

PCG Pressure Case Gamma Ray  
DGR Dual Gamma Ray  
PCD Pressure Case Directional

[illegible]

## WELL INFORMATION

<b>MWD Run Number</b>	100	200			
<b>Date run completed</b>	16-Aug-13	19-Aug-13			
<b>Rig Bit Number</b>	0100	0200			
<b>Bit Size (in)</b>	8.750	6.125			
<b>Tool Nominal OD (in)</b>	6.790	4.750			
<b>Log Start Depth (MD, ft)</b>	894.00	8,235.00			
<b>Log End Depth (MD, ft)</b>	8,235.00	12,395.00			
<b>Drill or Wipe</b>	Drill	Drill			
<b>Drill/Wipe Start Date and Time</b>	13-Aug-13 04:45	17-Aug-13 19:45			
<b>Drill/Wipe End Date and Time</b>	16-Aug-13 02:15	19-Aug-13 06:20			
<b>Min Inc (deg) @ Depth (MD, ft)</b>	.11 @ 1,113.00	88.15 @ 12,342.00			
<b>Max Inc (deg) @ Depth (MD, ft)</b>	84.88 @ 8,188.00	91.42 @ 10,945.00			
<b>Bit TFA(in2) / Bit Type</b>	2.23 / PDC	1.53 / PDC			
<b>Flow Rate (gpm)</b>	570.77	298.67			
<b>Max AV (fpm) / CV (fpm) @ MWD</b>	N/A / N/A	N/A / N/A			
<b>Fluid Type</b>	Fresh Water Gel	Native/Spud Mud			
<b>Density (ppg) / Viscosity (spqt)</b>	10.00 / 41.00	9.40 / 40.00			
<b>Filtrate CL (ppm)</b>	1,100.00	1,300.00			
<b>pH / Fluid Loss (mptm)</b>	8.50 / 4	8.50 / 3			
<b>PV (cP) / YP (lbf2)</b>	8 / 9.00	9 / 8.00			
<b>% Solids / % Sand</b>	4.50 / 0.00	6.50 / 0.00			
<b>% Oil / Oil:Water Ratio</b>	N/A / N/A	N/A / N/A			
<b>Rm @ Measured Temp (degF)</b>	N/A @ N/A	N/A @ N/A			
<b>Rmf @ Measured Temp (degF)</b>	N/A @ N/A	N/A @ N/A			
<b>Rmc @ Measured Temp (degF)</b>	N/A @ N/A	N/A @ N/A			
<b>Max Tool Temp (degF) / Source</b>	187.48 / PCM	233.18 / HCIM			
<b>Rm @ Max Tool Temp (degF)</b>	N/A @ 187.48	N/A @ 233.18			
<b>Lead MWD Engineer</b>	Clay Wass	Clay Wass			
<b>Customer Representative</b>	Dave Cornett				

SENSOR INFORMATION					
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Downhole Processor Information					
Tool Type	PCM	HCIM			
Software Version	5.84	88.56			
Sub Serial Number	11404277	047269			
Insert Serial Number	11400825	11436722			
Date and Time Initialized	11-Aug-13 18:39	17-Aug-13 11:07			
Date and Time Read	16-Aug-13 16:18	19-Aug-13 23:39			
ECMB SW Version	N/A	N/A			

Directional Sensor Information					
Tool Type	PCDC	PCDC			
Distance From Bit (ft)	45.43	50.93			
Software Version	6.21	6.21			
Sub Serial Number	11404277	11917160			
Sonde Serial Number	11833253	11478086			
Sensor ID Number	N/A	N/A			
Toolface Offset (deg)	57.32	256.39			

Gamma Ray Sensor Information					
Tool Type	PCG	DGR			
Distance From Bit (ft)	55.74	72.87			
Recorded Sample Period (sec)	10	8			
Software Version	8.15	N/A			
Sub Serial Number	11404277	047296			
Insert/Sonde Serial Number	11292593	266030			

Resistivity Sensor Information					
Tool Type		Slim P4			
Distance From Bit (ft)		65.87			
Recorded Sample Period (sec)		10			
Software Version		5.55			
Sub Serial Number		47296			
Receiver Insert Serial Number		260883			
Transmitter Insert Serial Number		11062260			
Receiver Orientation		Down			

DDSr-DGR Sensor Information					
Tool Type		DDSr-DGR			
Distance From Bit (ft)		75.77			
Recorded Sample Period (sec)		12			
Software Version		10.88			
Sub Serial Number		047296			
Insert Serial Number		11270370			
Sensor ID Number		7035			

REMARKS
<div>1. All depths are calibrated to the driller's pipe tally and are measured bit depths, measured from the drill floor.</div> <div>2. No depth corrections have been made for pipe stretch or compression.</div> <div>3. Critical annular velocities have been calculated using the "Power Law" model for water based fluids and the "Bingham Plastic" model for syntheic and oil based fluids.</div> <div>4. All data presented is recorded (memory) data unless otherwise stated.</div>

1. All data presented is recorded (memory) data unless otherwise stated.

ROPA is real time data

5. The following smoothing parameters have been applied to the data:  
ROPA: 0.5 ft interval, 1.2 ft coercion distance, 3 ft gap fill  
PGRC: 0.5 ft interval, 0.6 ft coercion distance, 3 ft gap fill  
DGRCC: 0.5 ft interval, 0.6 ft coercion distance, 3 ft gap fill
6. Insite Version 7.4.2

## WARRANTY

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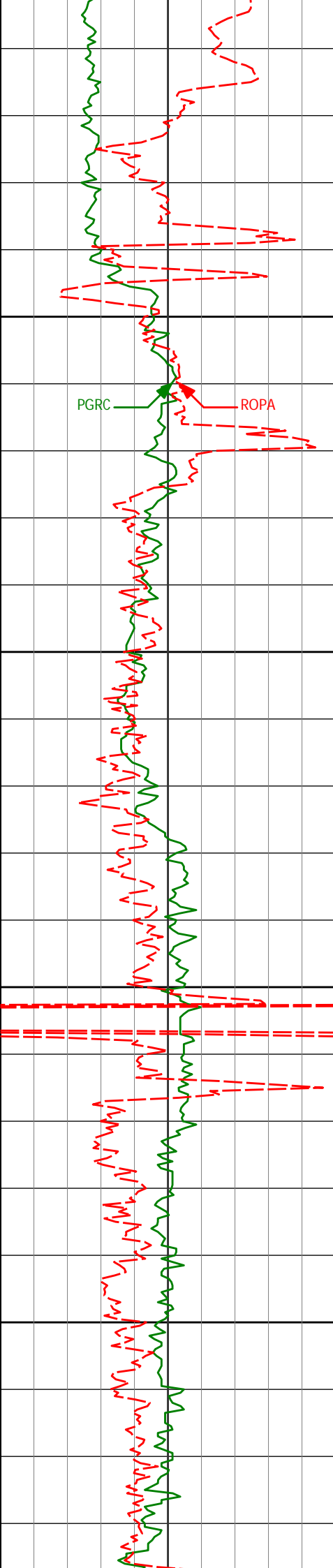
# HALLIBURTON

## Sperry Drilling Services

### MD Detail Log 1:240

Anadarko  
Underhill 2C-17HZ  
Xtreme 22  
05123369170000





950

PGRC

ROPA

1000

1018'

0.28°

299.36°

1017.98'

3.16'

1050

1100

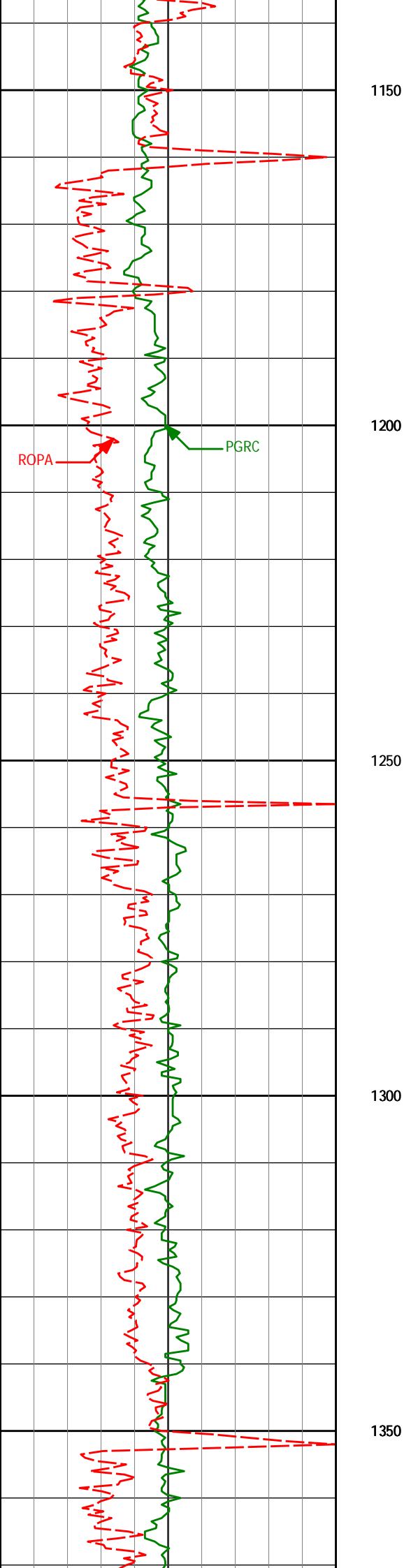
1113'

0.11°

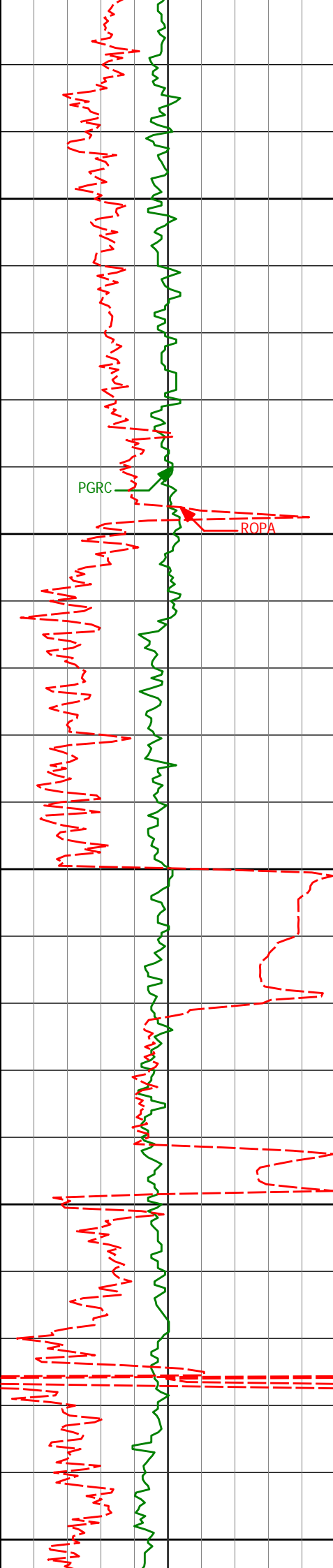
305.46°

1112.98'

3.33'



1305'	0.26°	265.60°	1304.98'	3.39'
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1400

1450

1495'

1500

1550

1591'

1600

0.48°

229.18°

1494.97'

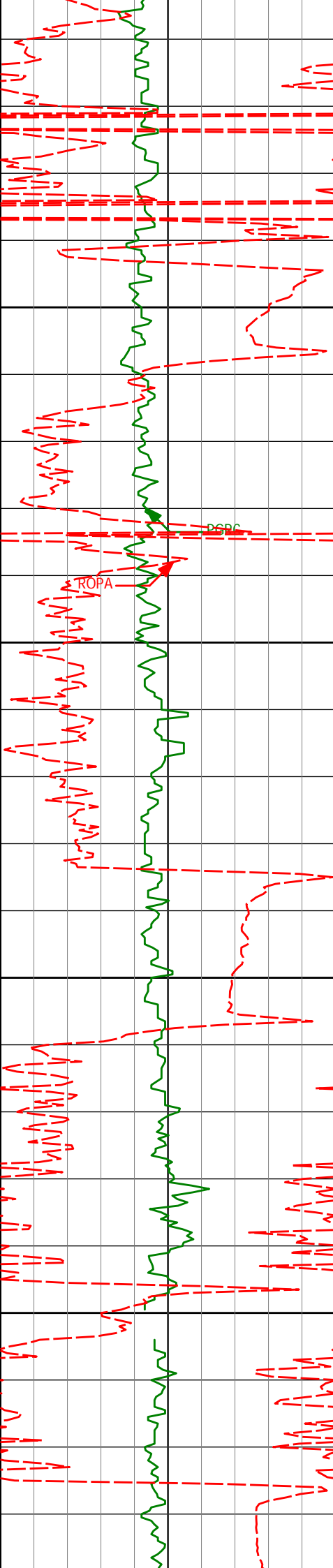
2.82'

2.37°

231.31°

1590.94'

1.29'



1650

1700

1750

1800

1686'

3.77°

227.07°

1685.80'

-2.12'

