



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+ (%)
01/Sep/2015	18:00	1	2013	Oil Based Mud	9.1	11	N/A	N/A	65 / 25	Active Mud Pit	68000	0.0
02/Sep/2015	18:00	3	6171	Oil Based Mud	9.1	14	N/A	N/A	64 / 25	Active Mud Pit	71000	0.0
03/Sep/2015	18:00	3	7684	Oil Based Mud	9.3	16	N/A	N/A	62 / 26	Active Mud Pit	78000	0.0

Mud Resistivity Record

				Surface				Downhole			
Date / Time		LWD Run No.	Measured Depth (ft.)	Surface Temp (deg F)	Rm (ohm.m)	Rmf (ohm.m)	Rmc (ohm.m)	BHCT (deg F)	Rm @ BHCT (ohm.m)	Rmf @ BHCT (ohm.m)	Rmc @ BHCT (ohm.m)
01/Sep/2015	20:43	1	2013	100	100.00	100.00	100.00	120	83.46	83.46	83.46
02/Sep/2015	12:00	2	4378	100	100.00	100.00	100.00	120	83.46	83.46	83.46
03/Sep/2015	07:00	3	6963	100	100.00	100.00	100.00	169	59.39	59.39	59.39

Mnemonics

Curve	Description	Units
GRAM	Gamma Ray Apparent, 0.5 ft. Avg	API
GRIM	Gamma Ray Data Density	unitless
RACHM	Resistivity (AT) (LS) 2 MHz Compensated Borehole Corrected	ohm-m
RACLM	Resistivity (AT) (LS) 400 kHz Compensated Borehole Corrected	ohm-m
RPCHM	Resistivity (PD) (LS) 2 MHz Compensated Borehole Corrected	ohm-m
RPCLM	Resistivity (PD) (LS) 400 kHz Compensated Borehole Corrected	ohm-m
CACLM	Conductivity (AT) (LS) 400 kHz Compensated Borehole Corrected	mmho/m
RPTHM	Resistivity Time Since Drilled	min
RPSIHM	Resistivity Slide Indicator	unitless
ROPA	Rate of Penetration, 3.0 ft. Avg	ft/hr

Equipment and Service Data

LWD Run No.	Tool	Serial Number	Measurement	Bit Offset (ft.)	Max O.D. (in.)	Min I.D. (in.)
1	CS	13345920	-	68.38	7.020	4.350
1	BCPM	11823270	Telemetry	61.11	7.270	4.350
1	FLEX SUB	13600471	-	54.27	5.000	4.350
1	OTK	12494218	Directional	49.56	7.031	2.165
1	OTK	12494218	Resistivity	43.75	7.031	2.165
1	OTK	12494218	Gamma	39.71	7.031	2.165
1	OTK	12494218	Pressure	38.83	7.031	2.165
1	CS	13270500	-	35.48	7.010	4.350
2	CS	13270773	-	70.96	7.000	3.125
2	BCPM	12761885	Telemetry	60.53	7.000	3.125

2	FLEX SUB	13517312	-	53.44	5.000	3.000
2	OTK	12382038	Directional	48.74	7.031	2.165
2	OTK	12382038	Resistivity	42.93	7.031	2.165
2	OTK	12382038	Gamma	38.90	7.031	2.165
2	OTK	12382038	Pressure	38.01	7.031	2.165
2	CS	12202667	-	35.44	7.000	3.125
3	CS	13270773	-	67.06	7.000	3.125
3	BCPM	12761885	Telemetry	56.63	7.000	3.125
3	FLEX SUB	13517312	-	49.54	5.000	3.000
3	OTK	12382038	Directional	44.84	7.031	2.165
3	OTK	12382038	Resistivity	39.03	7.031	2.165
3	OTK	12382038	Gamma	35.00	7.031	2.165
3	OTK	12382038	Pressure	34.11	7.031	2.165
3	CS	12202667	-	31.54	7.000	3.125
4	DIR	12017345	Directional	51.21	6.750	3.125
4	SRIG	12023992	Gamma	47.79	6.750	3.125

### Service and Tool Mnemonics

Mnemonic	Name	Description
BCPM	BCPM	Mud pulse telemetry and downhole tool power module
DIR	Directional	Wellbore directional survey
FLEX SUB	Flex Sub	Flexible sub connection
OTK	OnTrak	Propagation resistivity, propagation conductivity, gamma ray, directional, annular pressure, system memory and VSS
SRIG	Inclination and Gamma	Probe based gamma ray and inclination module
CS	Closure Sub	BHA power ring isolator allowing insertion of inert sub into electrically powered BHA


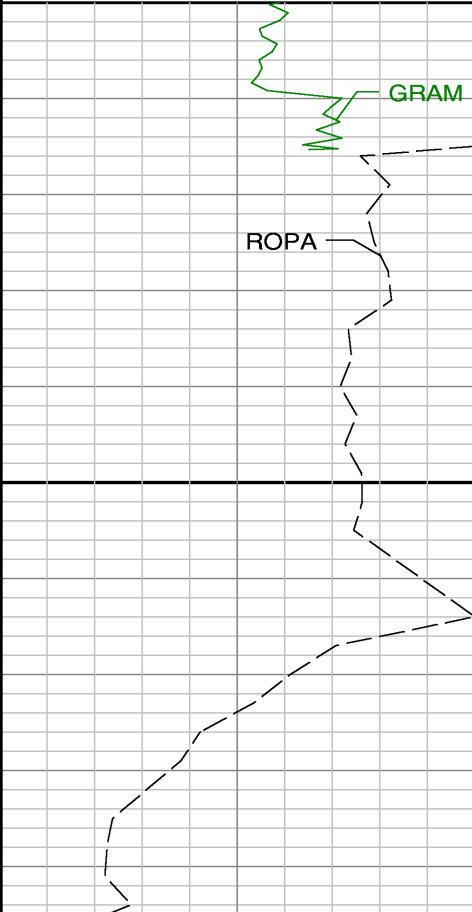
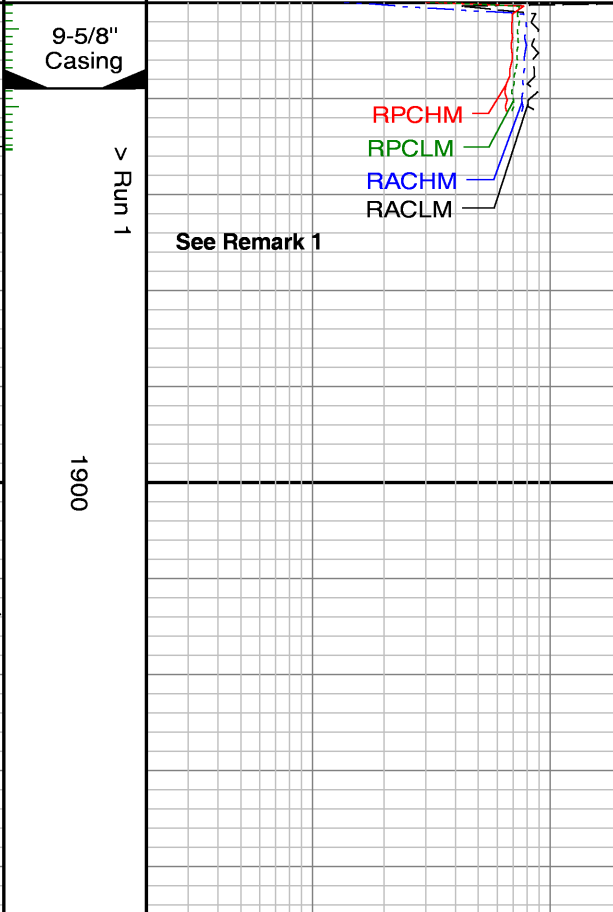

### Comments

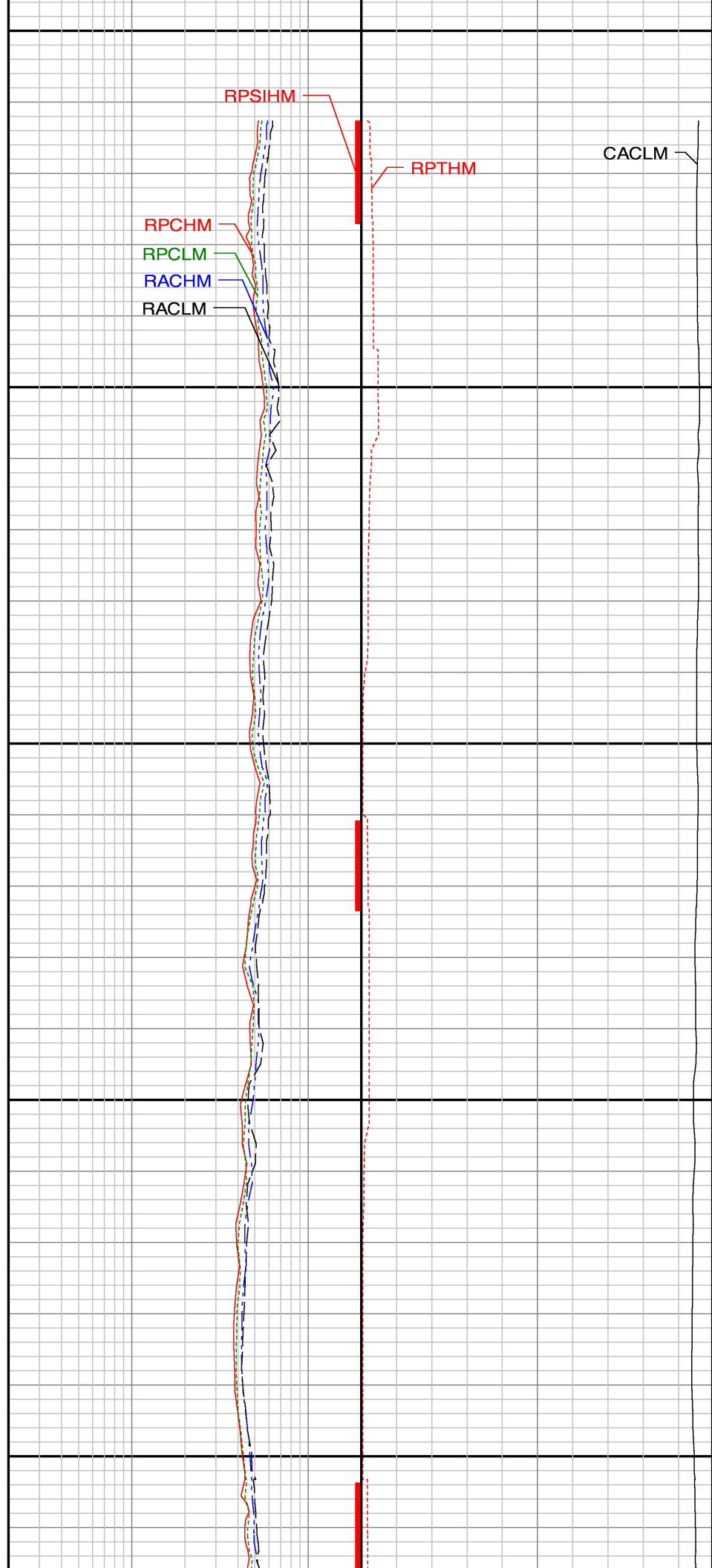
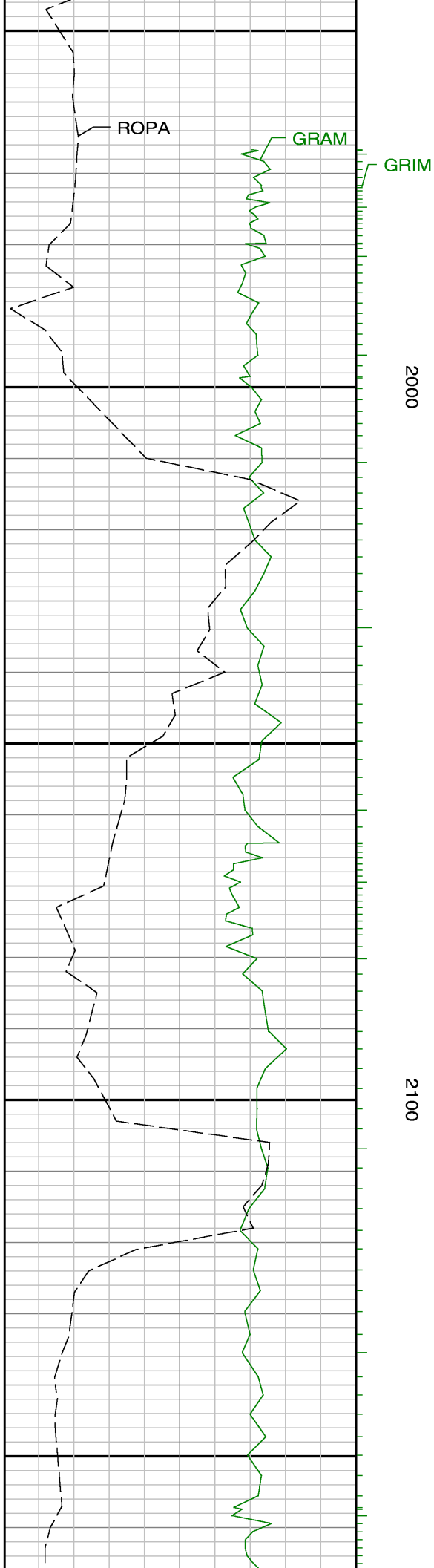
1. Depth measurements were obtained from a depth control system not supplied or operated by Baker Hughes INTEQ. Due to lack of control by Baker Hughes INTEQ logging engineers, depth calibrations and measurements could not be independently verified and the unverified depths as supplied to INTEQ are being used to represent logging data.
2. Baker Hughes run 1 utilized a 6.75 inch OnTrak services (Multiple Propagation Resistivity, Gamma Ray, and Directional) tool behind a 8.5 inch bit and steerable assembly from 1865 feet to 4378 feet MD (1825 feet to 4182 feet TVD.)
3. Baker Hughes run 2 utilized a 6.75 inch OnTrak services (Multiple Propagation Resistivity, Gamma Ray, and Directional) tool behind a 8.5 inch bit and steerable assembly from 4378 feet to 6964 feet MD (4182 feet to 6700 feet TVD.)
4. Baker Hughes run 3 utilized a 6.75 inch OnTrak services (Multiple Propagation Resistivity, Gamma Ray, and Directional) tool behind a 8.5 inch bit and steerable assembly from 6964 feet to 7684 feet MD (6700 feet to 7044 feet TVD.)
5. Realtime only services were required after the curve. Well was finished with a 6.75 inch Navigamma (Directional and Gamma Ray) tool behind a 8.5 inch bit and steerable assembly.
6. A sliding indicator is shown on the right edge of track 2 as a heavy line. This indicator has been depth-shifted to the Multiple Propogation Resistivity sensor offset to correspond with Resisitivity data acquired while sliding.

### Remarks

Number	Measured	Hole	LWD	Remark
	Depth	Section	Run No.	
	(ft.)	(in.)		
1	1875	8.500	1	The interval from 1862 to 1964 feet MD (1822 to 1919 feet TVD) has no Gamma or MPR data due to tool de-sync as tool exited casing.

