



REALTIME LOG

Natural Formation Evaluation  
Gamma Ray

Scale: Company: Anadarko

1:240 Well: USA FED 04N-36HZ

MEASURED DEPTH Field: Weld County (Kerr McGee)

Status: County: Weld County State: Colorado

Surface Location: Other Services:

FINAL PRINT Latitude: 40° 10' 36.296" N

Longitude: 104° 43' 58.357" W

DIRECTIONAL  
VSS

API Number: 05-123-3689600 Section: 36 TWN: 3N Range 66E

Permanent Datum (P.D.): Ground Level Elevation: 5041.00 ft.

Log Measured From: Kelly Bushing 17.00 ft. Above P.D.

Depth Reference: Driller's Depth Elevations: 17.00 ft. N/A

Interval Logged Dates Magnetic Field Reference

Top: 7672.0 ft. Date From: 19/Sep/13 Dip Angle: 66.96° Azi Reference North: True

Bottom: 11808.0 ft. Date To: 07/Oct/13 Total Mag to Reference

Spud Date: 19/Sep/13 Field Strength: 52707.0 nT North Correction: 8.58°

Borehole Record

Casing Record

Hole Size	From	To	Size	Weight	From	To
13.500 in.	SURFACE	940.0 ft.	9.000 in.	36.00 lb/ft	Surface	947.0 ft.
8.500 in.	947.0 ft.	7710.0 ft.	7.000 in.	27.00 lb/ft	Surface	7700.0 ft.
6.125 in.	7710.0 ft.	11808.0 ft.				

Mud Record

Deviation Record

Type	From	To	Hole Size	Interval	Inc / Az (Start)	Inc / Az (End)
Water Based Mud	947.0 ft.	11808.0 ft.	13.500 in.	Surface	0.0° / 0.0°	0.3° / 261.1°
			8.500 in.	Vertical/Curve	0.9° / 243.3°	84.8° / 1.7°
			6.125 in.	Lateral	89.1° / 0.9°	91.3° / 359.5°
					/	/
					/	/
					/	/
					/	/

Acquisition System Software Version

Other

Advantage	2.20U4	Rig / Contractor:	Xtreme 8	/ Xtreme Coil Drilling
PATS	6.4.1.34	Job No:	5797242	
		District / Unit:	Rocky Mountain	/ 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.
							Top	Bottom	From	To	Start		End		Time  (hrs.)
							(ft.)	(ft.)	(ft.)	(ft.)					
2	2	2	8.500	PDC		Mud Motor	6740.0	7662.0	947.0	7710.0	02/Oct/2013 20:20	03/Oct/2013 16:00		37.2	
3	3	3	6.125	PDC		Mud Motor	7662.0	11757.0	7710.0	11808.0	05/Oct/2013 10:10	06/Oct/2013 23:00		28.9	

Crew

Name	Arrive	Depart	Name	Arrive	Depart	Name	Arrive	Depart
	Wellsite	Wellsite		Wellsite	Wellsite		Wellsite	Wellsite
Nick Roosen	02/Oct/2013	07/Oct/2013	Shirley Arimah	02/Oct/2013	07/Oct/2013			

Mud Properties Record

Date / Time	LWD Run No.	Measured	Mud	Density	Viscosity	pH	Fluid	Oil /	Source	Total	K+
		Depth (ft.)	Type	(ppg)	(s/qt)		Loss (cc)	Water		Chlorides (ppm)	(%)
03/Oct/2013 07:21	3	5842.0	Water Based Mud	9.6	36	8.5	N/A	1 / 93	Flowline	800	N/A
05/Oct/2013 23:54	4	8602.0	Water Based Mud	9.7	37	9.5	N/A	3 / 90	Flowline	1200	N/A
06/Oct/2013 20:00	4	11808.0	Water Based Mud	9.5	38	9.0	N/A	3/91	Flowline	1200	N/A

Mnemonics

Curve	Description	Units
GRAX	Gamma Ray Apparent, 0.5 ft. Avg	API
GRIX	Gamma Ray Density	points
TCDX	Downhole Temperature	degF
ROP_AVG	Rate of Penetration, 3.0 ft. Avg	ft/hr
WOB_AVG	Surface Weight on Bit, 1.0 ft. Avg	klbs
GRSI	Gamma Ray Sliding Indicator	unitless

Equipment and Service Data

LWD Run No.	Tool	Serial Number	Measurement	Bit Offset (m.)	Max O.D. (in.)	Min I.D. (in.)
3	DIR	12168813	Directional	45.76	6.750	3.250
3	SRIG	12023982	Gamma	42.39	6.750	3.250
4	DIR	12042365	Directional	54.24	4.750	1.750
4	SRIG	12595025	Gamma	50.86	4.750	1.750

Service and Tool Mnemonics

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

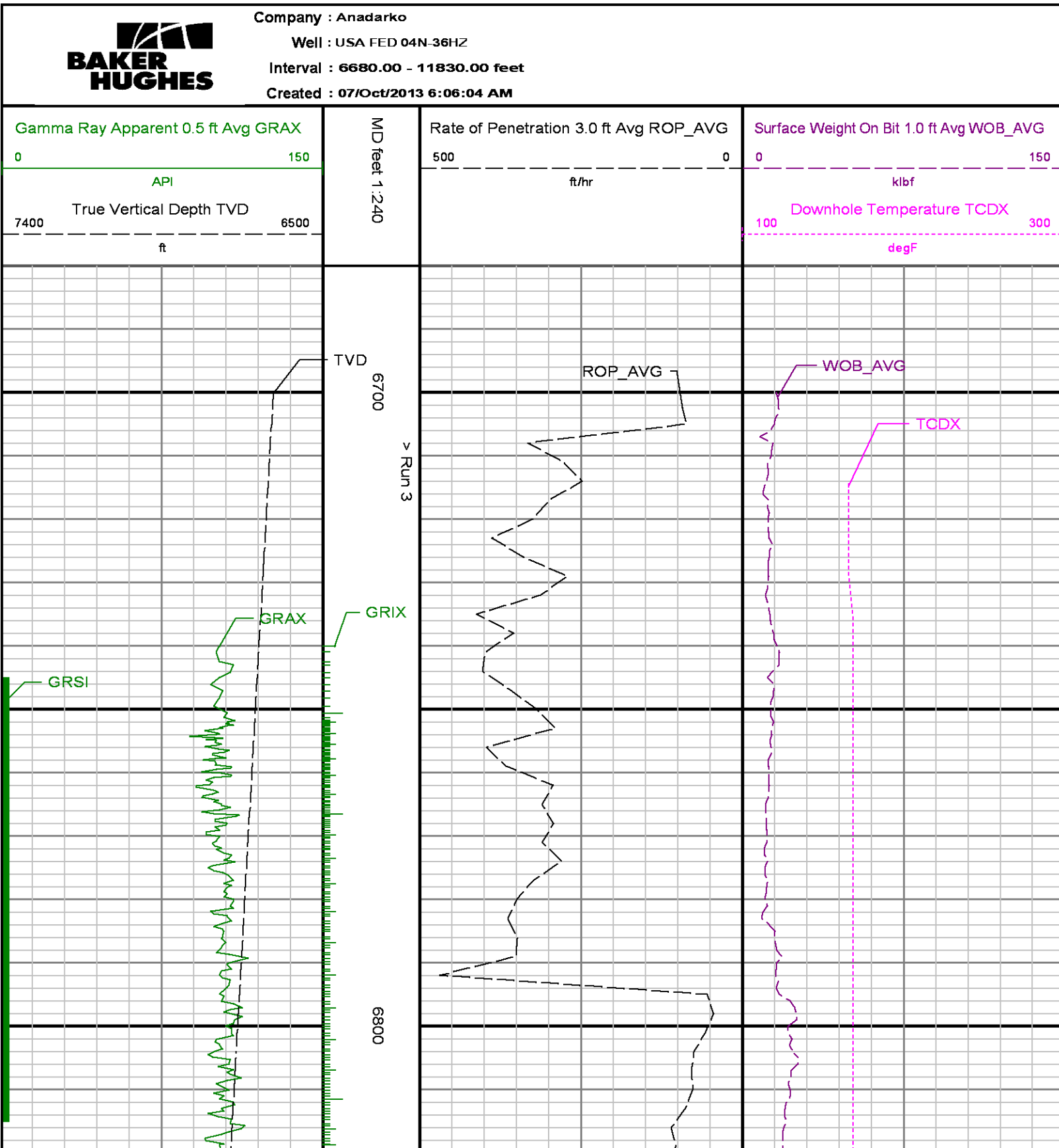
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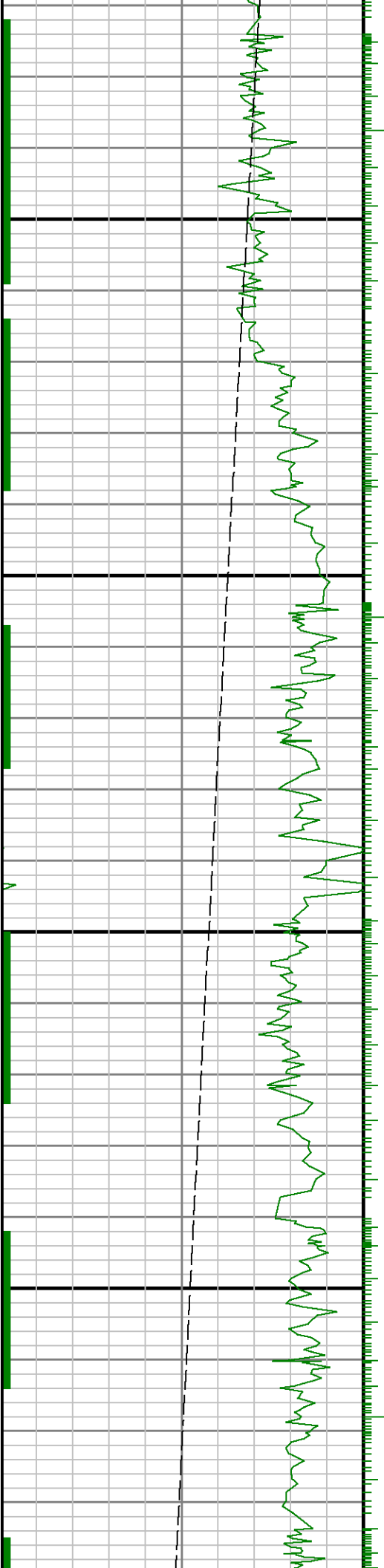
(1) Baker Hughes INTEQ run 3 utilized 6 1/2 inch NaviGamma services (Gamma Ray and Directional) behind an 8 3/4 inch bit and steerable assembly from 947 to 7710 feet MD (947 to 7300 feet TVD)
(2) Baker Hughes INTEQ run 4 utilized 4 3/4 inch NaviGamma services (Gamma Ray and Directional) behind an 6.125 inch bit and steerable assembly from 7710 to 11808 feet MD (7300 to 7291 feet TVD)
(3) A sliding indicator is shown to the right edge of track 1 as a heavy line.

Remarks

Number	Measured Depth (ft.)	Hole Section (in.)	LWD Run No.	Remark
1	7110	2-200	3	The interval from 7410 to 7662 feet MD (7229 to 7296 feet TVD) was not properly logged due to a gamma sensor failure in the