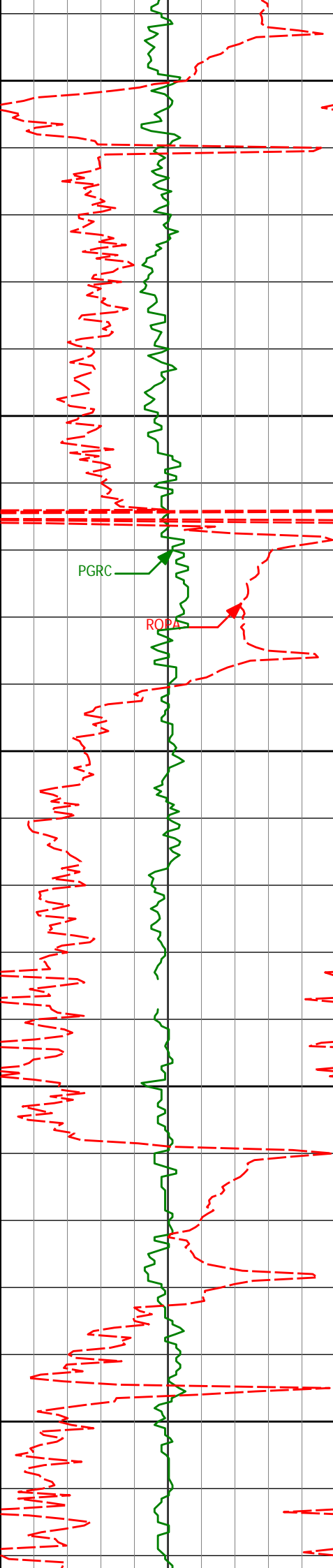
1779'

6.39°

221.70°

1778.43'

-8.15'



1850

1871'

7.66°

213.19°

1869.74'

-17.21'

1900

PGRC

ROPA

1950

1962'

9.77°

207.47°

1959.68'

-29.23'

2000

2050

2054'

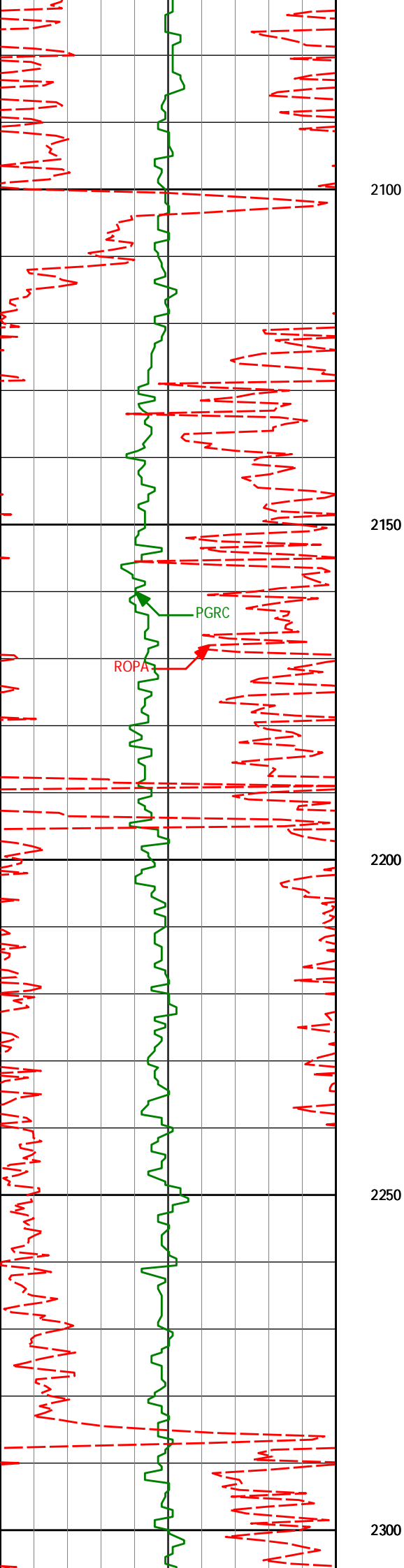
11.76°

206.09°

2050.06'

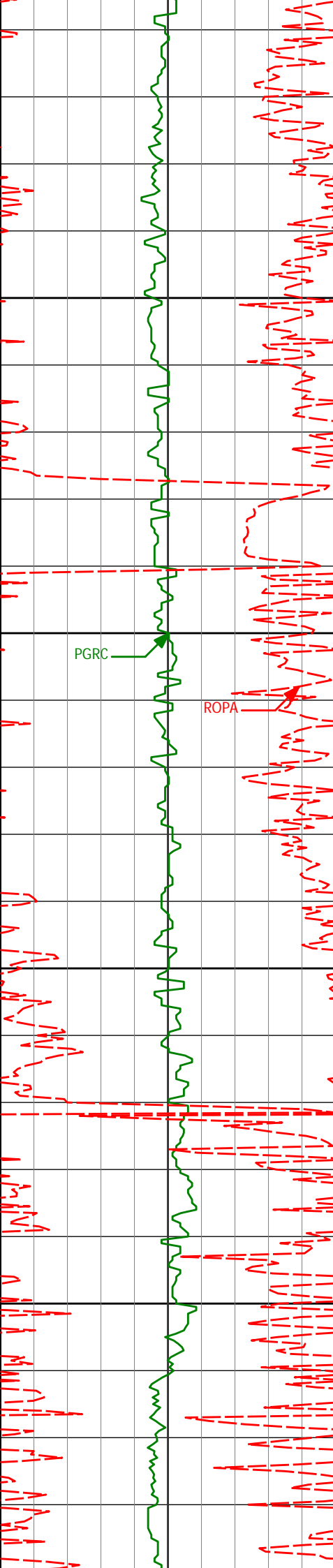
-44.68'





2146'	11.44°	205.57°	2140.18'	-61.45'
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2239'	11.04°	204.95°	2231.40'	-77.95'
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2350

2400

2450

2500

2330'

10.74°

203.42°

2320.76'

-93.73'

2422'

11.33°

204.45°

2411.06'

-109.93'

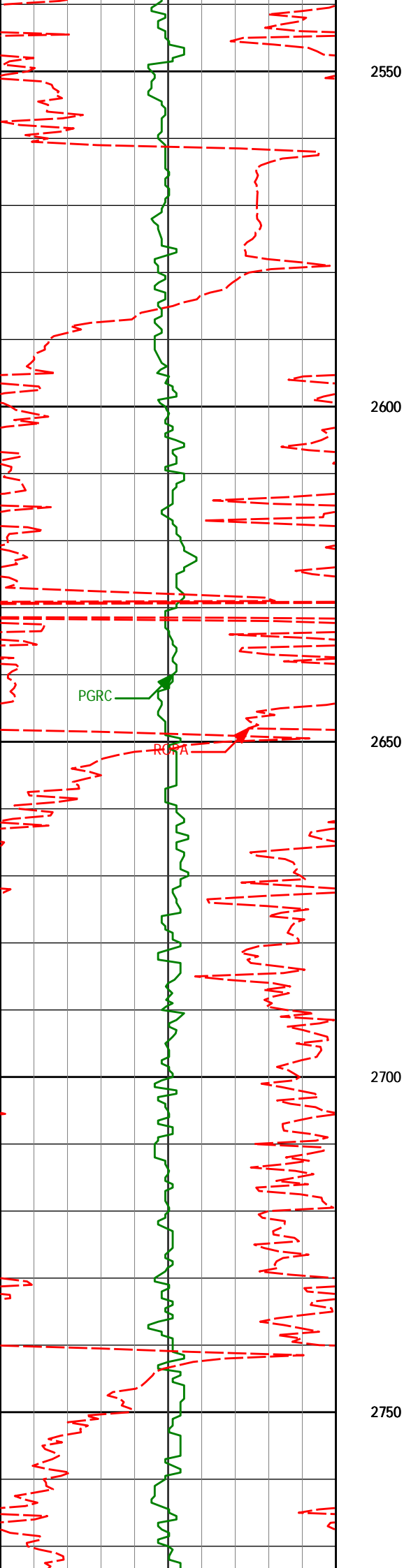
2514'

10.61°

204.08°

2501.38'

-125.99'



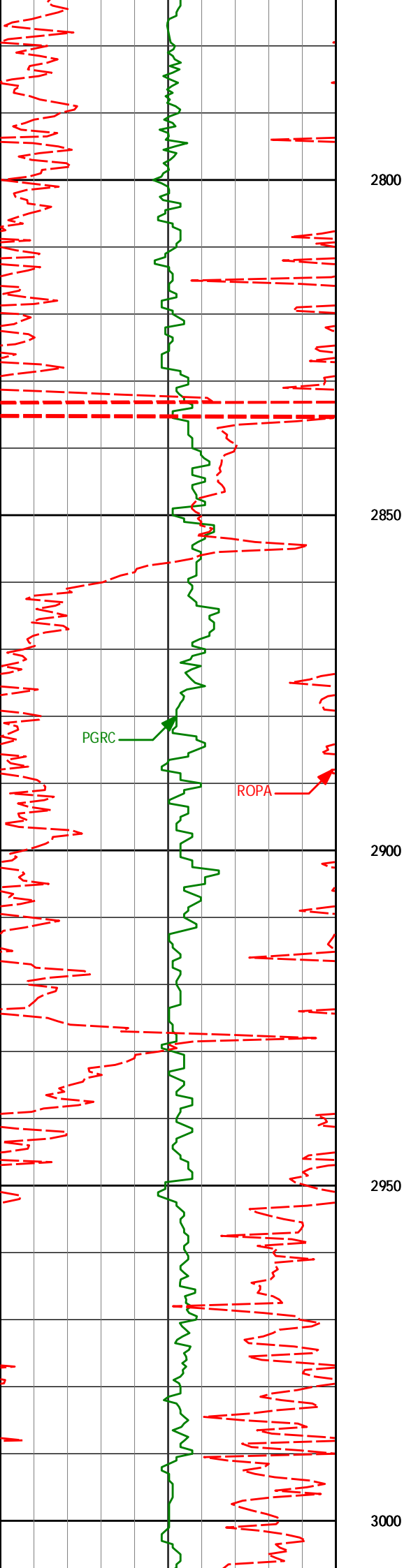
2606'

11.98°

204.52°

2591.59'

-142.51'



2791'

10.35°

201.55°

2773.09'

-175.63'

2800

2850

PGRC

ROPA

2900

2950

2974'

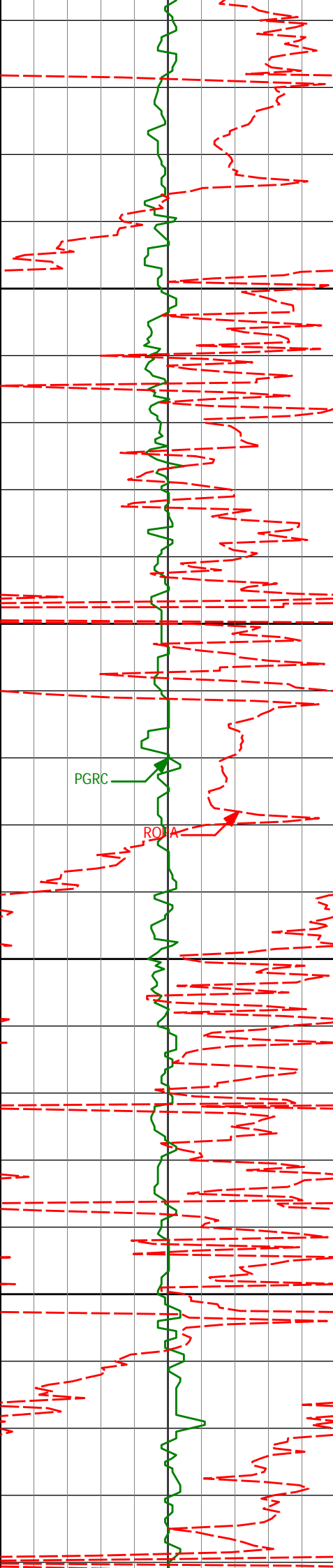
10.29°

205.48°

2953.13'

-205.86'

3000



3050

3100

3150

3200

PGRC

RODA

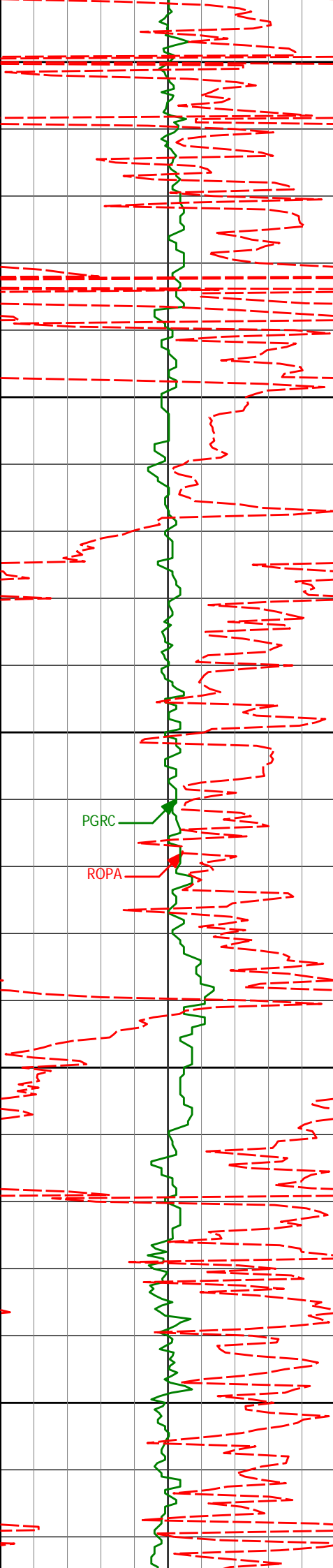
3158'

11.50°

211.59°

3133.82'

-236.55'