2	3387	8.500	1	The interval from 3382 to 3476 feet MD (3246 to 3335 feet TVD) has no Gamma,MPR and Surface data due to third party depth tracking system losing connection.
3	4257	8.500	1	The interval from 4251 to 4322 feet MD (4064 to 4130 feet TVD) has no Gamma or MPR data due to tool de-sync, after multiple de-sync issues tool was laid down for a backup Ontrak.
4	4322	8.500	2	The interval from 4322 to 4375 feet MD (4130 to 4179 feet TVD) was logged up to 9 hours after being drilled due to trip out of hole to change Ontrak tools.
5	6920	8.500	3	The interval from 6920 to 6964 feet MD (6659 to 6700 feet TVD) was logged up to 9 hours after being drilled due to trip out of hole to change Motor and Bit.
6	7655	8.500	4	The interval from 7649 to 7684 feet MD (7044 feet TVD) has no Gamma or MPR data due to sensor offset from bit.

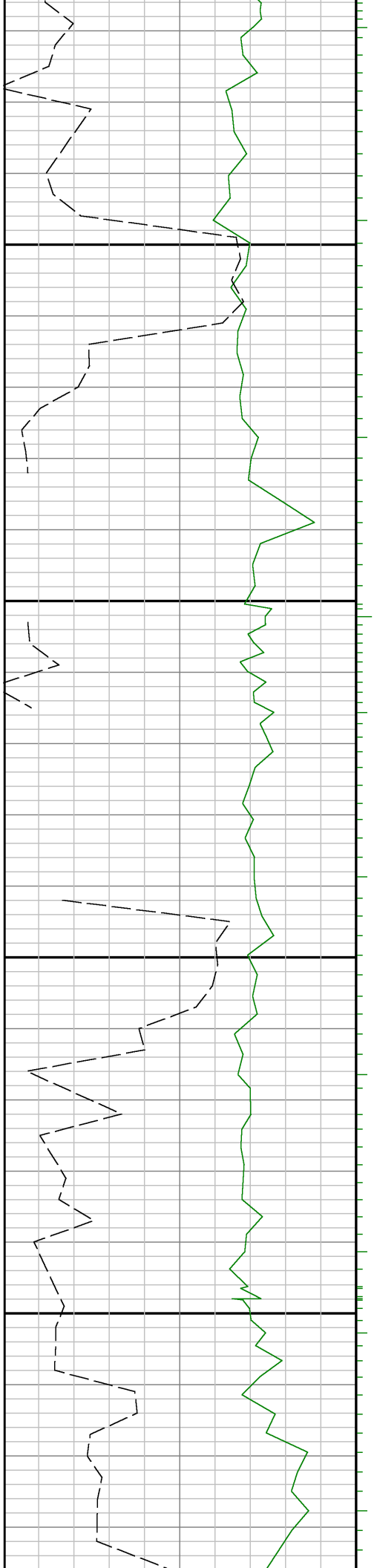
		Company : Anadarko Well : Sarchet 37N-20HZ Interval : 1850.00 - 7686.00 feet Created : 02/Sep/2015 8:53:29 AM	
Gamma Ray Apparent 0.5 ft Avg [GRAM] 0 150 API Rate of Penetration 3.0 ft Avg ROPA 1200 0 ft/hr	MD feet 1:240	Res PD LS 2MHz Corr [RPCHM] 0.2 20 ohm.m Res PD LS 400kHz Corr [RPCLM] 0.2 20 ohm.m Res AT LS 2MHz Corr [RACHM] 0.2 20 ohm.m Res AT LS 400kHz Corr [RACLM] 0.2 20 ohm.m	Con AT LS 400kHz Corr [CACLM] 4000 0 mmho/m Time Since Drilled [RPTHM] 0 600 min
	9-5/8" Casing > Run 1 1900		

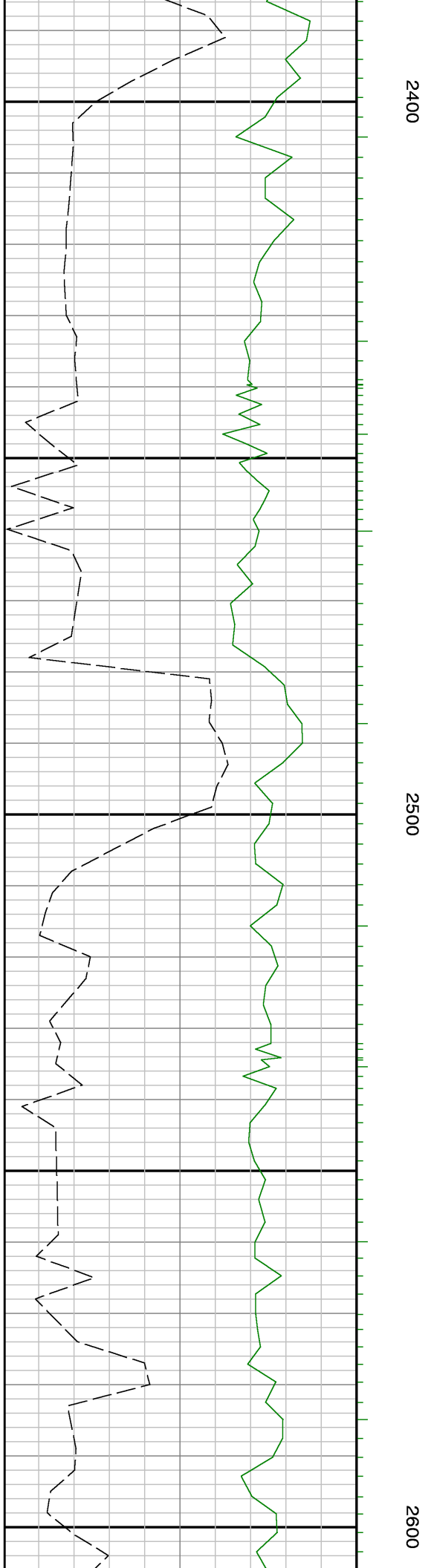
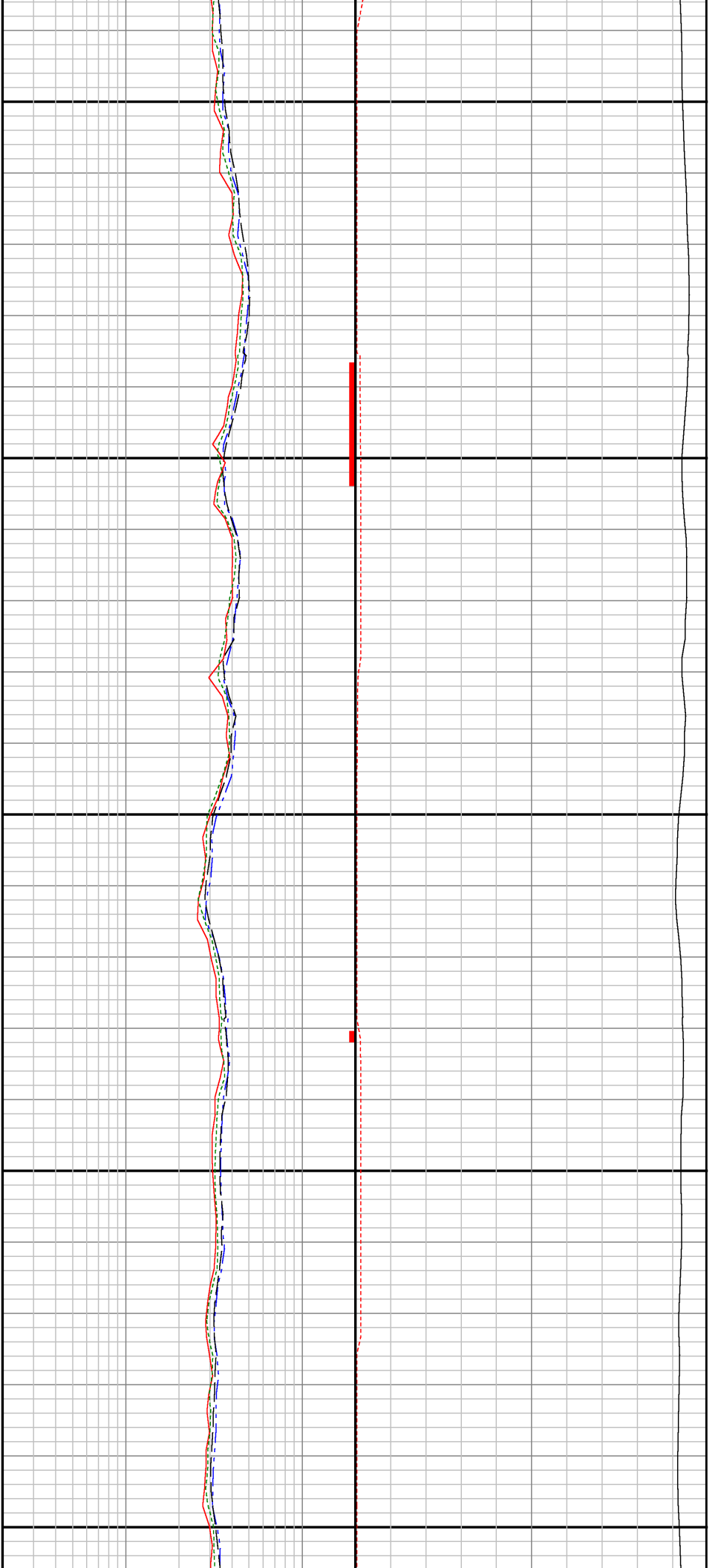




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2300

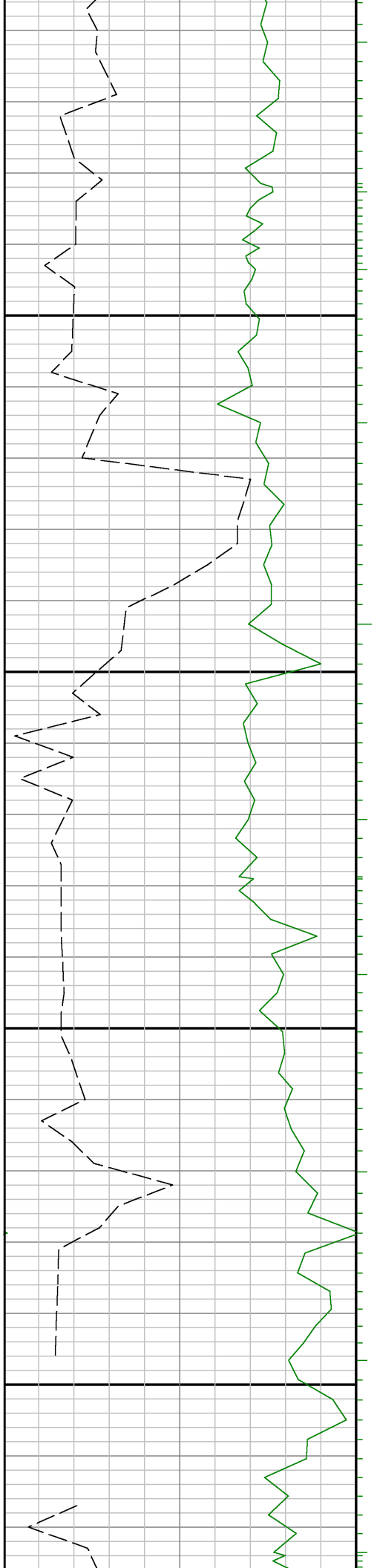




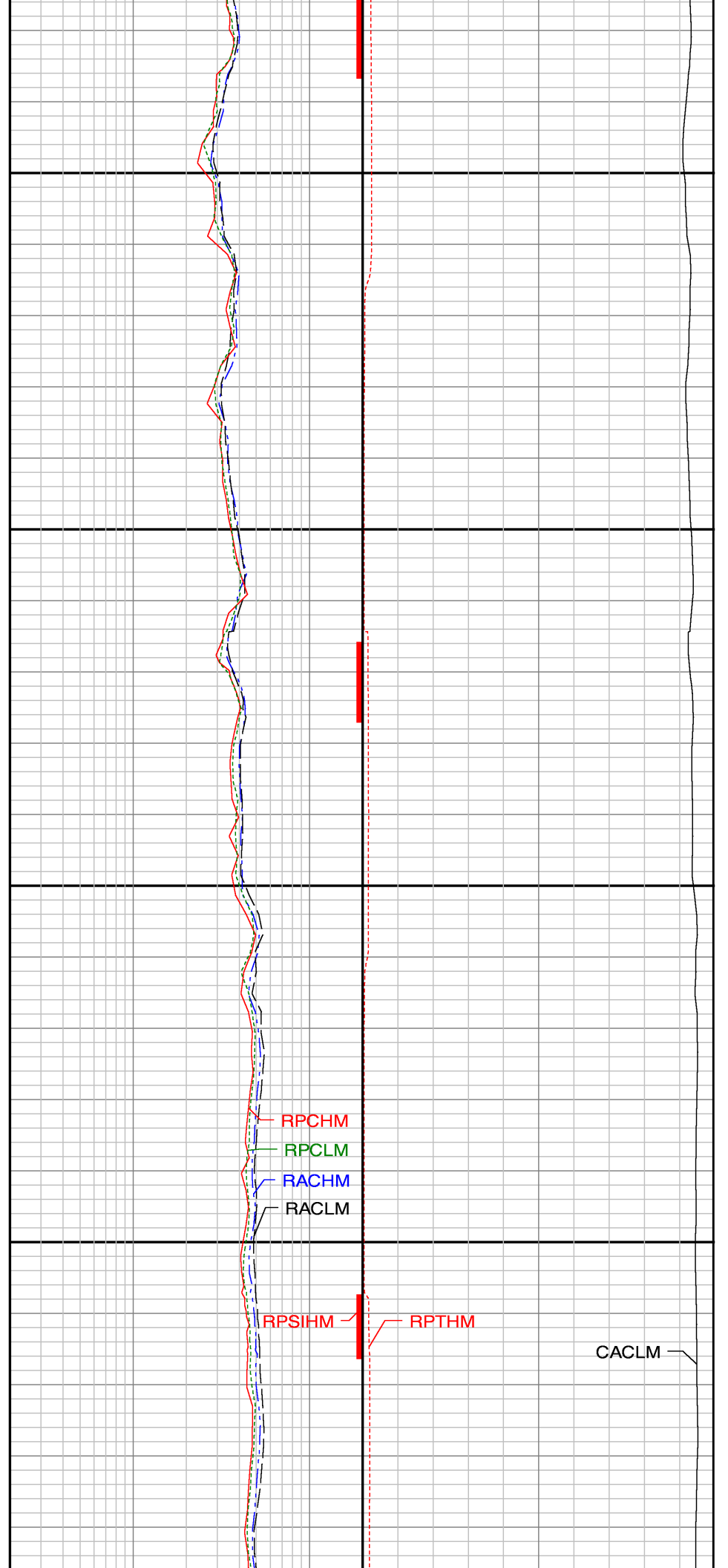
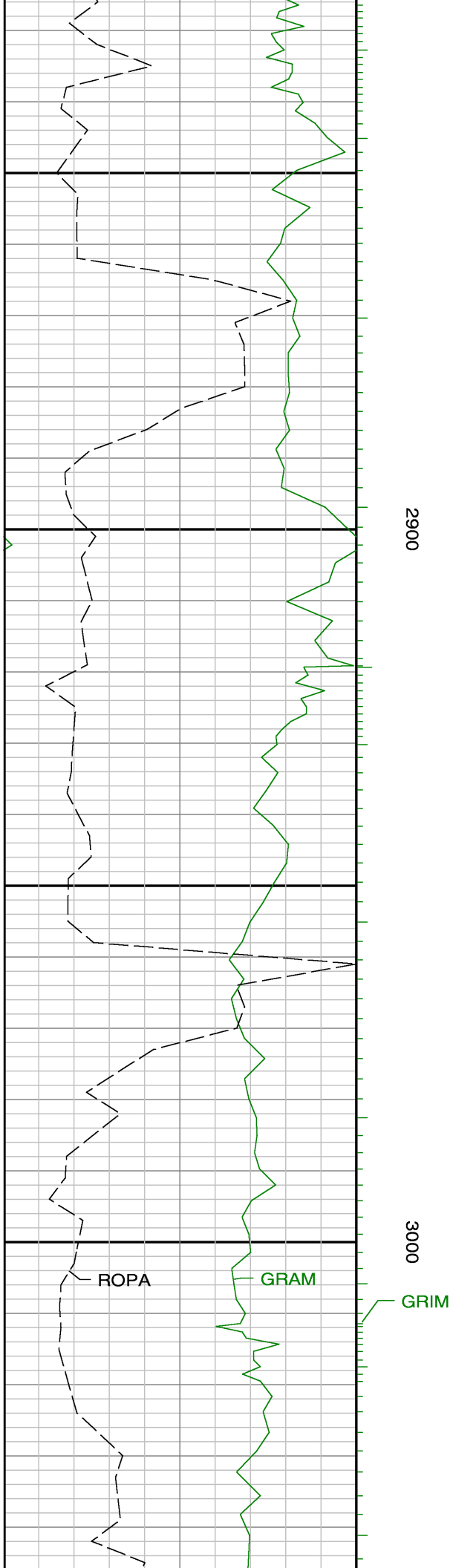


