

Real Time Log									
<div><div><div>BAKER HUGHES</div></div><div></div></div>				Natural Formation Evaluation Gamma Ray					
Scale:				Company: Anadarko					
1:240 Measured Depth				Well: Aggregate State 16N-16HZ Field: Weld County (Kerr McGee) Region: RMD Country: U.S.A.					
Status: Final Print		Surface Location: Latitude: 40° 9' 6.948" N Longitude: 104° 46' 33.701" W				Other Services: Directional VSS			
API Number: 05-123-38330		SEC: 9 TWN: 2N RNG: 66W							
Permanent Datum (P.D.):		Ground Level		Elevation:		Elevations:			
Log Measured From:		Rig Floor		13.00 ft.		Above P.D.		KB: 4950.00 ft. DF: N/A GL: 4937.00 ft.	
Depth Reference:		Driller's Depth							
Interval Logged				Dates		Magnetic Field Reference			
Top: 6652.0 ft.		Date From: 12/Mar/2014		Dip Angle: 66.94 °		Azi Reference North:		True	
Bottom: 14648.0 ft.		Date To: 22/Mar/2014		T total		Mag to Reference			
		Spud Date: 12/Mar/2014		Field Strength: 52811.0 nT		North Correction:		8.45 °	
Borehole Record					Casing Record				
Hole Size		From		To		Size		Weight	
13,500 in.		0.0 ft.		1015.0 ft.		9.625 in.		36.00 lb/ft	
8,750 in.		1015.0 ft.		7716.0 ft.		7.000 in.		26.00 lb/ft	
6,125 in.		7716.0 ft.		14698.0 ft.					
Mud Record									
Type		From		To		Hole Size		Interval	
Water Based		0.0 ft.		1015.0 ft.		13,500 in.		1015.0 ft.	
Water Based		1015.0 ft.		7716.0 ft.		8,750 in.		6701.0 ft.	
Water Based		7716.0 ft.		14698.0 ft.		6,125 in.		6982.0 ft.	
Deviation Record									
Type		From		To		Hole Size		Interval	
Water Based		0.0 ft.		1015.0 ft.		13,500 in.		1015.0 ft.	
Water Based		1015.0 ft.		7716.0 ft.		8,750 in.		6701.0 ft.	
Water Based		7716.0 ft.		14698.0 ft.		6,125 in.		6982.0 ft.	
Acquisition System									
Software Version		2.20U4		Rig: / Contractor:		Ensign 145		/ Ensign Drilling	
Advantage		6,4,1,34		Job No:		6176974			
PATS				District: / Unit:		RMD		/ 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	Bottom	From	To	Start	End	
							(ft.)	(ft.)	(ft.)	(ft.)			
1	1	2	8.750	PDC	1.000	Steerable	6652.0	7661.0	1015.0	7716.0	12/Mar/2014 21:50	15/Mar/2014 07:30	27.4
2	2	3	6.125	PDC	6.000	Steerable	7661.0	14648.0	7716.0	14698.0	16/Mar/2014 01:30	22/Mar/2014 12:00	103.8

Crew

Name	Arrive	Depart	Name	Arrive	Depart	Name	Arrive	Depart
	Wellsite	Wellsite		Wellsite	Wellsite		Wellsite	Wellsite
Thanh Hoang Nguyen	12/Mar/2014	22/Mar/2014	Michael Gurnsey	12/Mar/2014	22/Mar/2014			
Donald Delay	12/Mar/2014	22/Mar/2014	Alex Janorschke	12/Mar/2014	22/Mar/2014			

Mud Properties Record

Date / Time	LWD Run No.	Measured Depth (ft.)	Mud Type	Density (ppg)	Viscosity (cp)	pH	Fluid Loss (cc/30min)	Oil / Water	Source	Total Chlorides (ppm)	K+ (%)
12/Mar/2014 06:48	1	240.0	Water Based	8.4	28	8.4	N/A	0 / 100	Active Mud Pit	1000	N/A
14/Mar/2014 06:50	1	7524.0	Water Based	9.9	44	9.5	N/A	1 / 91	Active Mud Pit	2200	N/A
16/Mar/2014 06:51	2	8232.0	Water Based	10.7	40	8.8	N/A	2 / 88	Active Mud Pit	1700	N/A
18/Mar/2014 06:53	2	11214.0	Water Based	10.8	45	9.5	N/A	4 / 85	Active Mud Pit	2000	N/A
20/Mar/2014 06:54	2	14050.0	Water Based	10.8	46	9.7	N/A	3 / 85	Active Mud Pit	1800	N/A

Mnemonics

Curve	Description	Units
GRAX	Gamma Ray Apparent 0.5 ft. avg.	API
GRIX	Gamma Ray Density	points
GRSI	Gamma Ray Slide 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, 3.0 ft. avg.	ft. / hr.
WOBA	Surface Weight on Bit, 1.0 ft. avg.	klbf.

Equipment and Service Data

LWD Run No.	Tool	Serial Number	Measurement	Bit Offset (ft.)	Max O.D. (in.)	Min I.D. (in.)
1	DIR	10073495	Directional	56.17	6.750	2.875
1	SRIG	12606956	Gamma	52.79	6.750	2.875
2	DIR	11983381	Directional	53.40	4.750	2.625
2	SRIG	11858322	Gamma	50.02	4.750	2.625

Service and Tool Mnemonics

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

Comments

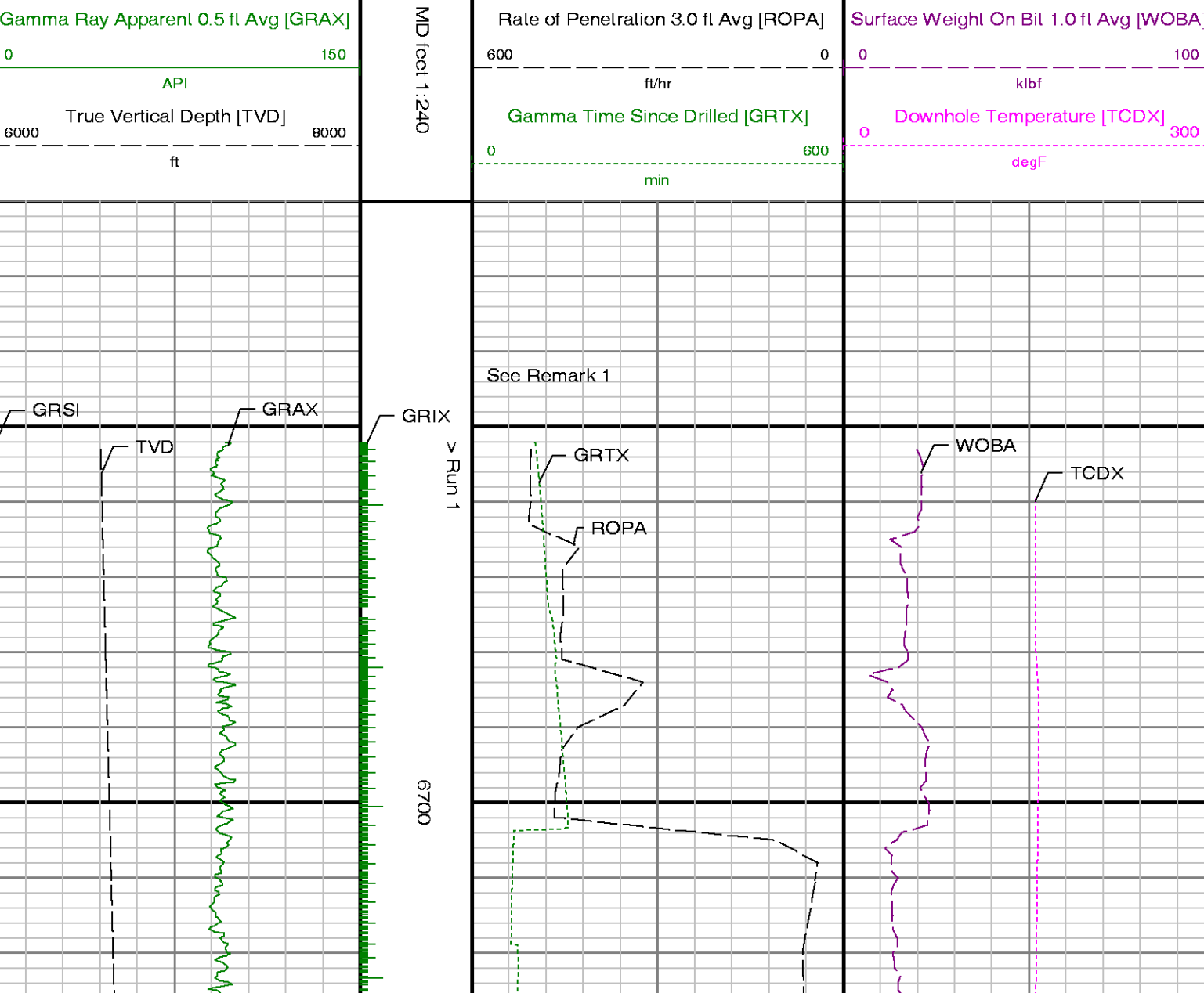
1) Baker Hughes run 1 utilized 6 1/2 inch NaviGamma services (VSS, Directional, Gamma Ray) behind an 8 3/4 inch bit and steerable assembly from 1015 to 7716 feet MD (1014.98 to 7255.02 feet TVD).
2) Baker Hughes run 2 utilized 4 3/4 inch NaviGamma services (VSS, Directional, Gamma Ray) behind an 8 3/4 inch bit and steerable assembly from 7716 to 14698 feet MD (7255.02 to 7281.06 feet TVD).
3) A sliding indicator is 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 with Gamma Ray data acquired while sliding.
4) Depth measurements were obtained from a depth tracking system not supplied or operated by Baker Hughes. Due to lack of control by Baker Hughes LWD logging engineers, depth calibrations could not be independently verified and the unverified depths as supplied to Baker Hughes are being used to present logging data.

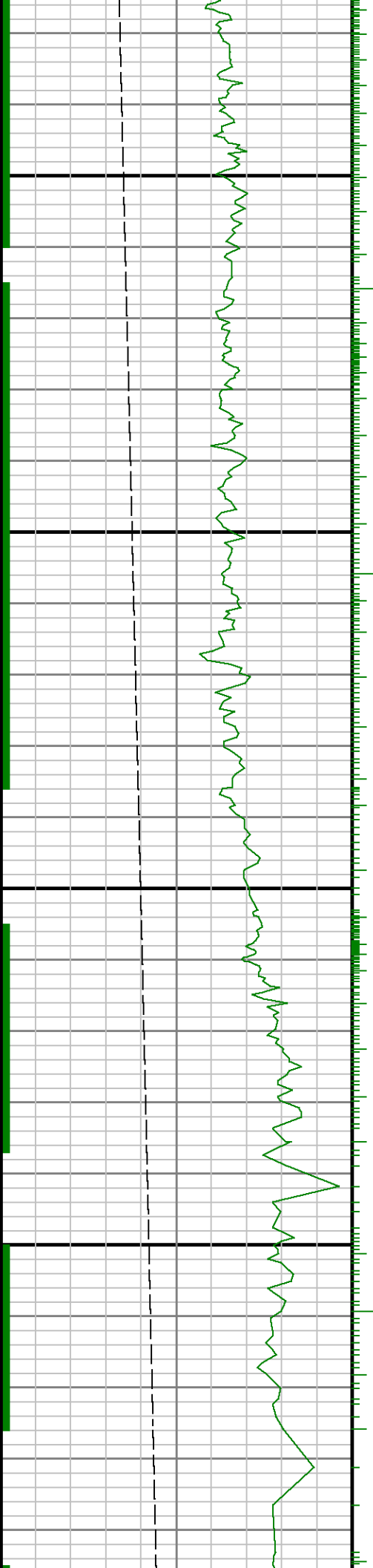
Remarks

Number	Measured Depth (ft.)	Hole Section (in.)	LWD Run No.	Remark
1	6652	8.750	1	Logging services begin. No logging data prior to 6652 feet MD (6603 feet TVD) as per client request.
2	7716	6.125	2	The interval from 7662 to 11213 MD (7255 feet TVD) was logged up to 38 hours gamma time since drilled due to casing operations.
3	11213	6.125	2	The interval from 11160 to 11213 MD (7265 feet TVD) was logged up to 16 hours gamma time since drilled due to a gas kick. Time was spent circulating off-bottom to analyze and increase the mud weight.
4	14648	6.125	2	The interval from 14648 to 14698 feet MD (7281 to 7282 feet TVD) has no logging data due to sensor to bit offset at TD.



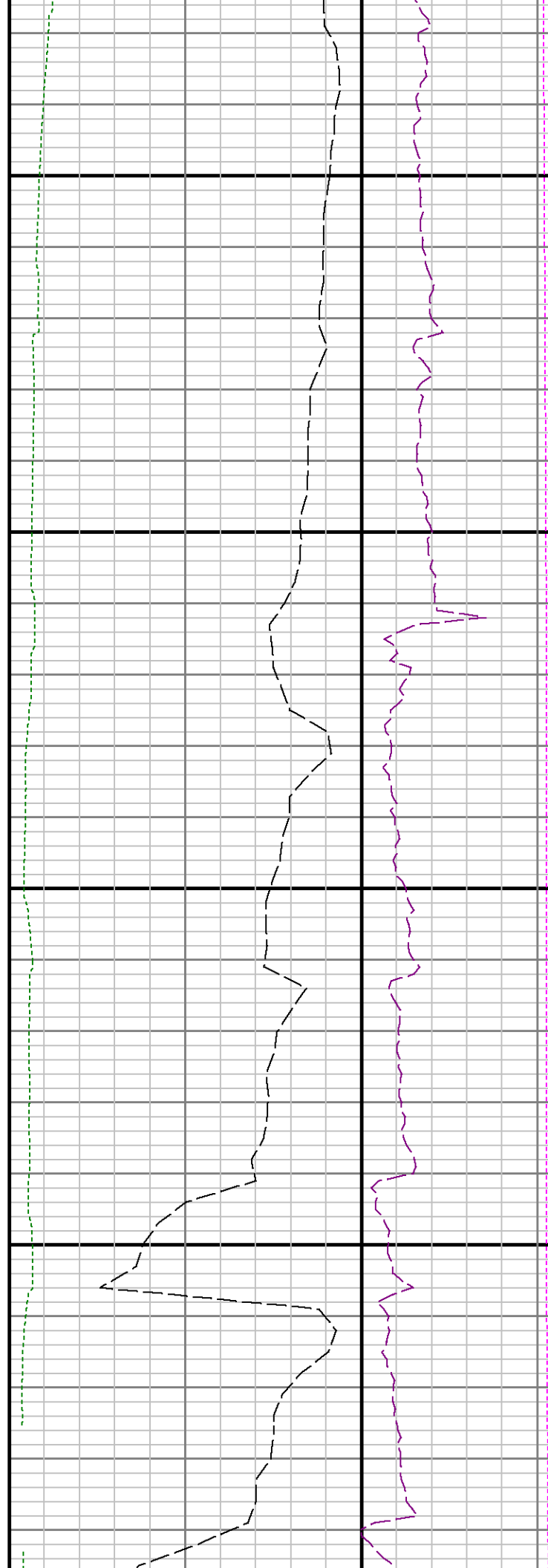
Company : Anadarko
Well : Aggregate State 16N-16HZ
Interval : 6620.00 - 14720.00 feet
Created : 25/Mar/2014 7:58:54 AM

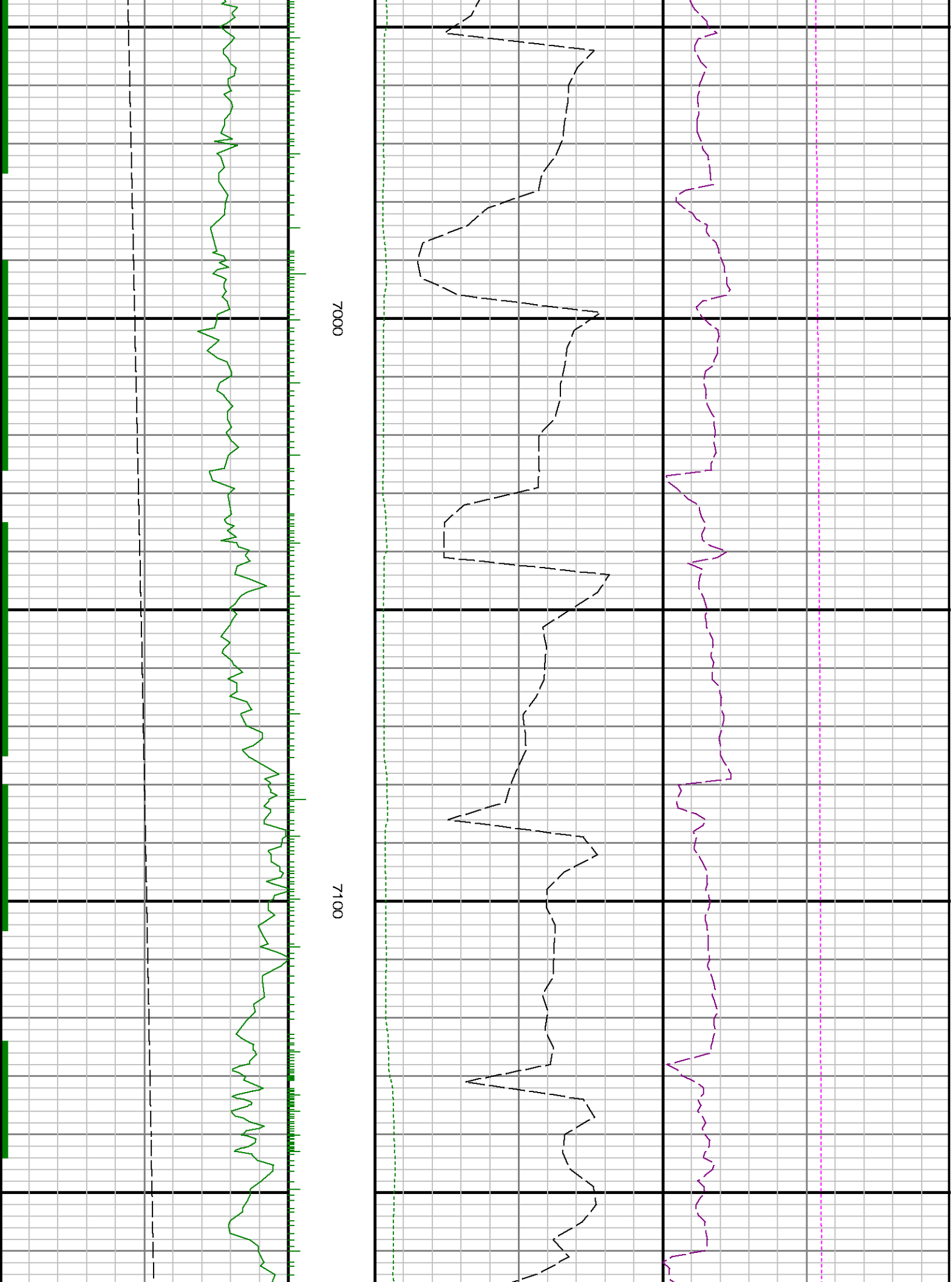




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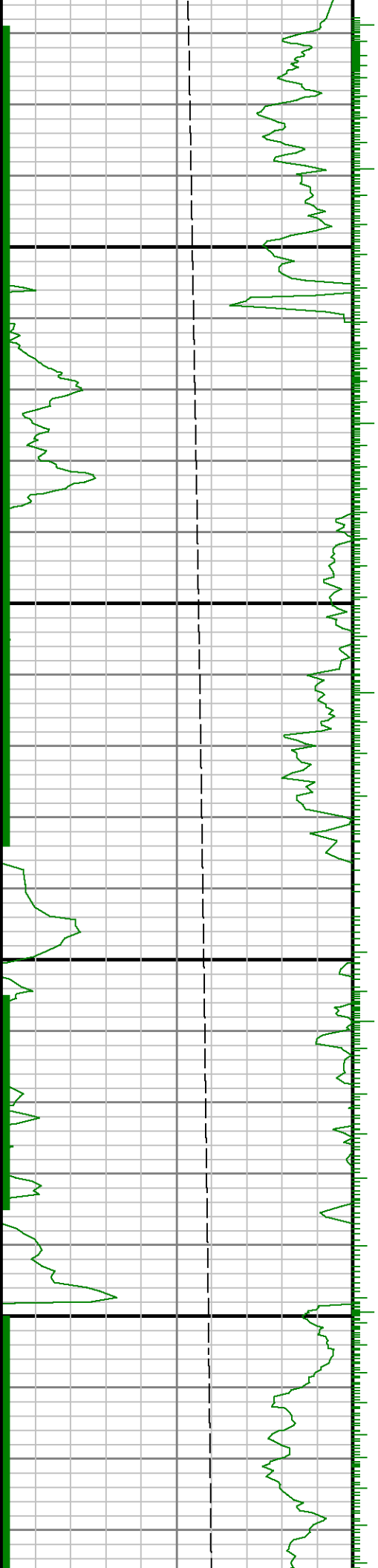


