

Schlumberger

Telescope Gamma Ray

1 in. / 100 ft and 5 in. / 100 ft Measured Depth

Recorded Mode Log

Company: ExxonMobil Oil Corporation

Well: PCU 296 6B1

Field: Piceance Creek

County: Rio Blanco

State: Colorado

Country: United States

APIN: 051031154600

Rig Name: H&P 215

Rig Type: Land Rig

Section: 6

Township: 2S

Range: 96W

FL: NDA27 Colorado State Planes, Northern Zone, US Foot

FL1: Latitude: N 39° 54' 19.064" Y: 219913 ft US

FL2: Longitude: W 108° 12' 15.612" X: 1241416 ft US

Log Measured From - Drill Floor: 7394.0 ft

Ground Level: 7367.0 ft

Permanent Datum - Mean Sea Level

Acquisition Dates: 18 Dec 10 to 24 Dec 10

Print Interval: 73.0(ft) to 4600.0(ft)

Index Types: Measured Depth

Index Scales: 1:1200 1" / 100', 1:240 5" / 100'

Depth Source: Driller's Depth

Depth Sensor: DES

Conveyance: Drill Pipe

Print Type: Final

Spud Date: 19-Dec-2010

Other Services:

Directional Drilling



Disclaimer

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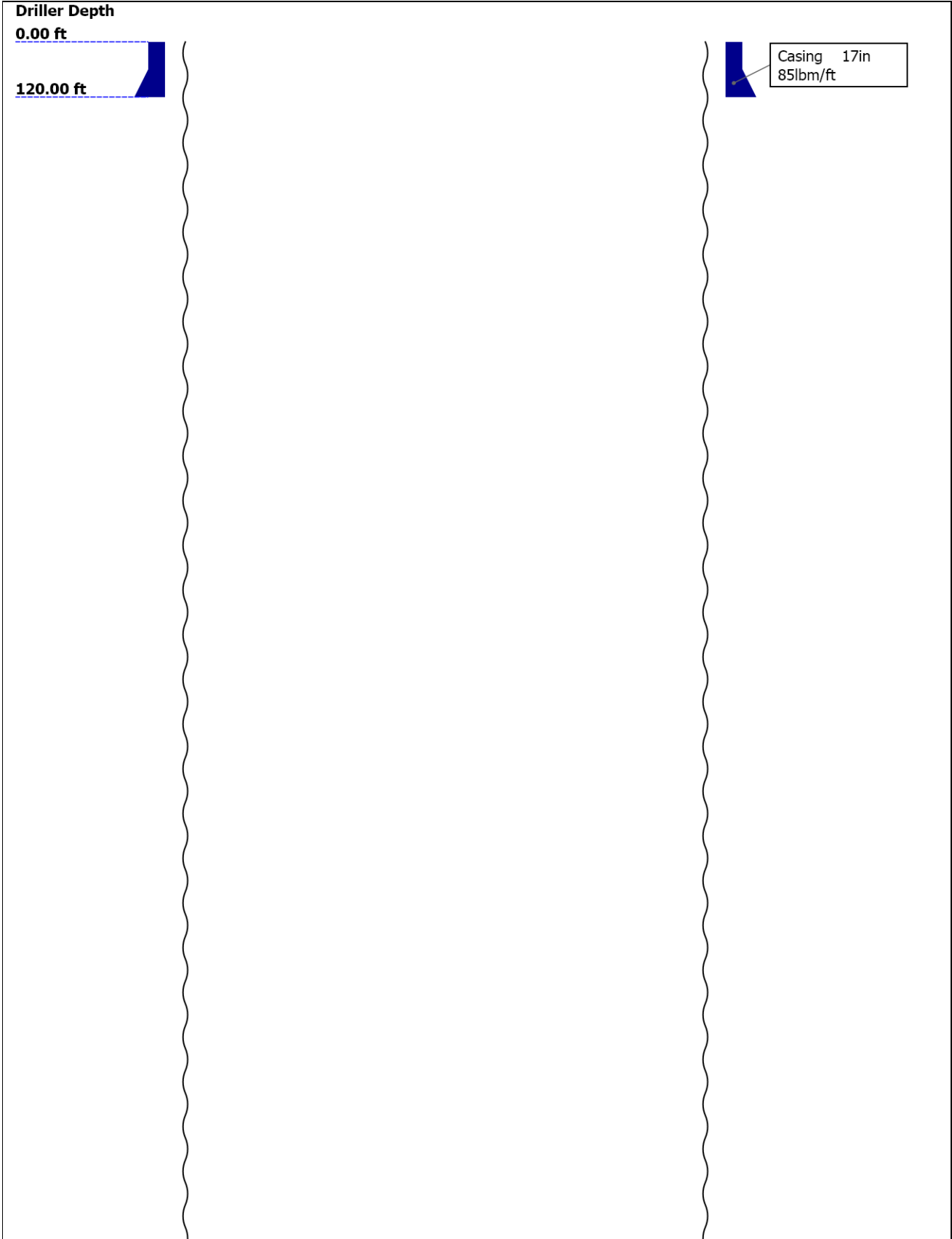
10.4 Log (TeleScope Gamma Ray MD RM)

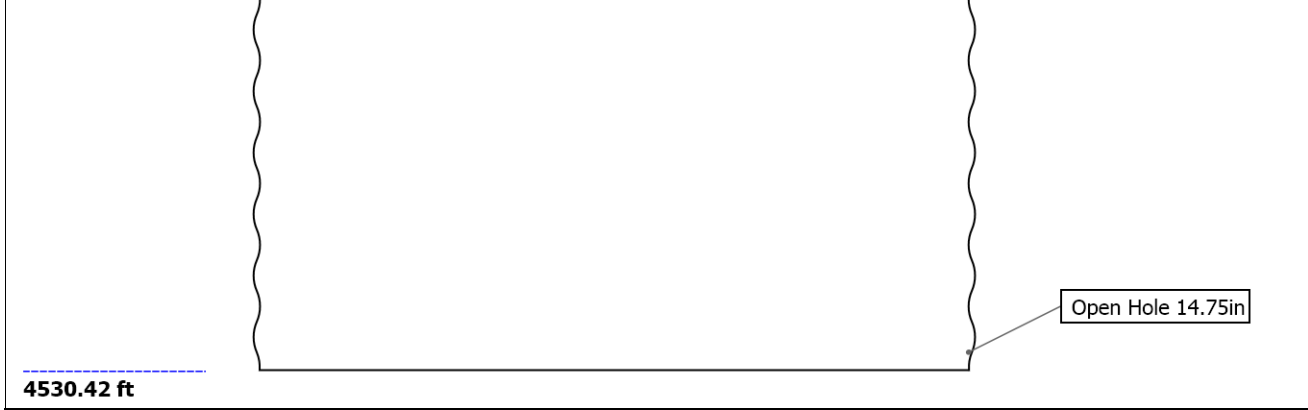
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Well Sketch





Borehole Size/Casing Record

Bit						
Bit Size (in)	14.75					
Bottom Driller (ft)	4530.42					
Casing						
Size (in)	17					
Weight (lbm/ft)	85					
Inner Diameter (in)	16.058					
Top Driller (ft)	0					
Bottom Driller (ft)	120					

Operational Run Summary

Parameter (unit)	Run001					
Date Log Started	18-Dec-2010					
Time Log Started	20:48:15					
Date Log Finished	24-Dec-2010					
Time Log Finished	12:44:16					
Bit Size (in)	14.750					
Bit Start Depth (ft)	143.00					
Bit Stop Depth (ft)	4530.42					
Top Log Interval (ft)	73.00					
Bottom Log Interval (ft)	4459.00					
Max Hole Deviation (deg)	17.99					
Azimuth of Max Deviation (deg)	120.65					
Logging Unit Number	93					
Logging Unit Location	Zone 2					
Recorded By	KEitel					
Witnessed By	GNegron					
Service Order Number	10RCB0439					

Borehole Fluids

Parameter (unit)	Run001					
Type Fluid	Water					
Max Recorded Temperature (degF)	146					

Source of Sample	Active Tank					
Salinity (ppm)	34972.17					
Density (lbm/gal)	Zoned					
Viscosity (s)	56					
Fluid Loss (cm3)	0					
pH	9.5					
Source Rmf						
Source Rmc	Pressed					
Rm @ Meas Temp (ohm.m@degF)	0.2 @ 68					
Rmf @ Meas Temp (ohm.m@degF)	0.15 @ 68					
Rmc @ Meas Temp (ohm.m@degF)	0 @ 68					
Rm @ BHT (ohm.m@degF)	0.10 @ 146					
Rmf @ BHT (ohm.m@degF)	0.07 @ 146					
Rmc @ BHT (ohm.m@degF)	0 @ 146					

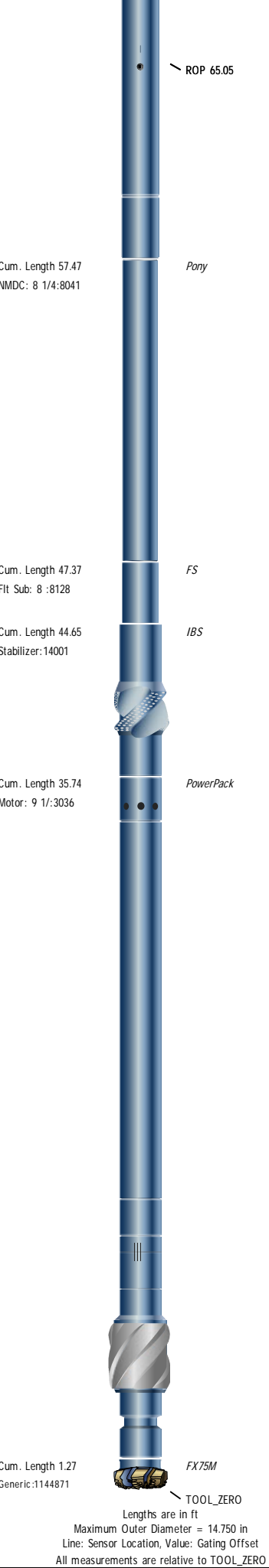
Zoned Borehole Fluids

Run001

Parameter	Value	Start
Density	9.3	12/18/2010 8:48:15 PM
Density	9	12/19/2010 11:00:00 PM
Density	8.9	12/20/2010 11:00:00 AM
Density	9	12/21/2010 11:00:00 AM
Density	9.10	12/21/2010 11:00:00 PM
Density	9.2	12/22/2010 11:00:00 PM
Density	9.05	12/23/2010 11:00:00 AM
Density	9.45	12/23/2010 11:00:00 PM
Density	9.7	12/24/2010 11:00:00 AM

Remarks and Equipment Summary

Run001: Toolstring		Run001: Remarks
<div><div>Cum. Length 88.56</div><div>TELE825:E3096</div><div>MSSU825:0825-000</div><div>Upper Extender</div><div>MDC825:E3096</div><div>MMA:2687</div><div>MDI</div><div>PMGR:276</div><div>PMEA:1017</div><div>MTA:2587</div><div>MTK825</div><div>MSSD825:0800-000</div><div>Lower Extender,</div></div> <div><div>PUP_GR</div><div><div><div>72.76</div><div>D&I</div></div><div><div>70.64</div><div>GR</div></div></div></div>	<div>Data presented is from tool memory and acquired from 144 ft to 4530 ft MD</div> <div>Depth Reference: Drillers Depth</div> <div>Gamma Ray is filtered but not environmentally corrected</div> <div>Barite in mud affects Gamma Ray readings</div> <div>Run objective: drill surface section of well</div> <div>Bit size: 14.75 in</div> <div>Drilled from 144 ft to 4530 ft MD</div> <div>Reason POOH: Section TD</div> <div>TeleScope Software Version 9.5C18</div> <div>Note on Calibration Report: Tool calibration is not incorrect. Calibration year for tool was entered incorrectly by Technician.</div>	



1 in. / 100 ft MD Log

Integration Summary

Output Channel(s)	Output Description	Input Parameter	Output Value	Unit
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Software Version

Acquisition System			Version	
MaxWell			2.0.6803.0	
Application Patch			SP-20100528-2.0.6803.1089	
Tool Elements	Description	Software Version	Firmware Version	
DRILLING_SURFACE	DRILLING_SURFACE	2.0.6803.1089		
PMGR	TeleScope - M10 Gamma Ray Assembly	2.0.6803.0		

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Acquisition Start Date	Acquisition Start Time
Run001	Drilling	Down	143.00 ft	4530.42 ft	18-Dec-2010	20:48:15

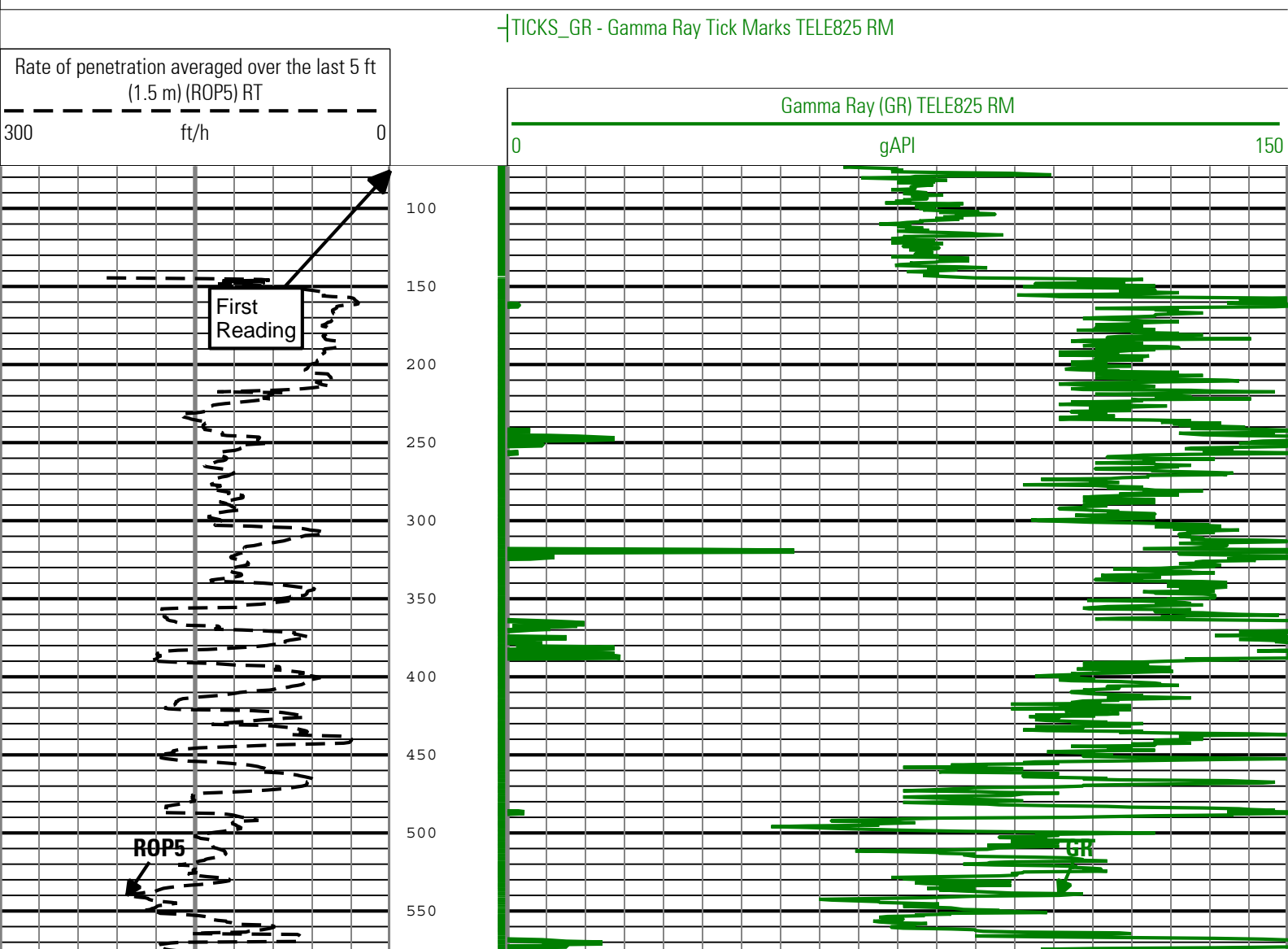
All depths are referenced to toolstring zero