2700

2800



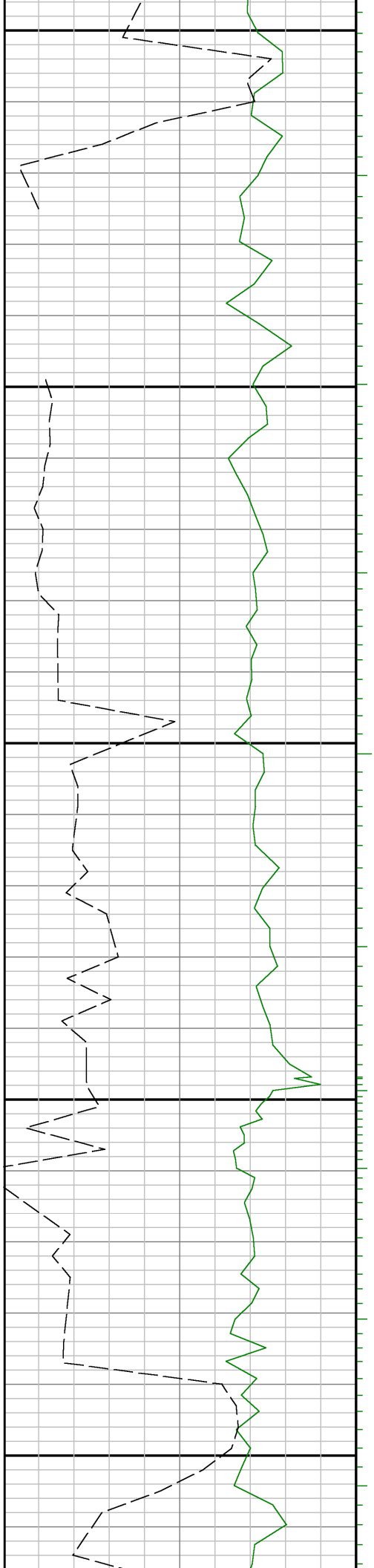






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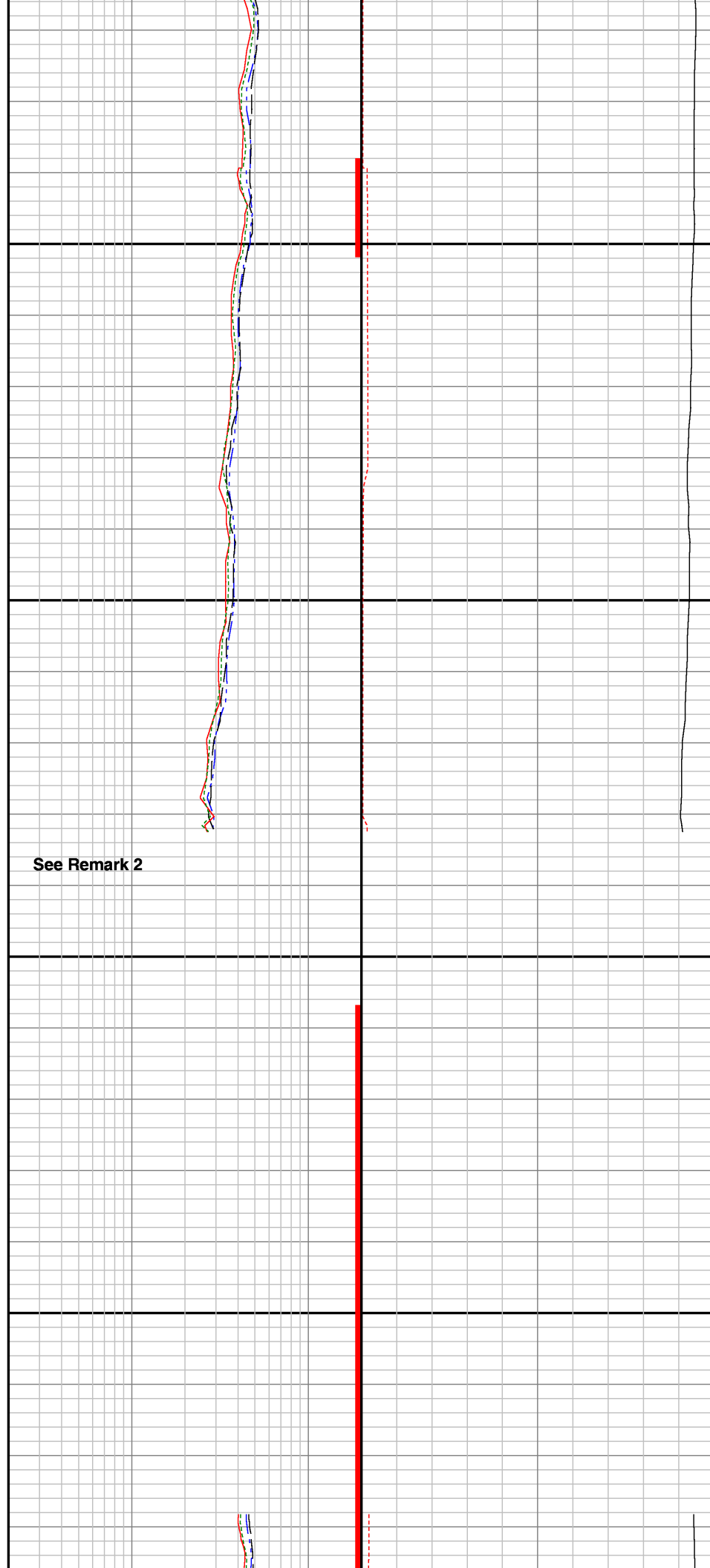
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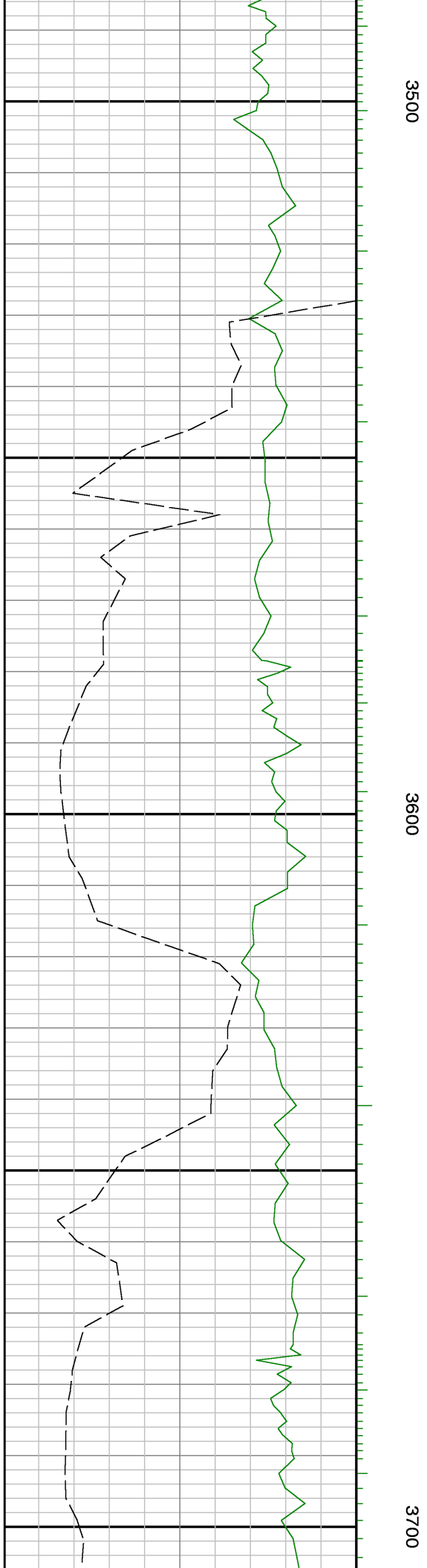


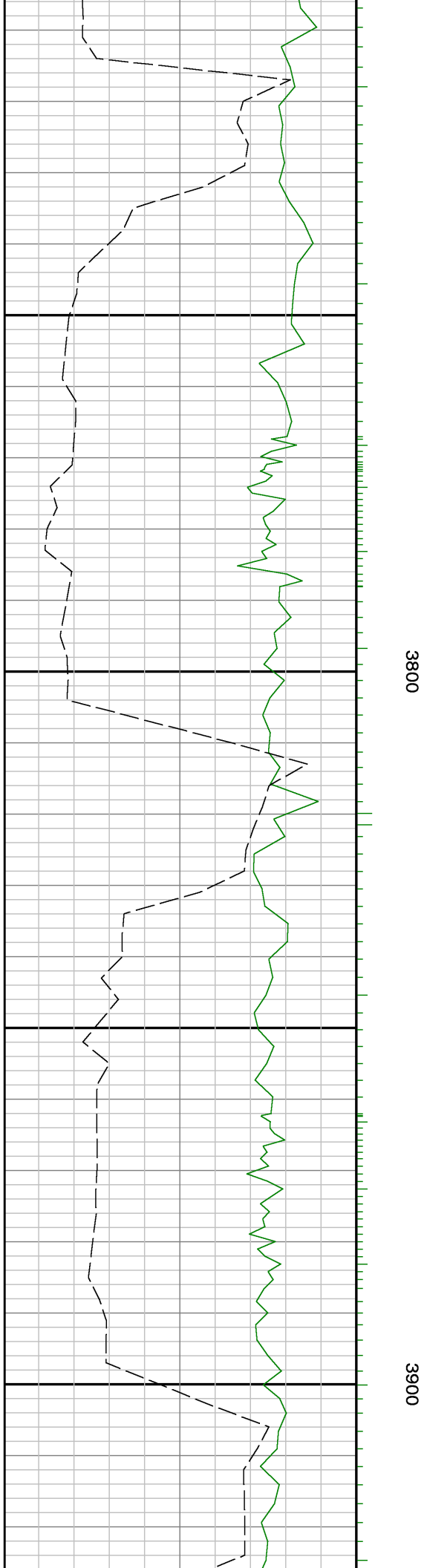
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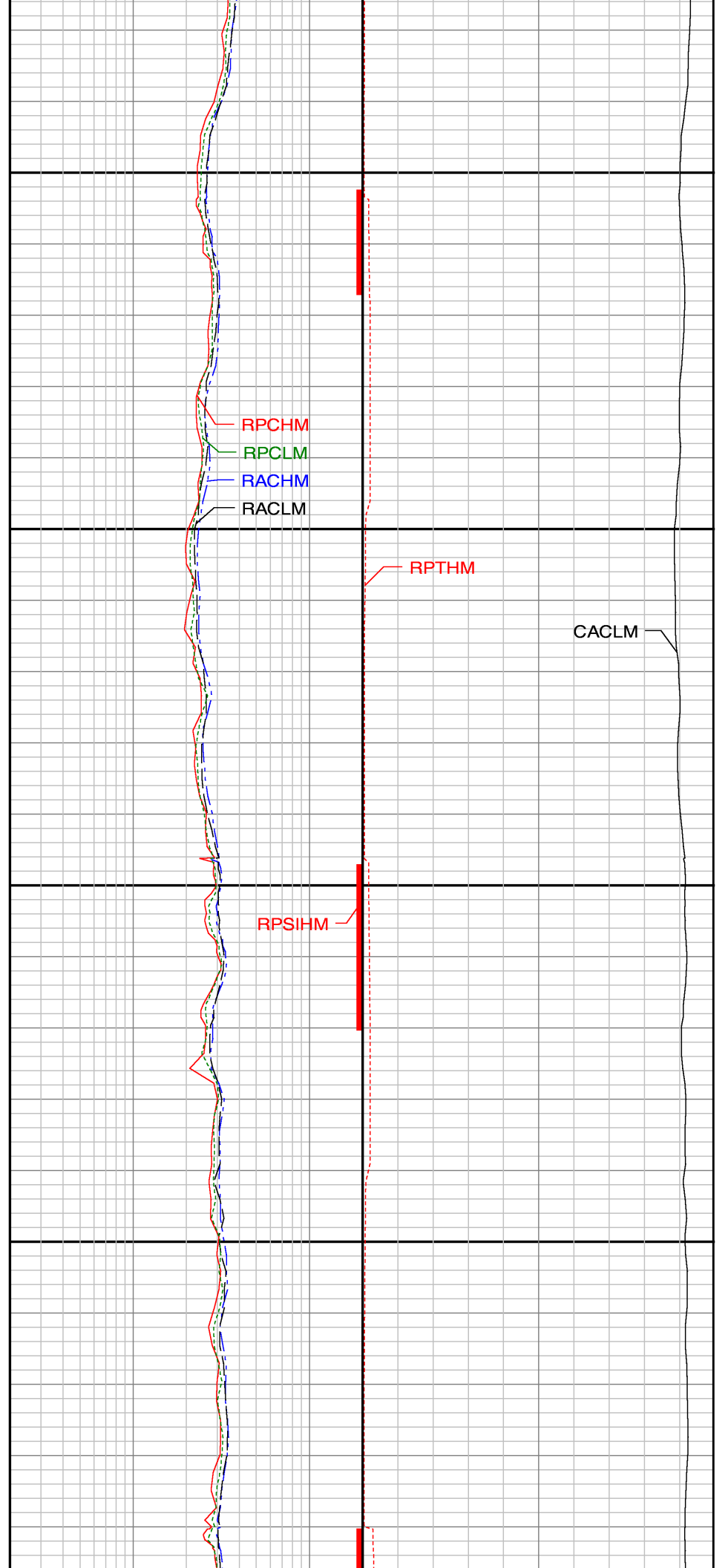
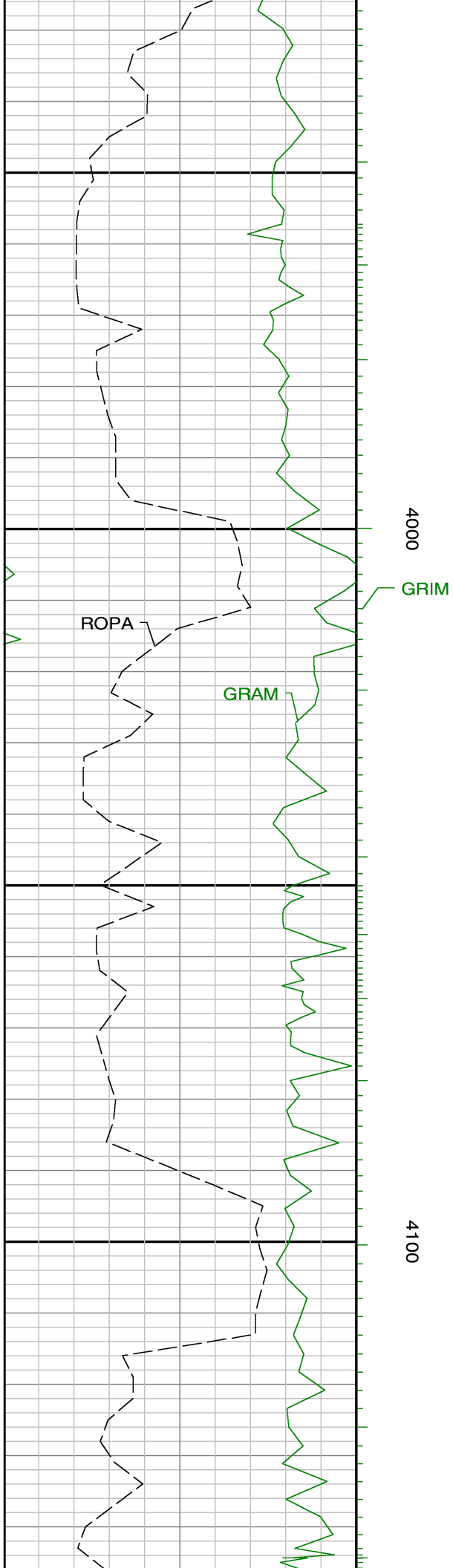
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See Remark 2



