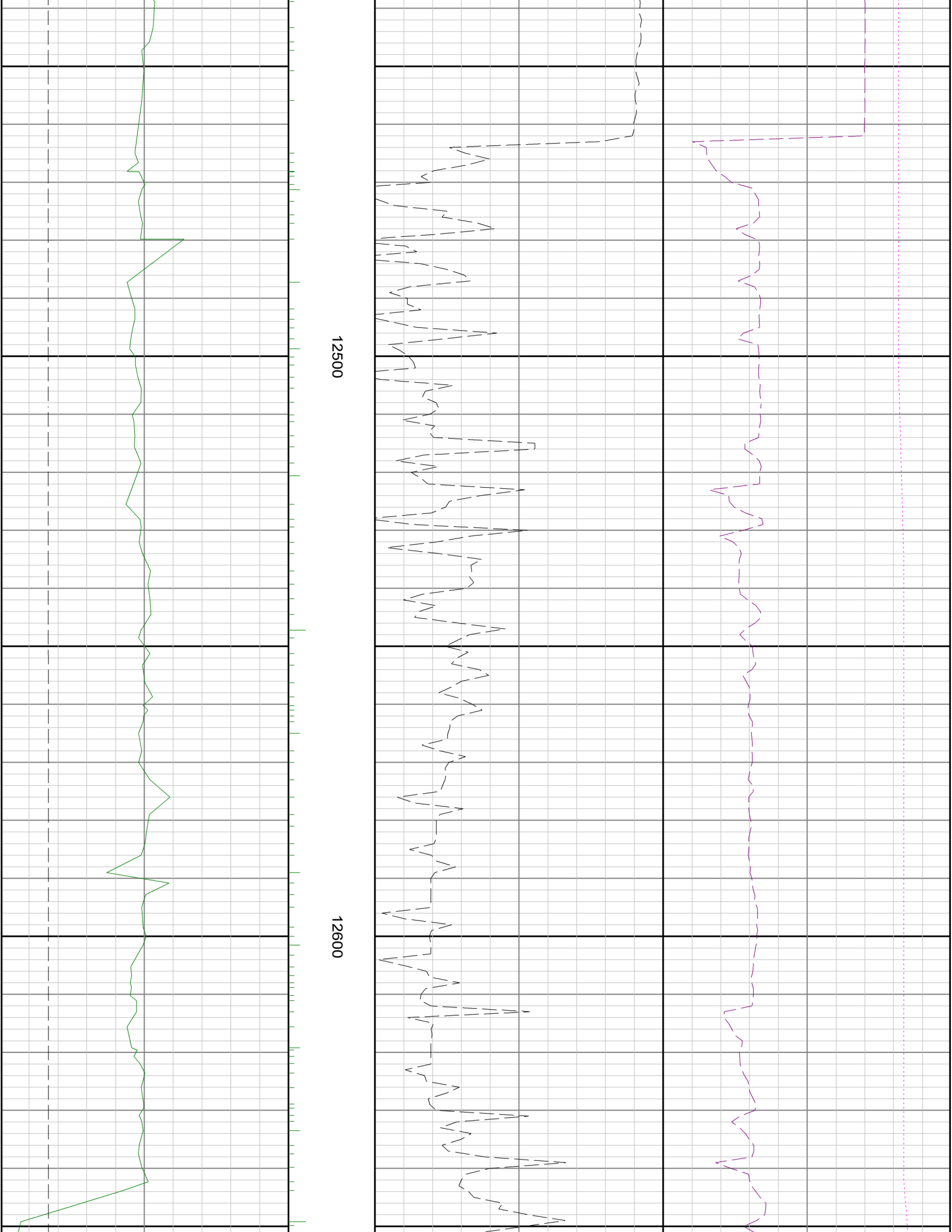
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12200



