



Realtime Log

Natural Formation Evaluation
Gamma Ray

Scale: Company: Kerr-McGee Oil & Gas Onshore LP

1:240 Well: Elliott State 40C-17HZ

Measured Depth Field: Weld County

County: Weld State: Colorado

Status: Surface Location: Other Services:

Final Print Latitude: 40° 13' 44.065" N

Longitude: 104° 55' 13.674" W

API Number: 05-123-39081-00 SEC: 17 TWP: 3 N RNG: 67 W

Permanent Datum (P.D.): Mean Sea Level Elevation: 4825.00 ft.

Log Measured From: Rig Floor 4838.00 ft. Above P.D.

Depth Reference: Driller's Depth Elevations: KB: N/A DF: 4838.00 ft. GL: 4825.00 ft.

Interval Logged Dates Magnetic Field Reference

Top: 6800.0 ft. Date From: 06/May/14 Date To: 12/May/14 Dip Angle: 66.89° Azi Reference North: True

Bottom: 12573.0 ft. Spud Date: 06/May/14 Field Strength: 52389.0 nT North Correction: 8.57°

Borehole Record

Casing Record

Hole Size	From	To	Size	Weight	From	To
13.500 in.	Surface	1263.0 ft.	9.625 in.	51.00 lb/ft	Surface	1263.0 ft.
8.750 in.	1263.0 ft.	7709.0 ft.	7.000 in.	39.00 lb/ft	Surface	7706.0 ft.
6.125 in.	7709.0 ft.	12573.0 ft.				

Mud Record

Deviation Record

Type	From	To	Hole Size	Interval	Inc / Az (Start)	Inc / Az (End)
Fresh Water	Surface	1263.0 ft.	8.750 in.	6446.0 ft.	0.4° / 18.4°	81.9° / 91.9°
Water Based Mud	1263.0 ft.	7709.0 ft.	6.125 in.	4864.0 ft.	88.0° / 92.5°	90.2° / 91.2°
					/	/
					/	/
					/	/
					/	/

Acquisition System Software Version

Other

Advantage	2.20U4	Rig: 6304500	Ensign 138	/ Kerr-McGee Oil & Gas Onshore LP
PATS	6.4.1.34	Job No: RMD		/ D&E
		District / Unit:		

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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	2	8.750	PDC	3.000	Steerable	6800.0	7649.0	1263.0	7709.0	07/May/2014 00:12	08/May/2014 16:11	41.9
2	2	3	6.125	PDC	6.000	Steerable	7649.0	12510.0	7709.0	12573.0	10/May/2014 10:40	11/May/2014 12:28	24.5

Crew

Name	Arrive	Depart	Name	Arrive	Depart	Name	Arrive	Depart
	Wellsite	Wellsite		Wellsite	Wellsite		Wellsite	Wellsite
Tyler Wall	06/May/2014	09/May/2014	Stephen Gray	09/May/2014	12/May/2014	Daniel Lee	06/May/2014	11/May/2014

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 (ppm)	K+ (%)
06/May/2014	21:00	1	1260.0	Fresh Water Mud	8.4	28	9.3	25.0	0 / 99	Active Mud Pit	2000	N/A
09/May/2014	09:00	1	7709.0	LSND	10.0	39	9.7	5.0	0 / 91	Active Mud Pit	2500	N/A
09/May/2014	21:00	1	7709.0	LSND	9.6	35	9.7	7.0	0 / 92	Active Mud Pit	2300	N/A
10/May/2014	09:00	2	7709.0	LSND	9.6	35	9.7	7.0	0 / 93	Active Mud Pit	2300	N/A
10/May/2014	21:00	2	9378.0	LSND	9.3	43	9.5	5.0	0 / 94	Active Mud Pit	2800	N/A

Mnemonics

Curve	Description	Units
GRAX	Gamma Ray Apparent, 0.5 ft. Avg.	API
GRIX	Gamma Ray Data Density	points
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	degF
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	12235763	Directional	62.12	6.750	2.875
1	SRIG	12131378	Gamma	58.72	6.750	2.875
2	DIR	11991886	Directional	63.45	4.750	2.750
2	SRIG	12023988	Gamma	60.07	4.750	2.750

Service and Tool Mnemonics

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

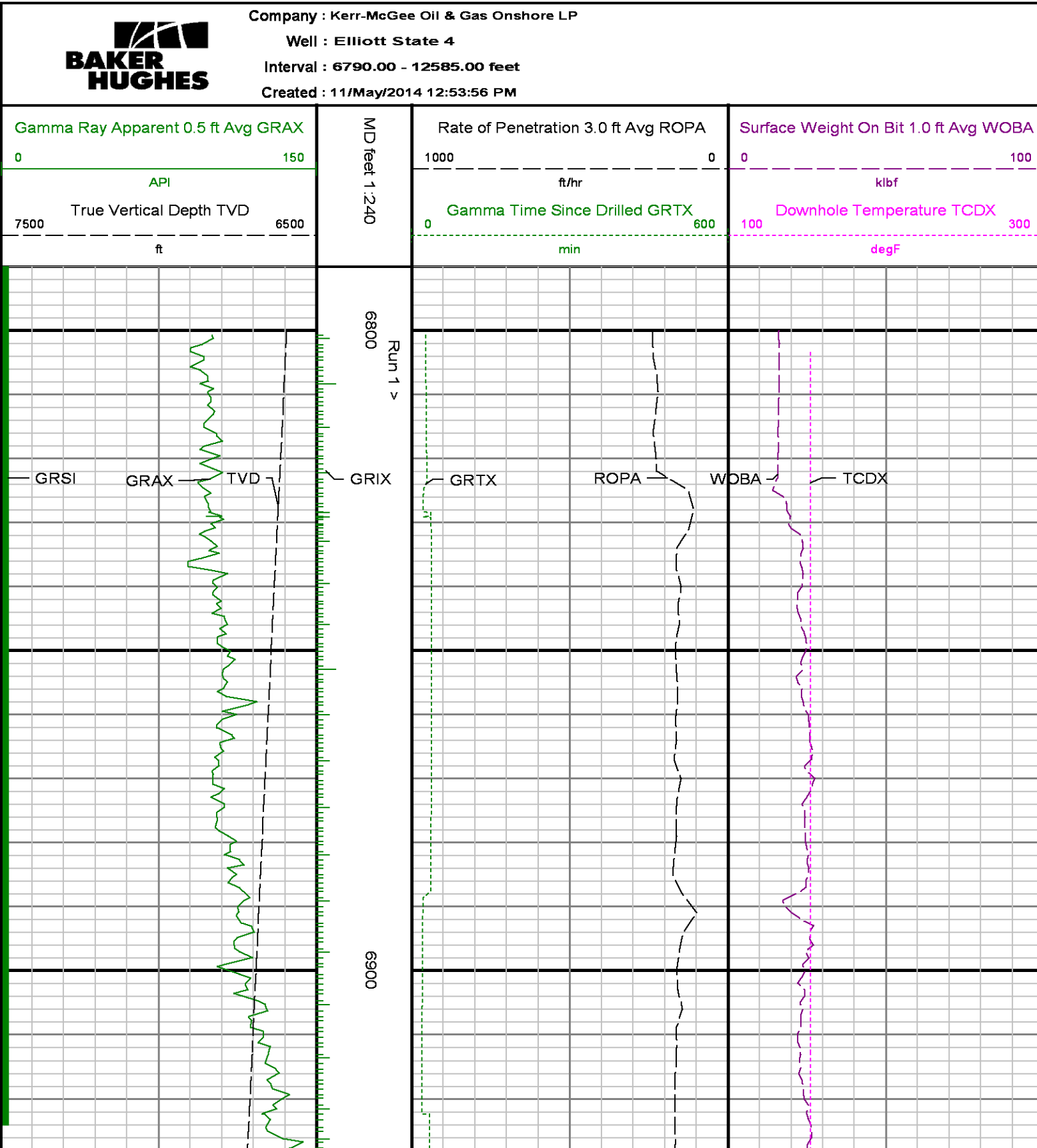
Comments

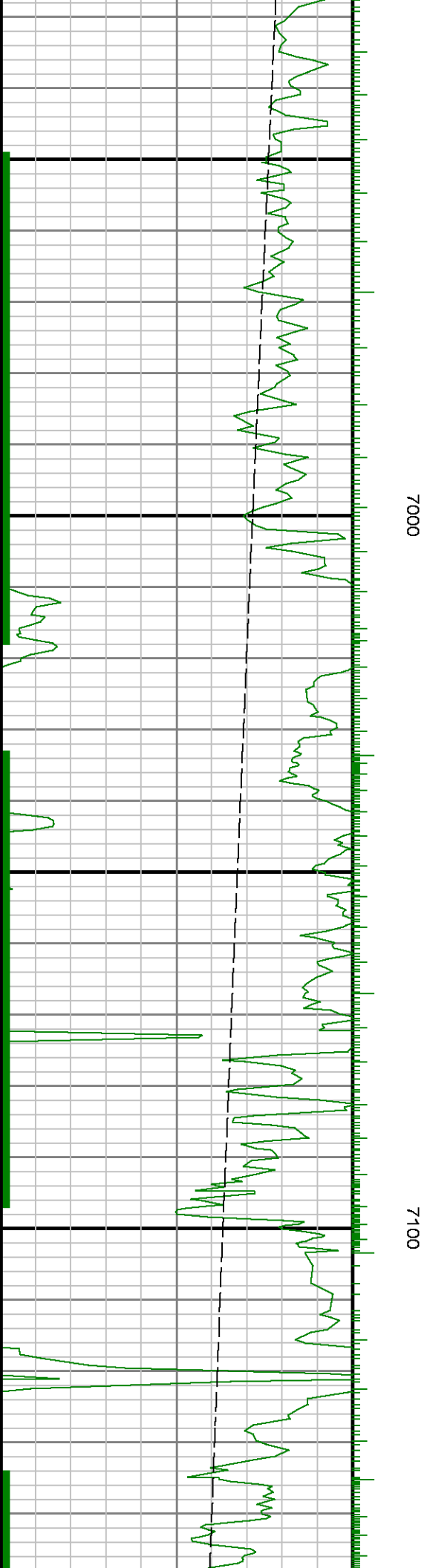
<p>1.) Baker Hughes LWD run 1 utilized 6 3/4 inch NaviTrak Services (VSS, Directional) from 1263 to 6800 ft. MD (1262.96 to 6593.92 ft. TVD) and NaviGamma Services (VSS, Directional, Gamma Ray) from 6800 to 7709 ft. MD (6593.92 to 7132.02 ft. TVD) behind an 8 3/4 inch bit and steerable assembly.</p> <p>2.) Baker Hughes LWD run 2 utilized 4 3/4 inch NaviGamma Services (VSS, Directional, Gamma Ray) from 7709 to 12573 ft. MD (7132.02 ft. to 7135.18 TVD) behind an 6 1/8 inch bit and steerable assembly.</p> <p>3.) Depth measurements 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.</p>