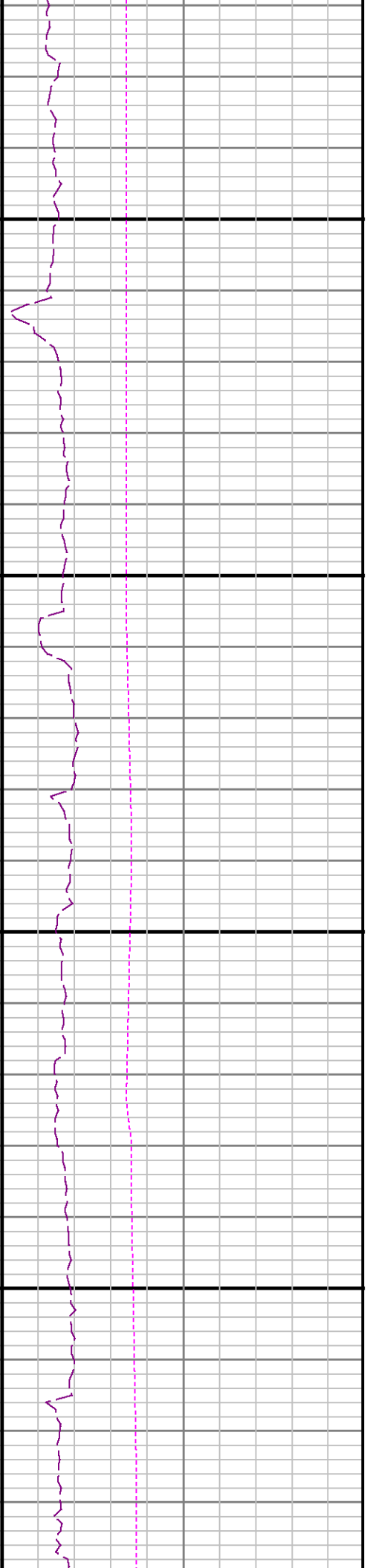
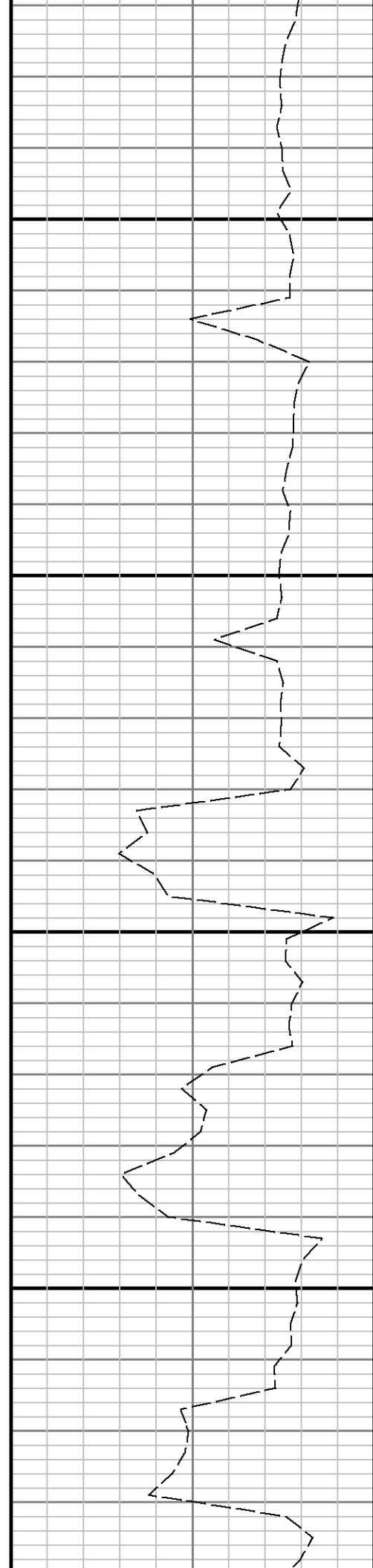
1	7410	8.500	3	MWD tool. Known good values were intermittent at best. Anadarko staff geologist had already received the necessary markers and it was decided to drill ahead and land the curve without gamma data.
2	7700	6.125	4	The interval from 7662 to 7710 feet MD (7296 to 7300 feet TVD) was logged up to 36 hours later due to trip out of hole to pick up 4 3/4 BHA for Lateral Run.
3	11800	6.125	4	The interval from 11757 to 11808 feet MD (7293 to 7291 feet TVD) was not logged due to sensor offset to bit at TD.

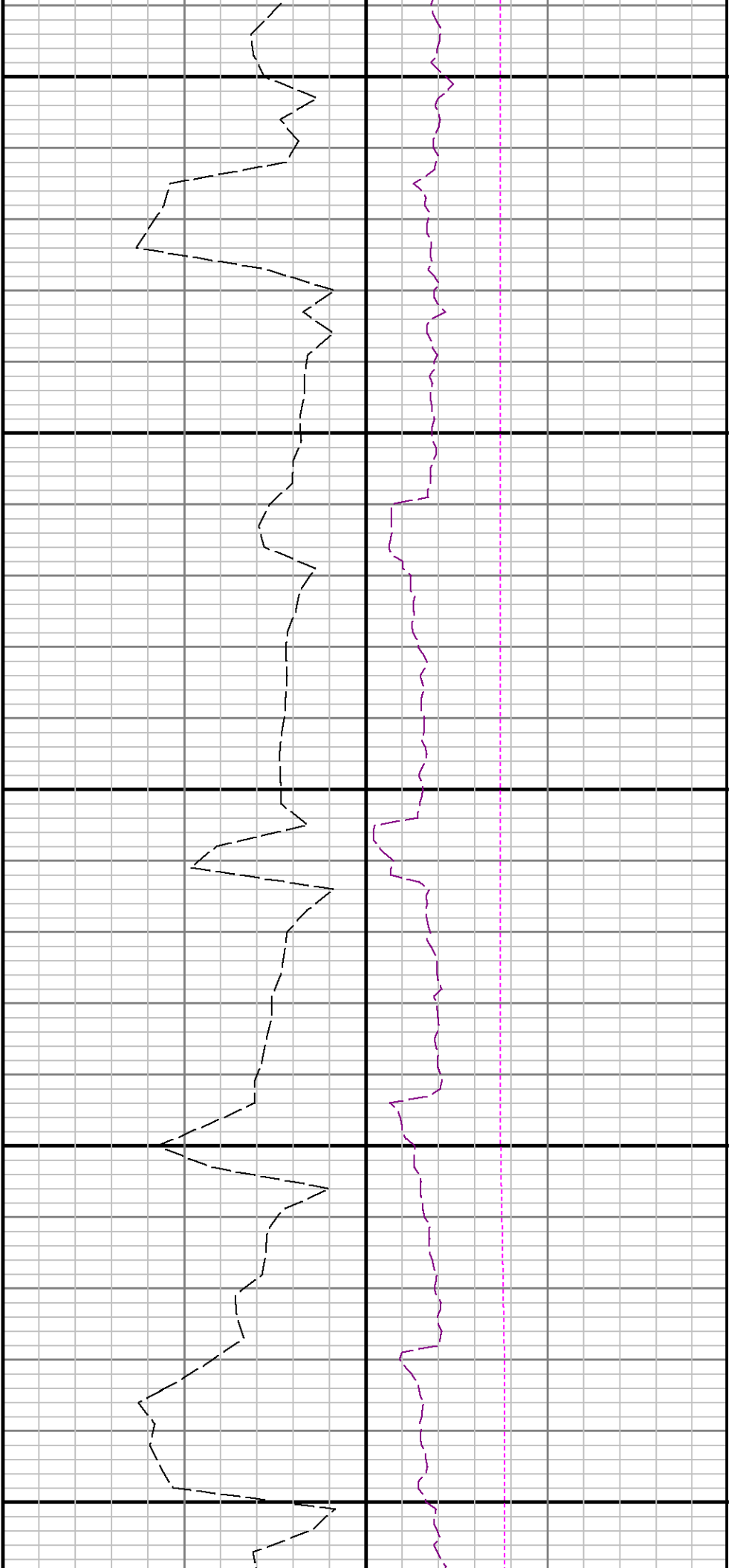




6900

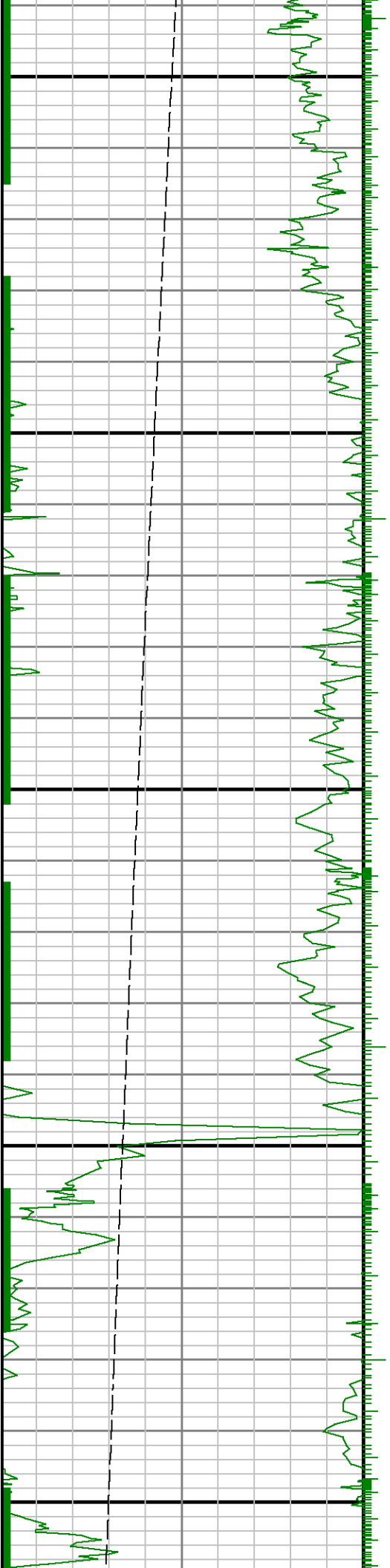
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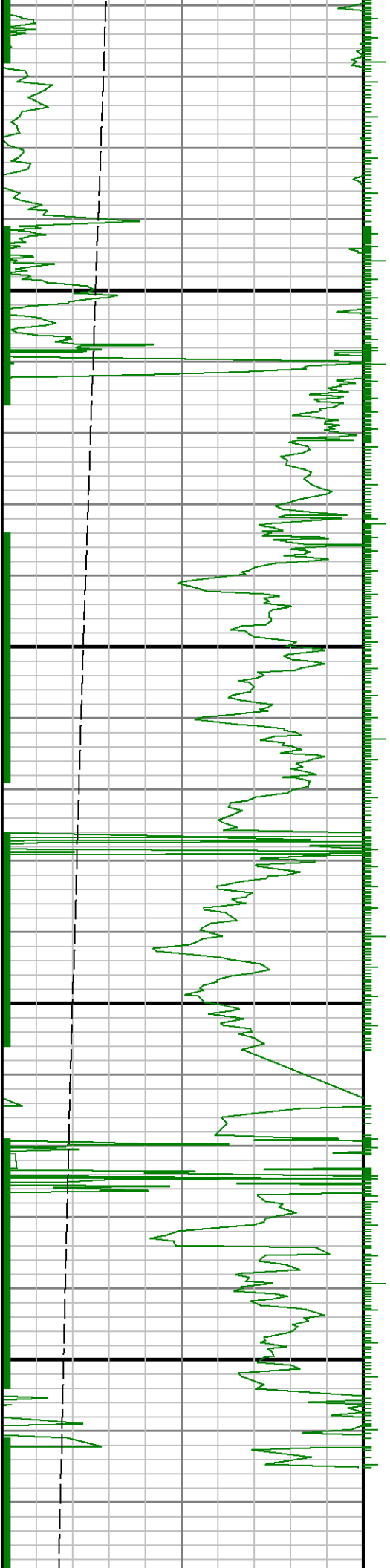