3250

3300

3350

3400

3450

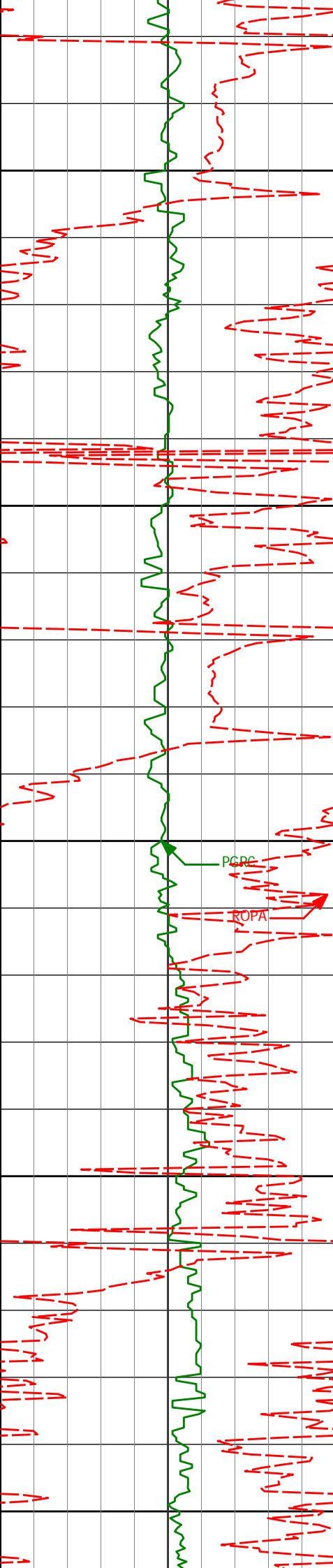
3342'

10.96°

212.56°

3314.30'

-267.19'



3500

3526'

11.35°

206.28°

3494.82'

-298.43'

3550

3600

PCRC

ROPA

3650

3700

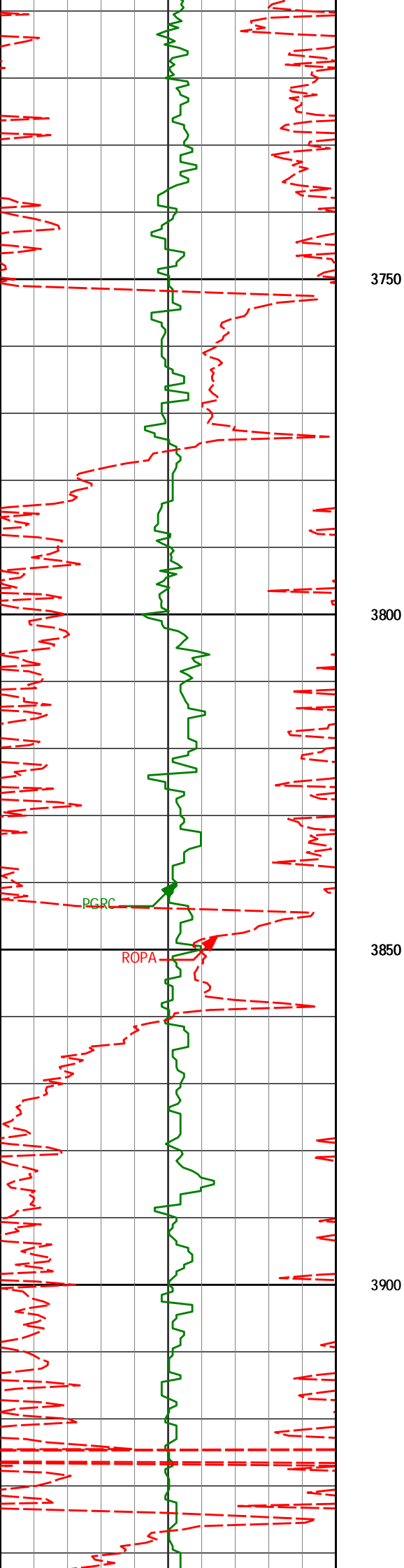
3708'

9.59°

205.15°

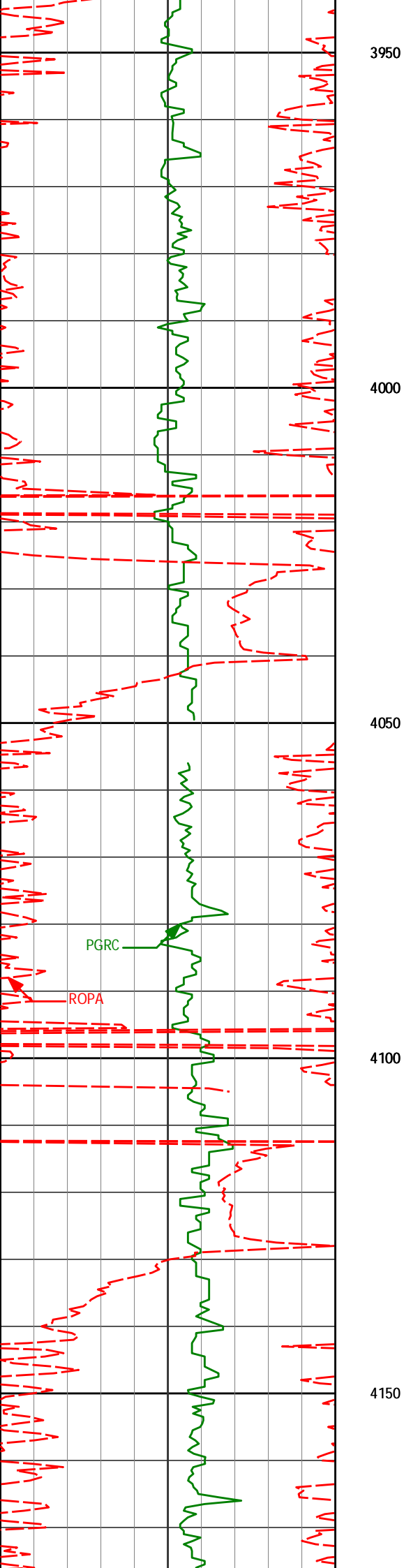
3673.78'

-328.43'



3700	7.37	205.13	3873.78	320.43
3750				
3800				
3850				
3891'	11.77°	206.22°	3853.60'	-359.19'
3900				





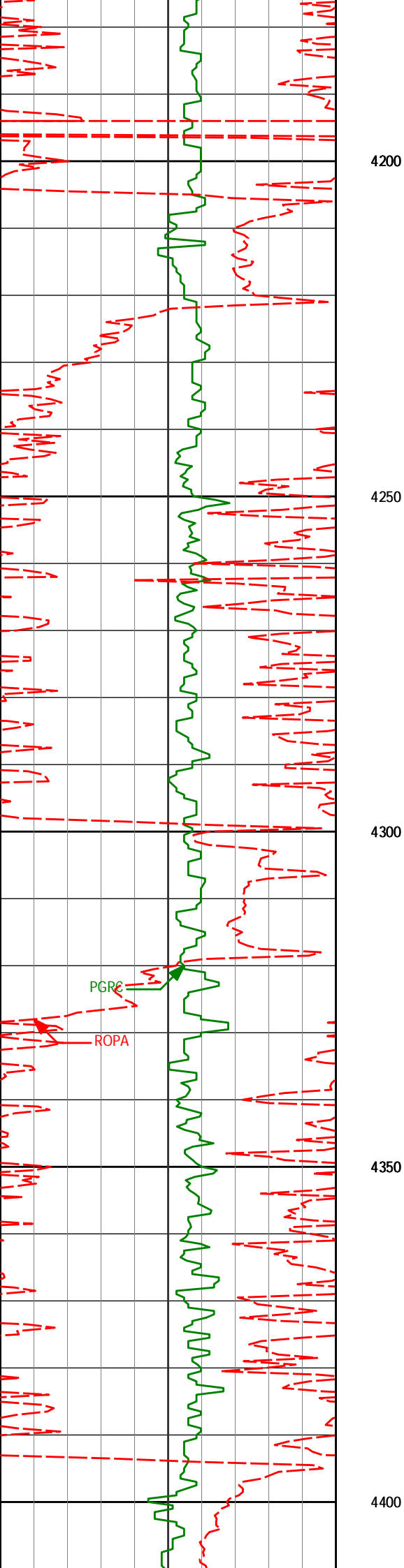
4075'

10.98°

204.16°

4033.99'

-392.24'



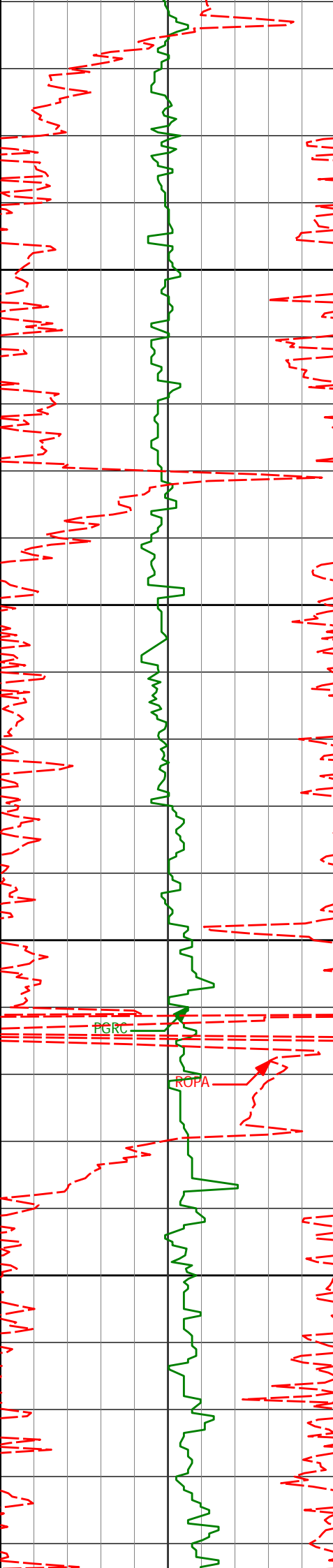
4257'

10.47°

201.67°

4212.81'

-423.62'



4450

4500

4550

4600

4434'

11.91°

207.70°

4386.44'

-454.96'

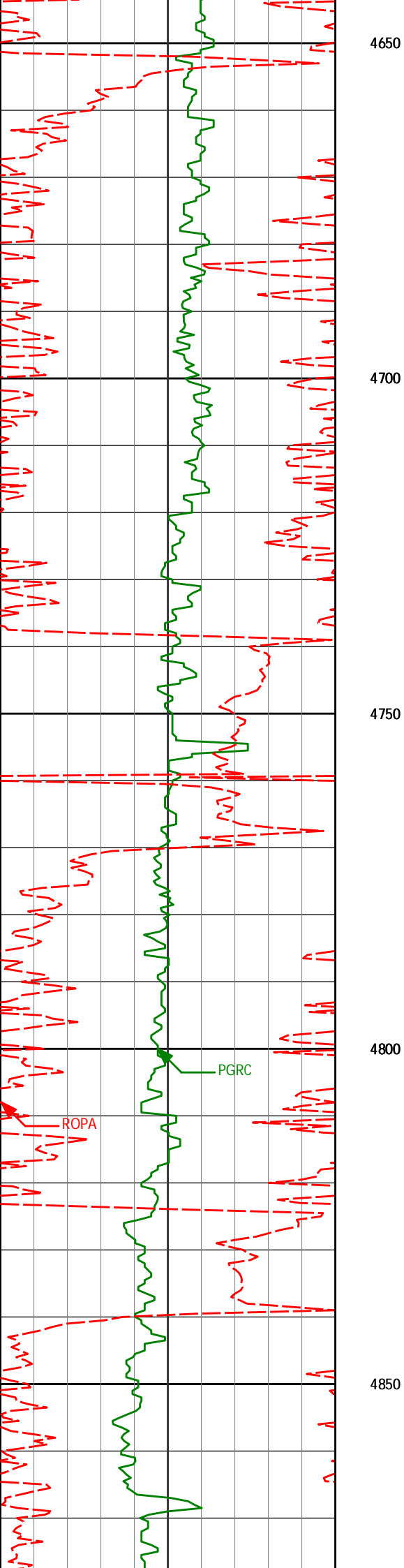
4605'

11.10°

205.27°

4554.00'

-485.69'



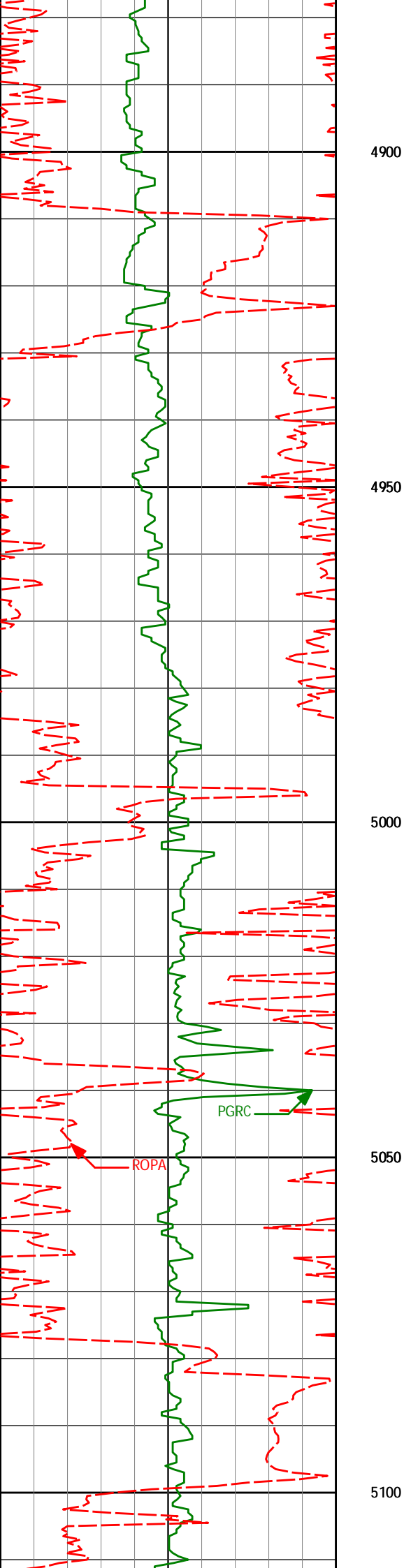
4776'

10.58°

198.59°

4721.96'