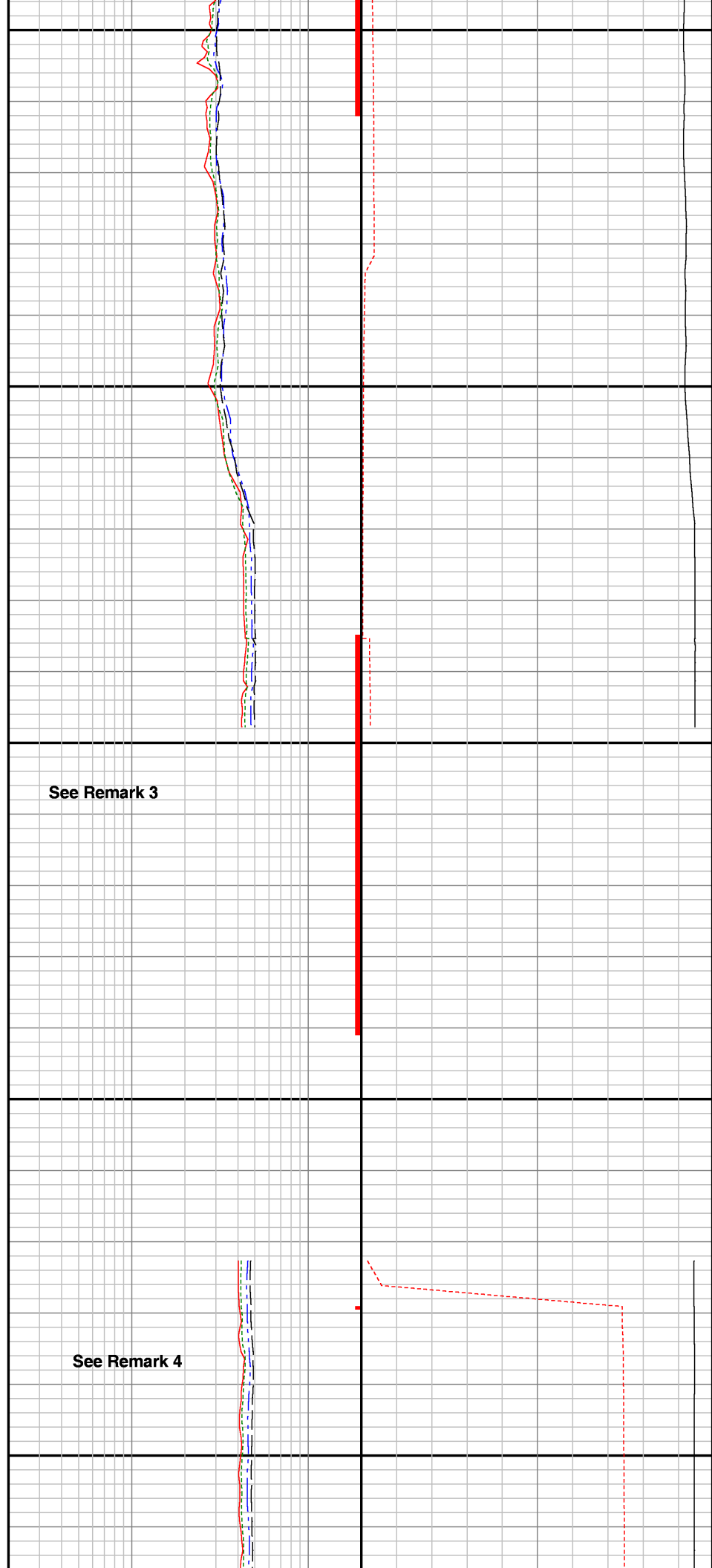






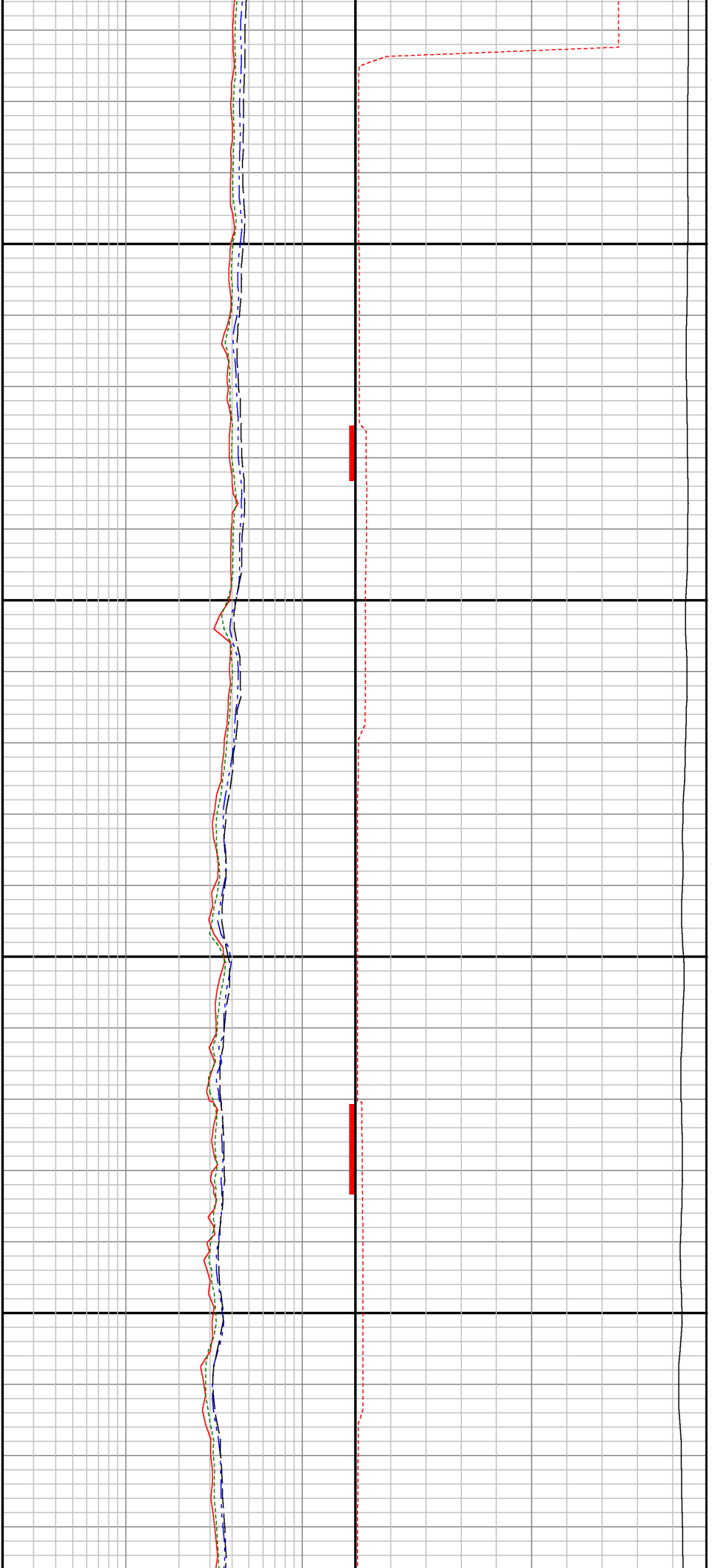
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4300



See Remark 3

See Remark 4

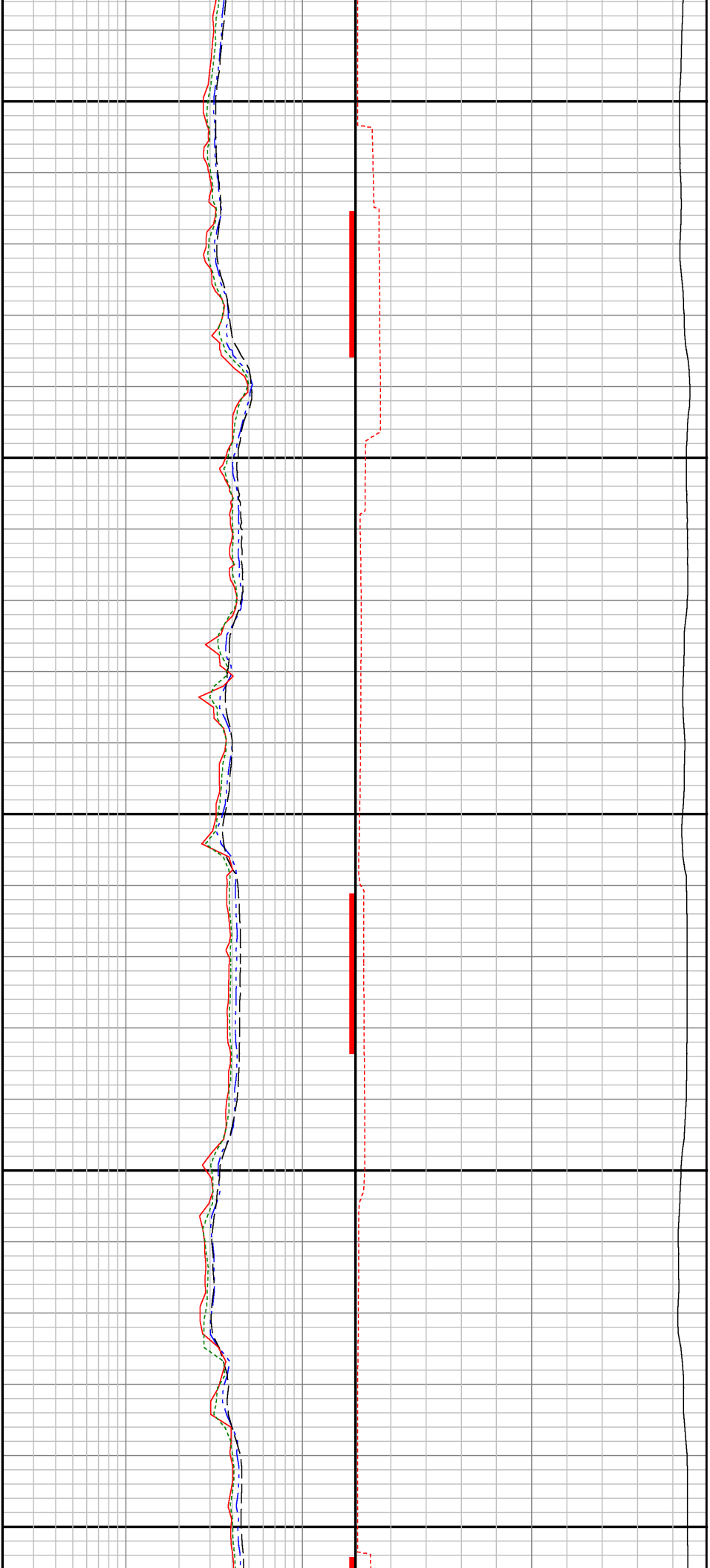


Run 1 <> Run 2

4400

4500

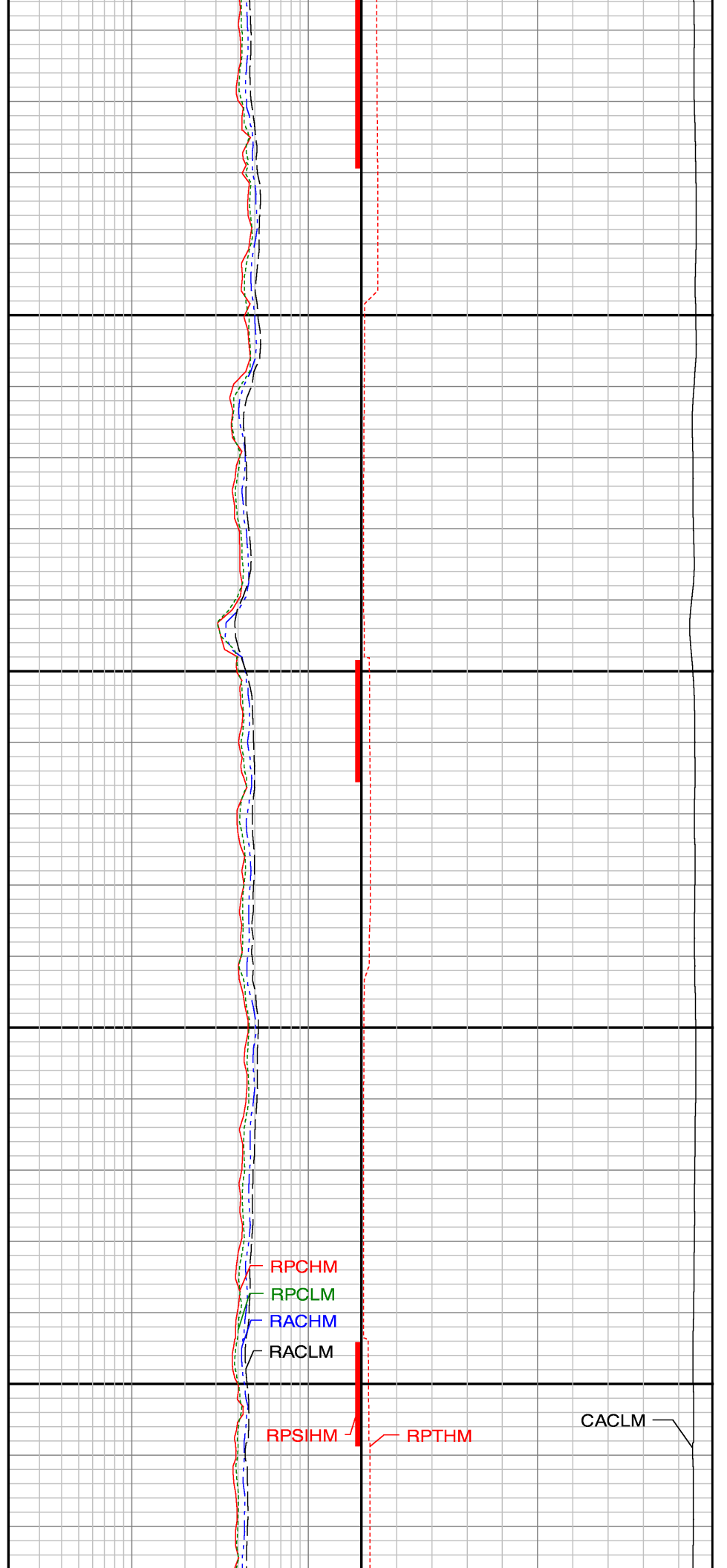
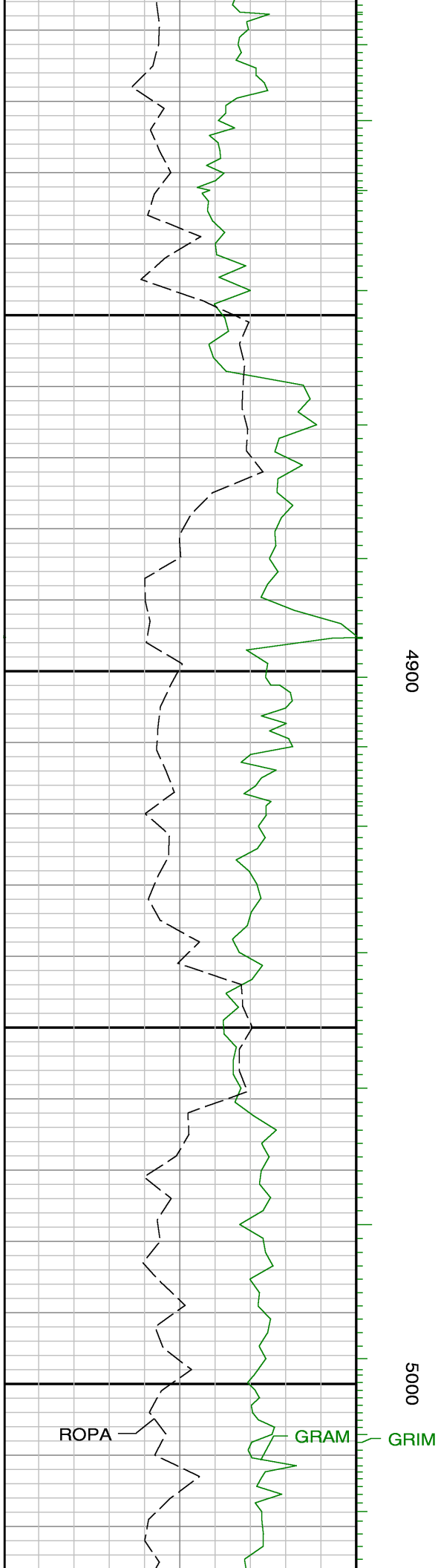


