



1 : 600 / 1 : 240

WELL INFORMATION					
MWD Run Number	100	200			
Date run completed	22-Dec-15	24-Dec-15			
Rig Bit Number	0100	0200			
Bit Size (in)	8.750	6.125			
Tool Nominal OD (in)	6.750	4.750			
Log Start Depth (MD, ft)	645.00	6,387.00			
Log End Depth (MD, ft)	6,387.00	10,000.00			
Drill or Wipe	Drill	Drill			
Drill/Wipe Start Date and Time	20-Dec-15 21:00	23-Dec-15 01:00			
Drill/Wipe End Date and Time	21-Dec-15 21:00	24-Dec-15 03:00			
Min Inc (deg) @ Depth (MD, ft)	0.17 @ 1,469.00	87.22 @ 6,449.00			
Max Inc (deg) @ Depth (MD, ft)	86.34 @ 6,387.00	93.76 @ 9,933.00			
Bit TFA(in2) / Bit Type	0.98 /	0.57 /			
Flow Rate (gpm)	584.13	311.88			
Max AV (fpm) / CV (fpm) @ MWD	400.0 / 250.0	250.0 / 350.0			
Fluid Type	Native/Spud Mud	Native/Spud Mud			
Density (ppg) / Viscosity (spqt)	10.20 / 36.00	10.30 / 41.00			
Filtrate CL (ppm)	1,100.00	2,100.00			
pH / Fluid Loss (mptm)	7.50 / 0	8.30 / 7			
PV (cP) / YP (lbf2)	20 / 9.00	9 / 9.00			
% Solids / % Sand	3 / 0.1	9.20 / 0.10			
% Oil / Oil:Water Ratio	1 / 0:99	1.00 /			
Rm @ Measured Temp (degF)	N/A @ N/A	N/A @ N/A			
Rmf @ Measured Temp (degF)	N/A @ N/A	N/A @ N/A			
Rmc @ Measured Temp (degF)	N/A @ N/A	N/A @ N/A			
Max Tool Temp (in) / S	127.05 / 0.01	210.01 / 0.01			

Max Tool Temp (degF) / Source	167.97 / PCM	210.31 / PCM			
Rm @ Max Tool Temp (degF)	@ 167.97	@ 210.31			
Lead MWD Engineer	adam sampson	adam sampson			
Customer Representative	Charles Colville	Charles Colville			

SENSOR INFORMATION

Downhole Processor Information

Tool Type	PCM	PCM			
Software Version	5.93	5.93			
Sub Serial Number	11619287	12187588			
Insert Serial Number	11680784	11680784			
Date and Time Initialized	20-Dec-15 11:12	22-Dec-15 12:12			
Date and Time Read	22-Dec-15 02:04	24-Dec-15 11:19			
ECMB SW Version	N/A	N/A			

Directional Sensor Information

Tool Type	PCDC	PCDC			
Distance From Bit (ft)	55.00	67.00			
Software Version	6.33	6.33			
Sub Serial Number	11619287	12187588			
Sonde Serial Number	10859920	10859920			
Sensor ID Number	N/A	N/A			
Toolface Offset (deg)	46.20	94.50			

Gamma Ray Sensor Information

Tool Type	PCG	PCG			
Distance From Bit (ft)	43.13	54.66			
Recorded Sample Period (sec)	10	10			
Software Version	8.15	8.15			
Sub Serial Number	11619287	12187588			
Insert/Sonde Serial Number	11579789	11579789			

REMARKS

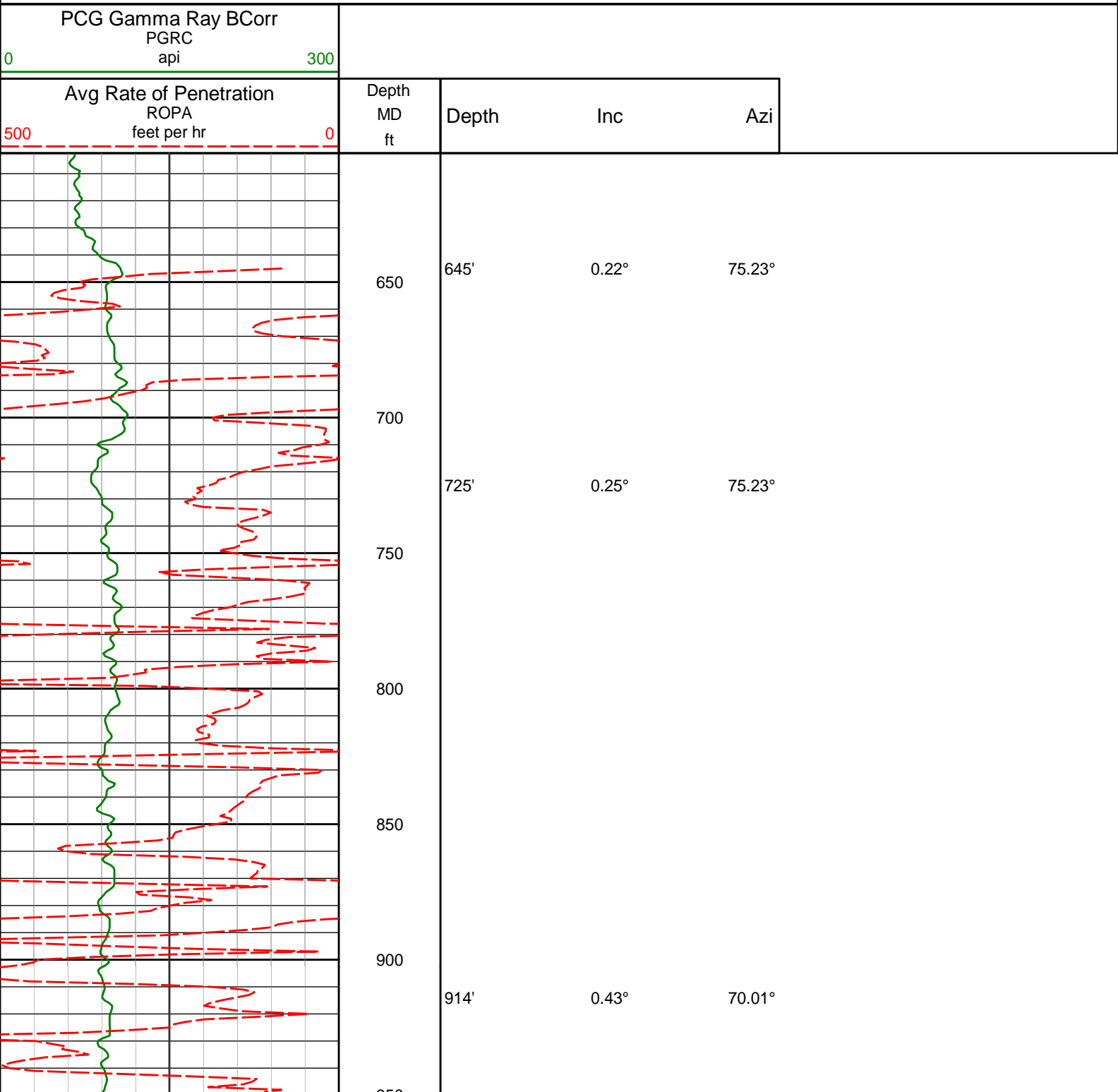
1. All depths are calibrated to the driller's pipe tally and are measured from the Rig drill floor.
2. No depth corrections have been made for pipe stretch or compression.
3. All data presented is recorded (memory data) unless otherwise stated.
 - ROPA: Average Rate of Penetration is real time data.
 - PGRC: Smooth Pressure Case Gamma Ray Borehole corrected is recorded data.
4. The following smoothing parameters have been applied to the data:
 - All ROP in logs - 0.5 ft interval, 1.2 ft coercion distance.
 - Gamma in 2" (1:600) logs - 1 ft interval, 3 ft coercion distance.
 - Gamma in 5" (1:240) logs - 0.5 ft interval, 0.6 ft coercion distance.
5. INSITE version 8.3.0.

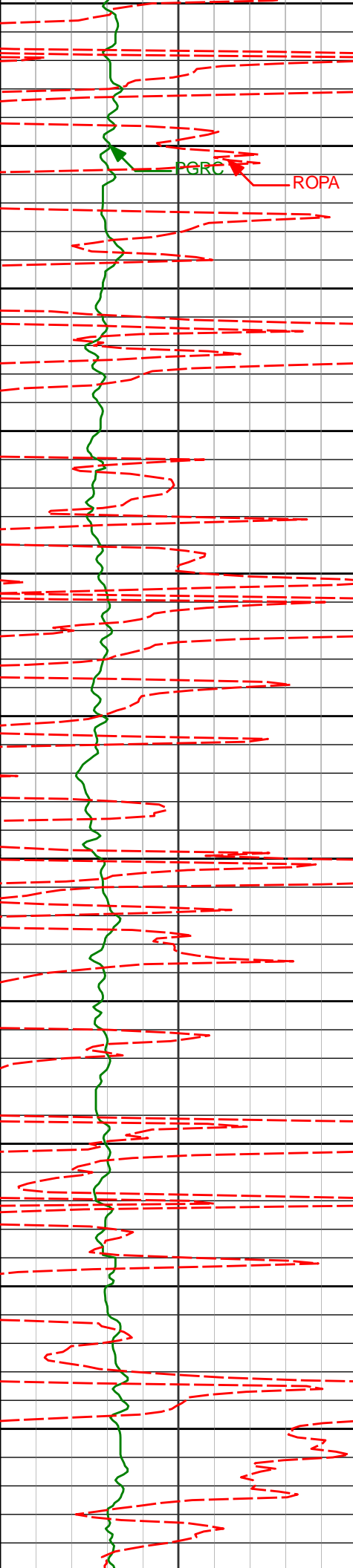
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MD Detail 1:600 Scale





950
1000
1050
1100
1150
1200
1250
1300
1350
1400
1450
1500

1009'

0.44°

69.11°

1287'

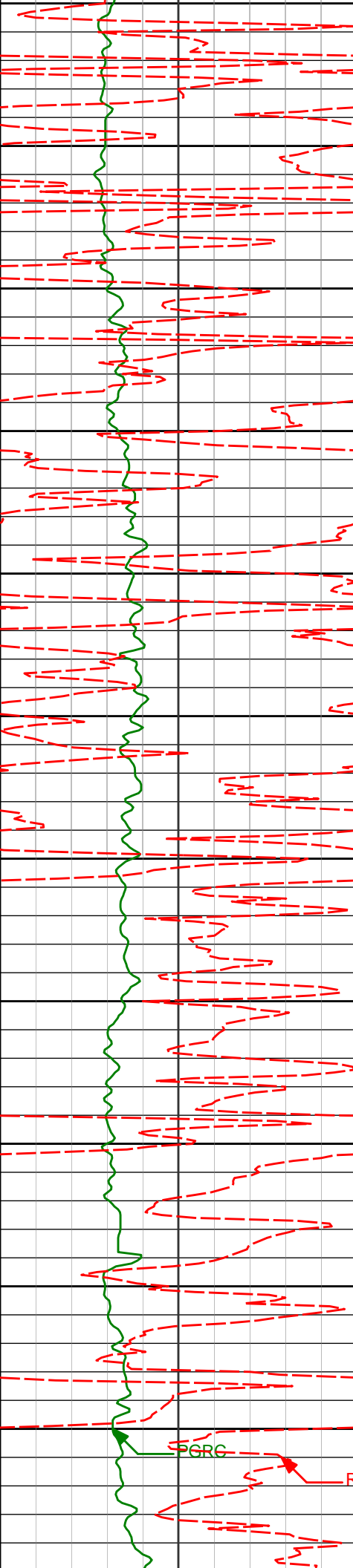
0.48°

100.08°

1469'

0.17°

78.29°



1500
1550
1600
1650
1700
1750
1800
1850
1900
1950
2000
2050

1744'

0.25°

129.94°

1836'

0.43°

136.81°

1927'

0.44°

160.45°

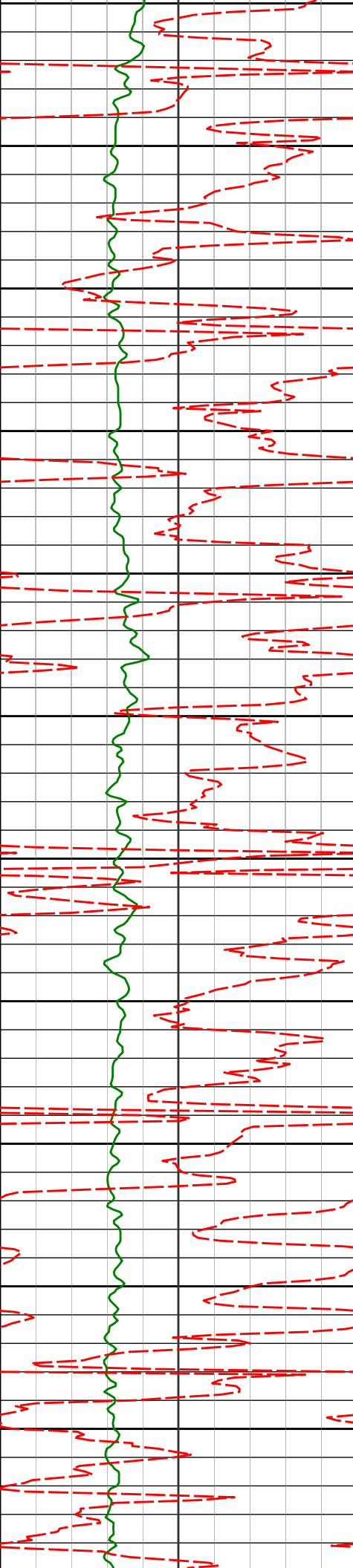
2019'

0.31°

141.98°

SGRC

ROPA

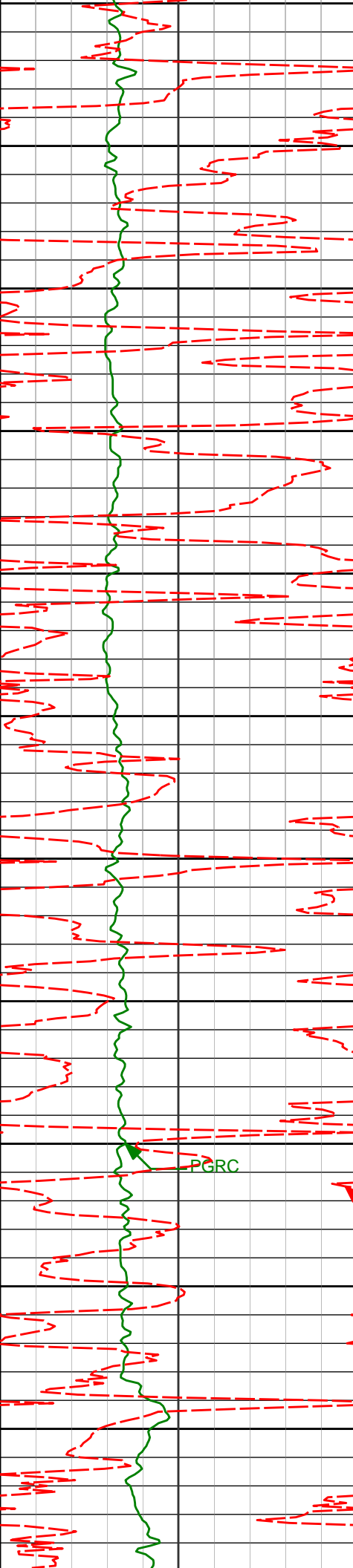


2050
2100
2150
2200
2250
2300
2350
2400
2450
2500
2550
2600

2110'
2201'
2293'
2384'
2476'
2568'