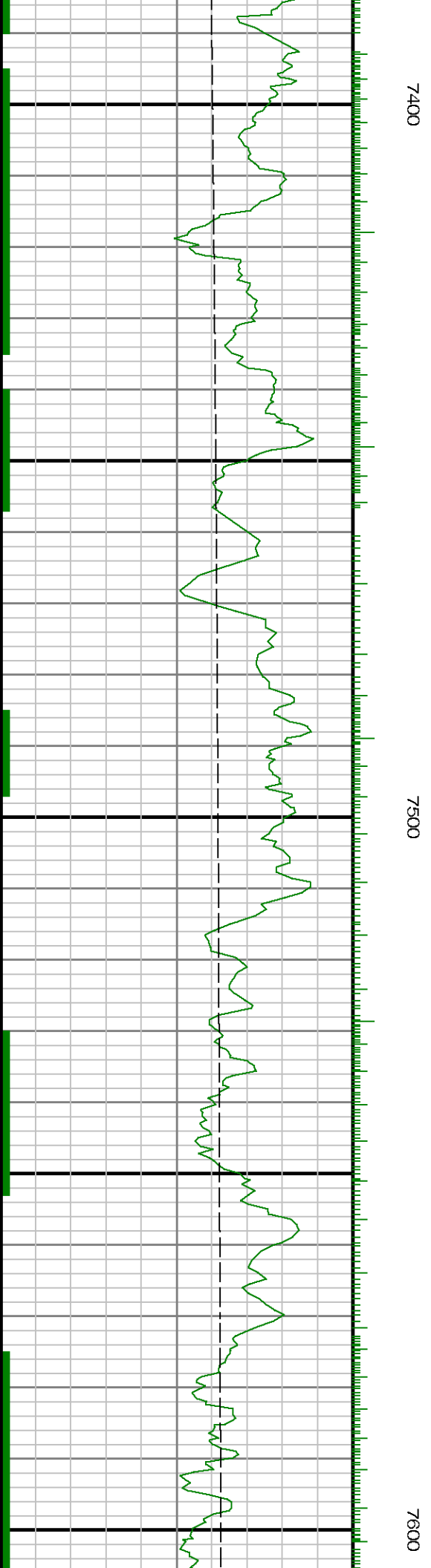
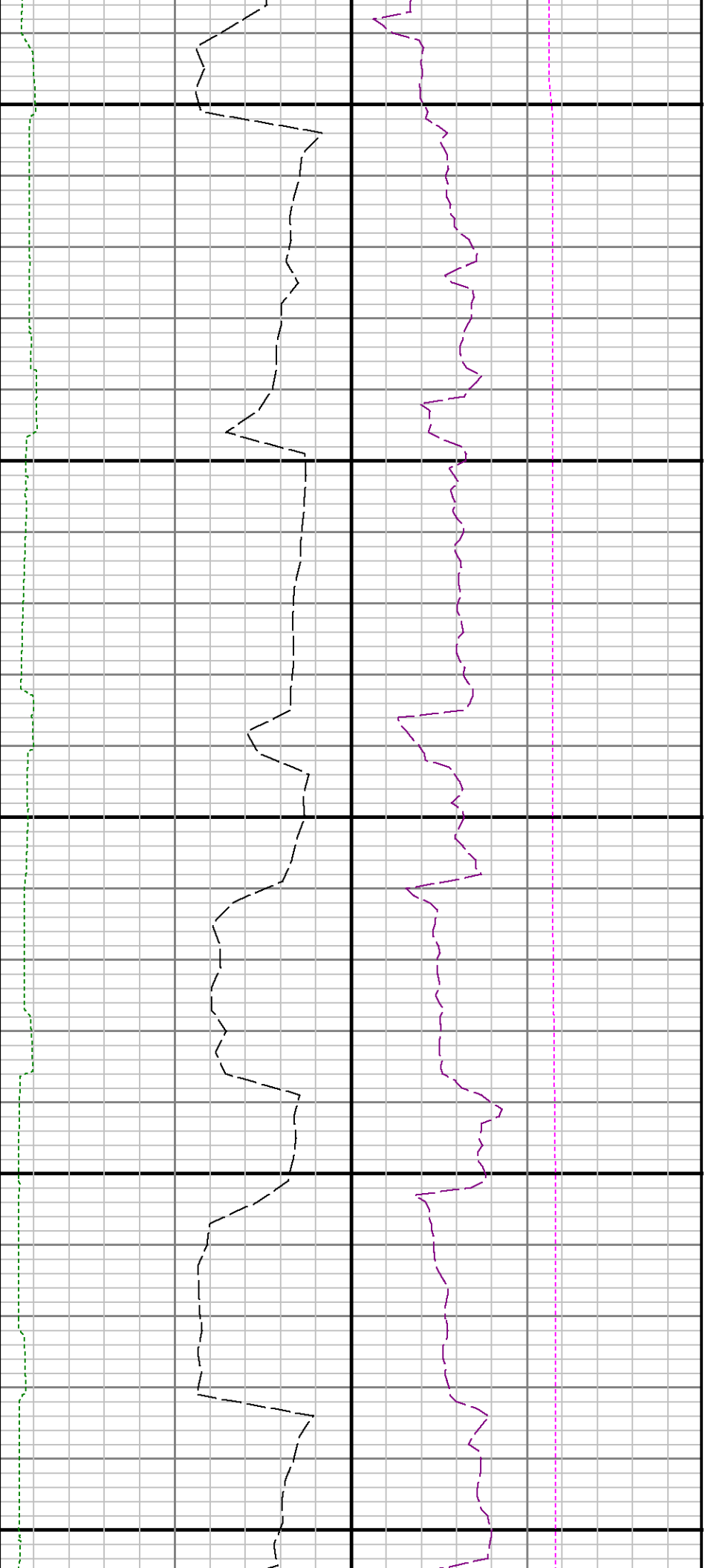


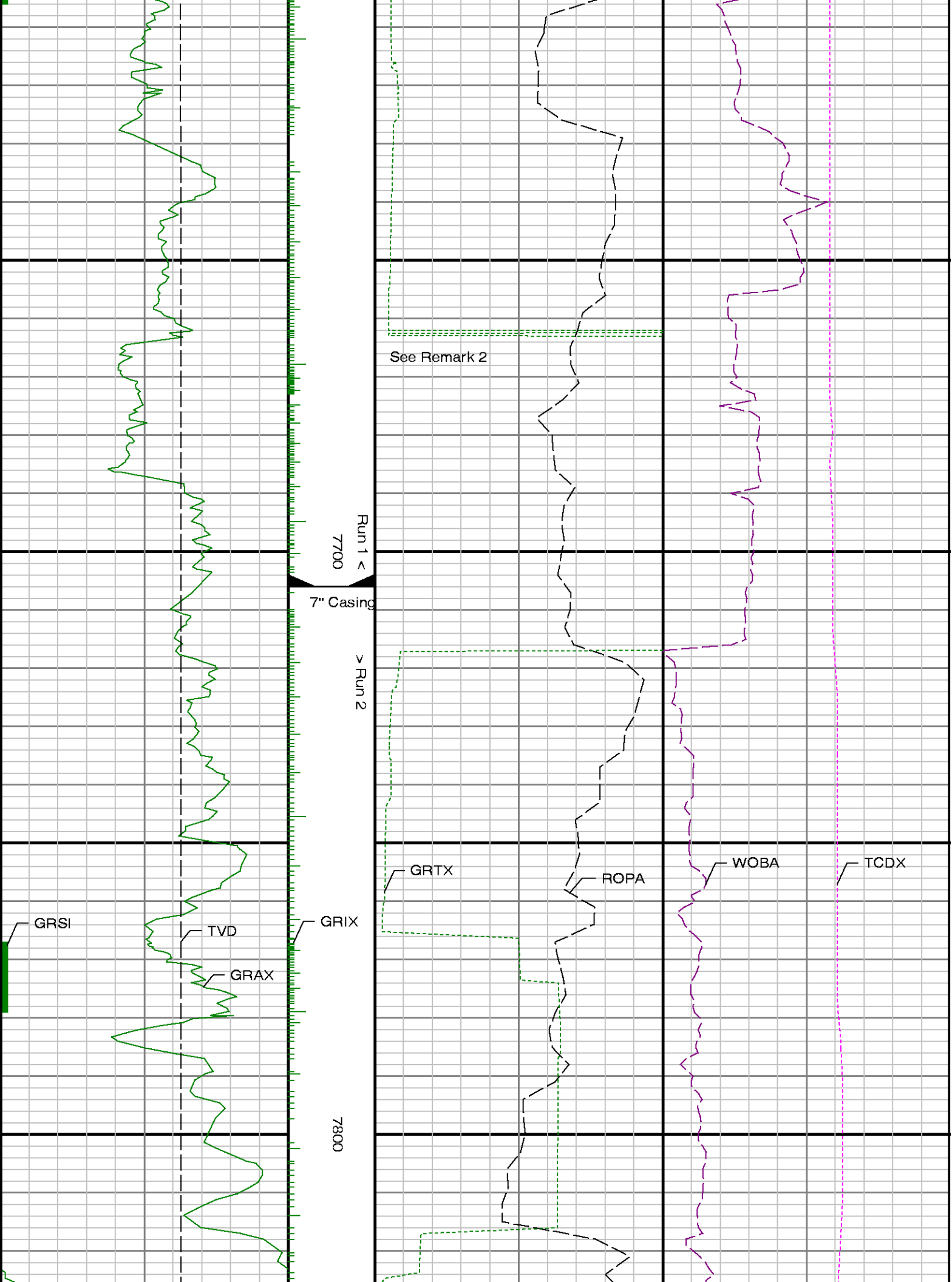


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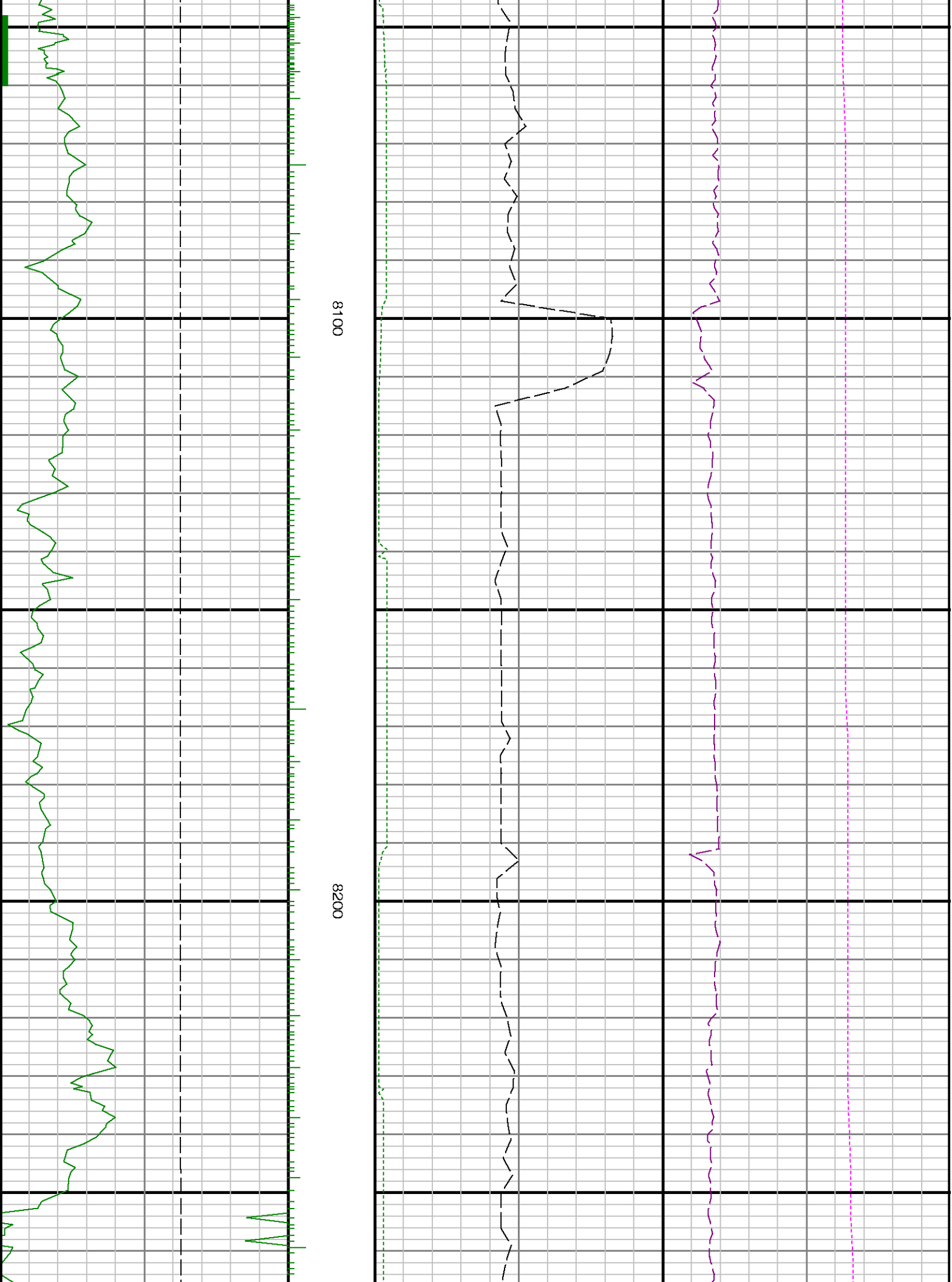
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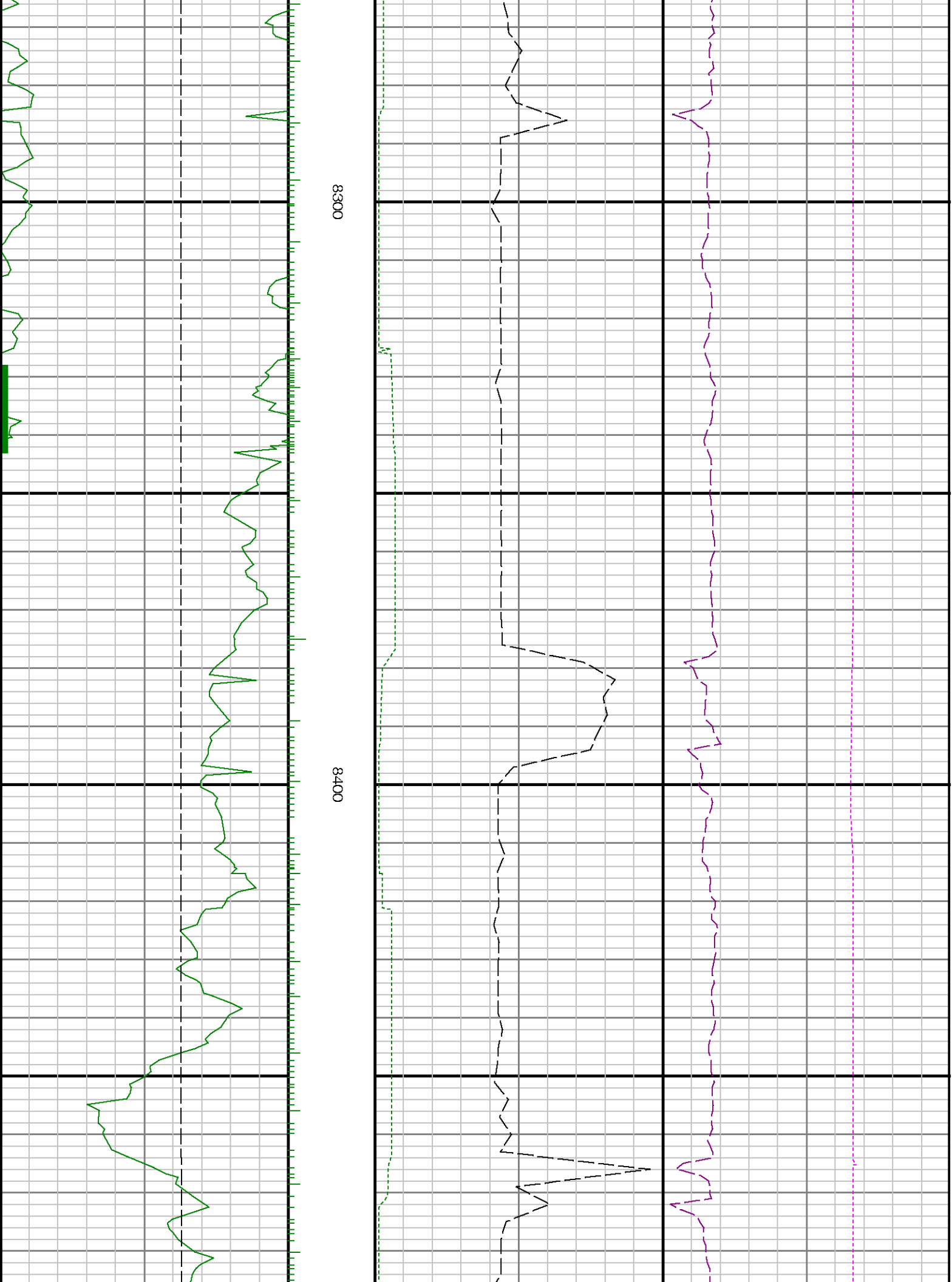