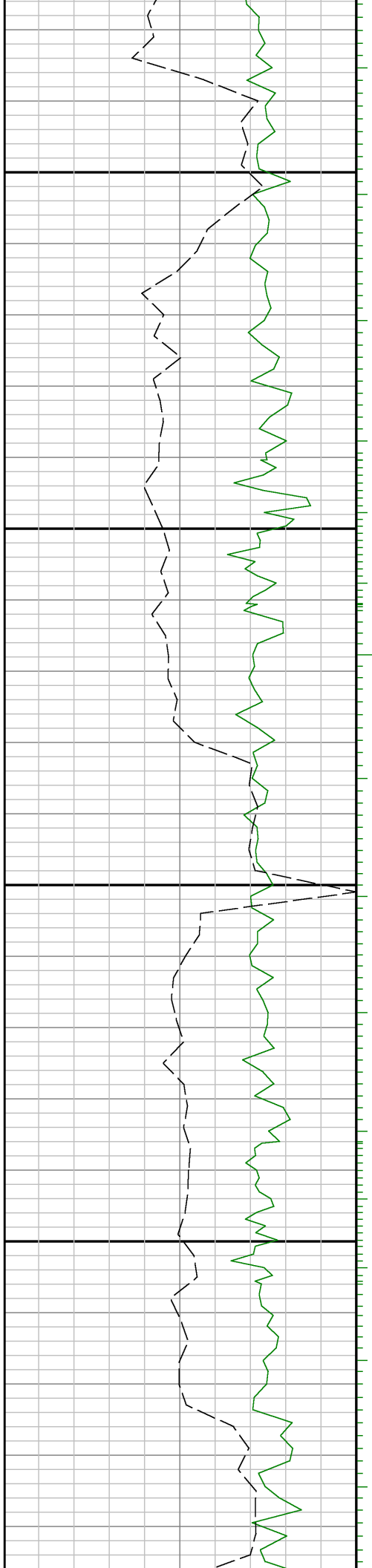
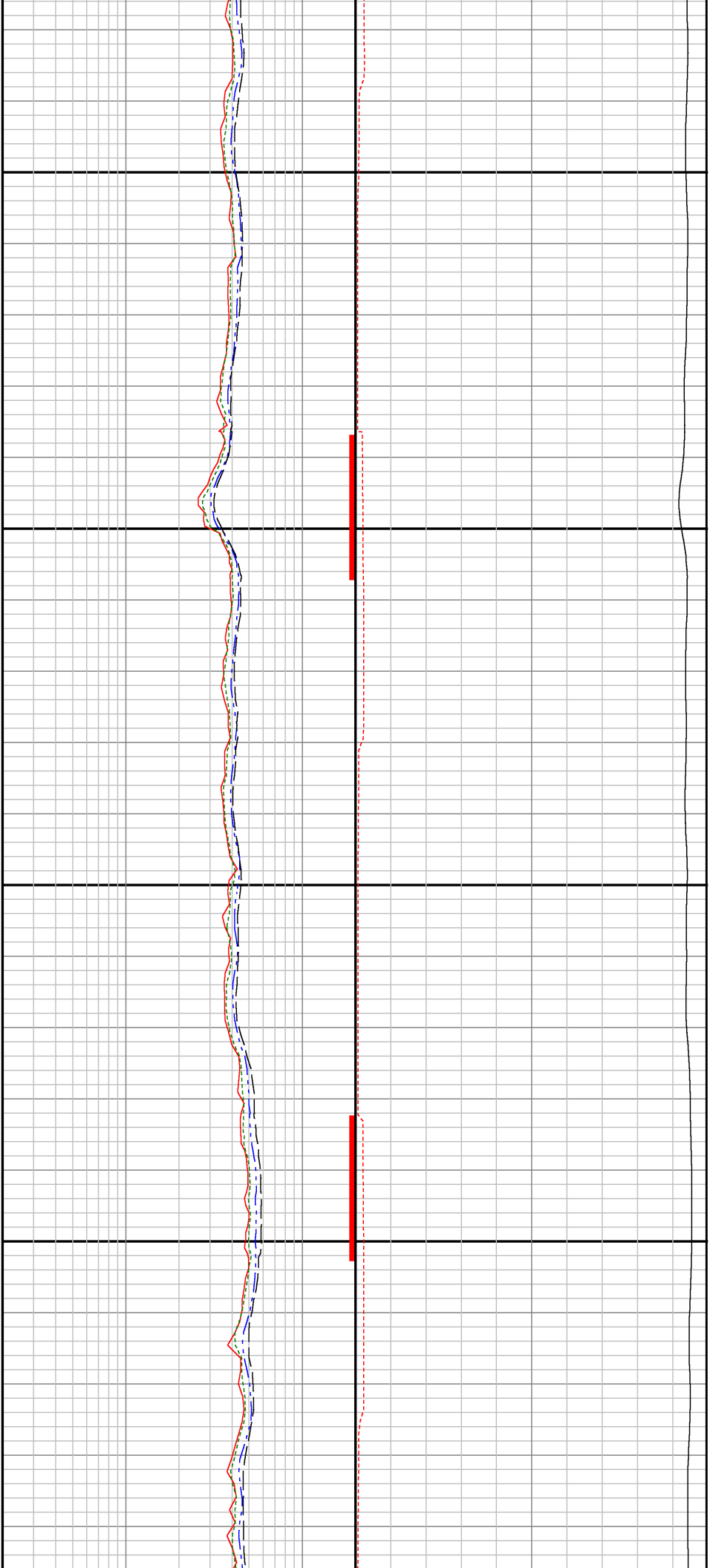


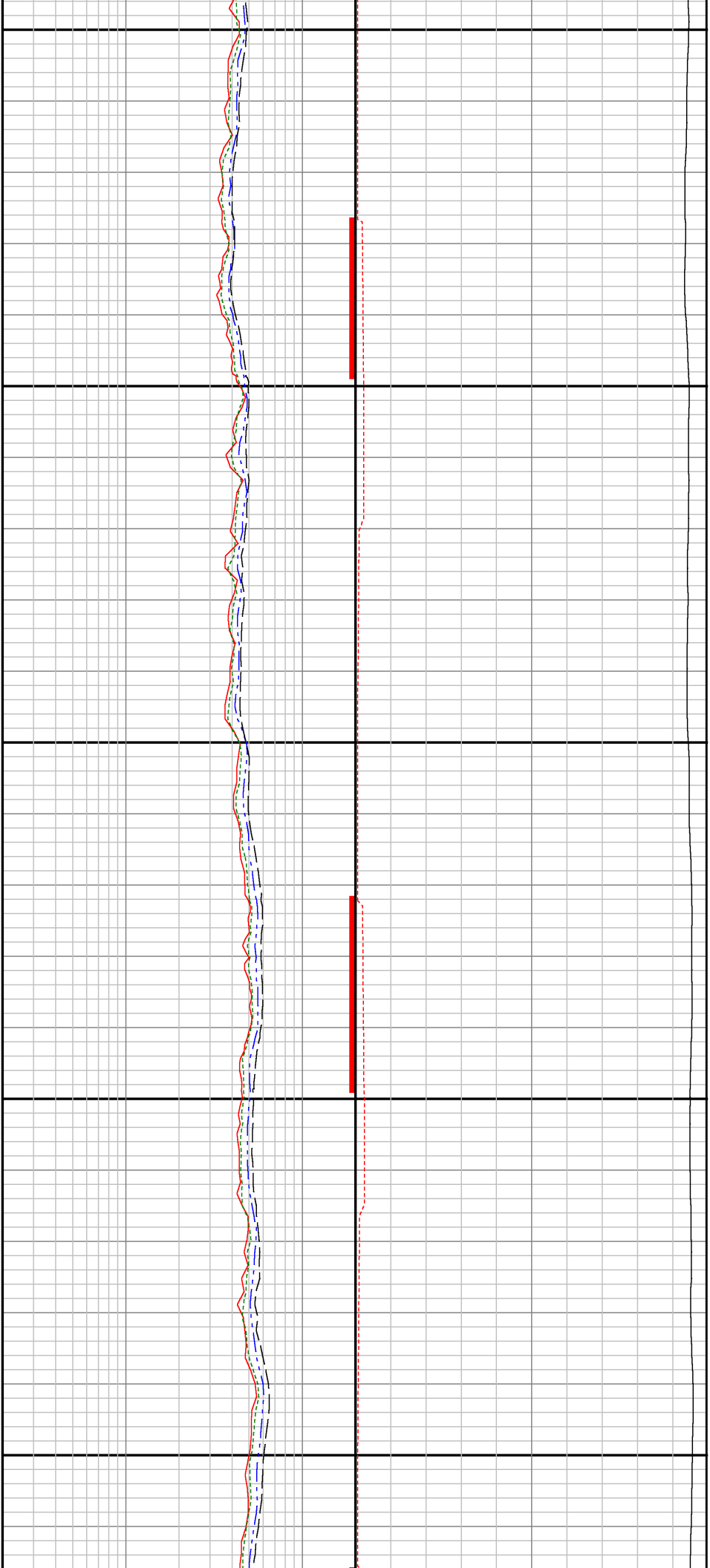
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4700