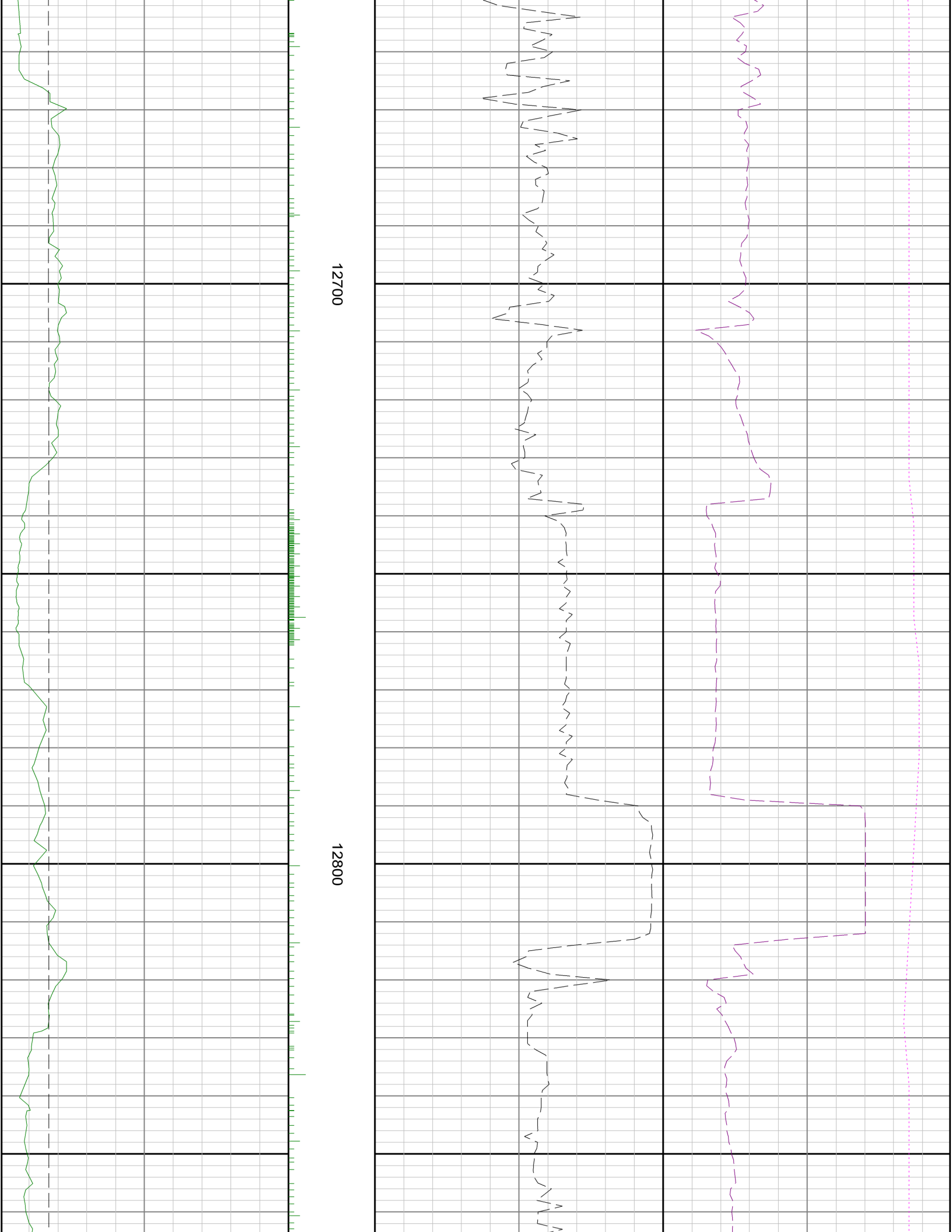
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