-515.63'



4947'

12.84°

202.96°

4889.39'

-548.19'

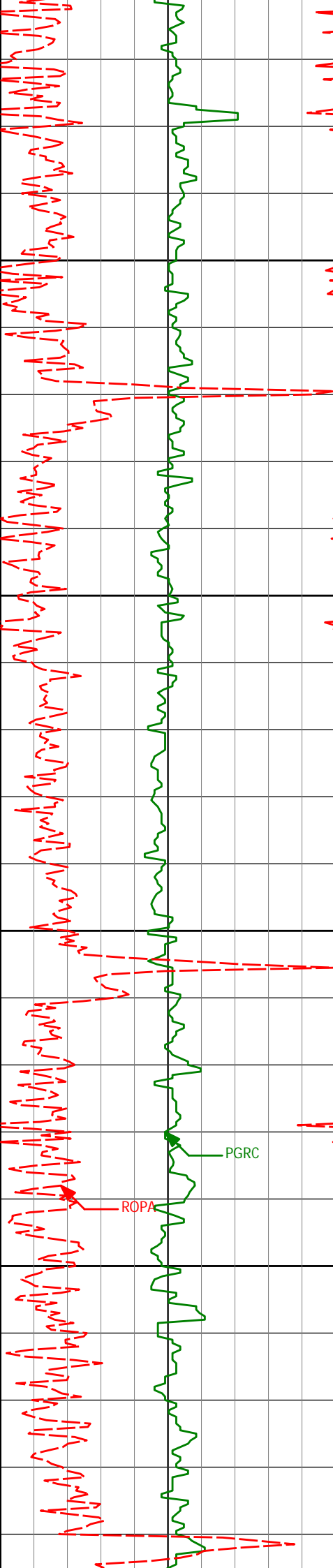
4900

4950

5000

5050

5100



5150

5200

5250

5300

5118'

5182°

211.04°

5056.46'

-580.93'

PGRC

ROPA

5289'

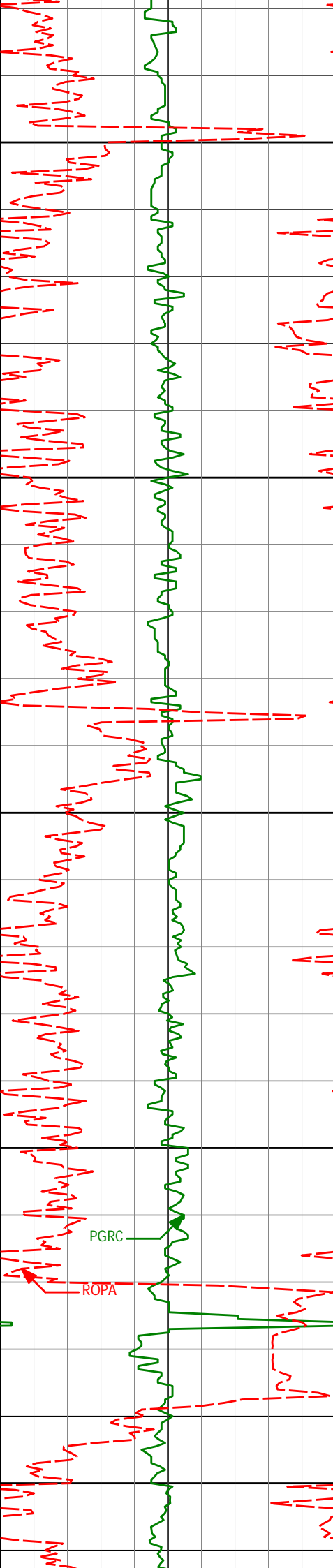
5182°

209.15°

5224.10'

-610.32'





5600

5650

5700

5750

5800

5632'

10.83°

205.10°

5561.40'

-666.00'

PGRC

ROPA

5804'

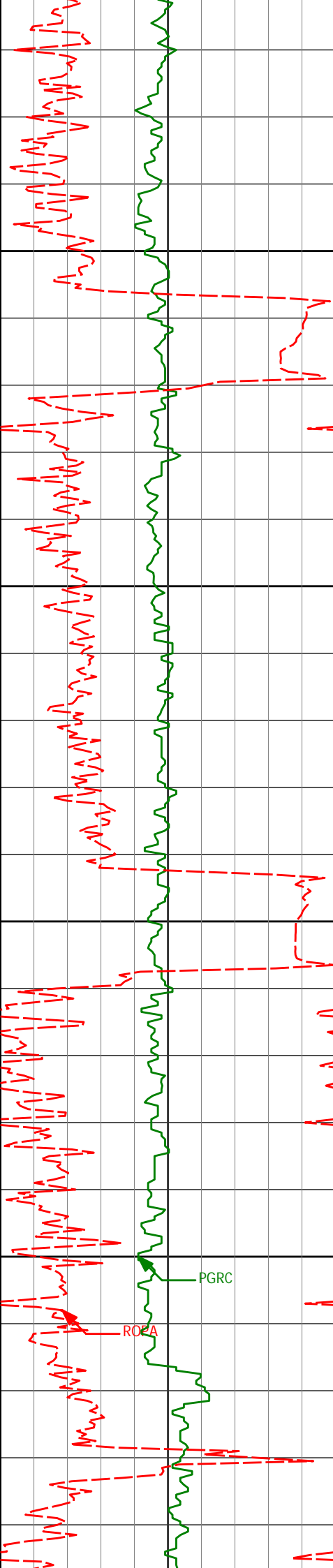
10.17°

197.12°

5730.53'

-695.31'





5850

5900

5950

6000

5975'

10.79°

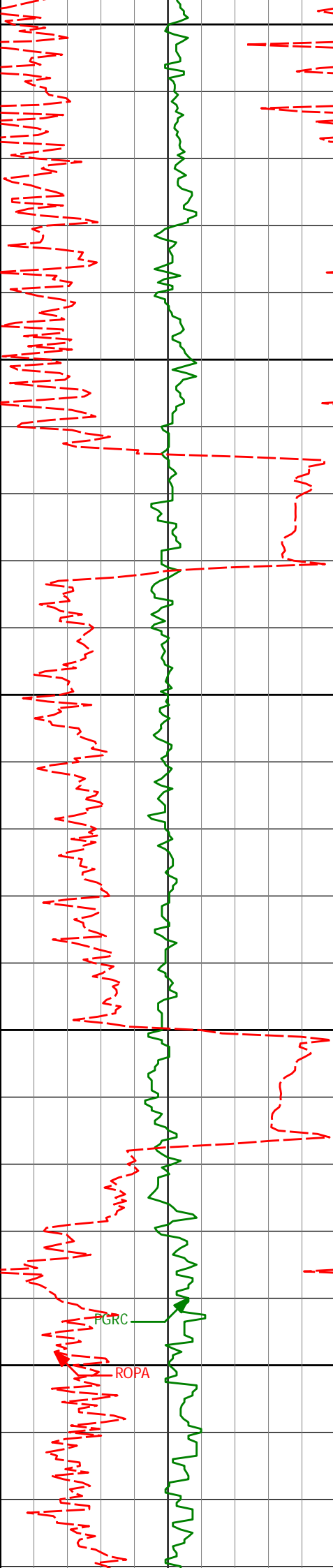
204.37°

5898.68'

-724.48'

PGRC

ROEA



6050

6100

6150

6200

6250

6147'

9.85°

211.84°

6067.90'

-751.86'

6232'

10.80°

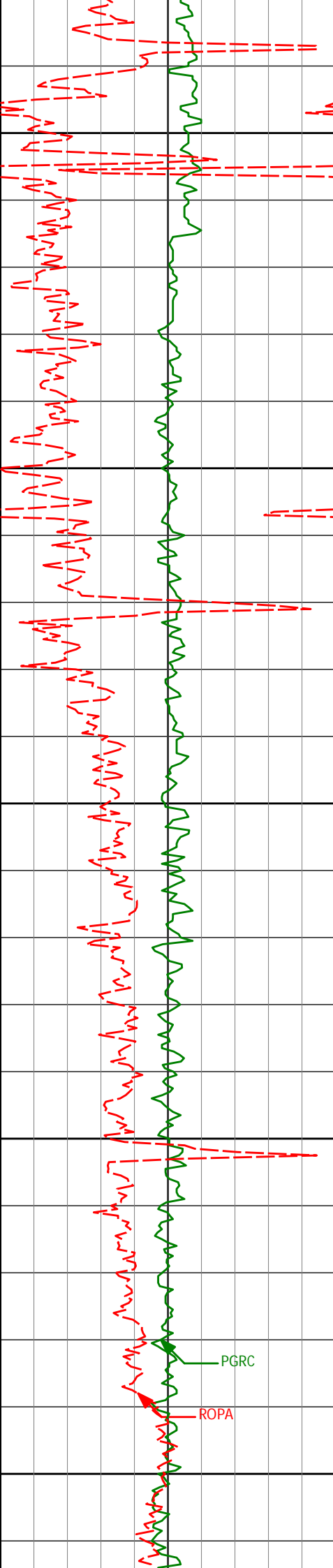
212.86°

6151.53'

-764.84'

PGRC

ROPA



6300

6350

6400

6450

6500

6318'

9.35°

210.63°

6236.20'

-777.74'

6404'

8.12°

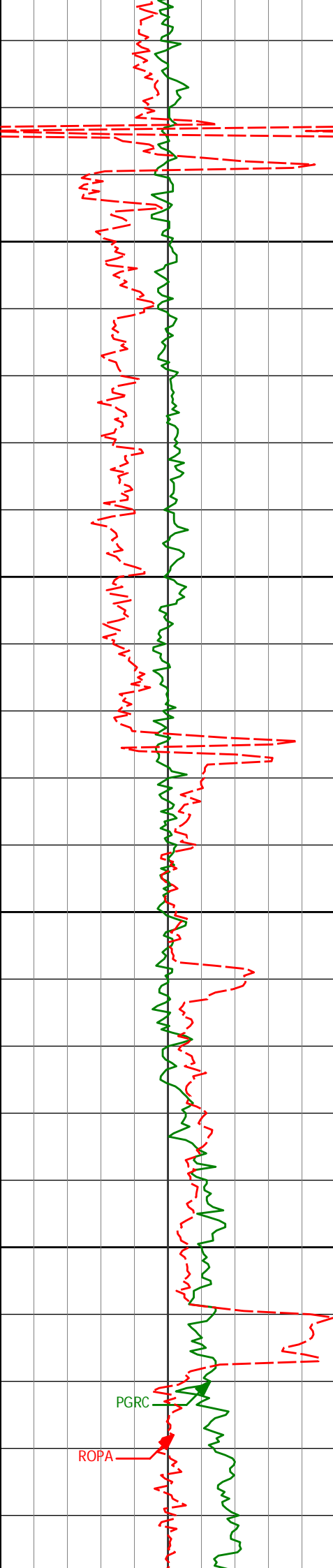
210.04°

6321.20'

-789.10'

PGRC

ROPA



6550

6600

6650

6700

6575'

6.44°

210.26°

6490.81'

-807.99'

PGRC

ROPA

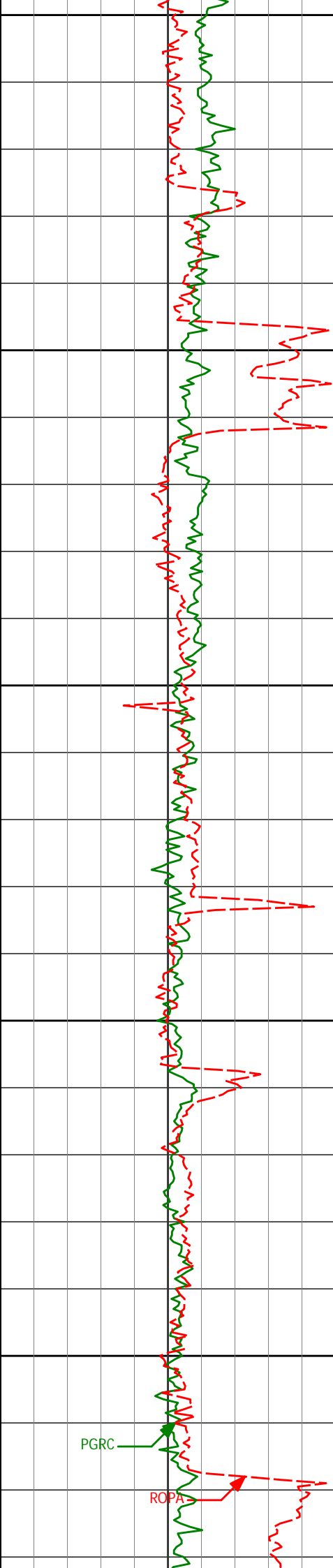
6747'

4.81°

214.95°

6661.98'

-822.36'



6750

6800

6850

6900

6950

6918'

2.73°

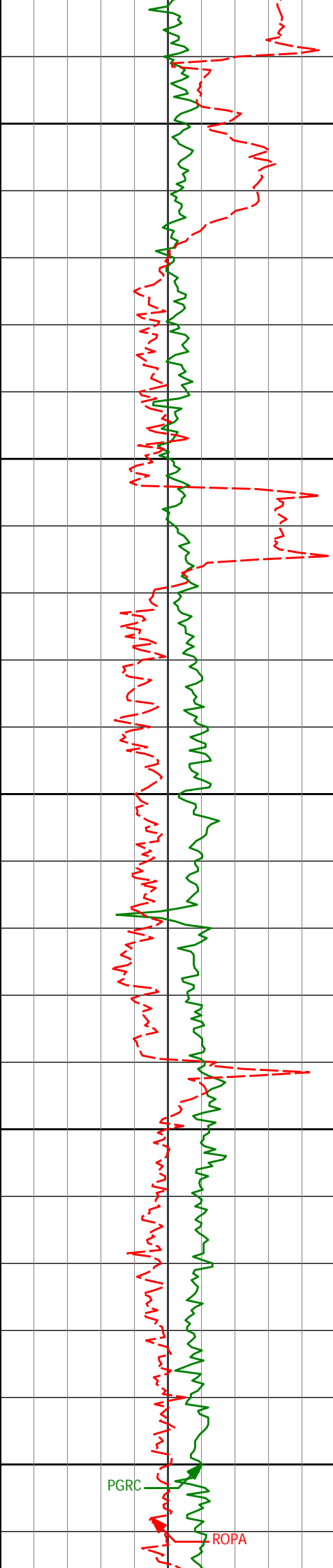
223.13°

6832.60'