4800

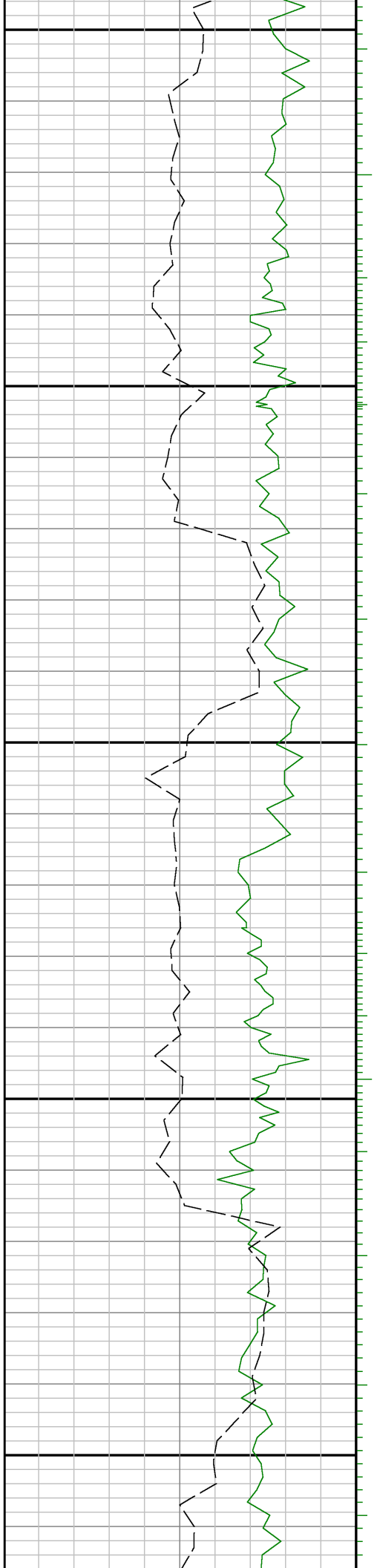






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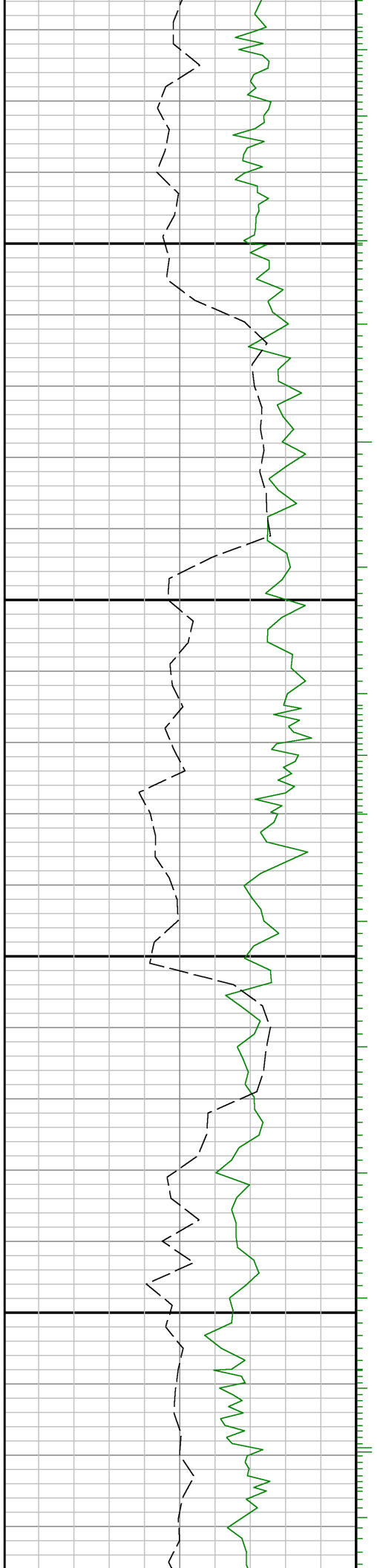
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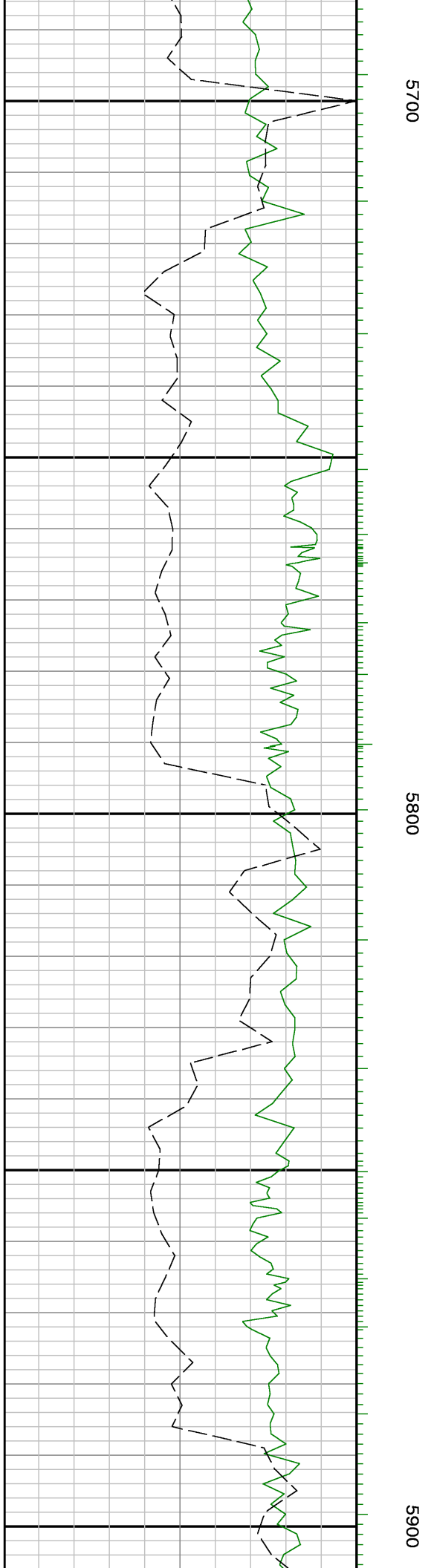
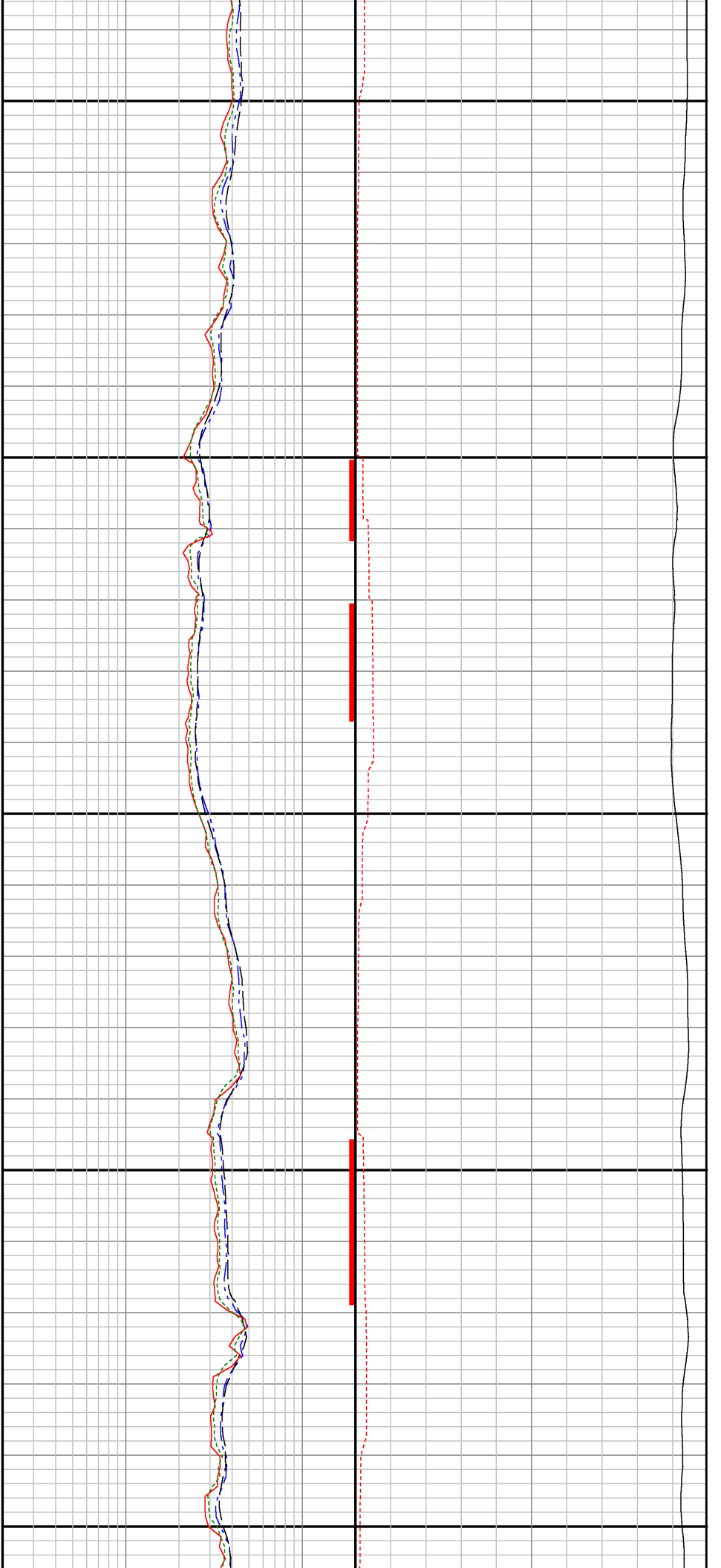


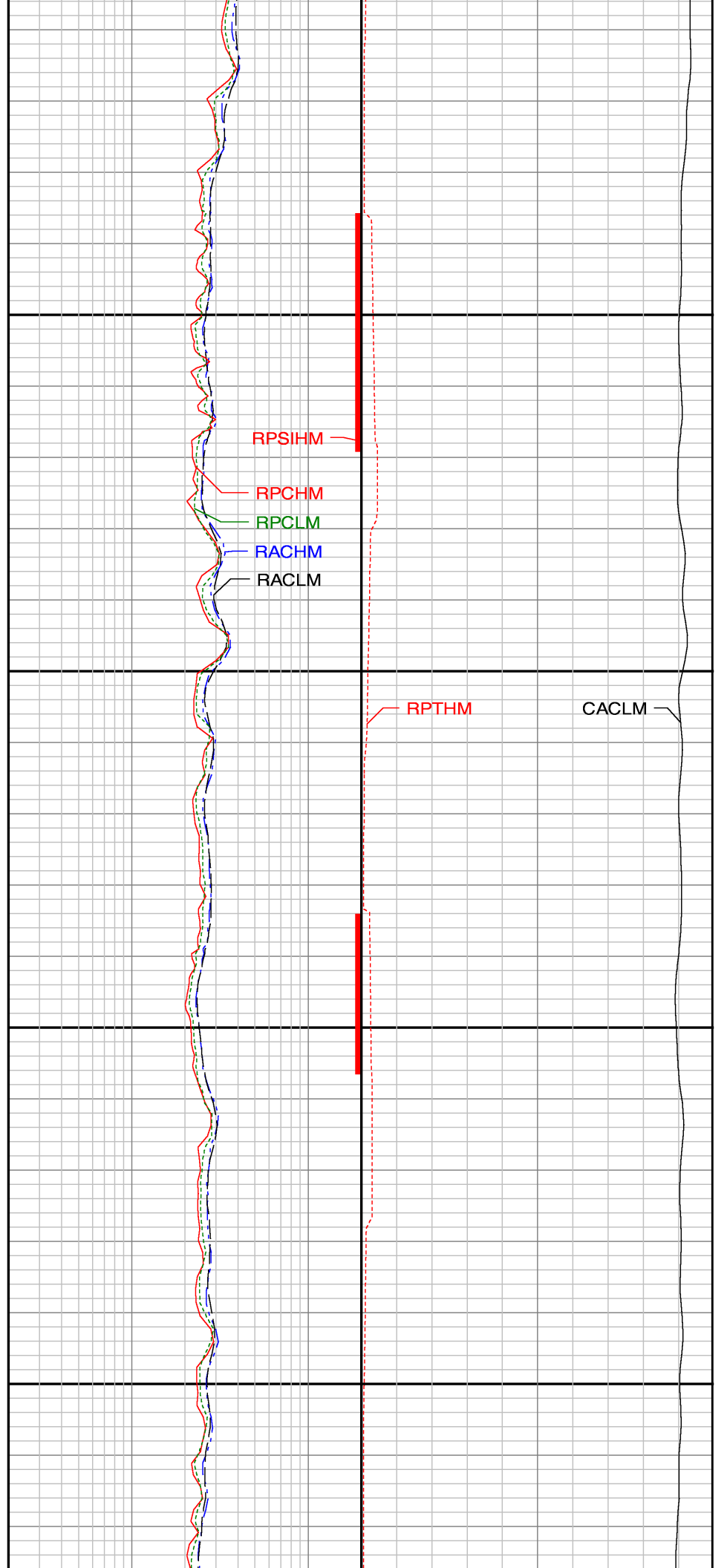
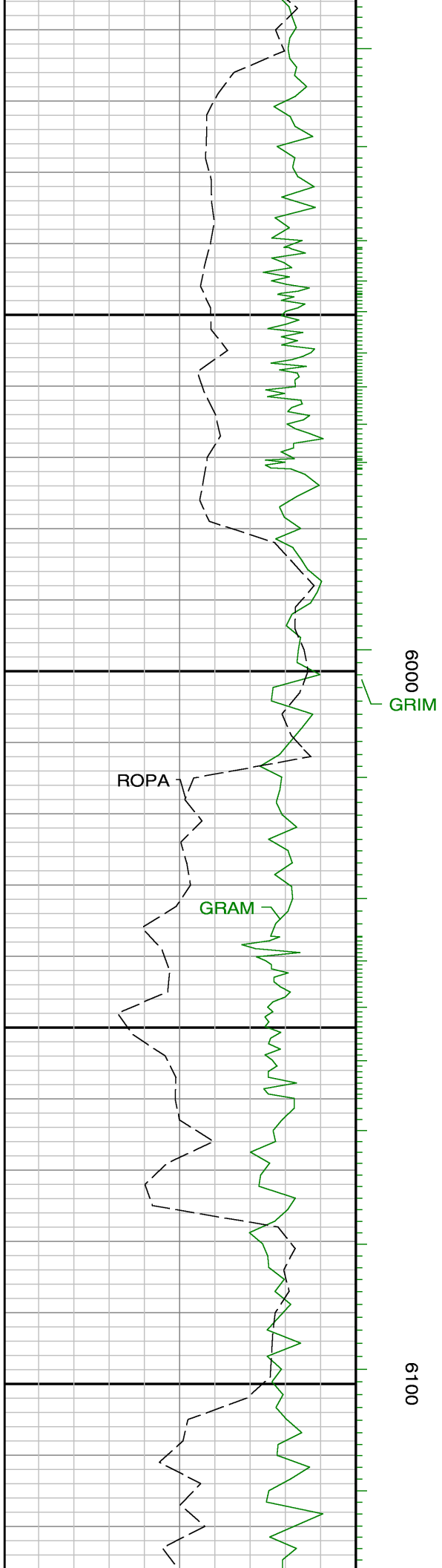


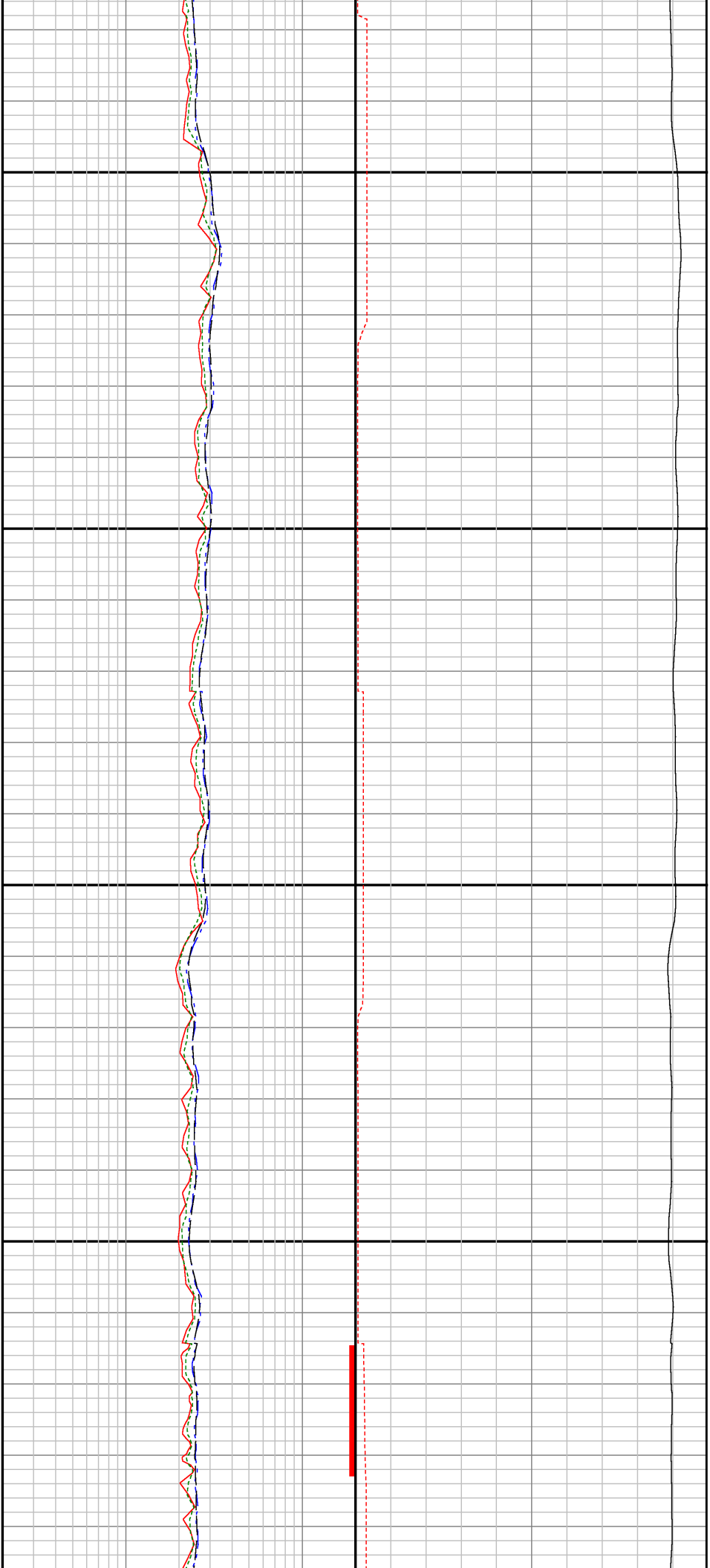
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5600