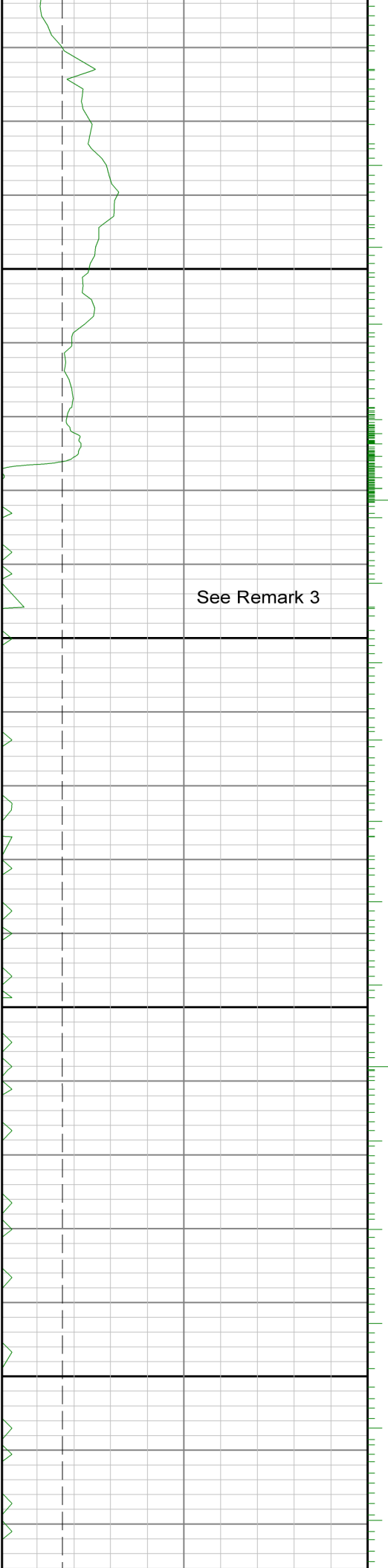
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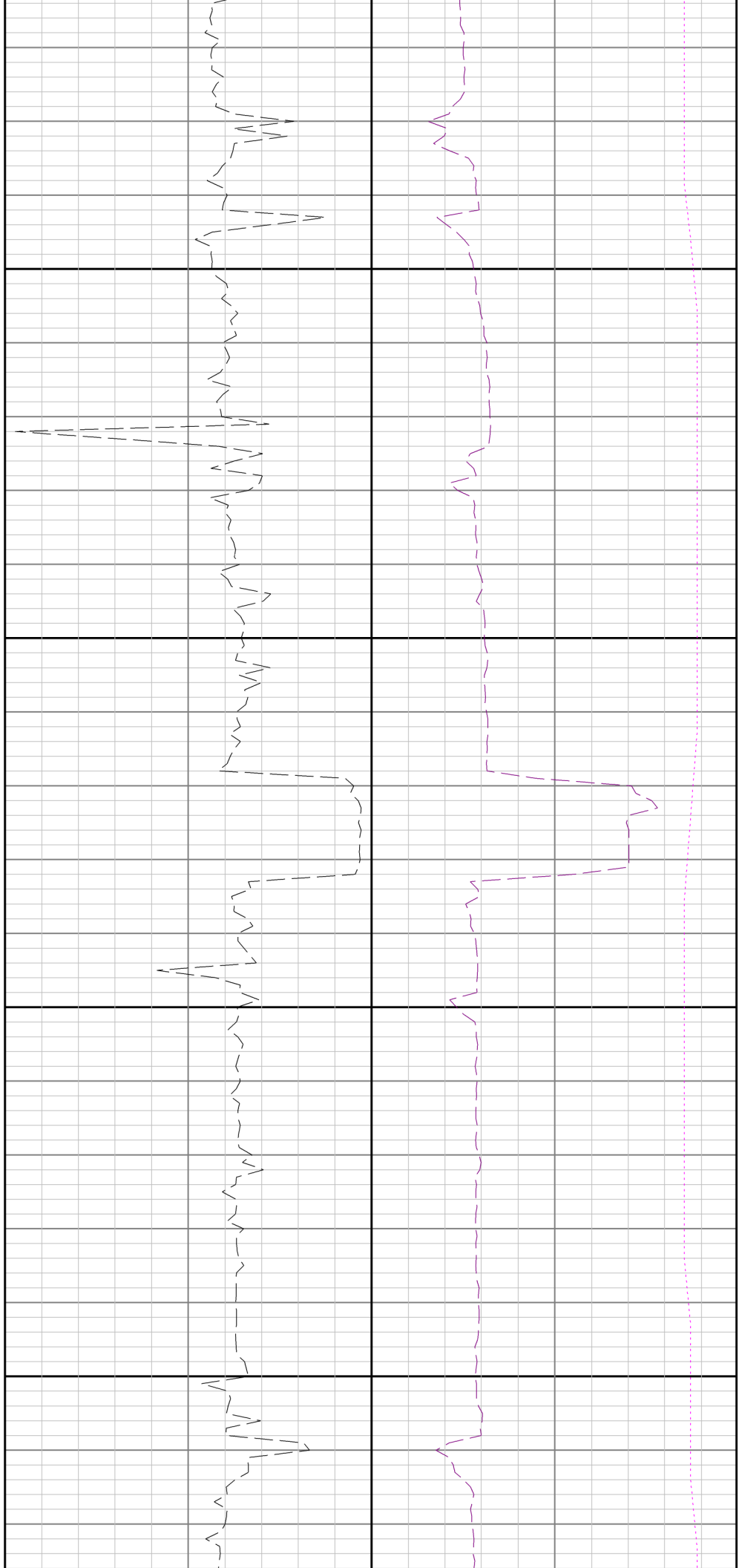