7100

7200

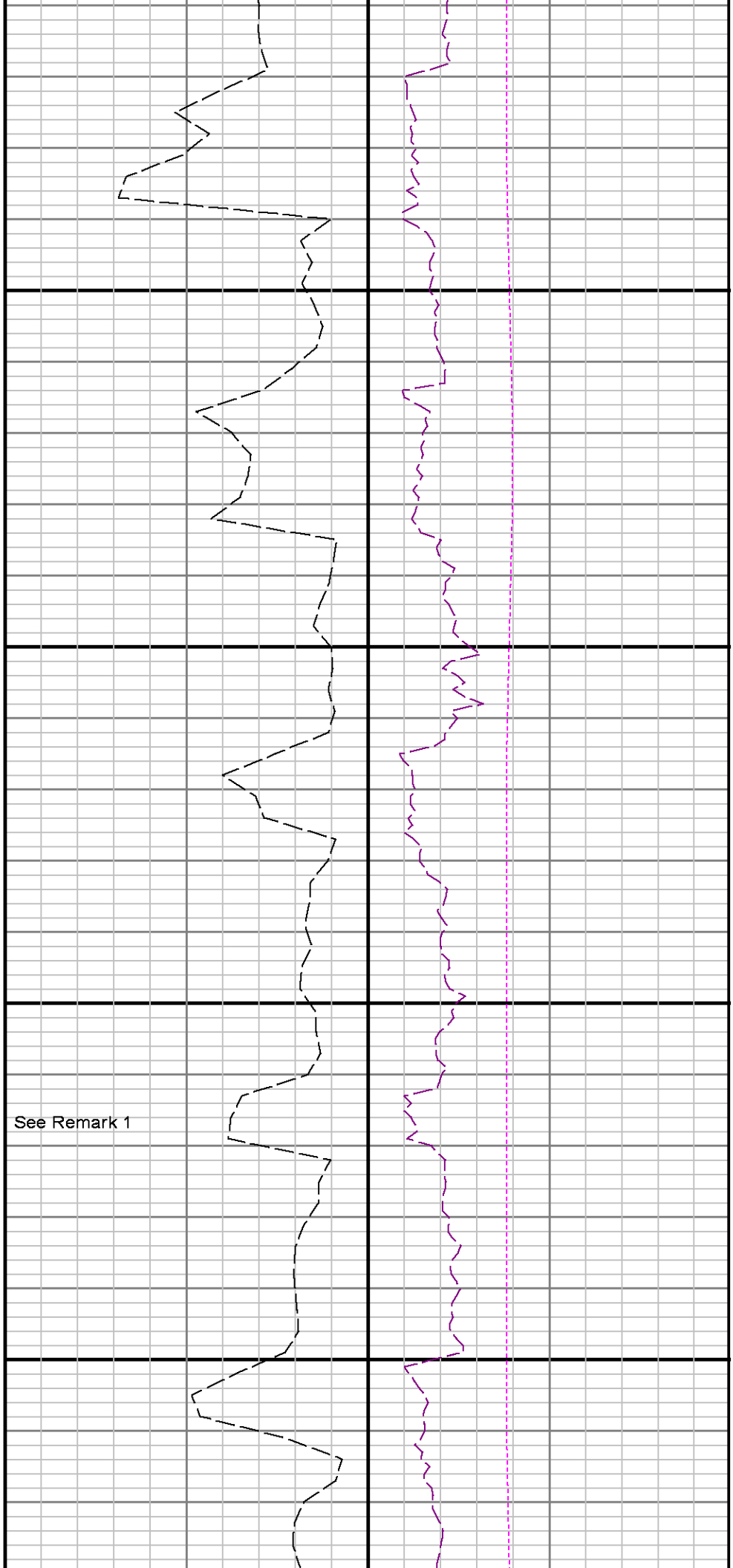


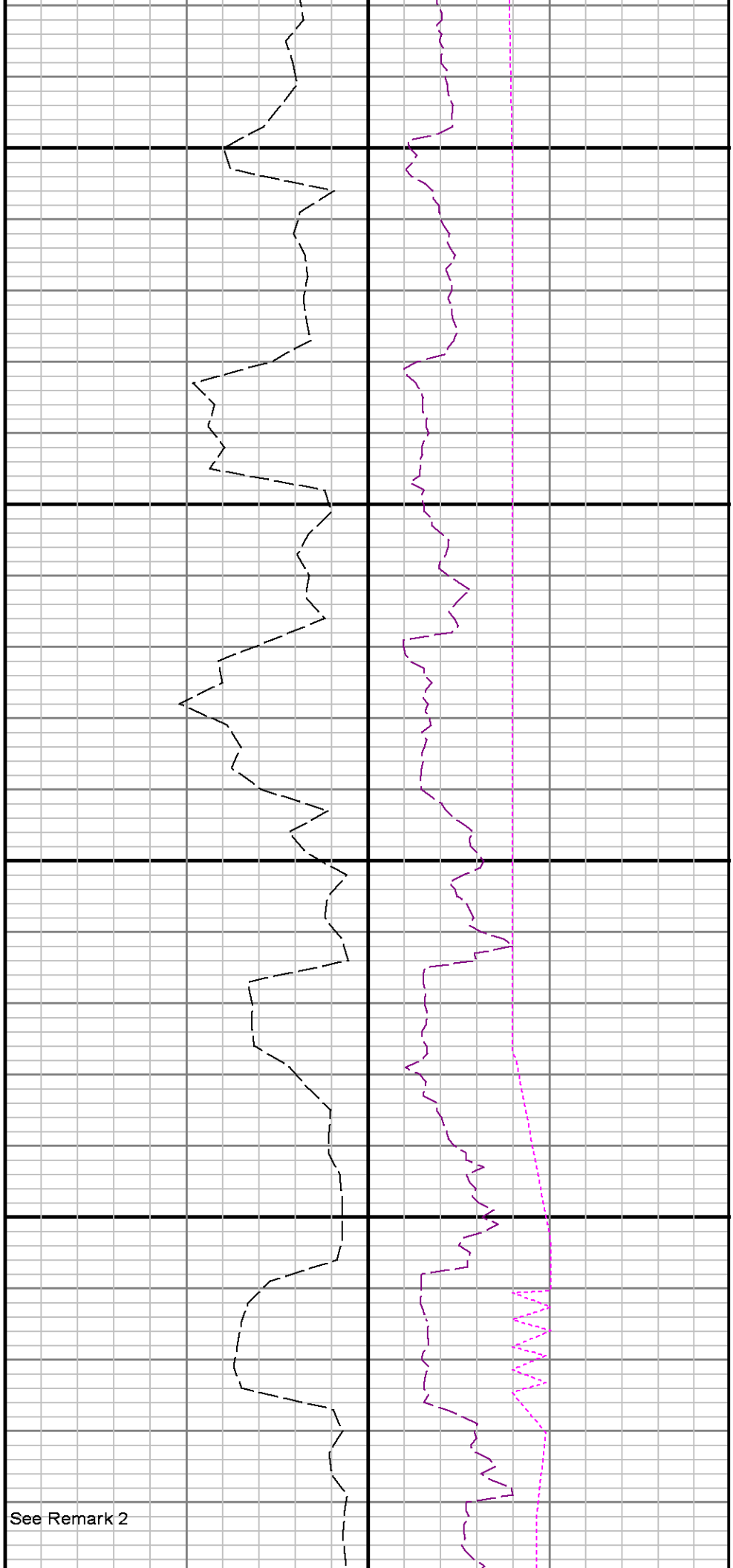
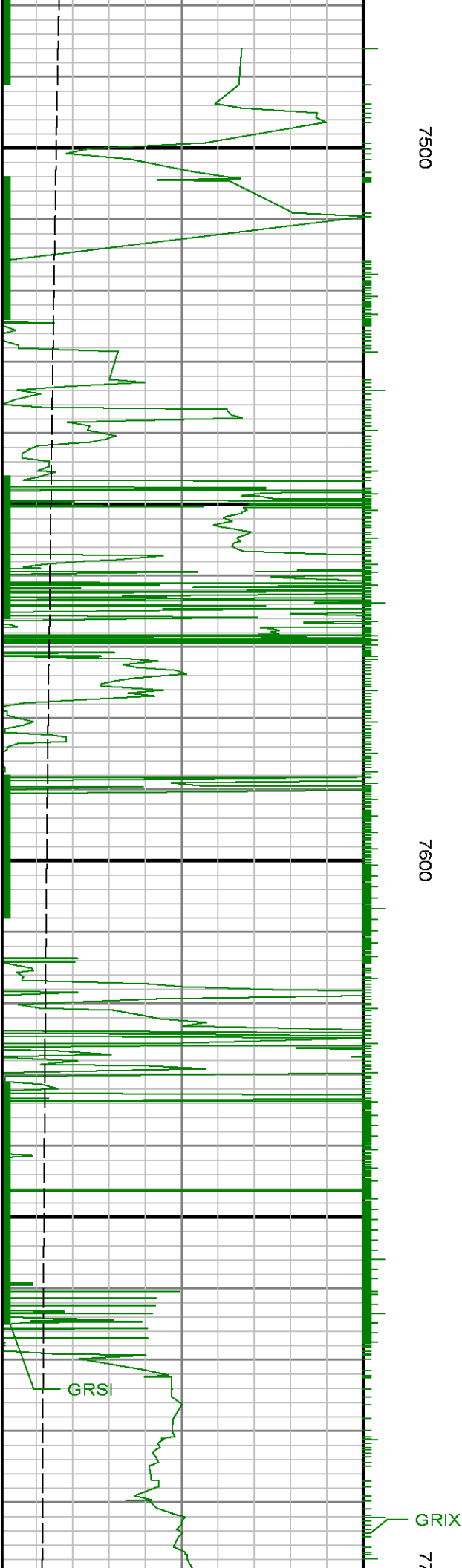


7300

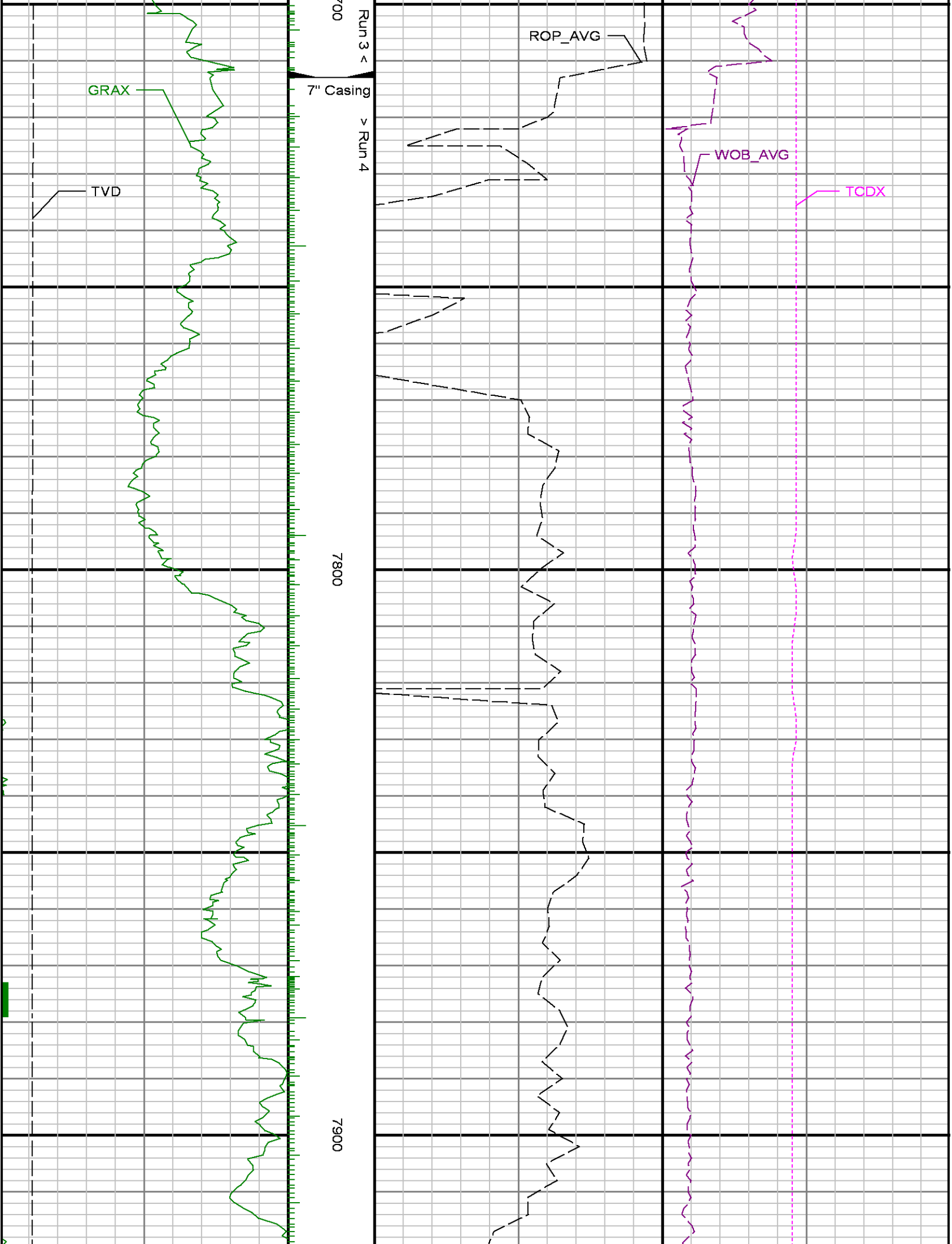
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See Remark 1