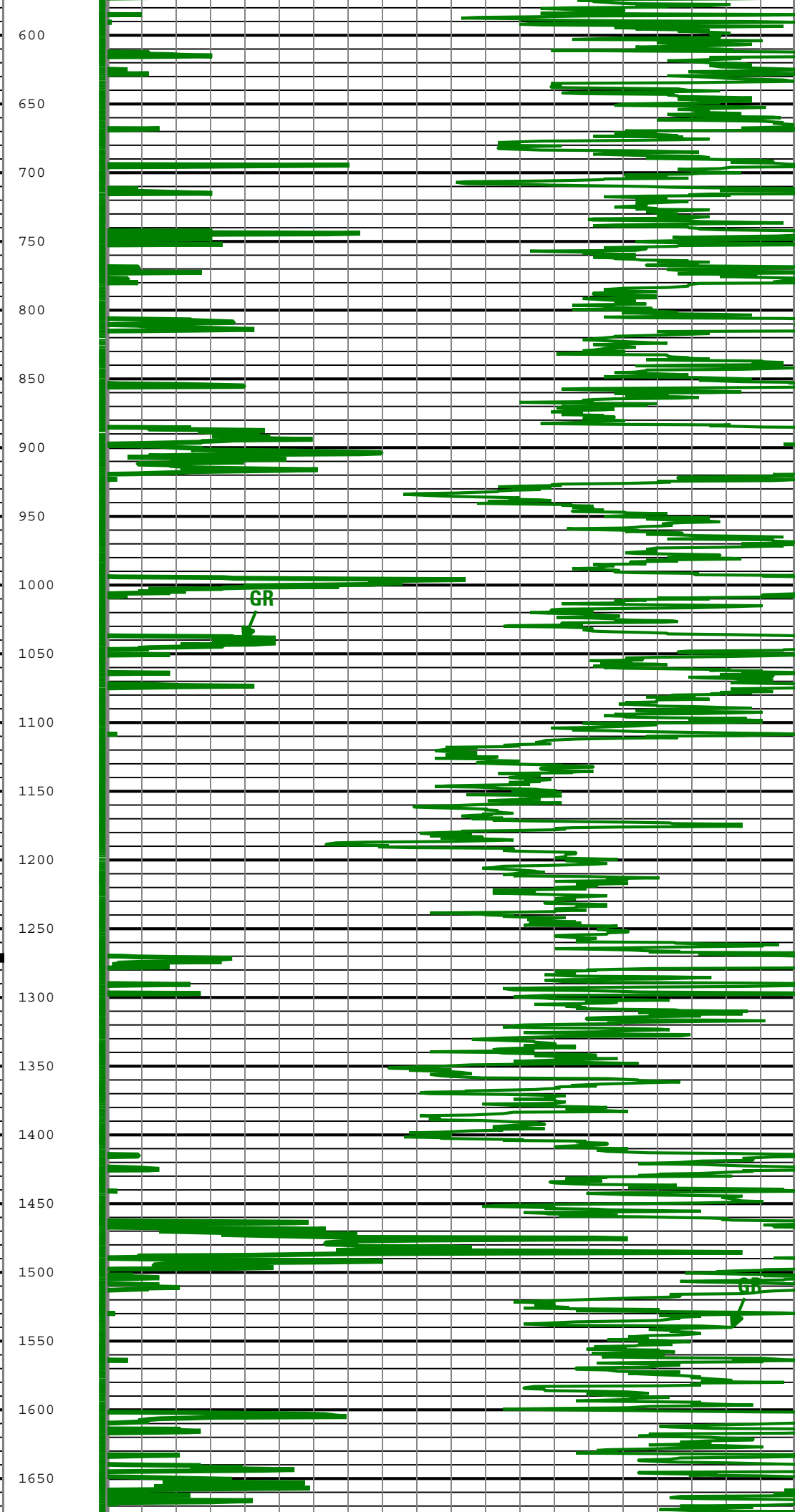
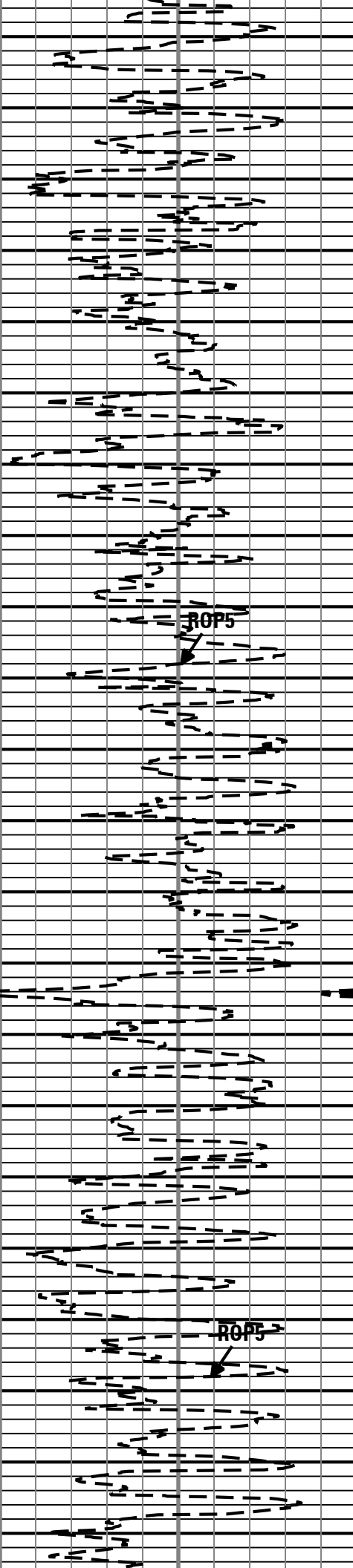
Log

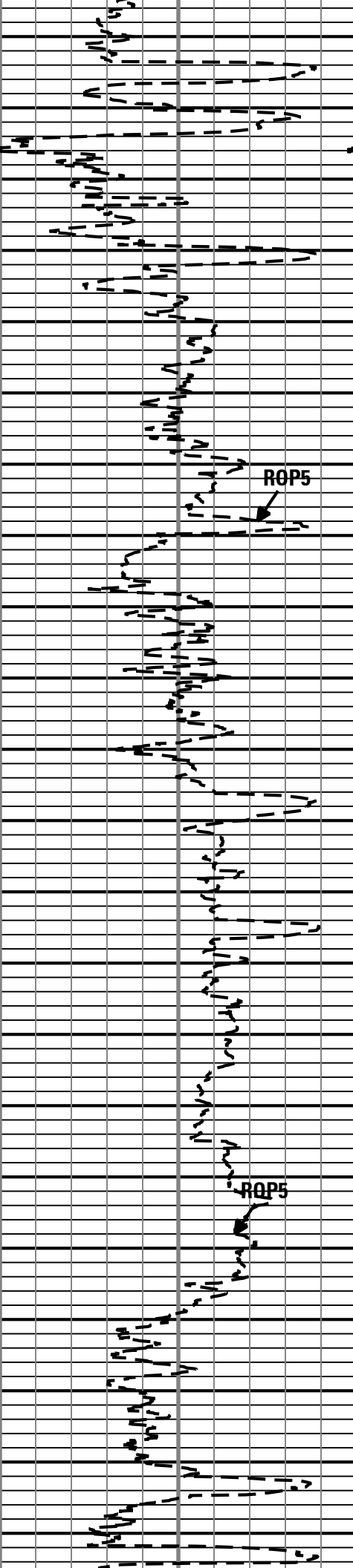
Run001: Drilling 6F61CC1B-BFF6-47D1-972C-617F0AB99552

Description: TeleScope Gamma Ray Depth Format: Log (TeleScope Gamma Ray MD RM) Index Scale: 1 in per 100 ft Index Unit: ft Index Type: Measured
Depth Creation Date: 07-Jan-2011 11:09:48

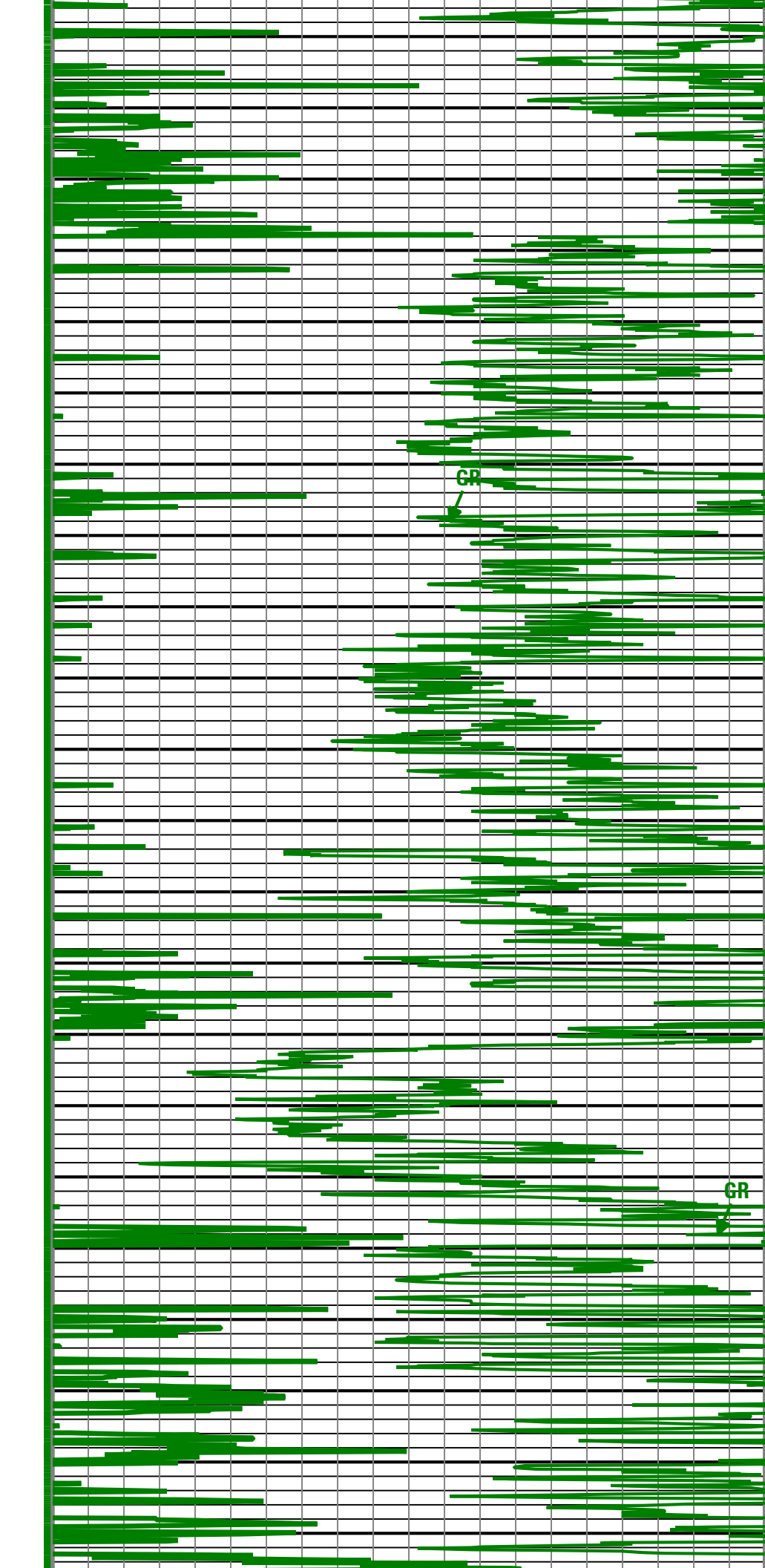
GR TELE825:TELE825:PMGR 6in - RM
ROP5 DRILLING_SURFACE 6in - RT
TICKS_GR TELE825:TELE825:PMGR 1.2in - RM