0.43°
0.79°
0.79°
0.99°
1.10°
1.09°

176.24°
165.47°
179.31°
182.88°
184.24°
175.54°

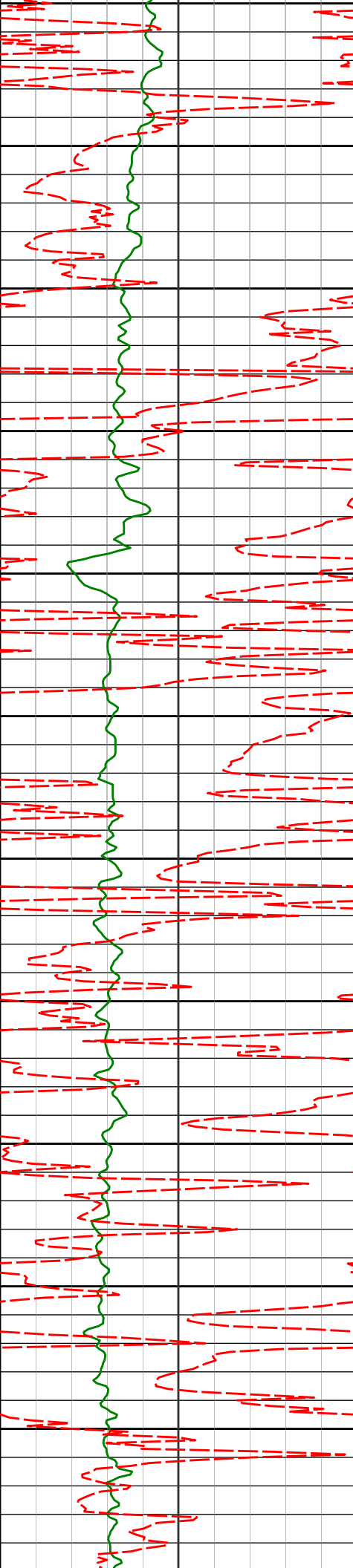


2600
2650
2700
2750
2800
2850
2900
2950
3000
3050
3100
3150

2660'
2846'
2940'
3035'
3129'

1.03°
1.29°
1.41°
1.38°
1.35°

187.02°
180.82°
180.10°
177.95°
181.95°

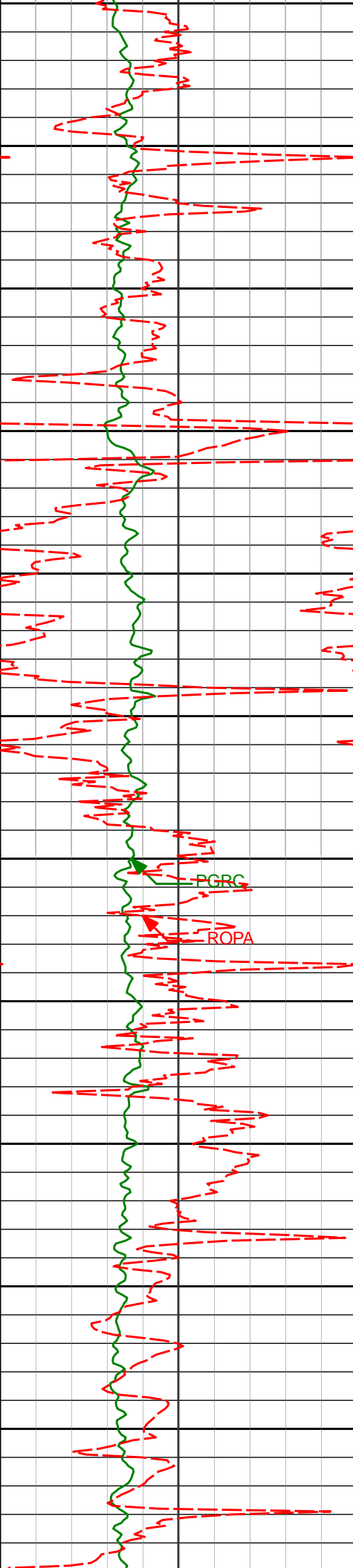


3150
3200
3250
3300
3350
3400
3450
3500
3550
3600
3650
3700

3224'
3319'
3508'
3603'
3698'

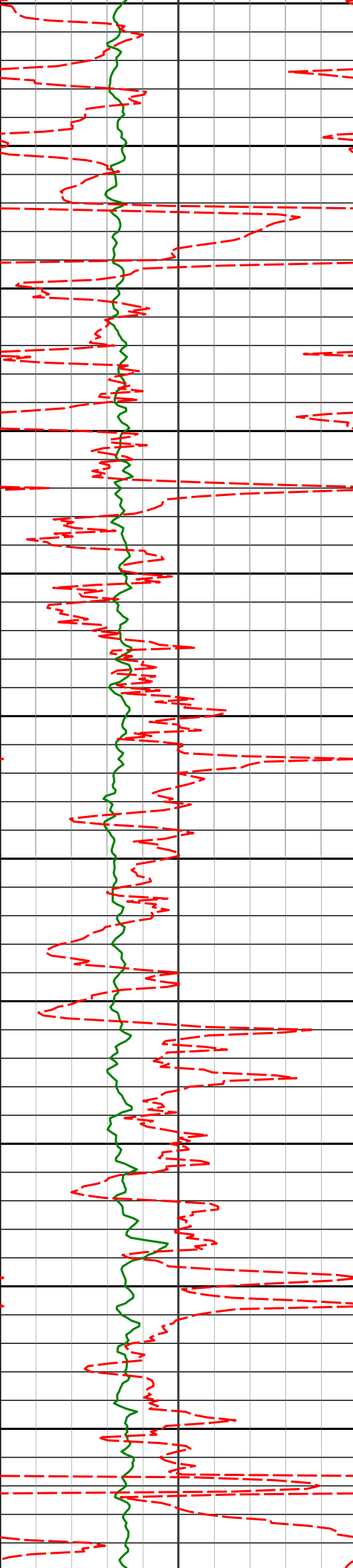
1.20°
0.97°
0.76°
0.86°
0.81°

170.17°
100.39°
108.60°
106.67°
106.13°



3700
3750
3800
3850
3900
3950
4000
4050
4100
4150
4200
4250

3792'	0.82°	103.28°
3887'	1.13°	355.58°
3981'	1.15°	12.54°
4076'	1.45°	17.78°
4171'	1.43°	31.76°

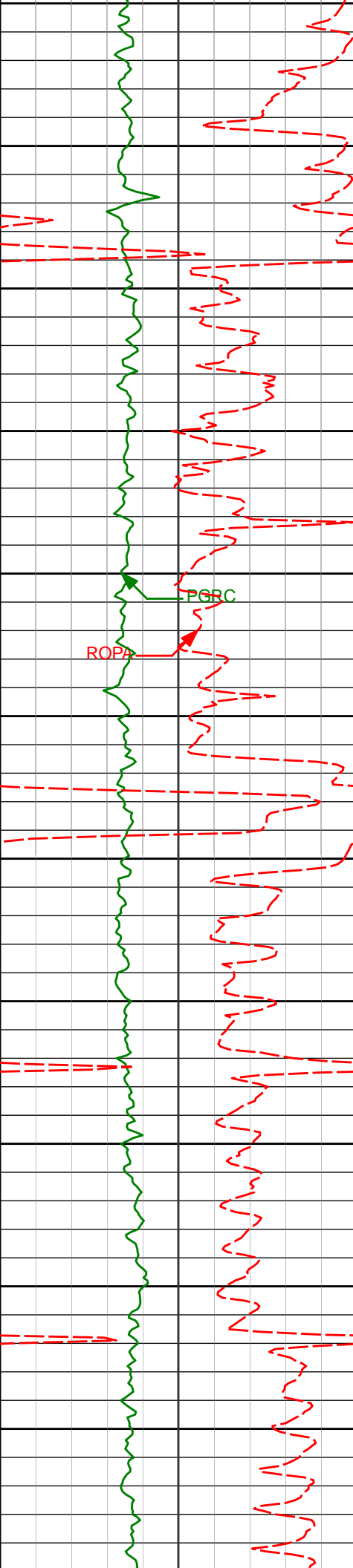


4250
4300
4350
4400
4450
4500
4550
4600
4650
4700
4750
4800

4265'
4360'
4455'
4550'
4644'
4739'

1.60°
2.21°
2.14°
2.20°
2.15°
2.05°

30.69°
320.89°
327.33°
330.06°
332.82°
336.97°

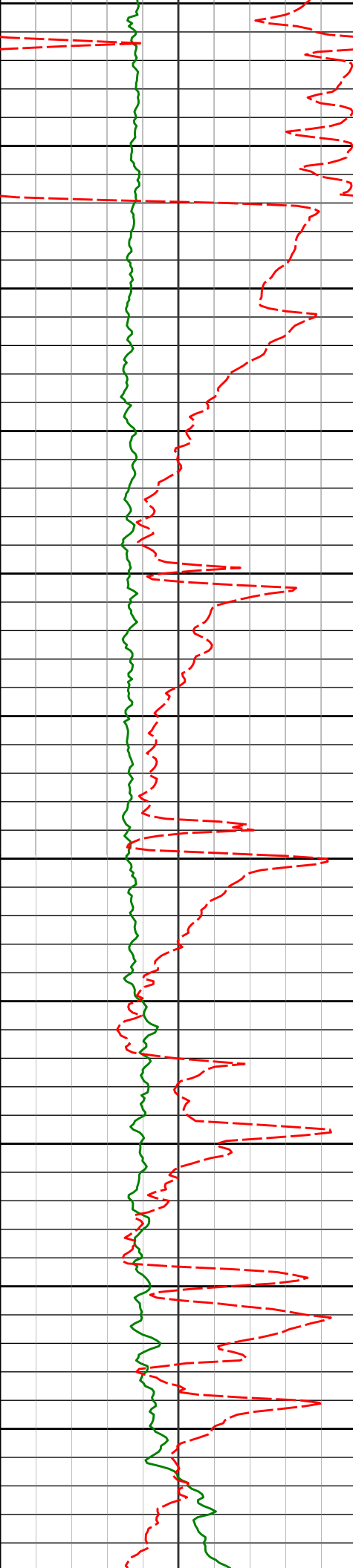


4800
4833'
4850
4900
4928'
4950
5000
5022'
5050
5100
5117'
5150
5200
5211'
5250
5300
5306'
5350

4833'
4928'
5022'
5117'
5211'
5306'

1.98°
1.95°
2.01°
0.68°
0.50°
0.37°

332.44°
324.76°
333.49°
272.89°
286.67°
268.47°

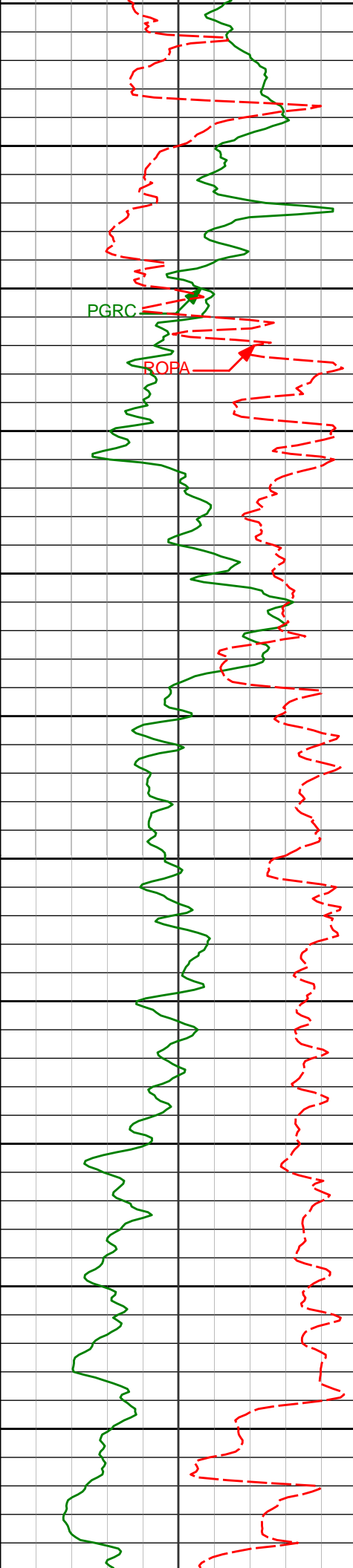


5350
5400
5450
5500
5550
5600
5650
5700
5750
5800
5850
5900

5401'
5496'
5590'
5685'
5779'
5874'

0.25°
8.35°
17.99°
26.92°
35.15°
42.83°

247.98°
189.16°
189.52°
184.36°
181.55°
183.09°



5900
5950
6000
6050
6100
6150
6200
6250
6300
6350
6400
6450

5968'

51.95°

181.62°

6063'

58.46°

176.63°

6158'

65.71°

176.03°

6252'

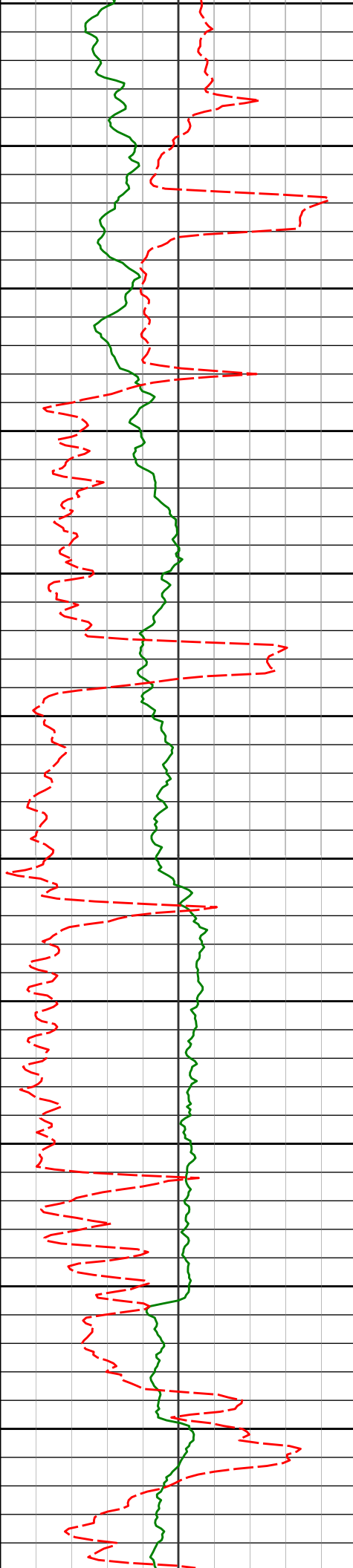
74.25°

176.39°

6332'

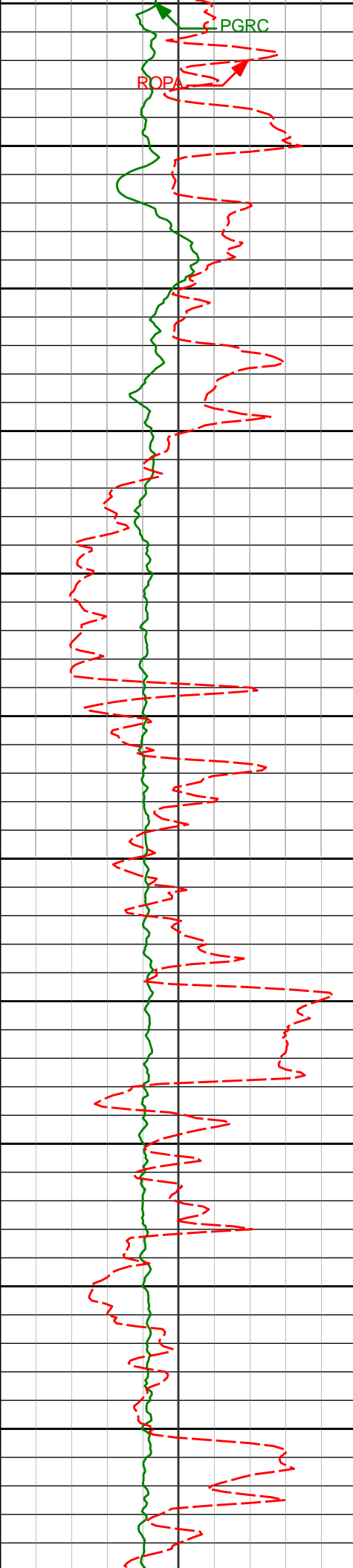
81.44°

177.35°



6450
6500
6550
6600
6650
6700
6750
6800
6850
6900
6950
7000

6449'	87.22°	179.71°
6512'	88.00°	179.49°
6605'	89.14°	178.32°
6700'	90.65°	178.66°
6794'	90.22°	178.05°
6889'	89.82°	177.24°
6983'	89.75°	176.97°