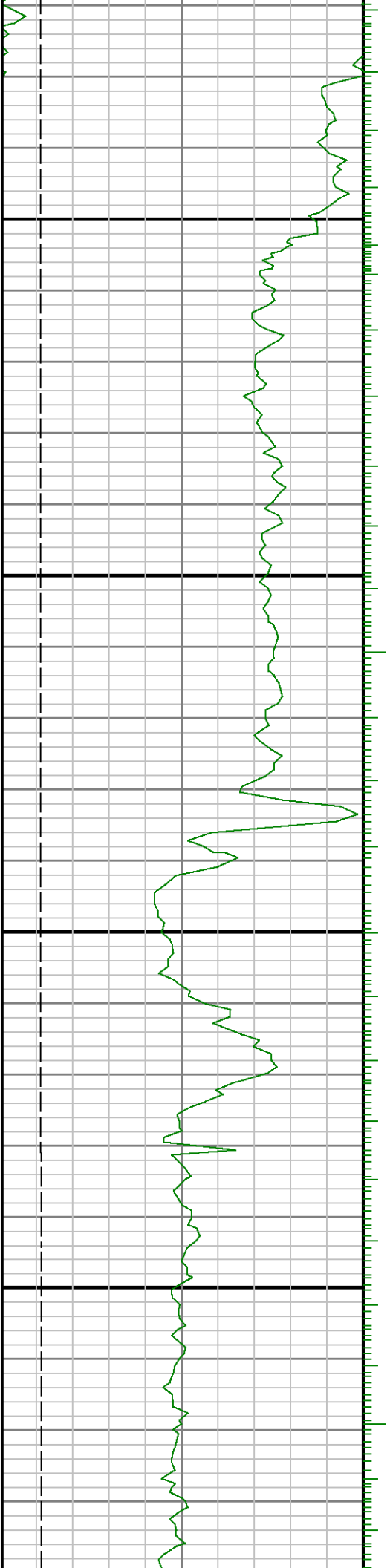




See Remark 2

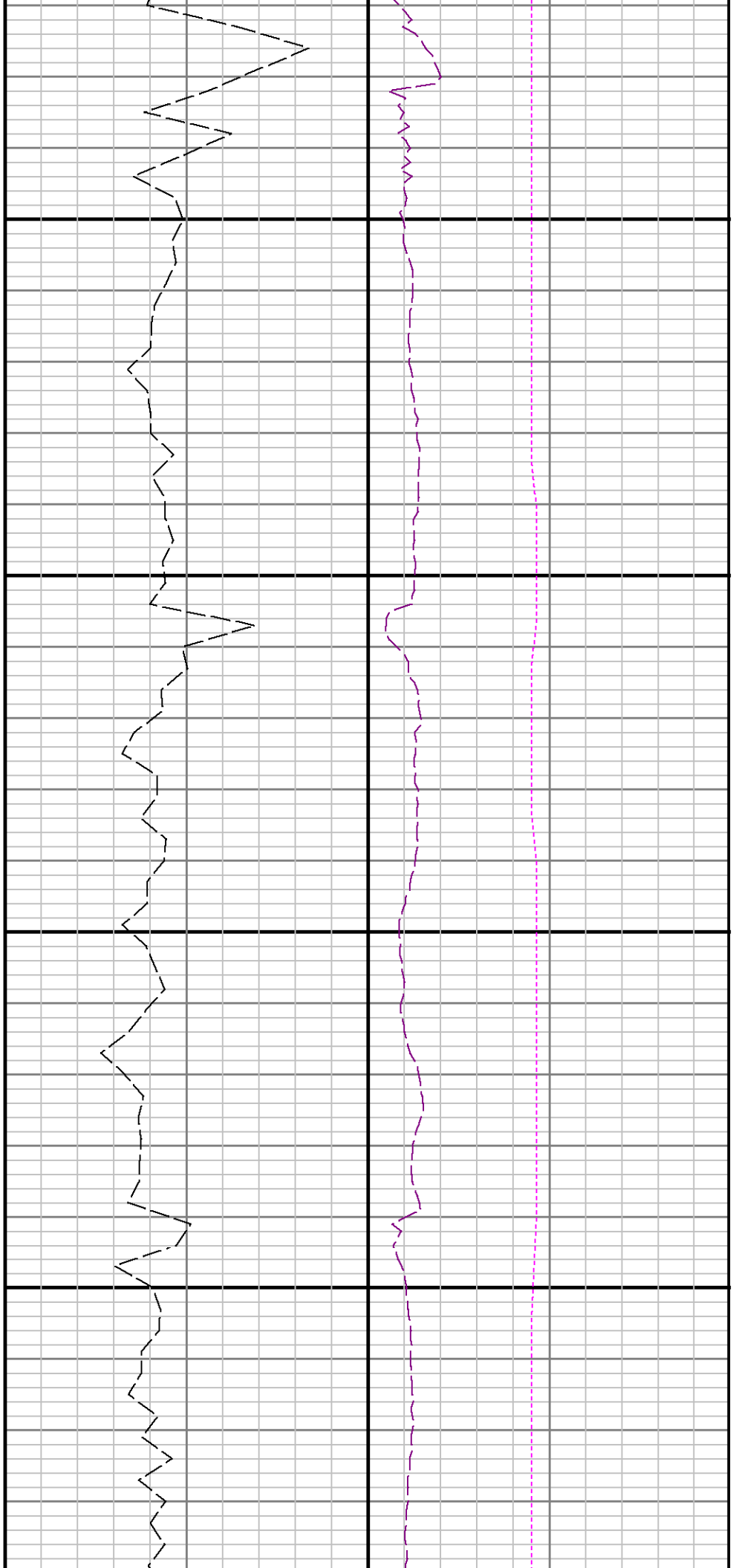


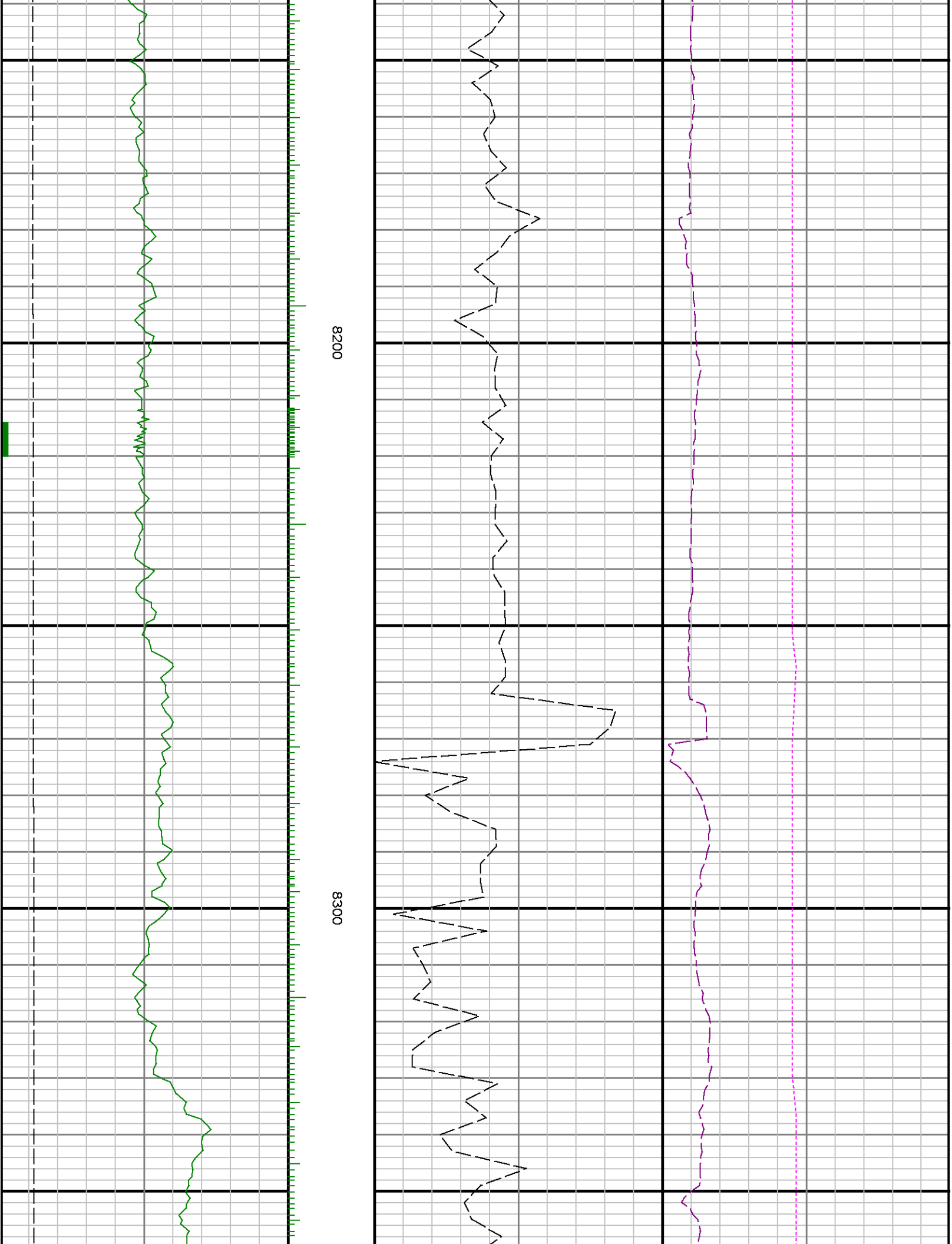


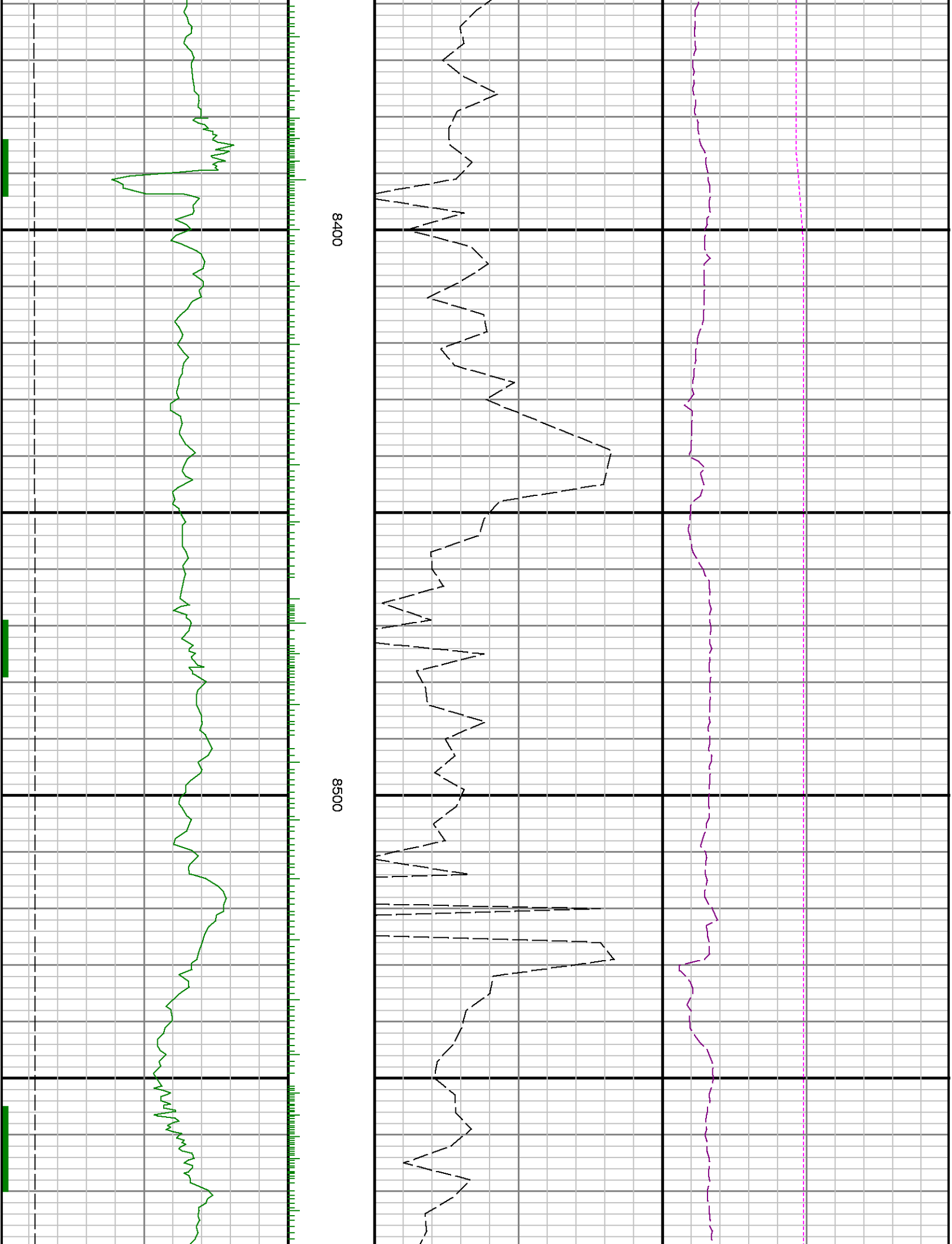


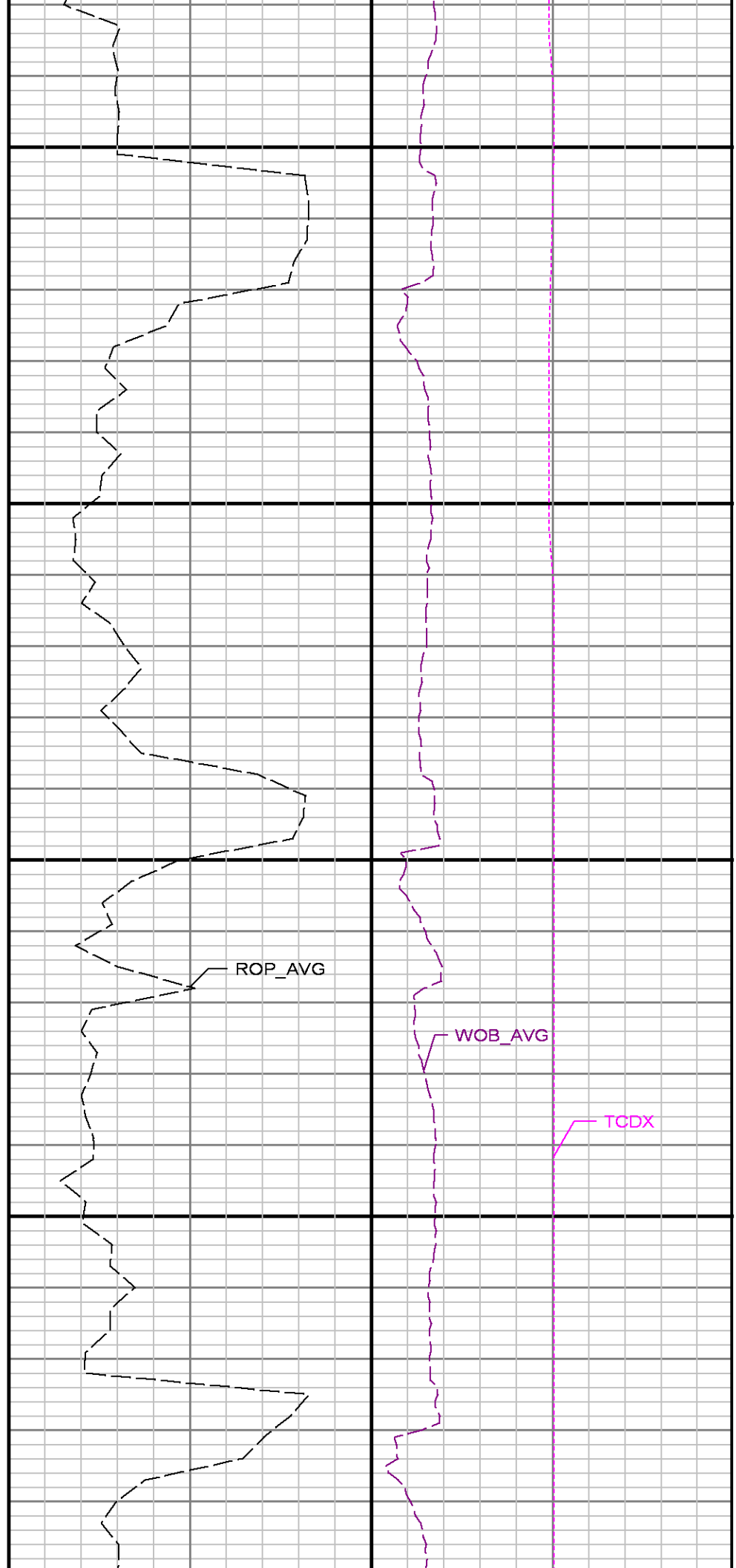