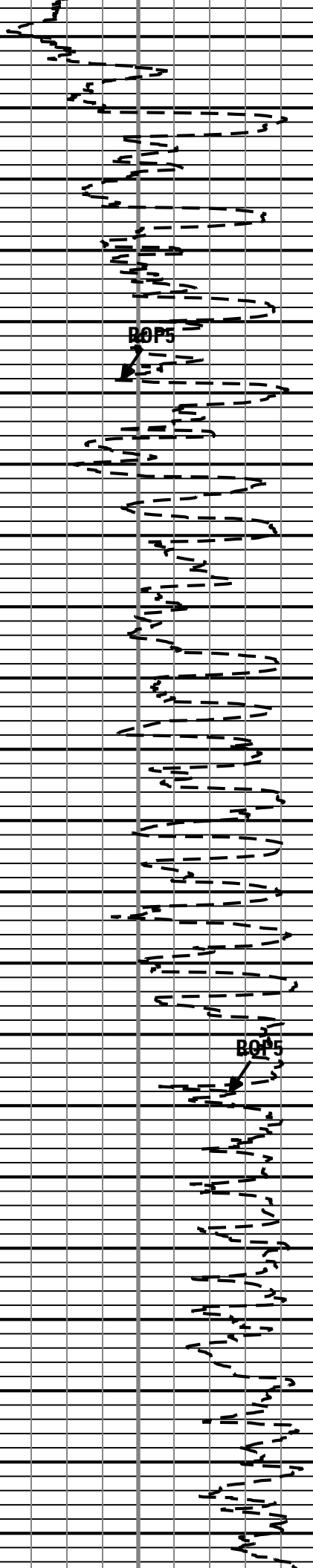




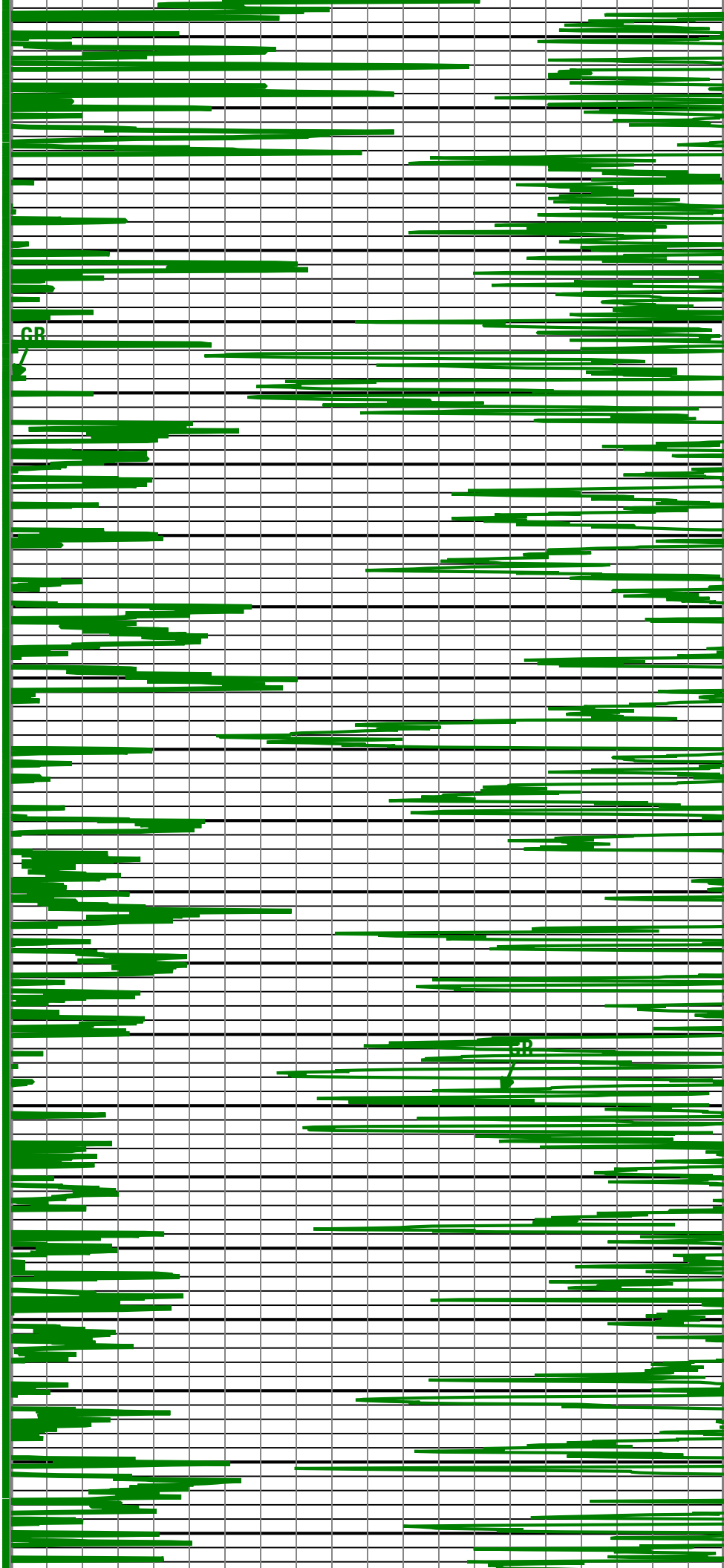


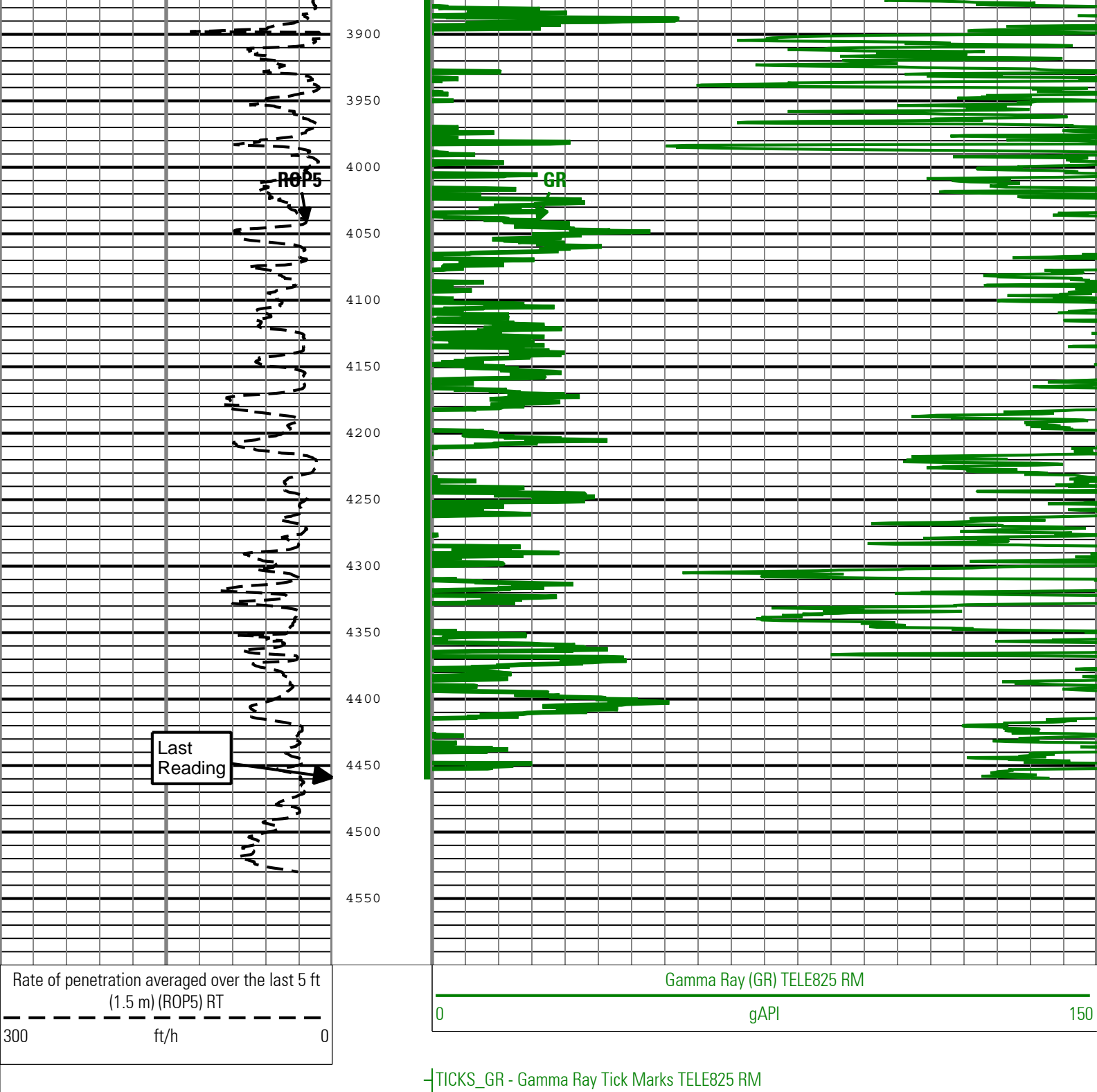
1700
1750
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2800
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2900
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3000
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3100
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3200
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3700
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3800
3850





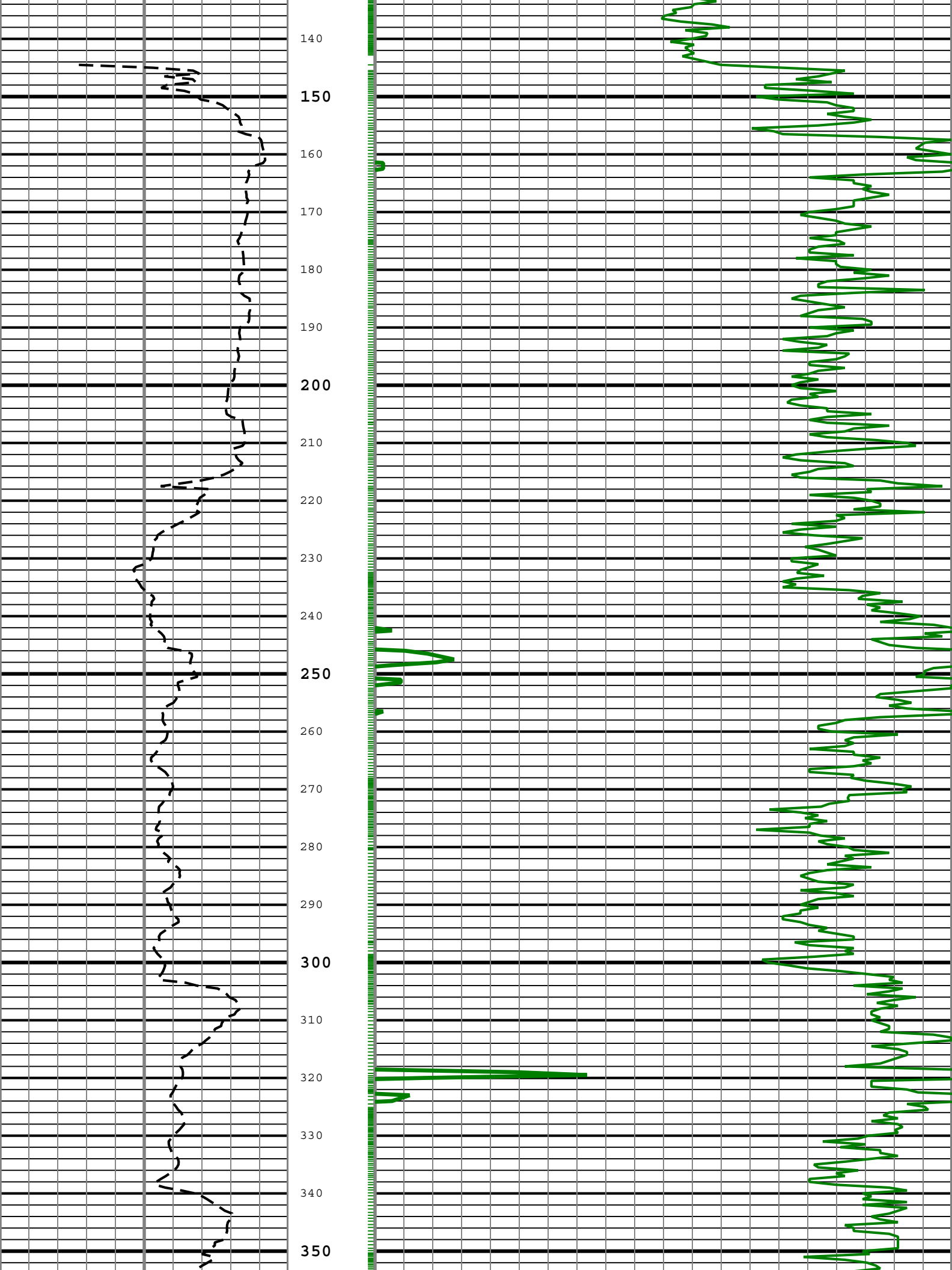
Description: TeleScope Gamma Ray Depth Format: Log (TeleScope Gamma Ray MD RM) Index Scale: 1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 07-Jan-2011 11:09:48

