

**PCD-C Pressure Case Directional
PCG-K Pressure Case Gamma**

1 : 240

| | | | |
|--|---------------------------------------|-------------|---------------------|
| Country : USA | | | |
| Field : Wattenberg | | | |
| Location : Lat: 40° 7' 42.64" North Long: 104° 49' 57.15" West | | | |
| Well : Gee 26C-12HZ | | | |
| Company : APC | | | |
| Rig : HP 308 | | | |
| LOCATION | | | |
| Latitude : 40° 7' 42.64" North Longitude : 104° 49' 57.15" West | | | |
| UTM Easting = 3,186,636.719 ft UTM Northing = 1,290,362.815 ft | | | |
| Company : APC Rig : HP 308 Well : Gee 26C-12HZ Field : Wattenberg Country : USA API Number : 05-123-39234 | | | |
| Other Services Directional Drilling | | | |
| Permanent Datum : Ground Level | Elevation : 4858.00 ft | | |
| Log Measured From : Drill Floor | 25.00 ft Above Permanent Datum | | |
| Drilling Measured From : Drill Floor | MD LOG | | |
| Depth Logged : 1,089.00 ft To 18,057.00 ft | Unit No. : 11581670 | | |
| Date Logged : 19-Nov-14 To 25-Dec-14 | Job No. : CA-XX-0901807945 | | |
| Total Depth MD : 18,057.00 ft TVD : 7,404.24 ft | Plot Type : Final | | |
| Spud Date : 17-Nov-14 | Plot Date : 25-Dec-14 | | |
| Borehole Record (MD) | | | |
| Run No. | Size | From | To |
| 0100 | 8.750 in | 1,089.00 ft | 7,812.00 ft |
| 0200 | 6.125 in | 7812.00 ft | 12500.00 ft |
| 0300 | 6.125 in | 12500.00 ft | 18,057.00 ft |
| Casing Record (MD) | | | |
| Run No. | Size | From | To |
| | 9.625 in | 36.00 lbpf | SURFACE 1,089.00 ft |
| | 7.000 in | 24.00 lbpf | SURFACE 7,802.00 ft |

WELL INFORMATION

| | | | | | |
|----------------------------------|------------------|-------------------|-------------------|--|--|
| MWD Run Number | 100 | 200 | 300 | | |
| Date run completed | 21-Nov-14 | 22-Dec-14 | 22-Dec-14 | | |
| Rig Bit Number | 0100 | 0200 | 0300 | | |
| Bit Size (in) | 8.750 | 6.125 | 6.125 | | |
| Tool Nominal OD (in) | 6.750 | 4.750 | 4.750 | | |
| Log Start Depth (MD, ft) | 1,089.00 | 7,812.00 | 12,500.00 | | |
| Log End Depth (MD, ft) | 7,812.00 | 12,500.00 | 18,057.00 | | |
| Drill or Wipe | Drill | Drill | Drill | | |
| Drill/Wipe Start Date and Time | 19-Nov-14 11:30 | 20-Dec-14 13:00 | 22-Dec-14 03:20 | | |
| Drill/Wipe End Date and Time | 21-Nov-14 08:30 | 22-Dec-14 03:00 | 22-Dec-14 03:20 | | |
| Min Inc (deg) @ Depth (MD, ft) | 0.36 @ 5,863.00 | 87.16 @ 7,917.00 | 88.37 @ 17,794.00 | | |
| Max Inc (deg) @ Depth (MD, ft) | 88.80 @ 7,812.00 | 91.48 @ 12,417.00 | 91.66 @ 16,663.00 | | |
| Bit TFA(in2) / Bit Type | 1.74 / PDC | 1.53 / PDC | 1.53 / PDC | | |
| Flow Rate (gpm) | 585.00 | 275.00 | 260.00 | | |
| Max AV (fpm) / CV (fpm) @ MWD | 550.0 / 500.0 | 452.0 / 452.0 | 427.0 / 427.0 | | |
| Fluid Type | Polymer | Mineral Oil Bas | Mineral Oil Bas | | |
| Density (ppg) / Viscosity (spqt) | 9.60 / 54.00 | 9.00 / 51.00 | 9.30 / 52.00 | | |
| Filtrate CL (ppm) | 800.00 | 25.00 | 24.71 | | |
| pH / Fluid Loss (mptm) | 9.70 / 12 | N/A / N/A | N/A / N/A | | |
| PV (cP) / YP (Ihf2) | 20 / 25.00 | 16 / 12.00 | 17 / 11.00 | | |
| % Solids / % Sand | 0.36 / 0.1 | 5.4 / 0.1 | 6.2 / 0.1 | | |
| % Oil / Oil:Water Ratio | N/A / N/A | 94.6 / 60:39 | 94 / 54:34 | | |
| Rm @ Measured Temp (degF) | N/A @ N/A | N/A @ N/A | N/A @ N/A | | |
| Rmf @ Measured Temp (degF) | N/A @ N/A | N/A @ N/A | N/A @ N/A | | |
| Rmc @ Measured Temp (degF) | N/A @ N/A | N/A @ N/A | N/A @ N/A | | |

| | | | | | |
|-------------------------------|--------------|--------------|----------------|--|--|
| Max Tool Temp (degF) / Source | 177.64 / PCM | 231.42 / PCM | 259.80 / 259.8 | | |
| Rm @ Max Tool Temp (degF) | N/A @ N/A | N/A @ N/A | N/A @ N/A | | |
| Lead MWD Engineer | Adam Sampson | James Ramsay | James Ramsay | | |
| Customer Representative | Jeremy Wilde | Jeremy Wilde | Jeremy Wilde | | |

SENSOR INFORMATION

Downhole Processor Information

| | | | | | |
|---------------------------|-----------------|-----------------|-----------------|--|--|
| Tool Type | PCM | PCM | PCM | | |
| Software Version | 5.93 | 5.93 | 5.93 | | |
| Sub Serial Number | 11341333 | 12301678 | 12301678 | | |
| Insert Serial Number | 11400850 | 11619996 | 11145513 | | |
| Date and Time Initialized | 18-Nov-14 10:15 | 19-Dec-14 11:51 | 22-Dec-14 05:36 | | |
| Date and Time Read | 18-Nov-14 09:45 | 22-Dec-14 08:00 | 25-Dec-14 14:43 | | |
| ECMB SW Version | N/A | N/A | N/A | | |

Directional Sensor Information

| | | | | | |
|------------------------|----------|----------|----------|--|--|
| Tool Type | PCDC | PCDC | PCDC | | |
| Distance From Bit (ft) | 46.00 | 48.00 | 48.00 | | |
| Software Version | 6.21 | 6.33 | 6.33 | | |
| Sub Serial Number | 11341333 | 12301678 | 12301678 | | |
| Sonde Serial Number | 11902154 | 11297491 | 11638628 | | |
| Sensor ID Number | N/A | N/A | N/A | | |
| Toolface Offset (deg) | 319.60 | 59.21 | 242.24 | | |

Gamma Ray Sensor Information

| | | | | | |
|------------------------------|----------|----------|----------|--|--|
| Tool Type | PCG | PCG | PCG | | |
| Distance From Bit (ft) | 48.71 | 50.77 | 50.67 | | |
| Recorded Sample Period (sec) | 10 | 10 | 10 | | |
| Software Version | 8.15 | 8.15 | 8.15 | | |
| Sub Serial Number | 11341333 | 12301678 | 12301678 | | |
| Insert/Sonde Serial Number | 11293319 | 11579829 | 11293322 | | |

REMARKS

1. All depths are measured bit depths referenced to the Driller's pipe tally and are measured from the Drill Floor, unless otherwise specified.
2. No depth corrections have been made for pipe stretch or compression.
3. All data presented is recorded data unless otherwise specified
4. The following smoothing parameters have been applied to the data:
PGRC (Corrected Gamma Ray):
Interval Resolution: 0.5 ft
Interval Distance: 0.6 ft
Gap Fill: 3.0 ft

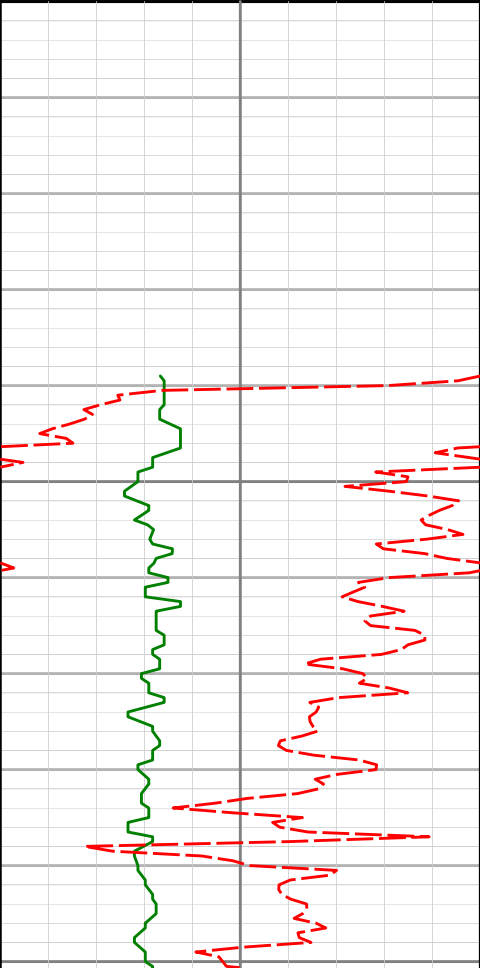
ROPA (Average Rate of Penetration):
Interval Resolution: 0.5 ft
Interval Distance: 1.2 ft
Gap Fill : 3.0 ft
5. INSITE version 8.0.20
6. Gap in data due to casing interference.

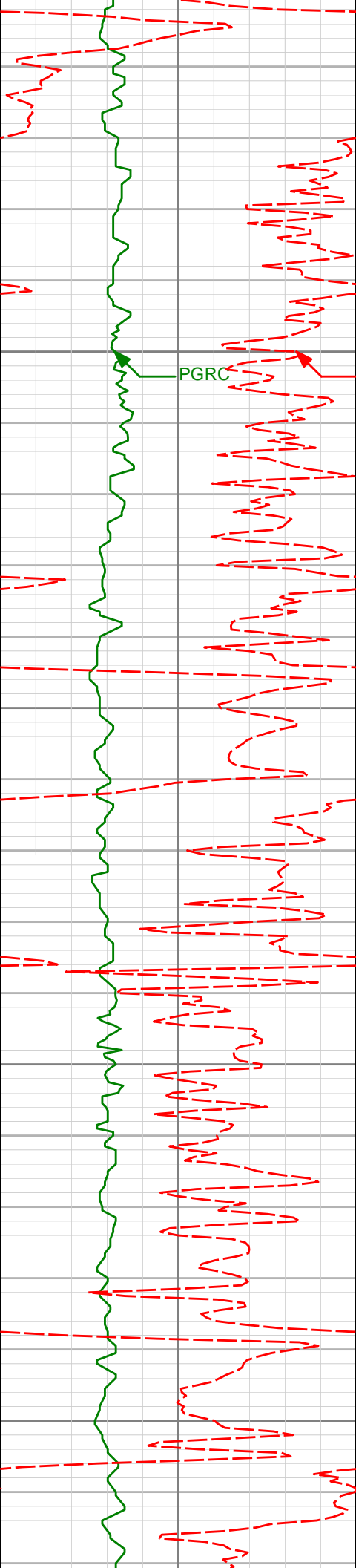
WARRANTY

HALLIBURTON WILL USE ITS BEST EFFORTS TO FURNISH CUSTOMERS WITH ACCURATE INFORMATION AND INTERPRETATION; THAT ARE PART OF, AND INCIDENT TO, THE SERVICES PROVIDED. HOWEVER, HALLIBURTON CANNOT AND DOES NOT WARRANT THE ACCURACY OR CORRECTNESS OF SUCH INFORMATION AND INTERPRETATIONS. UNDER NO CIRCUMSTANCES SHOULD ANY SUCH INFORMATION OR INTERPRETATION BE RELIED UPON AS THE SOLE BASIS FOR ANY DRILLING, COMPLETION, PRODUCTION, OR FINANCIAL DECISION OR ANY PROCEDURE INVOLVING ANY RISK TO THE SAFETY OF ANY DRILLING VENTURE, DRILLING RIG OR ITS CREW OR ANY OTHER THIRD PARTY. THE CUSTOMER HAS FULL RESPONSIBILITY FOR ALL DRILLING, COMPLETION AND PRODUCTION OPERATION. HALLIBURTON MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO THE SERVICES RENDERED. IN NO EVENT WILL HALLIBURTON BE LIABLE FOR FAILURE TO OBTAIN ANY PARTICULAR RESULTS OR FOR ANY DAMAGES, INCLUDING, BUT NOT LIMITED TO, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES, RESULTING FROM THE USE OF ANY INFORMATION OR INTERPRETATION PROVIDED BY HALLIBURTON.