-831.31'

PGRC

ROPA



7000

7050

7100

7150

7200

7090'

0.48°

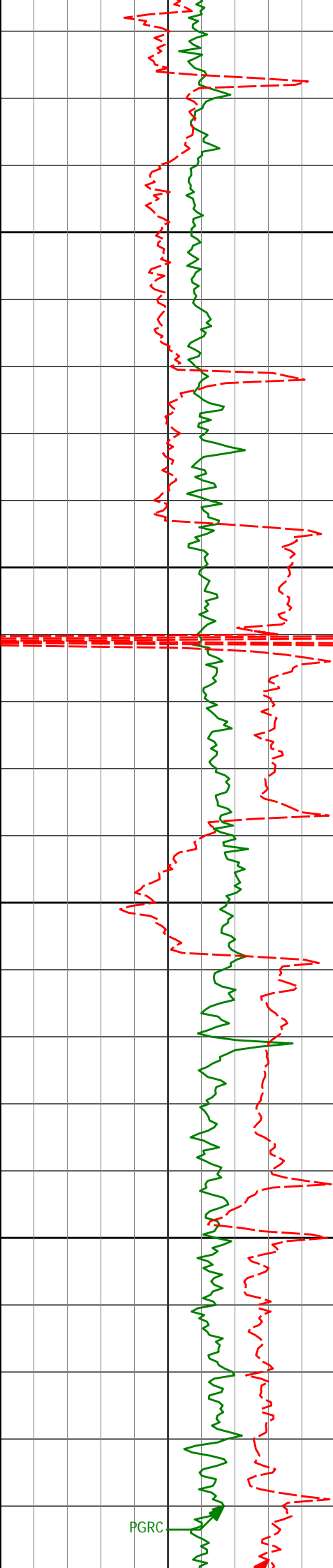
276.40°

7004.53'

-834.28'

PGRC

ROPA



7250

7261'

0.60°

212.57°

7175.52'

-834.97'

7300

7304'

1.93°

6.14°

7218.52'

-834.44'

7350

7347'

4.07°

6.70°

7261.46'

-832.20'

7400

7390'

7.26°

355.41°

7304.24'

-827.97'

7433'

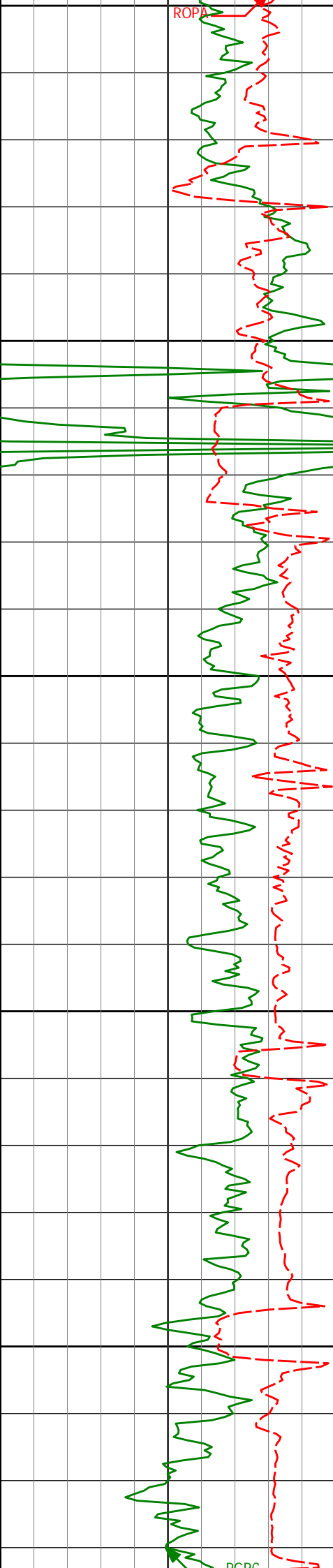
12.74°

353.52°

7346.57'

-820.56'

PGRC



7450

7476'

17.66°

357.81°

7388.06'

-809.33'

7500

7519'

20.36°

1.39°

7428.71'

-795.34'

7550

7561'

24.13°

0.91°

7467.57'

-779.44'

7600

7604'

28.92°

1.51°

7506.04'

-760.24'

7650

7647'

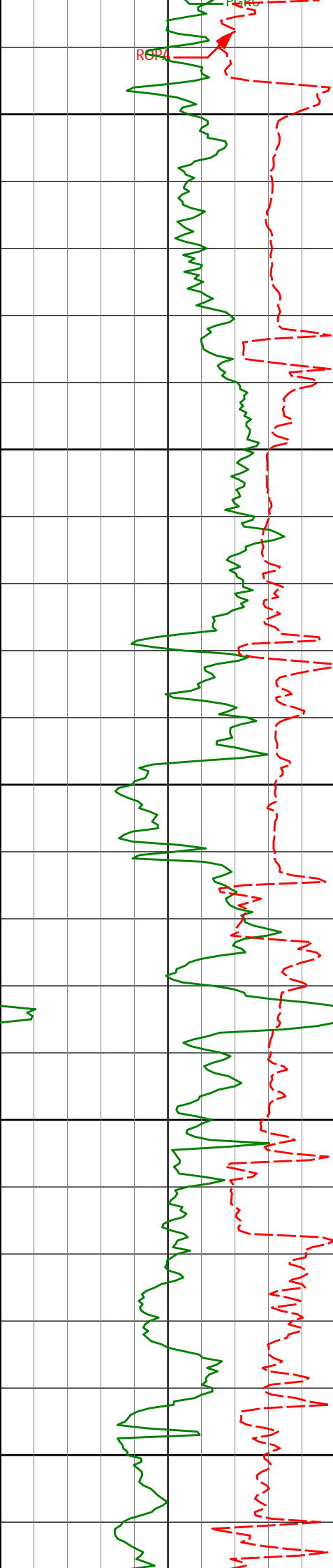
32.93°

2.51°

7542.92'

-738.15'





7700

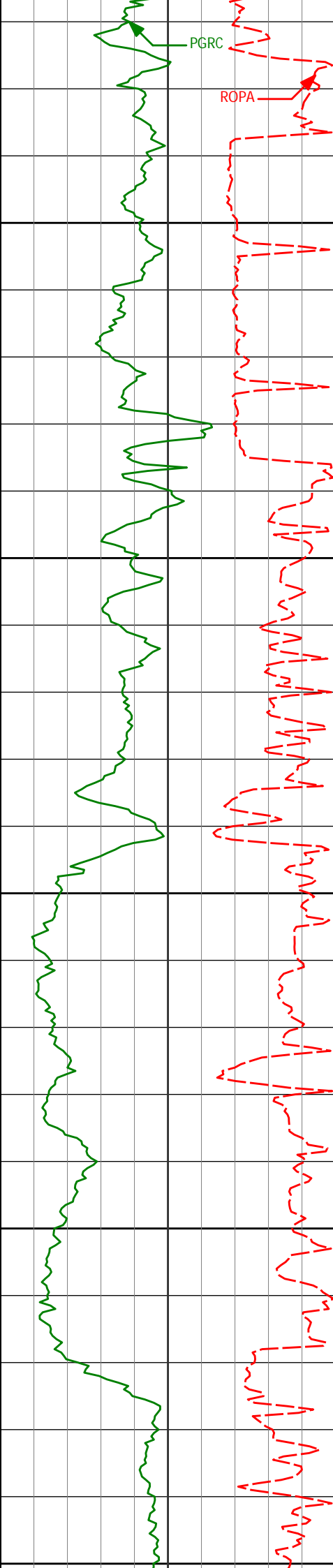
7750

7800

7850

7900

7690'	36.27°	2.81°	7578.31'	-713.75'
7733'	41.33°	6.15°	7611.81'	-686.88'
7776'	47.46°	6.28°	7642.52'	-656.95'
7819'	52.86°	4.10°	7670.06'	-624.04'
7862'	57.96°	2.57°	7694.46'	-588.68'
7905'	61.19°	2.45°	7716.23'	-551.63'



7950

7947'      62.93°      2.70°      7735.91'      -514.54'

8000

7990'      63.81°      1.48°      7755.19'      -476.11'

8050

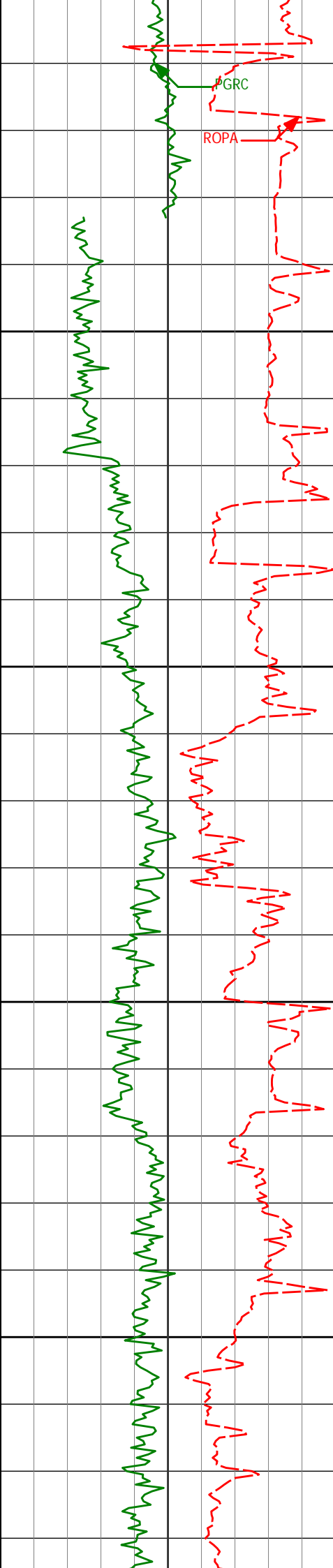
8033'      67.80°      359.78°      7772.81'      -436.90'

8100

8076'      73.51°      359.06°      7787.04'      -396.36'

8150

8119'      78.05°      359.94°      7797.60'      -354.70'



8162'

8188'

8200

8245'

8250

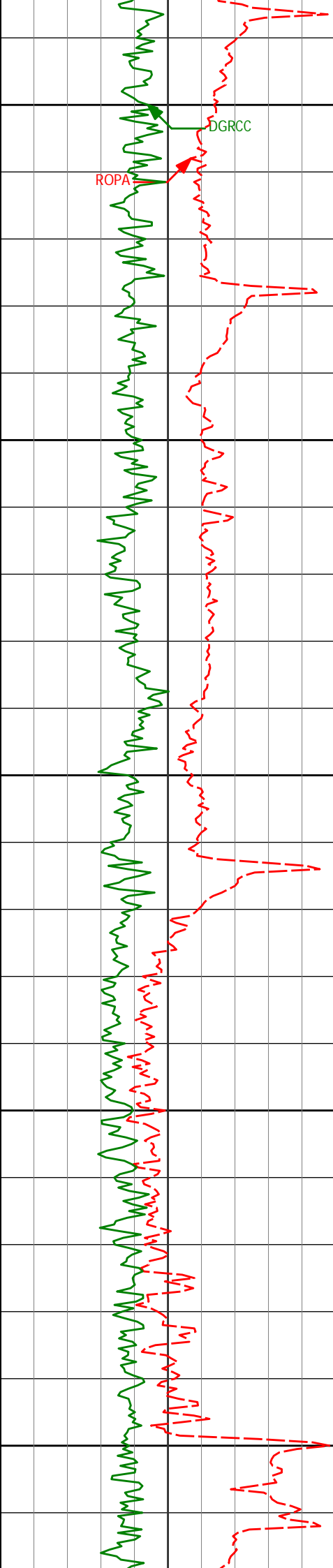
8300

8331'

8350

8374'

8162'	80.99°	359.81°	7805.42'	-312.42'
Switch from PCG to DGR				
8188'	84.88°	359.85°	7808.62'	-286.63'
8245'	88.70°	0.72°	7811.81'	-229.73'
8331'	90.31°	0.44°	7812.55'	-143.74'
8374'	90.43°	0.12°	7812.28'	-100.74'



8400

DGRCC

ROPA

8450

8459'

90.80°

0.74°

7811.36'

-15.75'

8500

8550

8600

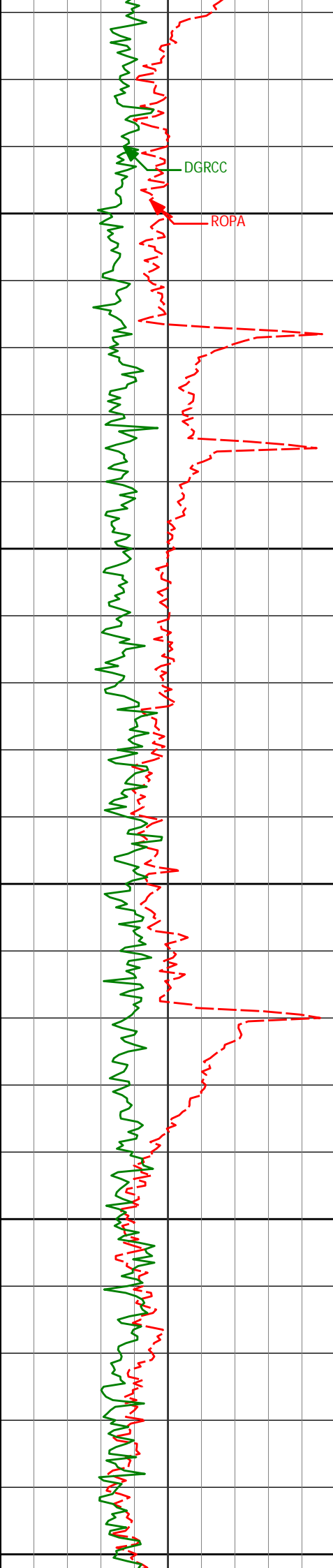
8545'