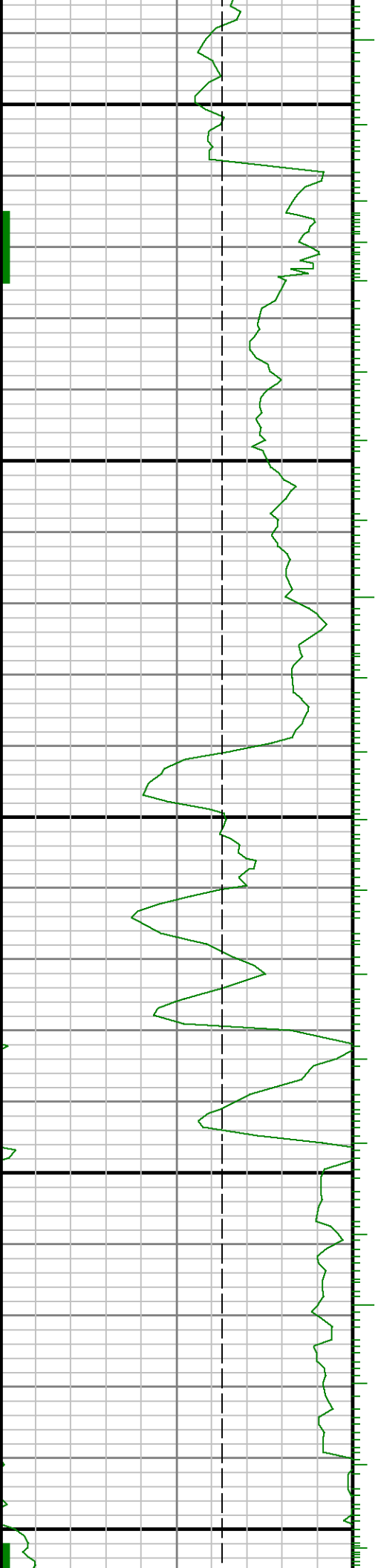








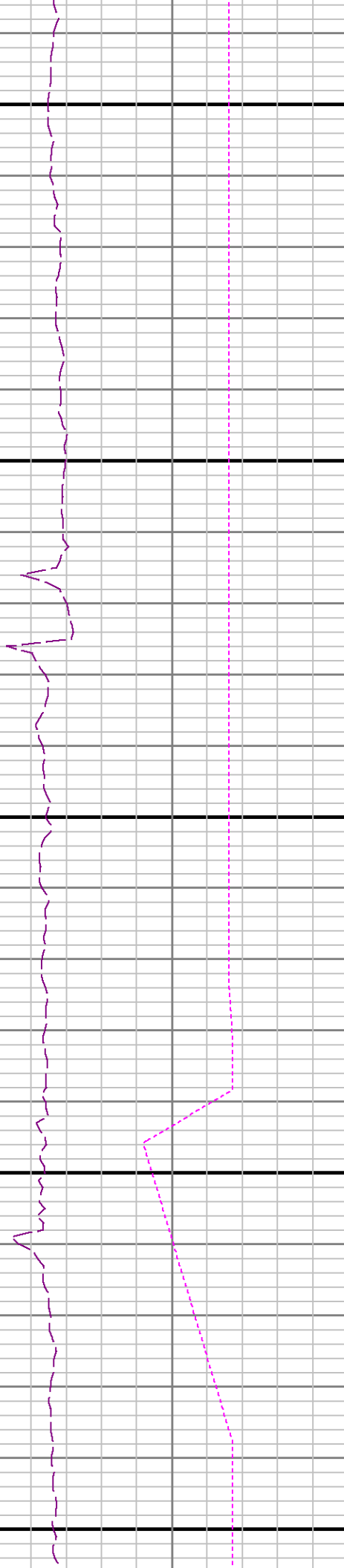


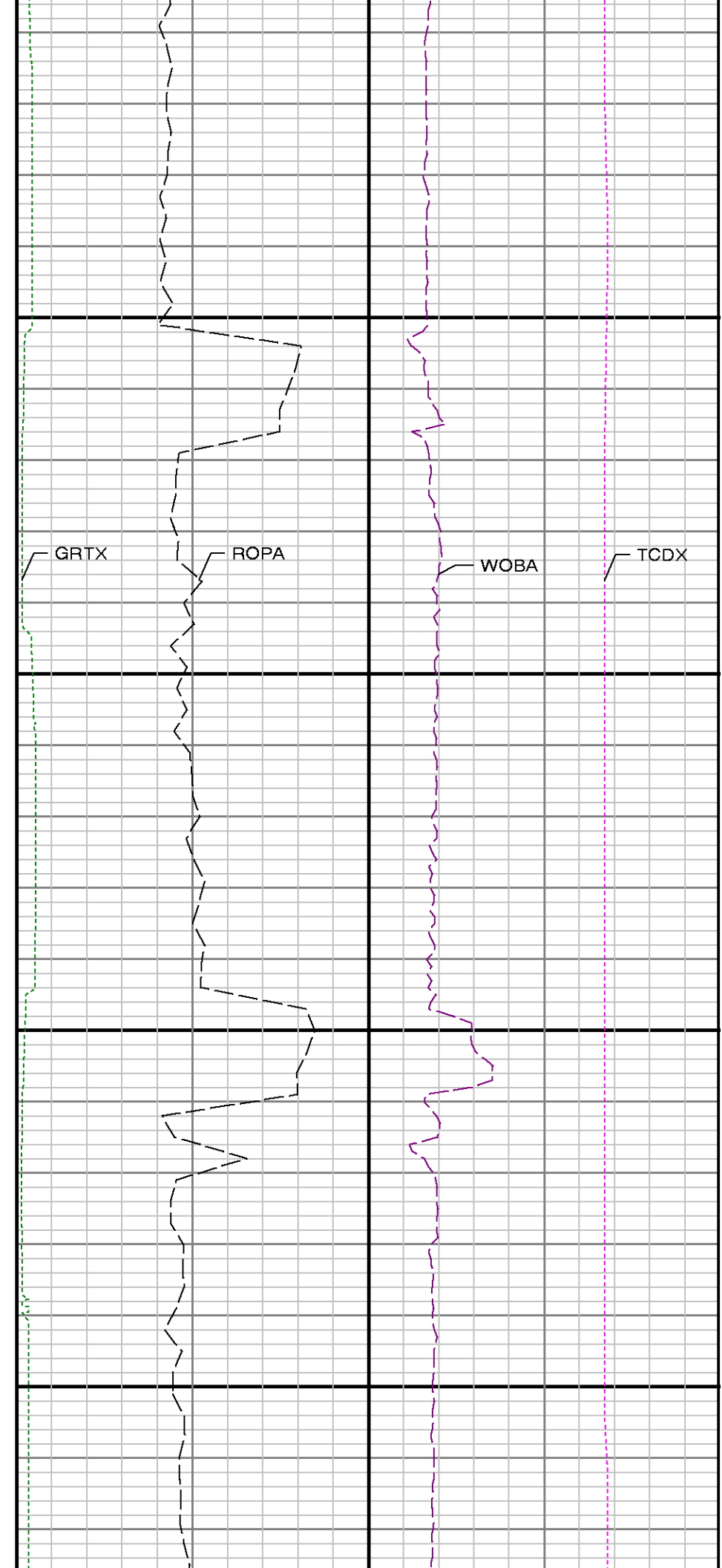
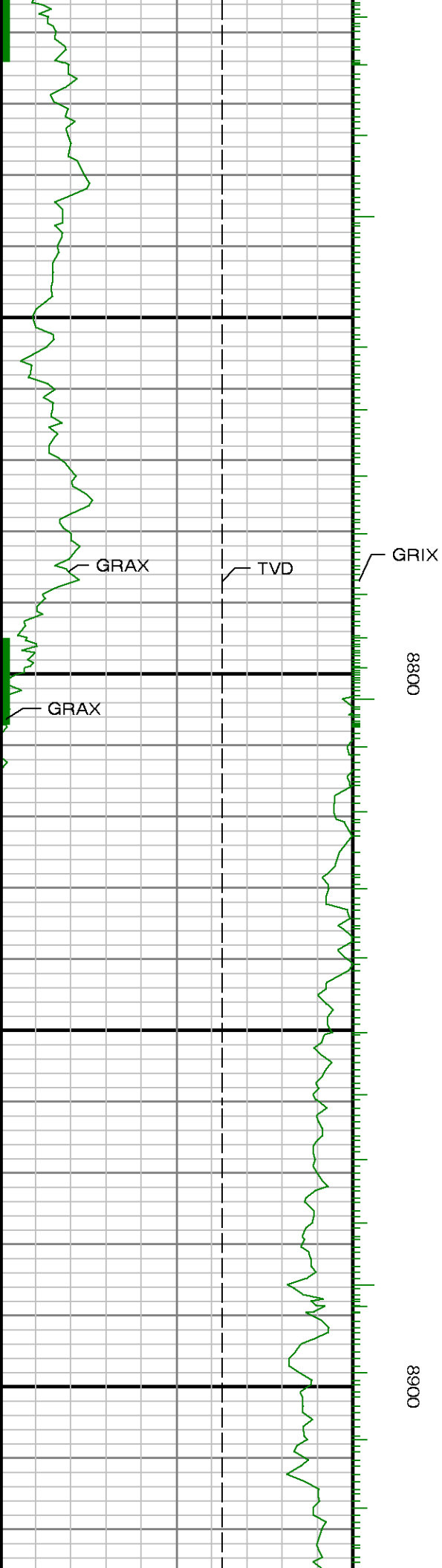


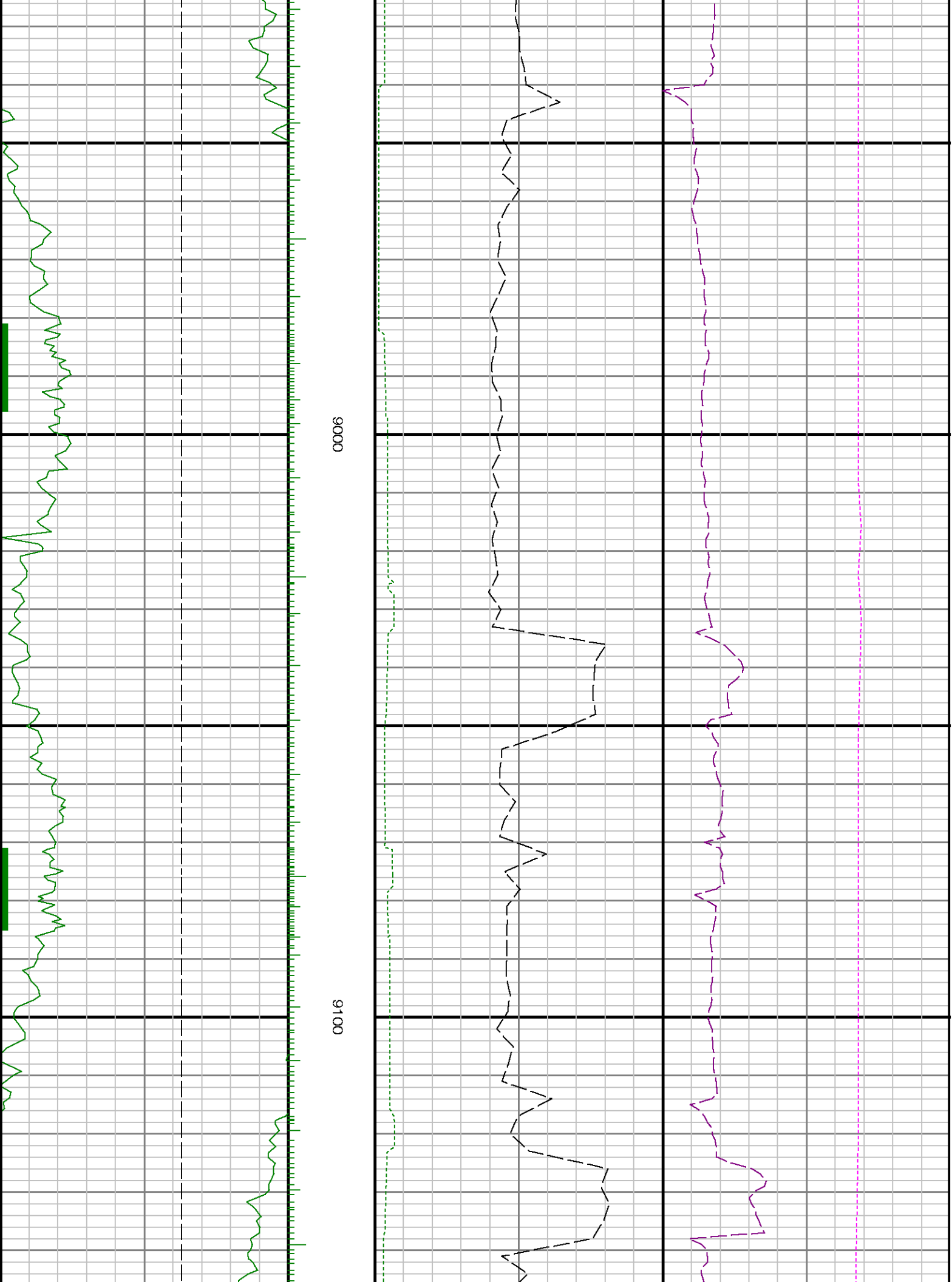
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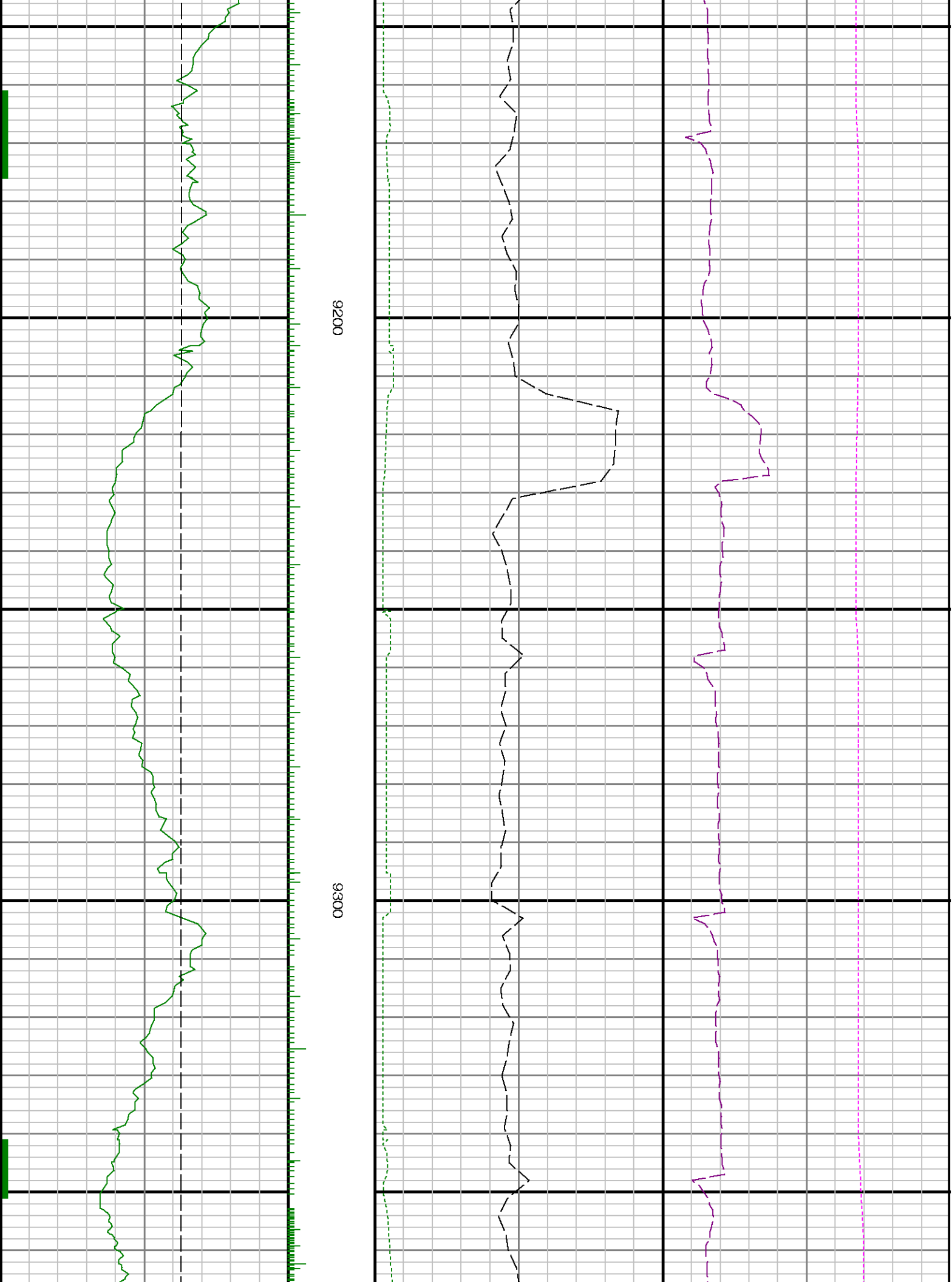
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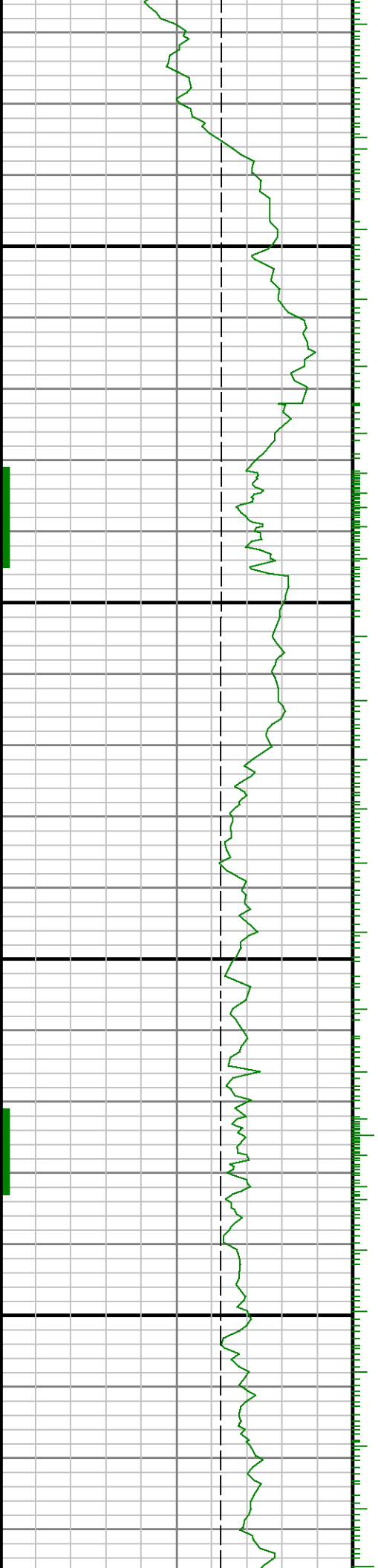