HALLIBURTON

APC
Gee 16N-25HZ
Wattenberg
Weld Colorado
USA
1:240 MD Detail Log

| | | | | | |
|---|----------|-------|---------|----------|--------|
| PCG Gamma Ray BCorr (PGRC) api | | | | | |
| 0300 | | | | | |
| Avg Rate of Penetration (ROPA) feet per hr | MD ft | Depth | Inc | Azi | TVD |
| 5000 | | | | | V/S |
|  | 1050 | | | | |
| | Run 100 | | | | |
| | 1100 | | | | |
| | 1117' | 0.59° | 189.34° | 1116.99' | -2.29' |
| | 1150 | | | | |



PGRC

ROPA

1200

1250

1300

1350

1212'

0.62°

211.44°

1211.98'

-3.22'

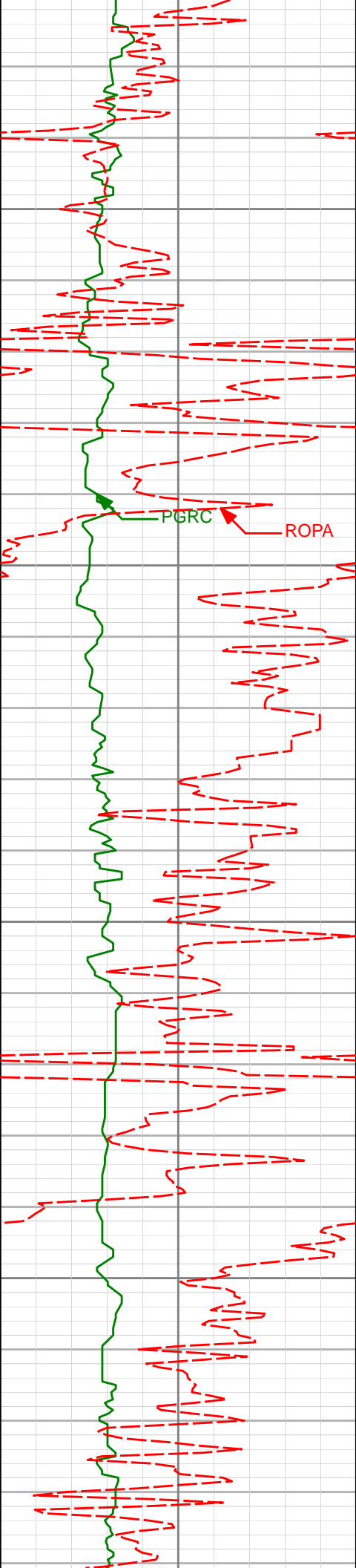
1307'

1.48°

140.65°

1306.97'

-4.60'



1400

1401'

3.87°

117.20°

1400.86'

-6.91'

1450

1500

1550

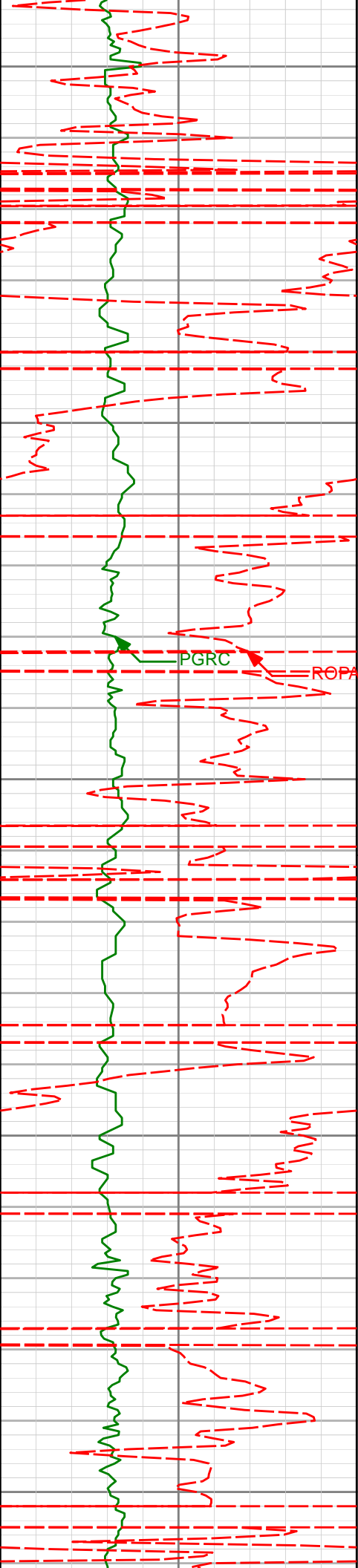
1496'

5.10°

118.73°

1495.57'

-10.28'



1600

1650

1700

1750

1800

1681'

7.54°

123.84°

1679.38'

-20.51'

1773'

9.12°

126.86°

1770.41'

-28.03'

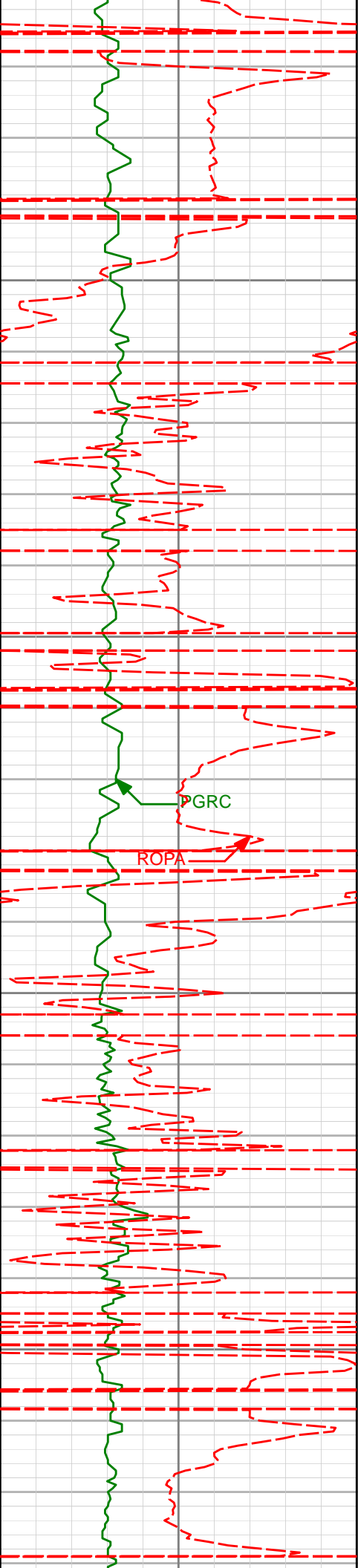
1591'

6.61°

119.67°

1590.07'

-14.85'



1850

1864'

11.37°

120.76°

1859.96'

-36.67'

1900

PGRC

ROPA

1950

1957'

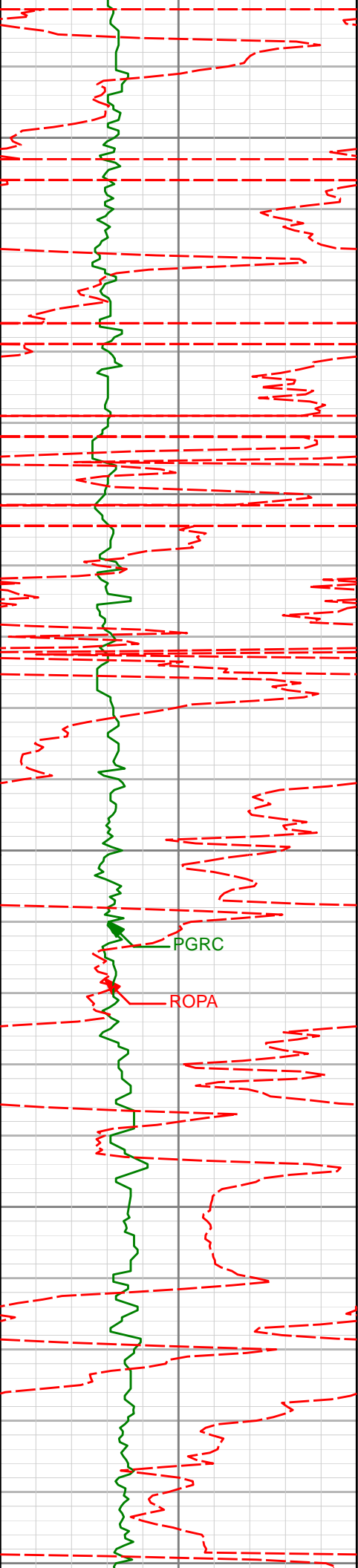
12.35°

113.35°

1950.98'

-44.96'

2000



| | | | | | |
|------|-------|--------|---------|----------|---------|
| 2050 | 2049' | 13.61° | 109.68° | 2040.62' | -52.13' |
|------|-------|--------|---------|----------|---------|

2100

| | | | | | |
|--|-------|--------|---------|----------|---------|
| | 2141' | 16.32° | 101.96° | 2129.51' | -58.00' |
|--|-------|--------|---------|----------|---------|

2150

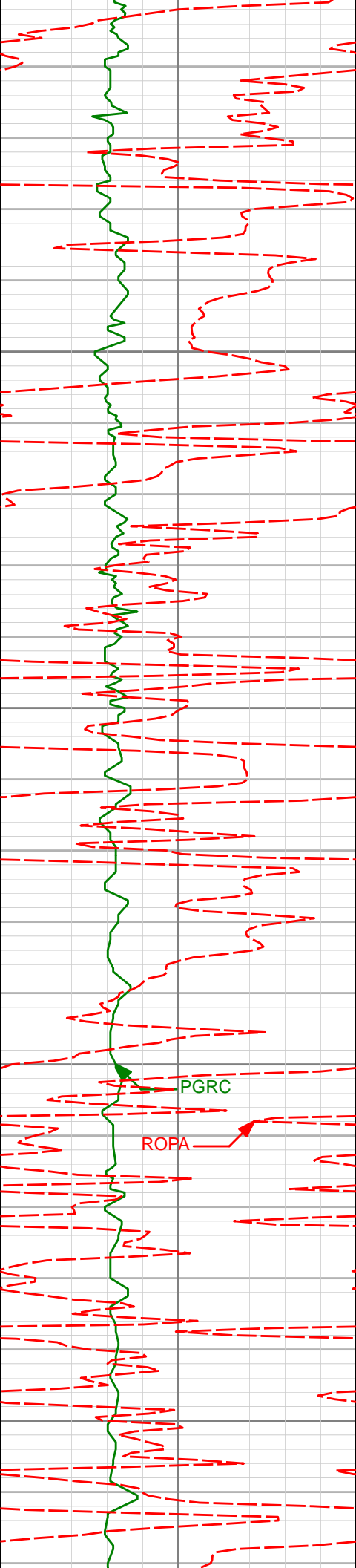
PGRC

ROPA

2200

| | | | | | |
|--|-------|--------|---------|----------|---------|
| | 2234' | 18.97° | 100.25° | 2218.12' | -62.84' |
|--|-------|--------|---------|----------|---------|