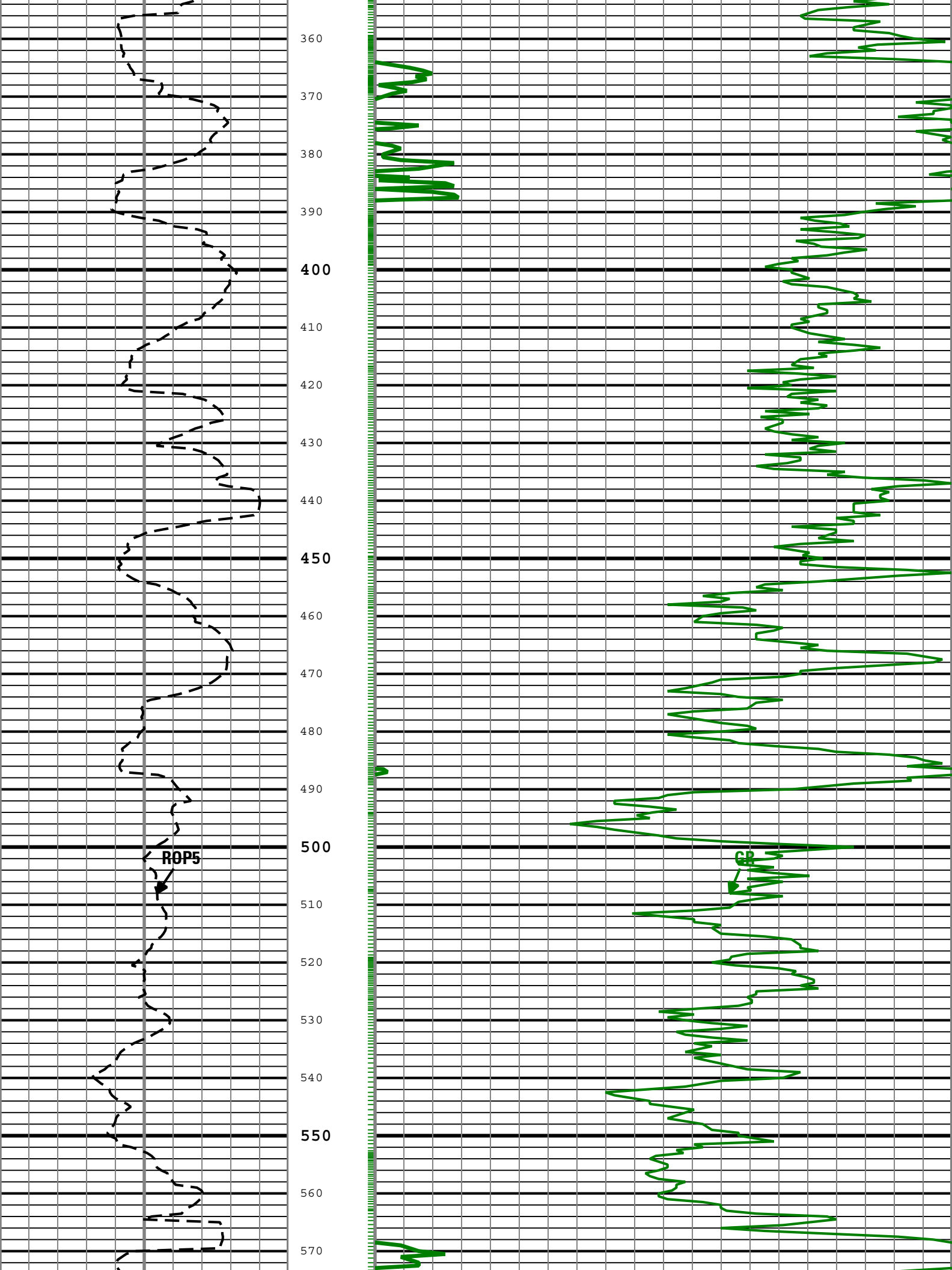
Channel Processing Parameters

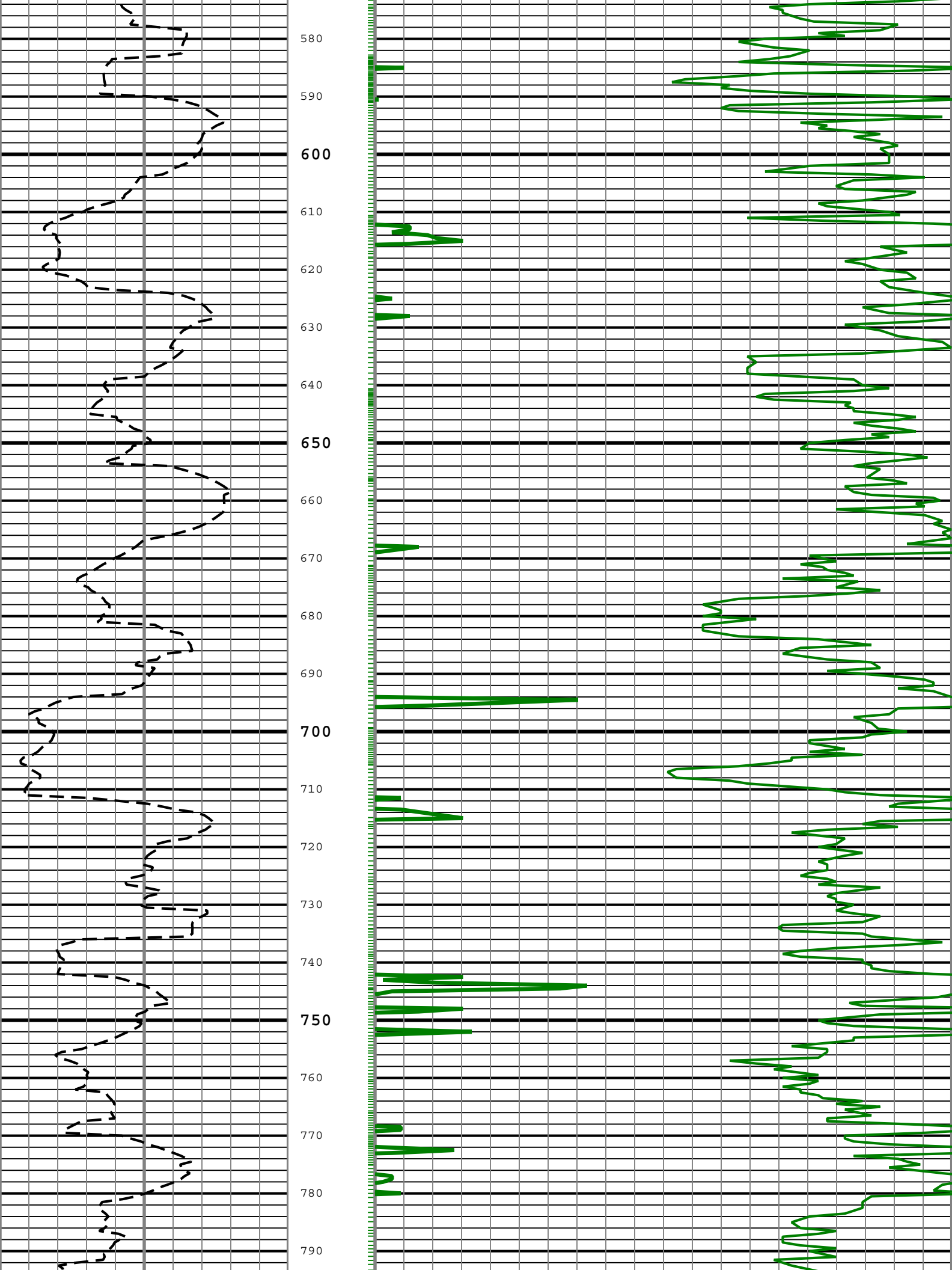
Parameter	Description	ToolPath	Value	Unit
BS	Bit Size	COMPLETION	14.75	in
DFD	Drilling Fluid Density	Borehole	Time Zoned	lbm/gal

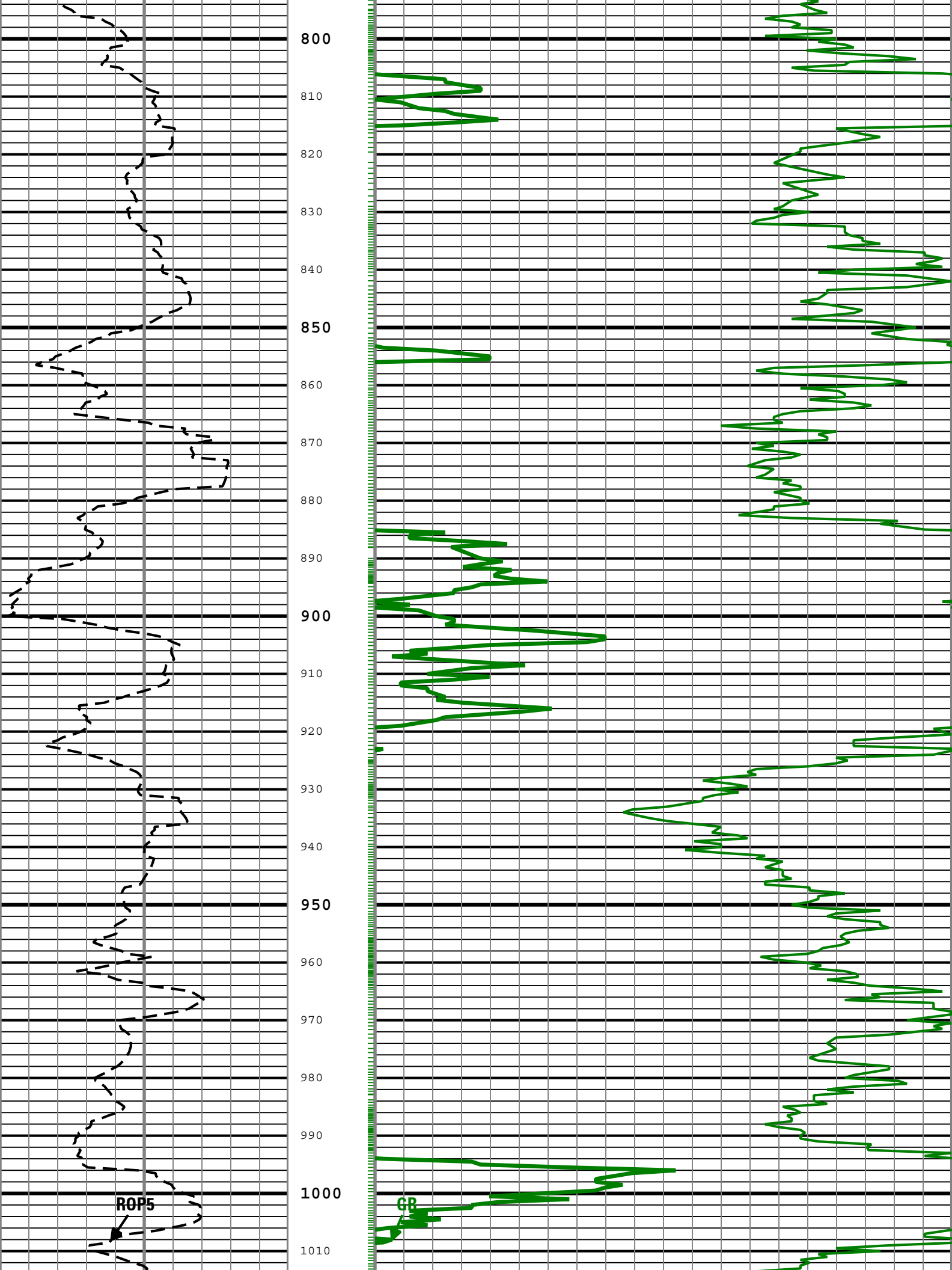
Time Zone Parameters

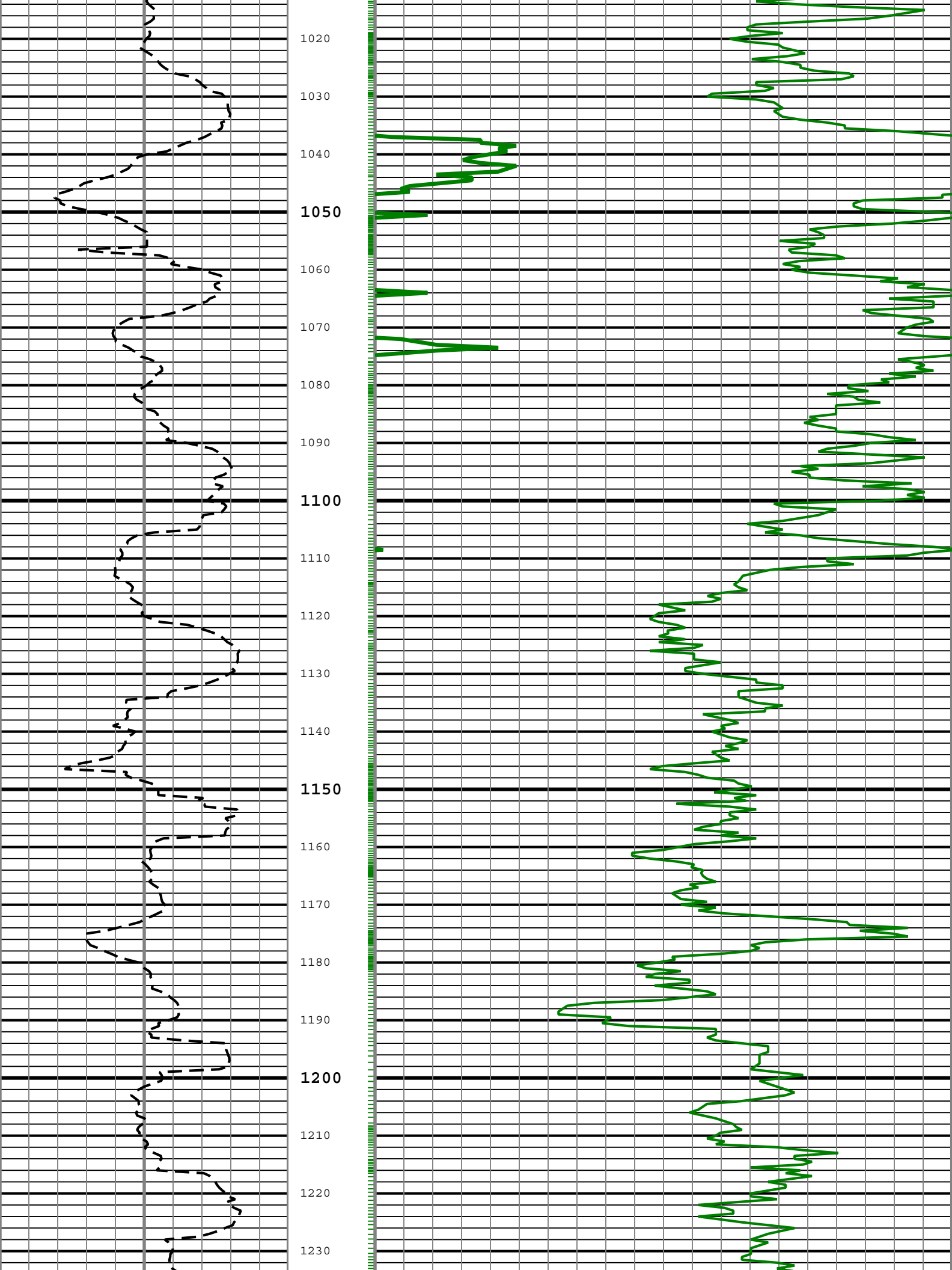
Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
DFD	9.3	18-Dec-2010 20:48:15	19-Dec-2010 23:00:00	143	1235.92
DFD	9	19-Dec-2010 23:00:00	20-Dec-2010 11:00:00	1235.92	2050.5
DFD	8.9	20-Dec-2010 11:00:00	21-Dec-2010 11:00:00	2050.5	3394.92
DFD	9	21-Dec-2010 11:00:00	21-Dec-2010 23:00:00	3394.92	3709.92