91.24°

0.83°

7809.83'

70.24'



8650

8700

8750

8800

8850

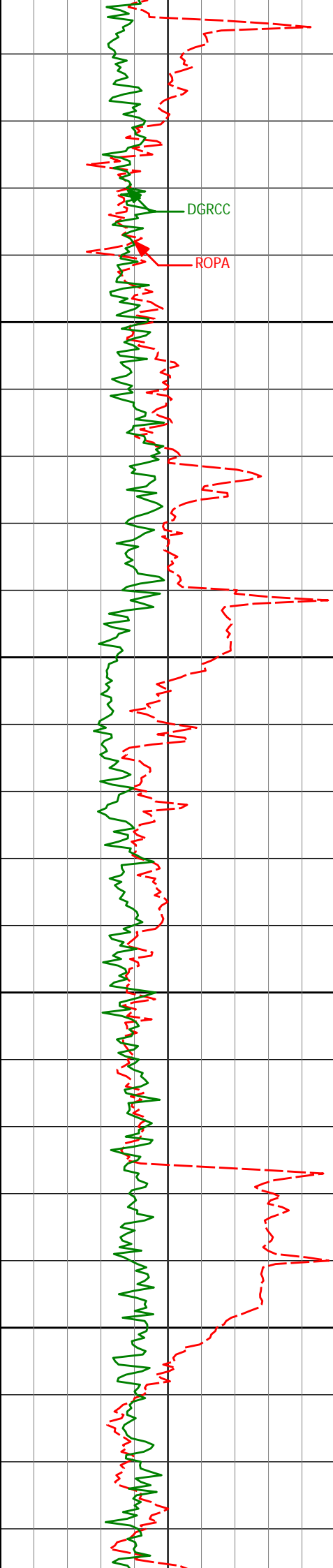
8716'

89.75°

359.75°

7808.35'

241.21'



8900

8950

9000

9050

8887'

89.75°

359.81°

7809.09'

412.18'

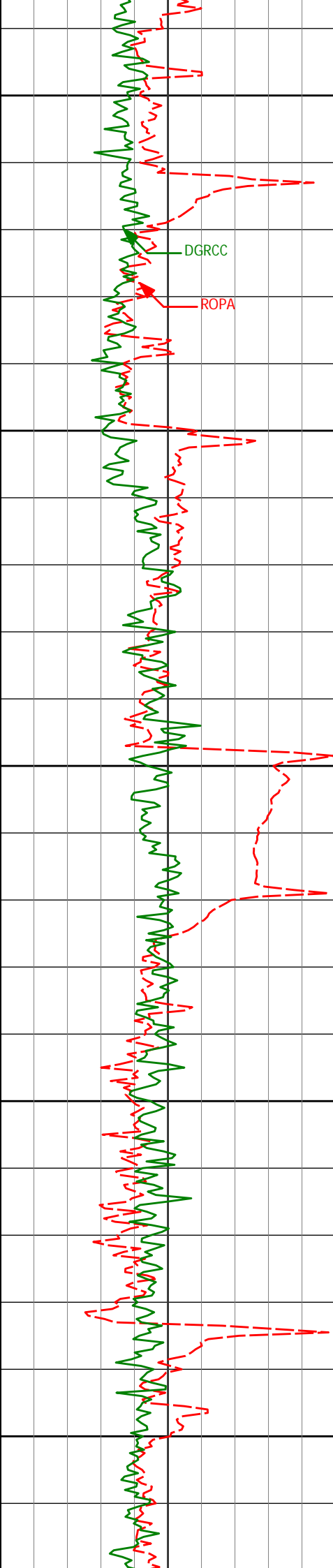
9059'

89.26°

358.72°

7810.58'

584.11'



9100

DGRCC

ROPA

9150

9200

9230'

90.12°

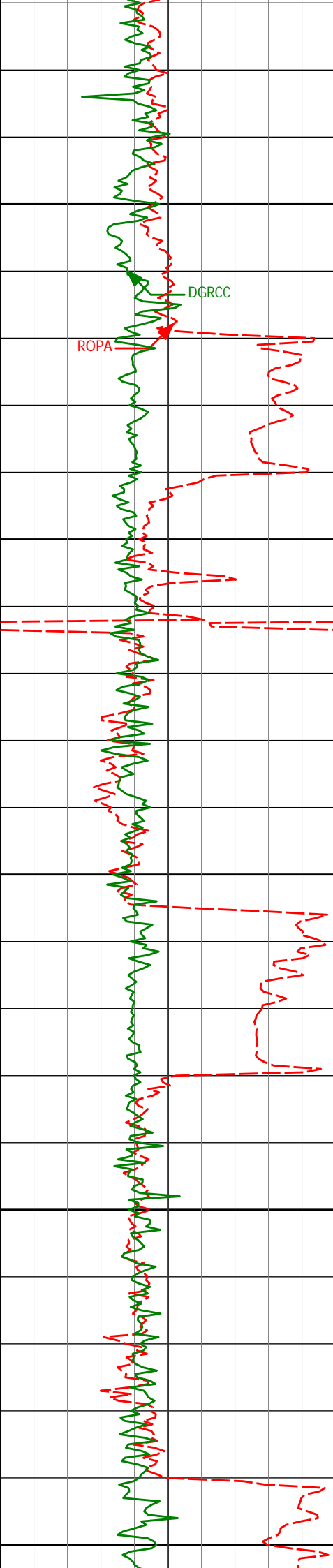
356.90°

7811.50'

754.86'

9250

9300



9350

9400

9450

9500

9550

9402'

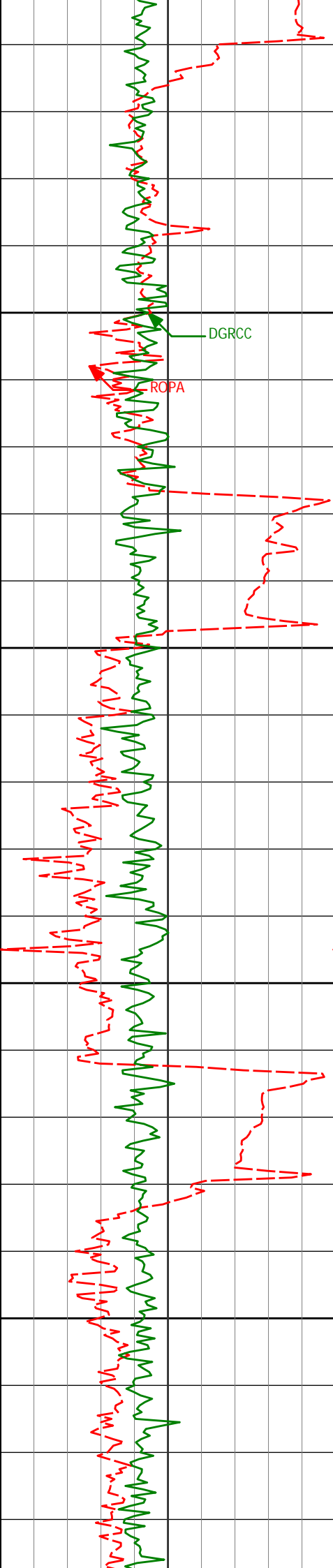
90.43°

355.58°

7810.66'

926.30'





9600

9650

9700

9750

9573'

90.12°

358.09°

7809.83'

1096.87'

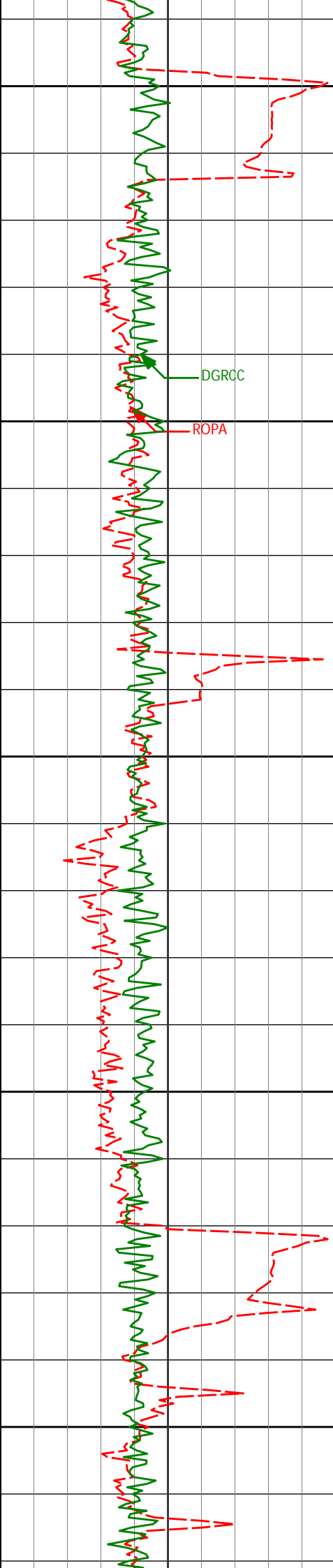
9745'

89.88°

1.36°

7809.83'

1268.82'



9800

9850

9900

9950

10000

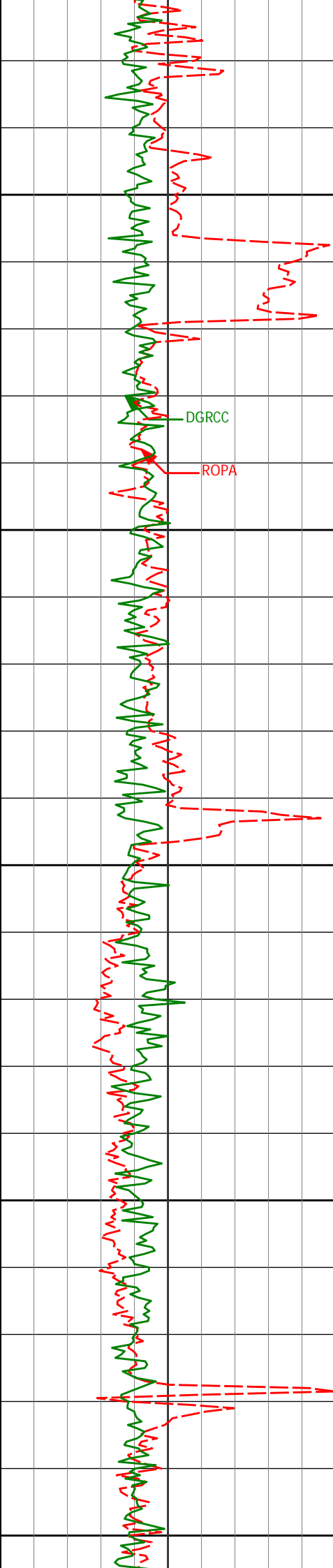
9916'

89.57°

2.39°

7810.66'

1439.78'



10050

10100

10150

10200

10250

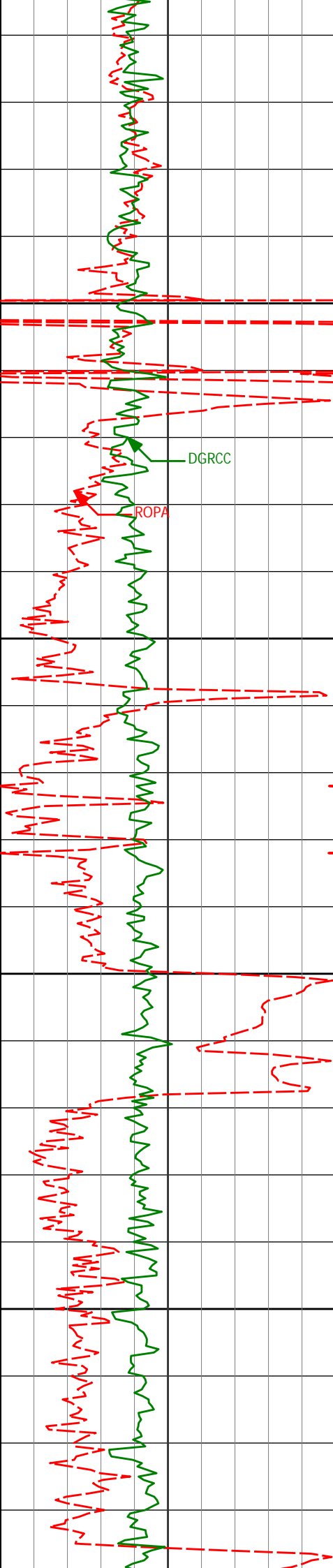
10088'

91.05°

2.10°

7809.74'

1611.72'



10259'

90.80°

1.10°

7806.97'

1782.68'

10300

DGRCC

ROPA

10350

10400

10431'