2250



2300

2350

2400

2450

2326'

20.63°

98.37°

2304.68'

-67.25'

PGRC

ROPA

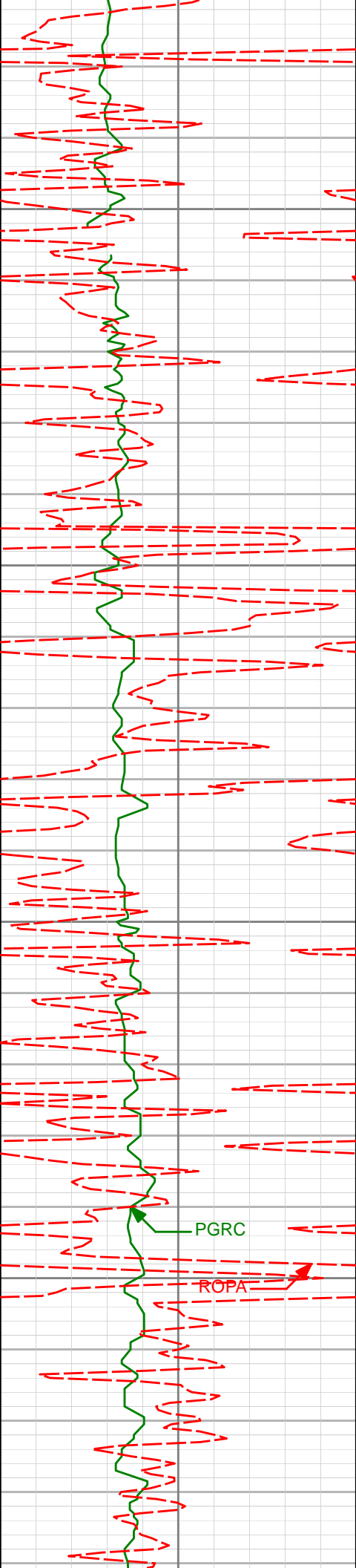
2419'

22.35°

92.23°

2391.22'

-69.65'



2500

2511'

20.91°

90.84°

2476.74'

-69.90'

2550

2600

2602'

21.69°

87.88°

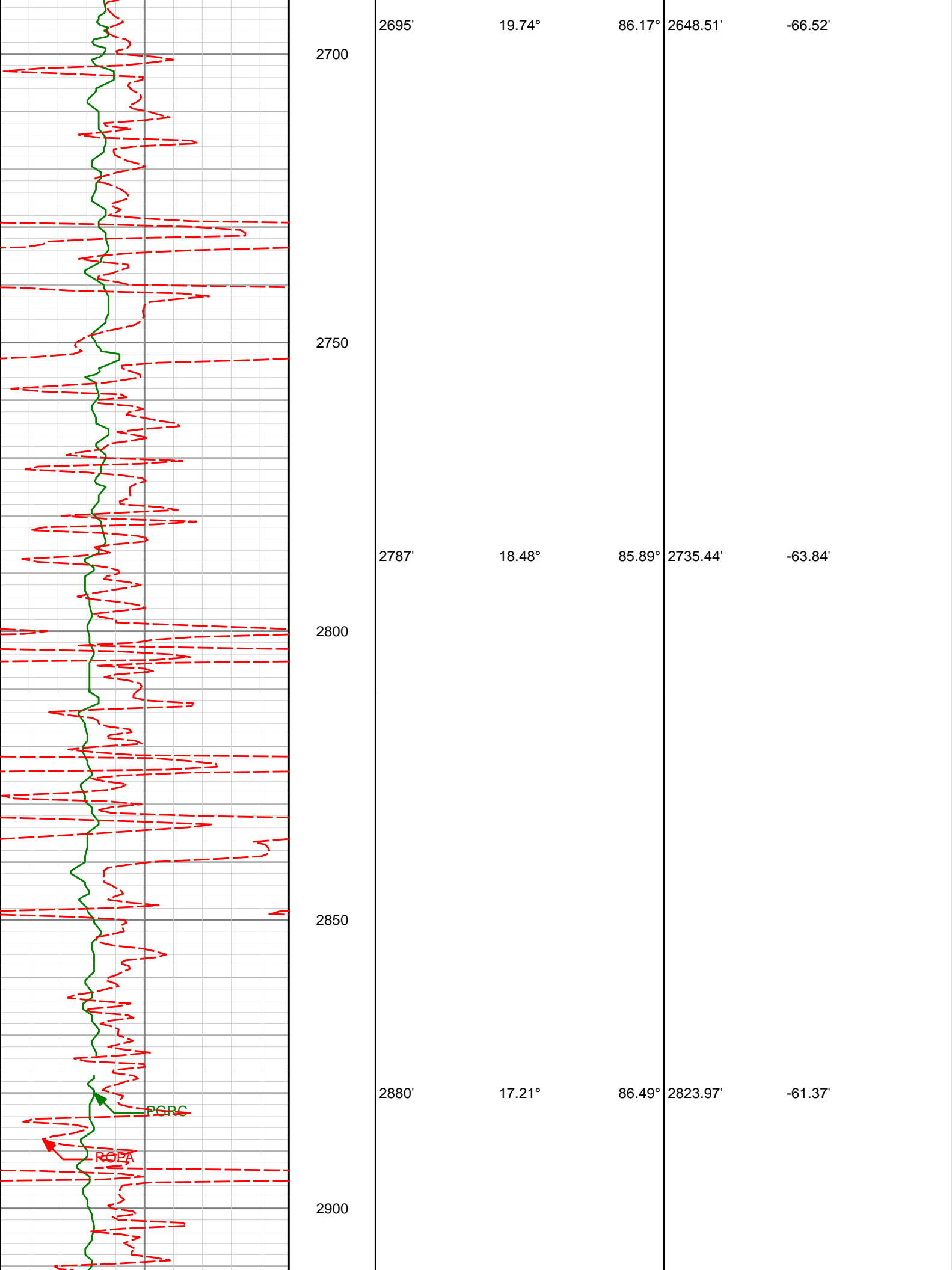
2561.53'

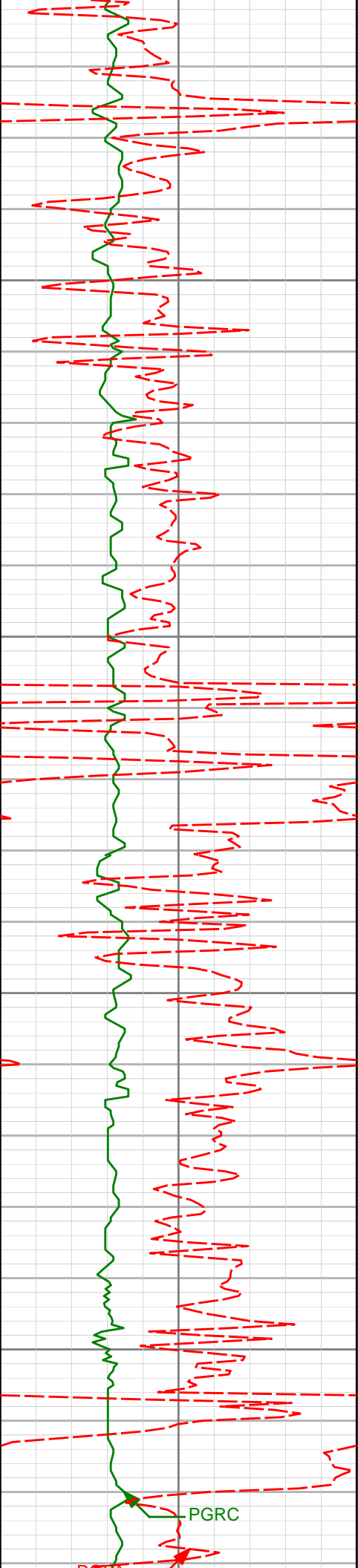
-68.86'

2650

PGRC

ROPA





2950

2972'

16.03°

85.60°

2912.12'

-59.04'

3000

3050

3065'

14.98°

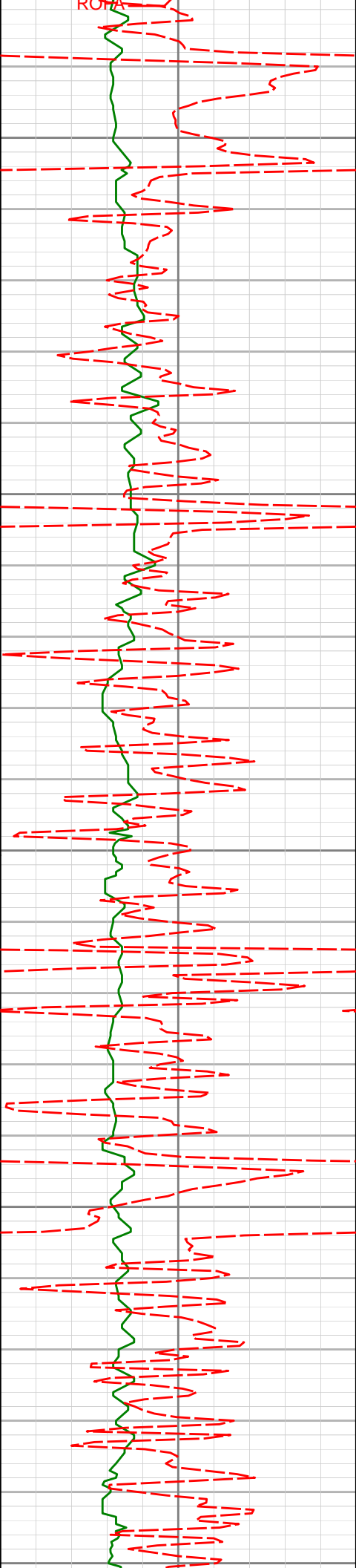
85.97°

3001.74'

-56.72'

3100

PGRC



3150

3156'

12.99°

91.97°

3090.04'

-55.81'

3200

3250

3248'

11.59°

92.86°

3179.93'

-56.24'

3300

3340'

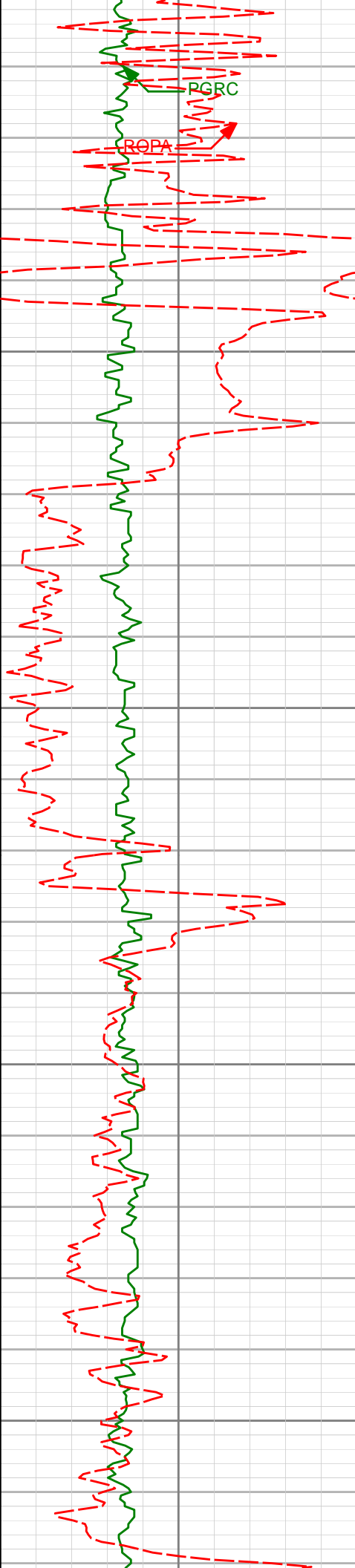
10.48°

92.50°

3270.23'