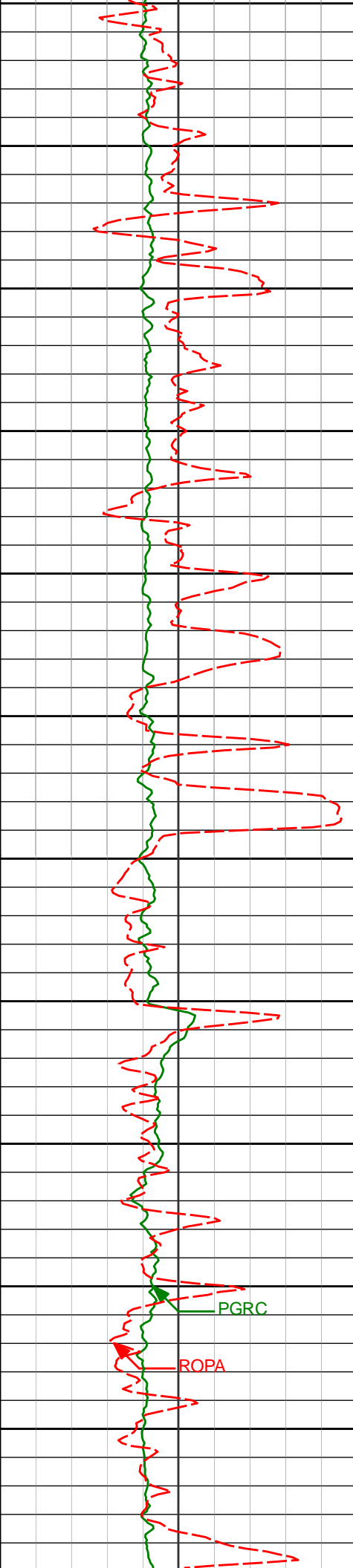


7000
7050
7100
7150
7200
7250
7300
7350
7400
7450
7500
7550

7077'
7170'
7265'
7359'
7454'
7548'

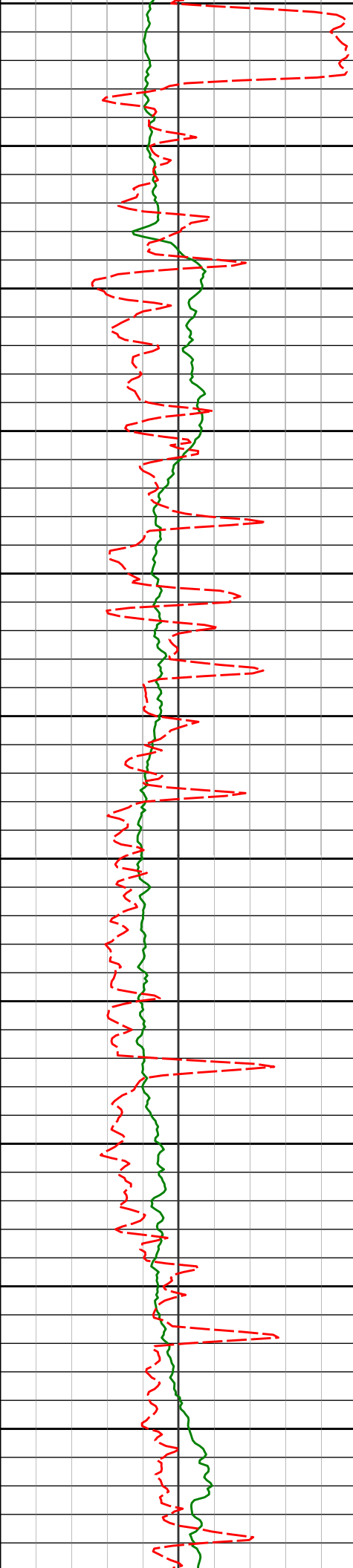
89.85°
90.00°
89.41°
90.15°
89.82°
90.12°

177.06°
176.64°
175.01°
178.29°
178.53°
178.85°



7550
7600
7650
7700
7750
7800
7850
7900
7950
8000
8050
8100

7540	90.12°	176.83°
7737'	91.57°	178.55°
7832'	90.18°	177.43°
7927'	90.00°	176.99°
8021'	89.88°	176.51°

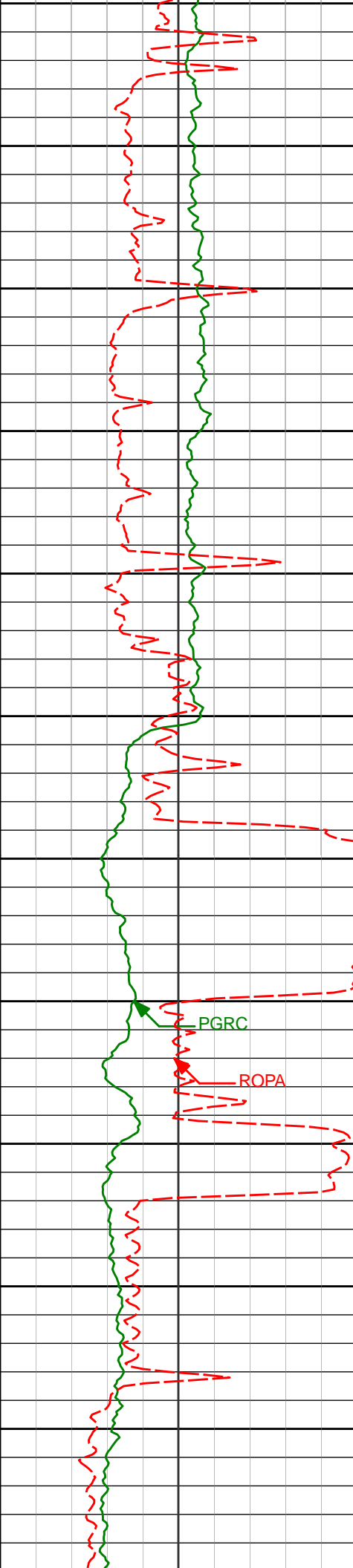


8100
8150
8200
8250
8300
8350
8400
8450
8500
8550
8600
8650

8116'
8211'
8306'
8400'
8494'
8589'

89.88°
90.37°
90.25°
90.28°
90.71°
90.74°

178.03°
178.60°
178.48°
178.76°
178.83°
177.93°



8650
8700
8750
8800
8850
8900
8950
9000
9050
9100
9150
9200

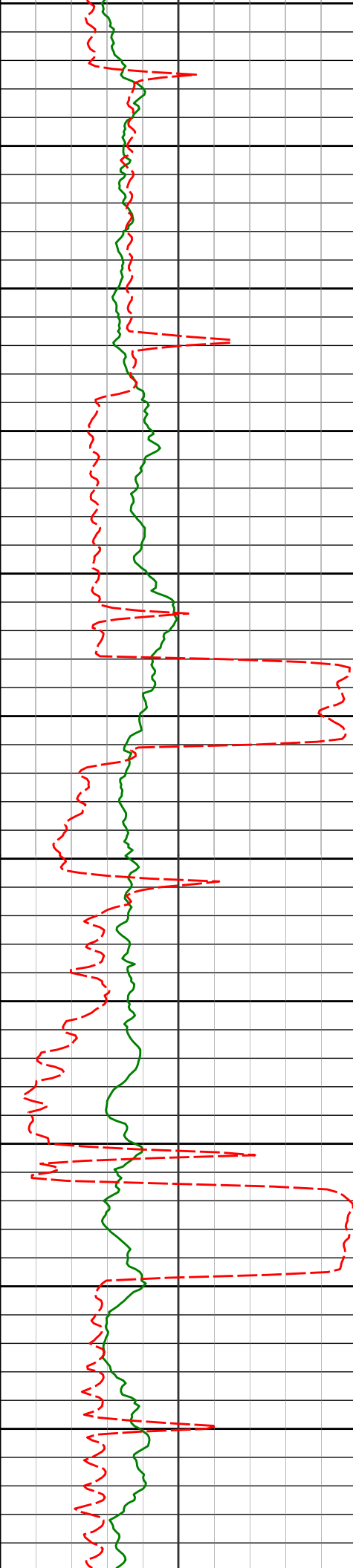
8684'
8778'
8873'
8968'
9062'
9157'

90.18°
90.52°
90.93°
91.51°
89.63°
89.97°

177.12°
177.09°
177.04°
177.68°
177.93°
178.32°

PGRC

ROPA

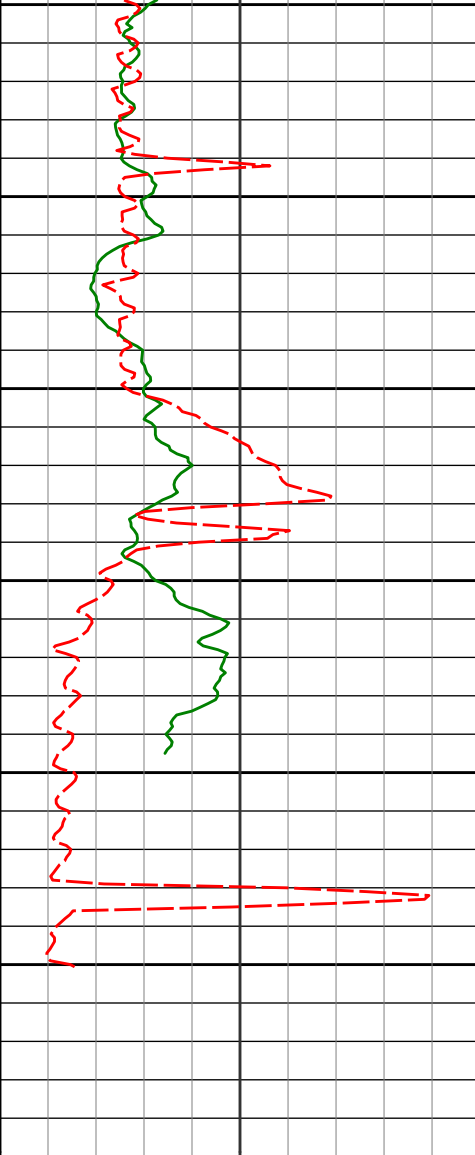


9200
9250
9300
9350
9400
9450
9500
9550
9600
9650
9700
9750

9252'
9346'
9441'
9536'
9631'
9726'

89.72°
87.75°
88.61°
88.37°
90.25°
91.23°

178.05°
175.51°
176.90°
175.70°
177.71°
177.96°



9750

9800

9850

9900

9950

10000

10050

9820'

92.34°

177.43°

9914'

93.58°

176.87°

9933'

93.76°

176.87°

10000'

93.76°

176.87°

Avg Rate of Penetration
ROPA
feet per hr

500 0

PCG Gamma Ray BCorr
PGRC
api

0 300

Depth
MD
ft

Depth

Inc

Azi

MD Detail 1:240 Scale

PCG Gamma Ray BCorr
PGRC
api

0 300

Avg Rate of Penetration
ROPA
feet per hr

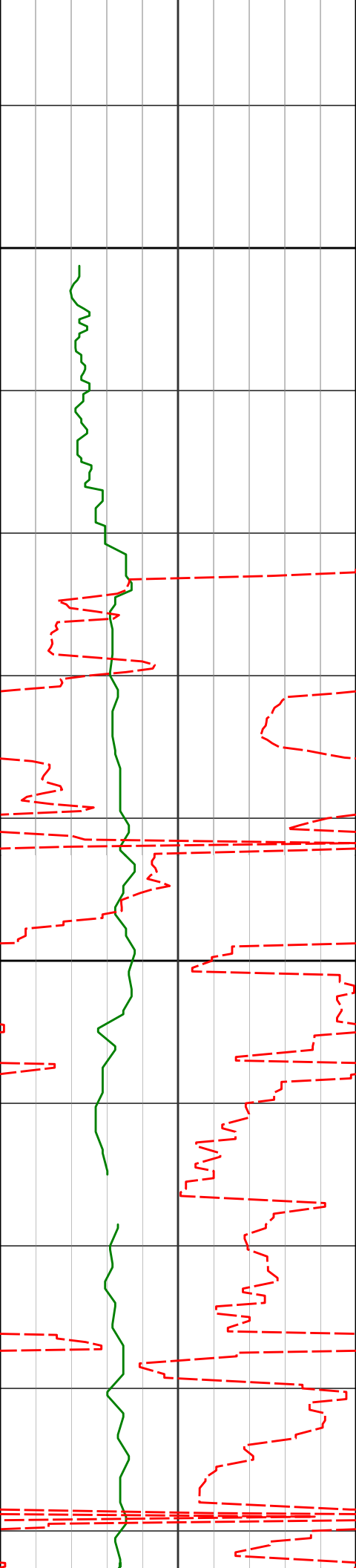
500 0

Depth
MD
ft

Depth

Inc

Azi



600

645'

0.22°

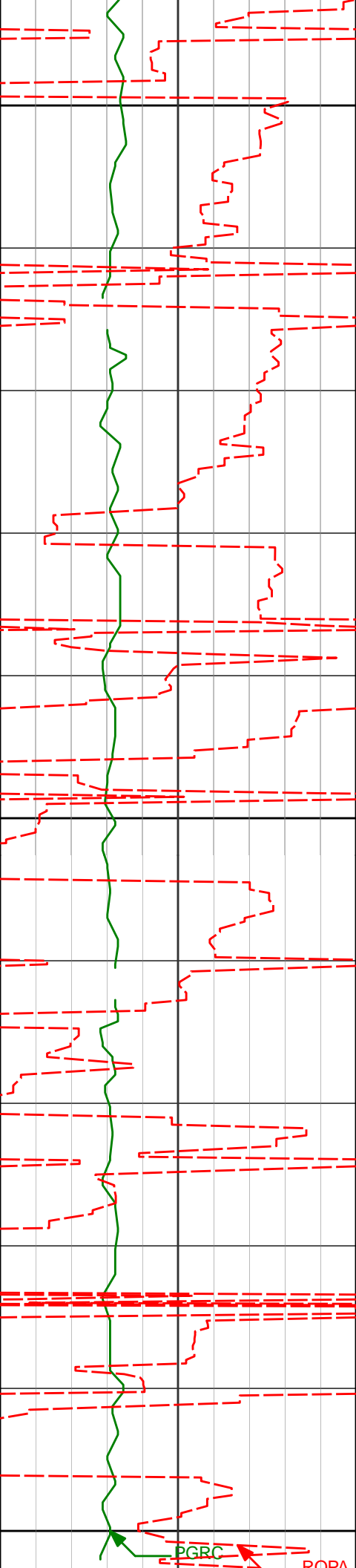
75.23°

700

725'

0.25°

75.23°



800

900

914'

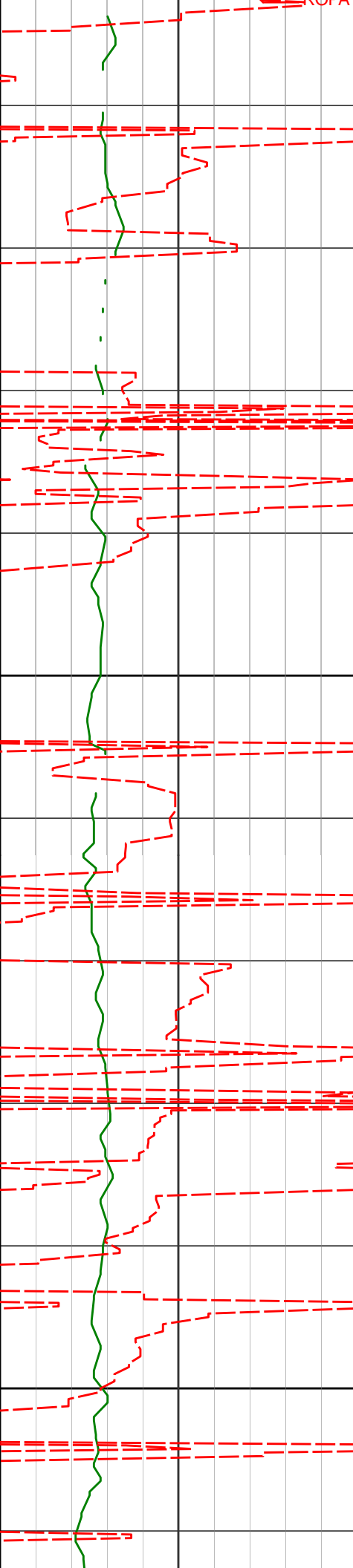
0.43°

70.01°

1000

PGRC

POPA



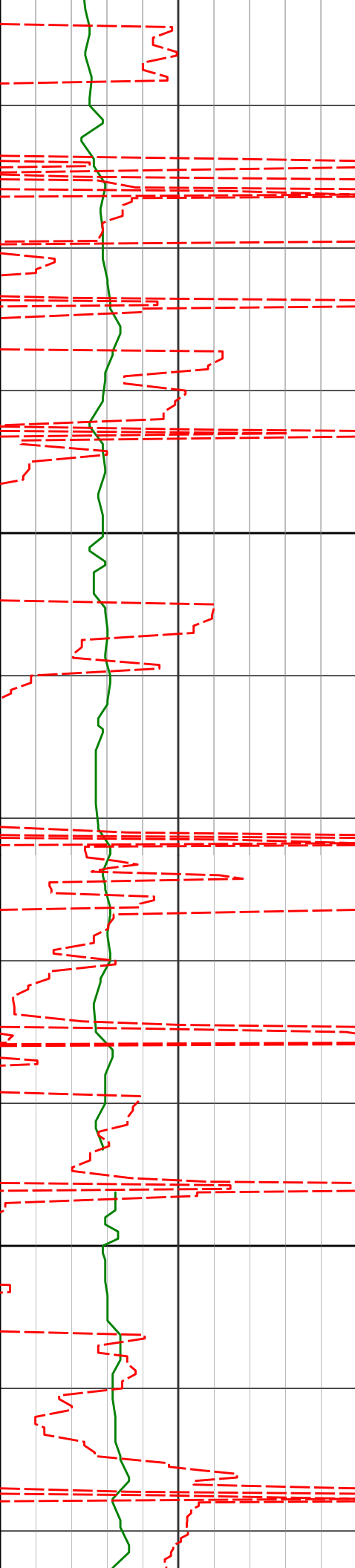
1009'