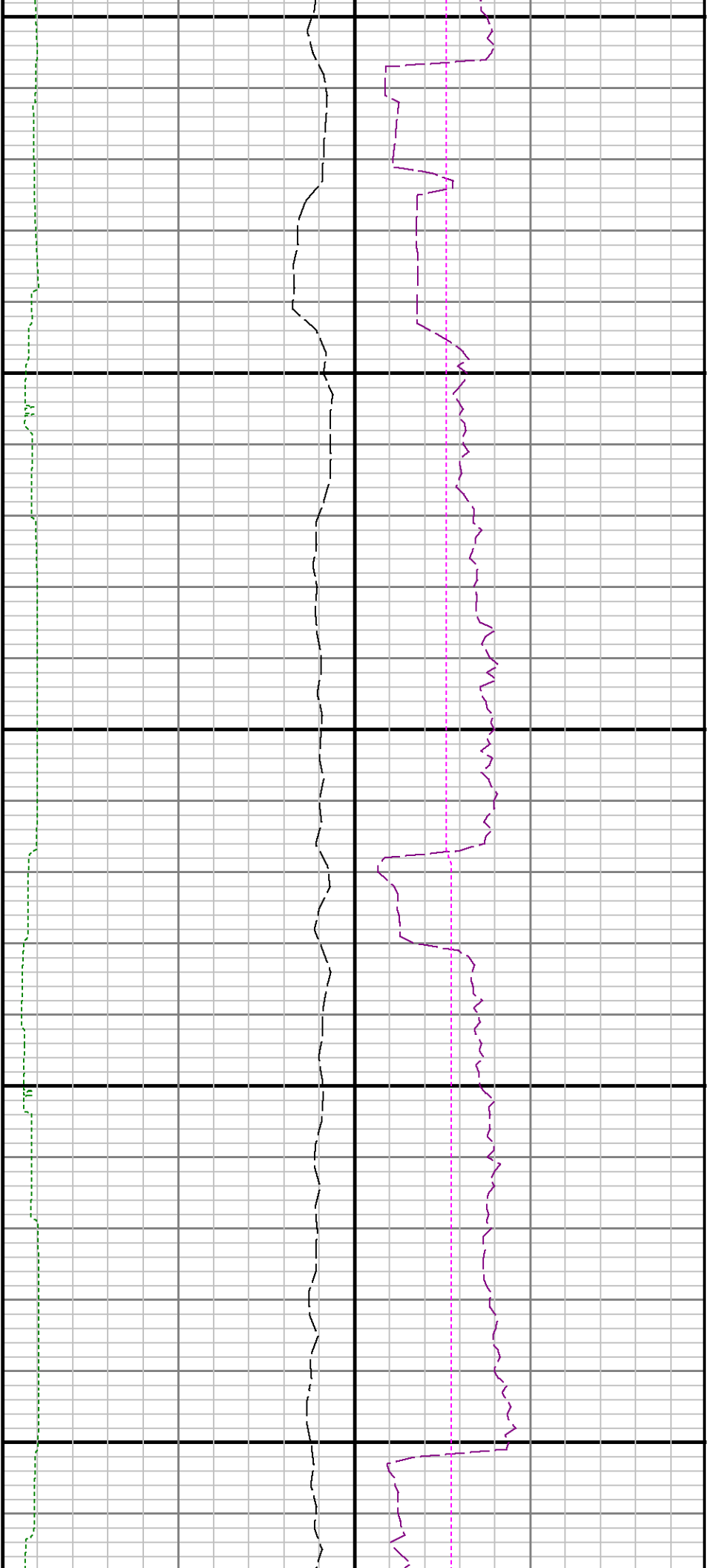
Remarks

Number	Measured Depth	Hole Section	LWD Run No.	Remark
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	(ft)	(in.)		
1	7724	8.750	1	The interval from 7649 to 7709 ft. MD (7126.40 to 7132.02 ft. TVD) was logged up to 42.30 hours after being drilled due to a trip out of the hole to lay down the vertical/curve assembly from run 1, casing/cementing operations by the rig, picking up lateral assembly for run 2, and tripping back to bottom.
2	12548	6.125	2	The interval from 12,510 to 12,573 ft. MD (7135.40 to 7135.18 ft. TVD) does not contain GRAX, GRIX or GRTX due to the bit to sensor offset.

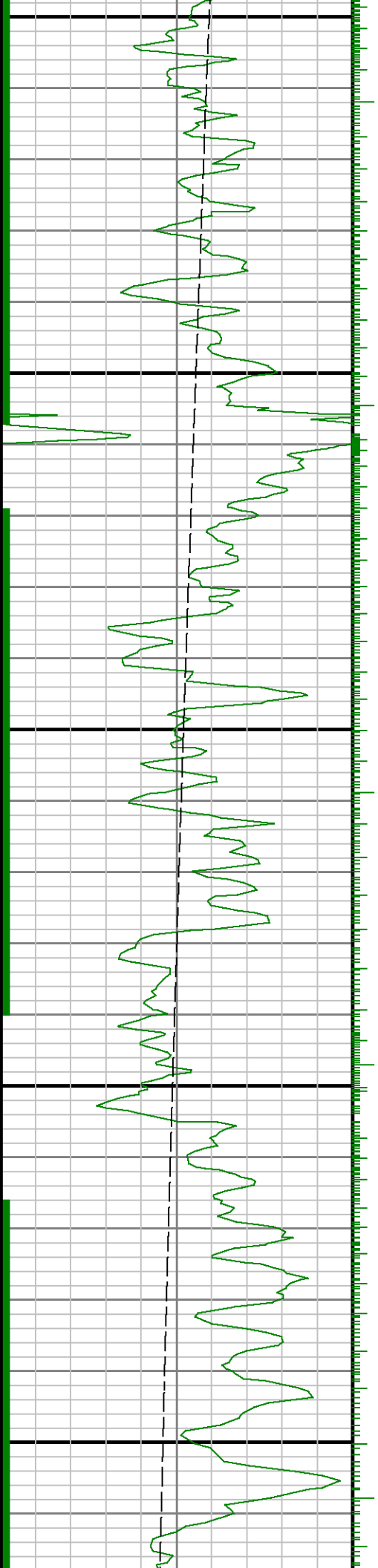


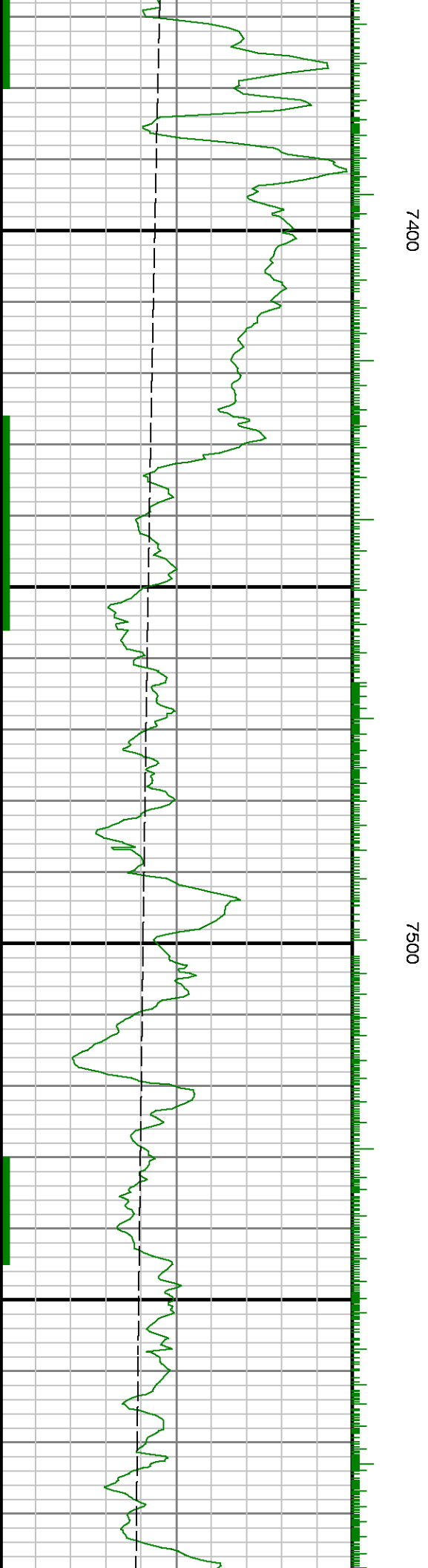
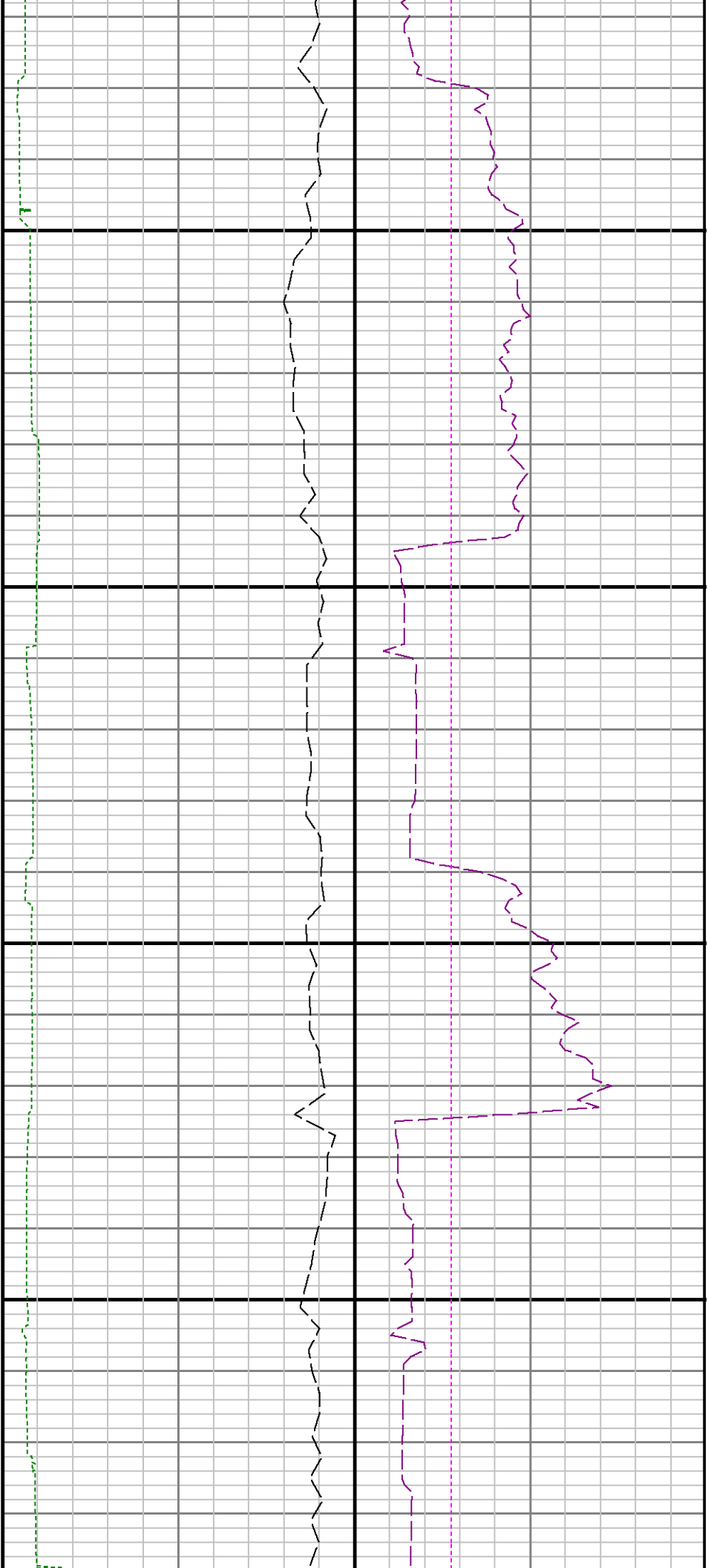