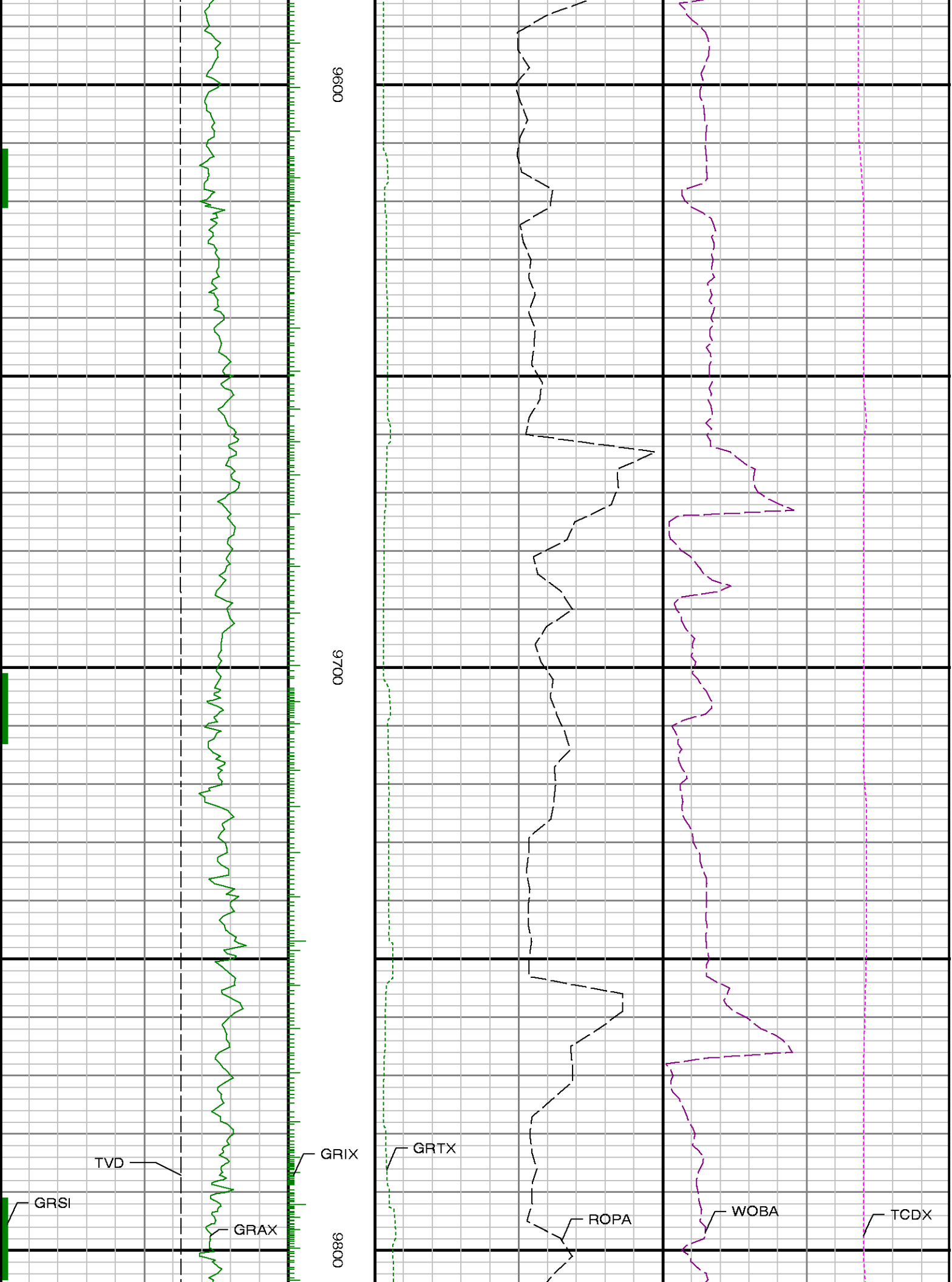




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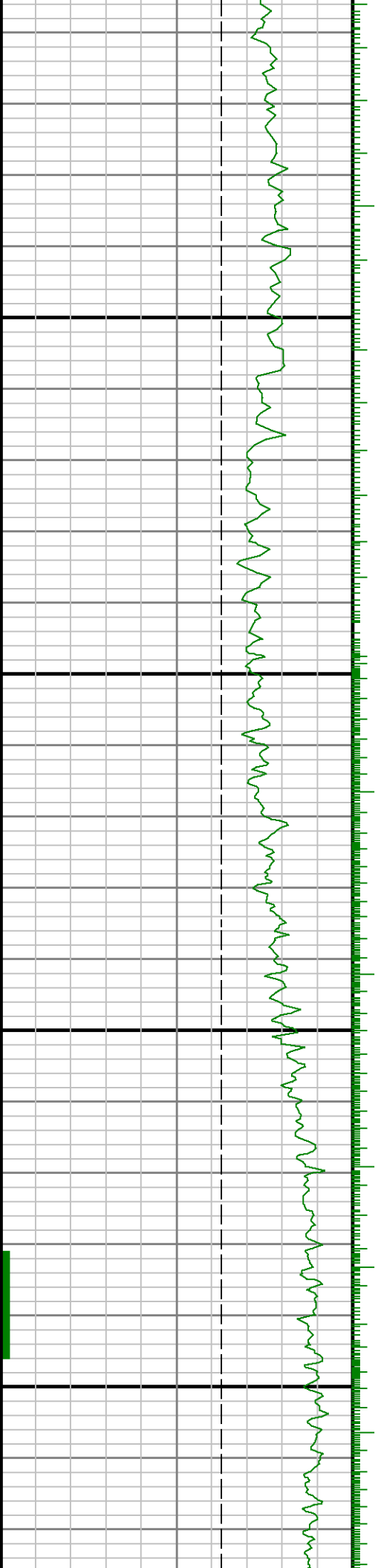






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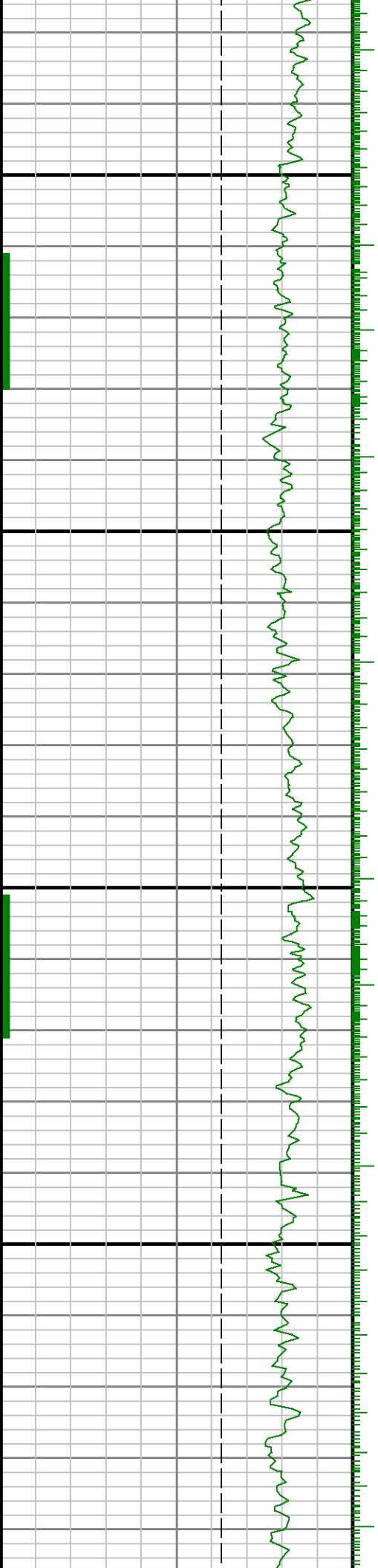
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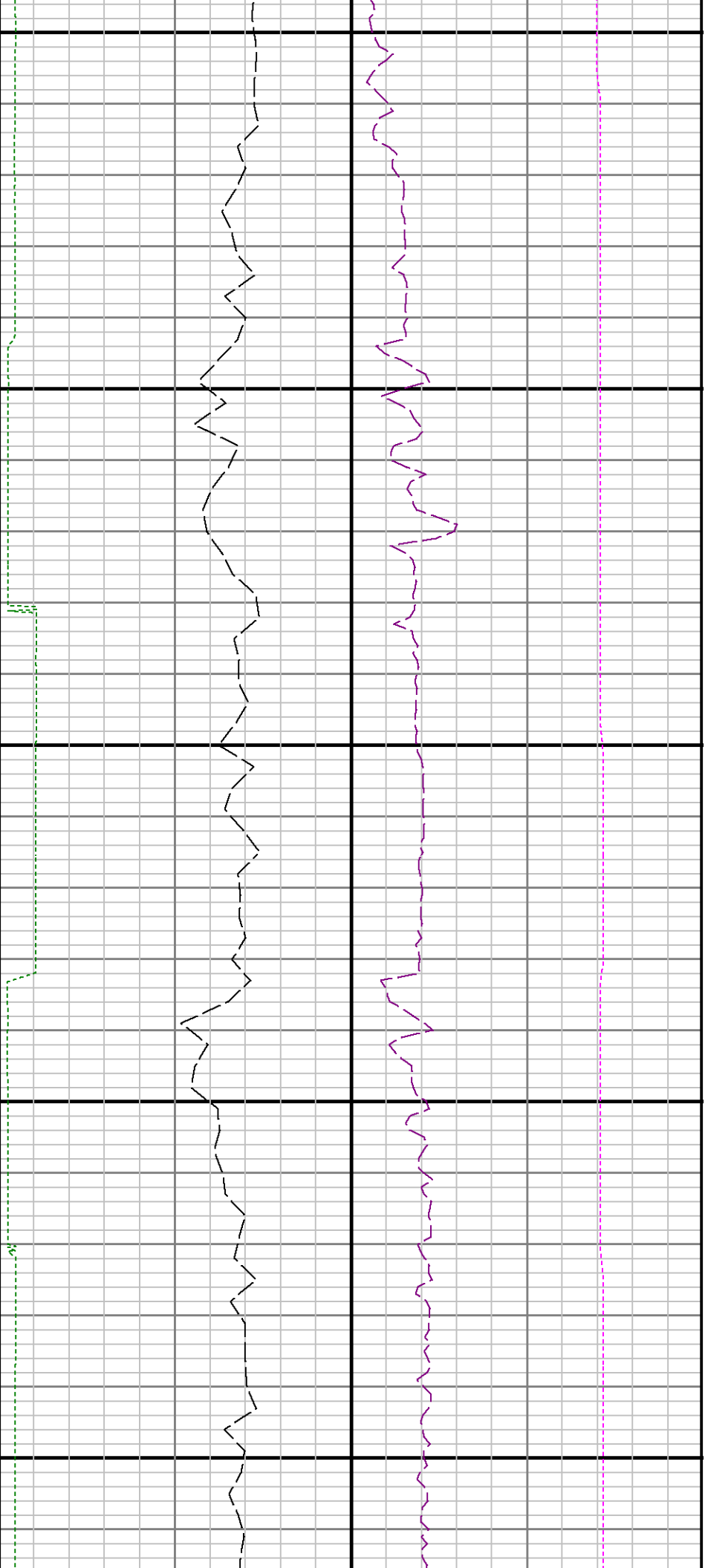




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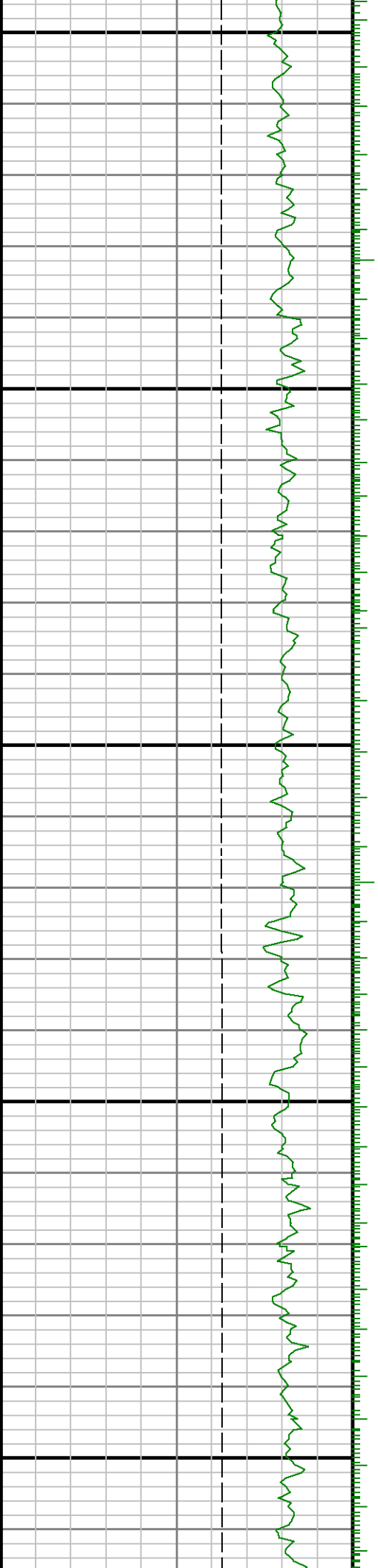
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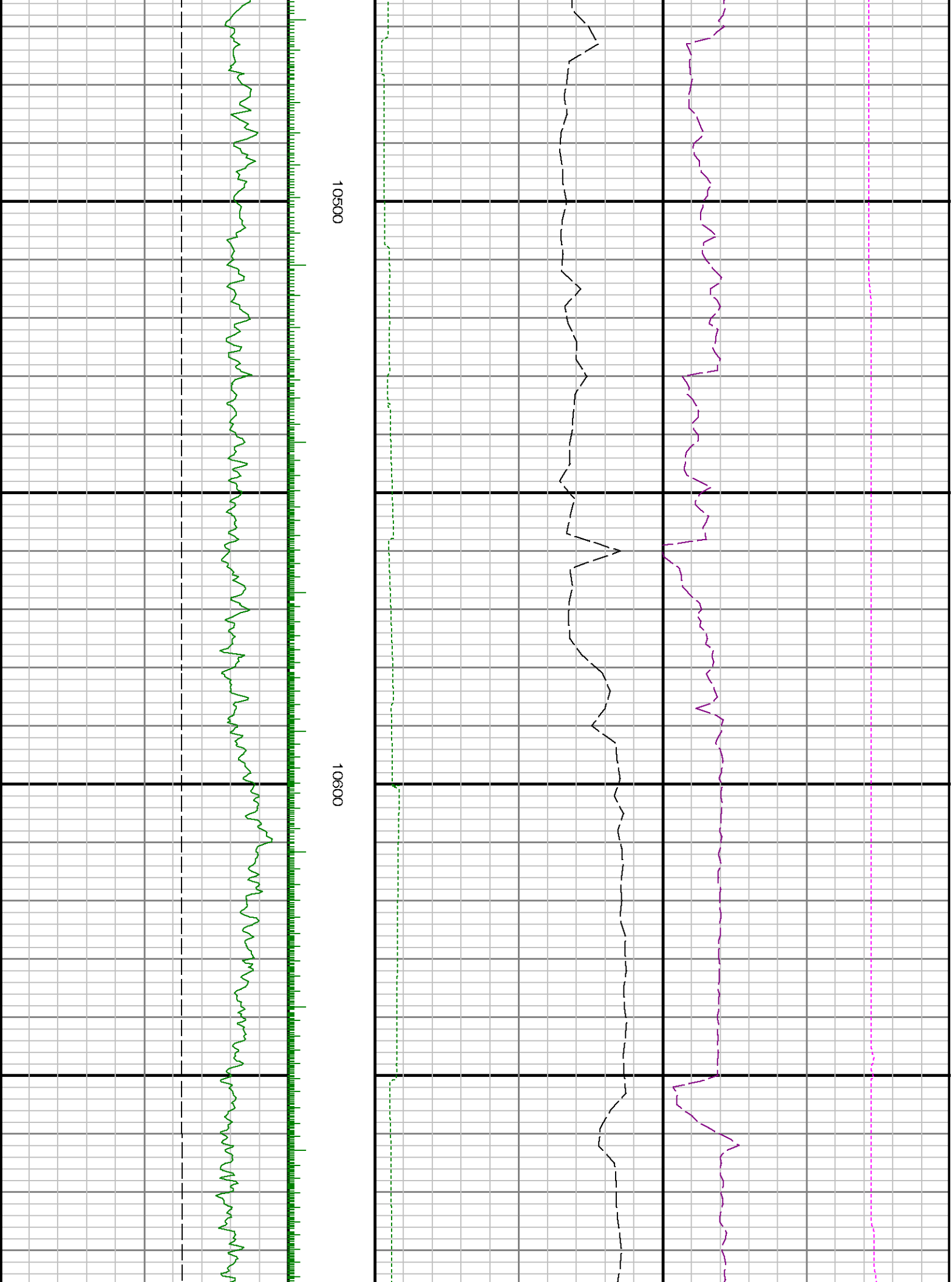