0.44°

69.11°

1100

1200



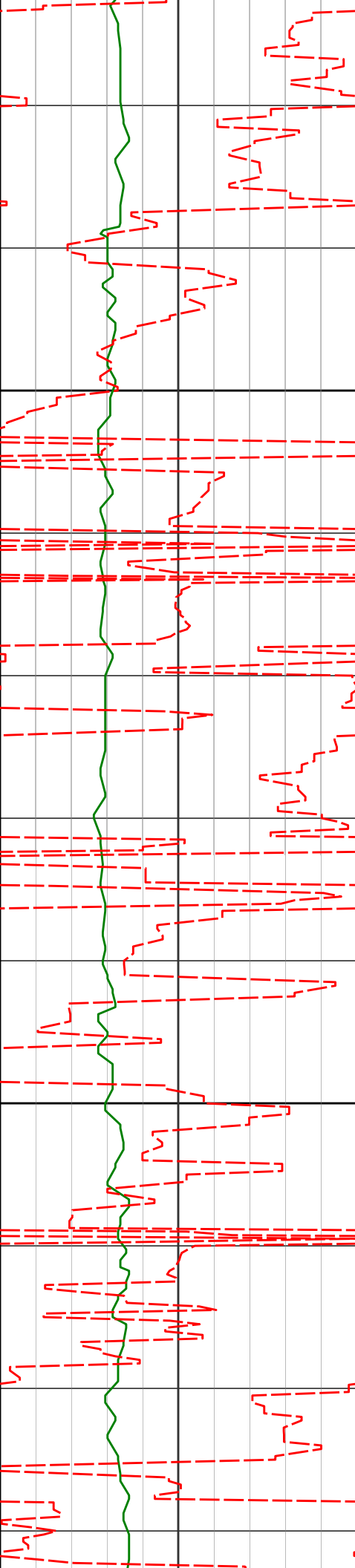
1287'

0.48°

100.08°

1300

1400



1500

1600



1700

1744'

0.25°

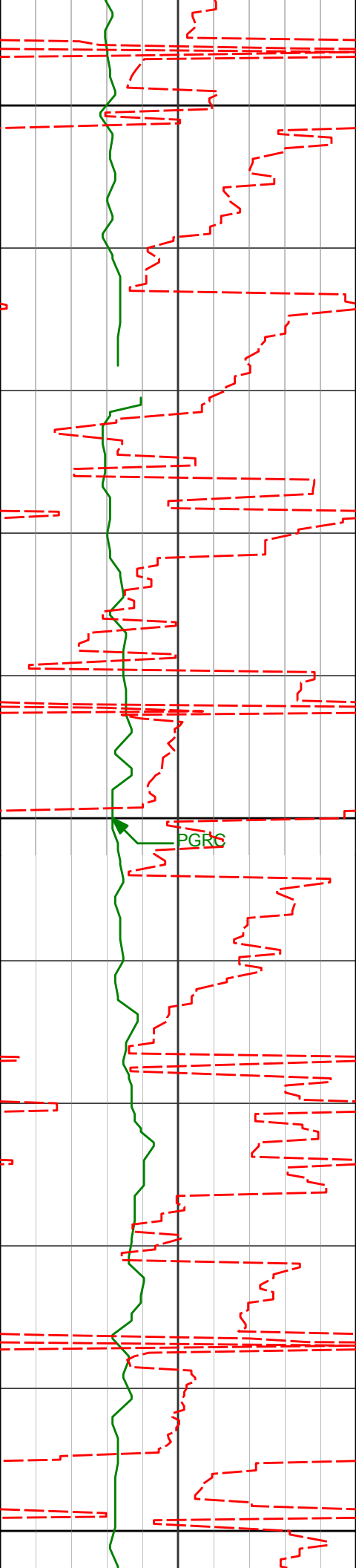
129.94°

1800

1836'

0.43°

136.81°



1900

1927'

0.44°

160.45°

2000

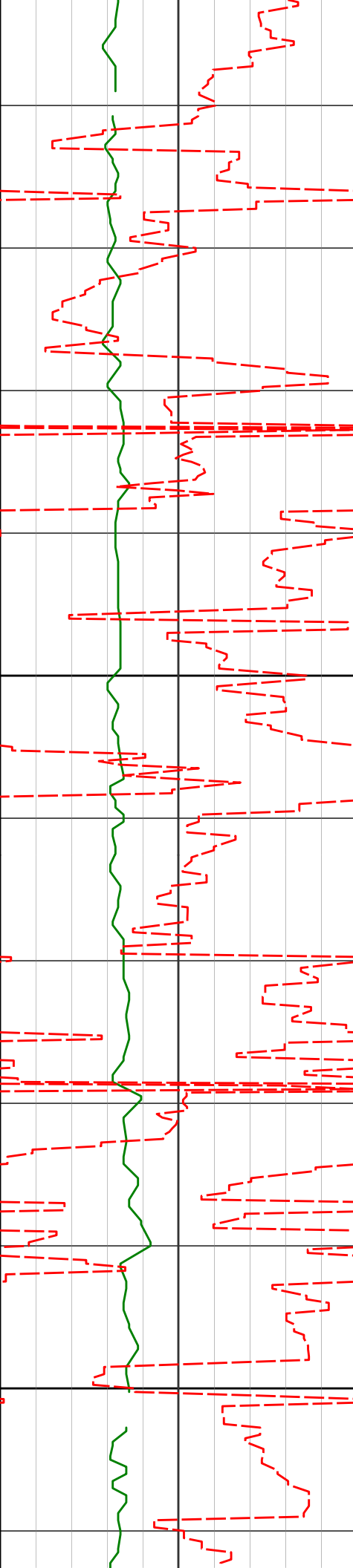
PGRS

2019'

0.31°

141.98°

2100



2200

2300

2110'

2201'

2293'

0.43°

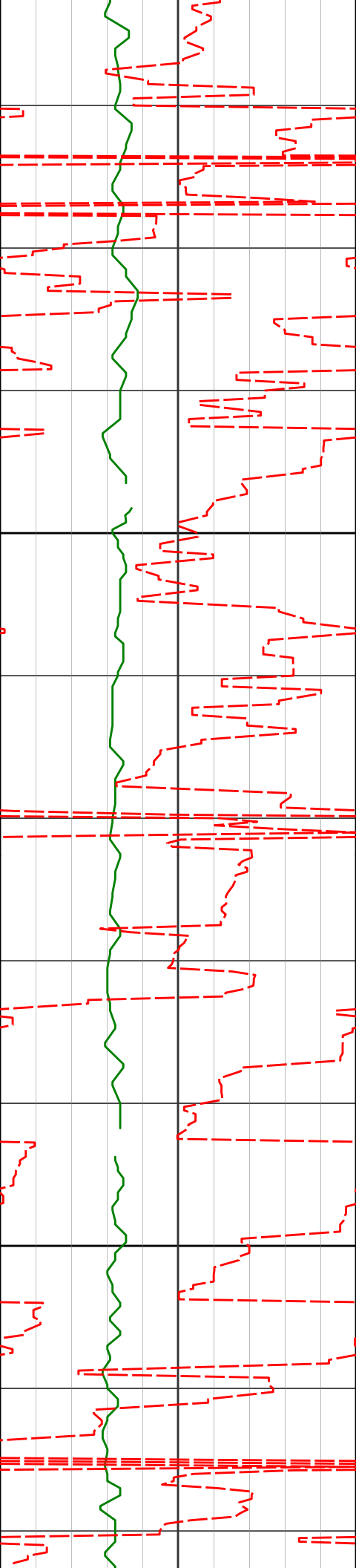
0.79°

0.79°

176.24°

165.47°

179.31°



2384'

0.99°

182.88°

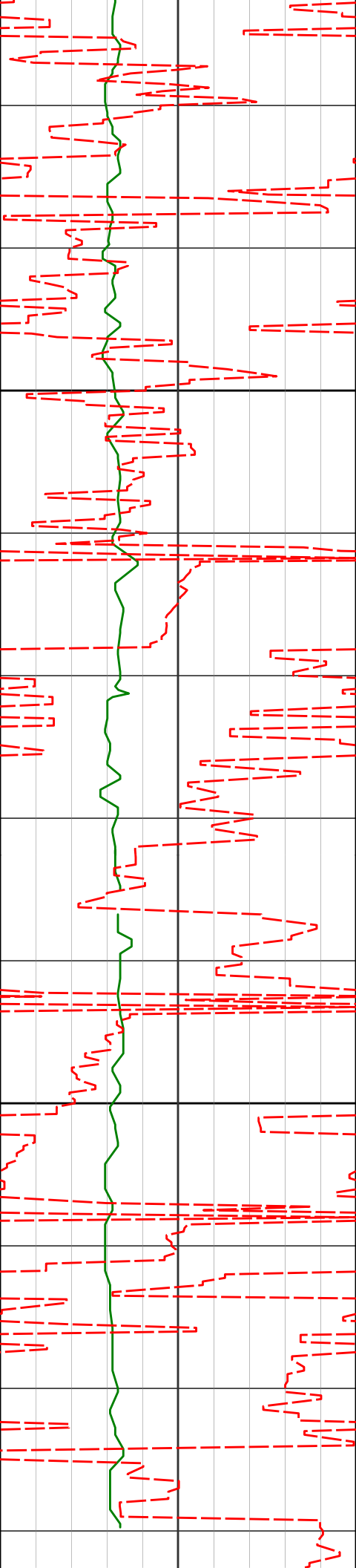
2400

2476'

1.10°

184.24°

2500



2568'

1.09°

175.54°

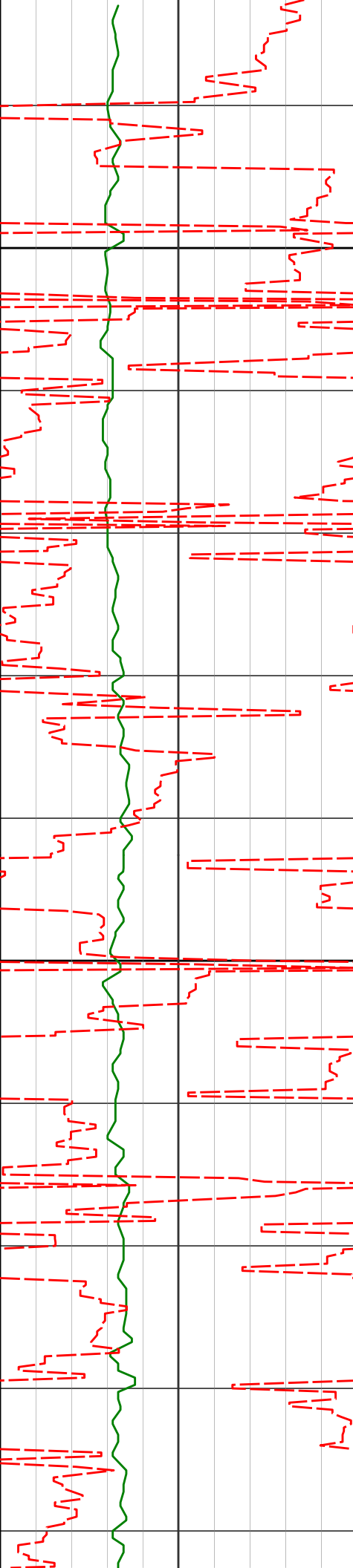
2600

2660'

1.03°

187.02°

2700



2800

2846'

1.29°

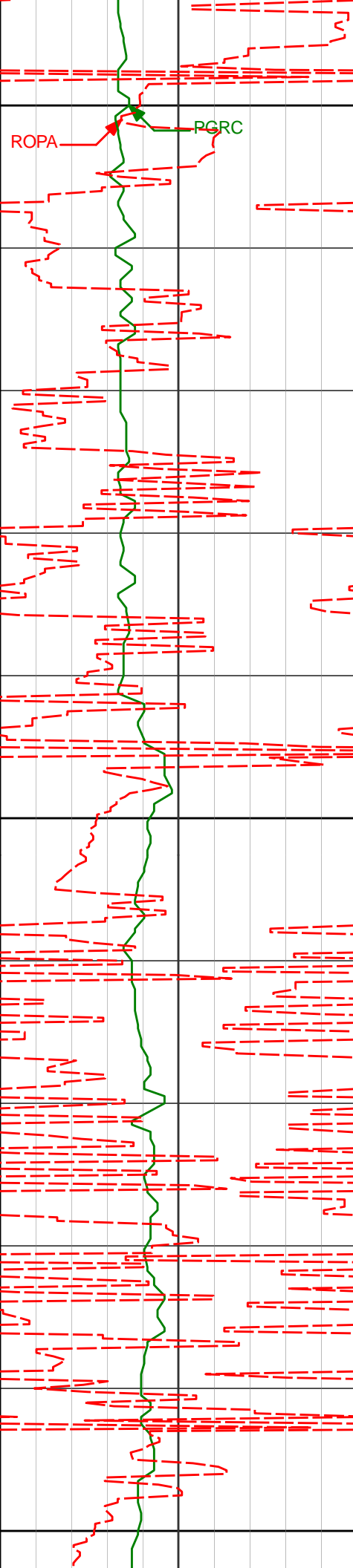
180.82°

2900

2940'

1.41°

180.10°



3000

3035'

1.38°

177.95°

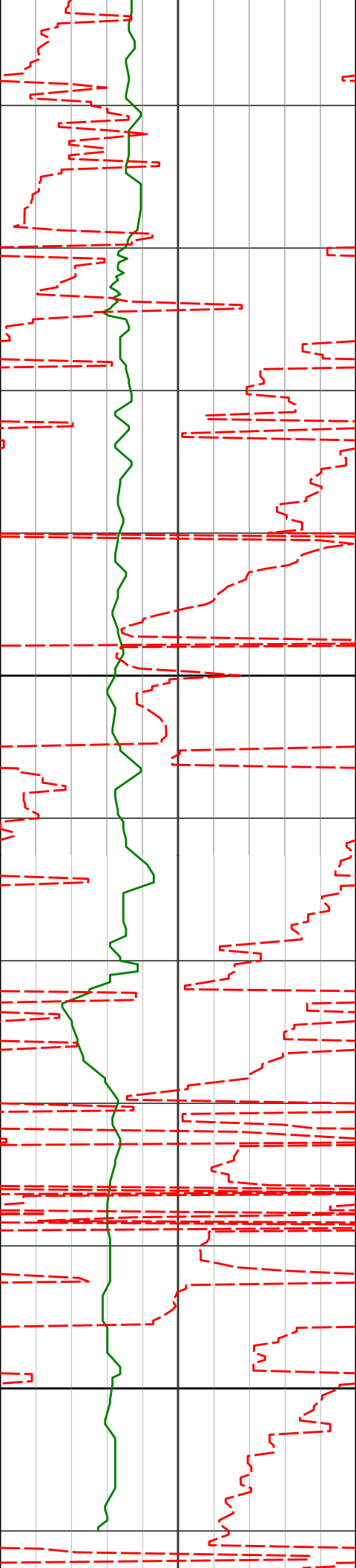
3100

3129'

1.35°

181.95°

3200



3224'