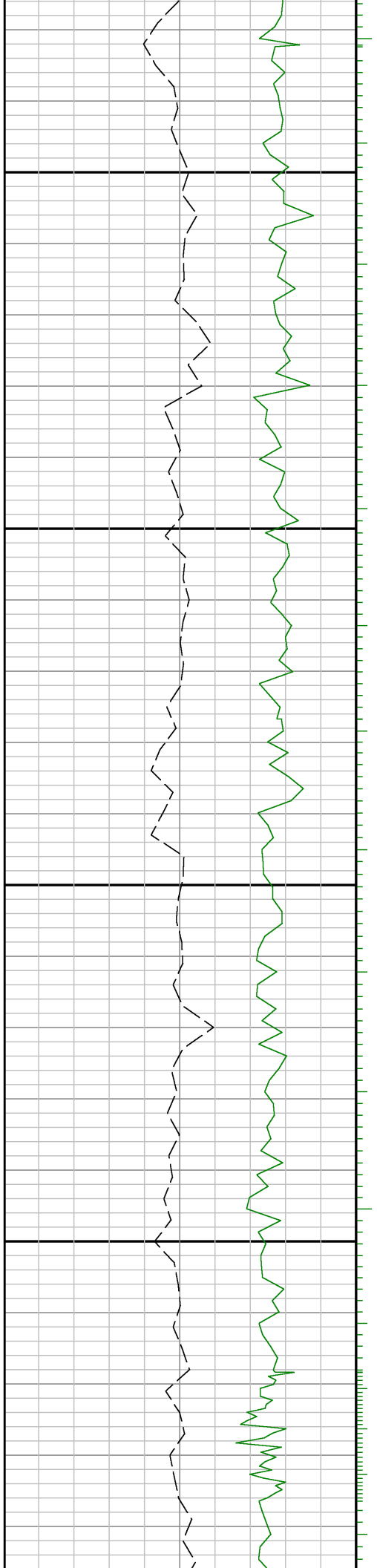






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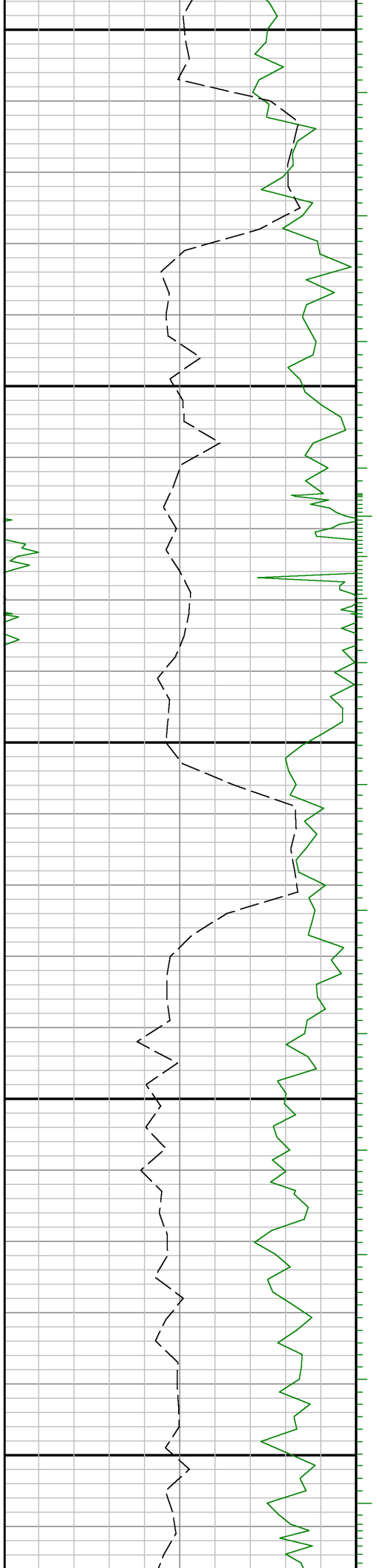


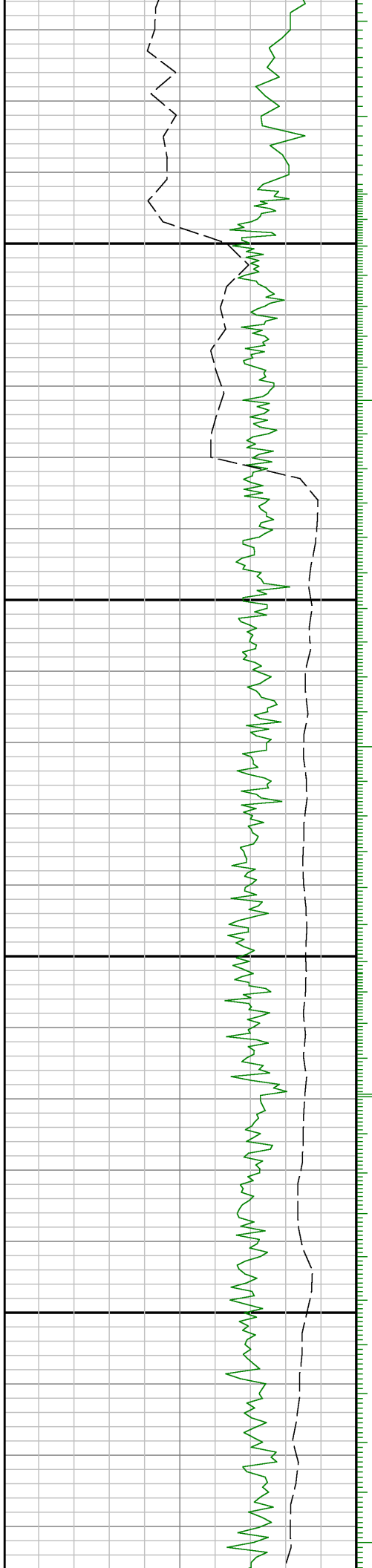




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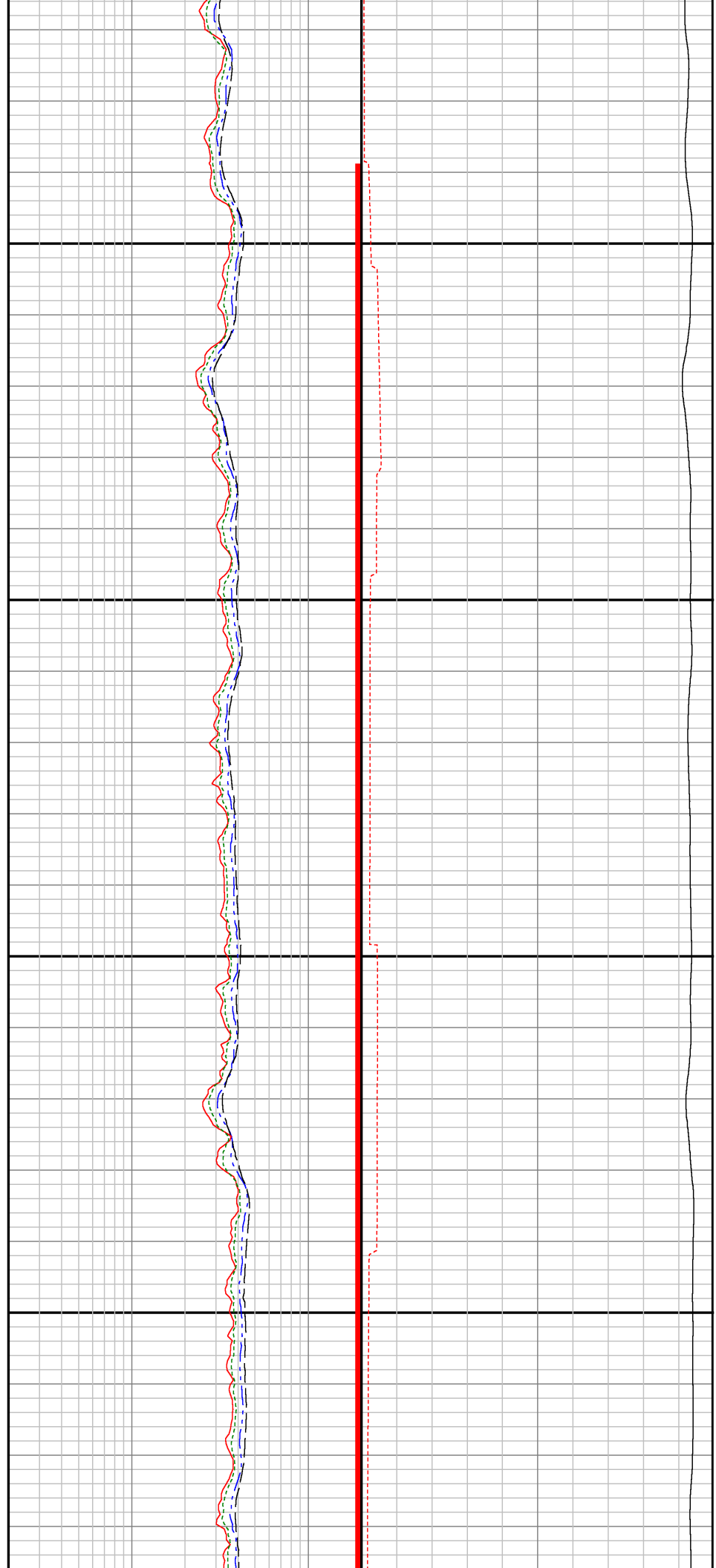
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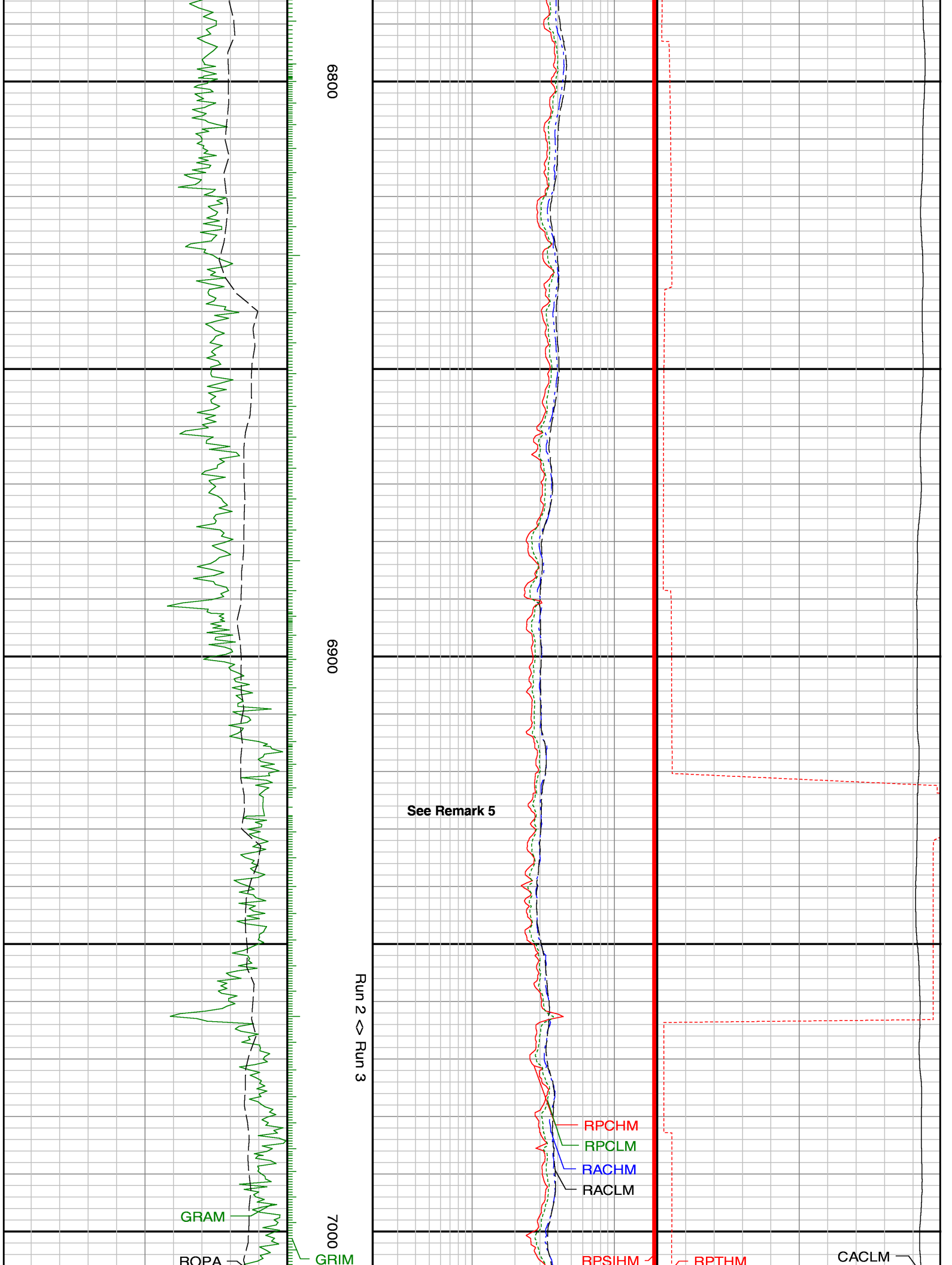