7200

7300







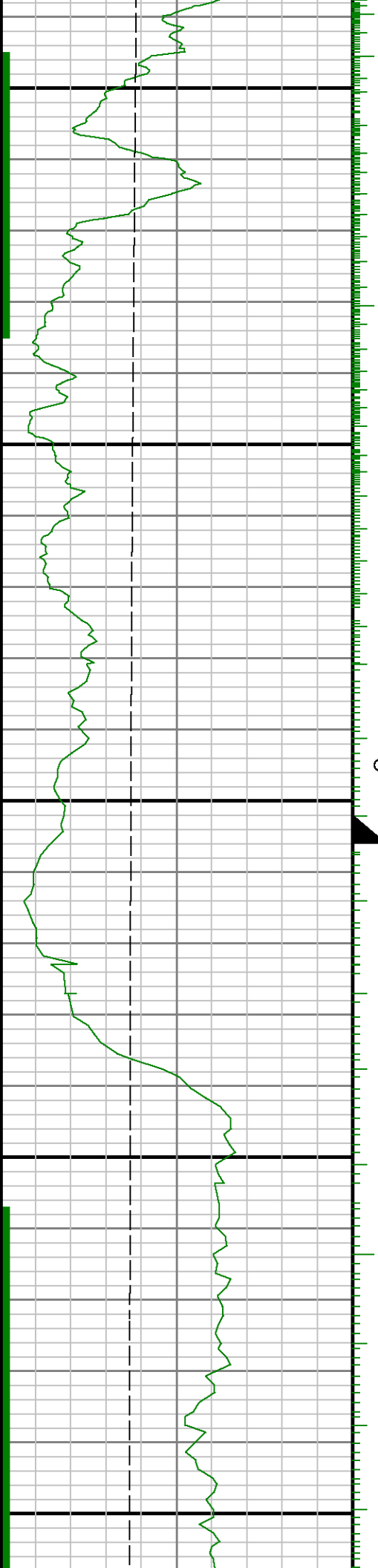
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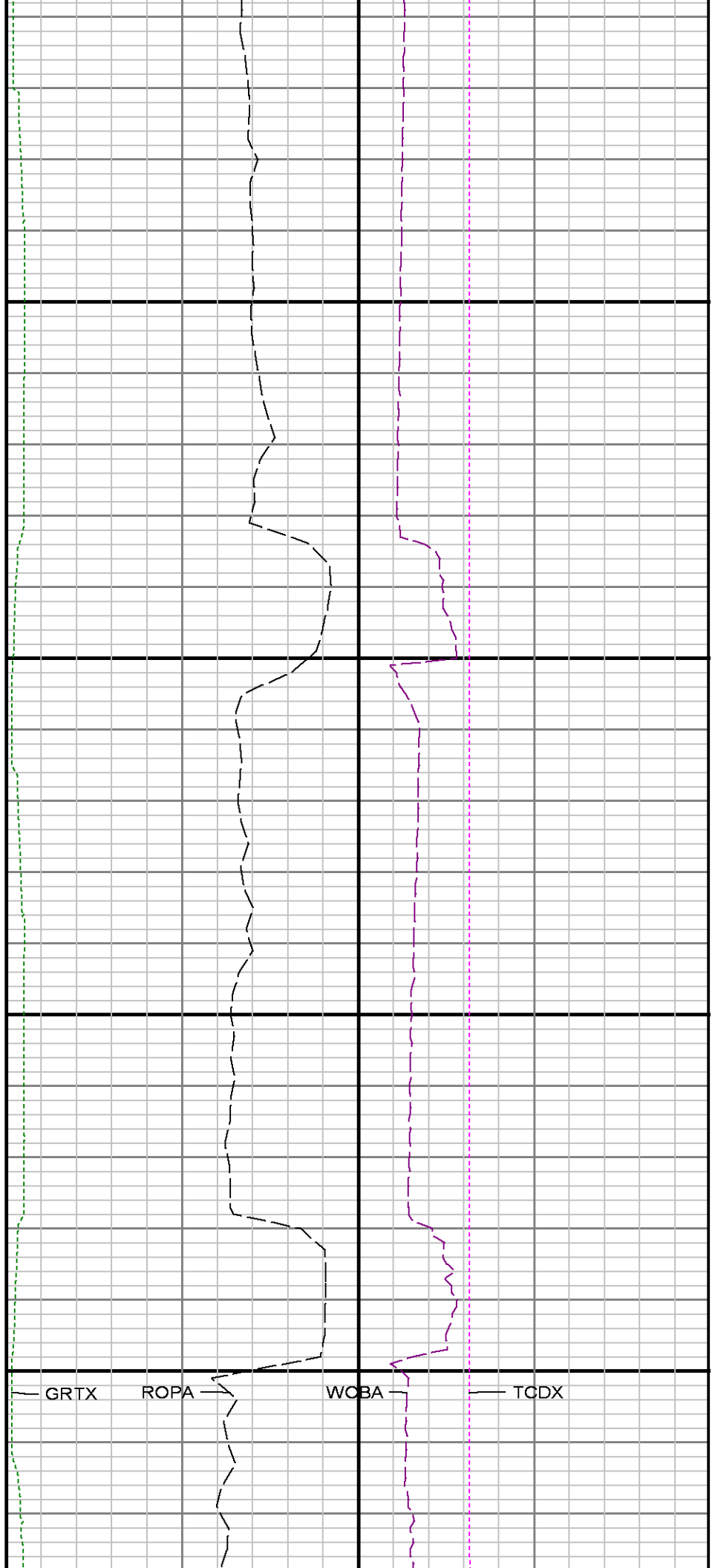
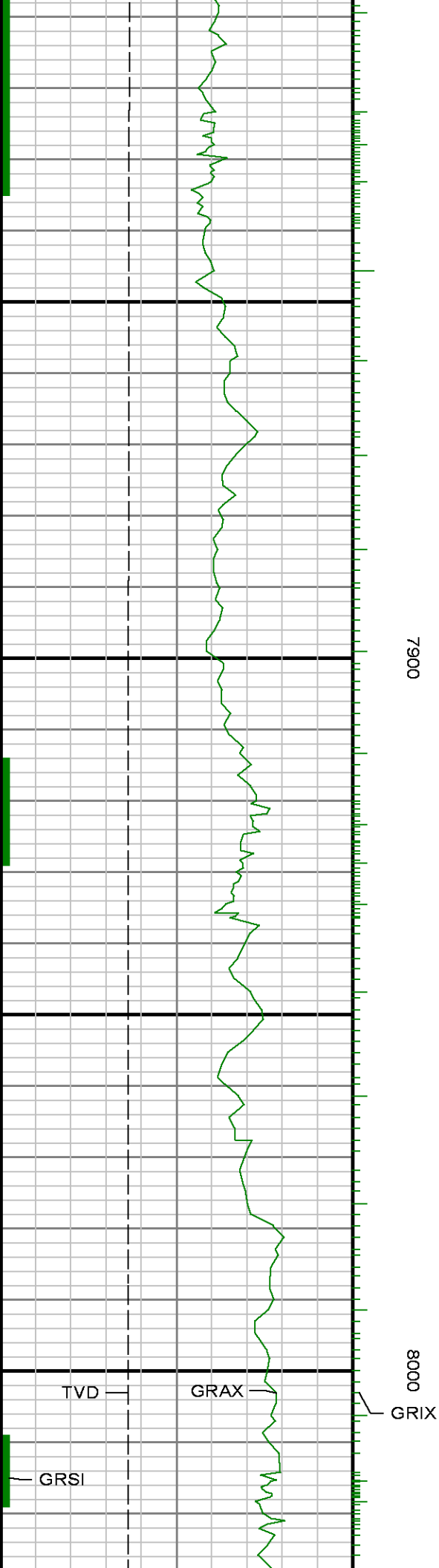
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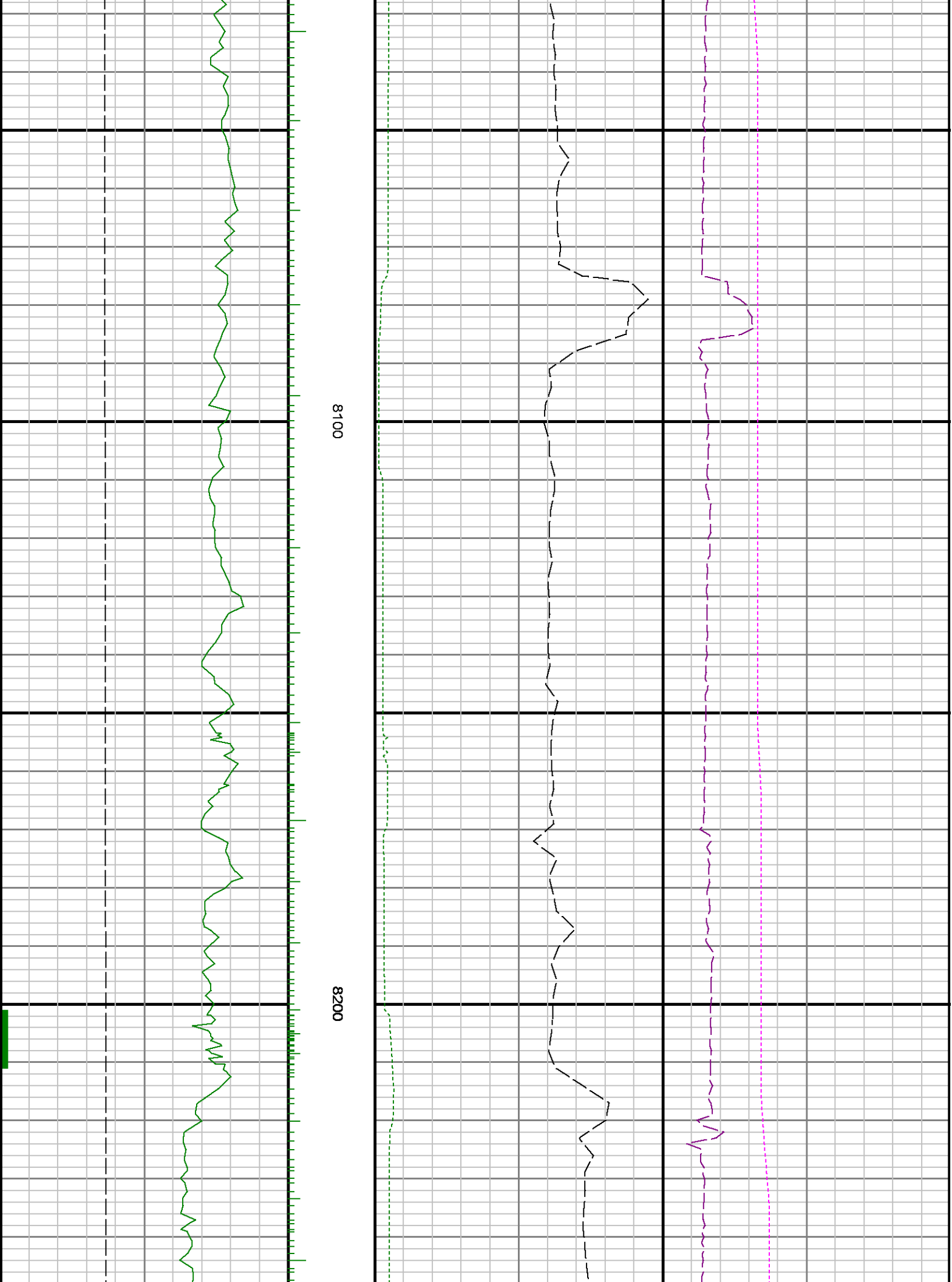
Run 1 <
Casing 7"
7700