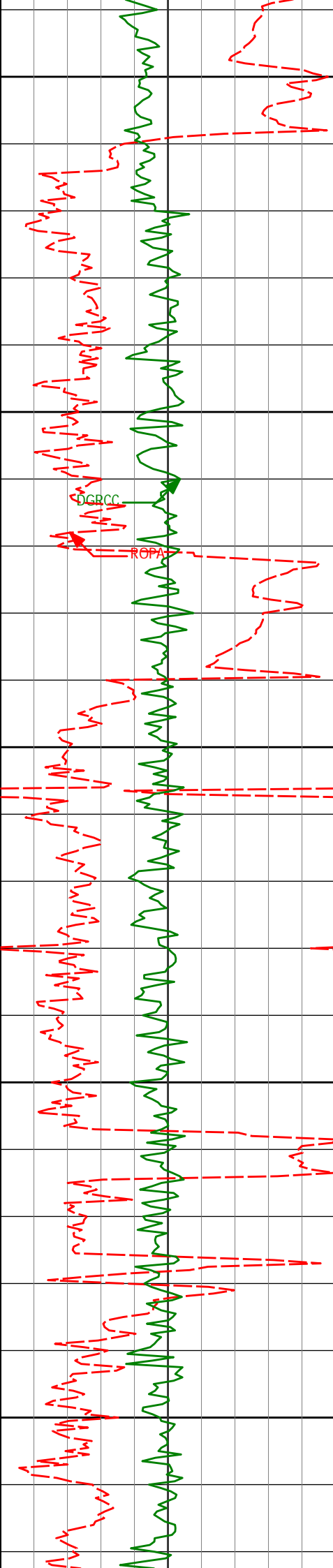
88.58°

1.18°

7807.90'

1954.67'

10450



10500

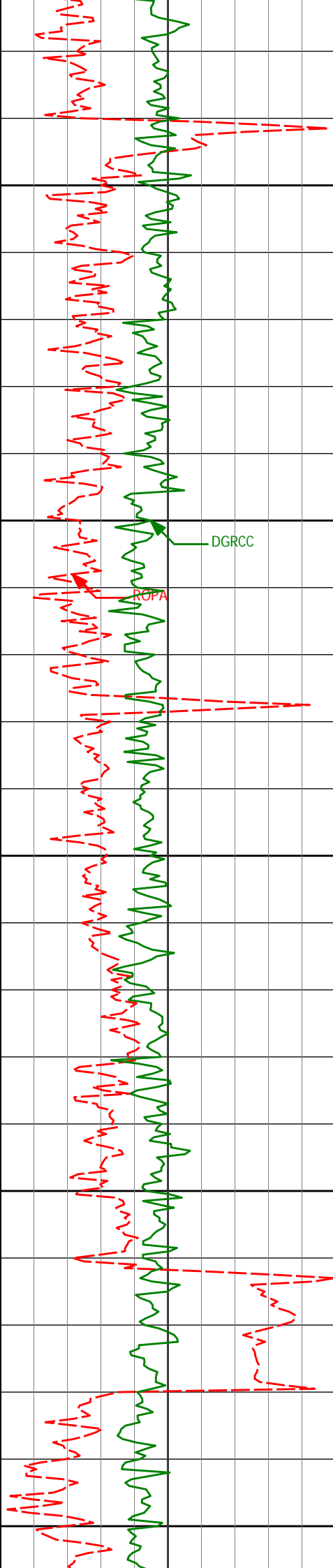
10550

10600

10650

10700

10602'	89.69°	3.60°	7810.48'	2125.57'
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10750

10774'

90.49°

3.35°

7810.20'

2297.39'

10800

DGRCC

ROFA

10850

10900

10950

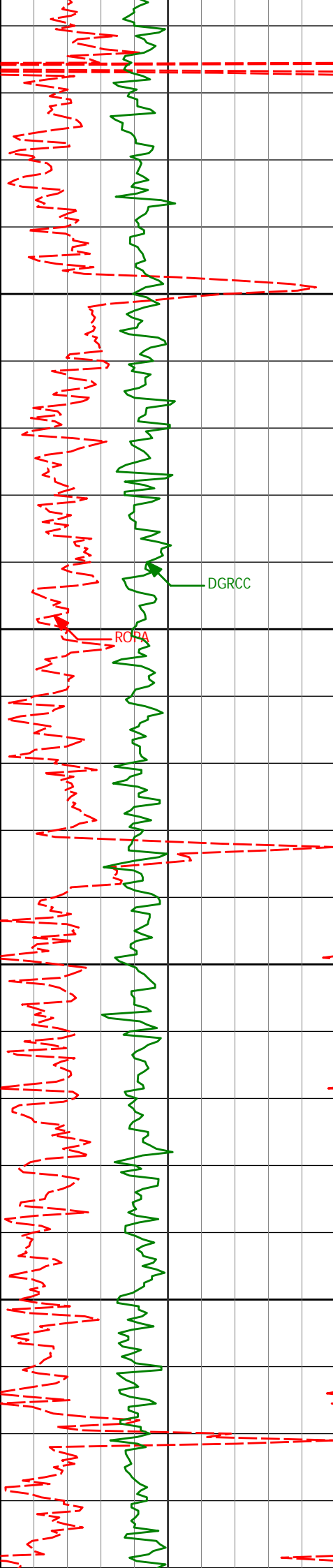
10945'

91.42°

3.38°

7807.34'

2468.19'



11000

11050

11100

11150

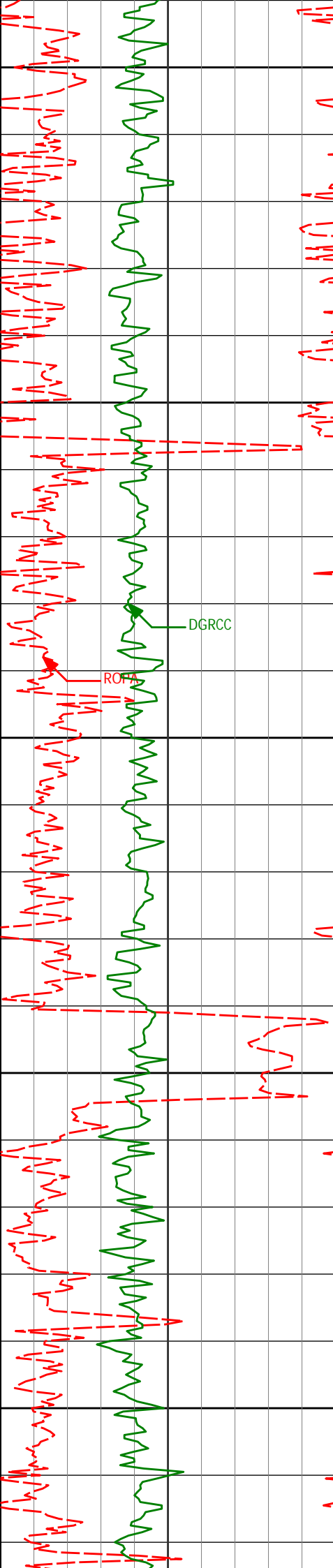
11117'

90.62°

3.06°

7804.28'

2640.01'



11200

11250

11300

11350

11400

DGRCC

RO

11288'

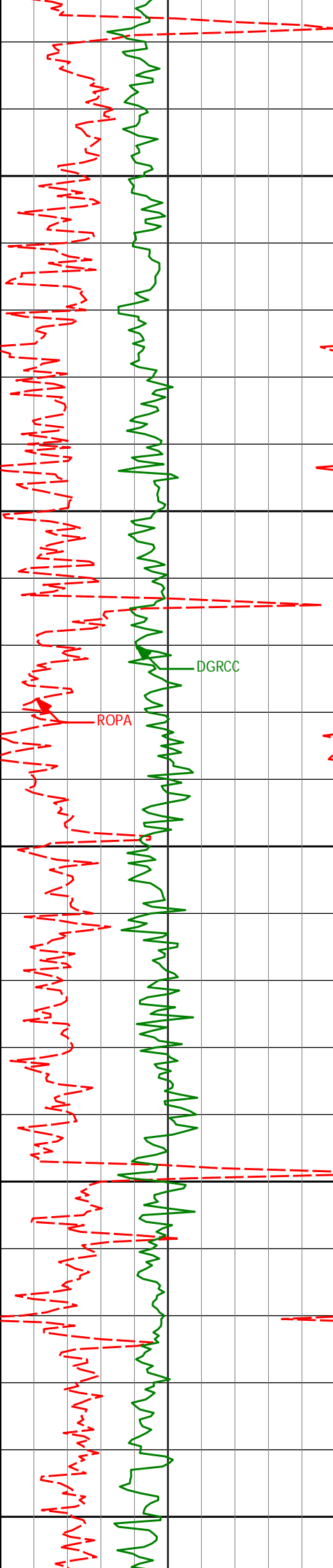
89.69°

1.87°

7803.82'

2810.94'





11450

11460'

90.80°

0.67°

7803.08'

2982.93'

11500

DGRCC

ROPA

11550

11600

11631'

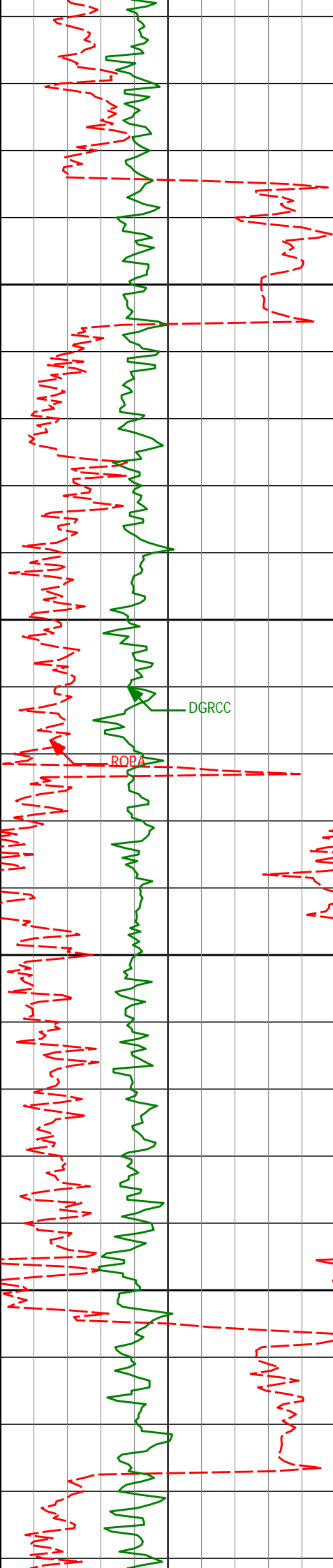
89.51°

1.09°

7802.62'

3153.92'

11650



11700

11750

11800

11850

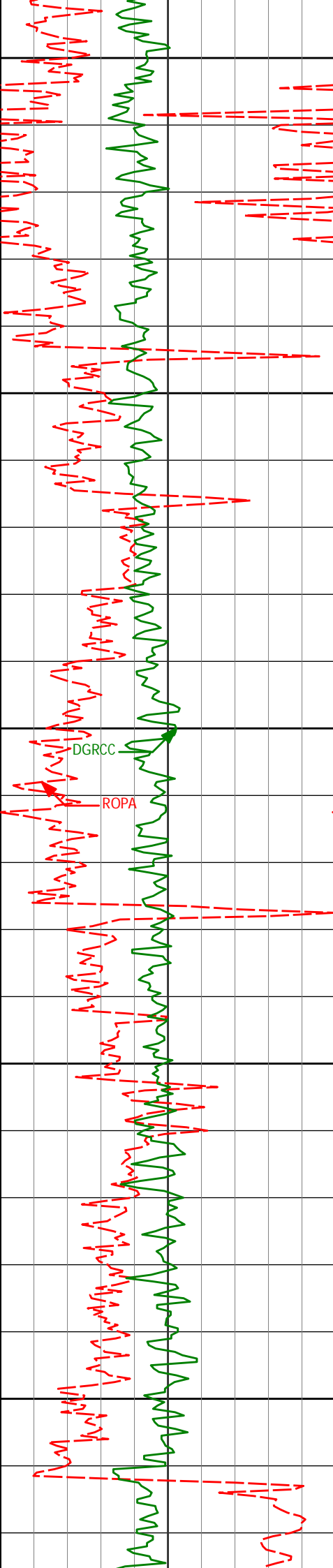
11802'

89.38°

0.96°

7804.27'

3324.91'



11900

11950

12000

12050

12100

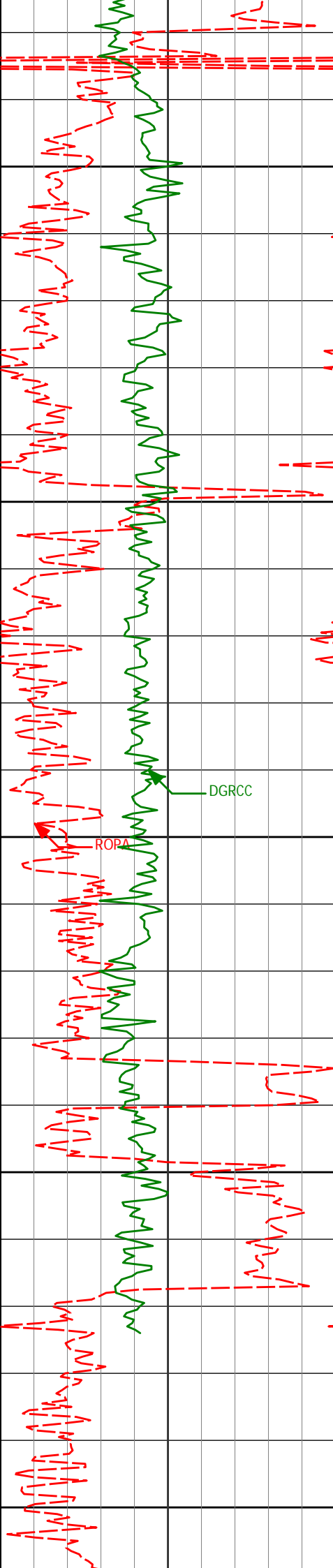
11973'

91.11°

0.38°

7803.54'

3495.90'