-56.71'

3350



3400

3450

3500

3550

3432'

8.20°

105.06°

3361.01'

-58.49'

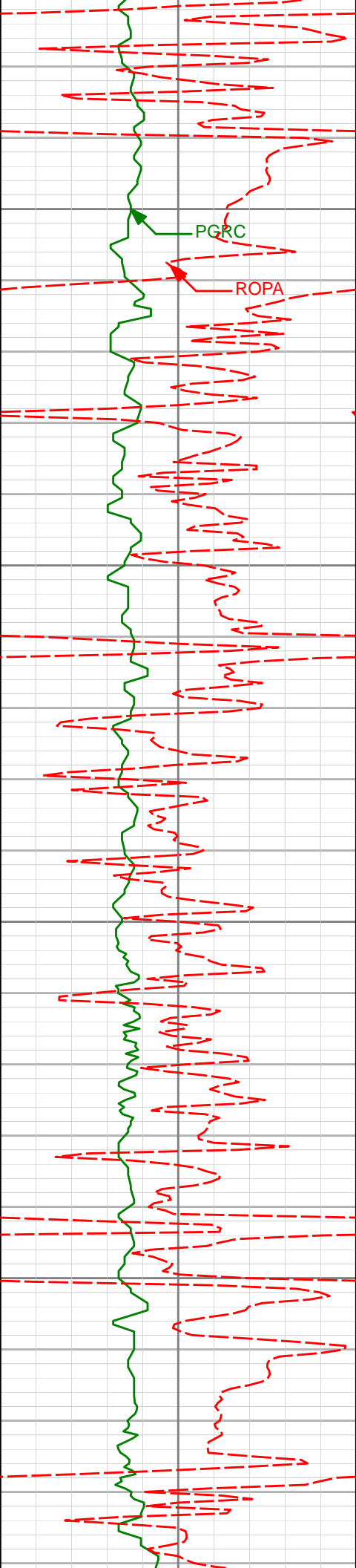
3524'

7.23°

104.17°

3452.18'

-61.37'



3600

3650

3700

3750

3615'

3708'

5.05°

4.80°

119.67°

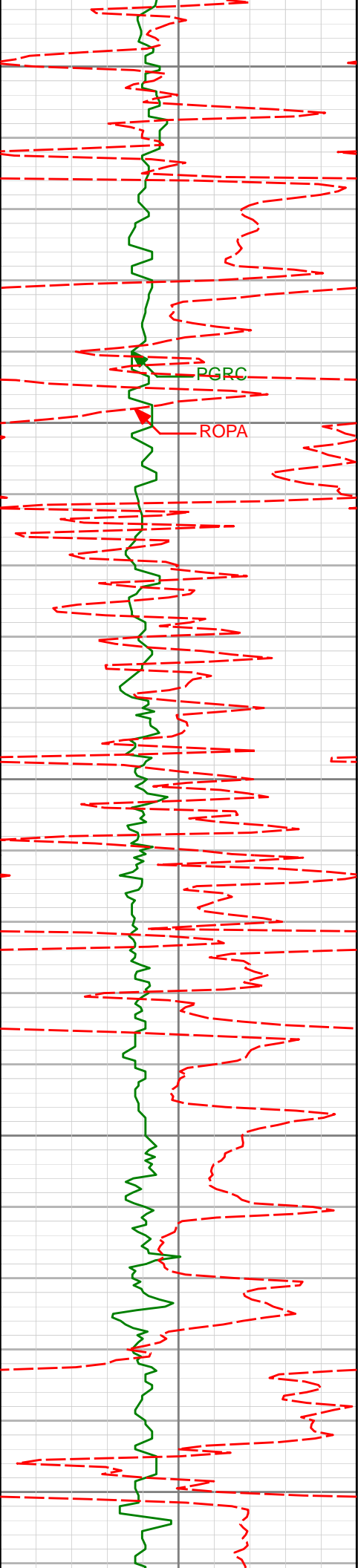
117.63°

3542.65'

3635.31'

-64.58'

-68.27'



3800

3850

3900

3950

4000

3799'

3891'

3983'

2.95°

1.21°

1.57°

138.51°

162.33°

295.41°

3726.10'

3818.04'

3910.03'

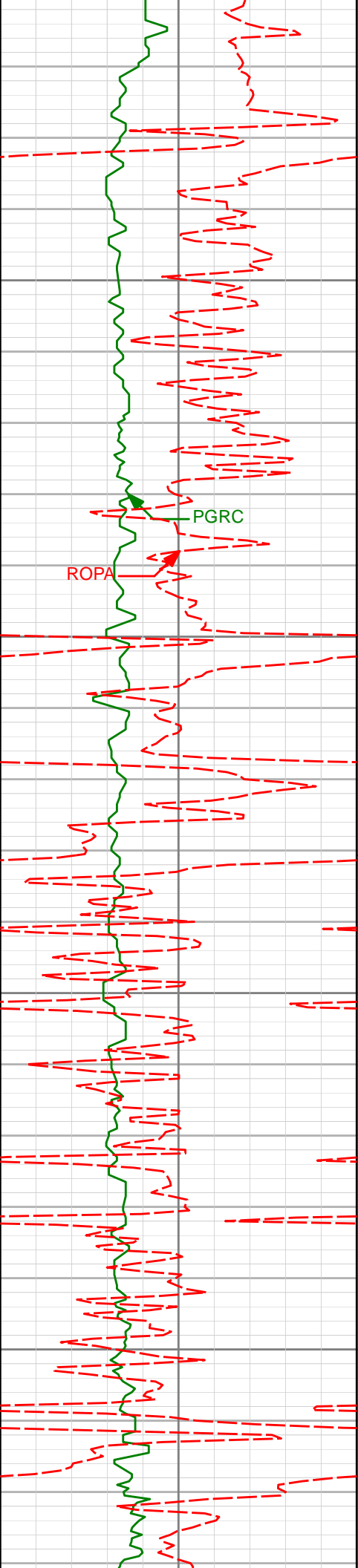
-71.69'

-74.35'

-74.75'

PGRC

ROPA



4050

4075'

1.39°

294.66°

4002.00'

-73.79'

4100

4150

4167'

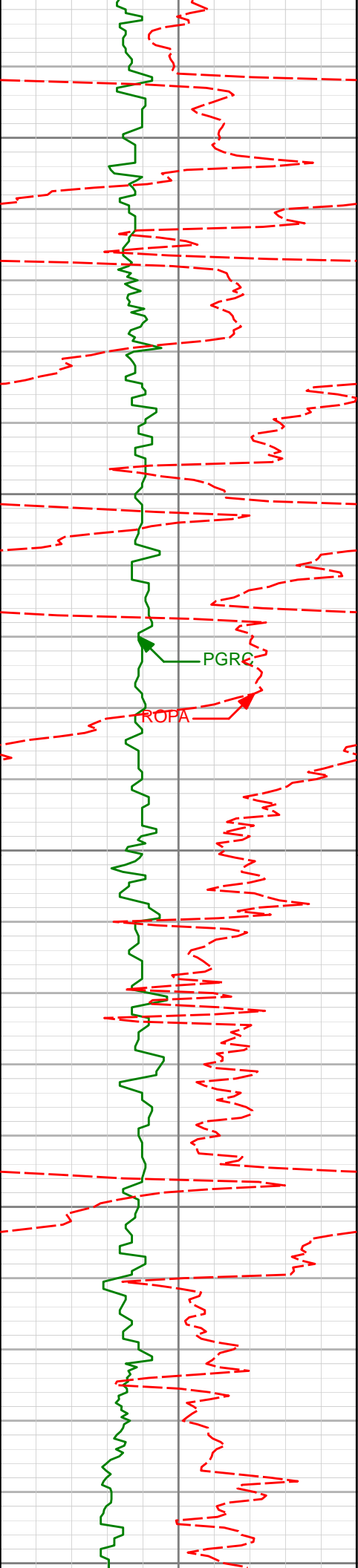
1.26°

288.72°

4093.97'

-73.04'

4200



4250

4300

4350

4400

4450

4353'

1.36°

294.82°

4279.92'

-71.53'

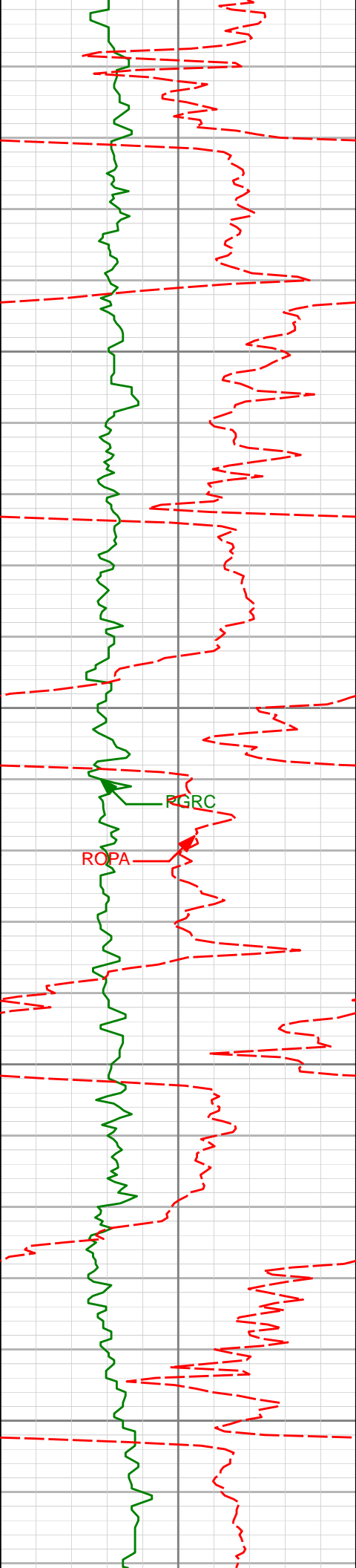
4447'

1.23°

290.98°

4373.90'

-70.74'



4650

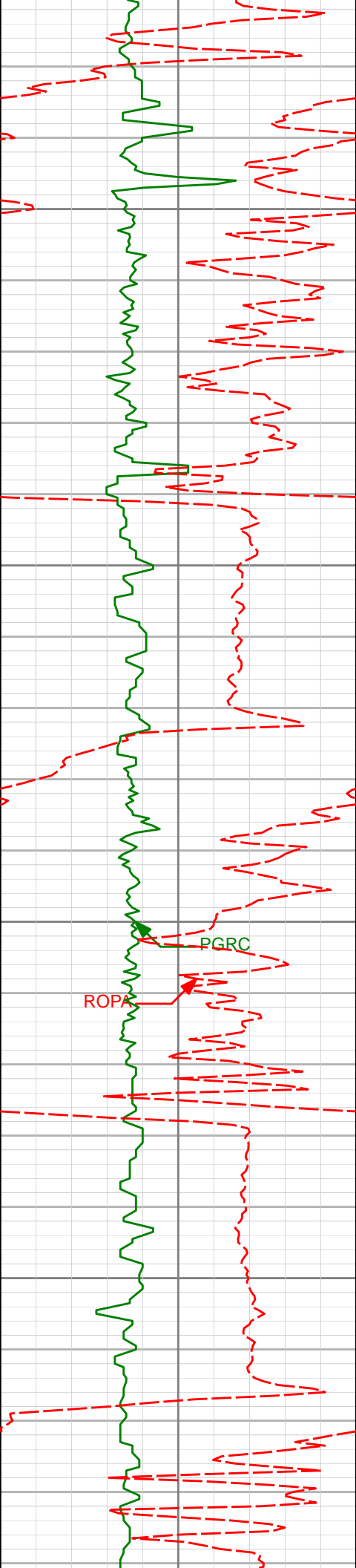
4635'