1.20°

170.17°

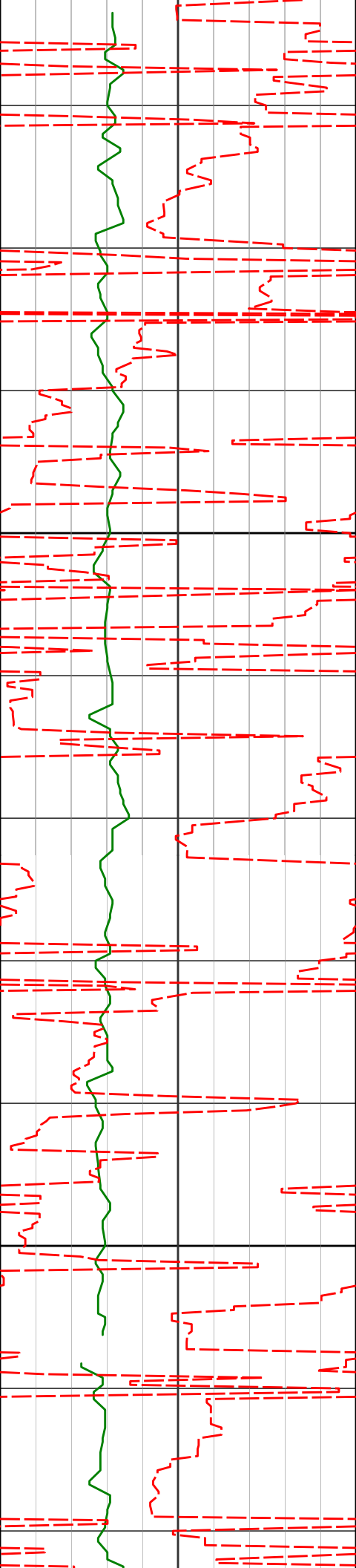
3300

3319'

0.97°

100.39°

3400



3500

3508'

0.76°

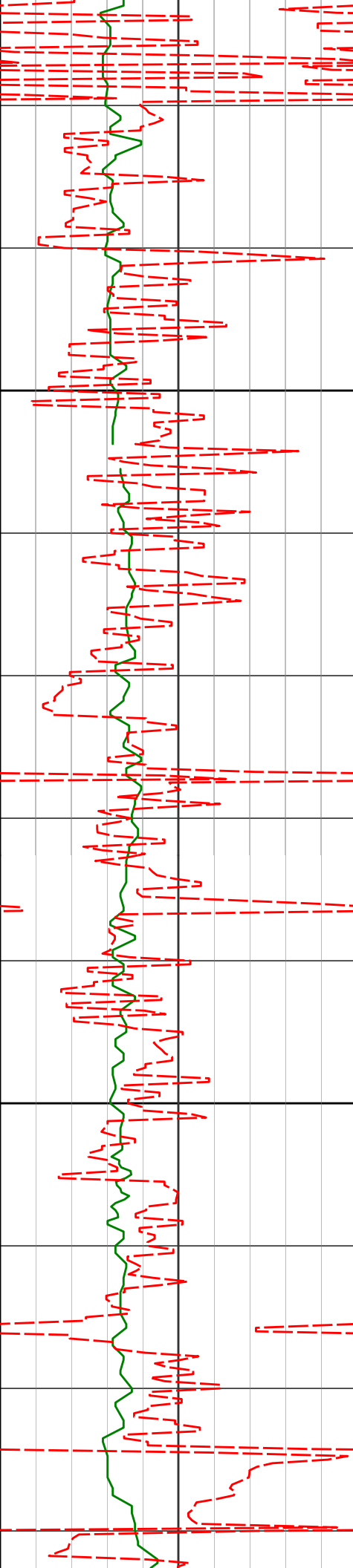
108.60°

3600

3603'

0.86°

106.67°



3700

3698'

0.81°

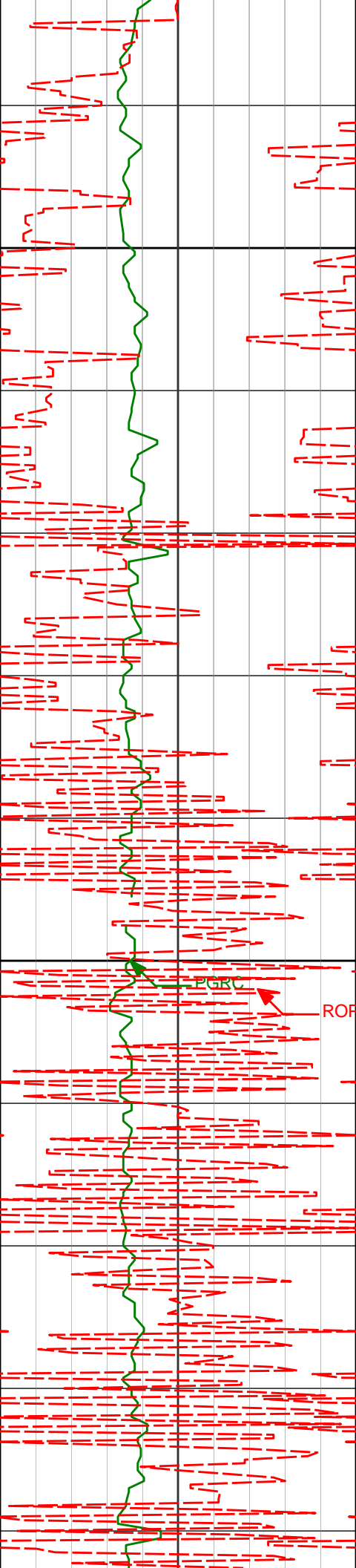
106.13°

3800

3792'

0.82°

103.28°



3887'

1.13°

355.58°

3900

3981'

1.15°

12.54°

4000

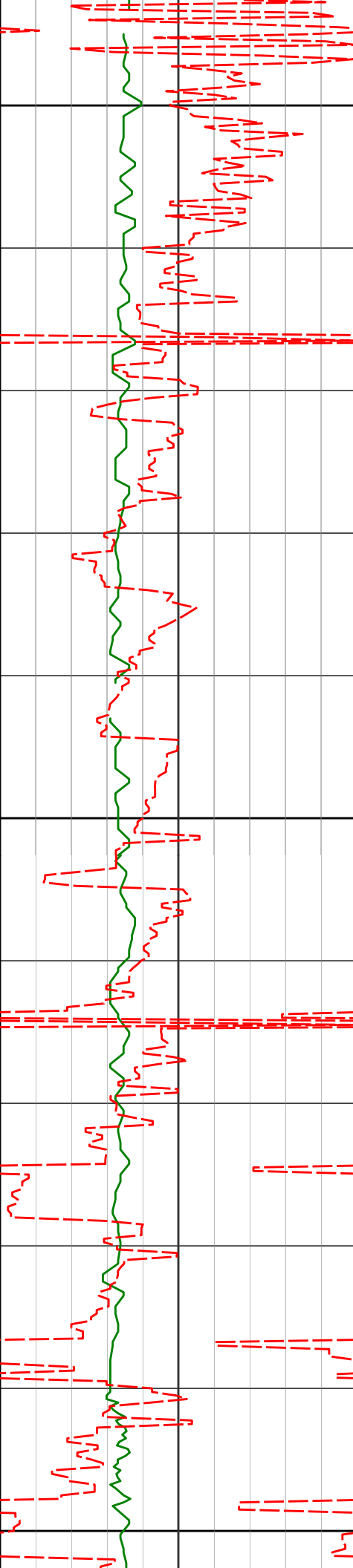
PGRC

ROPA

4076'

1.45°

17.78°



4100

4171'

1.43°

31.76°

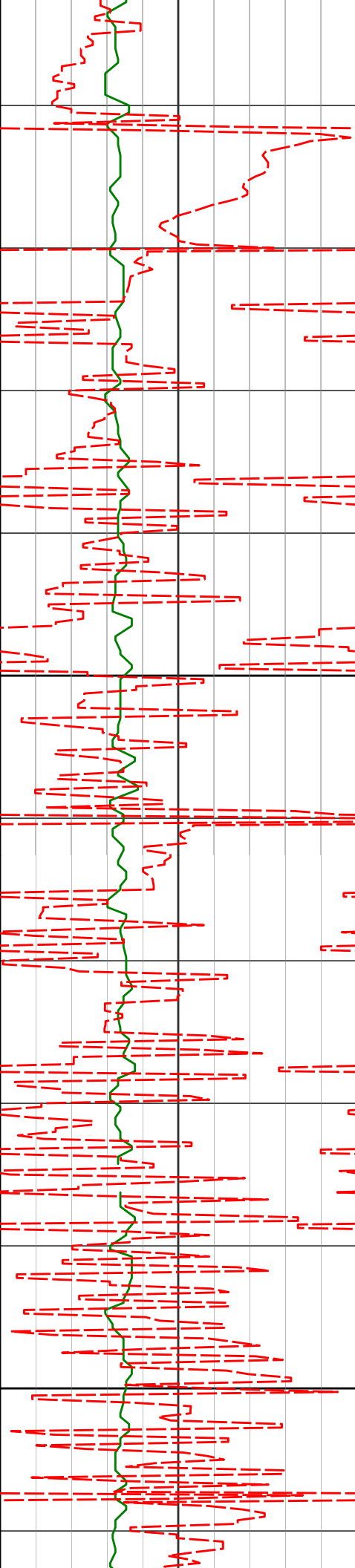
4200

4265'

1.60°

30.69°

4300



4400

4500

4360'

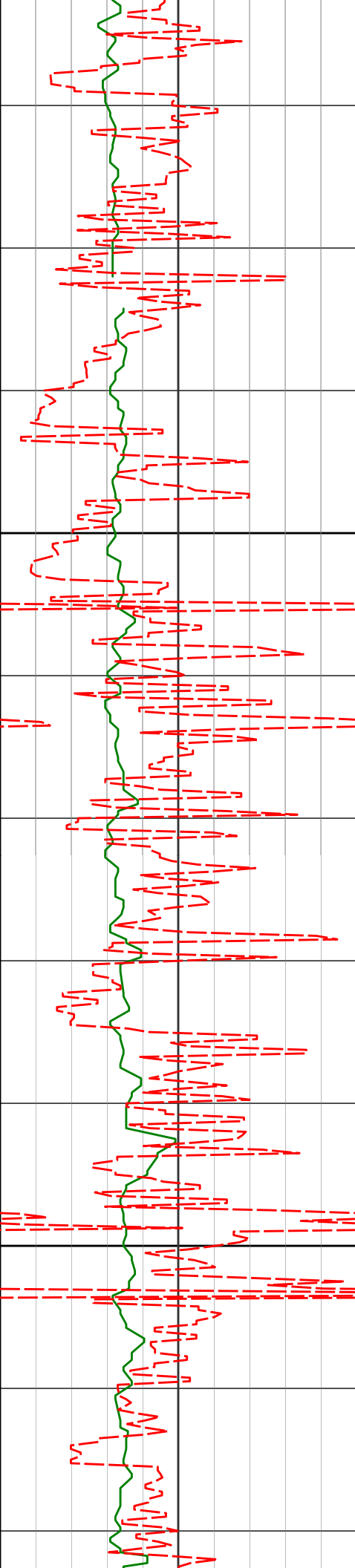
2.21°

320.89°

4455'

2.14°

327.33°



4550'

2.20°

330.06°

4600

4644'

2.15°

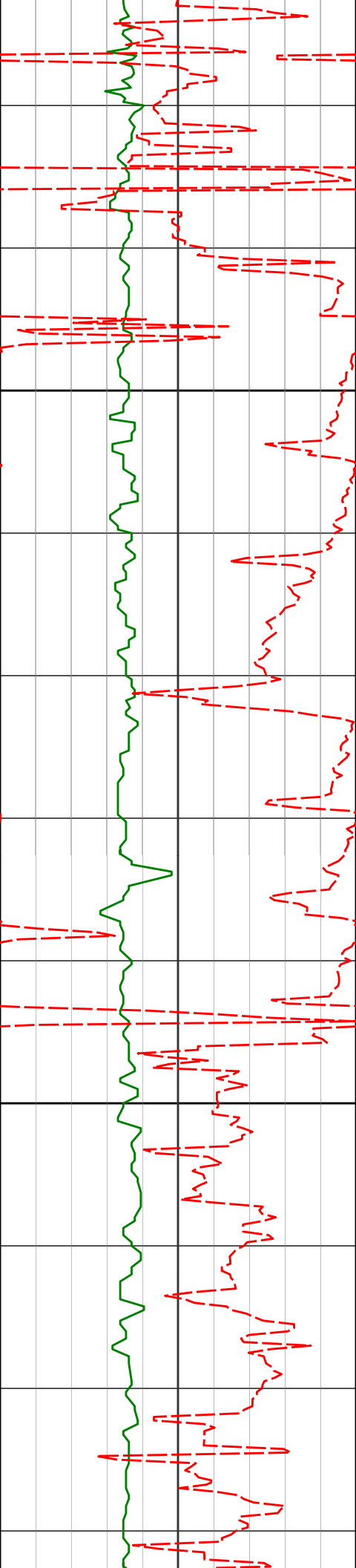
332.82°

4700

4739'

2.05°

336.97°



4800

4833'

1.98°

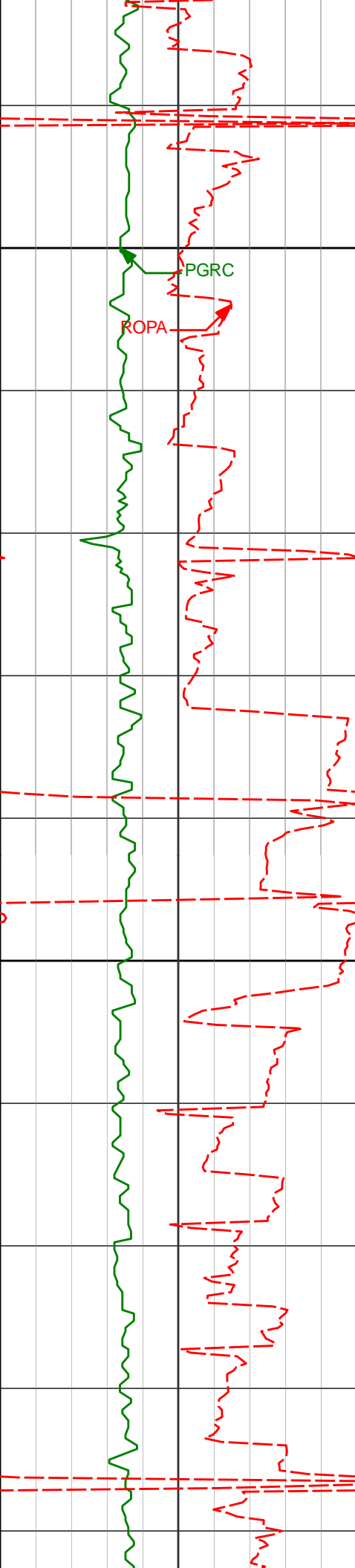
332.44°

4900

4928'

1.95°

324.76°



5000

5022'

2.01°

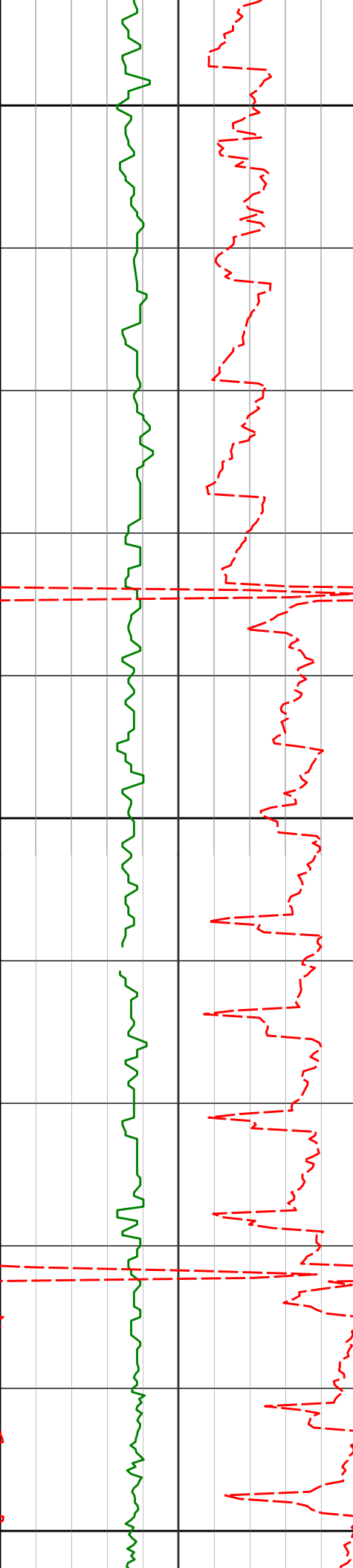
333.49°

5100

5117'

0.68°

272.89°



5200

5211'

0.50°

286.67°

5300

5306'