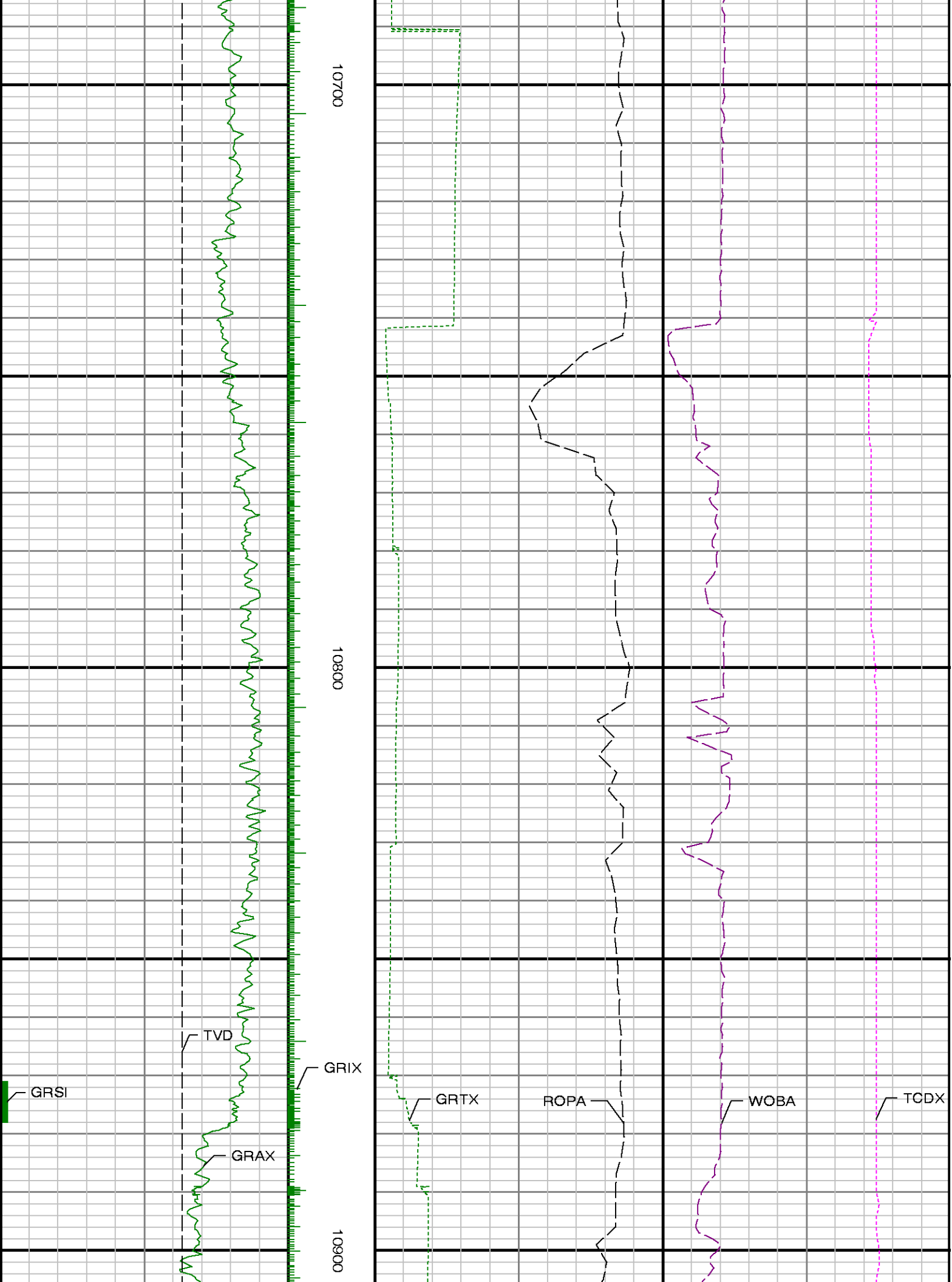


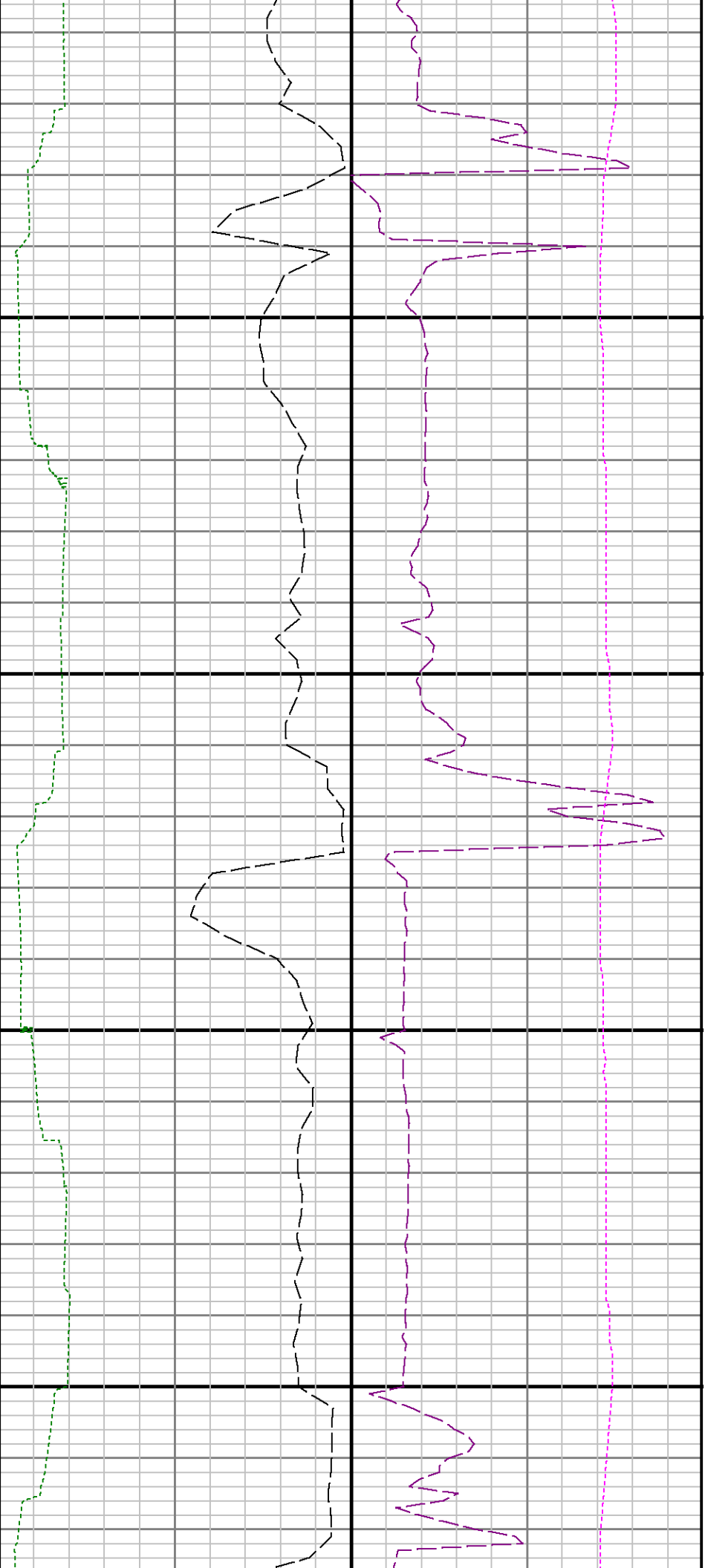
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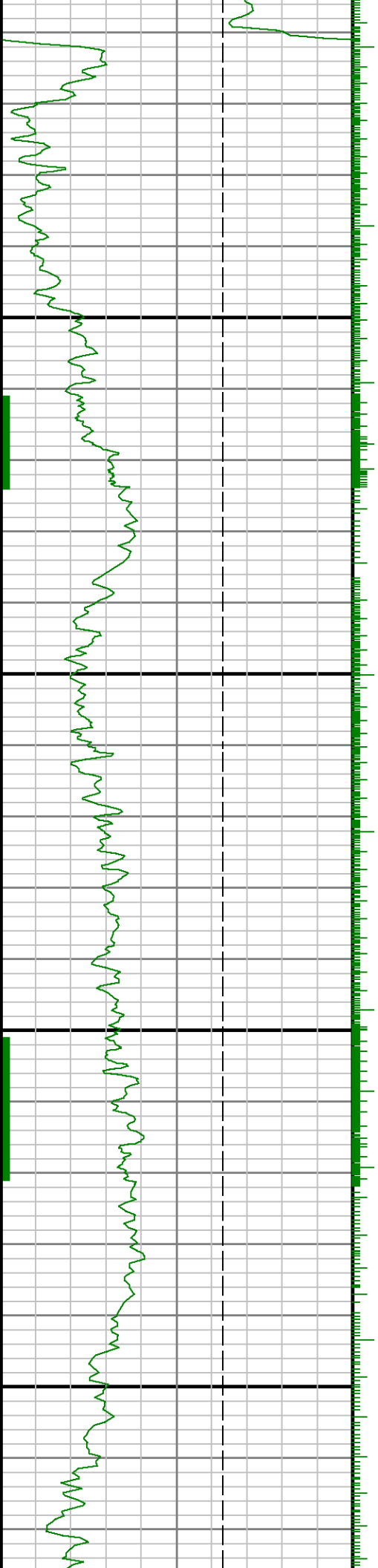


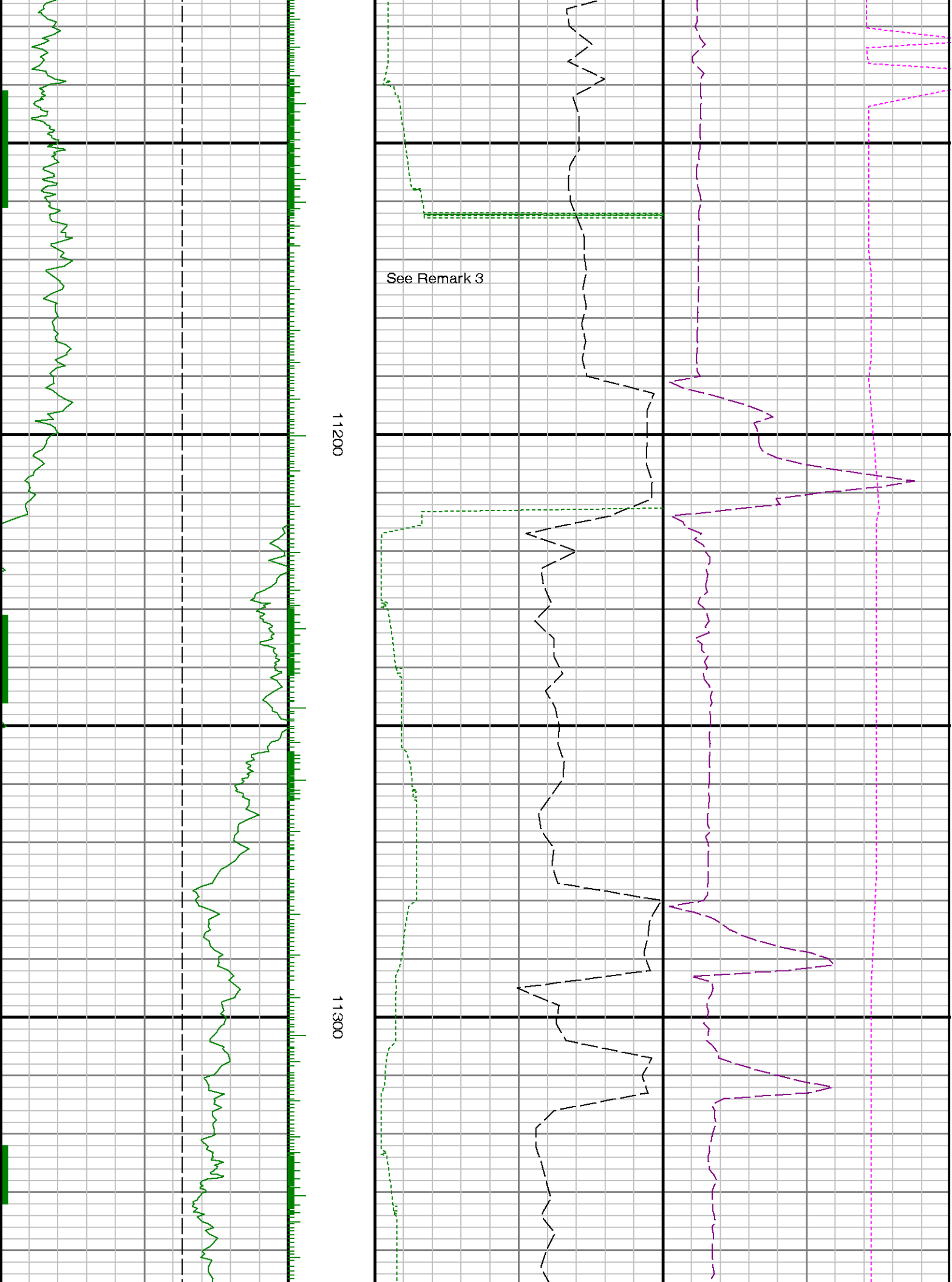


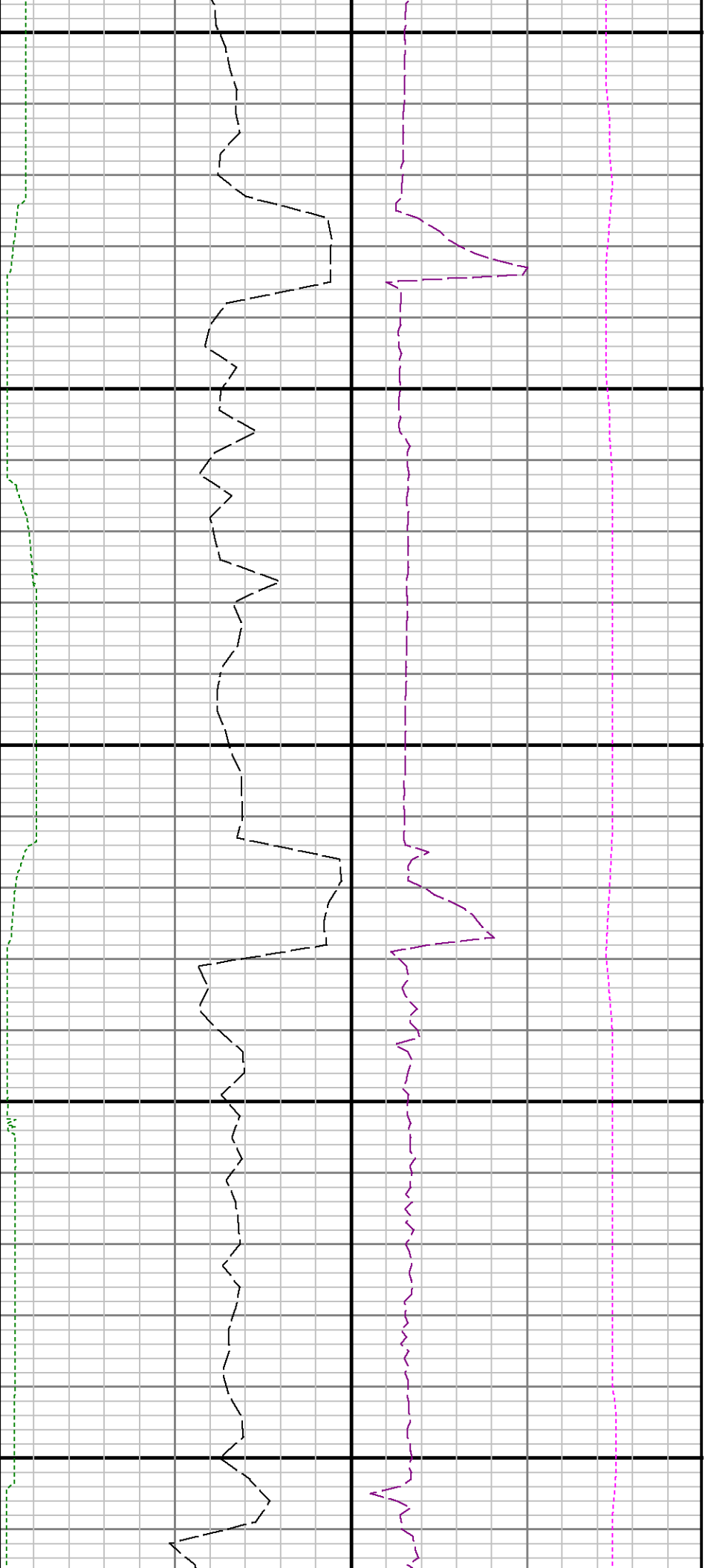


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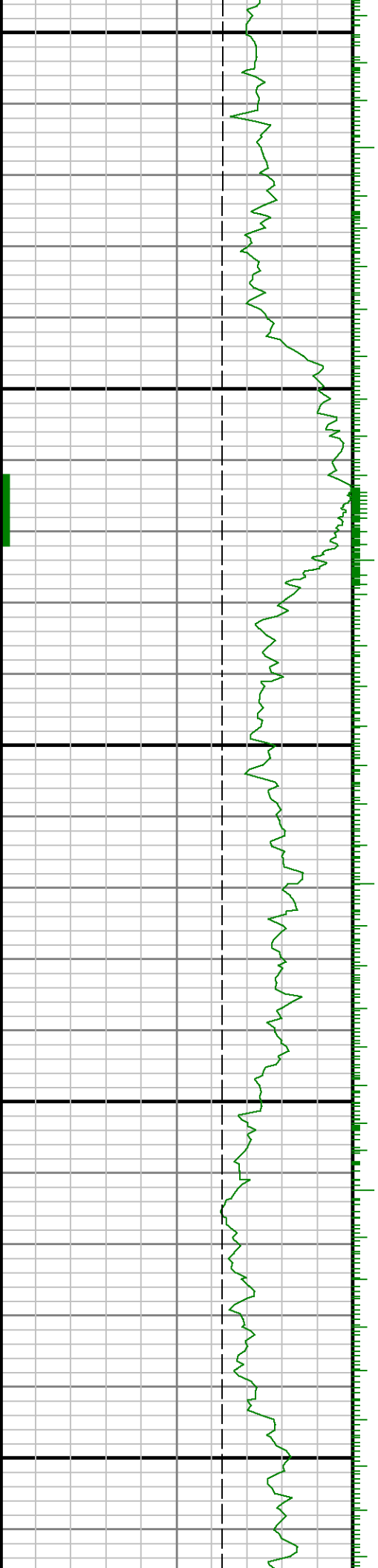