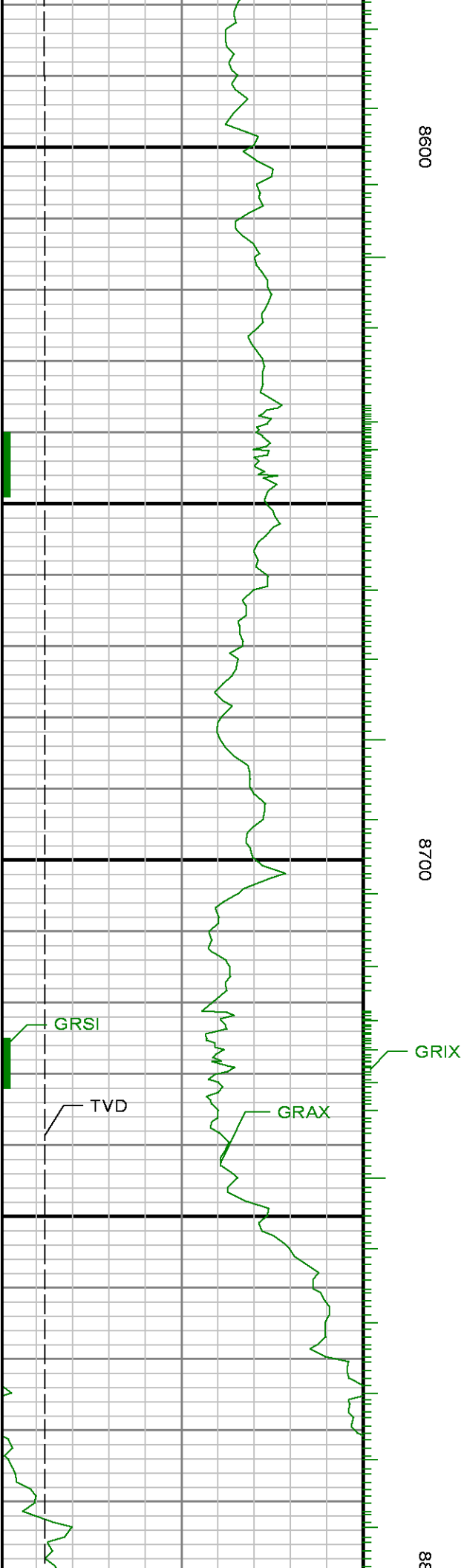
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8100

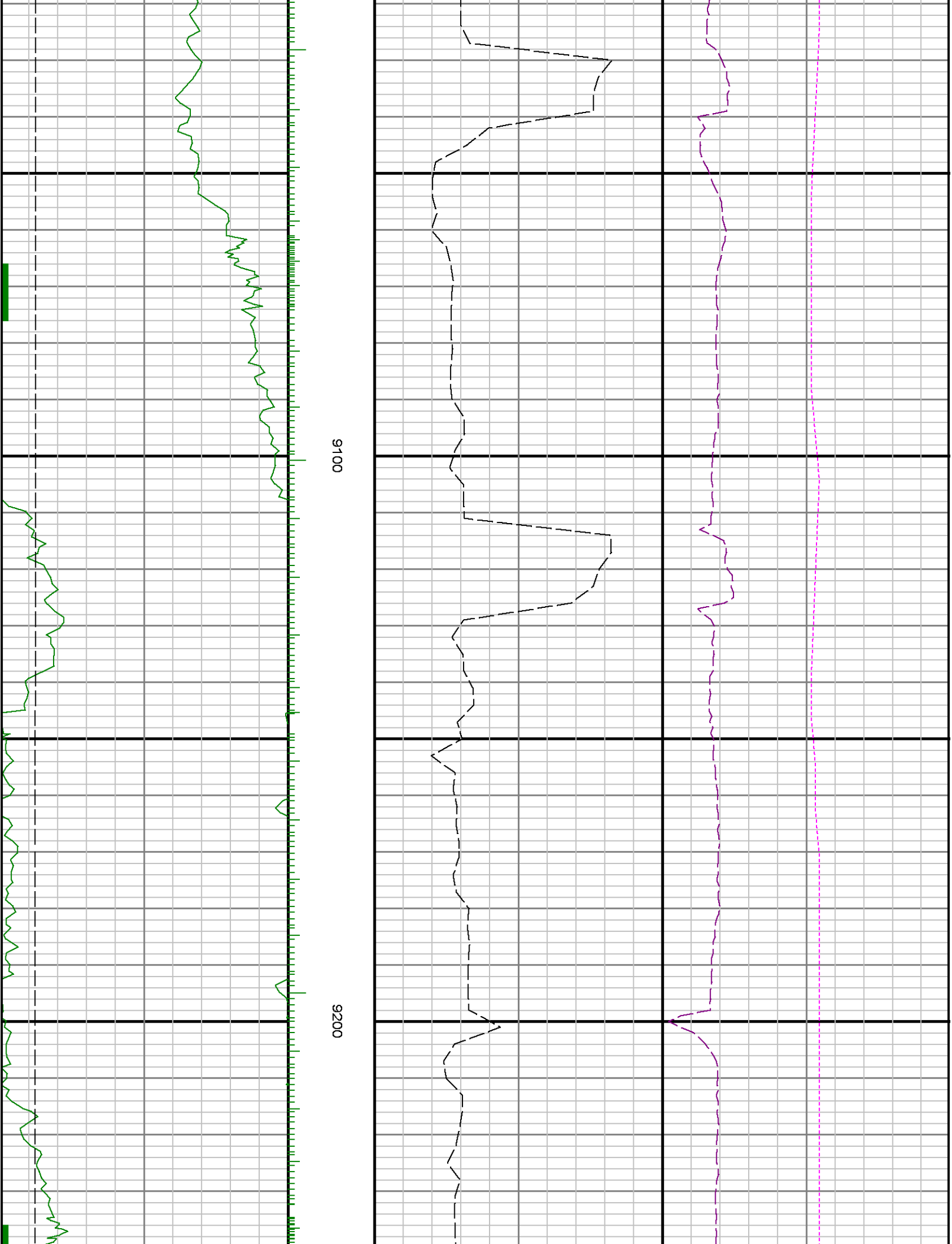


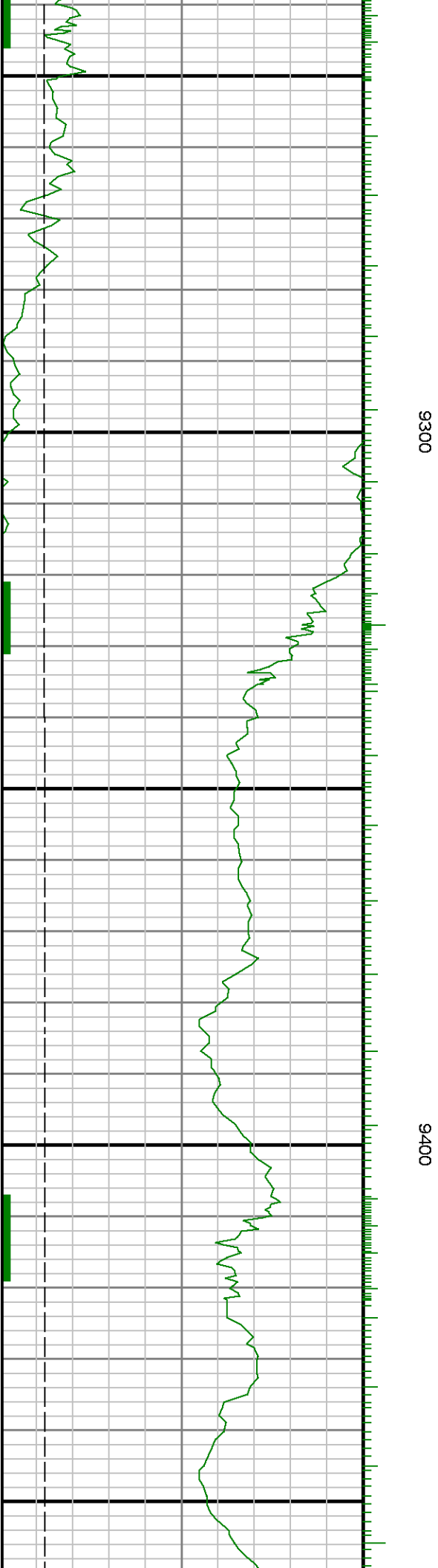
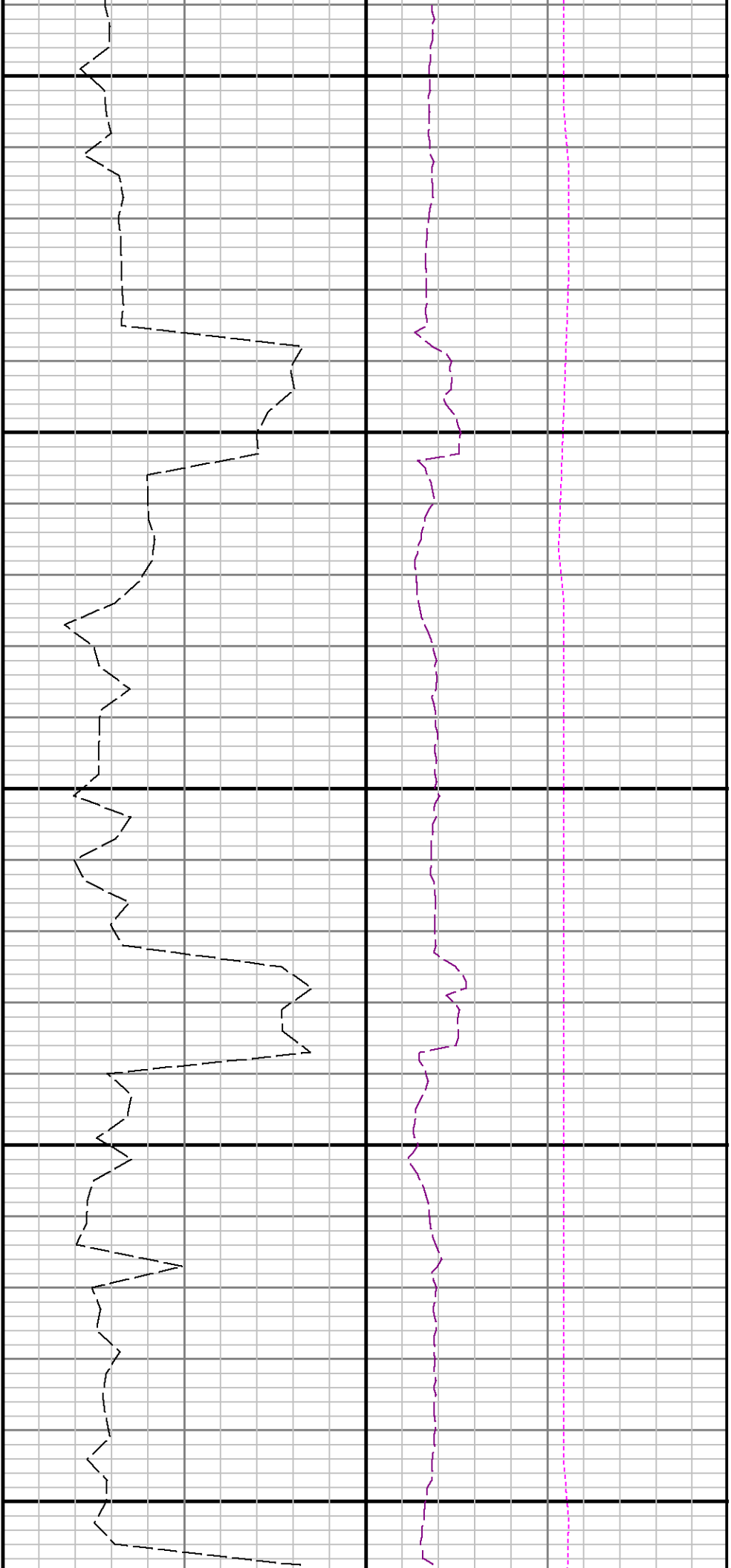