12150

12200

12250

12300

12350

12145'

89.94°

2.15°

7801.96'

3667.88'

DGRCC

ROPA

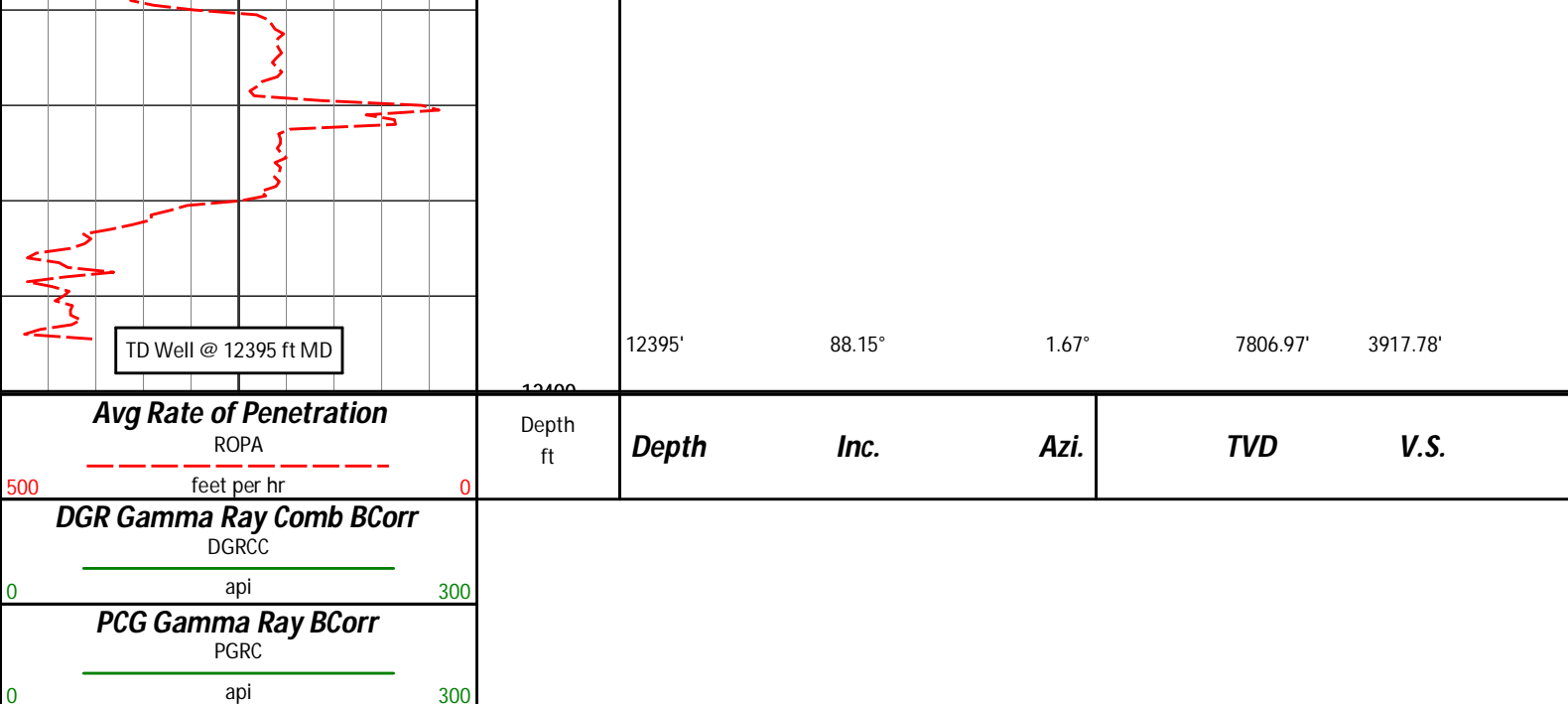
12342'

88.15°

1.67°

7805.25'

3864.81'



## HALLIBURTON

### DIRECTIONAL SURVEY REPORT

Anadarko Petroleum Corporation  
 UNDERHILL 2C-17HZ  
 Wattenberg  
 Weld Colorado  
 USA  
 CA-XX-0900550721

Measured Depth (feet)	Inclination (degrees)	Direction (degrees)	Vertical Depth (feet)	Latitude (feet)	Departure (feet)	Vertical Section (feet)	Dogleg (deg/100ft)
894.00	0.24	146.01	893.98	3.22 N	0.80 E	3.23	TIE-IN
1018.00	0.28	299.36	1017.98	3.15 N	0.68 E	3.16	0.41
1113.00	0.11	305.46	1112.98	3.32 N	0.41 E	3.33	0.18
1305.00	0.26	265.60	1304.98	3.39 N	0.19 W	3.39	0.10
1495.00	0.48	229.18	1494.97	2.84 N	1.22 W	2.82	0.16
1591.00	2.37	231.31	1590.94	1.34 N	3.08 W	1.29	1.98
1686.00	3.77	227.07	1685.80	2.02 S	6.90 W	-2.12	1.49
1779.00	6.39	221.70	1778.43	7.97 S	12.58 W	-8.15	2.86
1871.00	7.66	213.19	1869.74	16.93 S	19.35 W	-17.21	1.78
1962.00	9.77	207.47	1959.68	28.85 S	26.23 W	-29.23	2.50
2054.00	11.76	206.09	2050.06	44.20 S	33.95 W	-44.68	2.18
2146.00	11.44	205.57	2140.18	60.85 S	42.01 W	-61.45	0.36
2239.00	11.04	204.95	2231.40	77.24 S	49.75 W	-77.95	0.46
2330.00	10.74	203.42	2320.76	92.92 S	56.80 W	-93.73	0.45
2422.00	11.33	204.45	2411.06	109.02 S	63.94 W	-109.93	0.67
2514.00	10.61	204.08	2501.38	124.97 S	71.14 W	-125.99	0.79
2606.00	11.98	204.52	2591.59	141.39 S	78.55 W	-142.51	1.49
2791.00	10.35	201.55	2773.09	174.31 S	92.62 W	-175.63	0.93
2974.00	10.29	205.48	2953.13	204.35 S	105.69 W	-205.86	0.39
3158.00	11.50	211.59	3133.82	234.80 S	122.37 W	-236.55	0.91
3342.00	10.96	212.56	3314.30	265.17 S	141.39 W	-267.19	0.31
3526.00	11.35	206.28	3494.82	296.16 S	158.83 W	-298.43	0.69
3708.00	9.59	205.15	3673.78	325.95 S	173.21 W	-328.43	0.97
3891.00	11.77	206.22	3853.60	356.50 S	187.94 W	-359.19	1.20
4075.00	10.98	204.16	4033.99	389.33 S	203.40 W	-392.24	0.48
4257.00	10.47	201.67	4212.81	420.53 S	216.61 W	-423.62	0.38
4434.00	11.91	207.70	4386.44	451.66 S	231.04 W	-454.96	1.05
4605.00	11.10	205.27	4554.00	482.17 S	246.27 W	-485.69	0.55
4776.00	10.58	198.59	4721.96	511.94 S	258.31 W	-515.63	0.79
4947.00	12.84	202.96	4889.39	544.32 S	270.72 W	-548.19	1.42
5118.00	11.82	211.04	5056.46	576.83 S	287.17 W	-580.93	1.17
5289.00	10.91	209.15	5224.10	605.98 S	304.09 W	-610.32	0.58
5461.00	10.04	207.58	5393.23	633.48 S	318.96 W	-638.04	0.53
5632.00	10.83	205.10	5561.40	661.25 S	332.68 W	-666.00	0.53
5804.00	10.17	207.12	5730.53	689.42 S	344.84 W	-685.34	0.53

5804.00	10.17	197.12	5730.53	690.40 S	344.01 W	-695.31	0.93
5975.00	10.79	204.37	5898.68	719.42 S	355.06 W	-724.48	0.85
6147.00	9.85	211.84	6067.90	746.59 S	369.47 W	-751.86	0.95
6232.00	10.80	212.86	6151.53	759.45 S	377.62 W	-764.84	1.13
6318.00	9.35	210.63	6236.20	772.23 S	385.56 W	-777.74	1.74
6404.00	8.12	210.04	6321.20	783.50 S	392.16 W	-789.10	1.44
6575.00	6.44	210.26	6490.81	802.24 S	403.03 W	-807.99	0.98
6747.00	4.81	214.95	6661.98	816.48 S	412.02 W	-822.36	0.98
6918.00	2.73	223.13	6832.60	825.33 S	418.92 W	-831.31	1.25
7090.00	0.48	276.40	7004.53	828.24 S	422.44 W	-834.28	1.44
7261.00	0.60	212.57	7175.52	828.92 S	423.63 W	-834.97	0.34
7304.00	1.93	6.14	7218.52	828.39 S	423.68 W	-834.44	5.76
7347.00	4.07	6.70	7261.46	826.15 S	423.42 W	-832.20	4.98
7390.00	7.26	355.41	7304.24	821.92 S	423.46 W	-827.97	7.84
7433.00	12.74	353.52	7346.57	814.50 S	424.21 W	-820.56	12.75
7476.00	17.66	357.81	7388.06	803.26 S	425.00 W	-809.33	11.75
7519.00	20.36	1.39	7428.71	789.26 S	425.07 W	-795.34	6.83
7561.00	24.13	0.91	7467.57	773.36 S	424.75 W	-779.44	8.99
7604.00	28.92	1.51	7506.04	754.17 S	424.34 W	-760.24	11.14
7647.00	32.93	2.51	7542.92	732.09 S	423.55 W	-738.15	9.42
7690.00	36.27	2.81	7578.31	707.70 S	422.41 W	-713.75	7.76
7733.00	41.33	6.15	7611.81	680.87 S	420.27 W	-686.88	12.74
7776.00	47.46	6.28	7642.52	650.97 S	417.01 W	-656.95	14.27
7819.00	52.86	4.10	7670.06	618.10 S	414.05 W	-624.04	13.14
7862.00	57.96	2.57	7694.46	582.78 S	412.00 W	-588.68	12.22
7905.00	61.19	2.45	7716.23	545.74 S	410.38 W	-551.63	7.51
7947.00	62.93	2.70	7735.91	508.67 S	408.71 W	-514.54	4.18
7990.00	63.81	1.48	7755.19	470.26 S	407.31 W	-476.11	3.26
8033.00	67.80	359.78	7772.81	431.05 S	406.89 W	-436.90	9.96
8076.00	73.51	359.06	7787.04	390.50 S	407.30 W	-396.36	13.37
8119.00	78.05	359.94	7797.60	348.83 S	407.66 W	-354.70	10.75
8162.00	80.99	359.81	7805.42	306.55 S	407.75 W	-312.42	6.83
8188.00	84.88	359.85	7808.62	280.75 S	407.83 W	-286.63	14.97
8245.00	88.70	0.72	7811.81	223.85 S	407.55 W	-229.73	6.88
8331.00	90.31	0.44	7812.55	137.86 S	406.69 W	-143.74	1.90
8374.00	90.43	0.12	7812.28	94.86 S	406.48 W	-100.74	0.79
8459.00	90.80	0.74	7811.36	9.87 S	405.83 W	-15.75	0.85
8545.00	91.24	0.83	7809.83	76.11 N	404.65 W	70.24	0.51
8716.00	89.75	359.75	7808.35	247.09 N	403.78 W	241.21	1.07
8887.00	89.75	359.81	7809.09	418.09 N	404.44 W	412.18	0.03
9059.00	89.26	358.72	7810.58	590.06 N	406.66 W	584.11	0.70
9230.00	90.12	356.90	7811.50	760.93 N	413.21 W	754.86	1.18
9402.00	90.43	355.58	7810.66	932.55 N	424.49 W	926.30	0.78
9573.00	90.12	358.09	7809.83	1103.27 N	433.92 W	1096.87	1.48
9745.00	89.88	1.36	7809.83	1275.25 N	434.74 W	1268.82	1.90
9916.00	89.57	2.39	7810.66	1446.15 N	429.15 W	1439.78	0.63
10088.00	91.05	2.10	7809.74	1618.01 N	422.40 W	1611.72	0.88
10259.00	90.80	1.10	7806.97	1788.92 N	417.63 W	1782.68	0.60
10431.00	88.58	1.18	7807.90	1960.87 N	414.20 W	1954.67	1.29
10602.00	89.69	3.60	7810.48	2131.69 N	407.08 W	2125.57	1.56
10774.00	90.49	3.35	7810.20	2303.37 N	396.67 W	2297.39	0.49
10945.00	91.42	3.38	7807.34	2474.05 N	386.64 W	2468.19	0.54
11117.00	90.62	3.06	7804.28	2645.75 N	376.98 W	2640.01	0.50
11288.00	89.69	1.87	7803.82	2816.59 N	369.63 W	2810.94	0.88
11460.00	90.80	0.67	7803.08	2988.54 N	365.81 W	2982.93	0.95
11631.00	89.51	1.09	7802.62	3159.51 N	363.18 W	3153.92	0.80
11802.00	89.38	0.96	7804.27	3330.48 N	360.14 W	3324.91	0.10
11973.00	91.11	0.38	7803.54	3501.46 N	358.15 W	3495.90	1.07
12145.00	89.94	2.15	7801.96	3673.40 N	354.37 W	3667.88	1.23
12342.00	88.15	1.67	7805.25	3870.25 N	347.81 W	3864.81	0.94
12395.00	88.15	1.67	7806.97	3923.20 N	346.27 W	3917.78	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 0.83 DEGREES (TRUE)  
A TOTAL CORRECTION OF 8.65 DEG FROM MAGNETIC NORTH TO TRUE NORTH HAS BEEN APPLIED**

**HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.  
HORIZONTAL DISPLACEMENT(CLOSURE) AT 12395.00 FEET  
IS 3938.46 FEET ALONG 354.96 DEGREES (TRUE)**