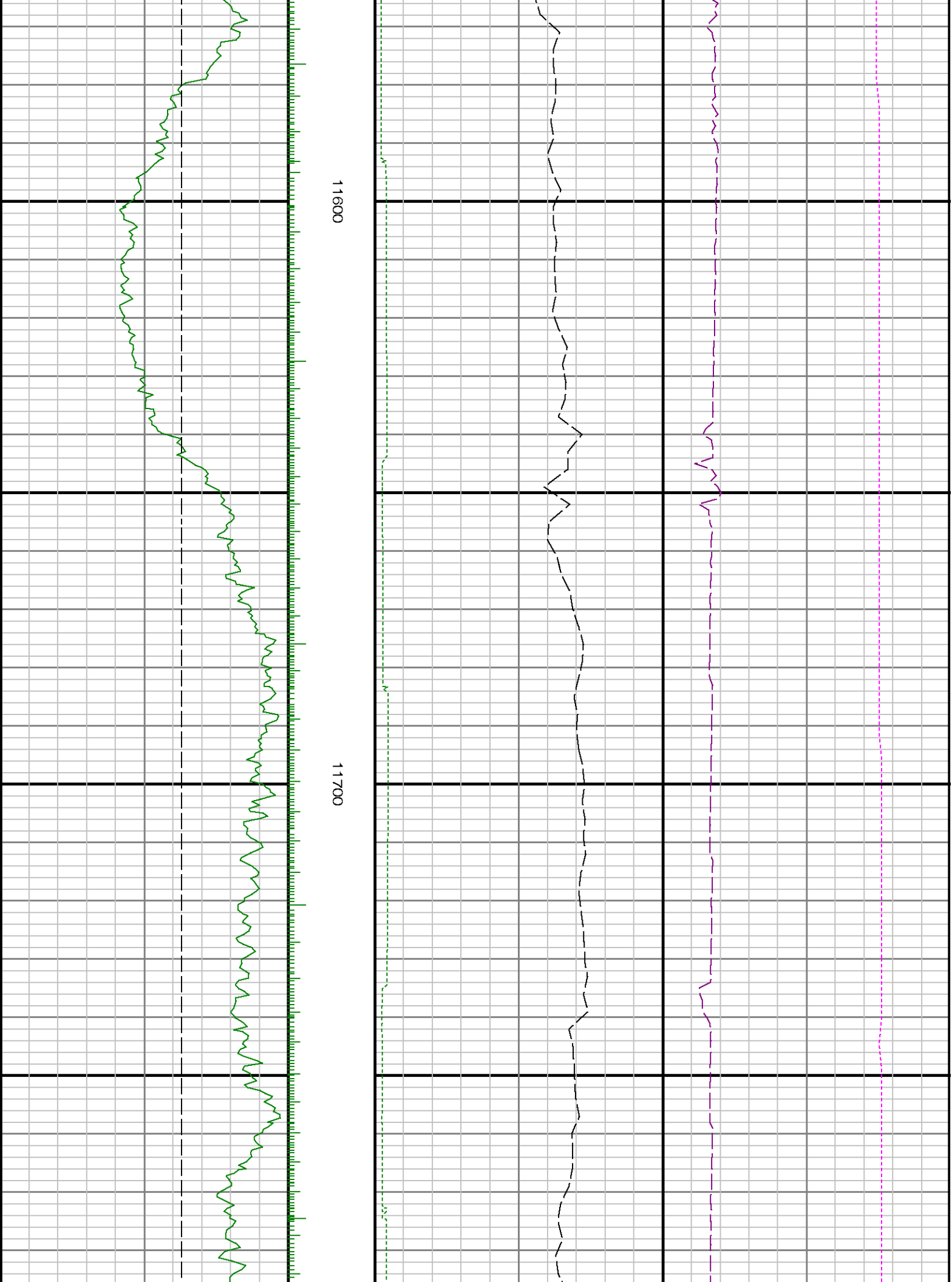


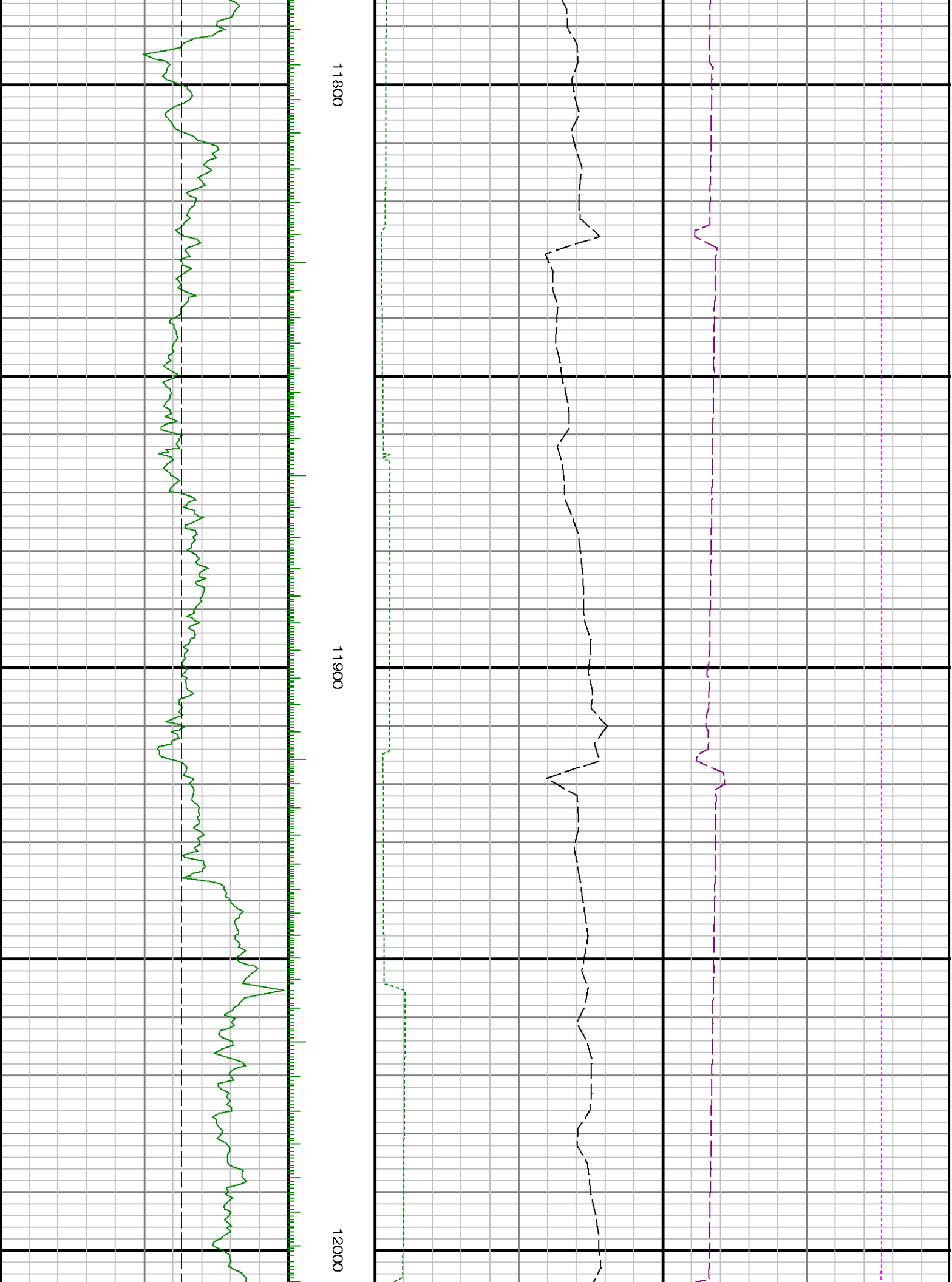


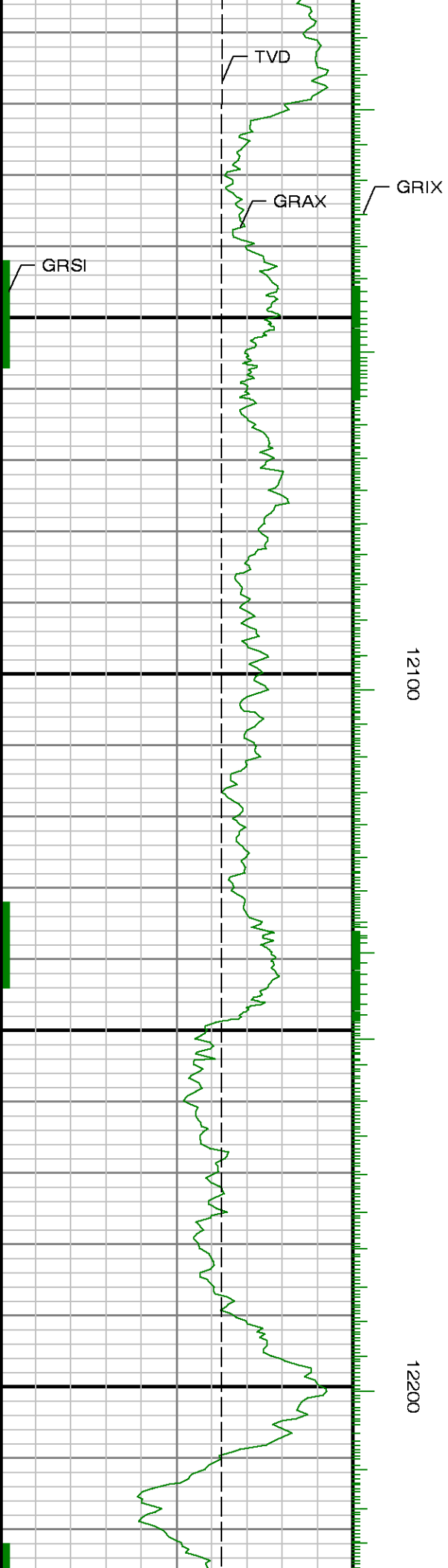
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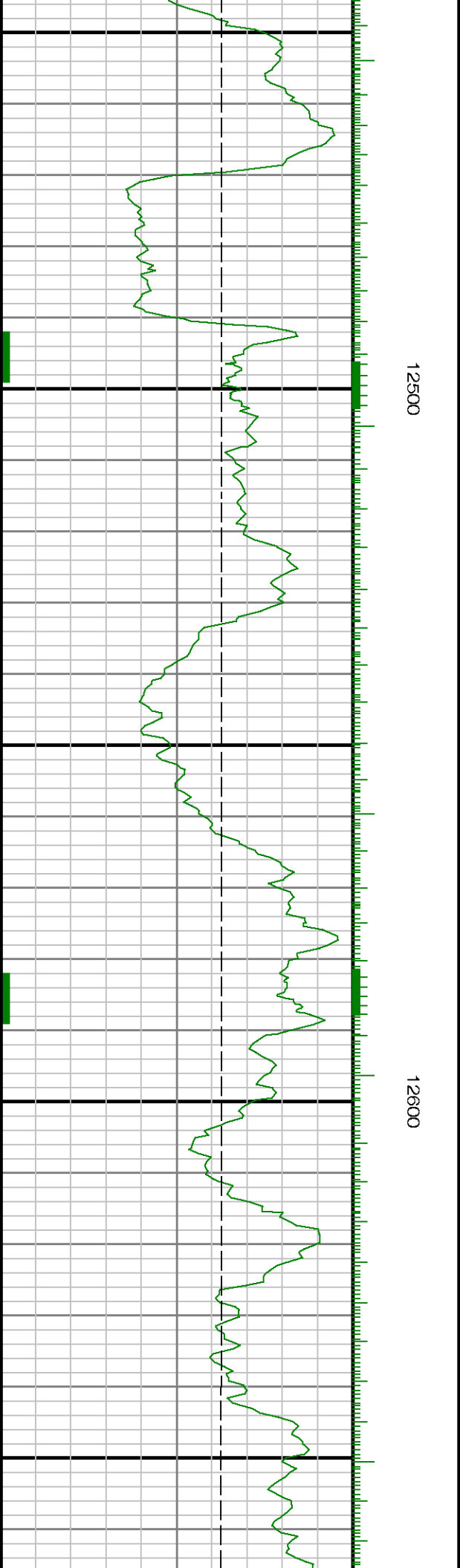
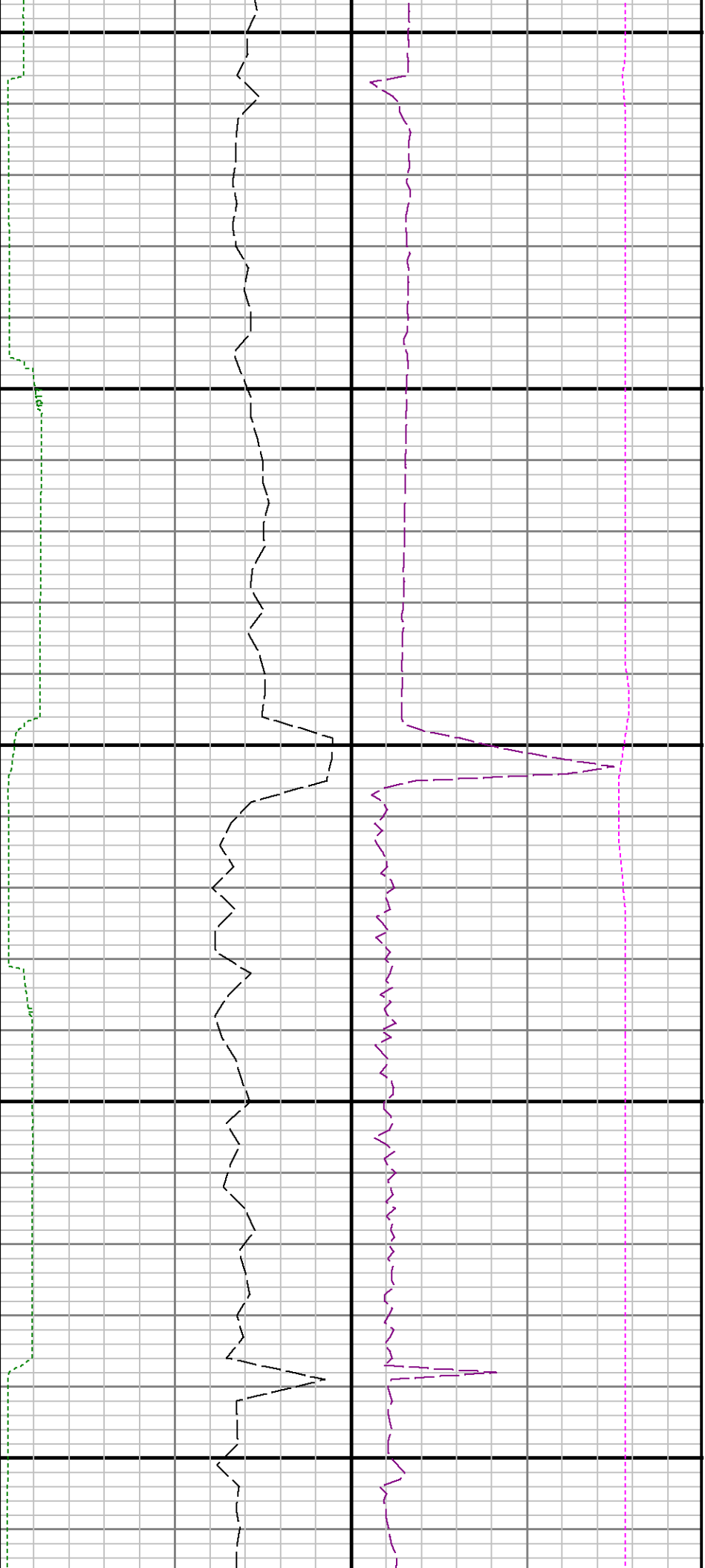