0.37°

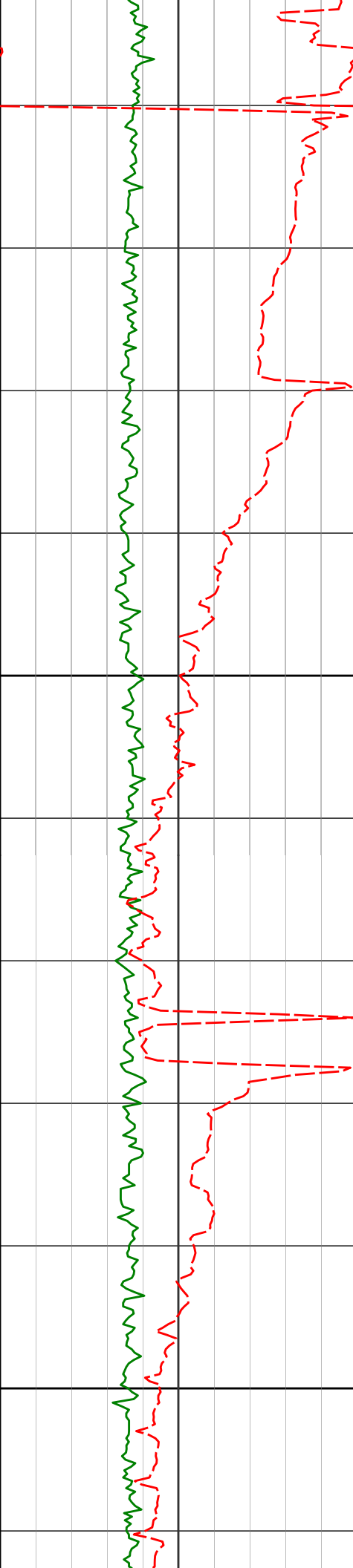
268.47°

5400

5401'

0.25°

247.98°



5500

5600

5496'

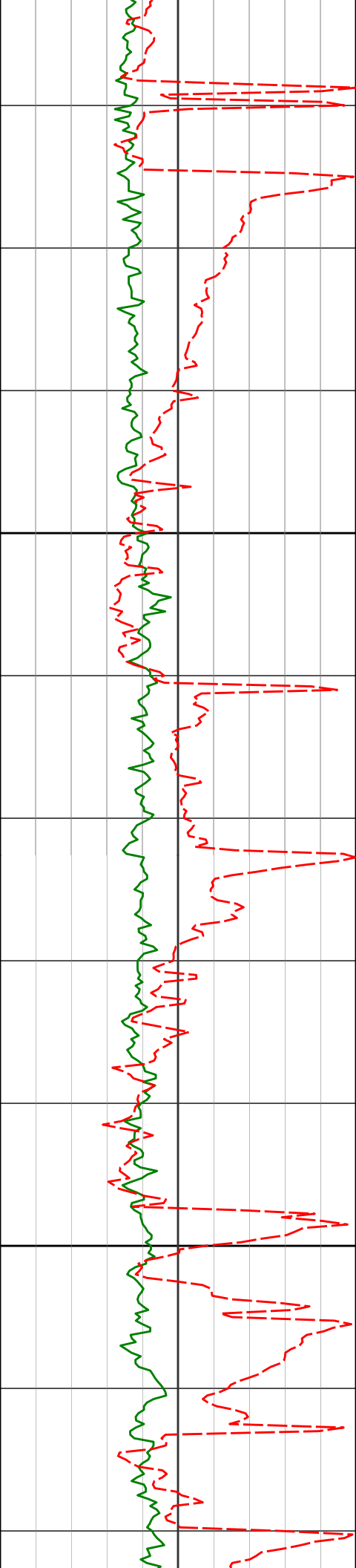
8.35°

189.16°

5590'

17.99°

189.52°



5700

5685'

26.92°

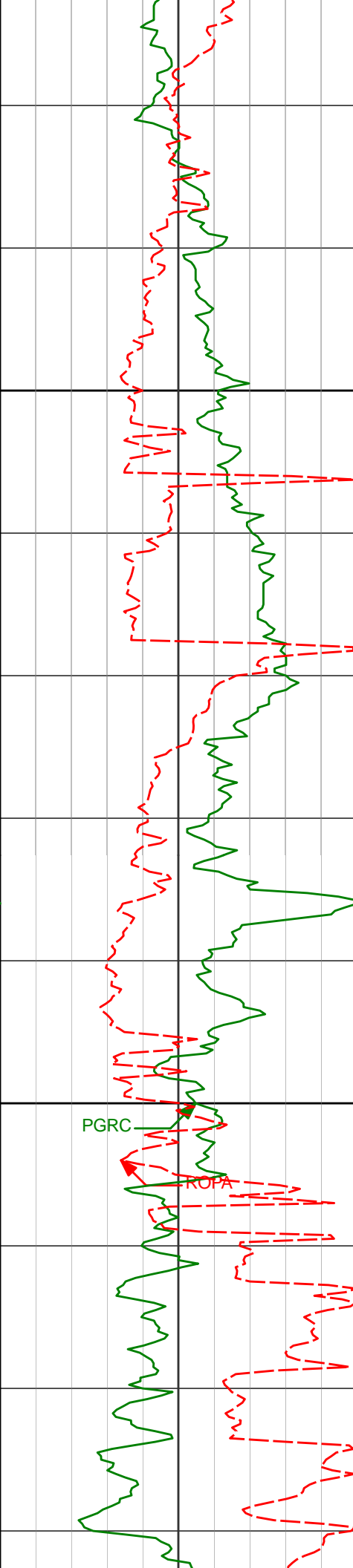
184.36°

5779'

35.15°

181.55°

5800



5900

6000

5874'

42.83°

183.09°

5968'

51.95°

181.62°

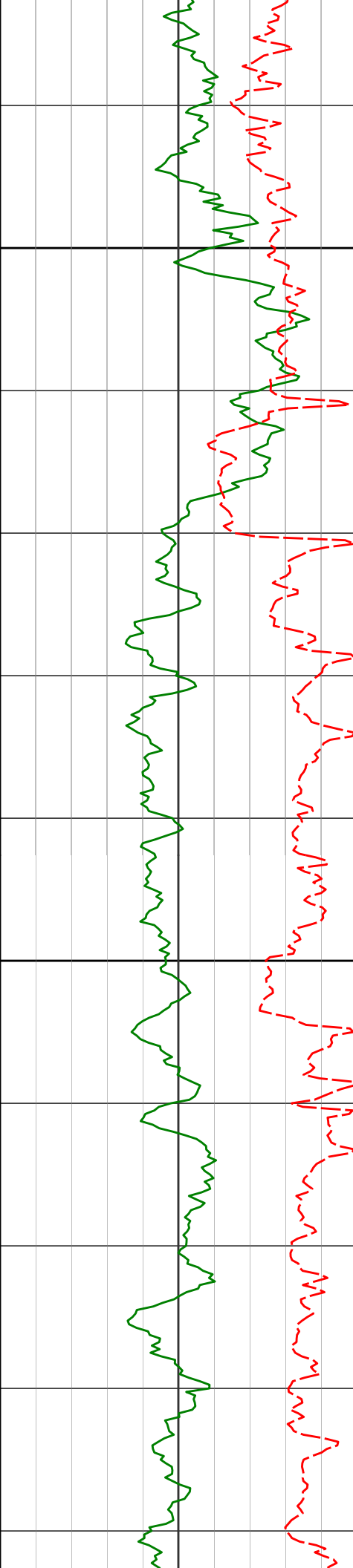
6063'

58.46°

176.63°

PGRC

ROPA



6100

6158'

65.71°

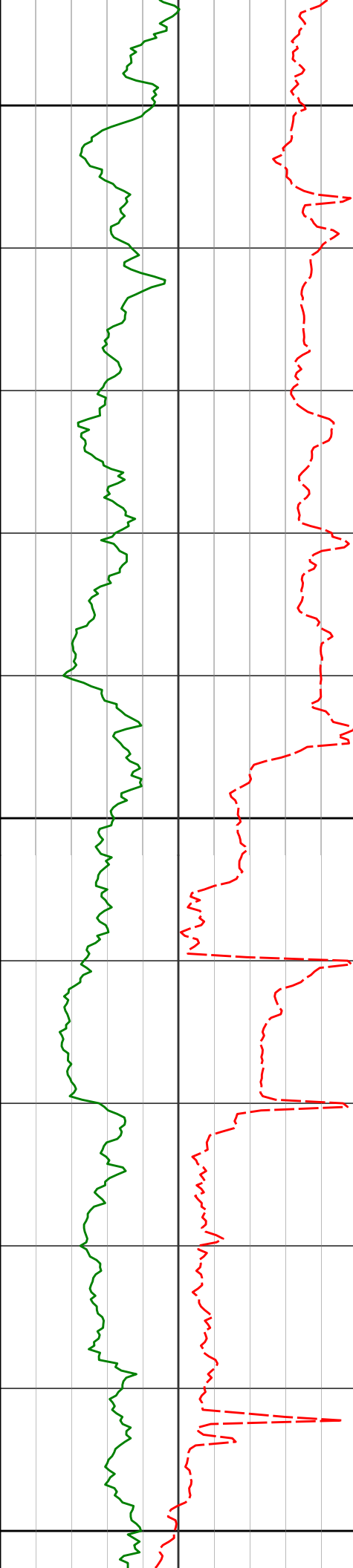
176.03°

6200

6252'

74.25°

176.39°



6300

6332'

81.44°

177.35°

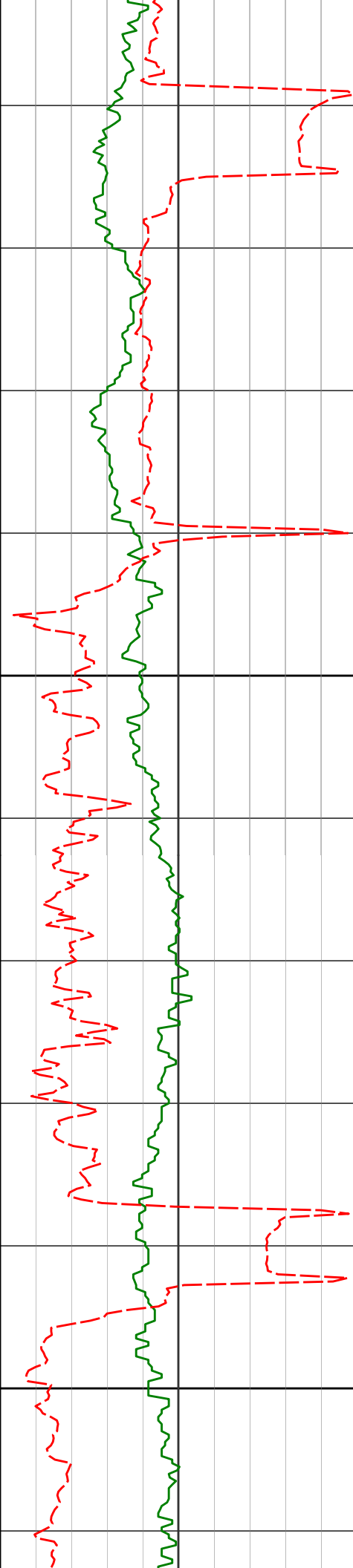
6400

6449'

87.22°

179.71°

6500



6600

6700

6512'

6605'

6700'

88.00°

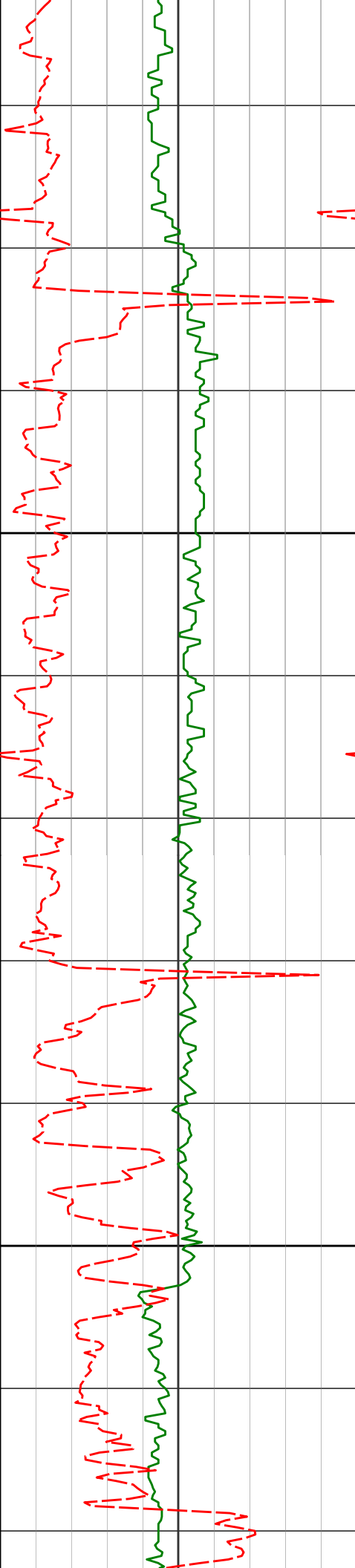
89.14°

90.65°

179.49°

178.32°

178.66°



6800

6900

6794'

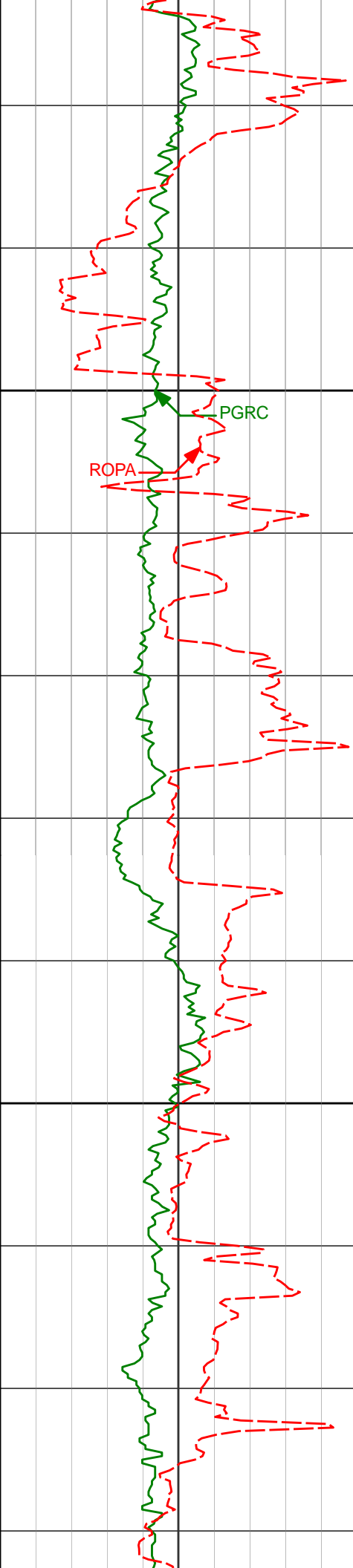
90.22°

178.05°

6889'

89.82°

177.24°



7000

6983'

89.75°

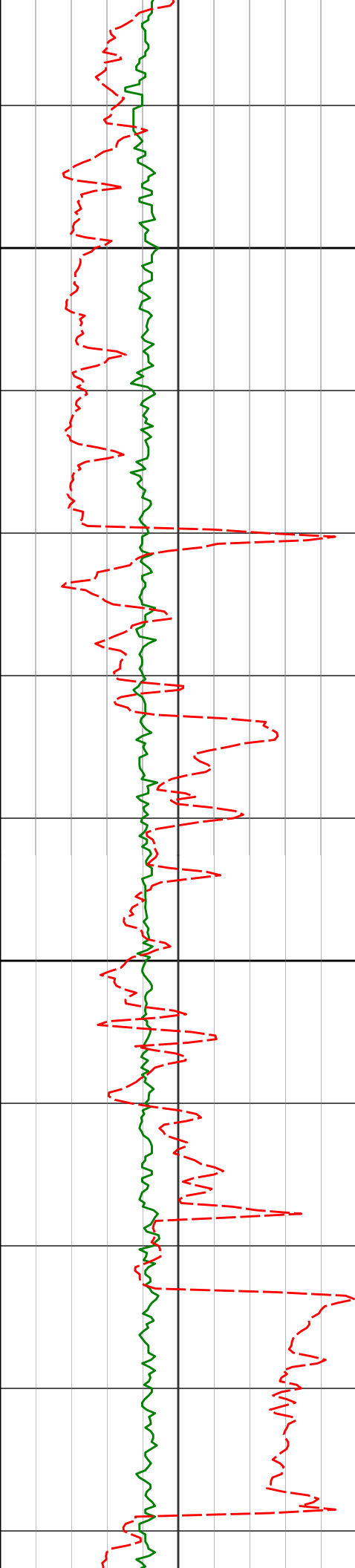
176.97°

7100

7077'