 1.60°

312.17°

4561.85'

-68.39'



4700

4730'

1.86°

311.25°

4656.81'

-66.53'

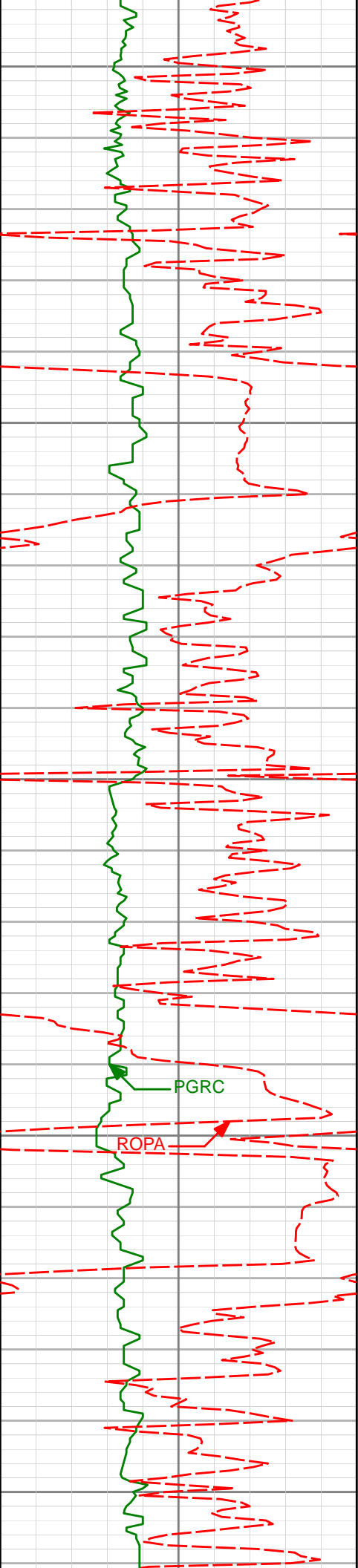
4750

4800

4850

PGRC

ROPA



4900

4919'

2.31°

293.16°

4845.68'

-63.12'

4950

5000

5014'

2.41°

289.97°

4940.60'

-61.76'

5050

5100

5108'

0.49°

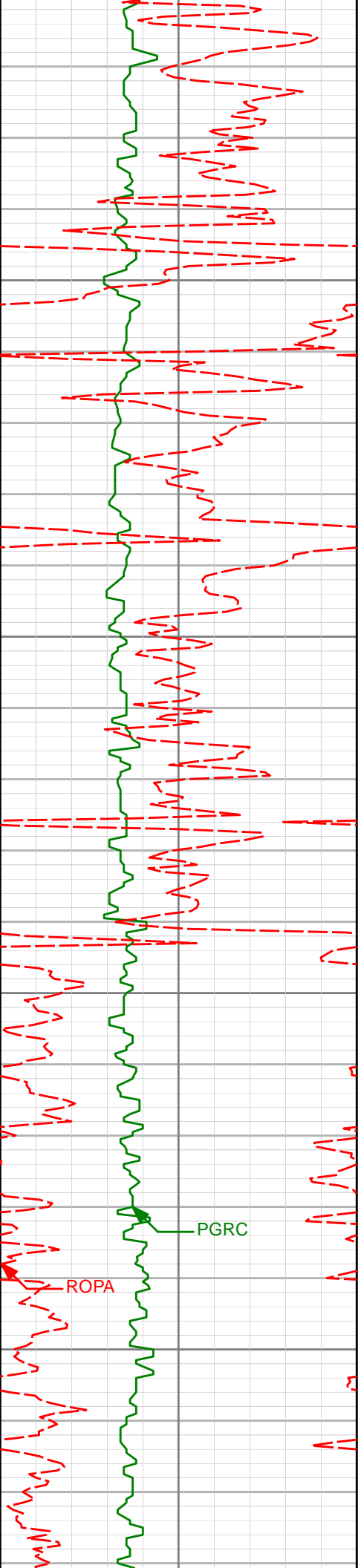
272.29°

5034.57'

-61.12'

PGRC

ROPA



5150

5200

5250

5300

PGRC

ROPA

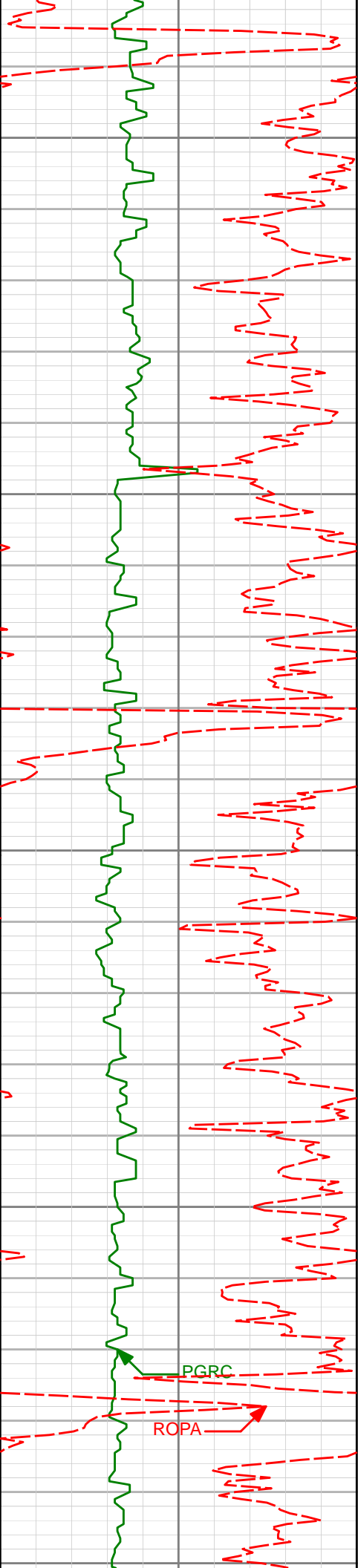
5297'

0.59°

294.23°

5223.56'

-60.72'



5350

5391'

0.74°

297.18°

5317.55'

-60.26'

5400

5450

5485'

0.67°

298.60°

5411.55'

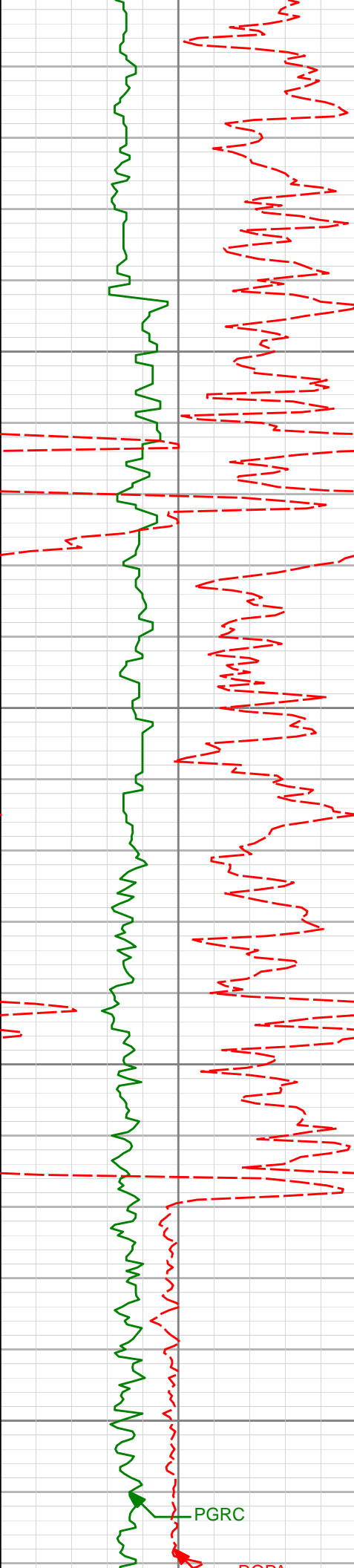
-59.74'

5500

5550

PGRC

ROPA



5550
5600
5650
5700
5750

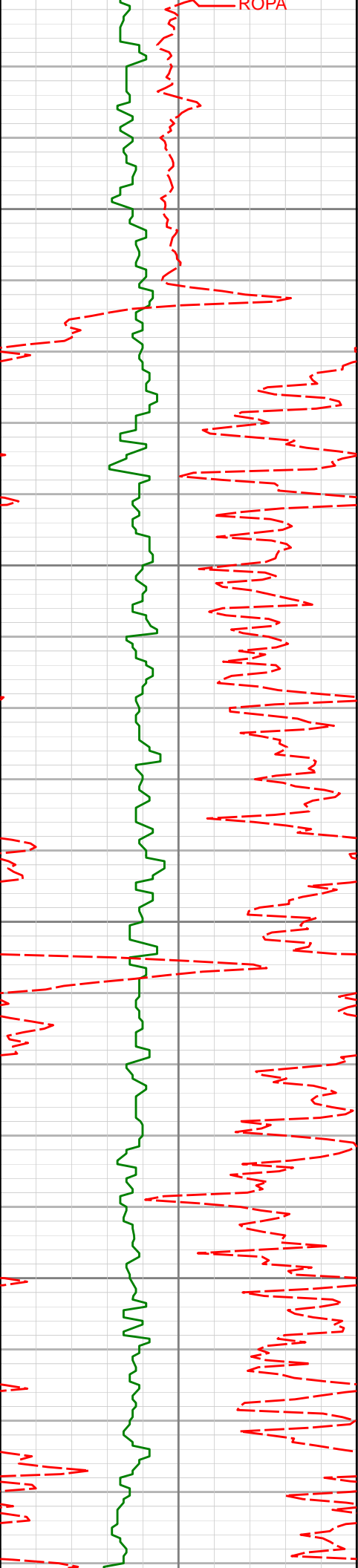
5580'
5674'
5769'

0.68°
0.78°
0.67°

285.50°
293.92°
326.34°

5506.54'
5600.53'
5695.53'

-59.35'
-58.96'
-58.25'



ROPA

5800

5850

5900

5950

5863'

0.36°

282.98°

5789.52'

-57.74'

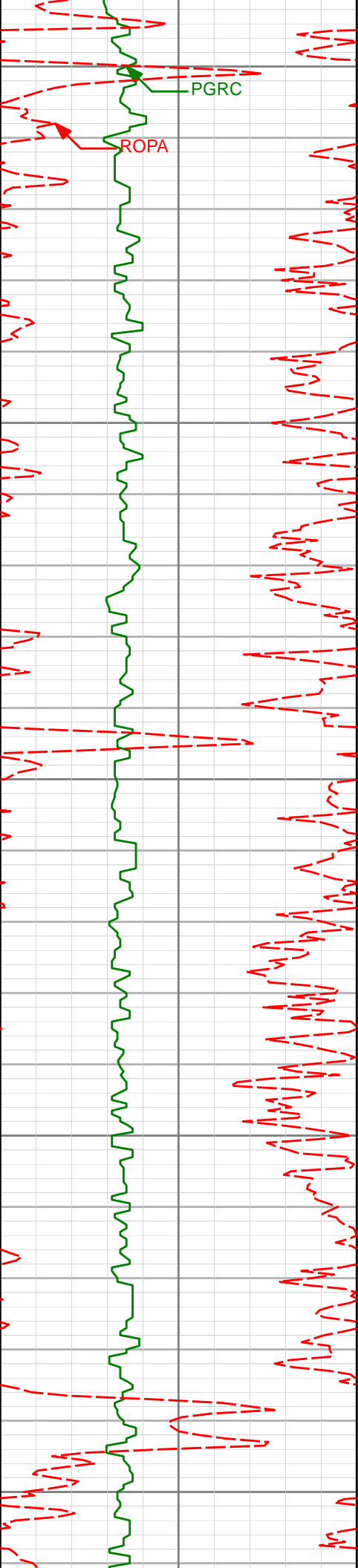
5957'