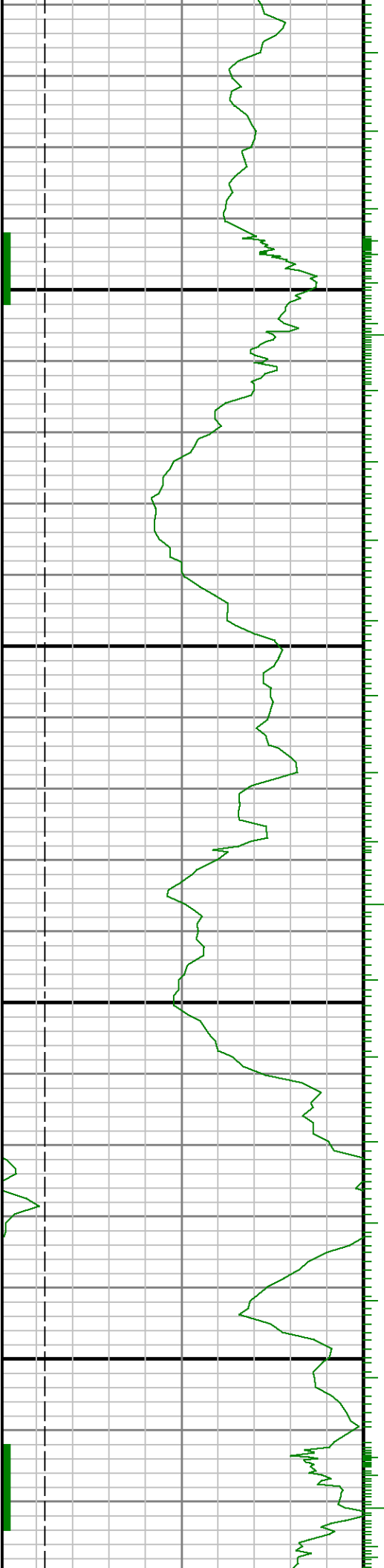






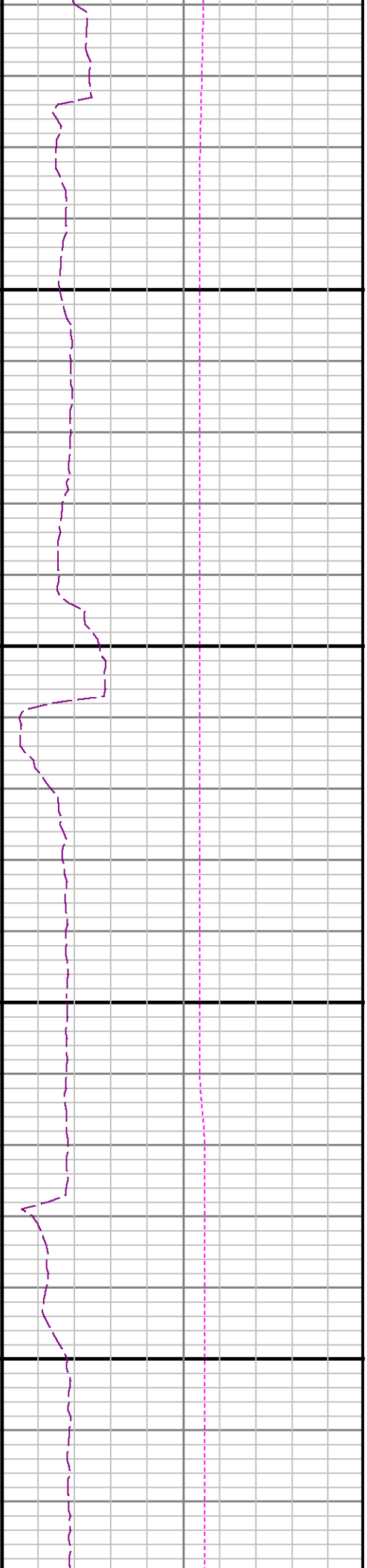
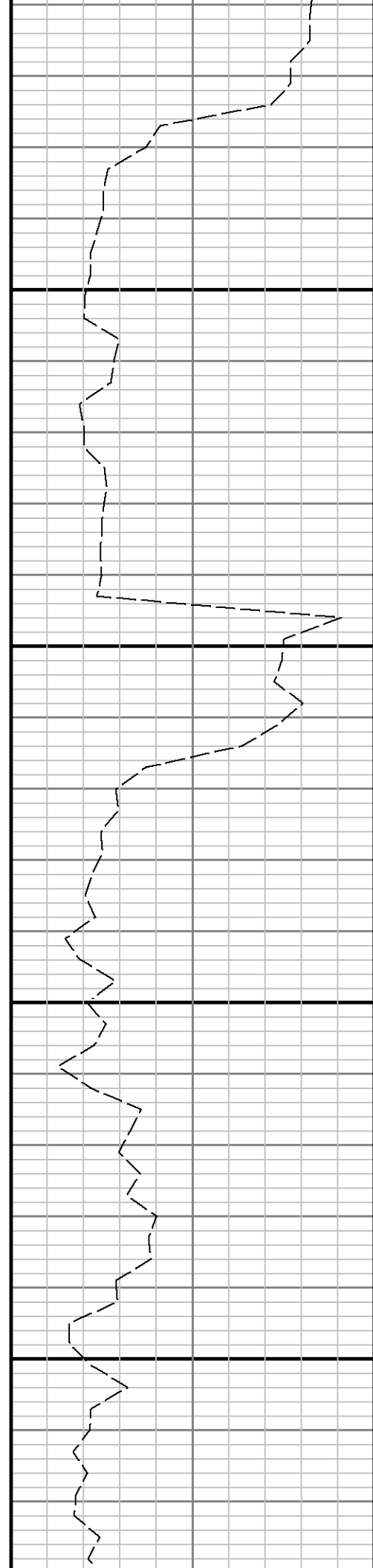