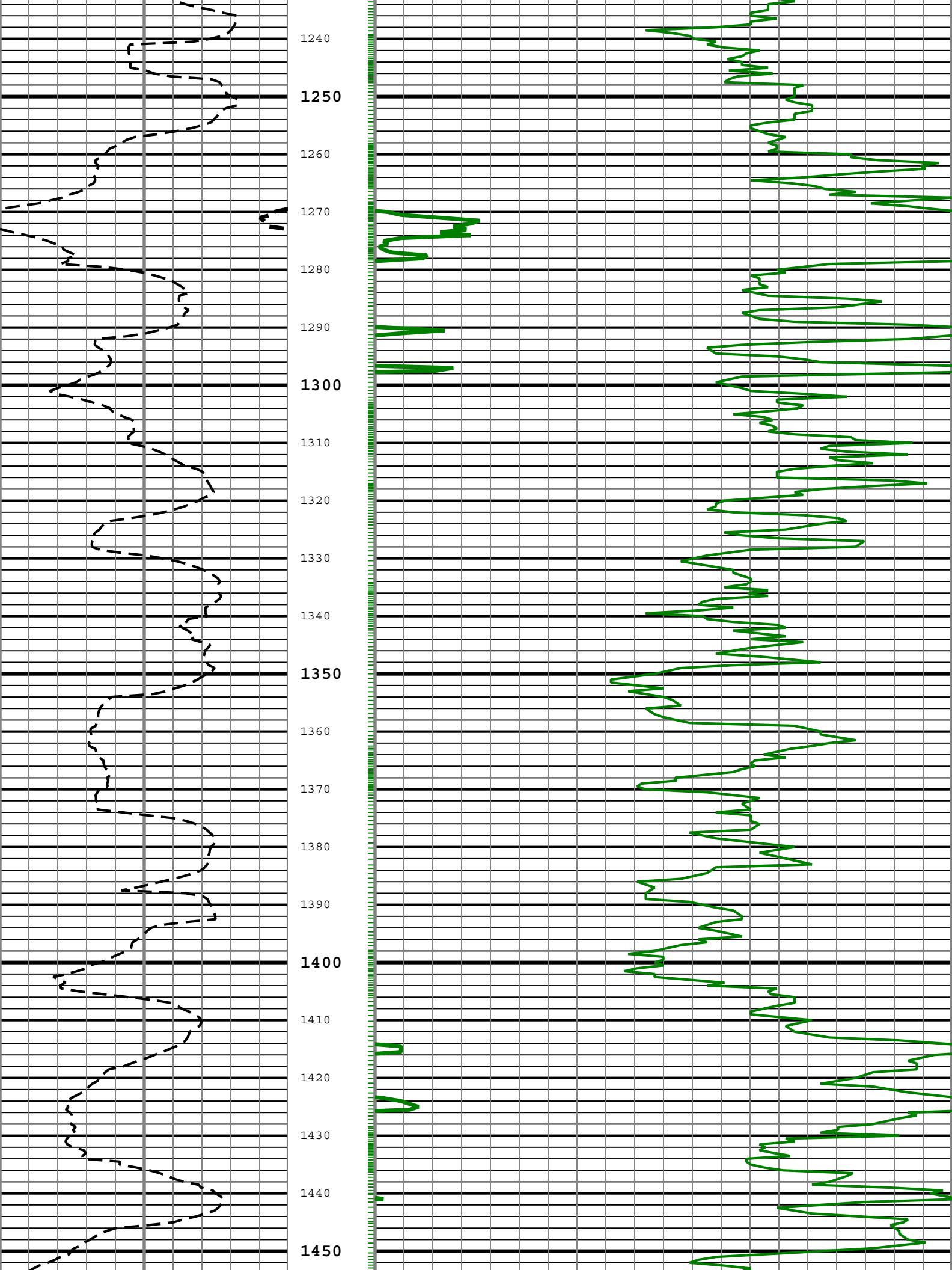


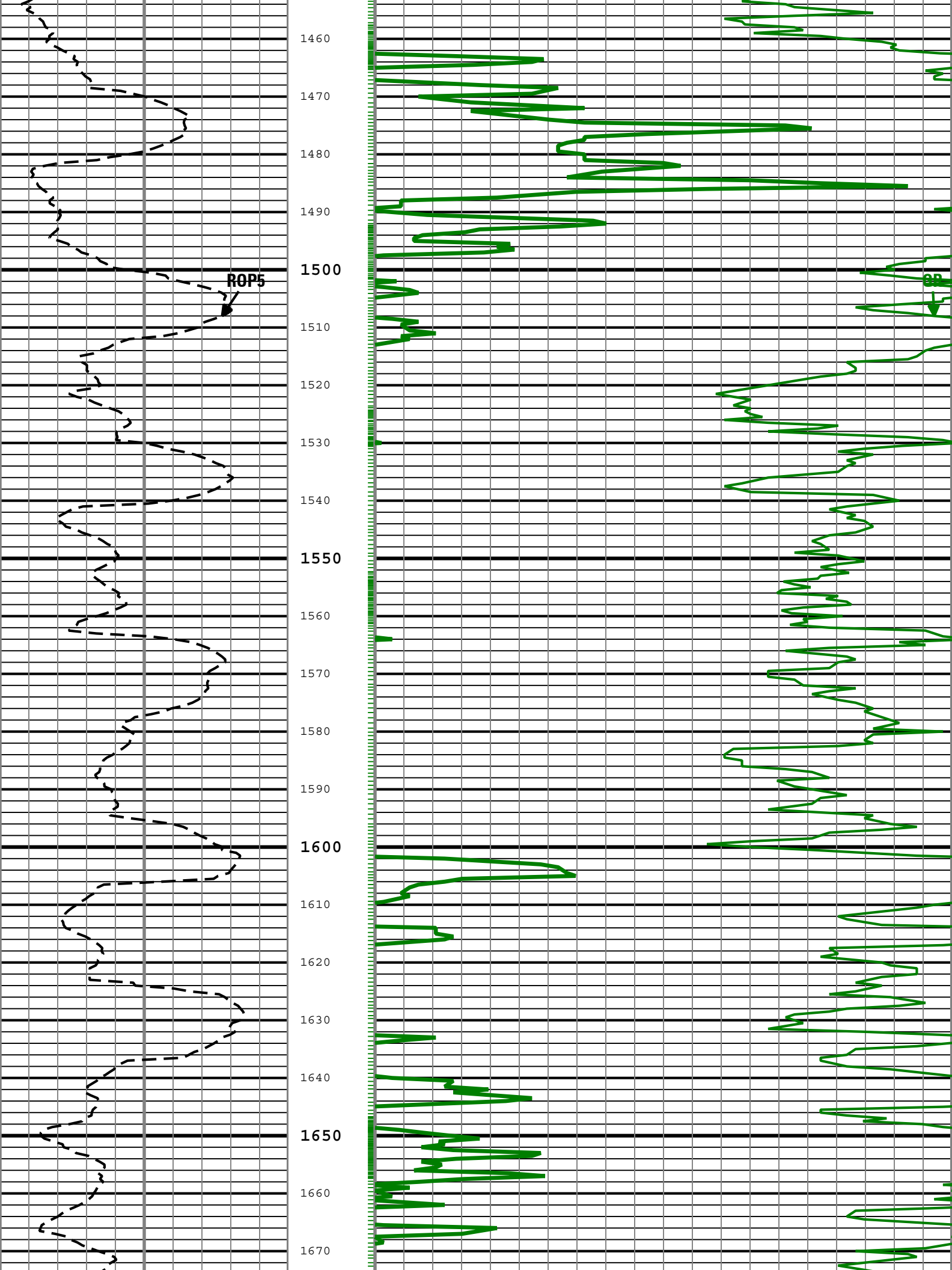


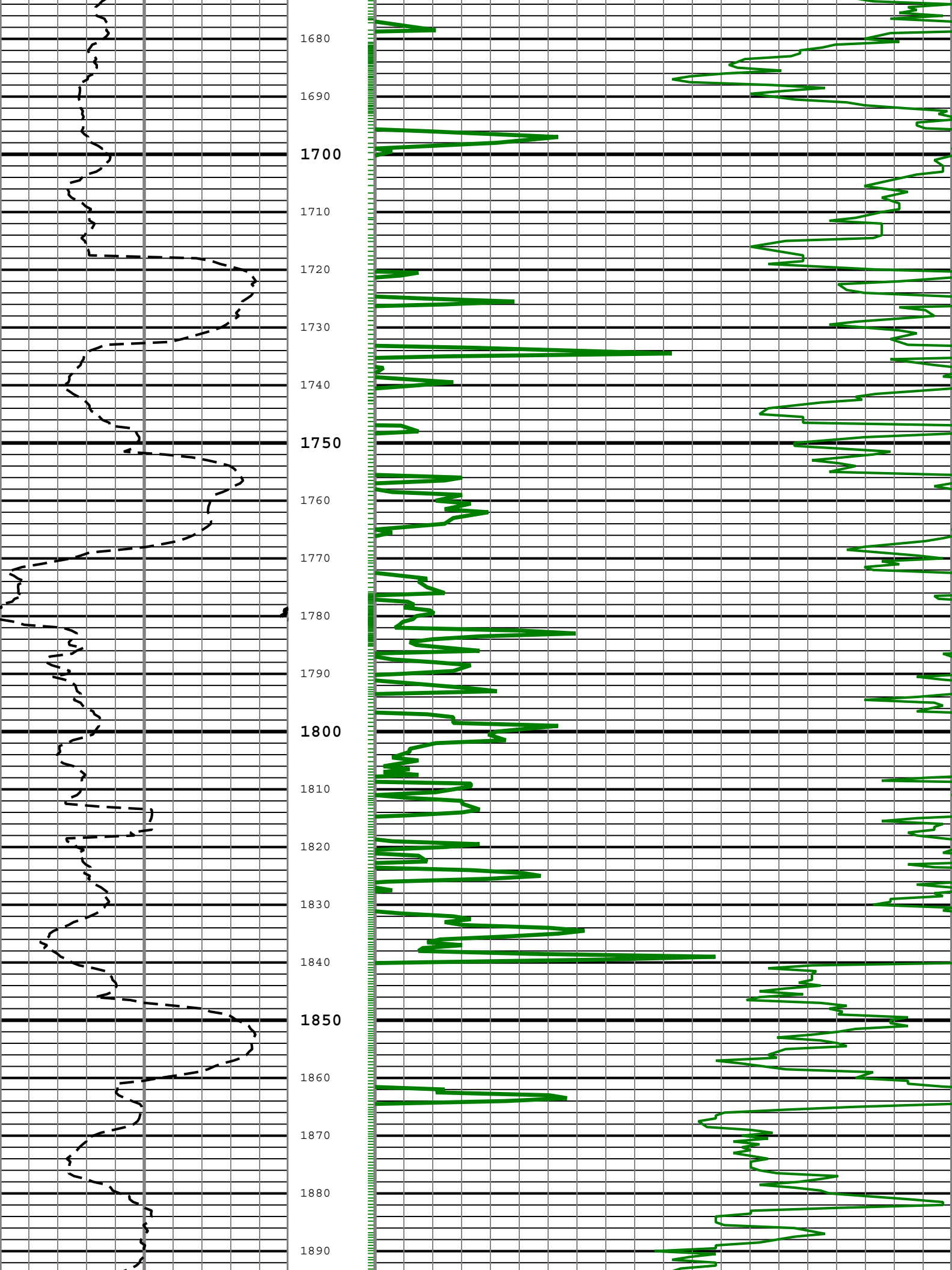


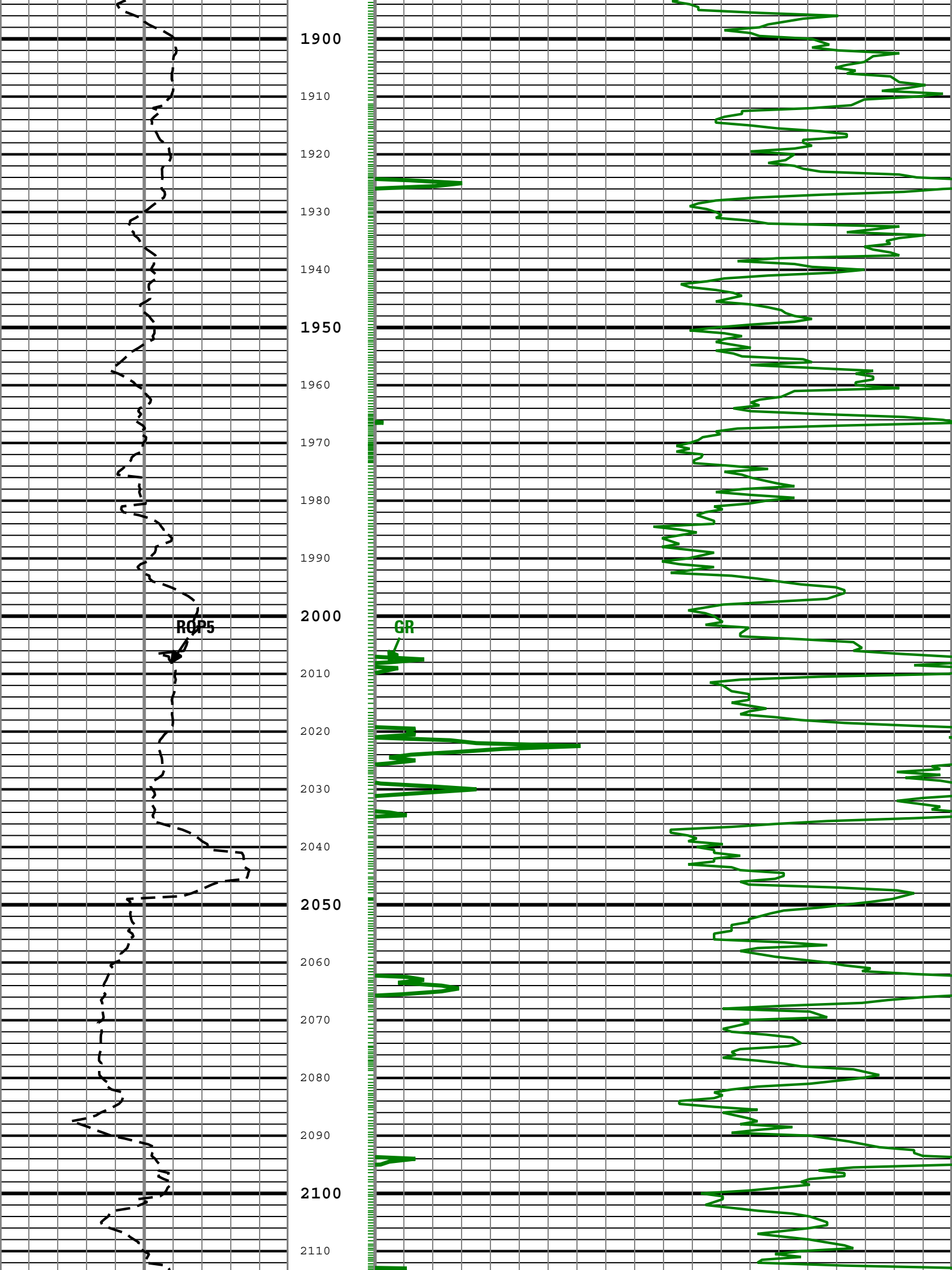


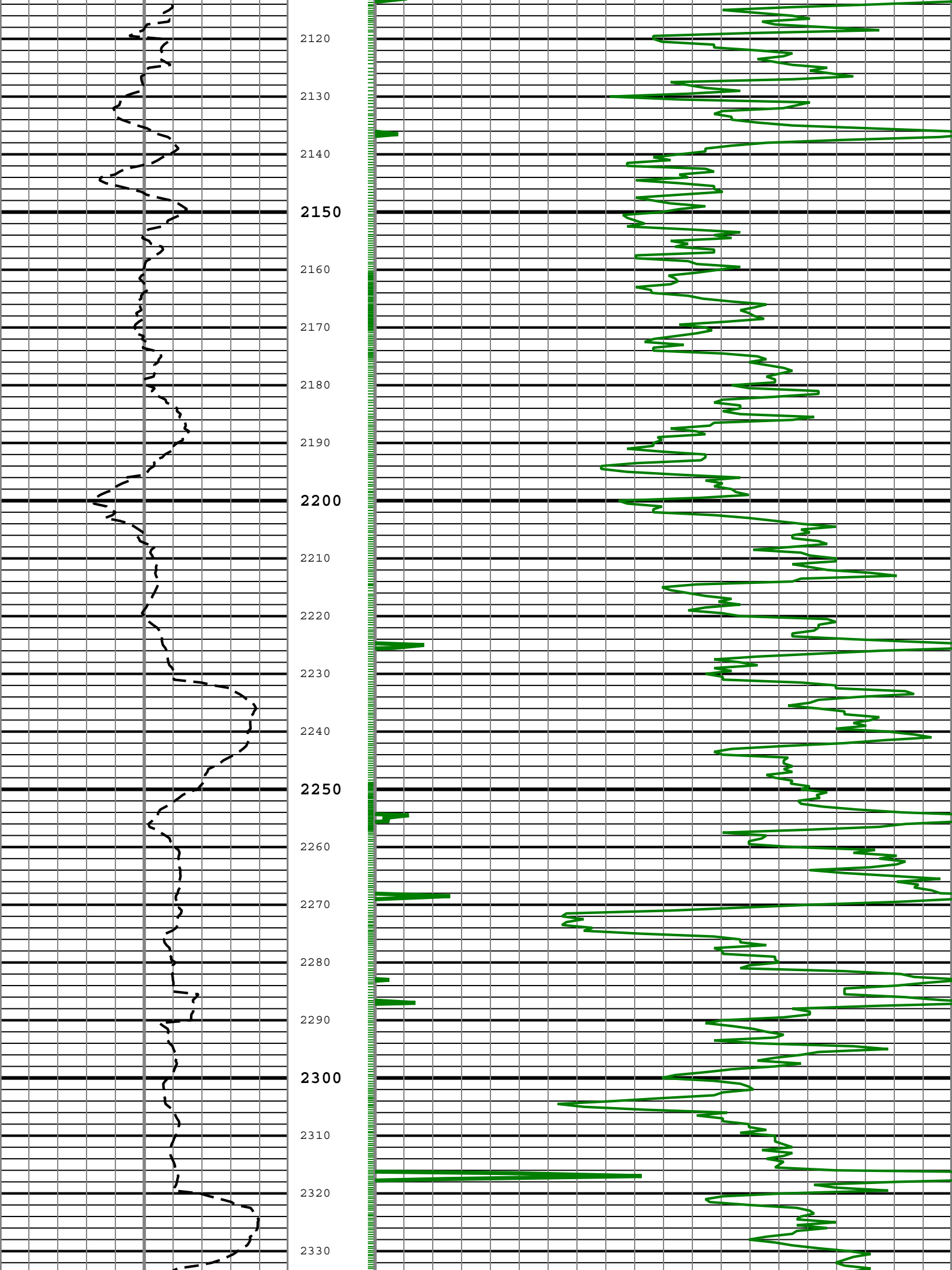


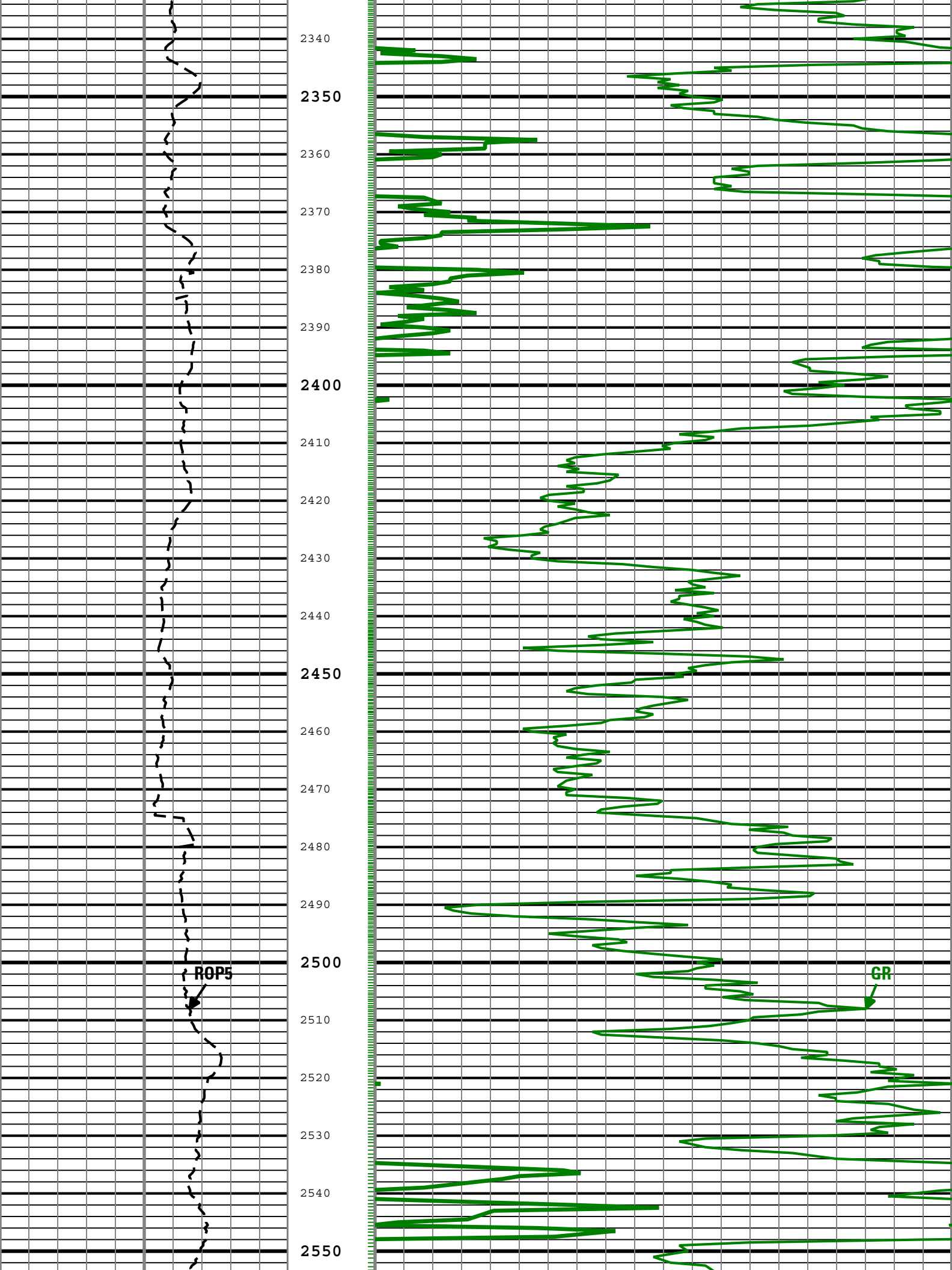


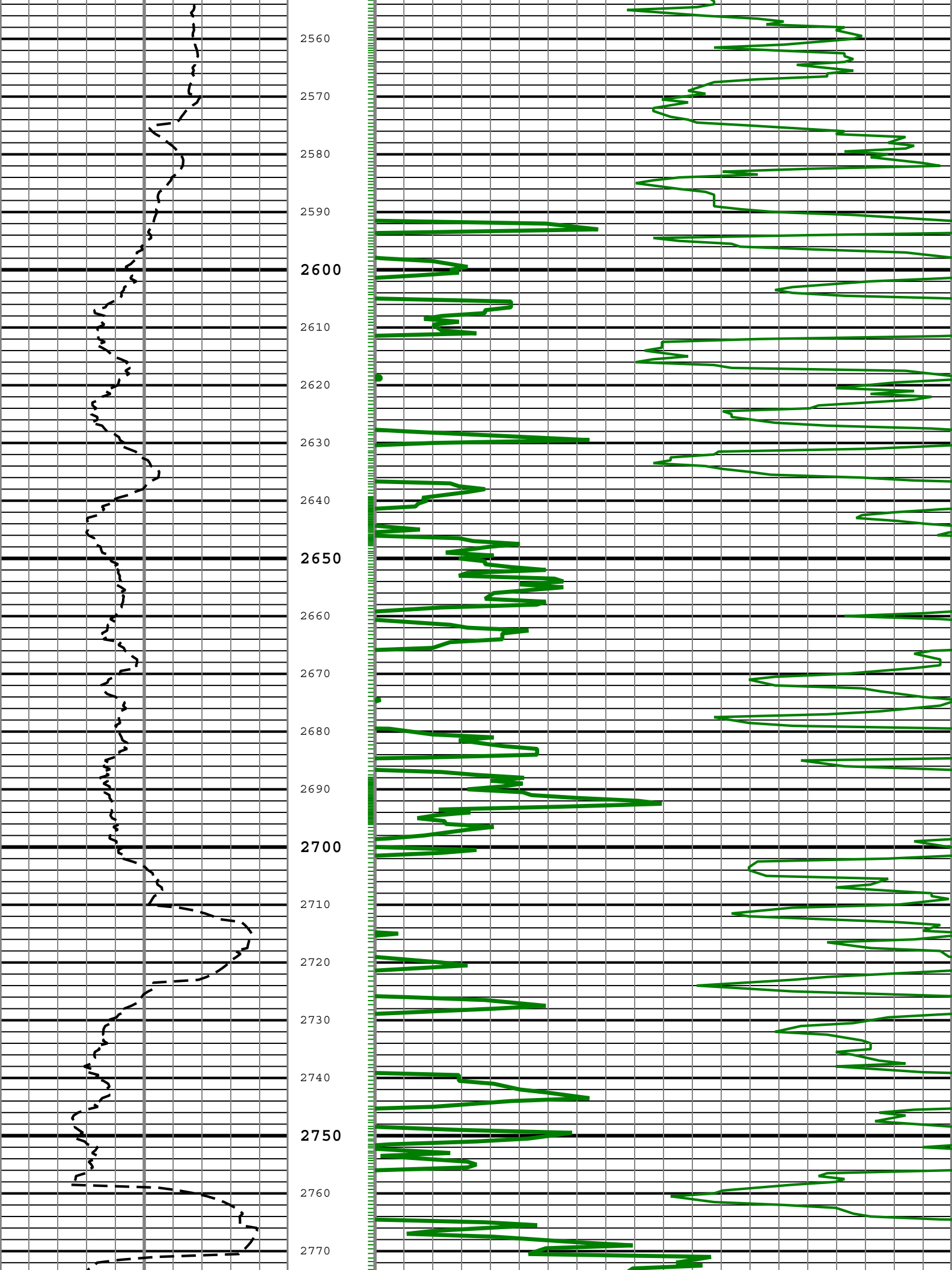


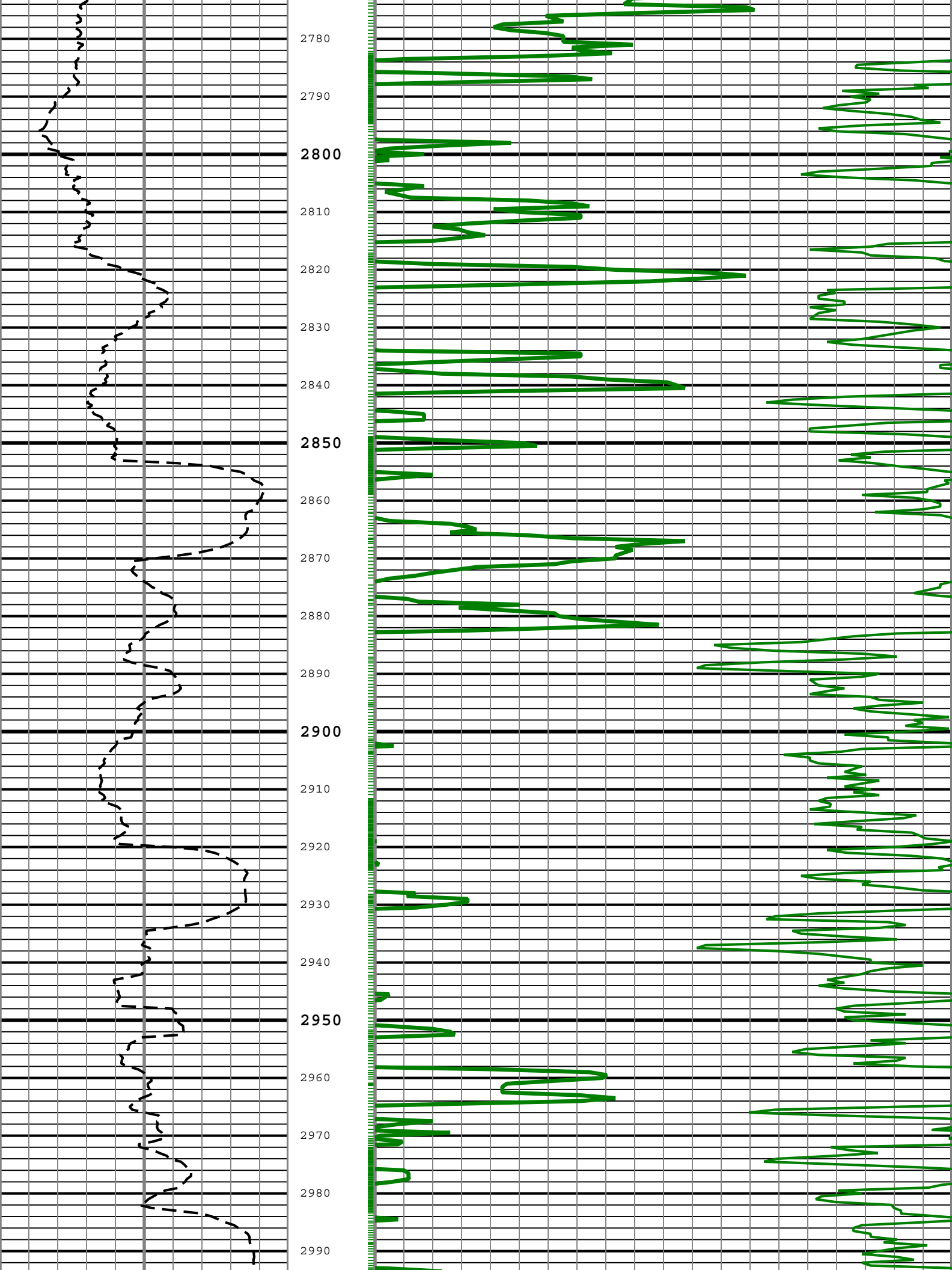


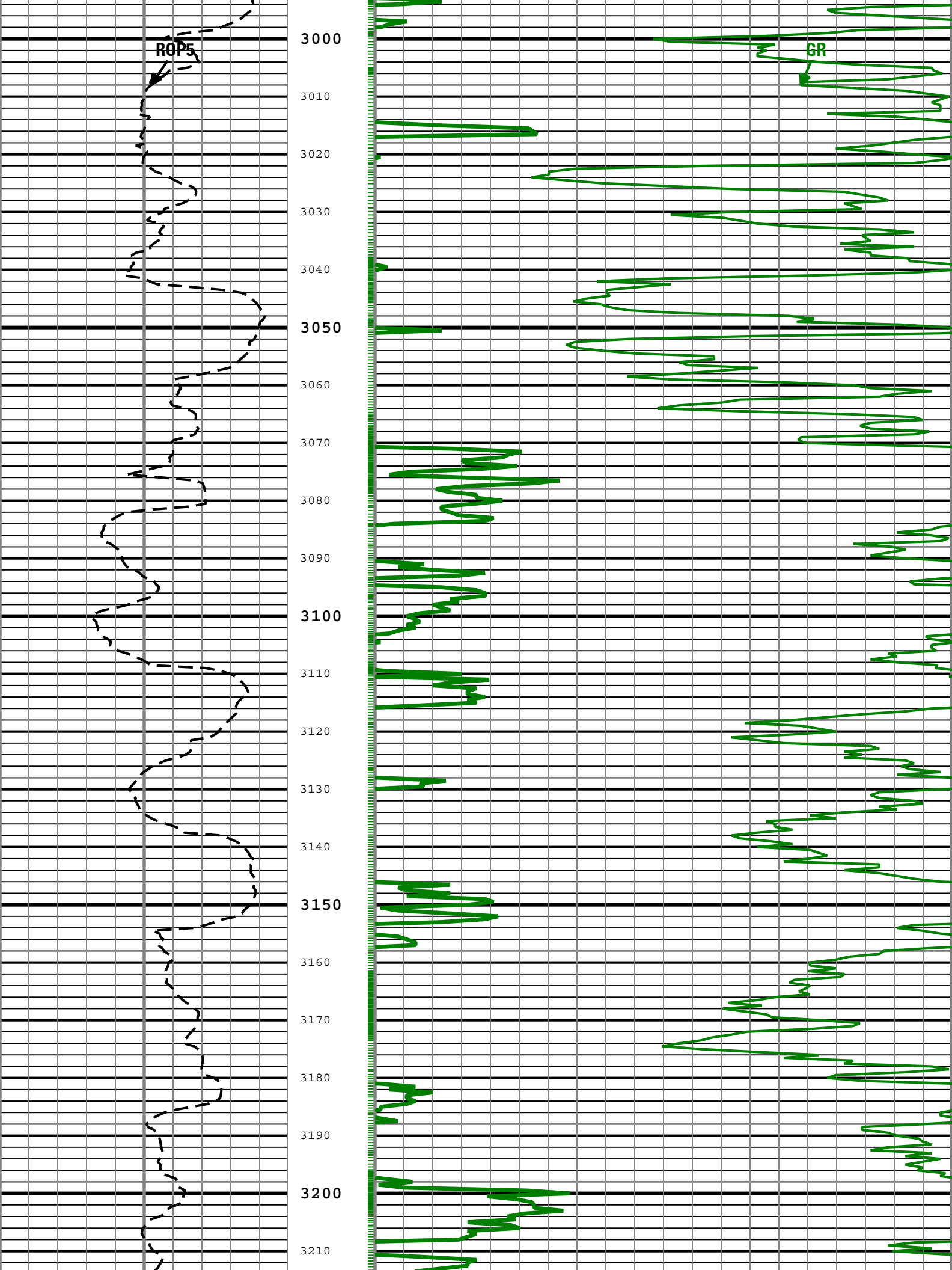


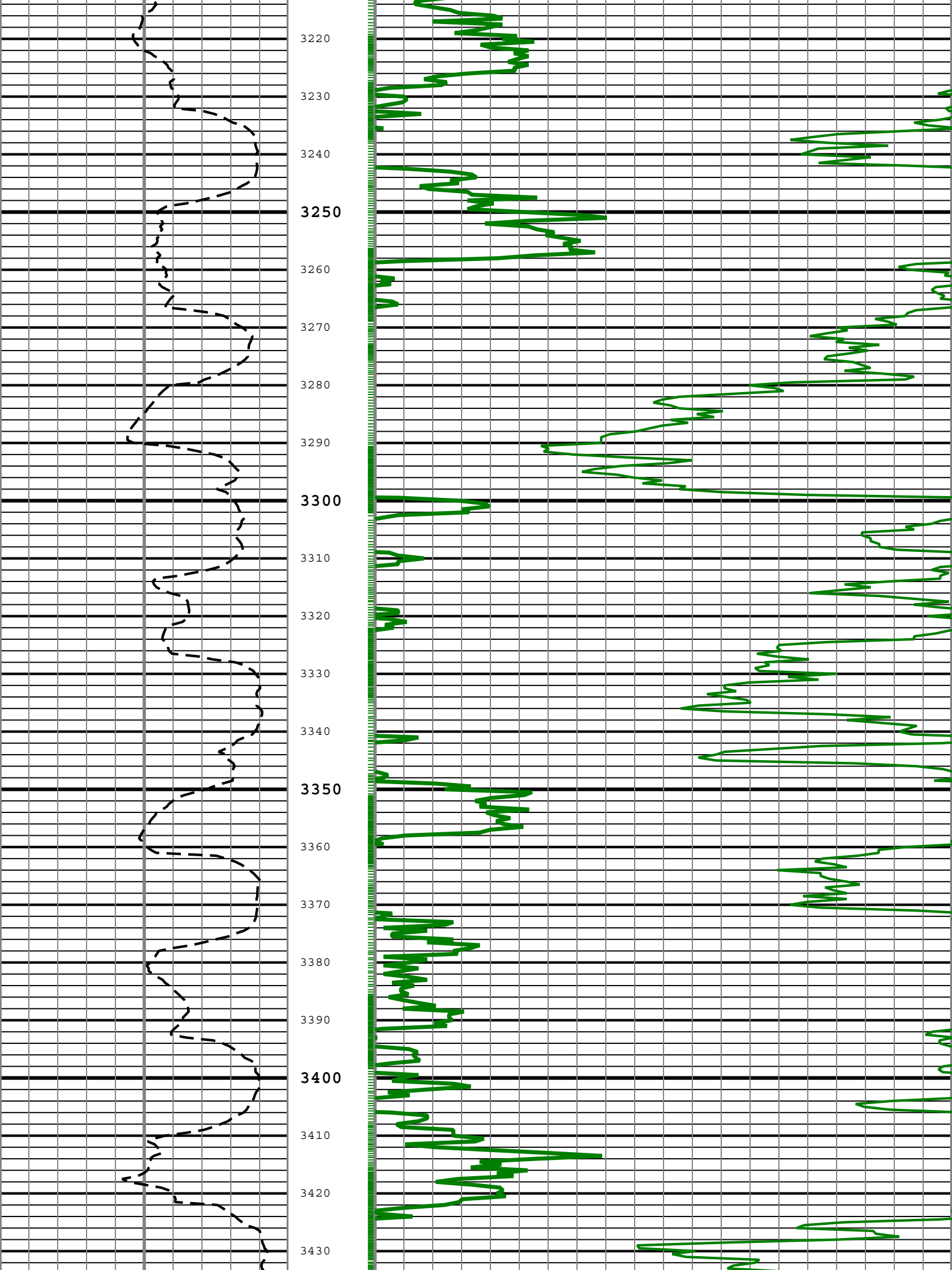


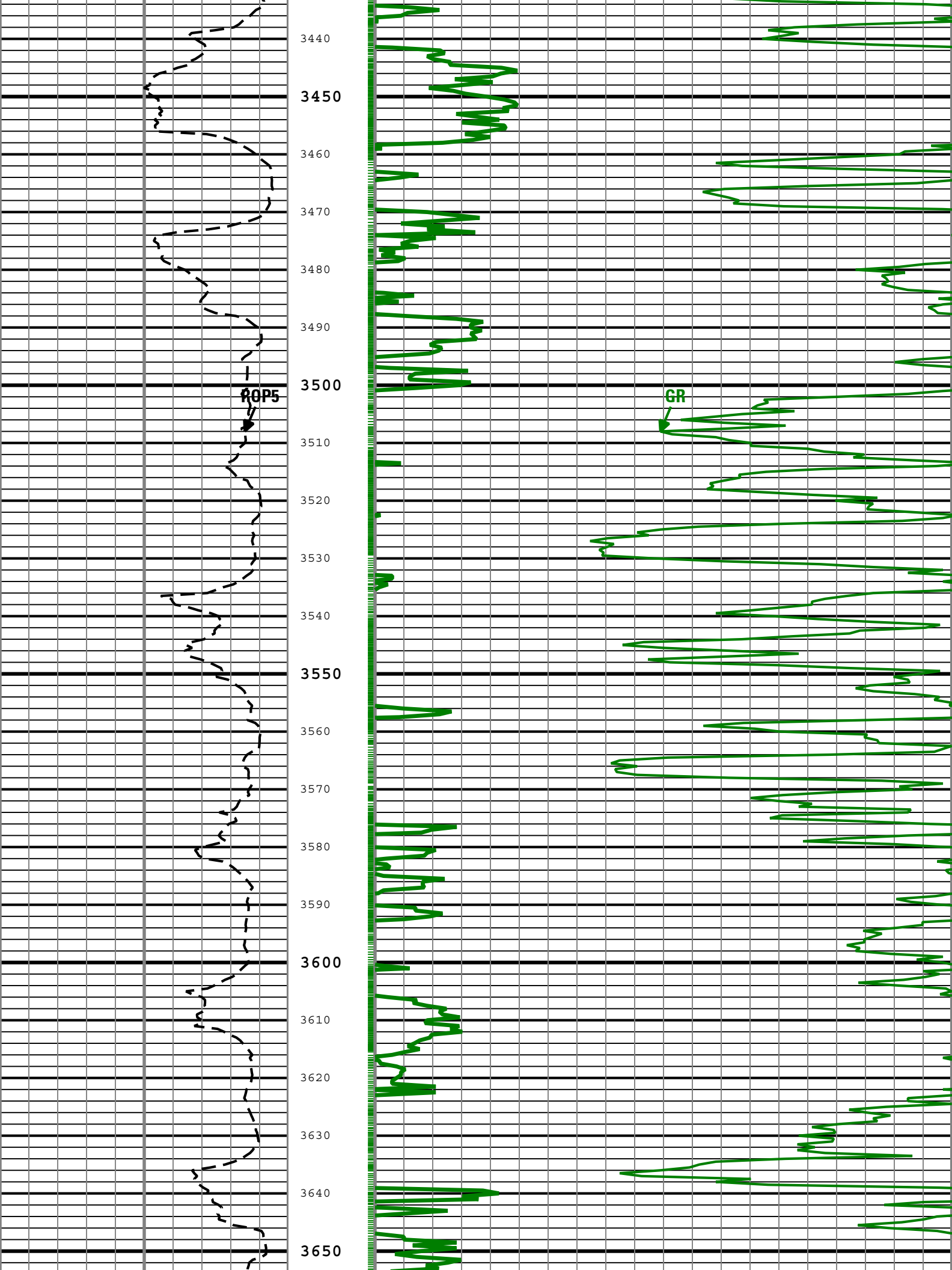


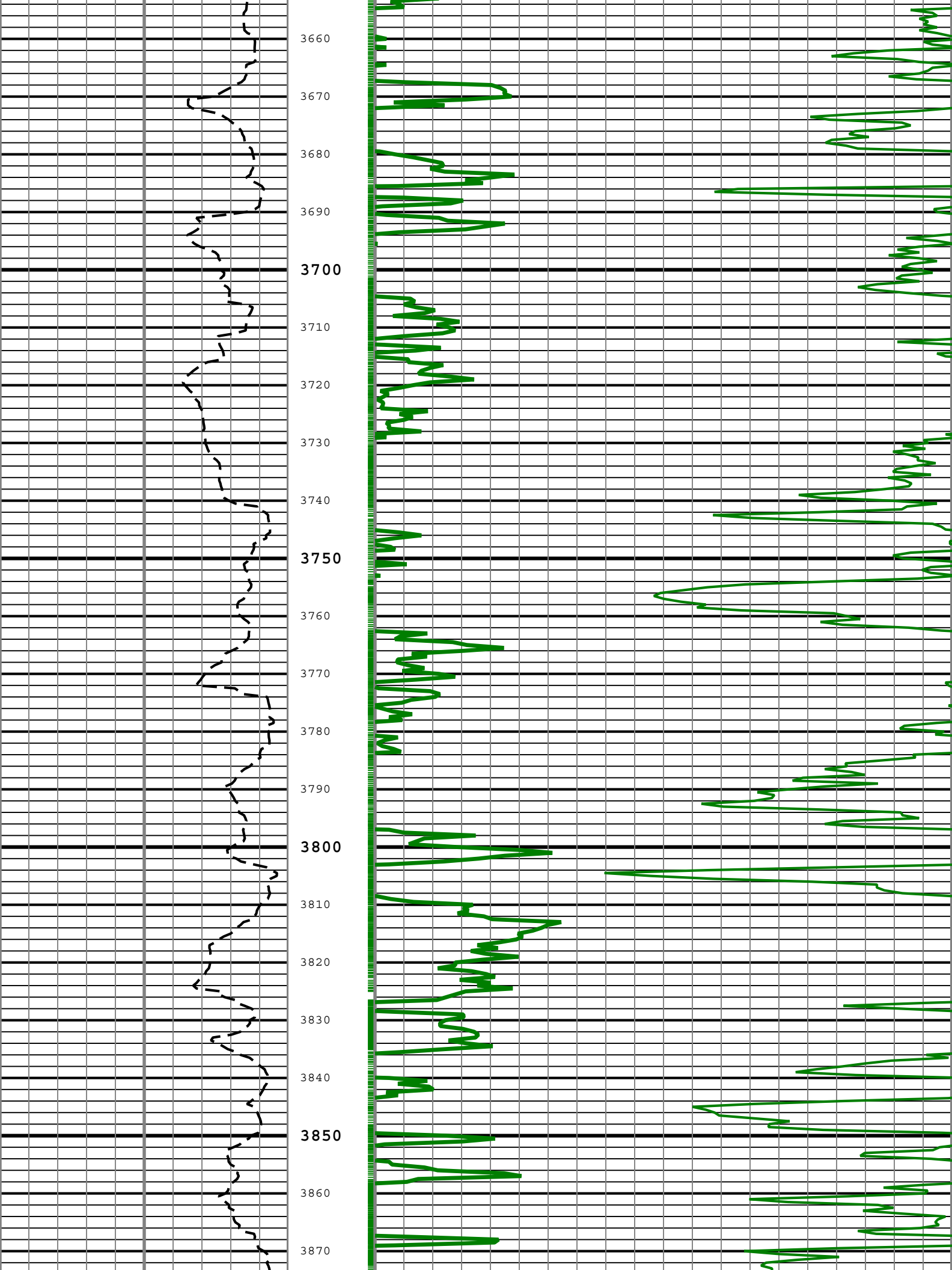


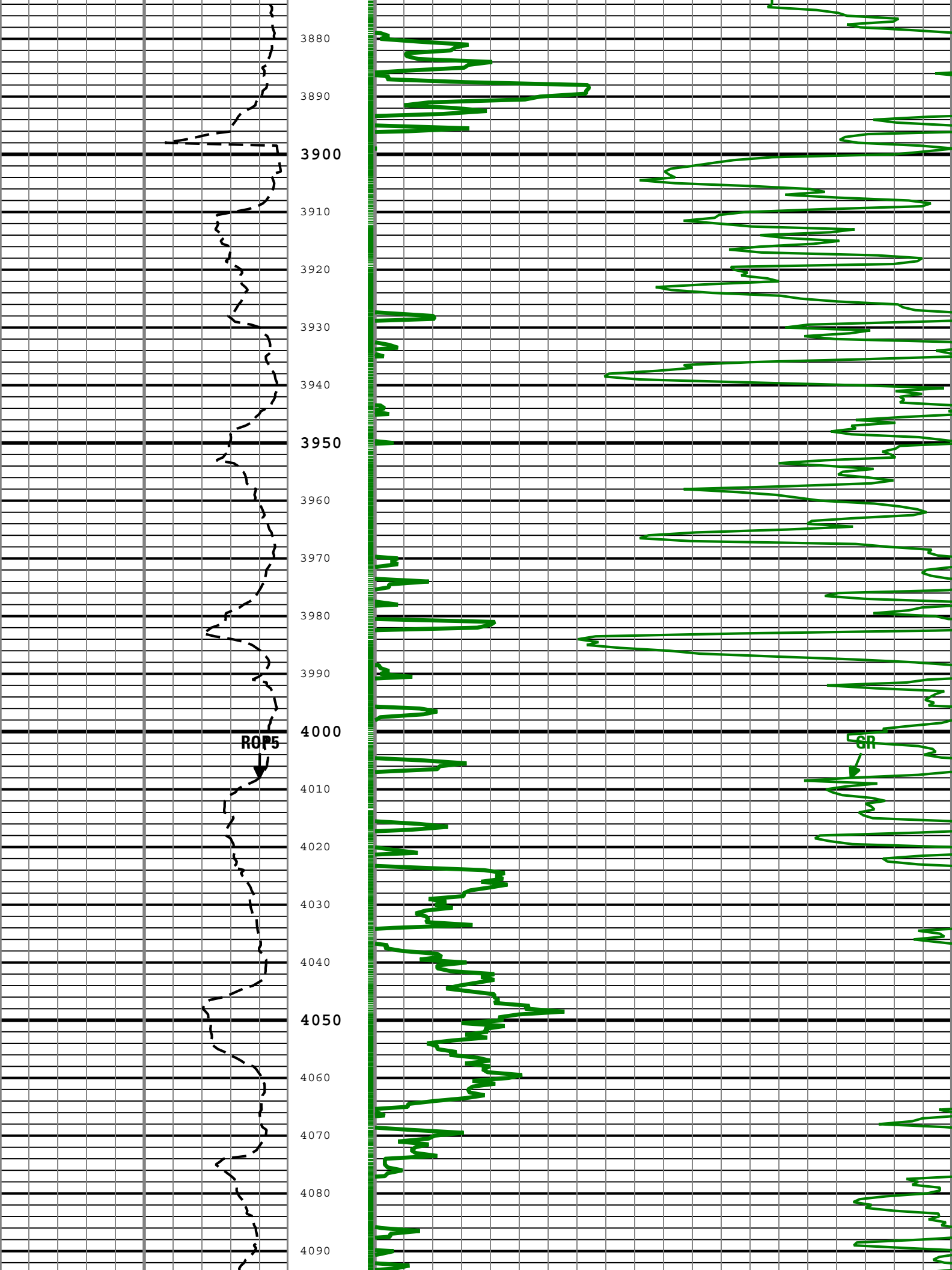