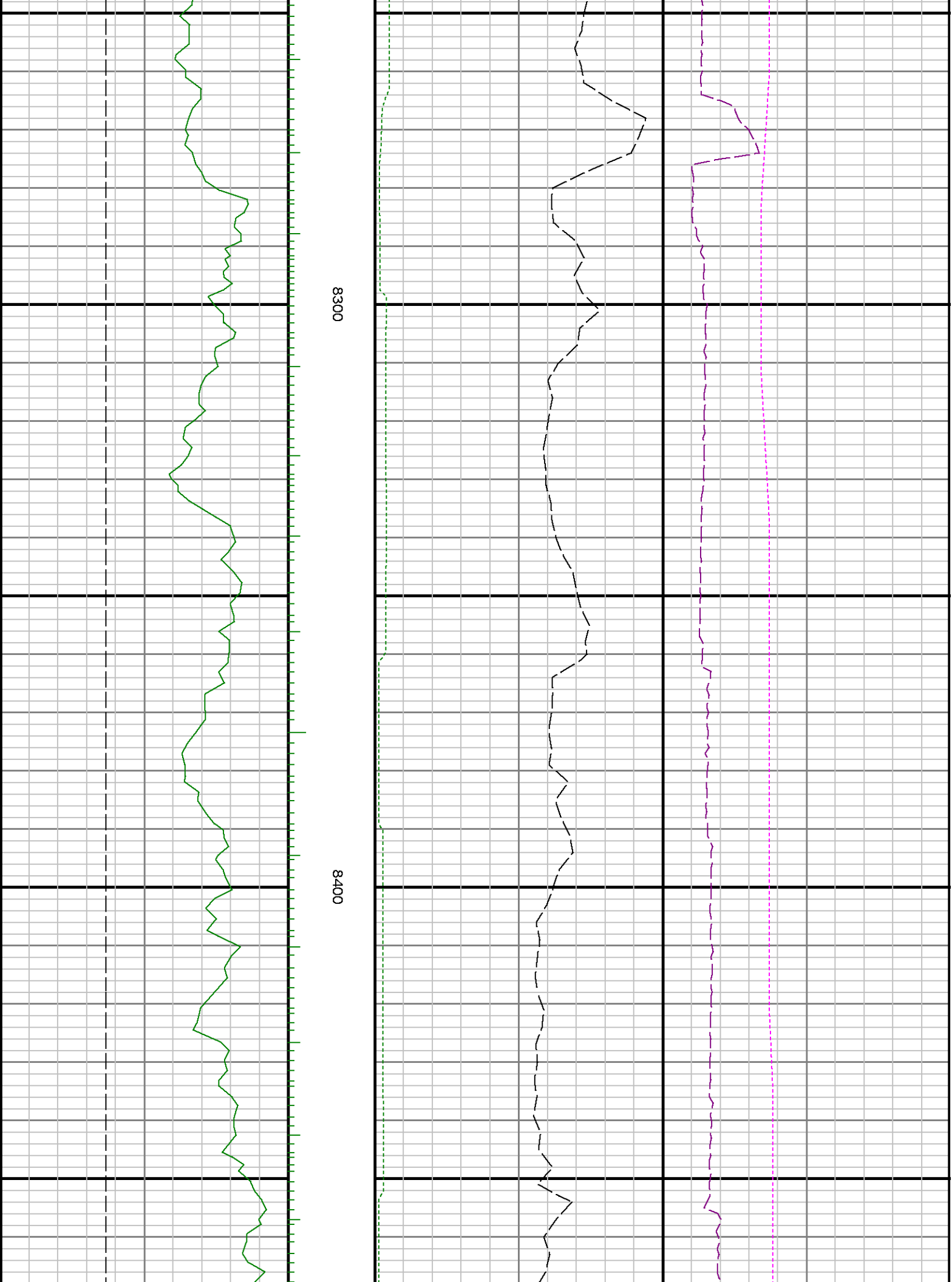
> Run 2

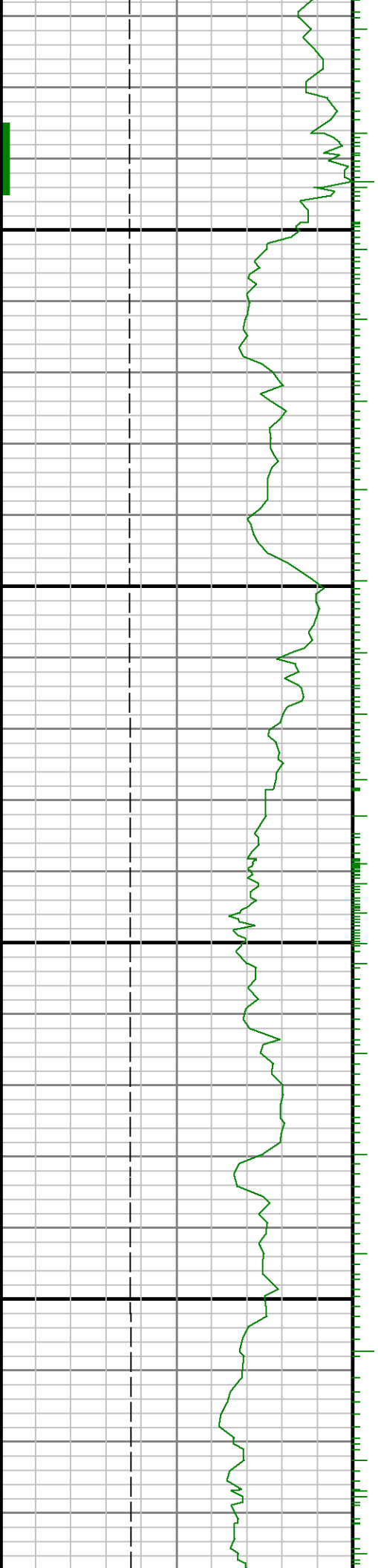
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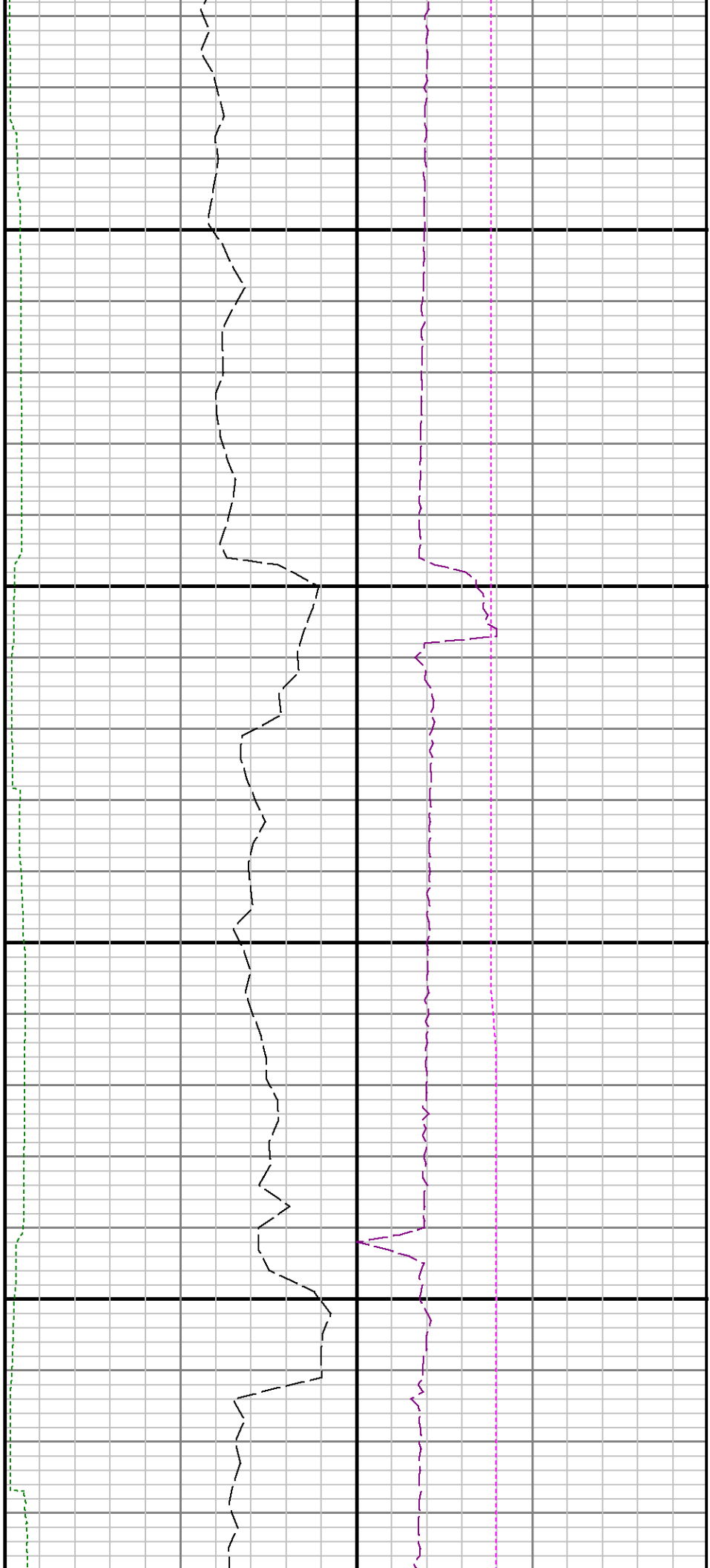


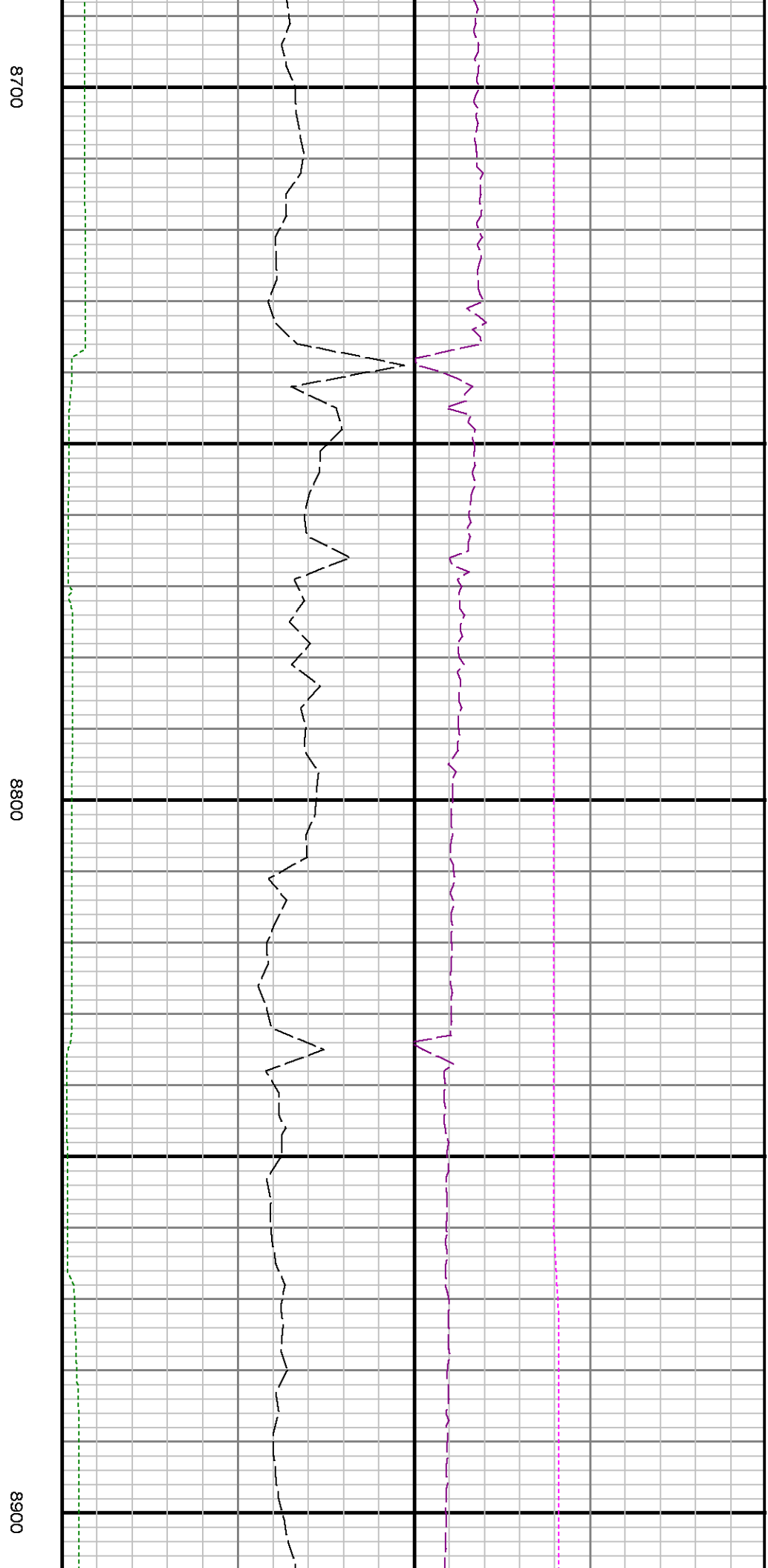
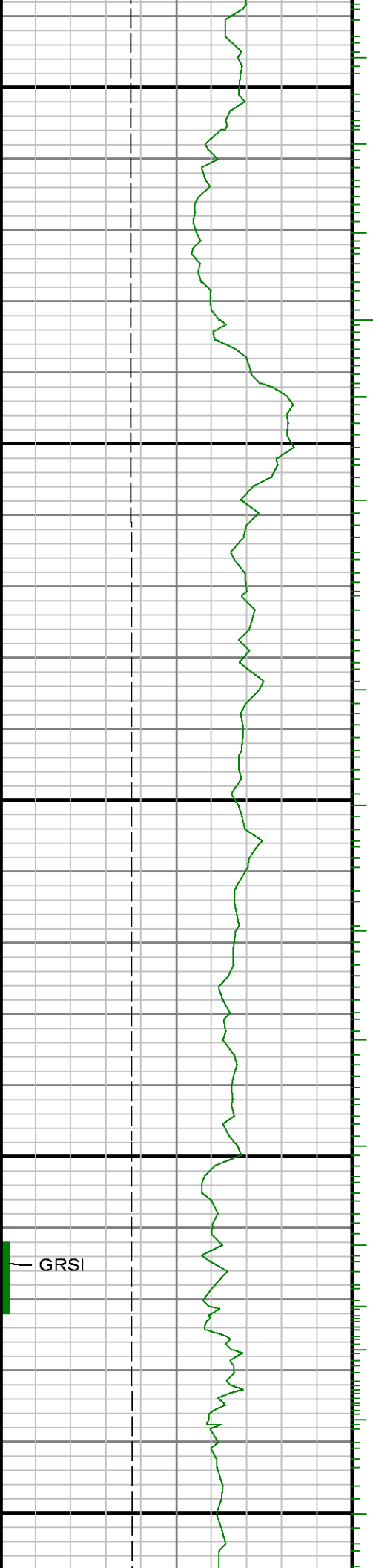