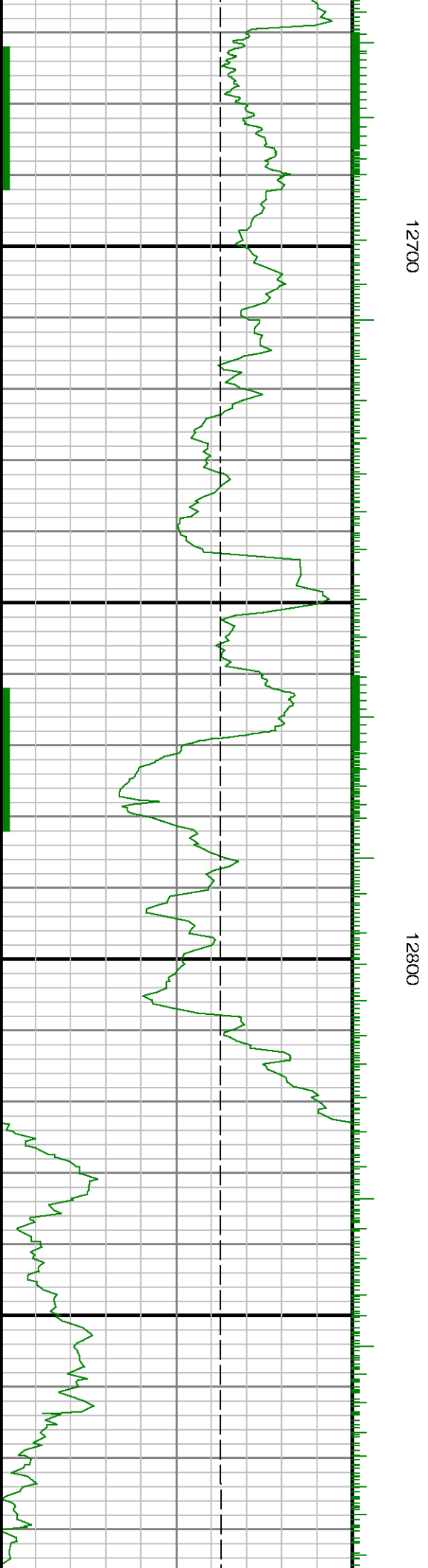


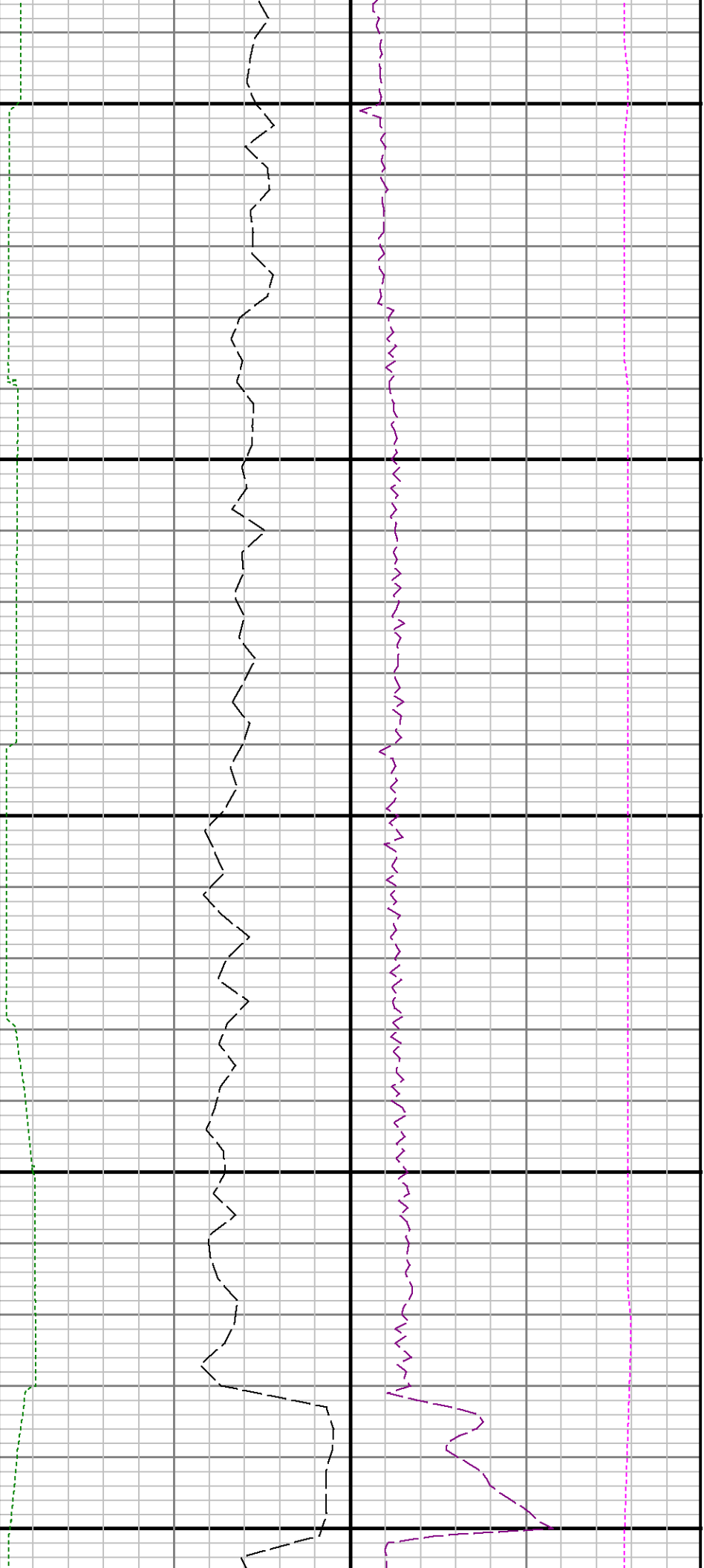








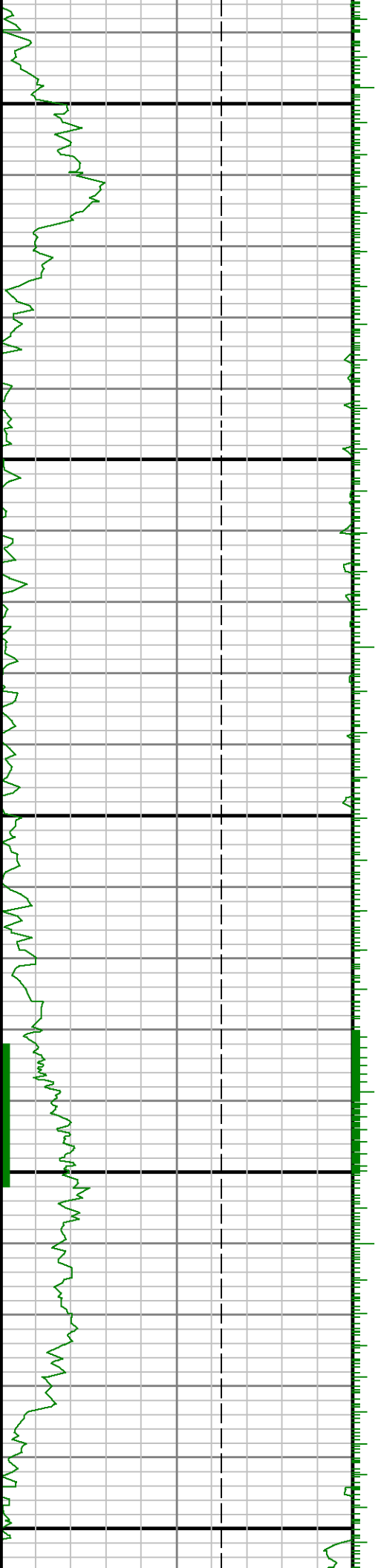


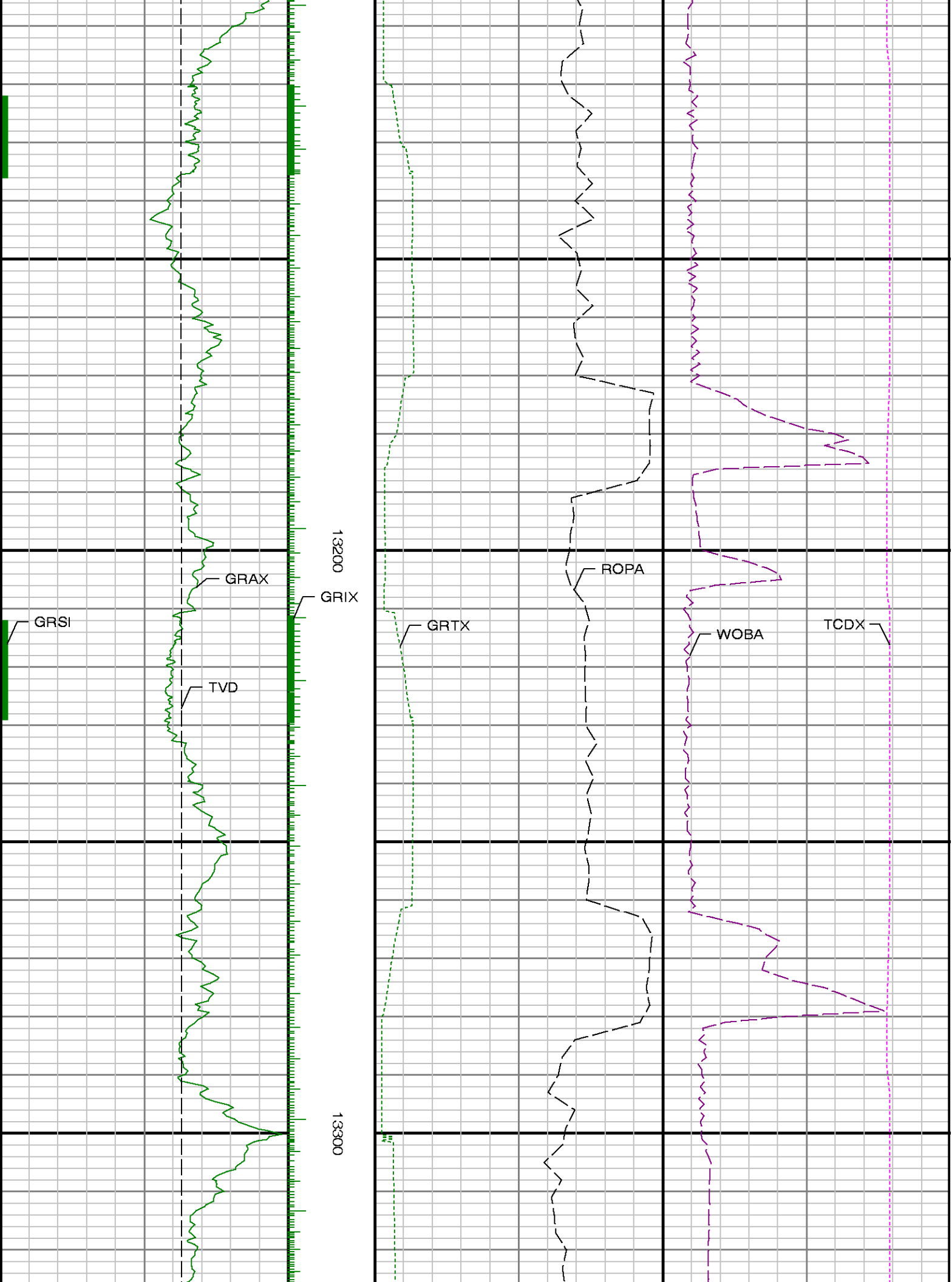


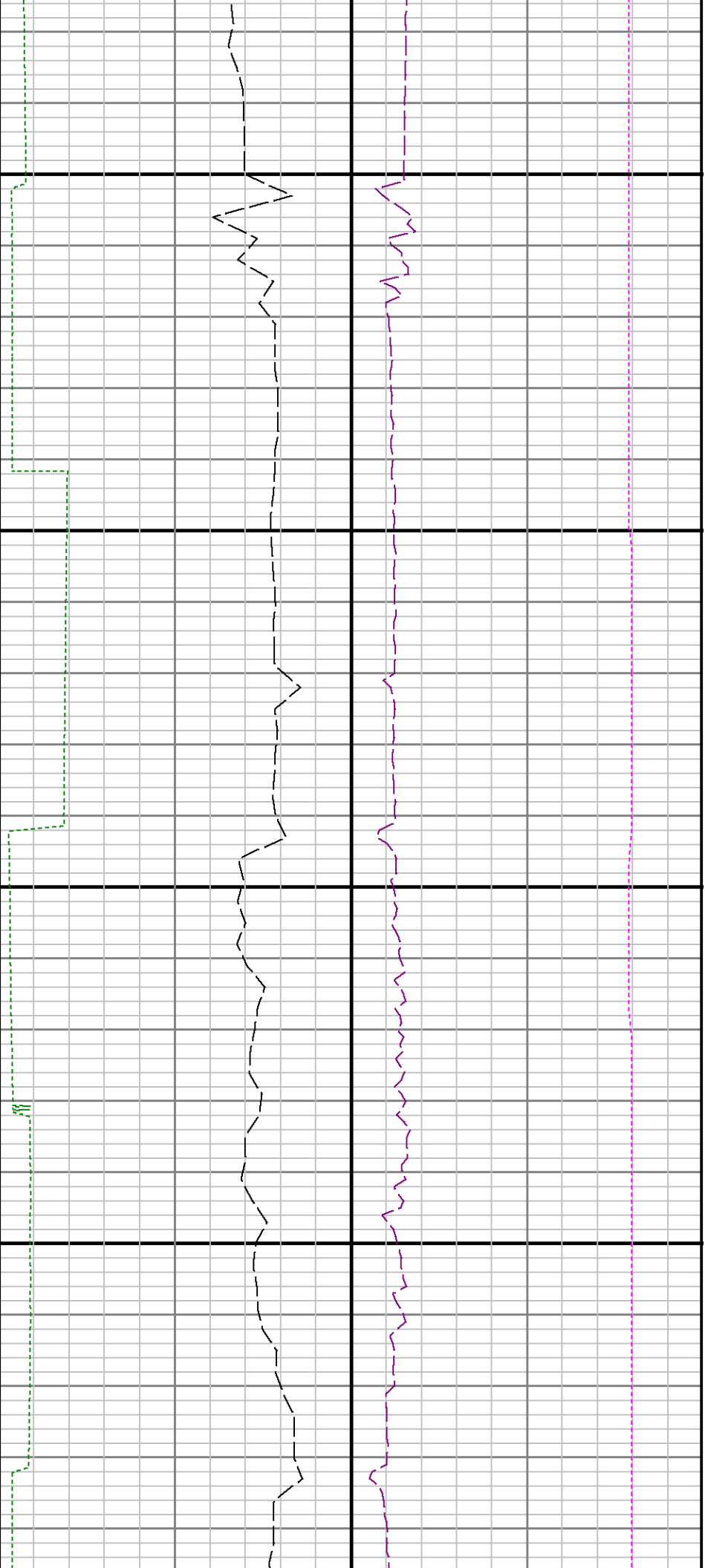
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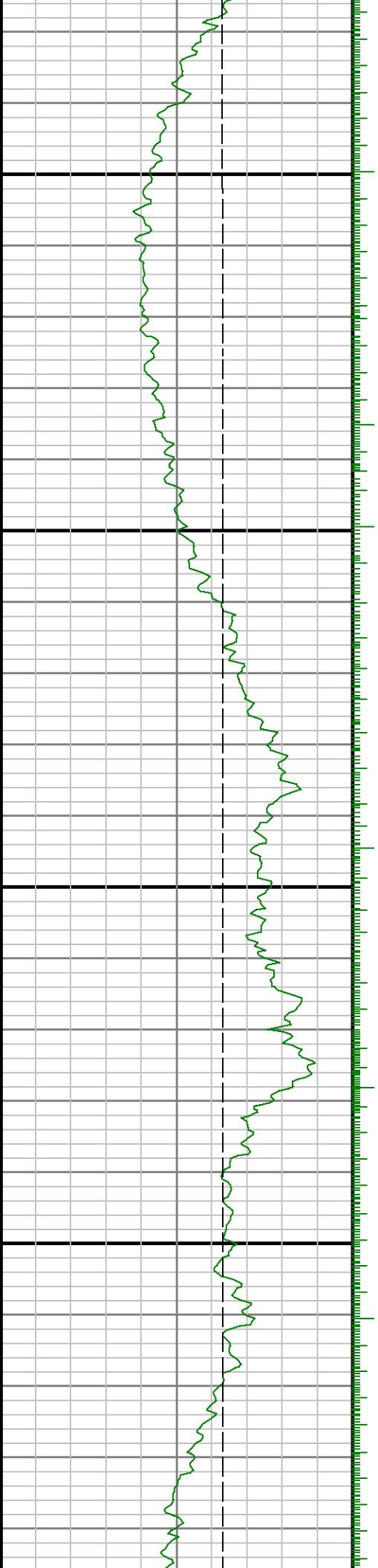