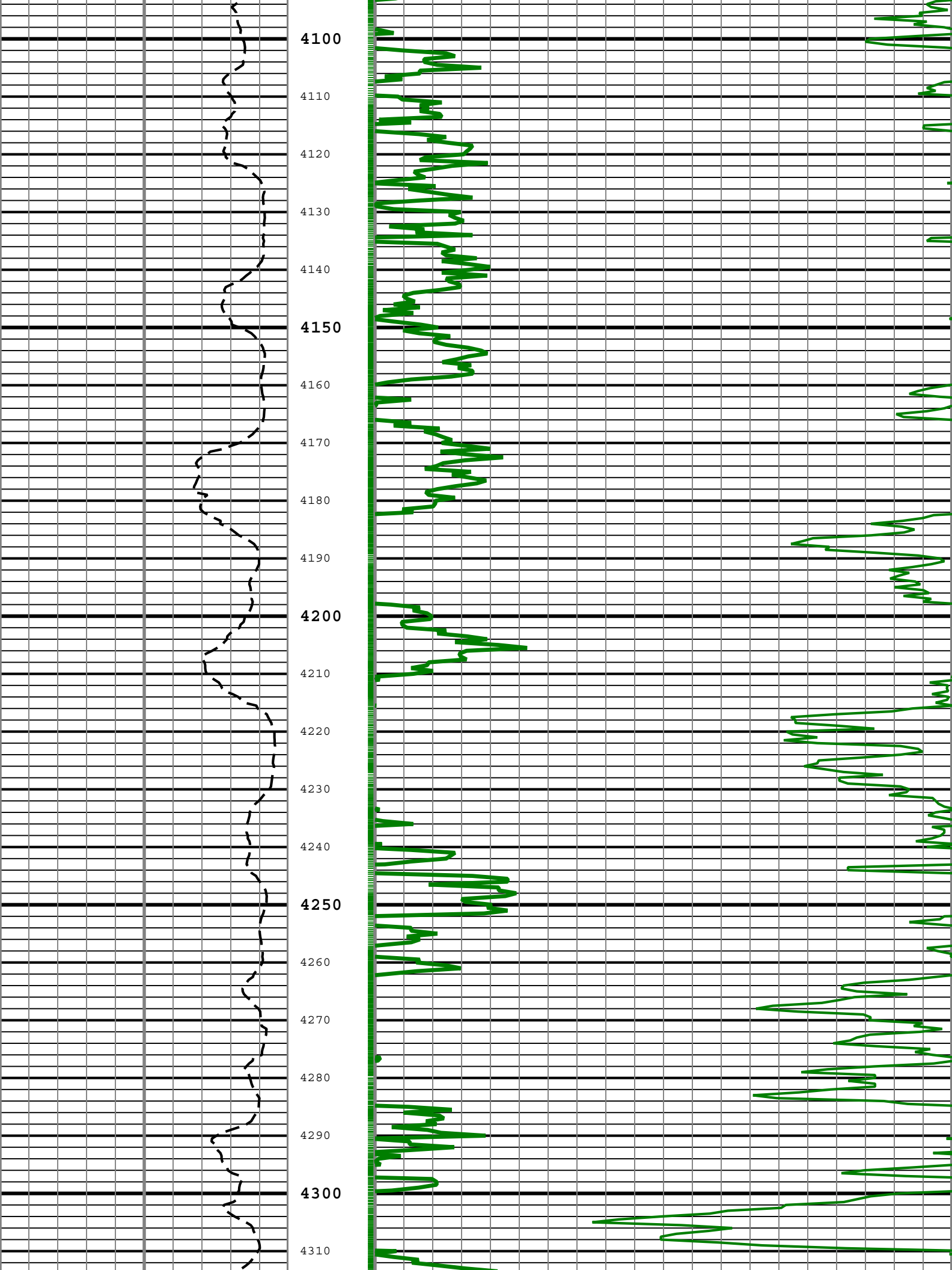


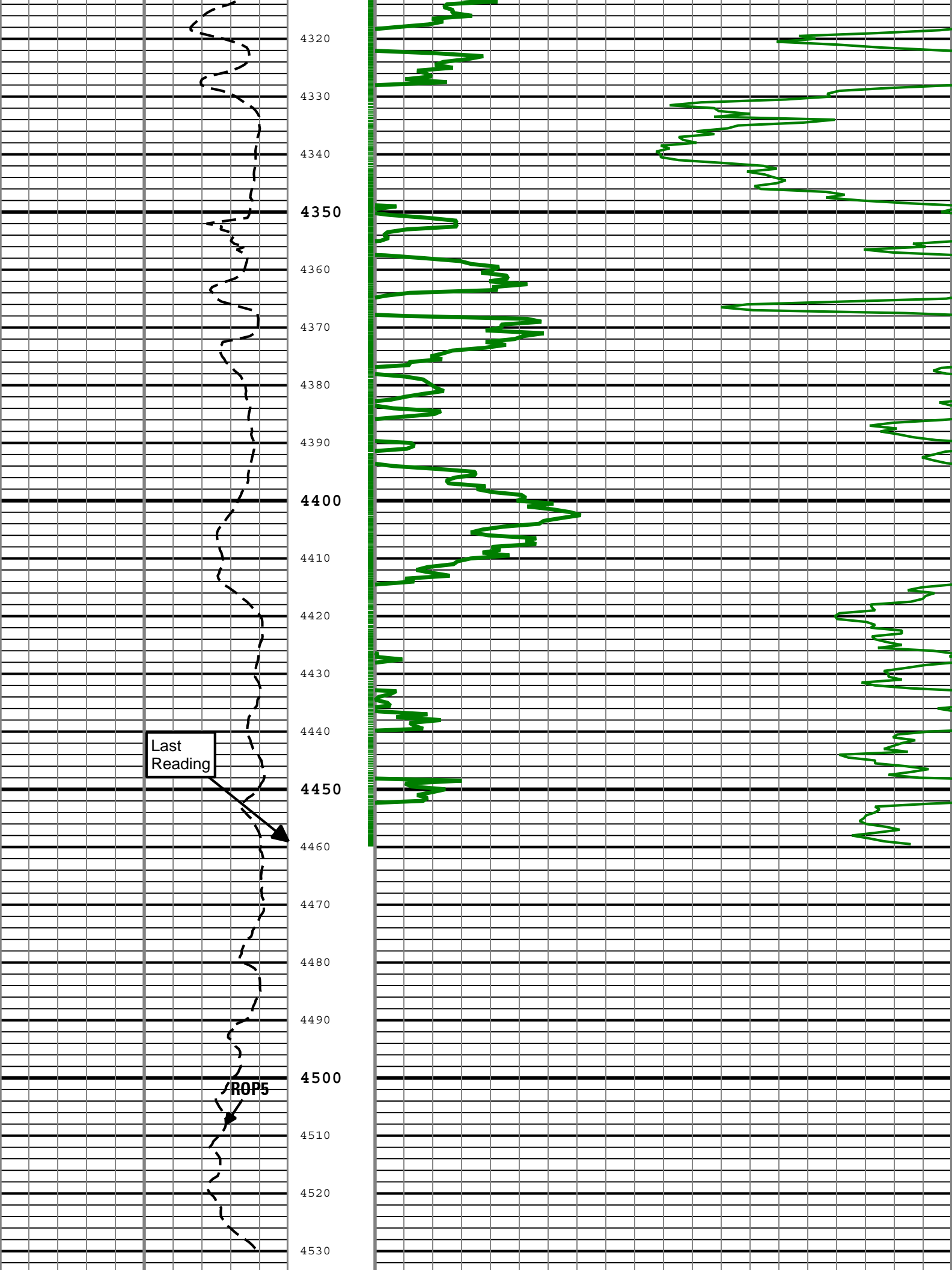


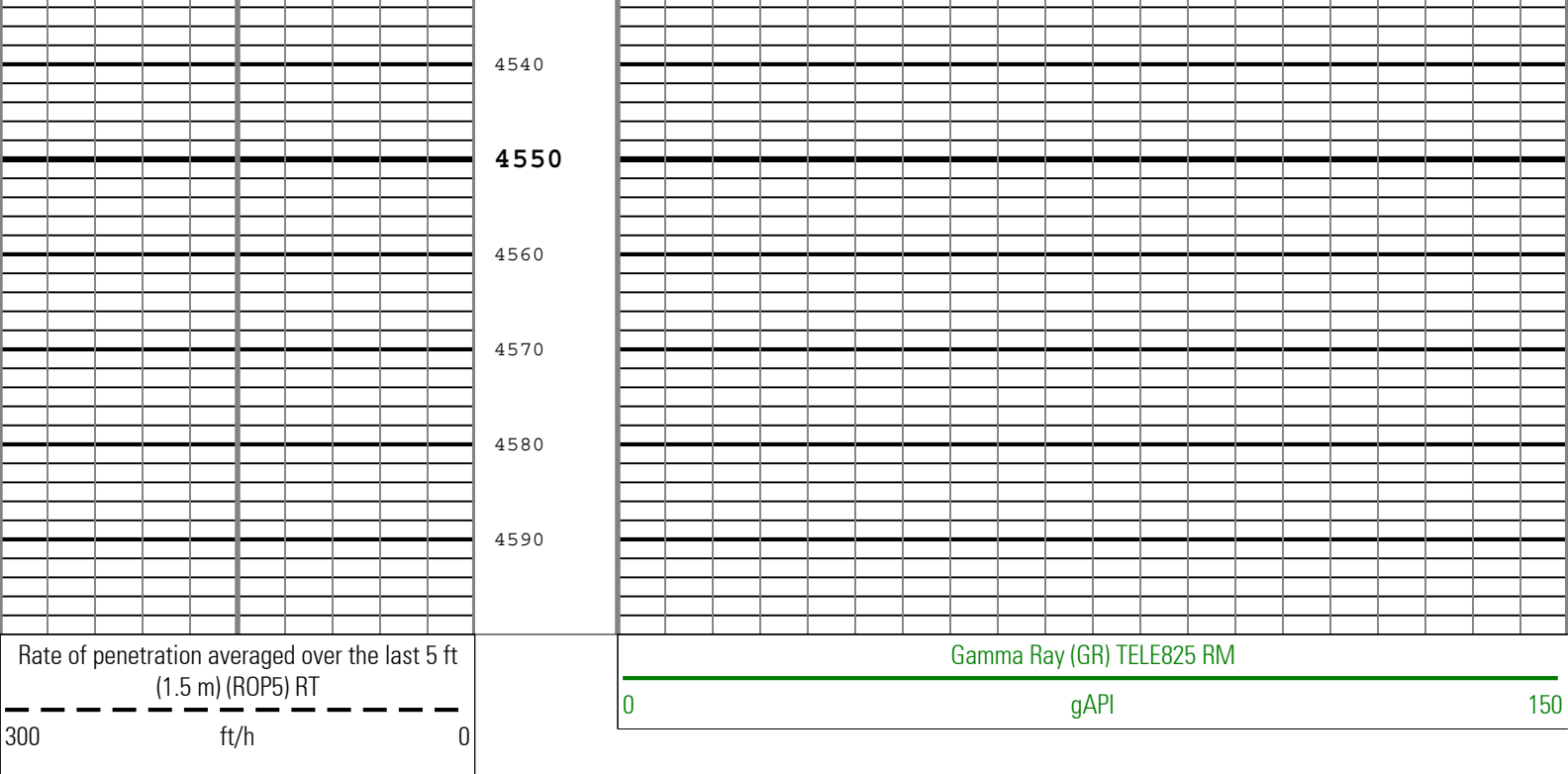












Channel Processing Parameters				
Parameter	Description	ToolPath	Value	Unit
BS	Bit Size	COMPLETION	14.75	in
DFD	Drilling Fluid Density	Borehole	Time Zoned	lbm/gal

Time Zone Parameters					
Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
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DFD	9	19-Dec-2010 23:00:00	20-Dec-2010 11:00:00	1235.92	2050.5
DFD	8.9	20-Dec-2010 11:00:00	21-Dec-2010 11:00:00	2050.5	3394.92