0.40°

255.31°

5883.52'

-57.77'



6000

6050

6100

6150

6200

6052'

0.66°

257.02°

5978.52'

-57.99'

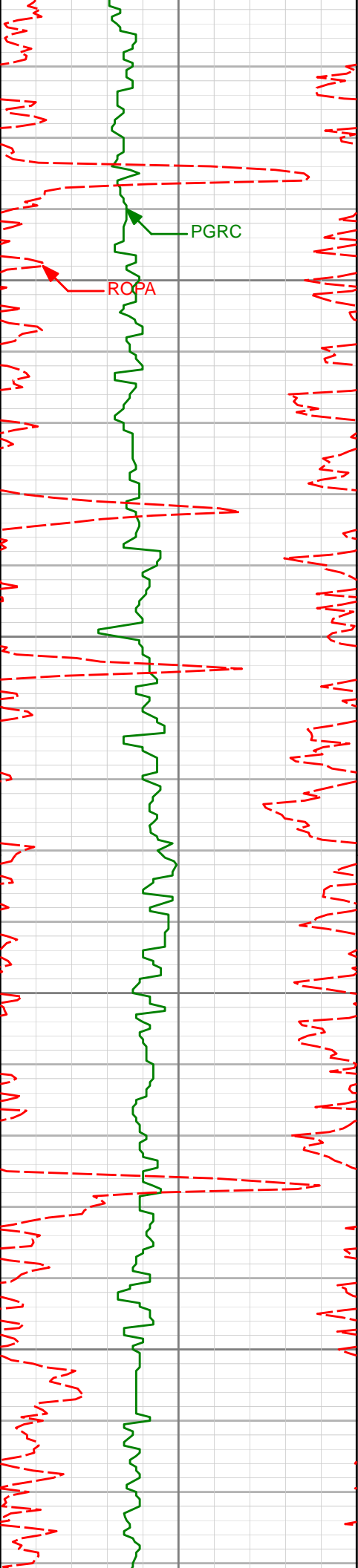
6146'

0.71°

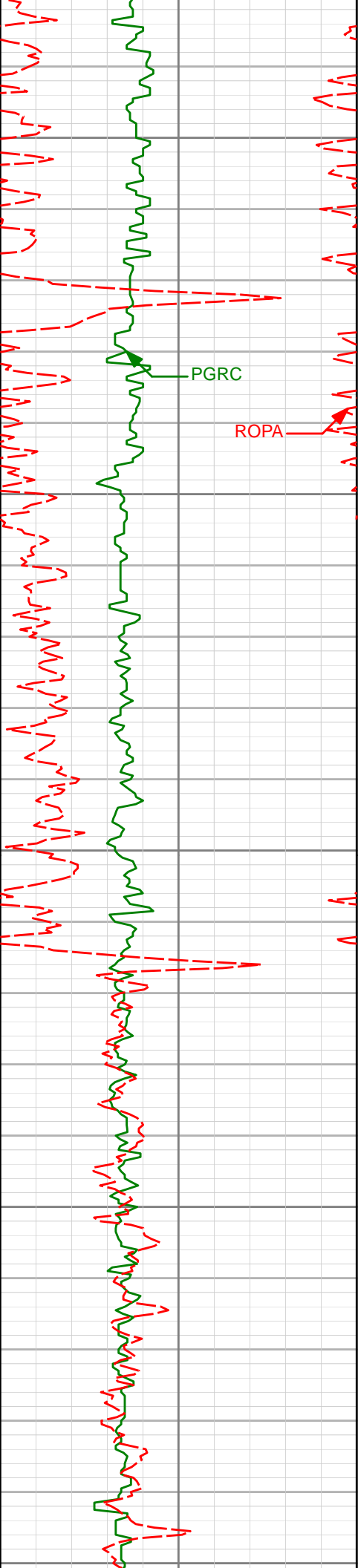
265.98°

6072.51'

-58.18'



| | | | | |
|-------|-------|---------|----------|---------|
| 6241' | 0.81° | 248.37° | 6167.50' | -58.49' |
| 6250 | | | | |
| 6300 | | | | |
| 6335' | 1.16° | 250.85° | 6261.49' | -59.08' |
| 6350 | | | | |
| 6400 | | | | |
| 6429' | 1.50° | 257.14° | 6355.46' | -59.71' |



6450

PGRC

ROPA

6500

6523'

1.05°

243.56°

6449.44'

-60.40'

6550

6600

6618'

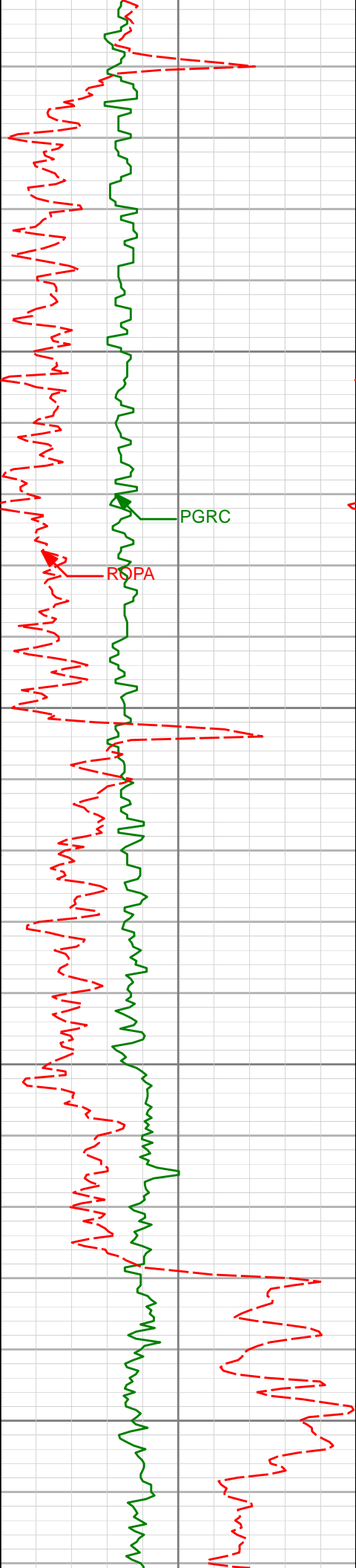
0.91°

242.22°

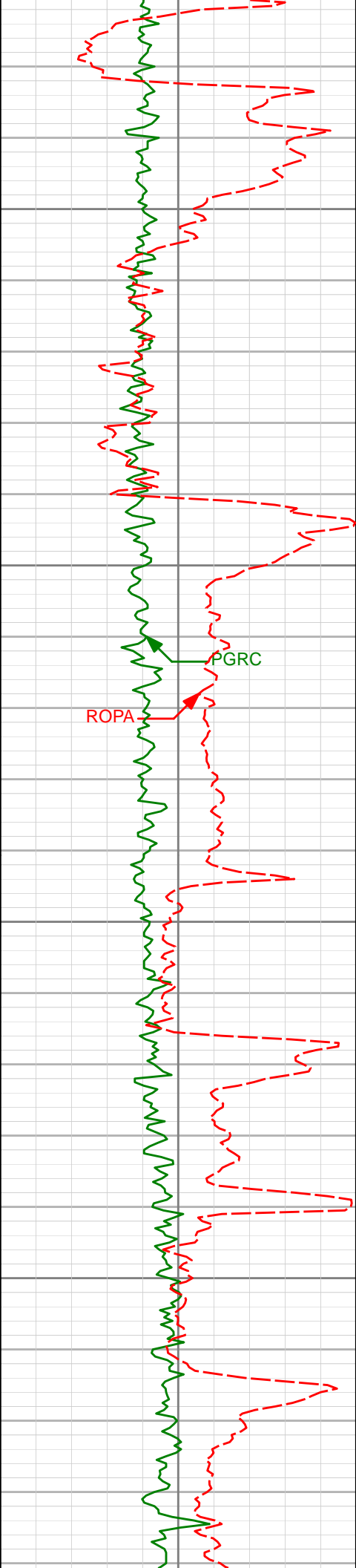
6544.42'

-61.17'

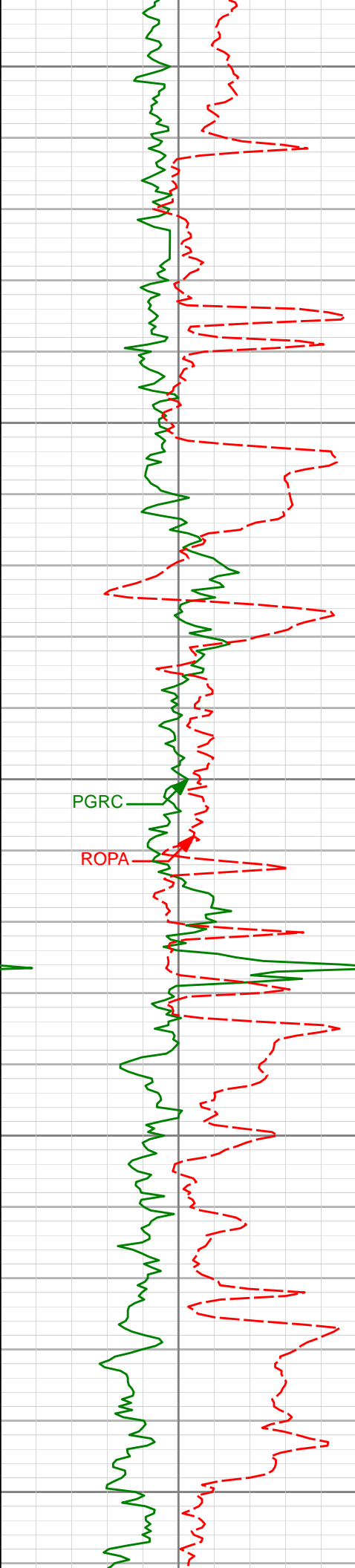
6650



| | | | | | |
|-------|-------|---------|----------|---------|--|
| 6700 | | | | | |
| 6712' | 0.70° | 221.22° | 6638.42' | -61.97' | |
| | | | | | |
| 6750 | | | | | |
| | | | | | |
| 6800 | | | | | |
| 6806' | 0.46° | 244.29° | 6732.41' | -62.58' | |
| | | | | | |
| 6850 | | | | | |
| 6853' | 1.36° | 343.10° | 6779.41' | -62.14' | |



| | | | | | |
|------|-------|--------|---------|----------|---------|
| 6900 | 6901' | 2.16° | 338.67° | 6827.38' | -60.76' |
| 6950 | 6948' | 10.34° | 355.88° | 6874.07' | -55.73' |
| 7000 | 6995' | 16.32° | 356.54° | 6919.78' | -44.94' |
| 7050 | 7042' | 19.06° | 359.81° | 6964.55' | -30.68' |
| | 7090' | 22.91° | 3.40° | 7009.36' | -13.50' |



7100

7137'

25.07°

5.78°

7052.30'

5.57'

7150

7184'

30.26°

9.18°

7093.92'

27.23'

7200

7231'

34.33°

7.69°

7133.64'

52.14'

7250

7279'