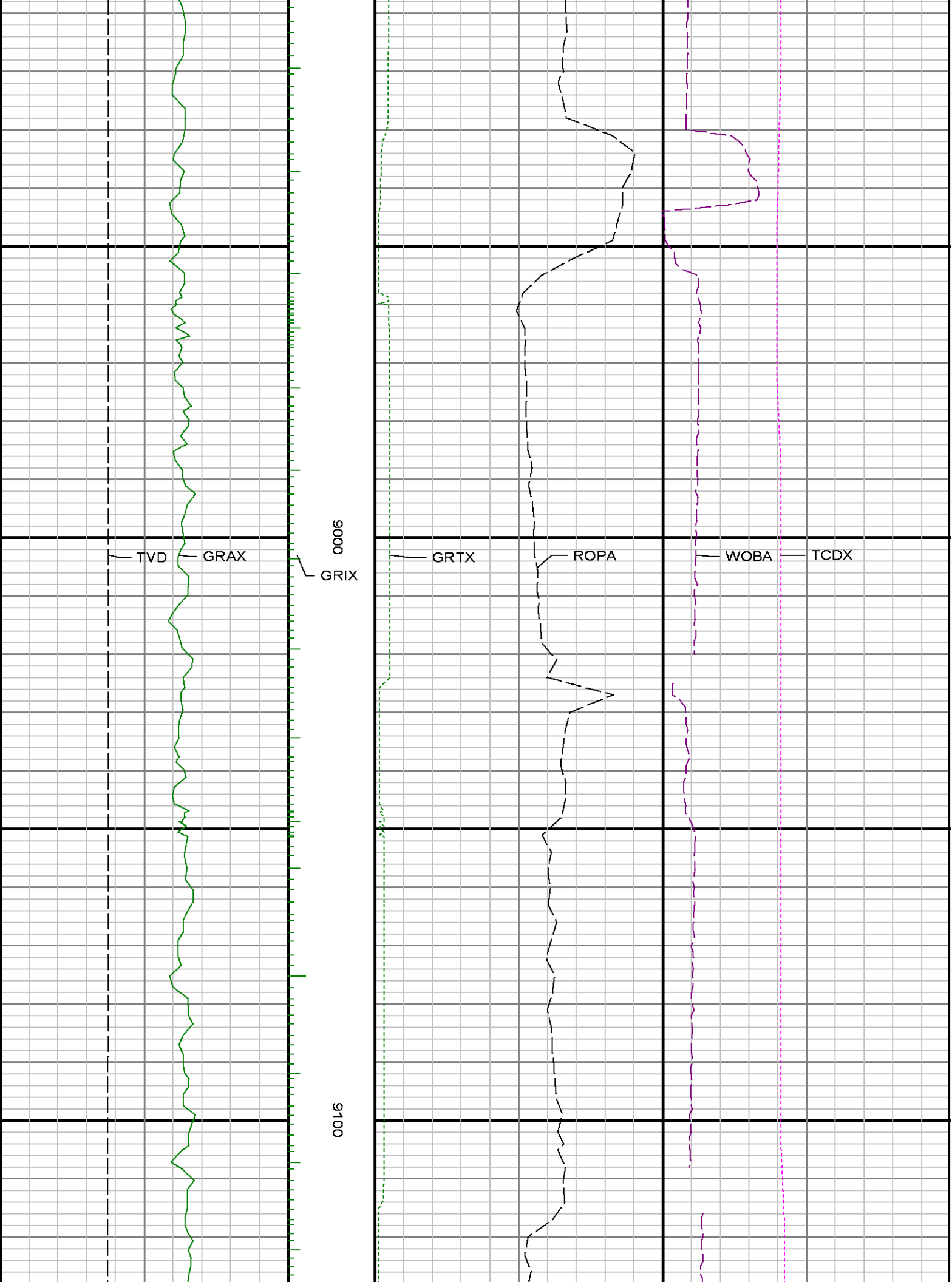


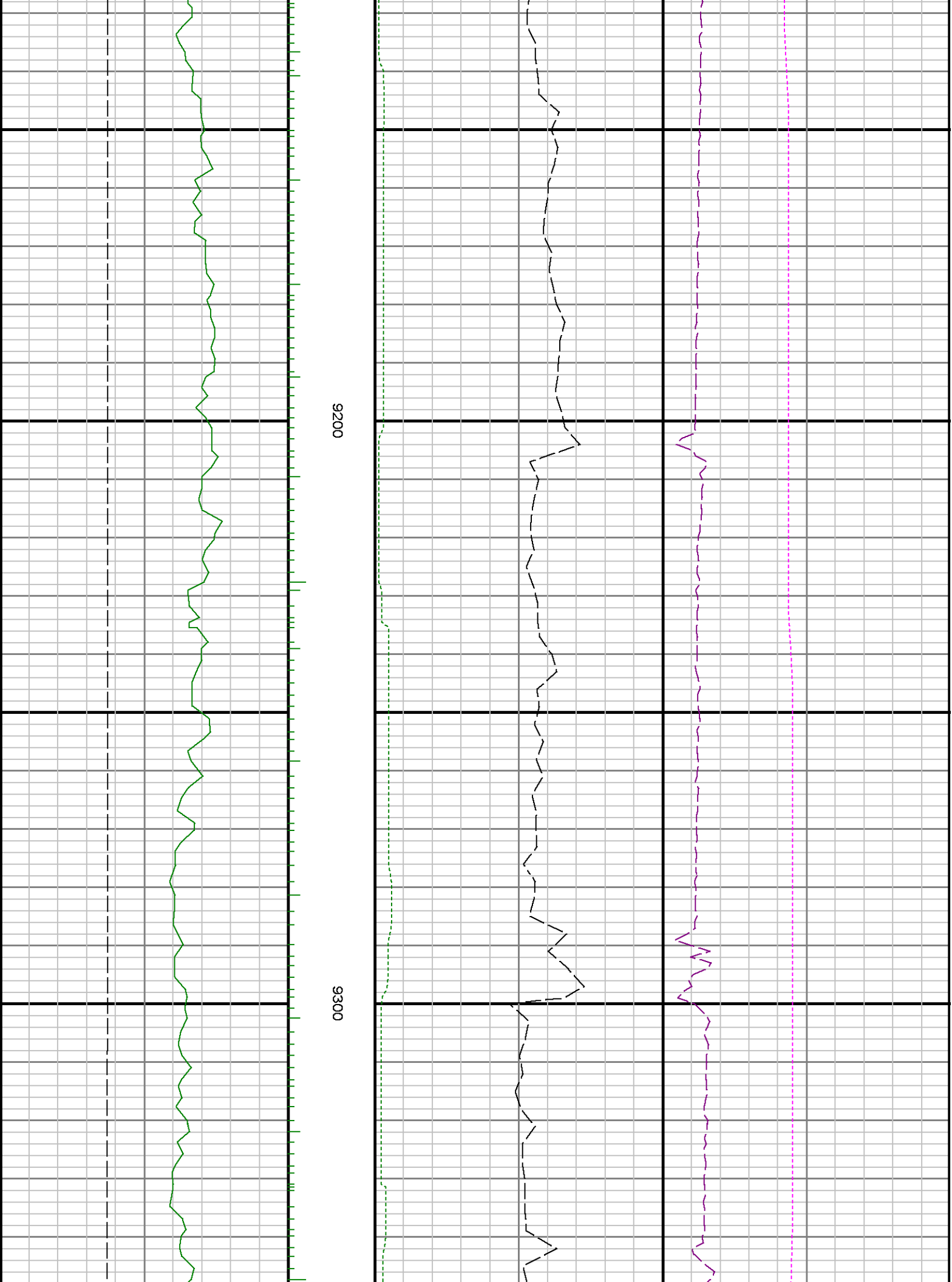
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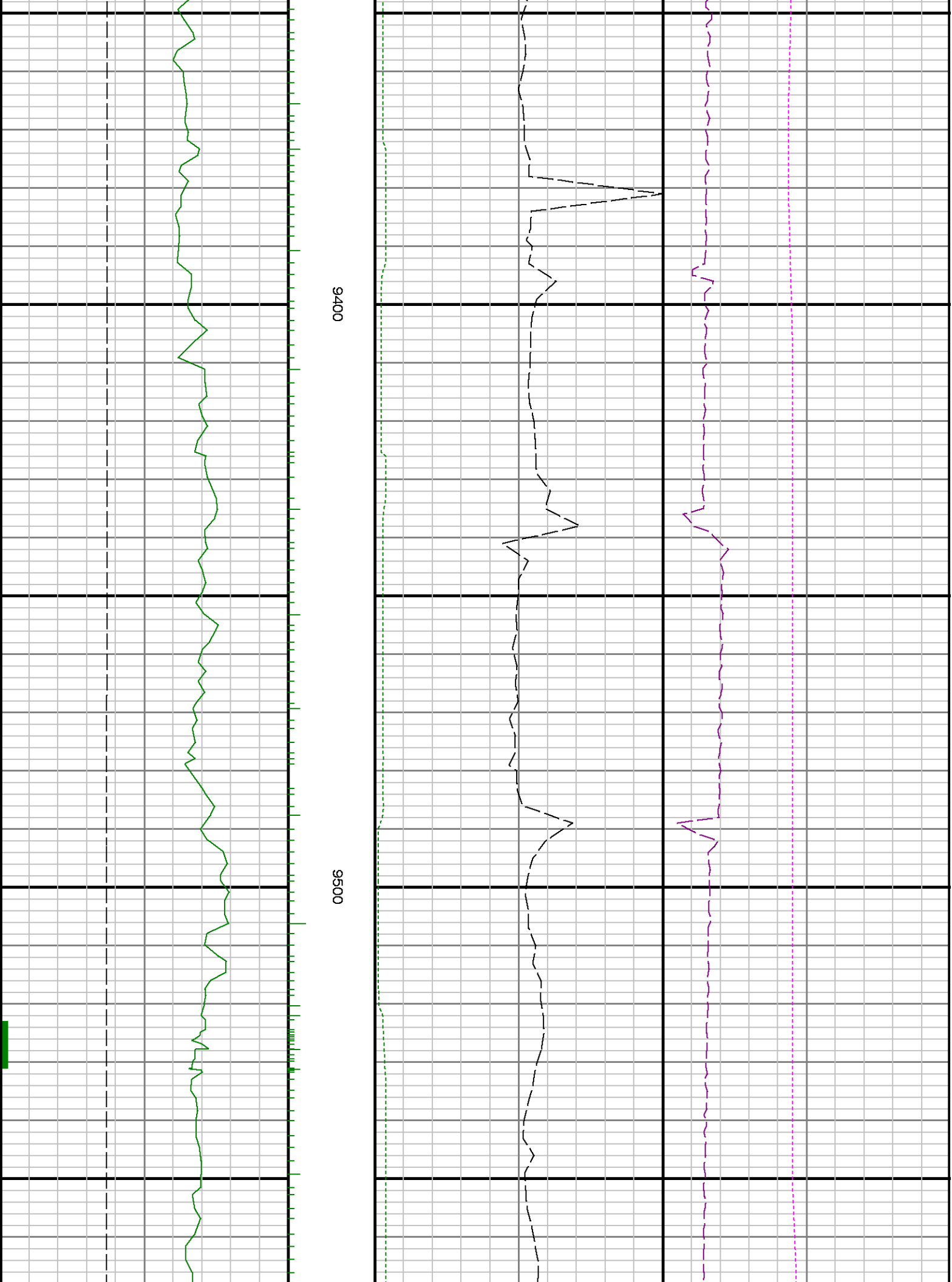
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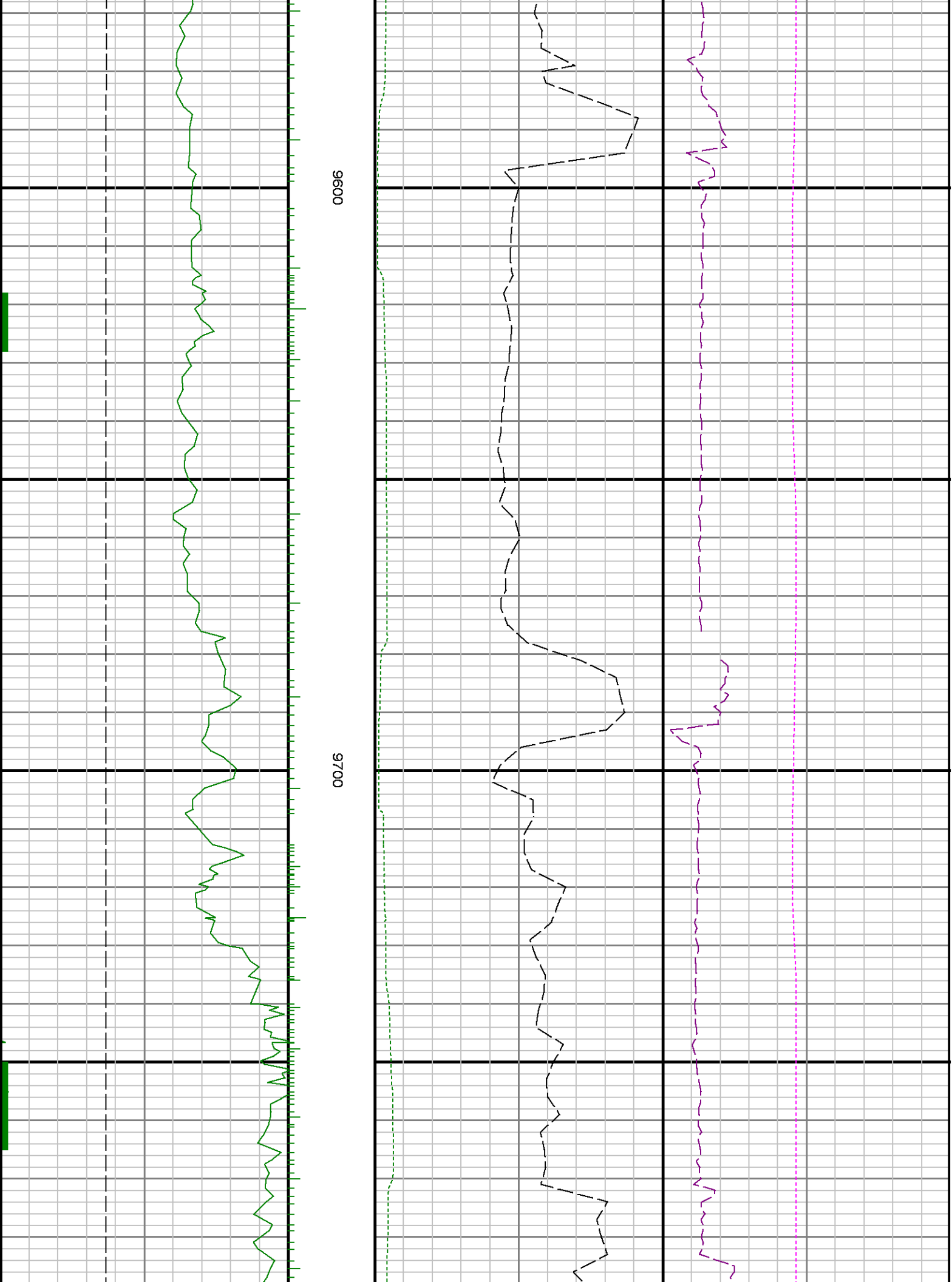