DFD	9	21-Dec-2010 11:00:00	21-Dec-2010 23:00:00	3394.92	3709.92
DFD	9.1	21-Dec-2010 23:00:00	22-Dec-2010 23:00:00	3709.92	3820.75
DFD	9.2	22-Dec-2010 23:00:00	23-Dec-2010 11:00:00	3820.75	4062.17
DFD	9.05	23-Dec-2010 11:00:00	23-Dec-2010 23:00:00	4062.17	4350.17
DFD	9.45	23-Dec-2010 23:00:00	24-Dec-2010 12:44:16	4350.17	4530.42

All depth are at tool zero.

Tool Control Parameters	
Detailed Calibration Record	

TELE825 : TeleScope Calibration Gamma Ray Calibration - Run001

Primary Set Components	Description	Tool Element	Serial Number
	Gamma Ray Cartridge	PMGR	276
Calibration Dates	Shop Calibration		
Date & Time / Date Validity	07-Jan-2009 03:12:30 PM - Expired Runs: Run001 OverDue: 527 days ,		
Calibration Source	Time Frame File		

Calibration Type: Gamma Ray: Blanket

Description	Min/Nominal/Max	Shop	Unit
GR_GAIN	0.7500 / 1.0000 / 1.2500	0.9627	

Company: ExxonMobil Oil Corporation

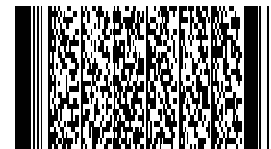
Well: PCU 296 6B1

Field: Piceance Creek

County: Rio Blanco

State: Colorado

Country: United States



Schlumberger

TeleScope Gamma Ray

1 in. / 100 ft and 5 in. / 100 ft Measured Depth

Recorded Mode Log