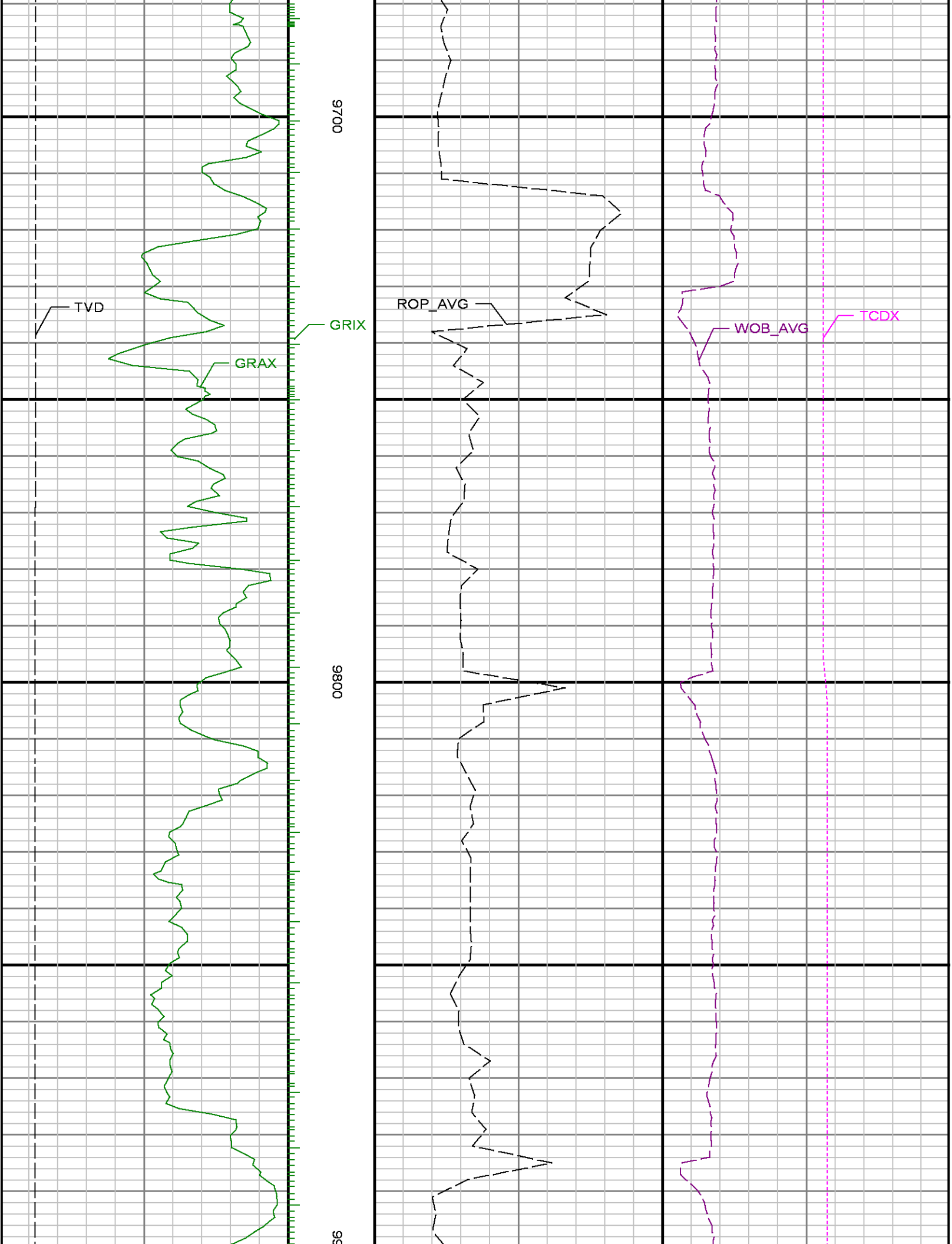


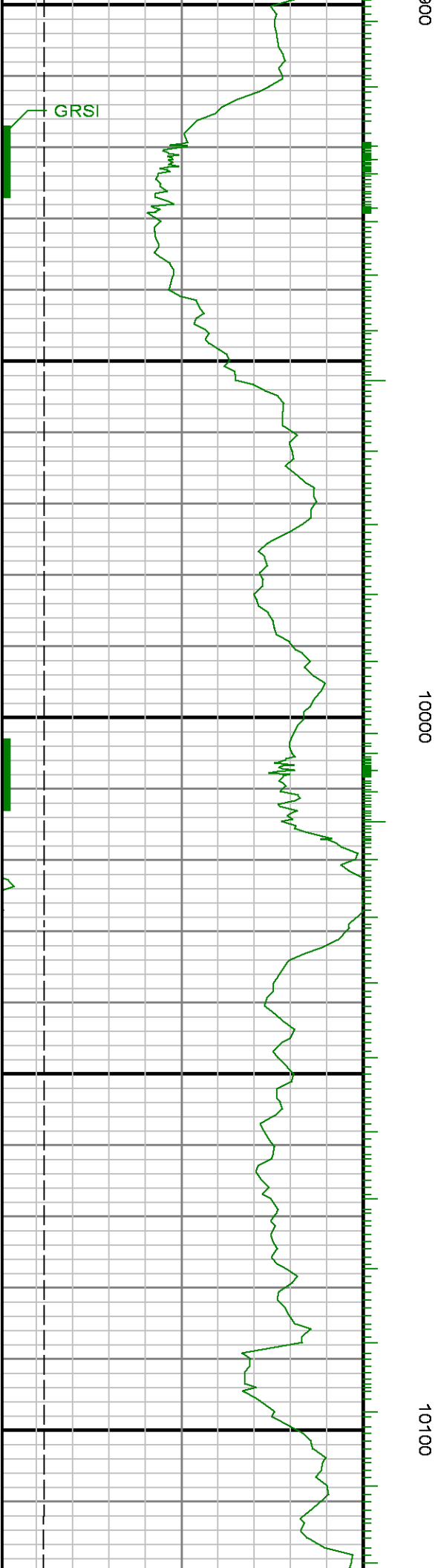
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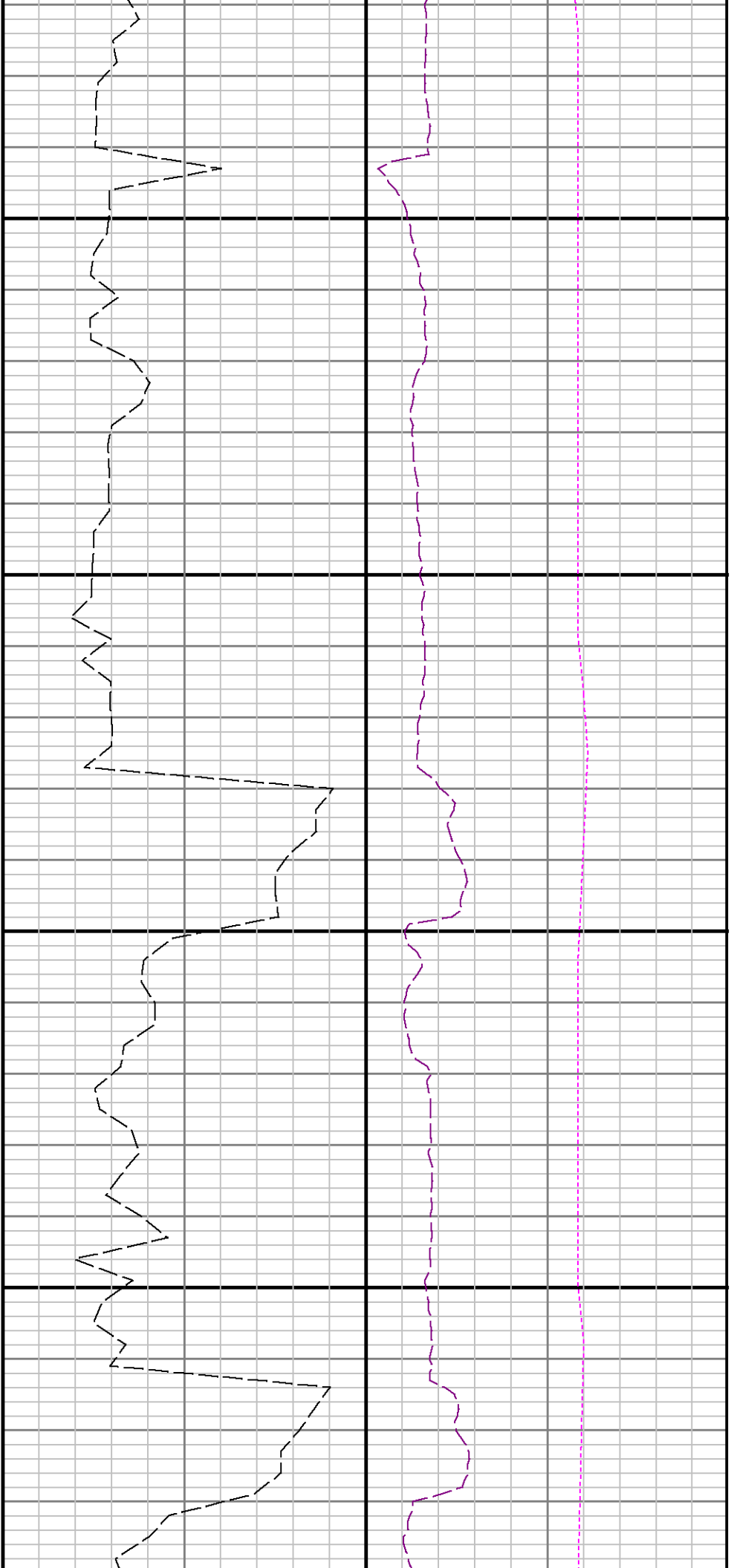
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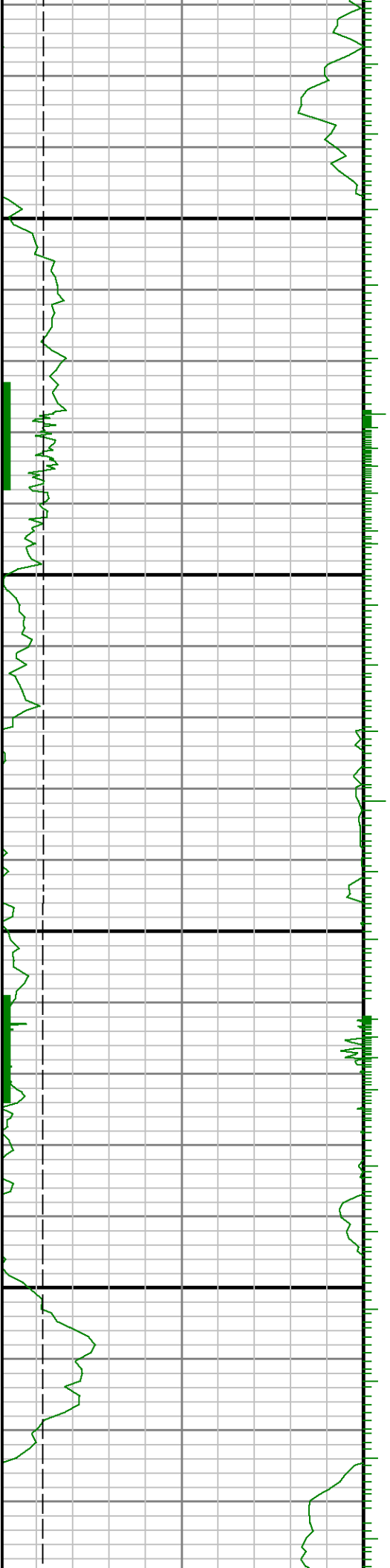




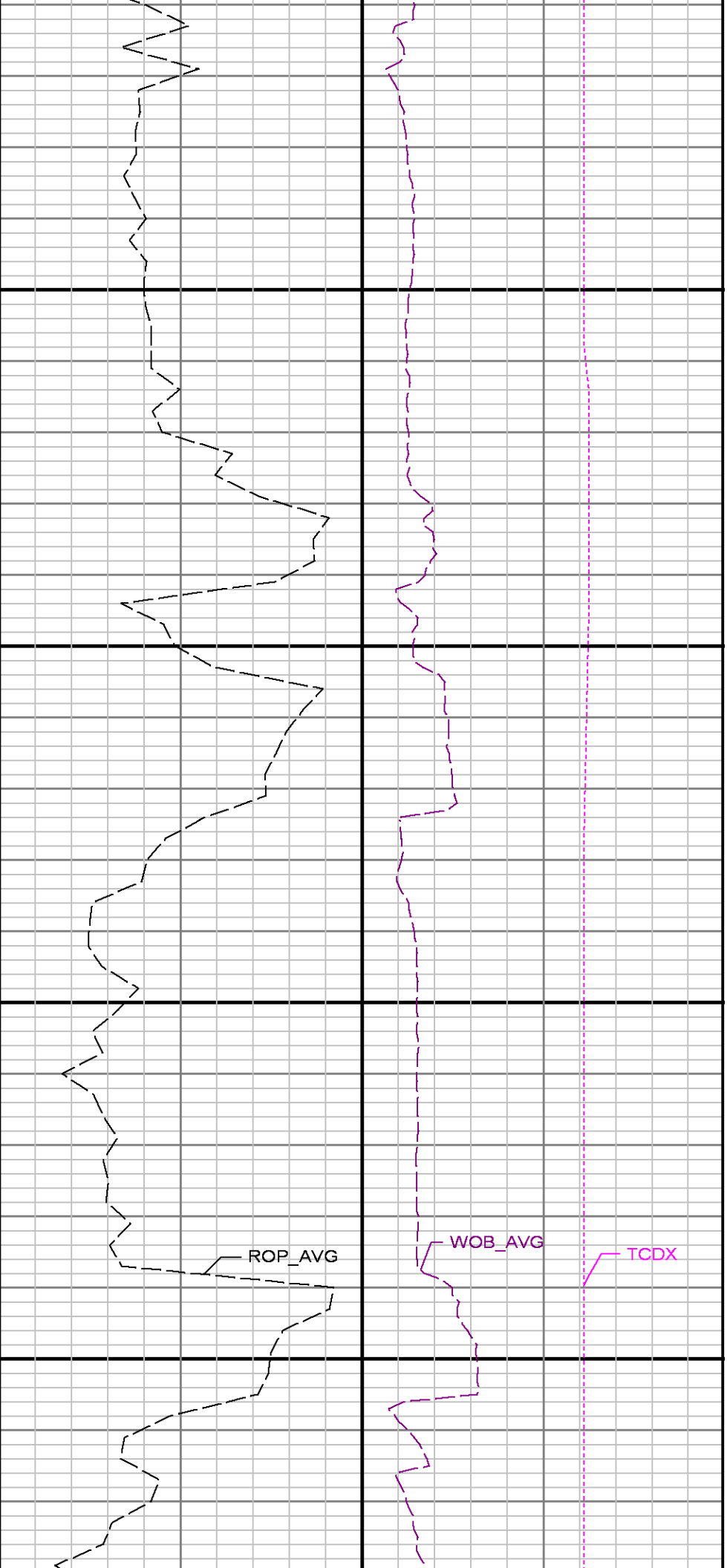
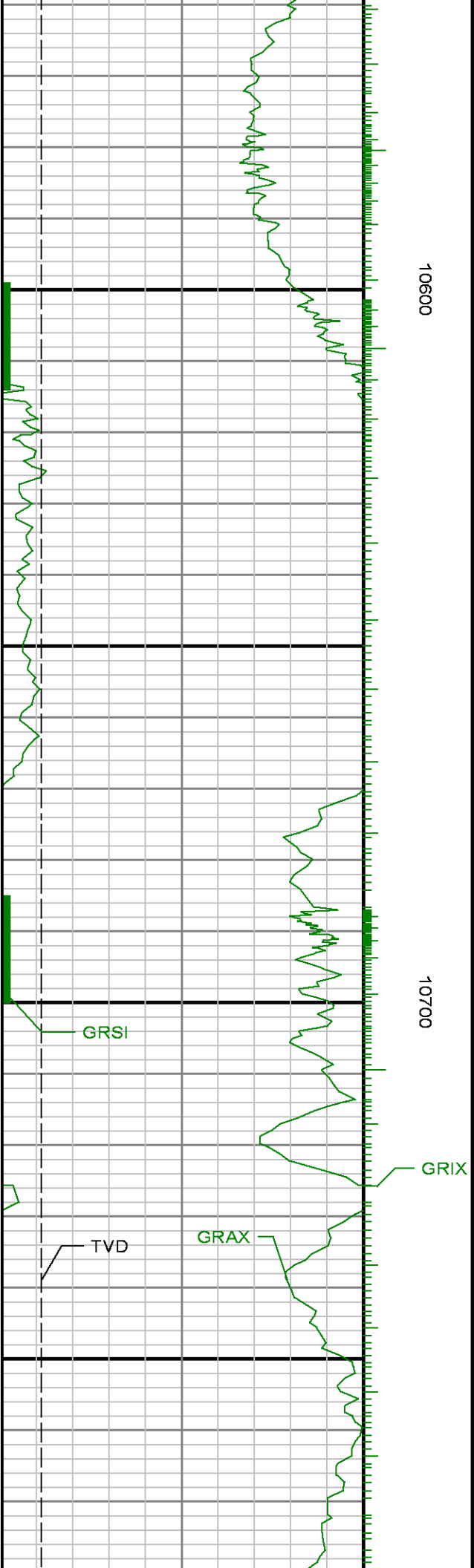