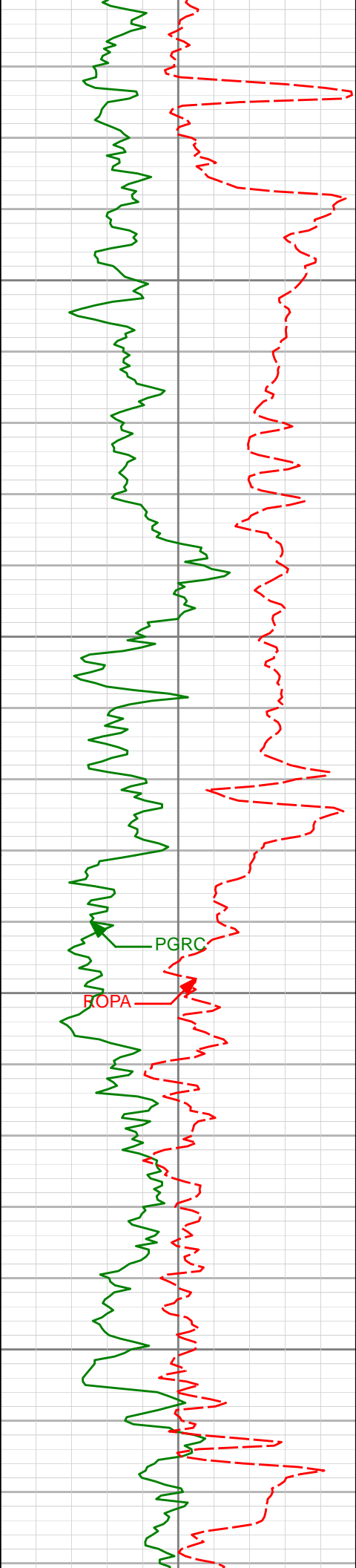
37.48°

5.87°

7172.52'

80.14'

7300



7350

7400

7450

7500

7326'

37.98°

5.29°

7209.69'

108.82'

7373'

42.75°

2.52°

7245.49'

139.21'

7420'

48.30°

0.82°

7278.41'

172.73'

7467'

54.71°

356.20°

7307.66'

209.44'

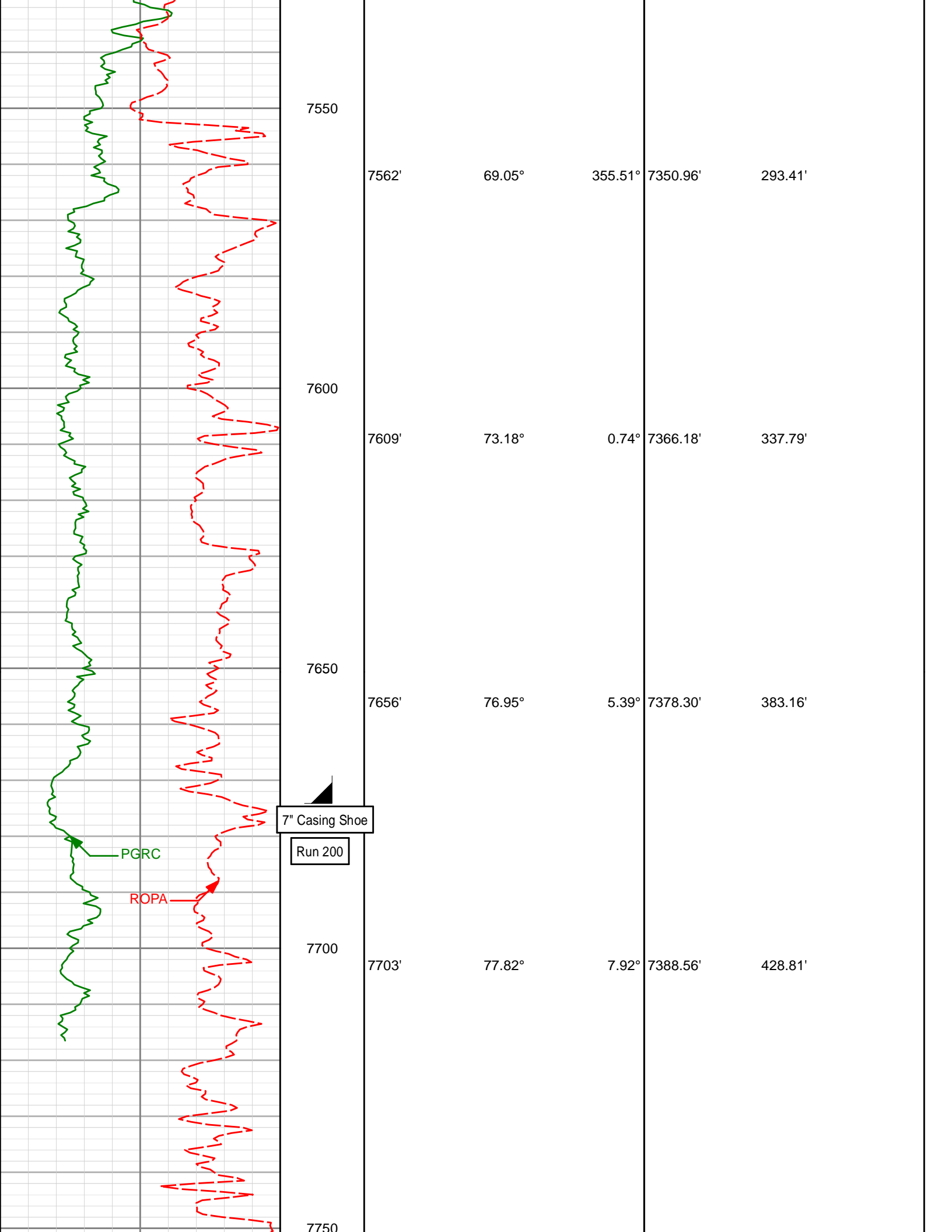
7514'

63.65°

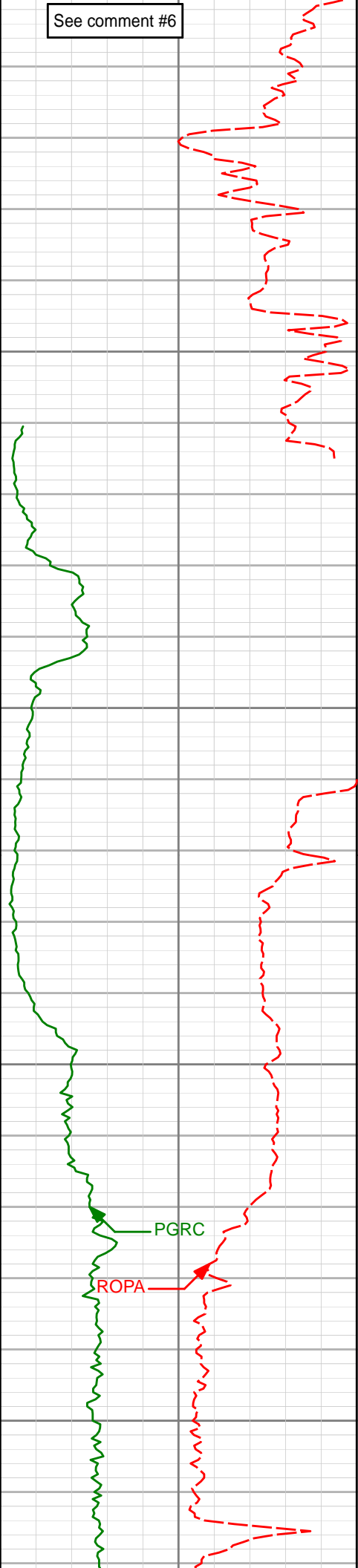
356.84°

7331.71'

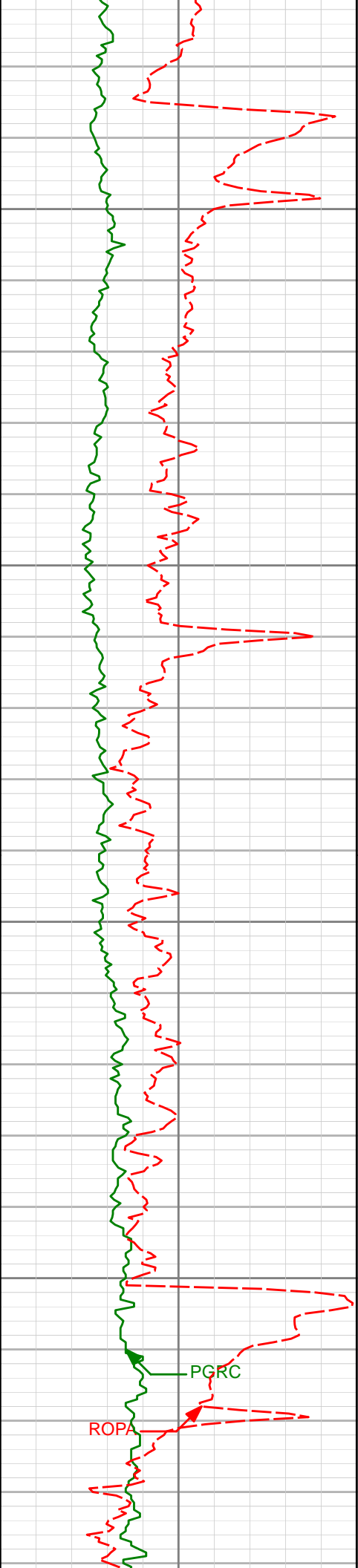
249.63'



See comment #6



| | | | | | |
|------|-------|--------|-------|----------|---------|
| 7750 | 7751 | 81.95° | 6.03° | 7396.99 | 475.80 |
| 7800 | | | | | |
| | 7823' | 87.19° | 5.84° | 7403.80' | 547.21' |
| 7850 | | | | | |
| | | | | | |
| 7900 | | | | | |
| | 7917' | 87.16° | 5.30° | 7408.44' | 640.81' |
| 7950 | | | | | |



8000

8050

8100

8150

8012'

88.77°

5.66°

7411.81'

735.47'

8106'

88.92°

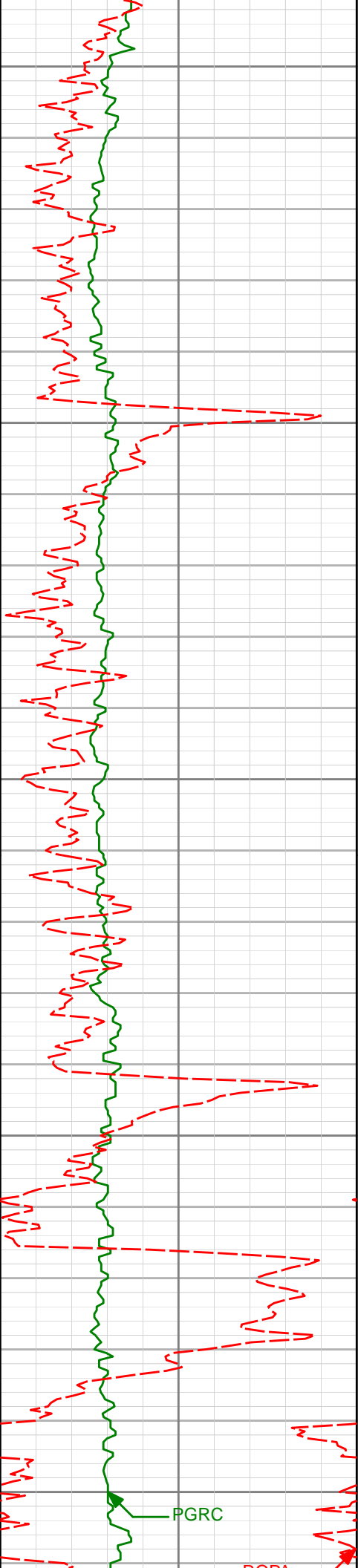
5.67°

7413.70'

829.16'

PGRC

ROPA



8200

8200'

90.62°

3.84°

7414.08'

922.97'

8250

8300

8294'

91.11°

3.92°

7412.66'

1016.85'

8350

8400

8388'