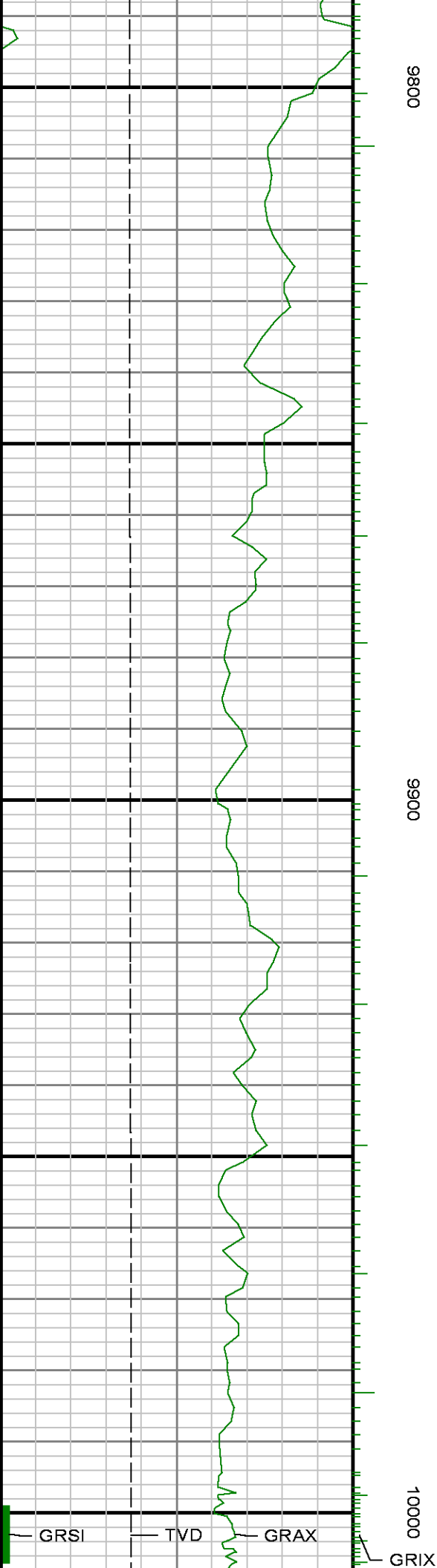


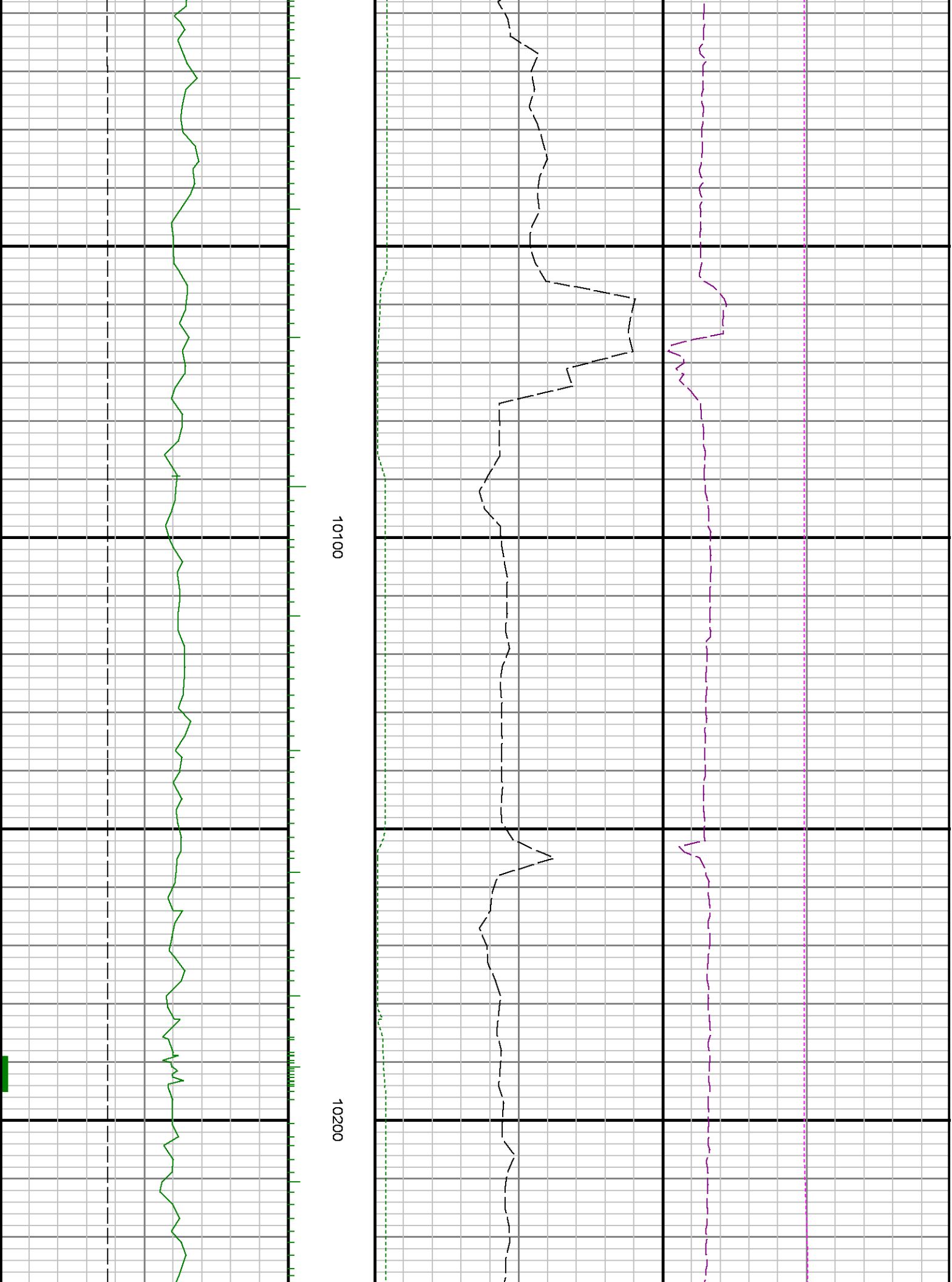


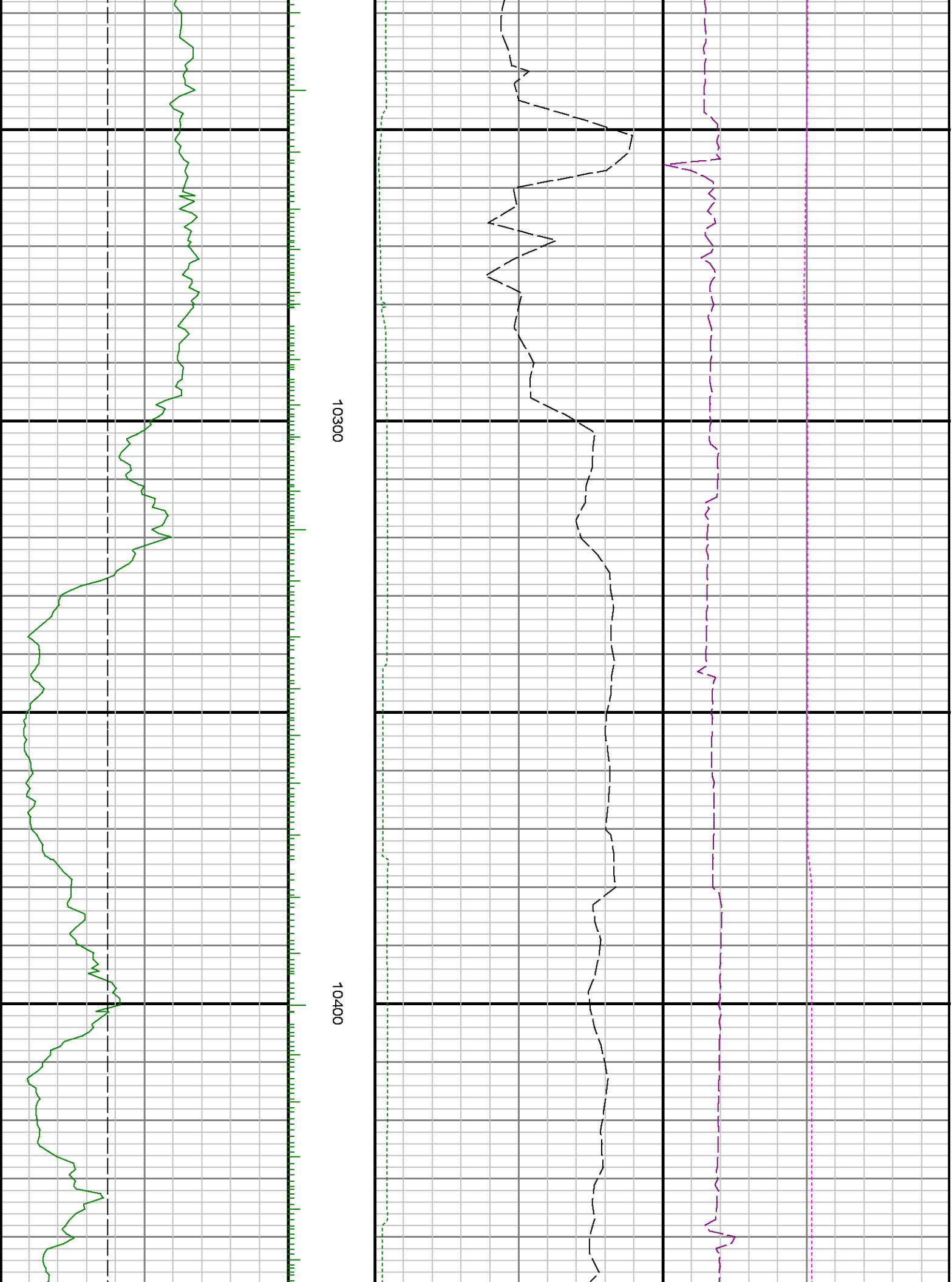








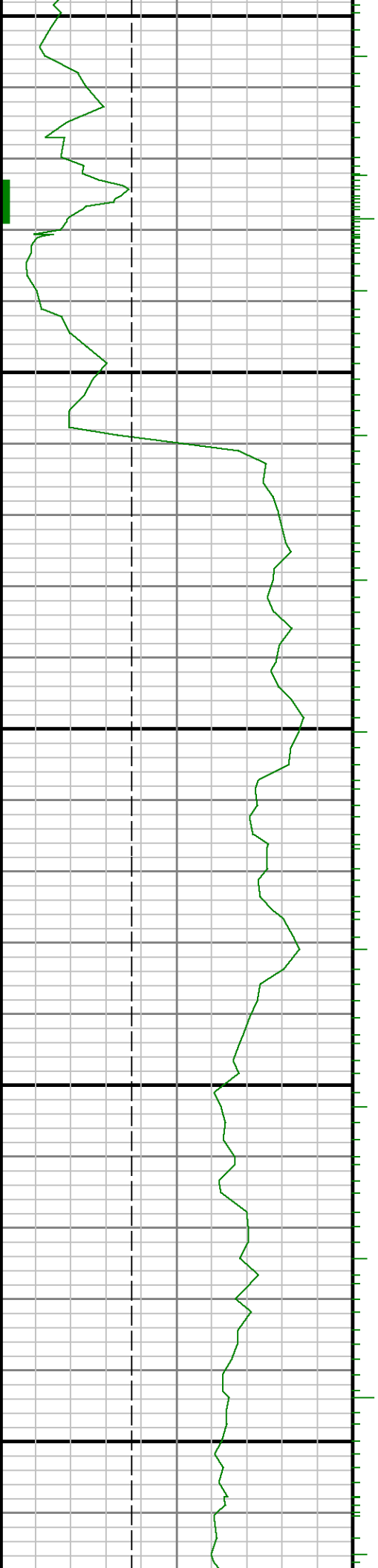


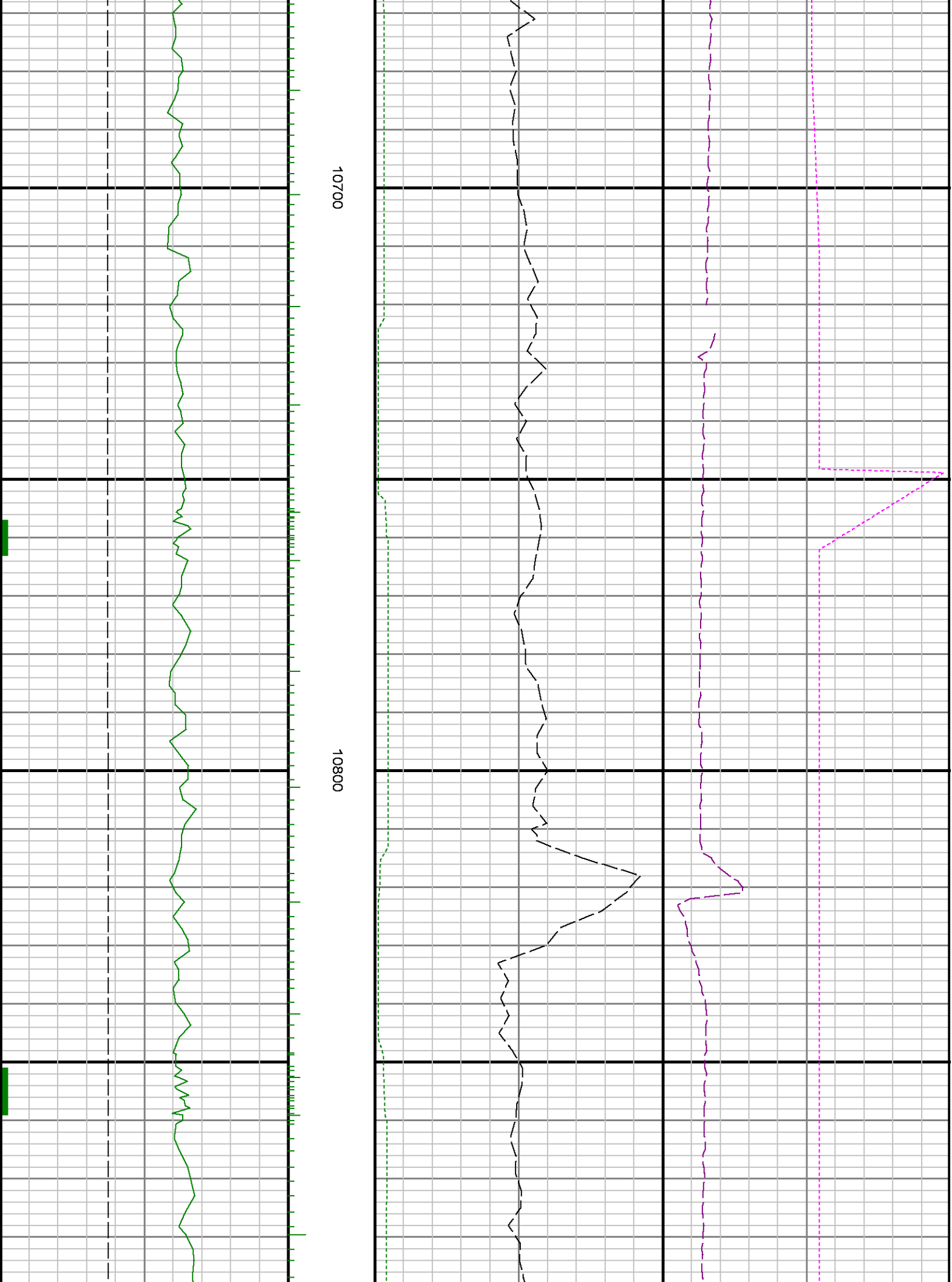