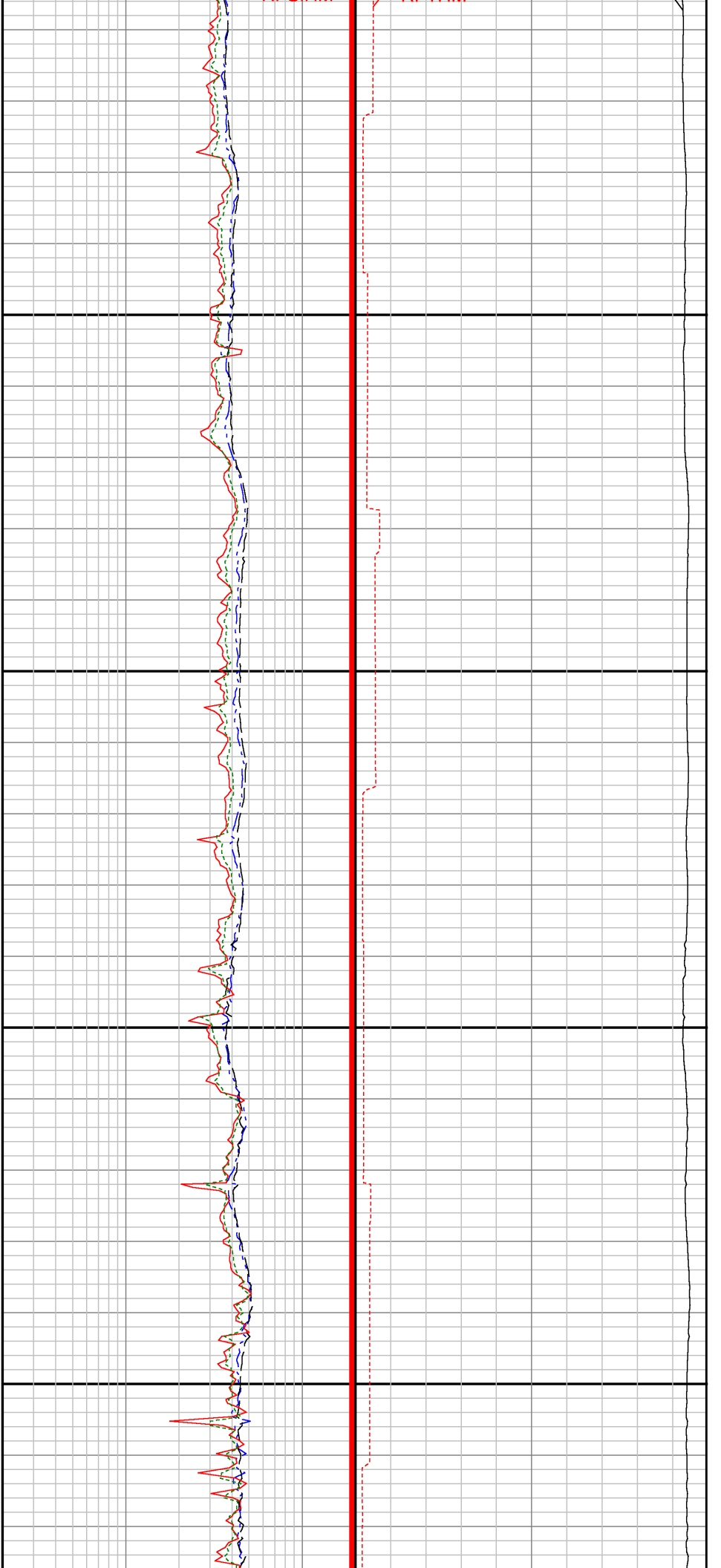


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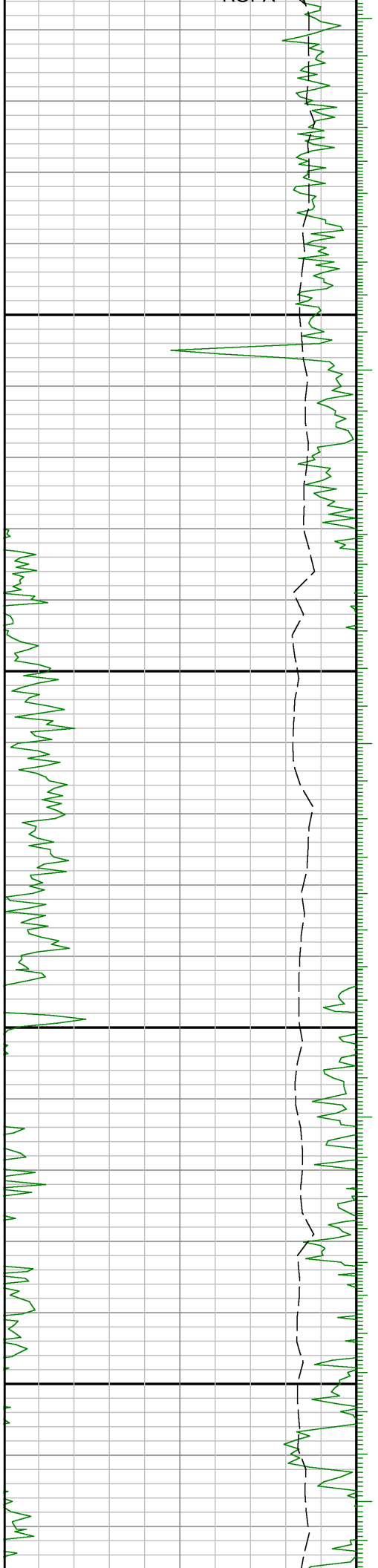


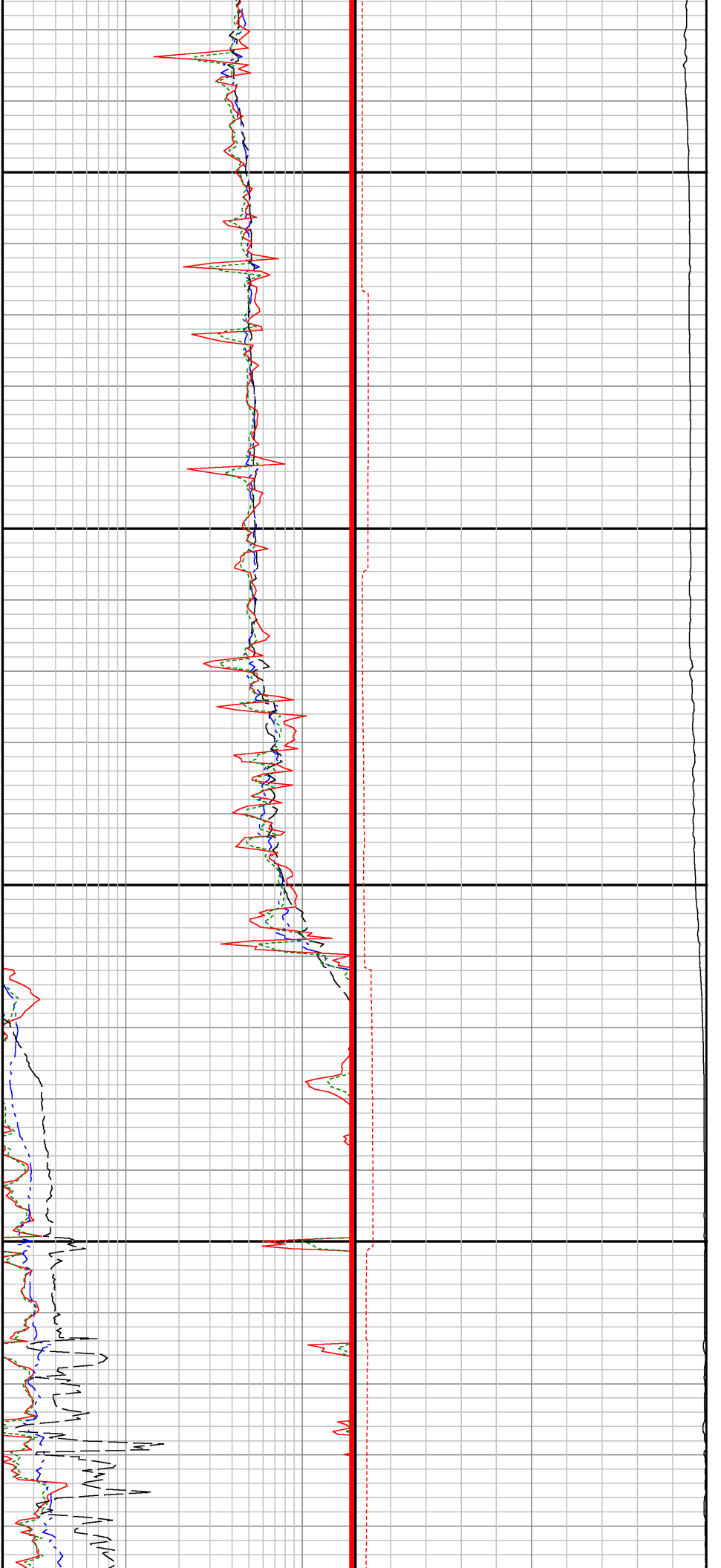




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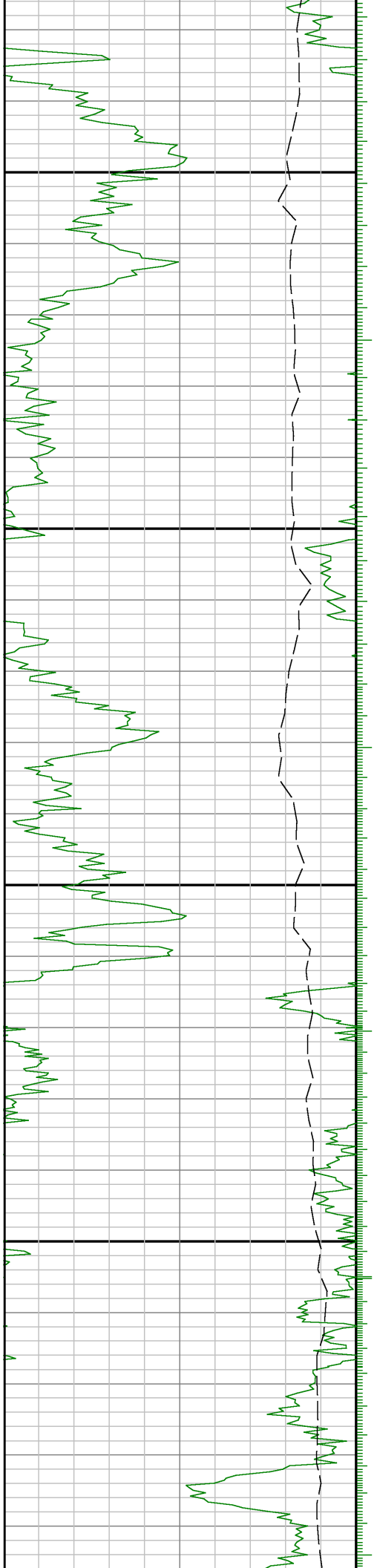
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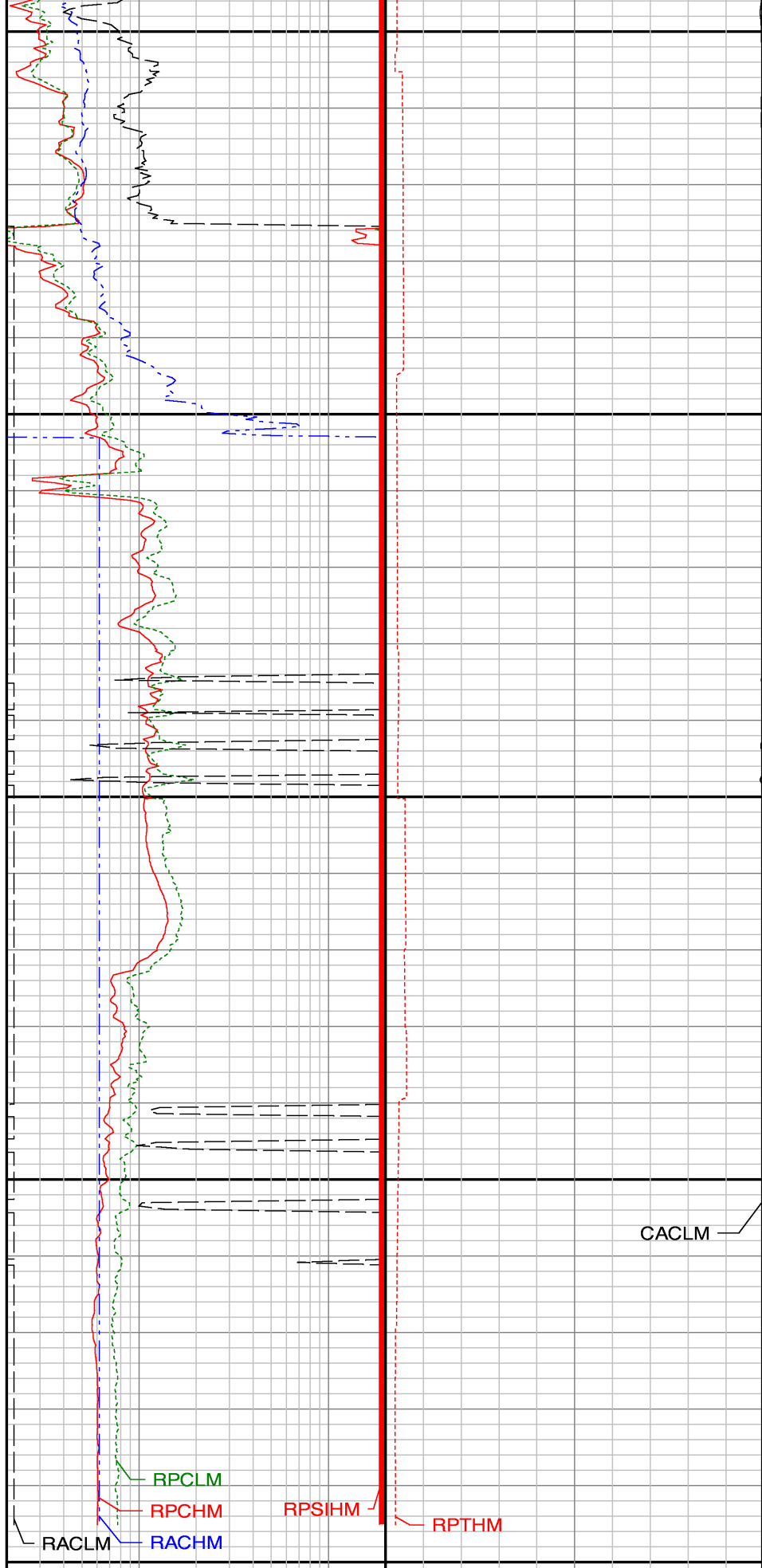
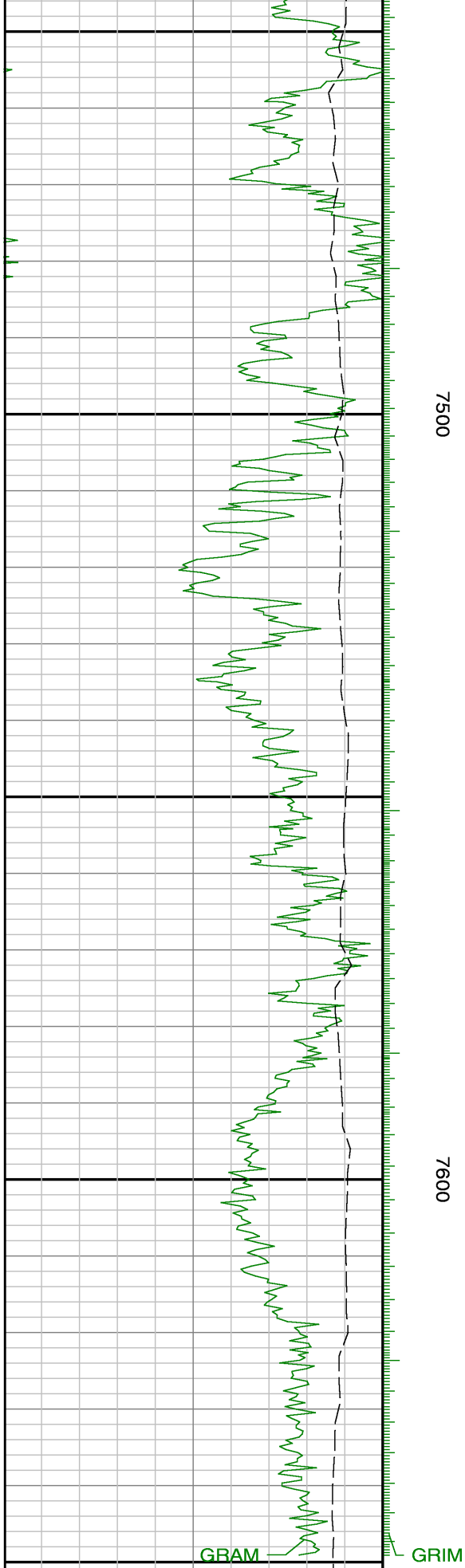




7300

7400





See Remark 6

<div> <div>ROPA</div> <div>Run 3 &lt;</div> </div>			
<div> <div>Gamma Ray Apparent 0.5 ft Avg [GRAM]</div> <div>0150</div> <div>API</div> <div>Rate of Penetration 3.0 ft Avg ROPA</div> <div>12000</div> <div>ft/hr</div> </div>		<div> <div>MD feet 1:240</div> <div> <div>Res PD LS 2MHz Corr [RPCHM]</div> <div>0.220</div> <div>ohm.m</div> <div>Res PD LS 400kHz Corr [RPCLM]</div> <div>0.220</div> <div>ohm.m</div> <div>Res AT LS 2MHz Corr [RACHM]</div> <div>0.220</div> <div>ohm.m</div> <div>Res AT LS 400kHz Corr [RACLM]</div> <div>0.220</div> <div>ohm.m</div> </div> <div> <div>Con AT LS 400kHz Corr [CACLM]</div> <div>40000</div> <div>mmho/m</div> <div>Time Since Drilled [RPTHM]</div> <div>0600</div> <div>min</div> </div> </div>	