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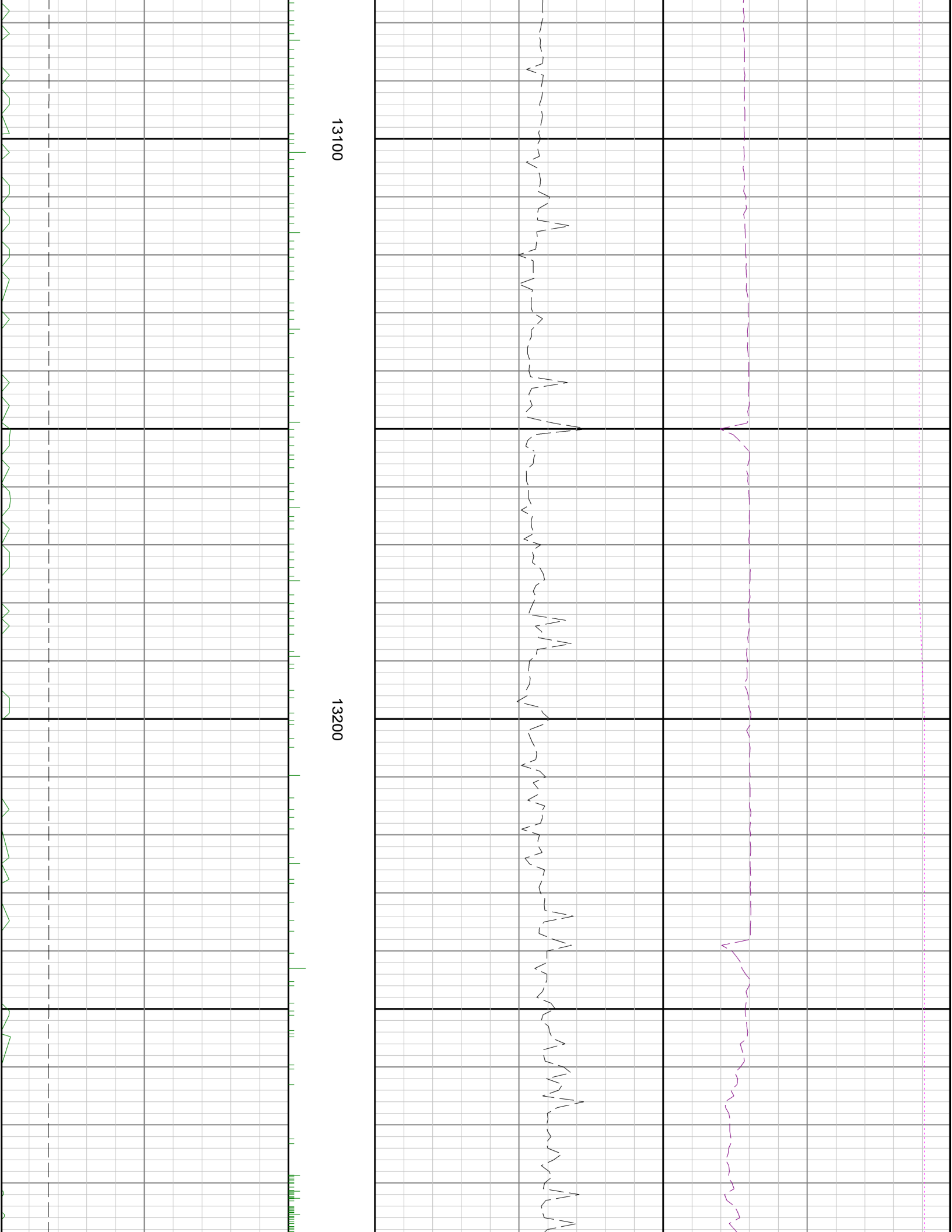