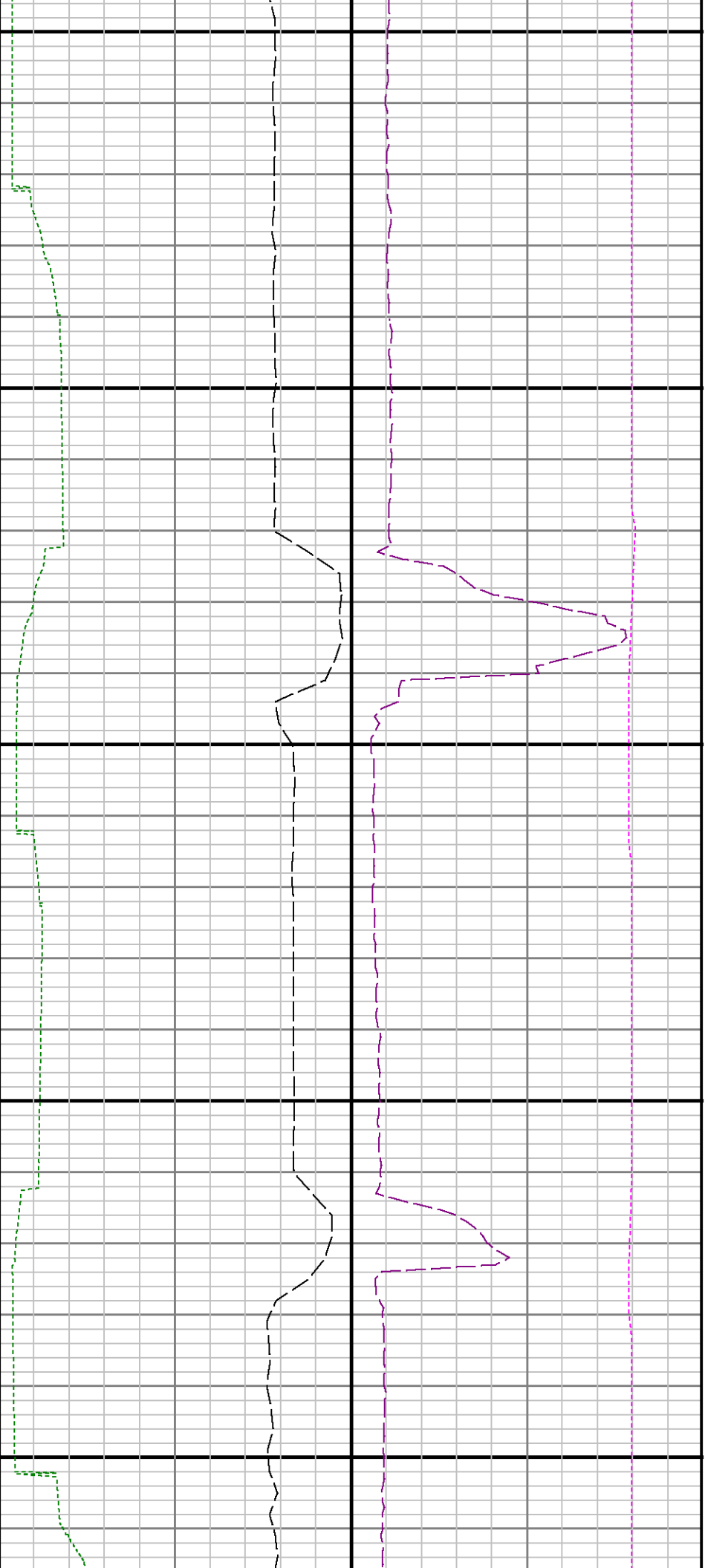




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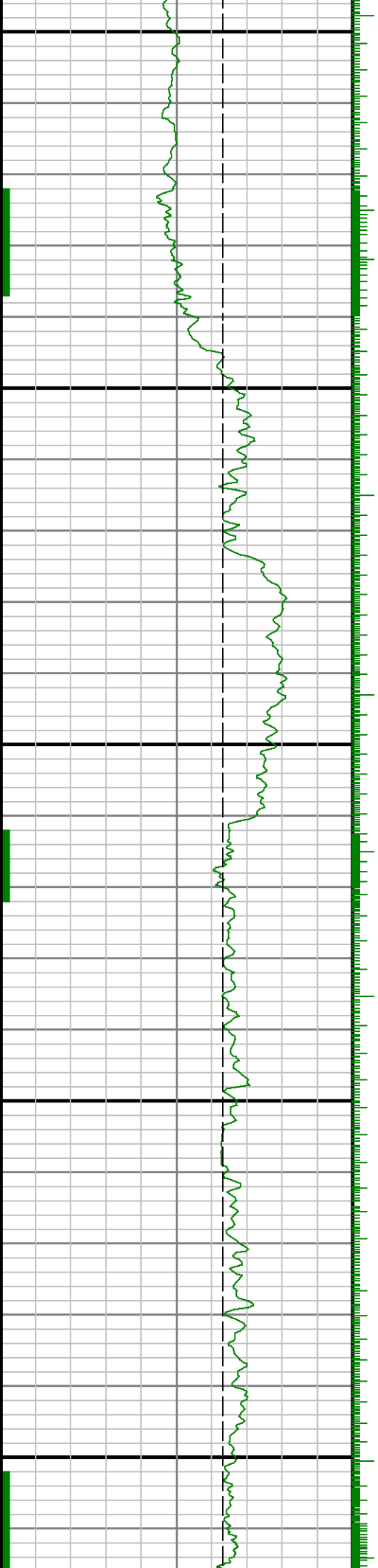
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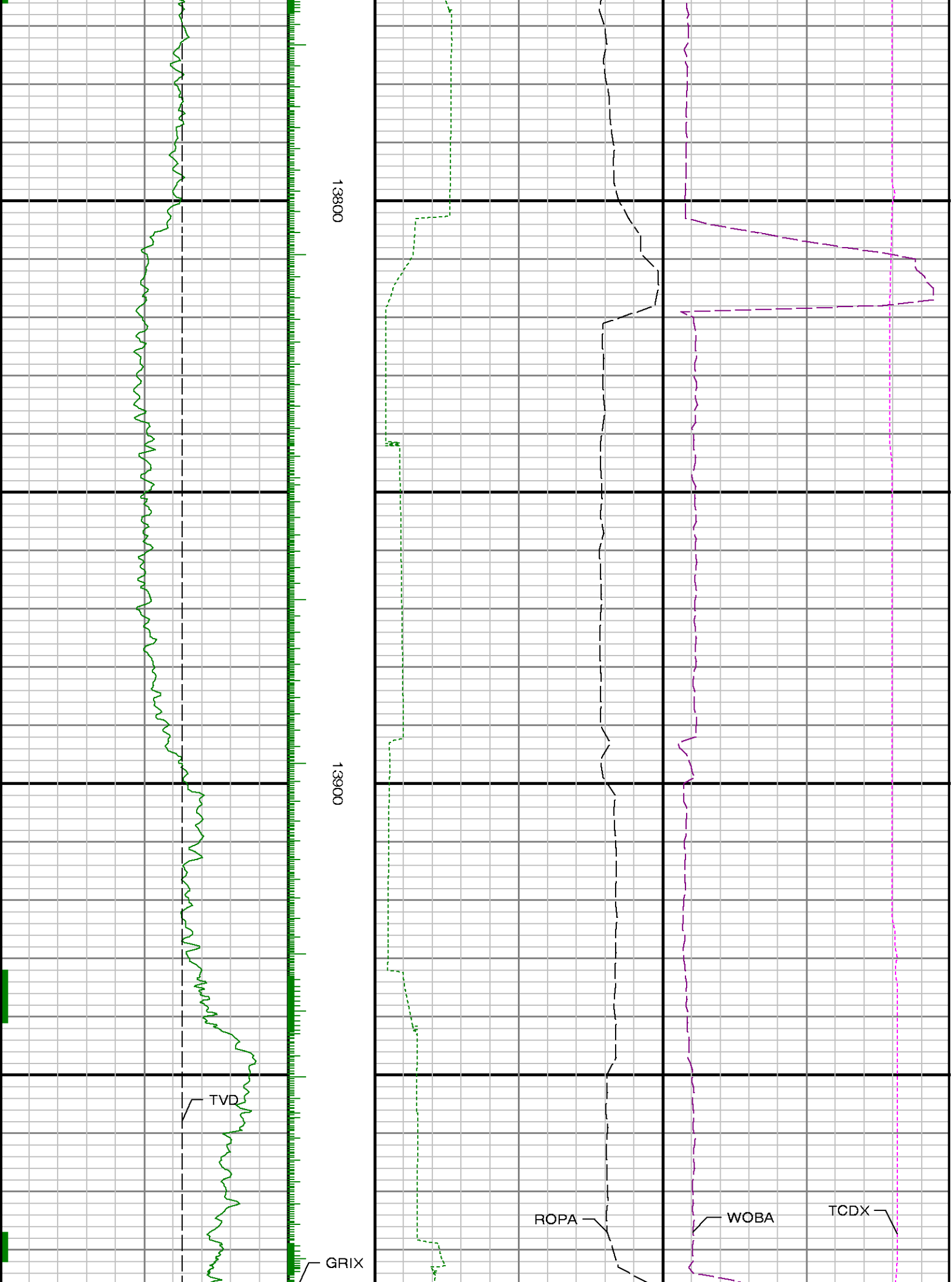


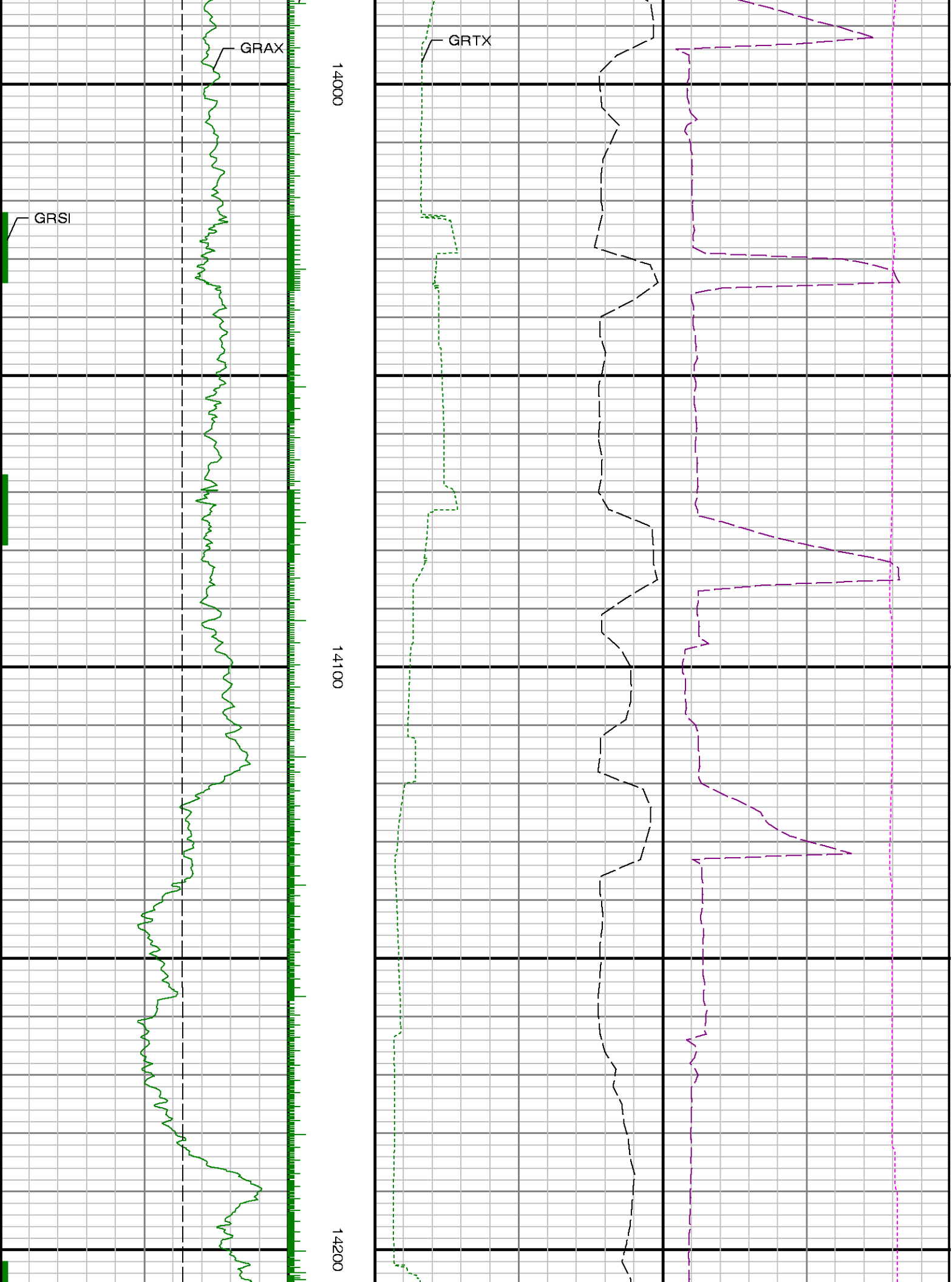


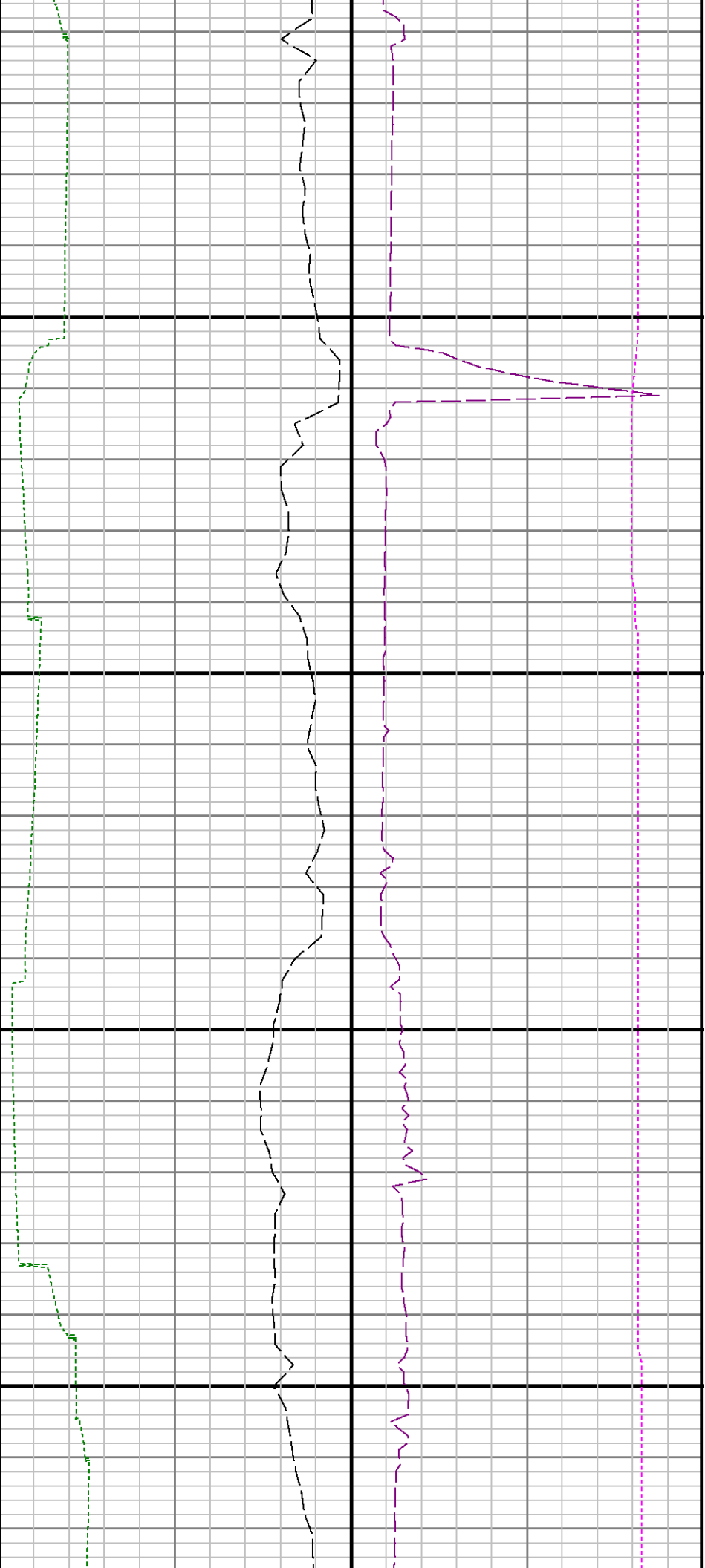
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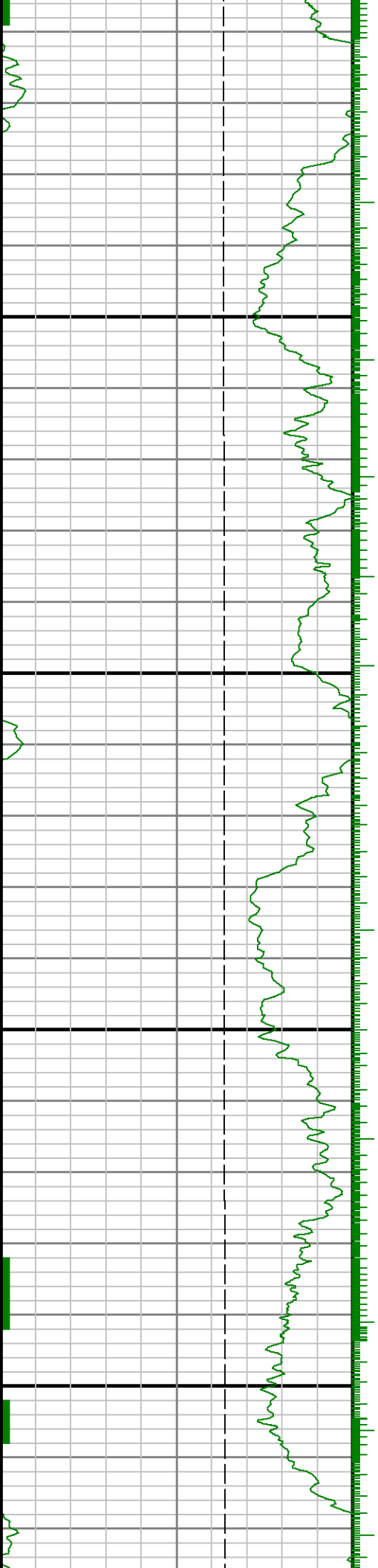


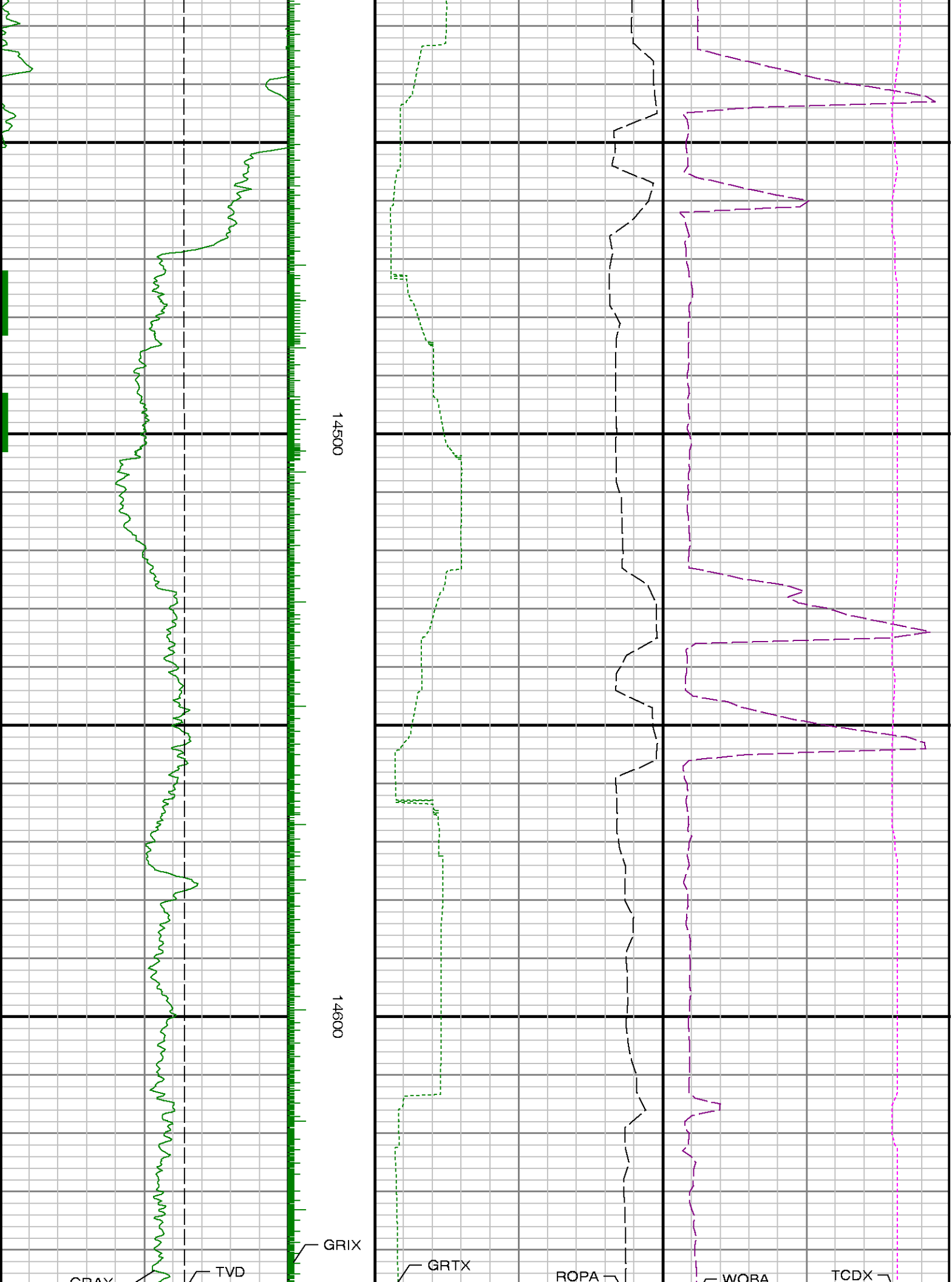




14300

14400





<div>GRAX</div> <div></div>		Run 2 < TD 14700	<div>See Remark 4</div> <div></div>		<div>WOBA</div> <div></div>	
<div></div> <div></div>			<div></div> <div></div>		<div></div> <div></div>	
<div></div> <div></div>			<div></div> <div></div>		<div></div> <div></div>	
<div>Gamma Ray Apparent 0.5 ft Avg [GRAX]</div> <div>0150</div> <div>API</div> <div>True Vertical Depth [TVD]</div> <div>60008000</div> <div>ft</div>		MD feet 1:240	<div>Rate of Penetration 3.0 ft Avg [ROPA]</div> <div>6000</div> <div>ft/hr</div> <div>Gamma Time Since Drilled [GRTX]</div> <div>0600</div> <div>min</div>		<div>Surface Weight On Bit 1.0 ft Avg [WOBA]</div> <div>0100</div> <div>kibf</div> <div>Downhole Temperature [TCDX]</div> <div>0300</div> <div>degF</div>	