89.85°

177.06°



7200

7300

7170'

7265'

7359'

90.00°

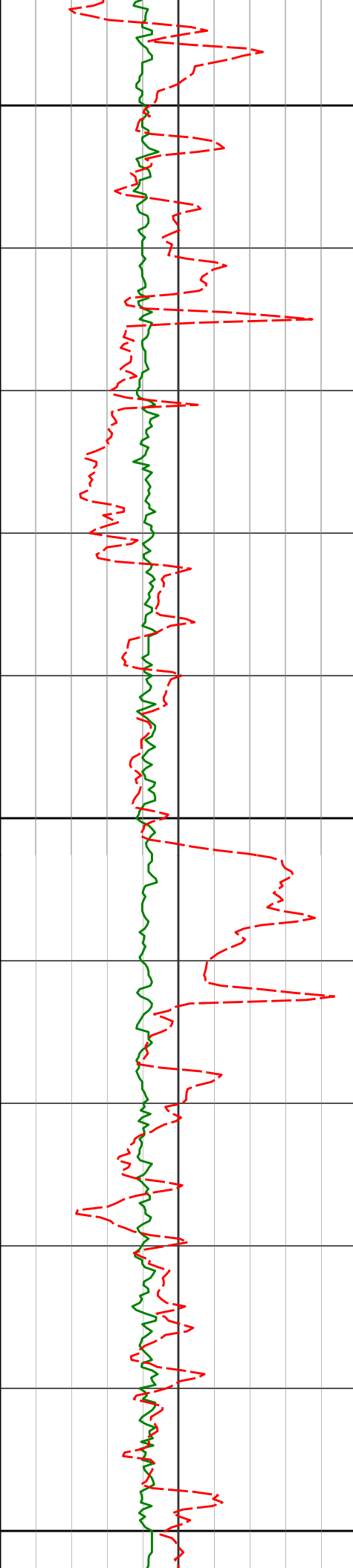
89.41°

90.15°

176.64°

175.01°

178.29°



7400

7454'

89.82°

178.53°

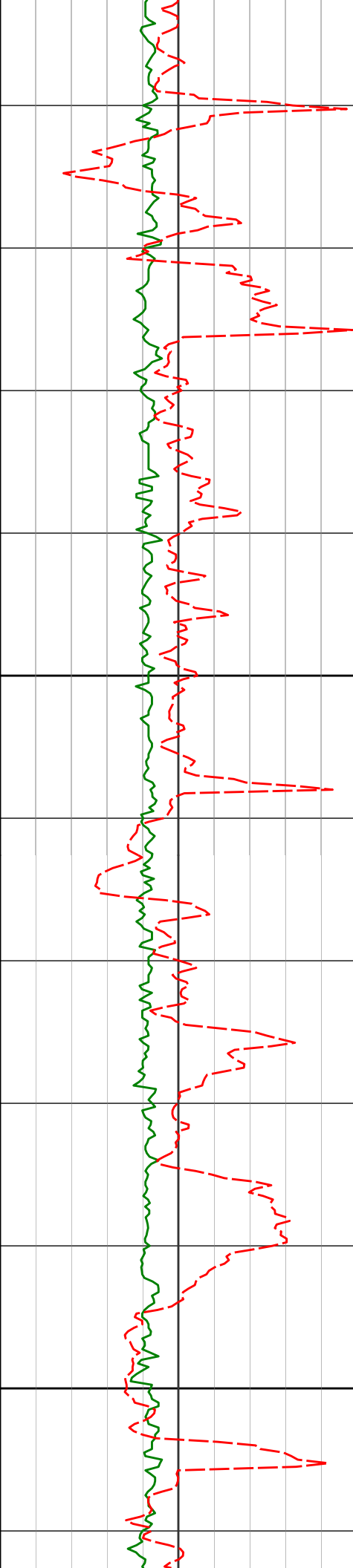
7500

7548'

90.12°

178.85°

7600



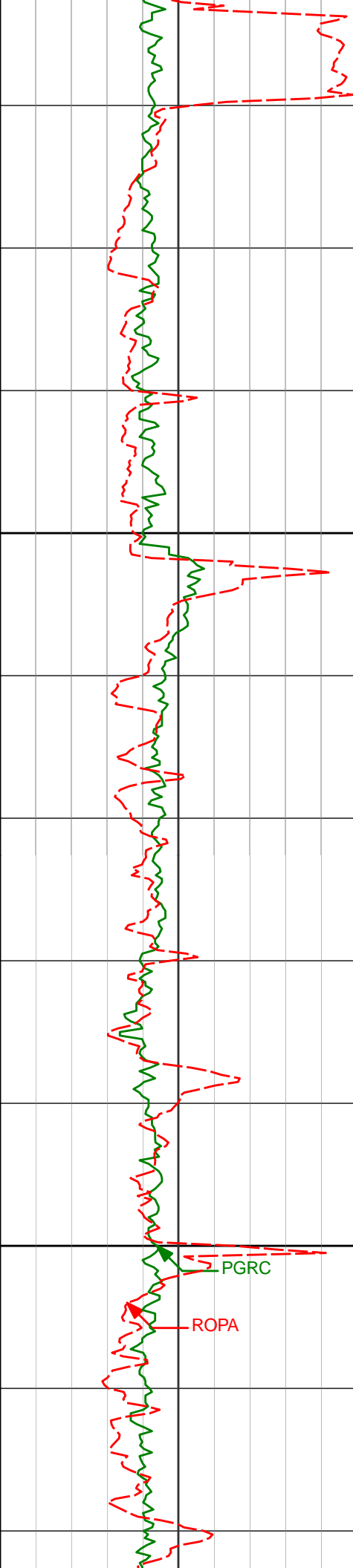
7700

7737'

91.57°

178.55°

7800



7900

8000

7832'

90.18°

177.43°

7927'

90.00°

176.99°

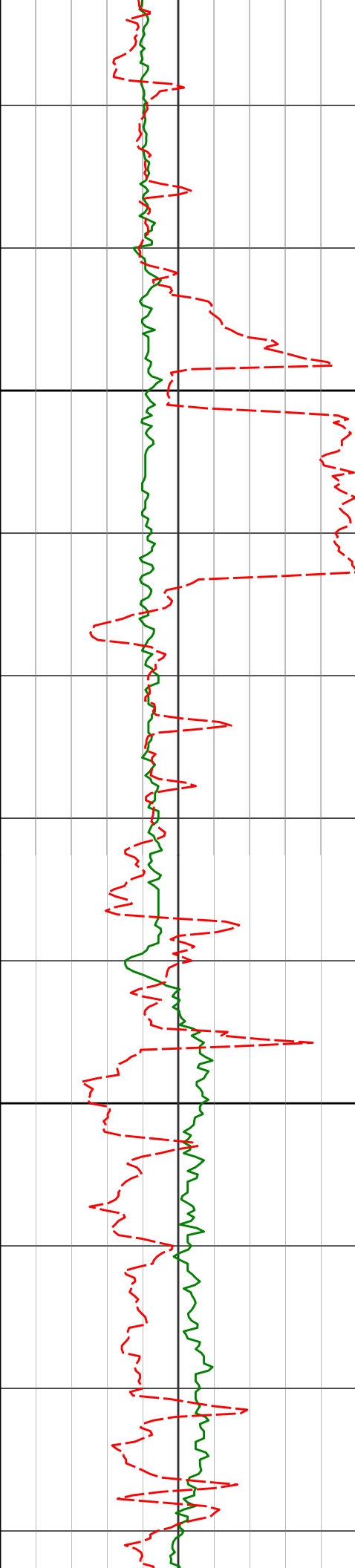
8021'

89.88°

176.51°

PGRC

ROPA



8100

8116'

89.88°

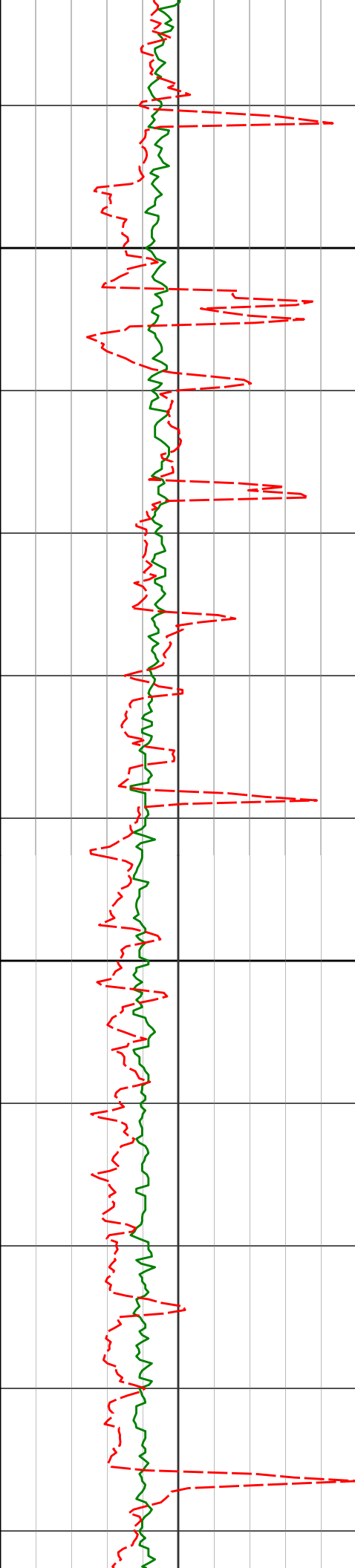
178.03°

8200

8211'

90.37°

178.60°



8300

8306'

90.25°

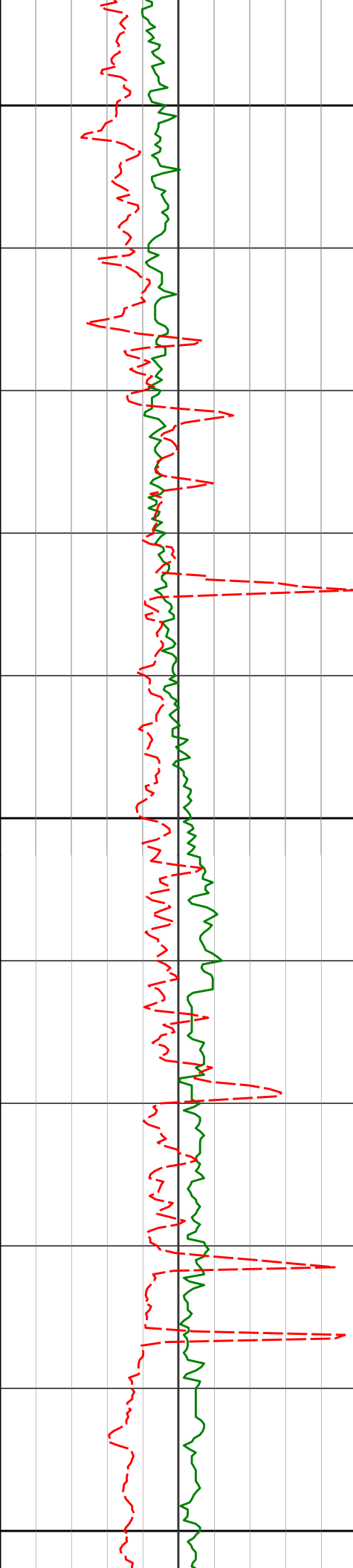
178.48°

8400

8400'

90.28°

178.76°



8500

8600

8700

8494'

90.71°

178.83°

8589'

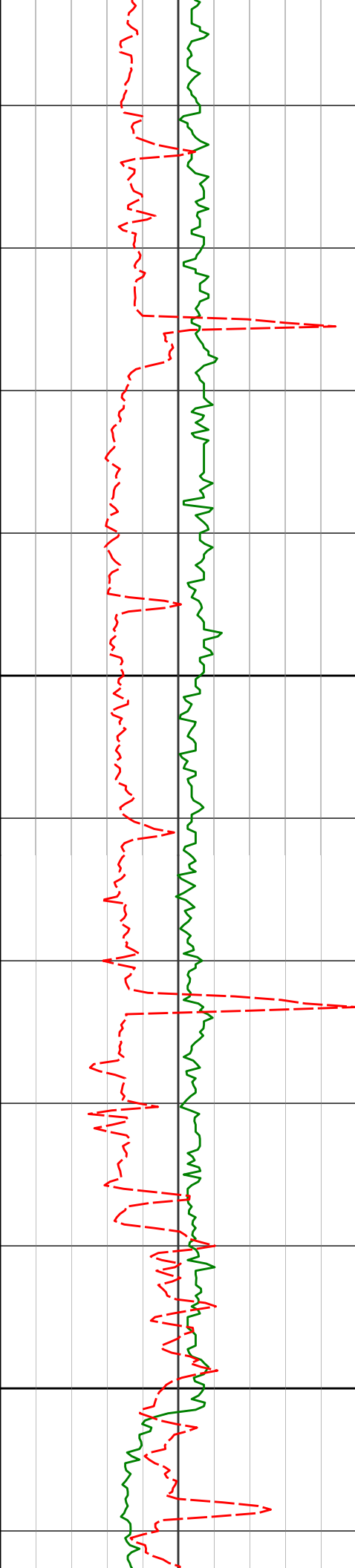
90.74°

177.93°

8684'

90.18°

177.12°



8800

8900

8778'

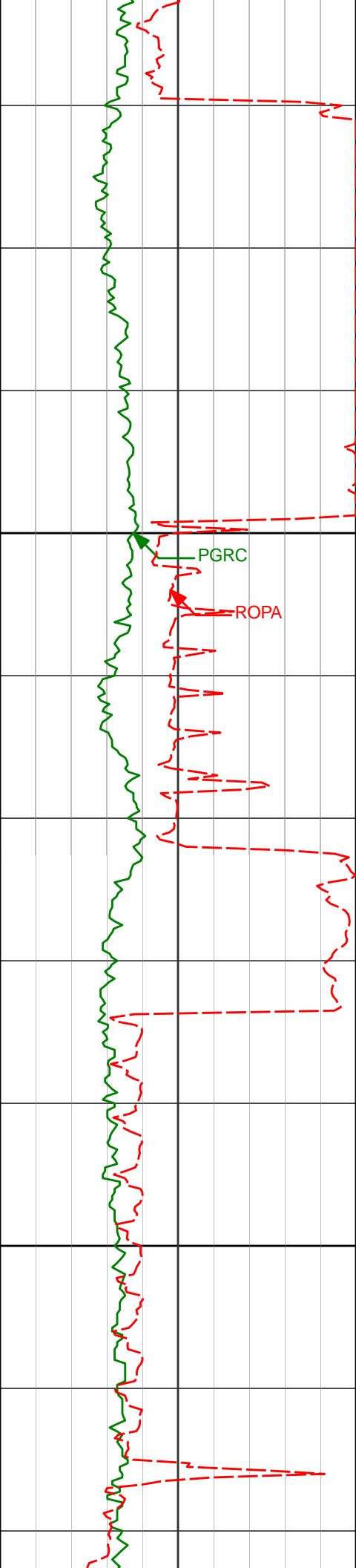
8873'

90.52°

90.93°

177.09°

177.04°



8968'

91.51°

177.68°

9000

PGRC

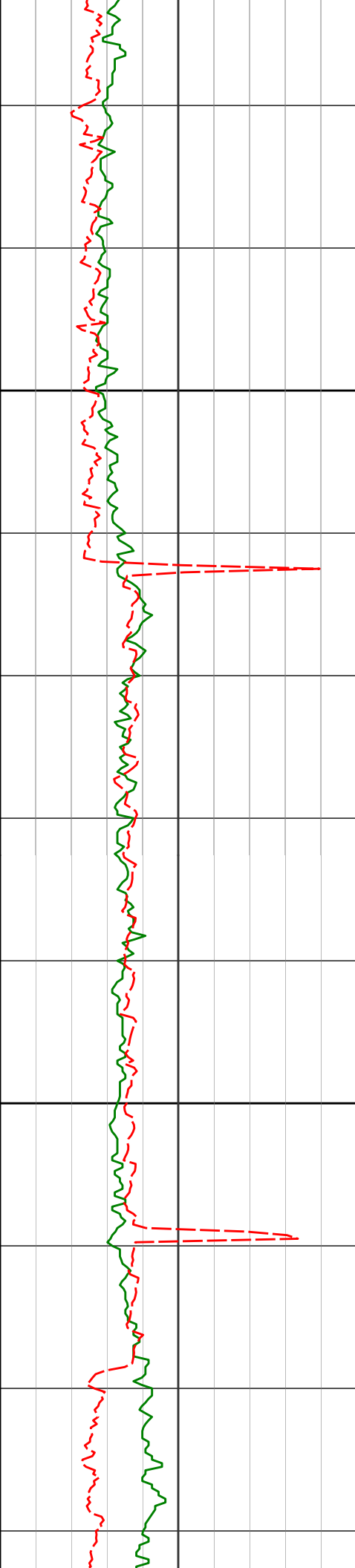
ROPA

9062'