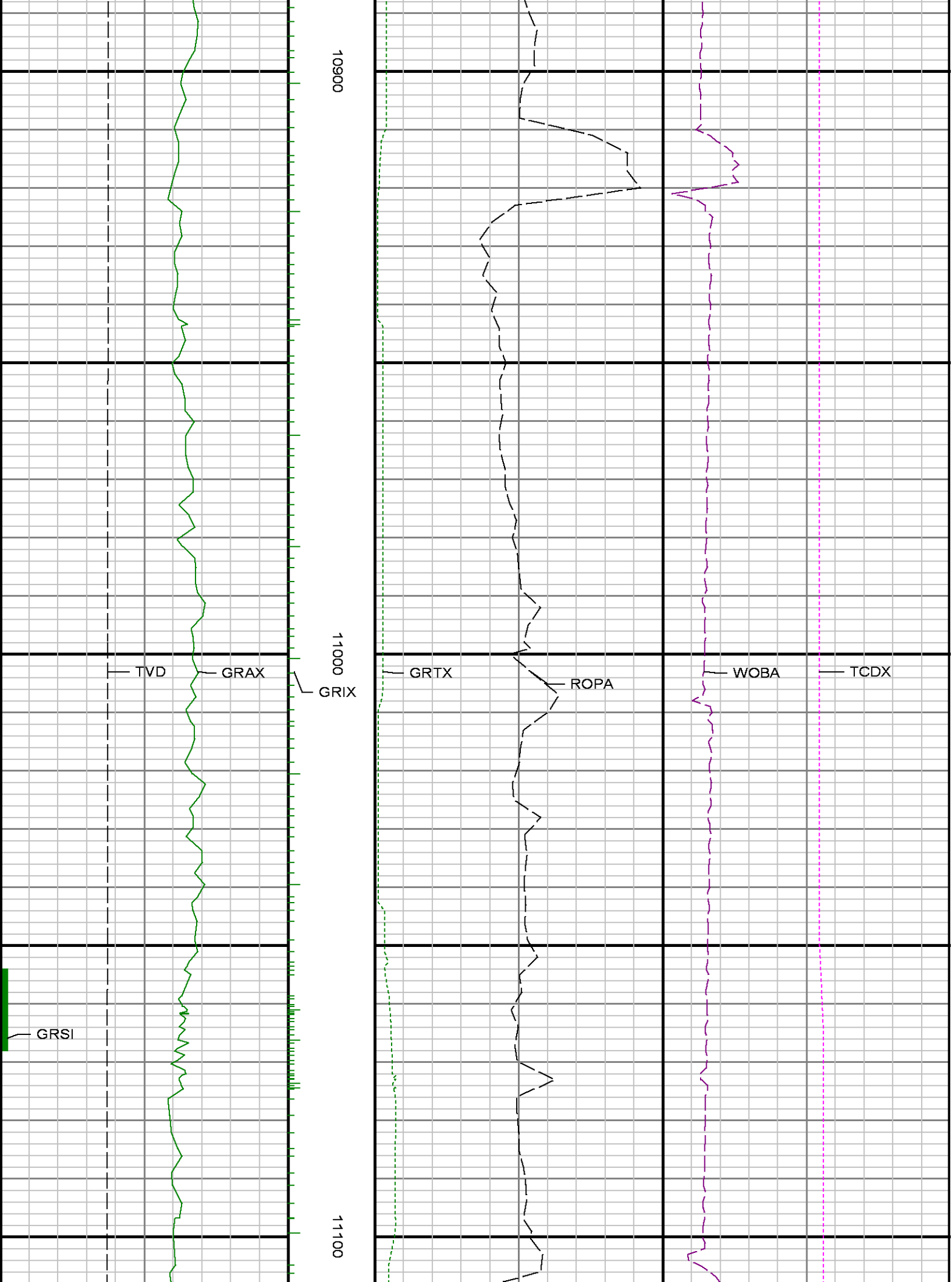


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10600



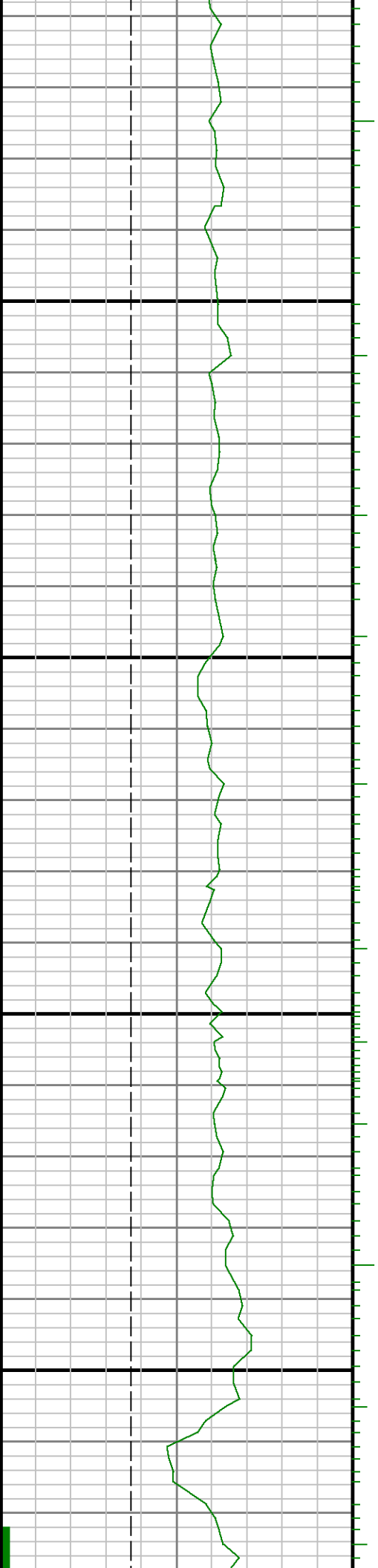


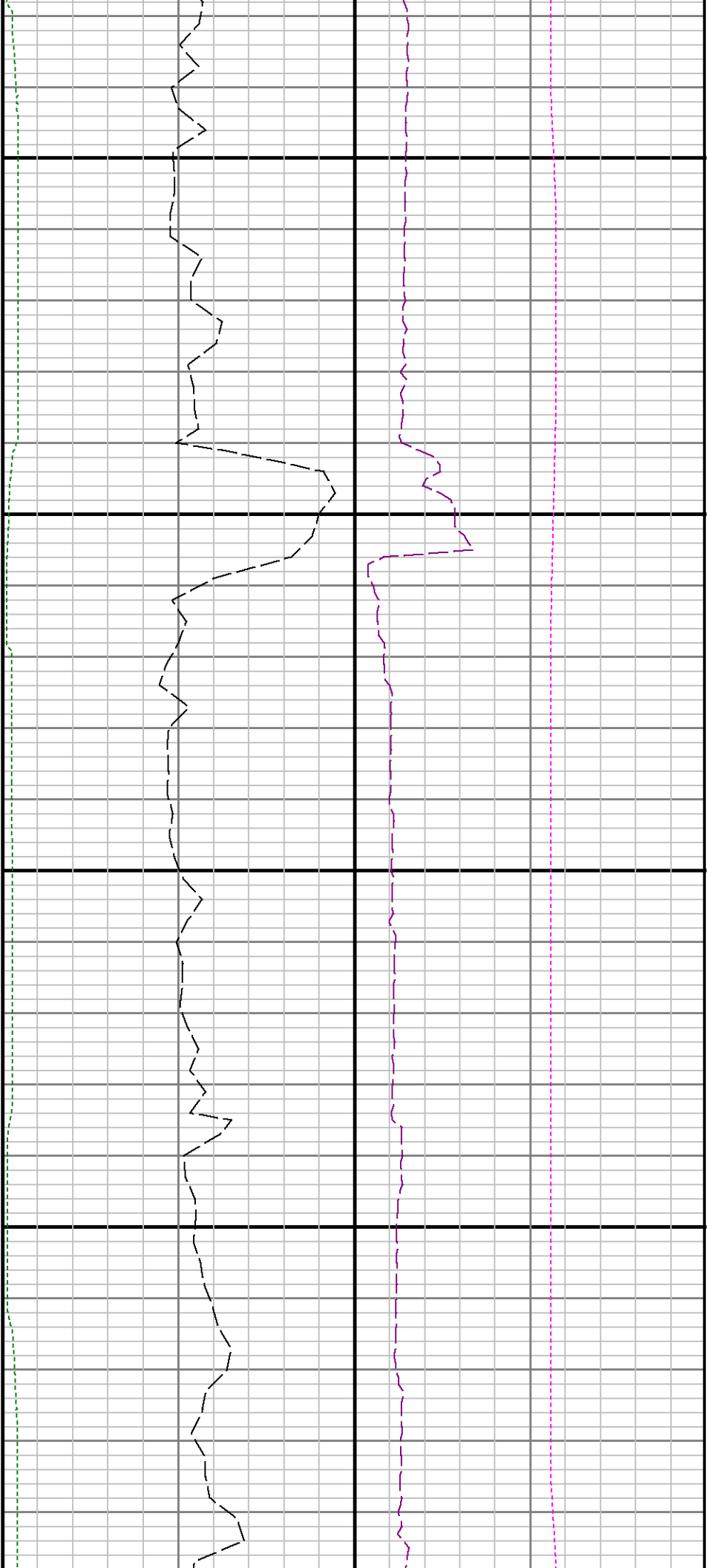