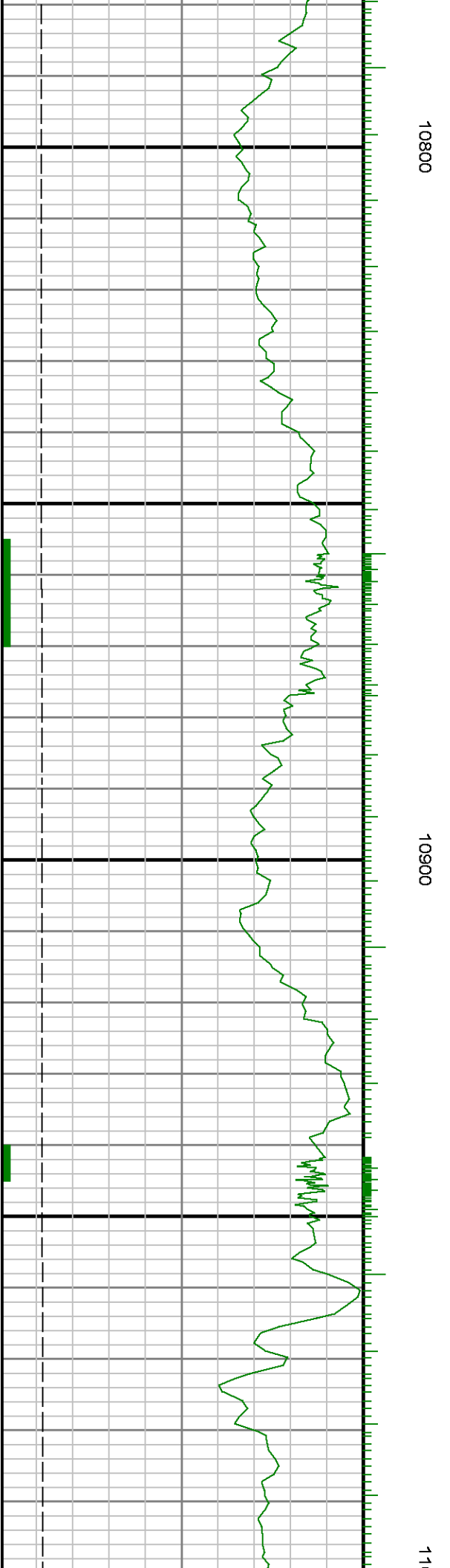
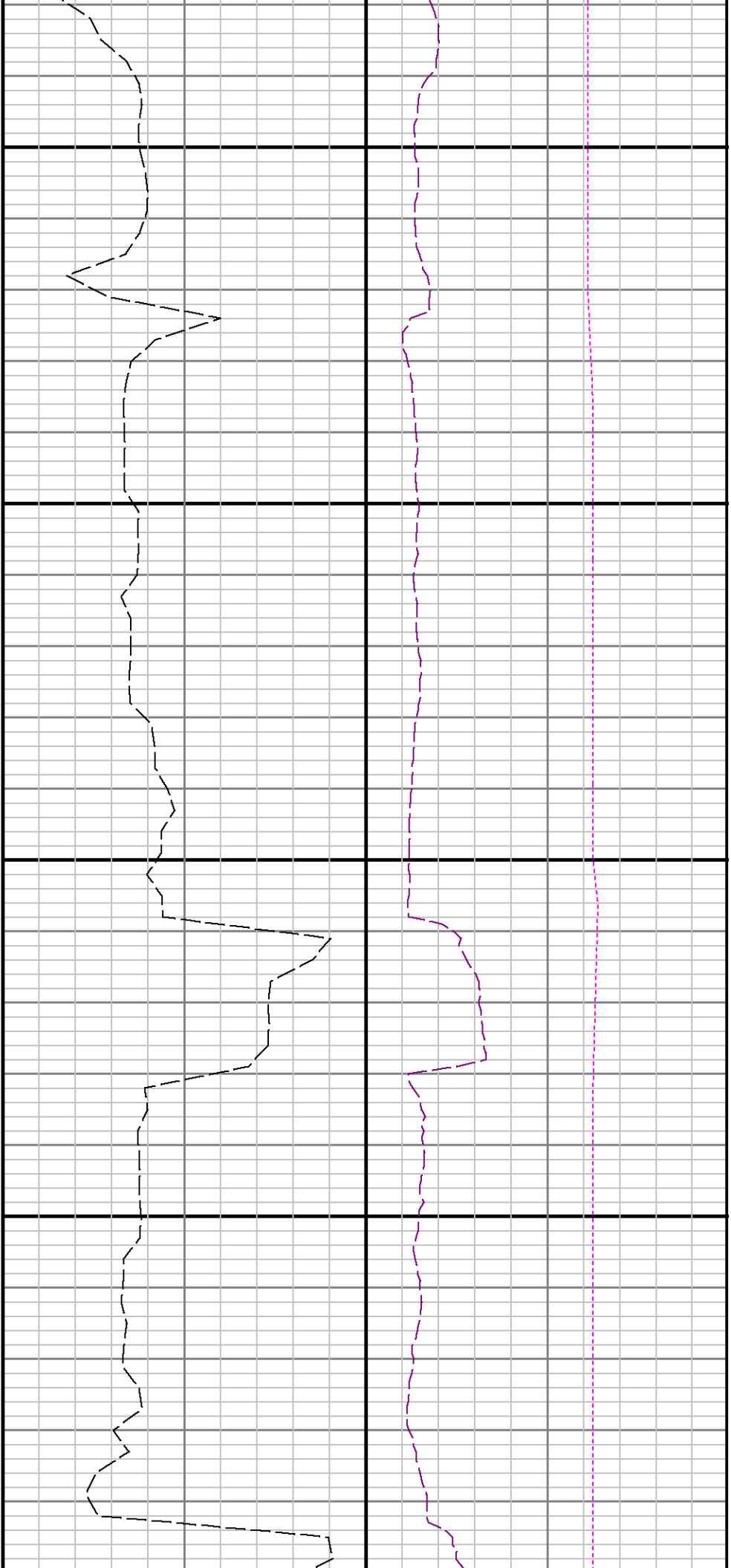
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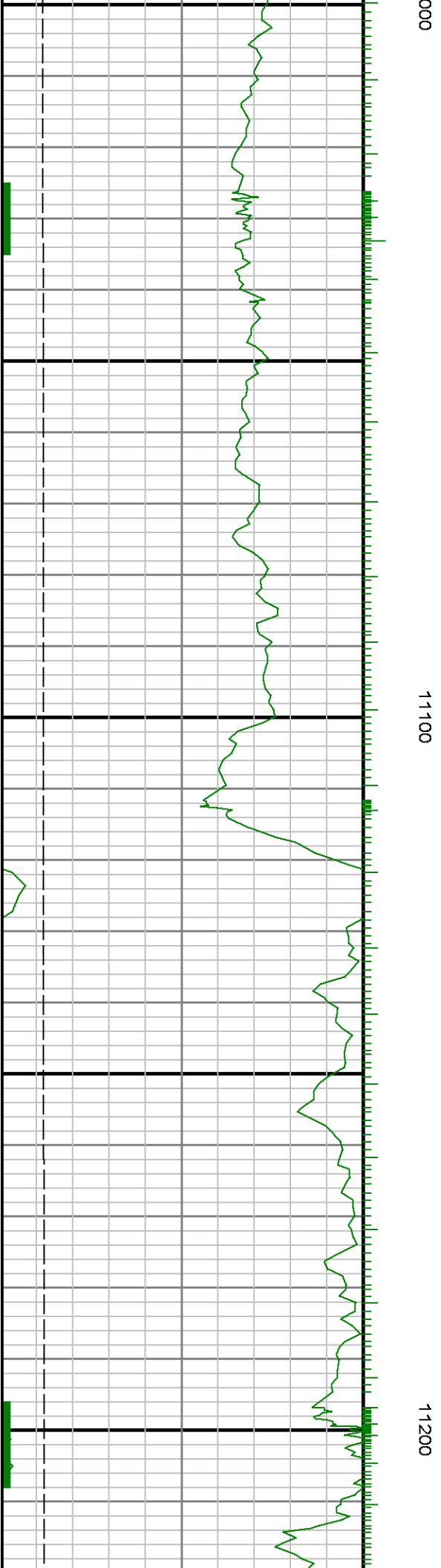
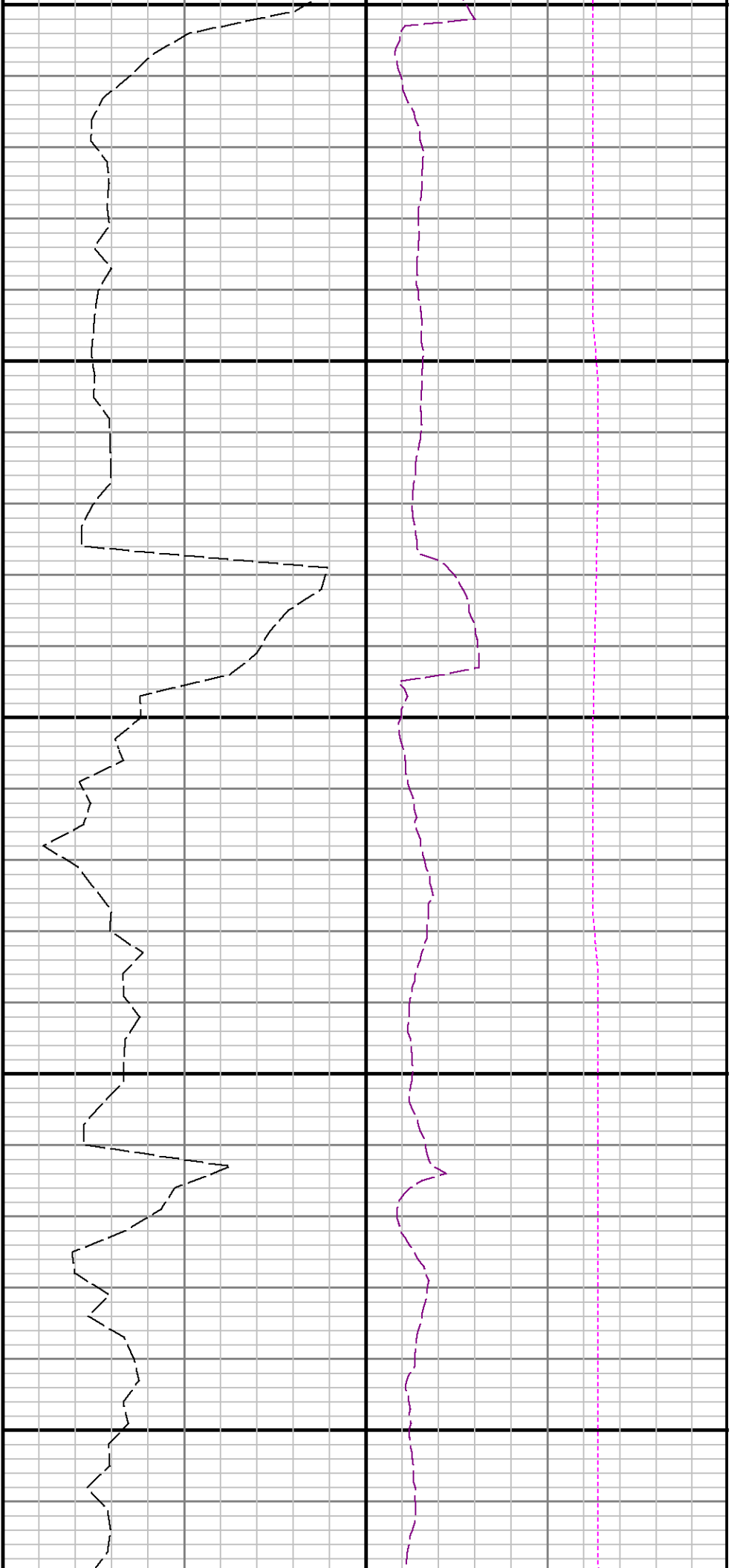
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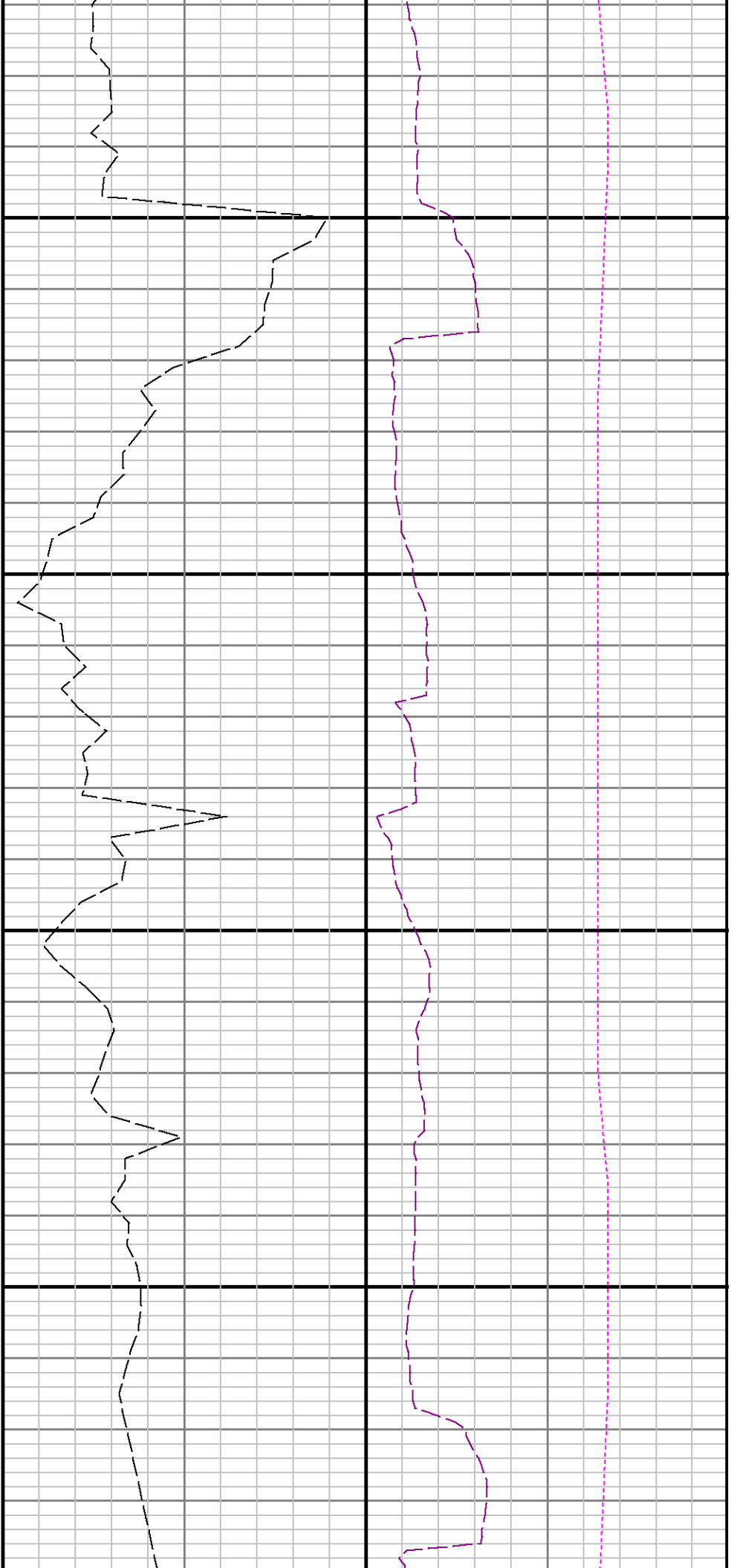












11300

11400