89.63°

177.93°

9100



9157'

89.97°

178.32°

9200

9252'

89.72°

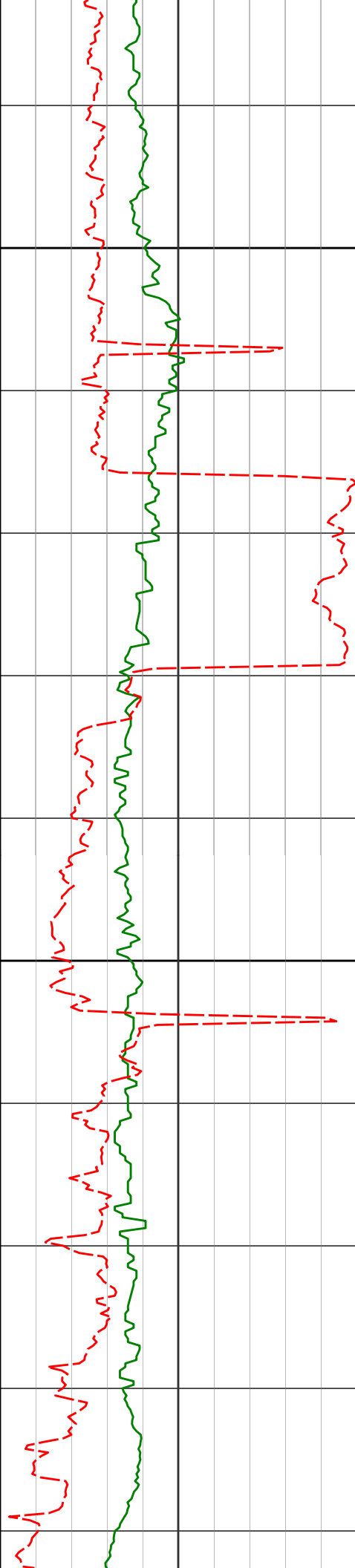
178.05°

9300

9346'

87.75°

175.51°



9400

9441'

88.61°

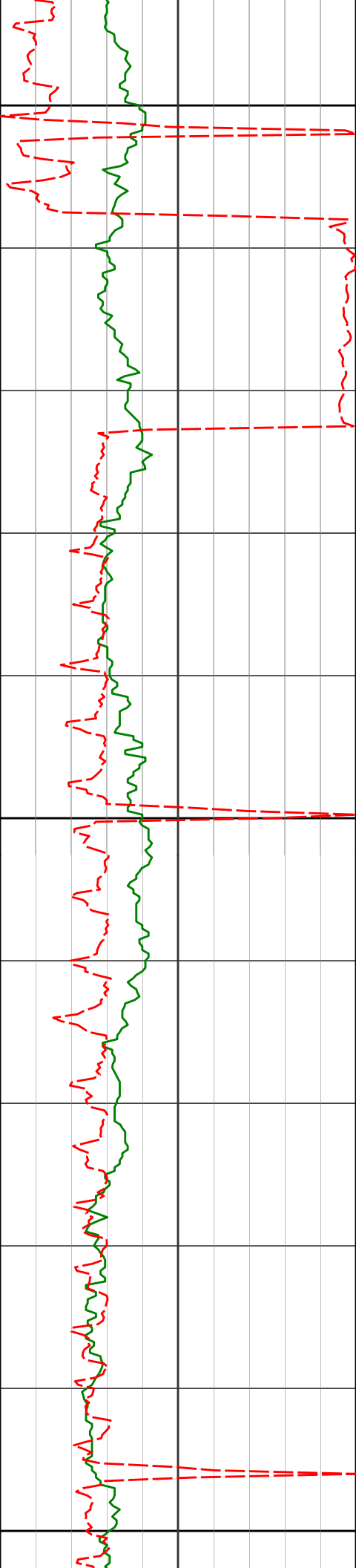
176.90°

9500

9536'

88.37°

175.70°



9600

9631'

90.25°

177.71°

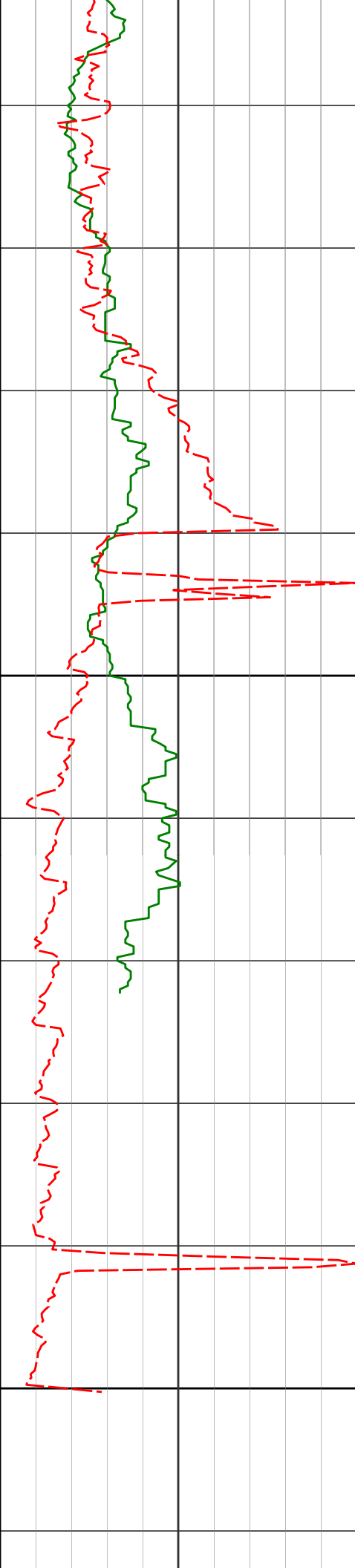
9700

9726'

91.23°

177.96°

9800



9900

10000

9820'

9914'

9933'

10000'

92.34°

93.58°

93.76°

93.76°

177.43°

176.87°

176.87°

176.87°

[illegible]

HALLIBURTON

DIRECTIONAL SURVEY REPORT

**Noble
Ann LC34-765
Wattenberg
Weld Colorado
USA
CA-XX-0902972916**

Measured Depth (feet)	Inclination (degrees)	Direction (degrees)	Vertical Depth (feet)	Latitude (feet)	Departure (feet)	Vertical Section (feet)	Dogleg (deg/100ft)
0.00	0.00	0.00	0.00	0.00 N	0.00 E	0.00	TIE-IN
250.00	0.09	75.23	250.00	0.05 N	0.19 E	-0.04	0.04
500.00	0.17	75.23	500.00	0.19 N	0.74 E	-0.17	0.03
645.00	0.22	75.23	645.00	0.32 N	1.22 E	-0.28	0.03
725.00	0.25	75.23	725.00	0.40 N	1.53 E	-0.36	0.04
914.00	0.43	70.01	913.99	0.75 N	2.60 E	-0.67	0.10
1009.00	0.44	69.11	1008.99	1.00 N	3.27 E	-0.90	0.01
1287.00	0.48	100.08	1286.98	1.18 N	5.43 E	-1.02	0.09
1469.00	0.17	78.29	1468.98	1.10 N	6.44 E	-0.90	0.18
1744.00	0.25	129.94	1743.98	0.80 N	7.28 E	-0.58	0.07
1836.00	0.43	136.81	1835.98	0.42 N	7.67 E	-0.18	0.20
1927.00	0.44	160.45	1926.97	0.16 S	8.03 E	0.40	0.20
2019.00	0.31	141.98	2018.97	0.69 S	8.30 E	0.94	0.19
2110.00	0.43	176.24	2109.97	1.22 S	8.47 E	1.48	0.27
2201.00	0.79	165.47	2200.97	2.16 S	8.65 E	2.43	0.42
2293.00	0.79	179.31	2292.96	3.41 S	8.81 E	3.68	0.21
2384.00	0.99	182.88	2383.95	4.82 S	8.78 E	5.08	0.23
2476.00	1.10	184.24	2475.93	6.50 S	8.68 E	6.76	0.12
2568.00	1.09	175.54	2567.91	8.25 S	8.68 E	8.51	0.18
2660.00	1.03	187.02	2659.90	9.94 S	8.65 E	10.20	0.24
2846.00	1.29	180.82	2845.86	13.68 S	8.41 E	13.93	0.15
2940.00	1.41	180.10	2939.83	15.90 S	8.40 E	16.14	0.14
3035.00	1.38	177.95	3034.81	18.21 S	8.44 E	18.46	0.07
3129.00	1.35	181.95	3128.78	20.45 S	8.44 E	20.70	0.10
3224.00	1.20	170.17	3223.76	22.55 S	8.57 E	22.80	0.32
3319.00	0.97	100.39	3318.74	23.67 S	9.53 E	23.95	1.32
3508.00	0.76	108.60	3507.72	24.37 S	12.30 E	24.73	0.13
3603.00	0.86	106.67	3602.71	24.77 S	13.58 E	25.17	0.11
3698.00	0.81	106.13	3697.70	25.16 S	14.91 E	25.60	0.05
3792.00	0.82	103.28	3791.69	25.50 S	16.21 E	25.98	0.04
3887.00	1.13	355.58	3886.68	24.72 S	16.80 E	25.22	1.67
3981.00	1.15	12.54	3980.66	22.88 S	16.93 E	23.38	0.36
4076.00	1.45	17.78	4075.64	20.81 S	17.50 E	21.33	0.34
4171.00	1.43	31.76	4170.61	18.66 S	18.49 E	19.21	0.37
4265.00	1.60	30.69	4264.58	16.53 S	19.78 E	17.13	0.19
4360.00	2.21	320.89	4359.54	13.97 S	19.30 E	14.55	2.35
4455.00	2.14	327.33	4454.47	11.06 S	17.19 E	11.58	0.27
4550.00	2.20	330.06	4549.40	7.99 S	15.32 E	8.45	0.13
4644.00	2.15	332.82	4643.33	4.86 S	13.62 E	5.27	0.12
4739.00	2.05	336.97	4738.27	1.71 S	12.14 E	2.08	0.19

4833.00	1.98	332.44	4832.21	1.27 N	10.73 E	-0.94	0.18
4928.00	1.95	324.76	4927.15	4.05 N	9.04 E	-3.77	0.28
5022.00	2.01	333.49	5021.10	6.83 N	7.38 E	-6.60	0.33
5117.00	0.68	272.89	5116.07	8.35 N	6.08 E	-8.16	1.87
5211.00	0.50	286.67	5210.07	8.49 N	5.13 E	-8.33	0.24
5306.00	0.37	268.47	5305.07	8.60 N	4.43 E	-8.47	0.19
5401.00	0.25	247.98	5400.06	8.52 N	3.93 E	-8.39	0.17
5496.00	8.35	189.16	5494.72	1.62 N	2.63 E	-1.54	8.65
5590.00	17.99	189.52	5586.14	19.49 S	0.86 W	19.45	10.26
5685.00	26.92	184.36	5673.86	55.48 S	4.94 W	55.31	9.61
5779.00	35.15	181.55	5754.34	103.83 S	7.29 W	103.57	8.89
5874.00	42.83	183.09	5828.12	163.51 S	9.78 W	163.13	8.15
5968.00	51.95	181.62	5891.69	232.56 S	12.56 W	232.07	9.77
6063.00	58.46	176.63	5945.90	310.48 S	11.24 W	309.99	8.10
6158.00	65.71	176.03	5990.34	394.20 S	5.85 W	393.84	7.65
6252.00	74.25	176.39	6022.49	482.24 S	0.03 W	482.02	9.08
6332.00	81.44	177.35	6039.33	560.28 S	4.24 E	560.15	9.07
6449.00	87.22	179.71	6050.88	676.61 S	7.21 E	676.52	5.34
6512.00	88.00	179.49	6053.51	739.55 S	7.64 E	739.45	1.27
6605.00	89.14	178.32	6055.83	832.51 S	9.41 E	832.41	1.76
6700.00	90.65	178.66	6056.01	927.47 S	11.91 E	927.40	1.63
6794.00	90.22	178.05	6055.31	1021.43 S	14.61 E	1021.40	0.79
6889.00	89.82	177.24	6055.28	1116.35 S	18.51 E	1116.39	0.95
6983.00	89.75	176.97	6055.64	1210.23 S	23.26 E	1210.37	0.30
7077.00	89.85	177.06	6055.96	1304.10 S	28.15 E	1304.35	0.14
7170.00	90.00	176.64	6056.09	1396.96 S	33.26 E	1397.32	0.49
7265.00	89.41	175.01	6056.57	1491.70 S	40.18 E	1492.23	1.83
7359.00	90.15	178.29	6056.93	1585.52 S	45.68 E	1586.18	3.58
7454.00	89.82	178.53	6056.95	1680.49 S	48.31 E	1681.18	0.44
7548.00	90.12	178.85	6057.00	1774.46 S	50.45 E	1775.18	0.47
7737.00	91.57	178.55	6054.21	1963.39 S	54.74 E	1964.15	0.78
7832.00	90.18	177.43	6052.75	2058.32 S	58.07 E	2059.13	1.88
7927.00	90.00	176.99	6052.60	2153.20 S	62.69 E	2154.11	0.49
8021.00	89.88	176.51	6052.70	2247.05 S	68.02 E	2248.08	0.53
8116.00	89.88	178.03	6052.90	2341.94 S	72.54 E	2343.06	1.60
8211.00	90.37	178.60	6052.70	2436.90 S	75.33 E	2438.06	0.80
8306.00	90.25	178.48	6052.19	2531.87 S	77.75 E	2533.06	0.18
8400.00	90.28	178.76	6051.76	2625.84 S	80.01 E	2627.06	0.29
8494.00	90.71	178.83	6050.95	2719.81 S	81.98 E	2721.05	0.46
8589.00	90.74	177.93	6049.75	2814.77 S	84.67 E	2816.04	0.95
8684.00	90.18	177.12	6048.98	2909.67 S	88.77 E	2911.03	1.03
8778.00	90.52	177.09	6048.40	3003.55 S	93.51 E	3005.01	0.36
8873.00	90.93	177.04	6047.20	3098.42 S	98.37 E	3099.98	0.43
8968.00	91.51	177.68	6045.18	3193.30 S	102.74 E	3194.94	0.91
9062.00	89.63	177.93	6044.25	3287.22 S	106.34 E	3288.93	2.02
9157.00	89.97	178.32	6044.58	3382.17 S	109.44 E	3383.93	0.55
9252.00	89.72	178.05	6044.83	3477.12 S	112.45 E	3478.93	0.39
9346.00	87.75	175.51	6046.91	3570.94 S	117.72 E	3572.86	3.42
9441.00	88.61	176.90	6049.92	3665.68 S	124.01 E	3667.75	1.72
9536.00	88.37	175.70	6052.43	3760.44 S	130.14 E	3762.66	1.28
9631.00	90.25	177.71	6053.58	3855.27 S	135.60 E	3857.61	2.89
9726.00	91.23	177.96	6052.35	3950.19 S	139.20 E	3952.60	1.07
9820.00	92.34	177.43	6049.42	4044.07 S	142.98 E	4046.55	1.31
9914.00	93.58	176.87	6044.56	4137.83 S	147.65 E	4140.40	1.44
9933.00	93.76	176.87	6043.35	4156.76 S	148.68 E	4159.36	0.99
10000.00	93.76	176.87	6038.95	4223.52 S	152.33 E	4226.19	0.01

CALCULATION BASED ON MINIMUM CURVATURE METHOD

**SURVEY COORDINATES RELATIVE TO WELL SYSTEM REFERENCE POINT
TVD VALUES GIVEN RELATIVE TO DRILLING MEASUREMENT POINT**

**VERTICAL SECTION RELATIVE TO WELL HEAD
VERTICAL SECTION IS COMPUTED ALONG A DIRECTION OF 178.26 DEGREES (GRID)
A TOTAL CORRECTION OF 7.06 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED**

**HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.
HORIZONTAL DISPLACEMENT(CLOSURE) AT 10000.00 FEET
IS 4226.26 FEET ALONG 177.93 DEGREES (GRID)**