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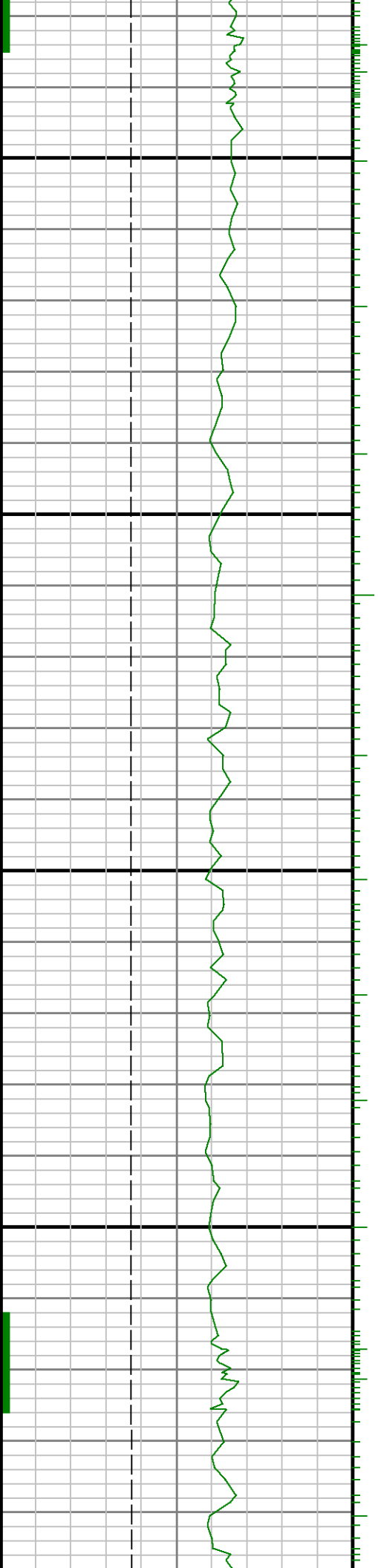
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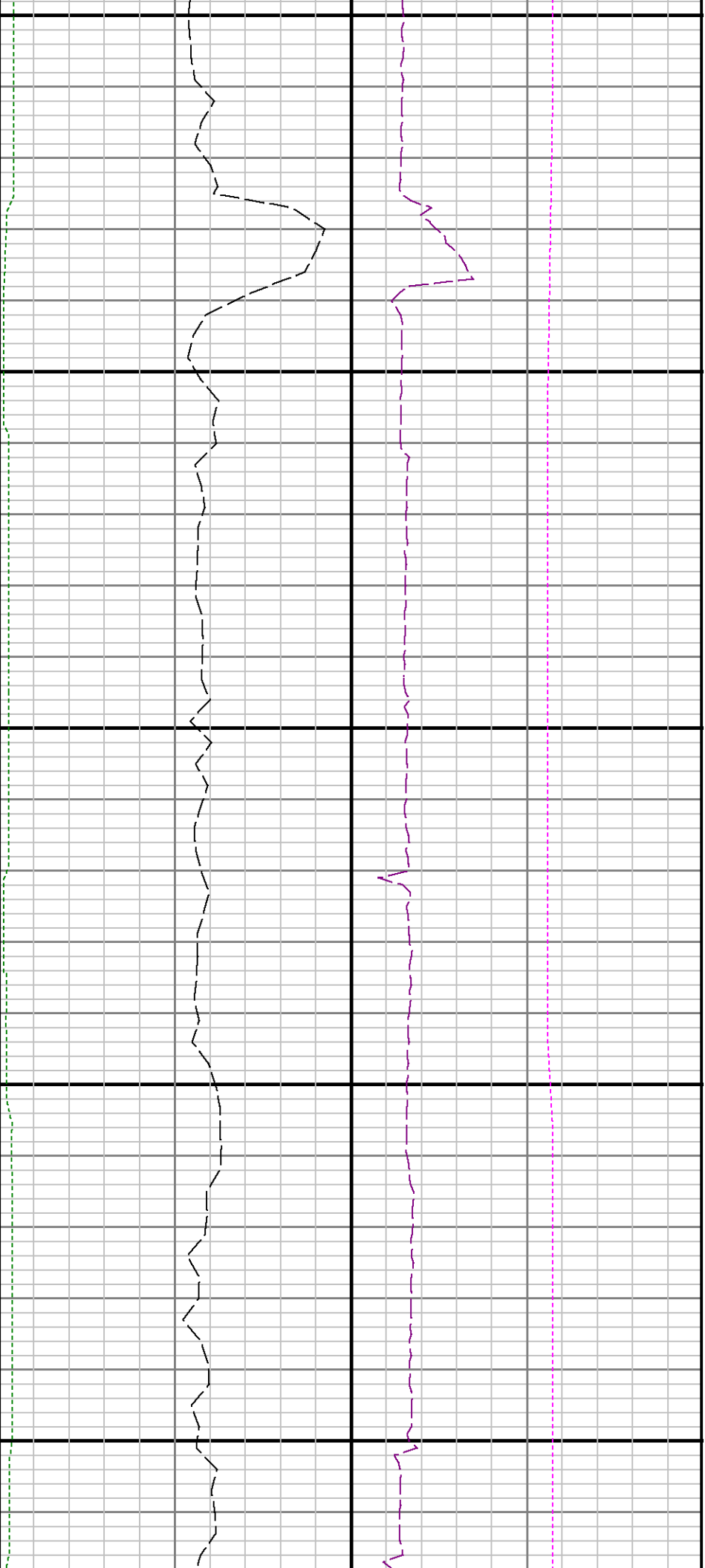




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