See Remark 3

12900

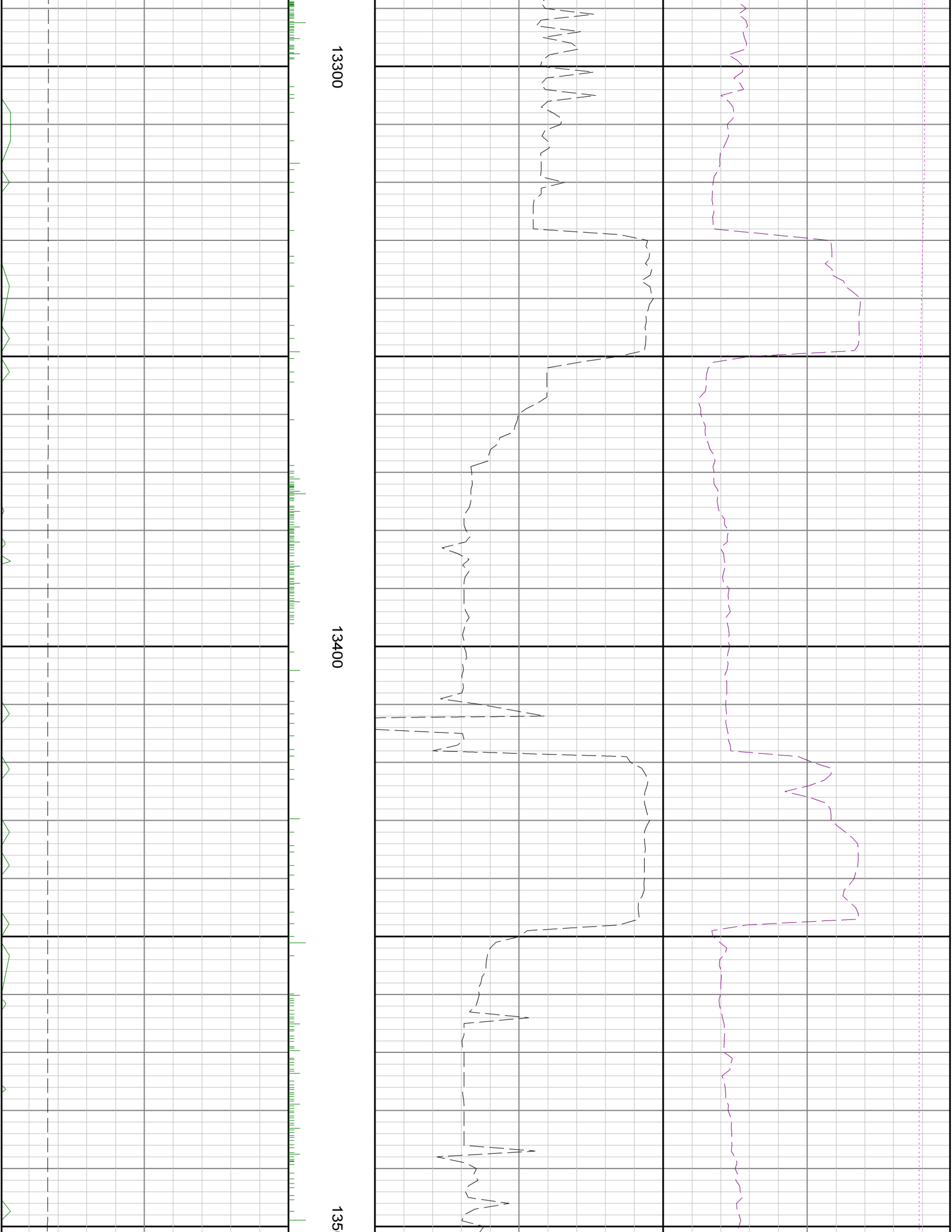
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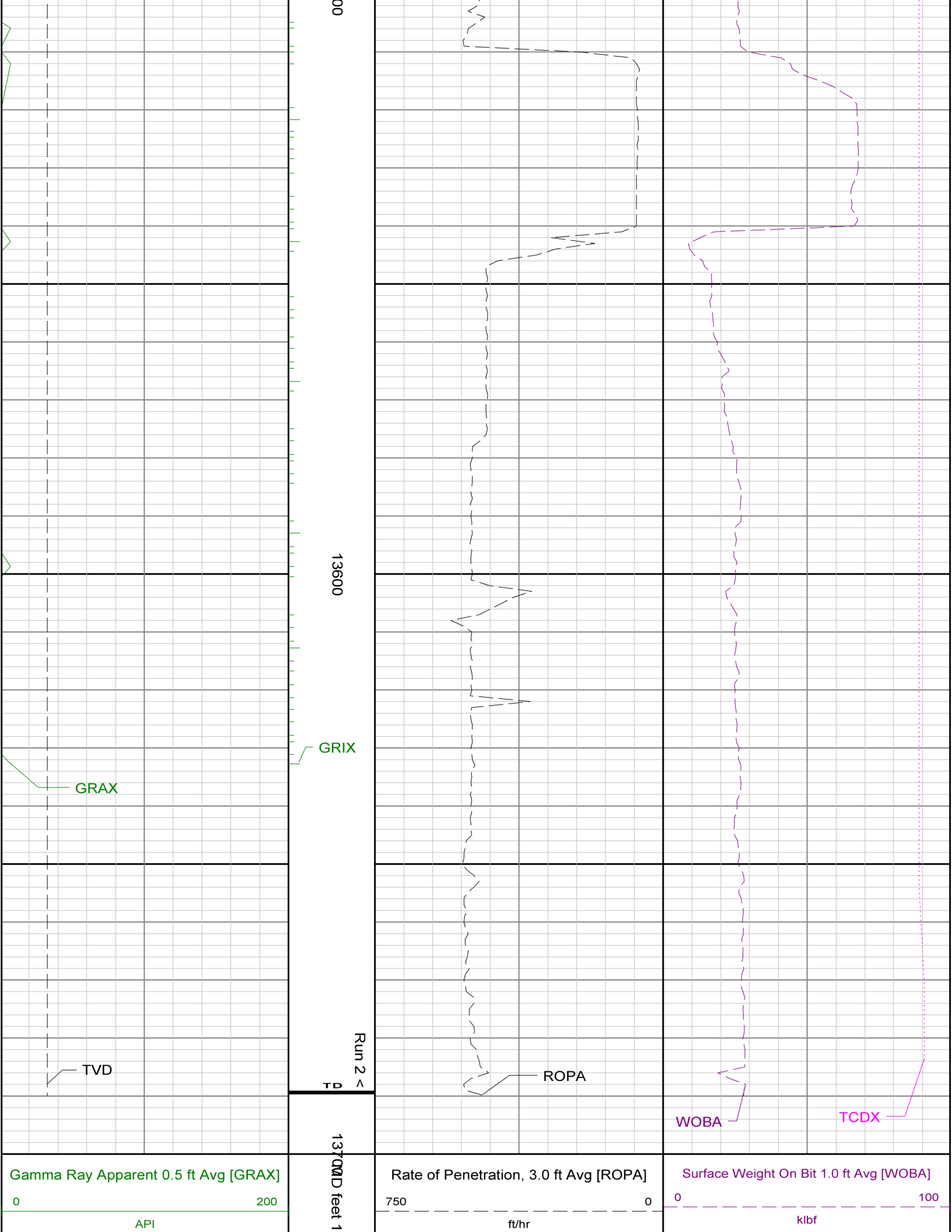
13200



13300

13400

135



00

13600

Run 2 >
TD

137000 feet 1

GRAX

TVD

ROPA

WOBA

TCDX

Gamma Ray Apparent 0.5 ft Avg [GRAX]

Rate of Penetration, 3.0 ft Avg [ROPA]

Surface Weight On Bit 1.0 ft Avg [WOBA]

0 200

750 0

0 100

API

ft/hr

klbf

8000 True Vertical Depth [TVD] 6200 ft	:240		100 Downhole Temperature [TCDX] 250 degF
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