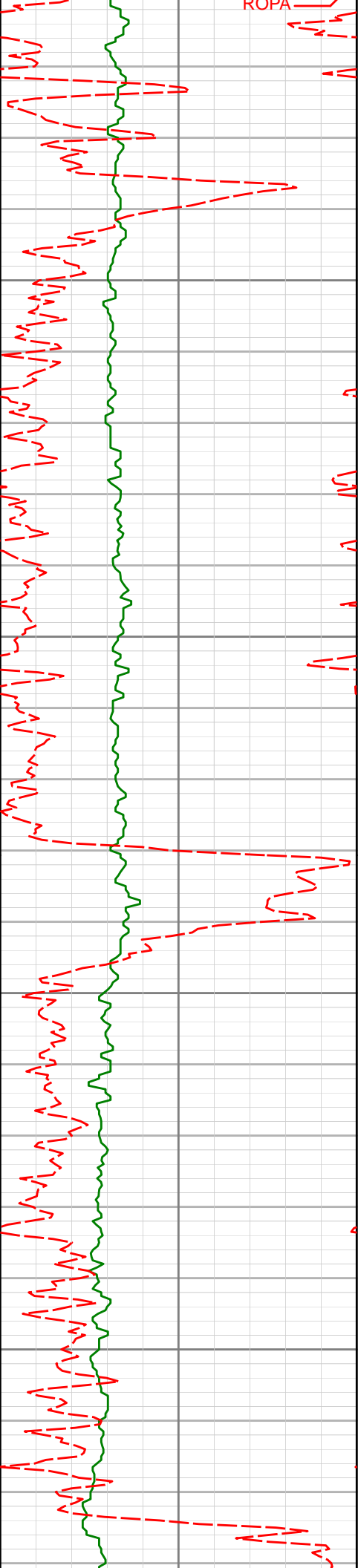
90.99°

2.60°

7410.94'

1110.77'

PGRC



8450

8500

8550

8600

8482'

90.92°

1.82°

7409.37'

1204.74'

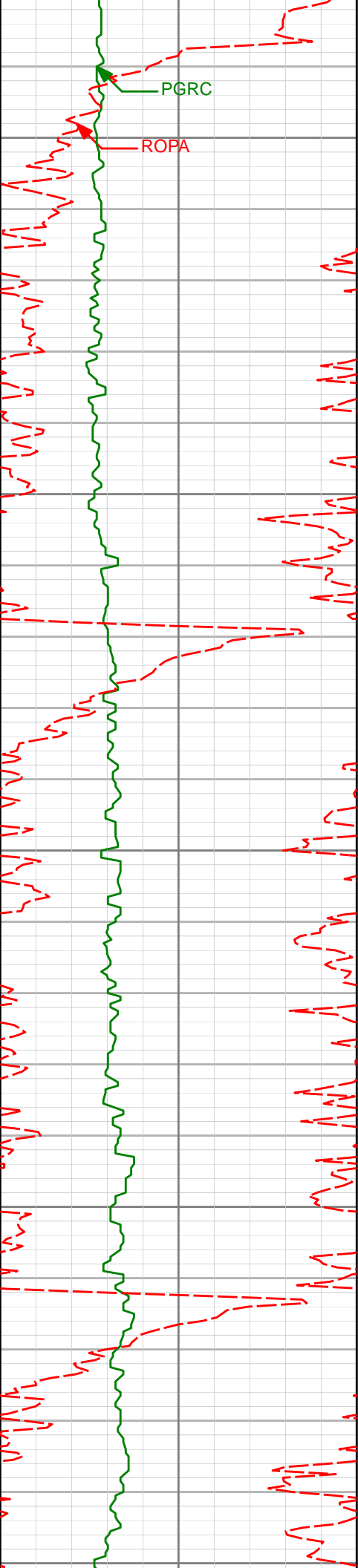
8576'

91.08°

1.07°

7407.73'

1298.72'



8650

8671'

89.91°

359.80°

7406.91'

1393.71'

8700

8750

8765'

90.00°

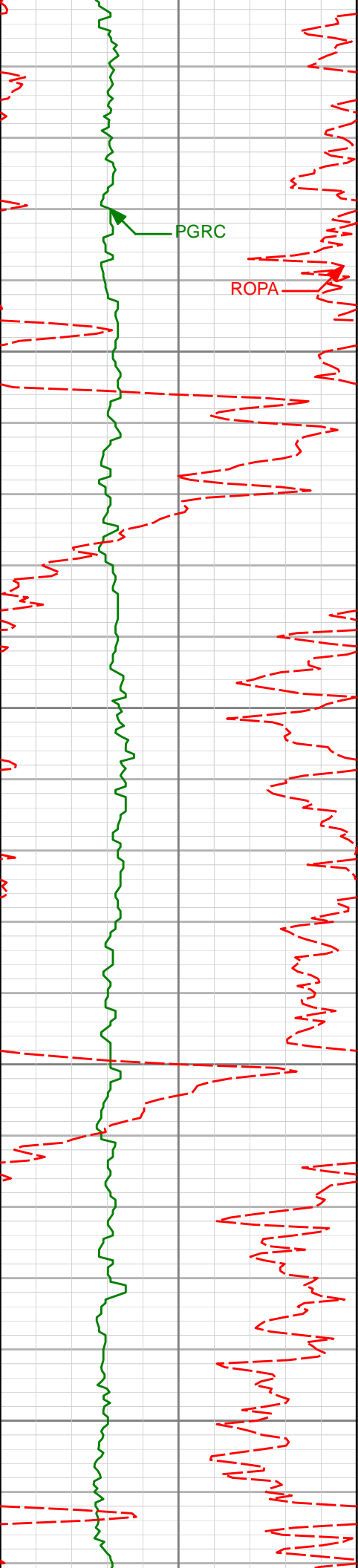
359.33°

7406.99'

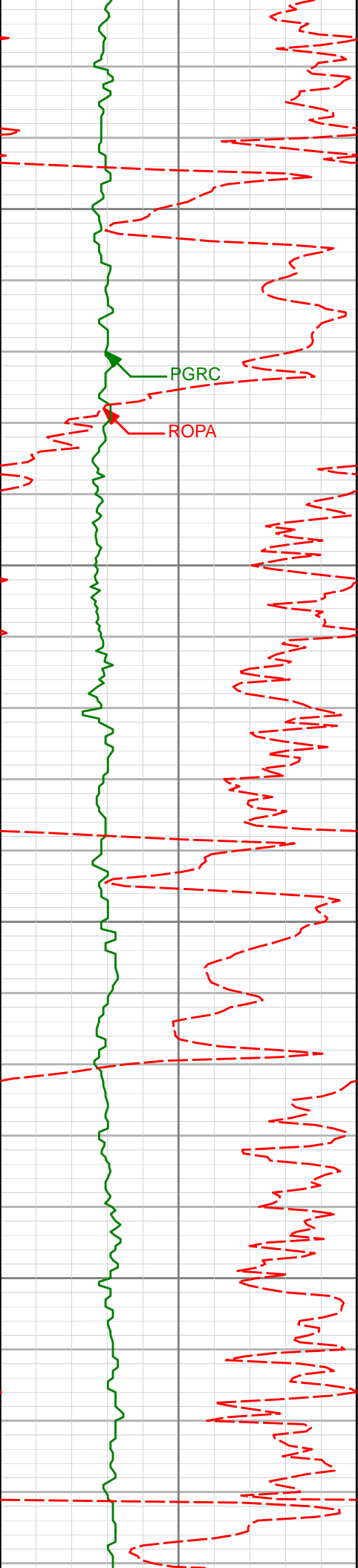
1487.67'

8800

8850



| | | | | |
|-------|--------|---------|----------|----------|
| 8859' | 89.91° | 358.60° | 7407.06' | 1581.60' |
| 8900 | | | | |
| 8950 | | | | |
| 8953' | 90.77° | 359.14° | 7406.50' | 1675.53' |
| 9000 | | | | |
| 9050 | | | | |
| 9047' | 90.18° | 357.18° | 7405.72' | 1769.39' |



9100

PGRC

ROPA

9150

9200

9250

9142'

90.59°

357.92°

7405.08'

1864.20'

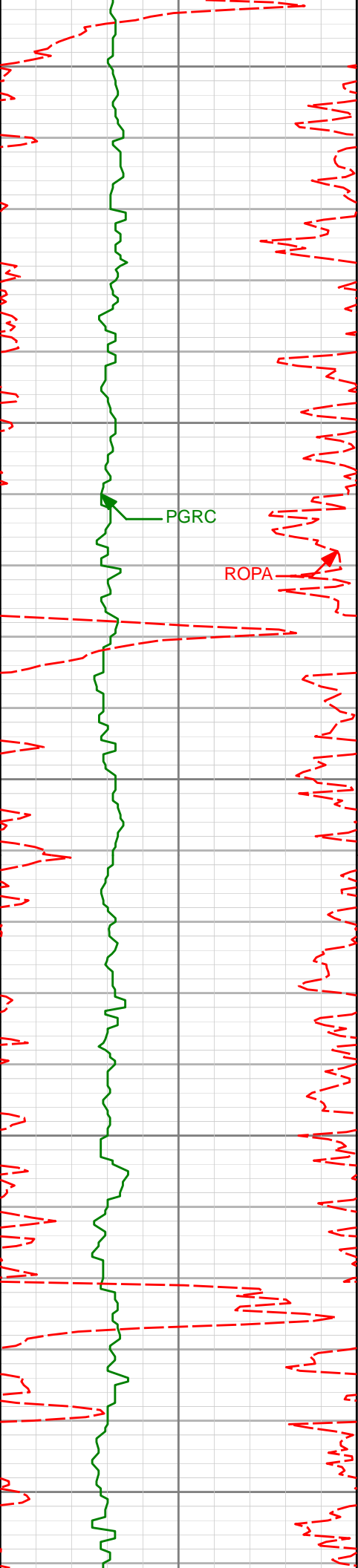
9236'

90.22°

1.56°

7404.42'

1958.15'



9300

9350

9400

9450

9500

9330'

90.25°

1.44°

7404.03'

2052.15'

9424'

90.18°

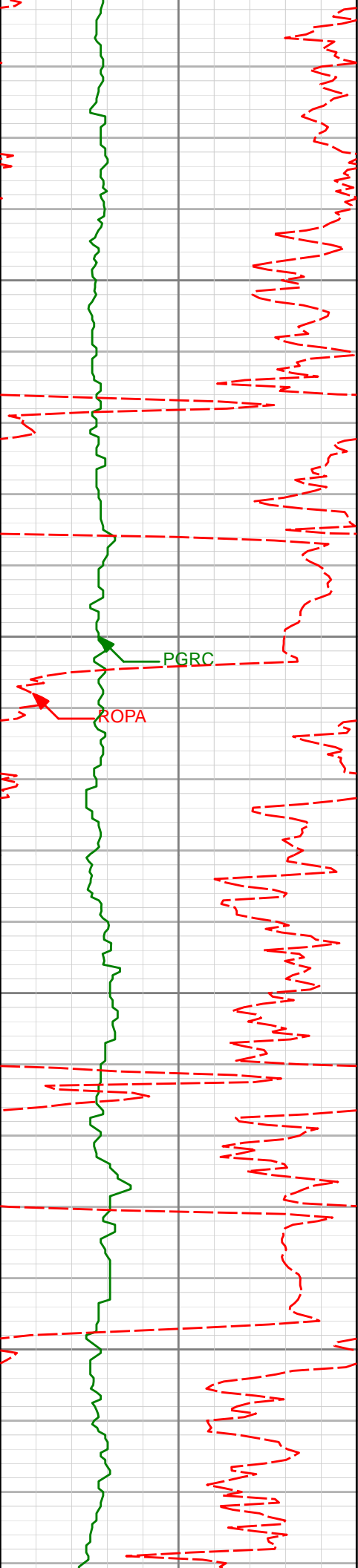
359.71°

7403.68'

2146.14'

PGRC

ROPA



9518'

90.74°

359.43°

7402.93'

2240.10'

9550

9600

PGRC

ROPA

9613'

90.34°

1.10°

7402.03'

2335.08'

9650

9700

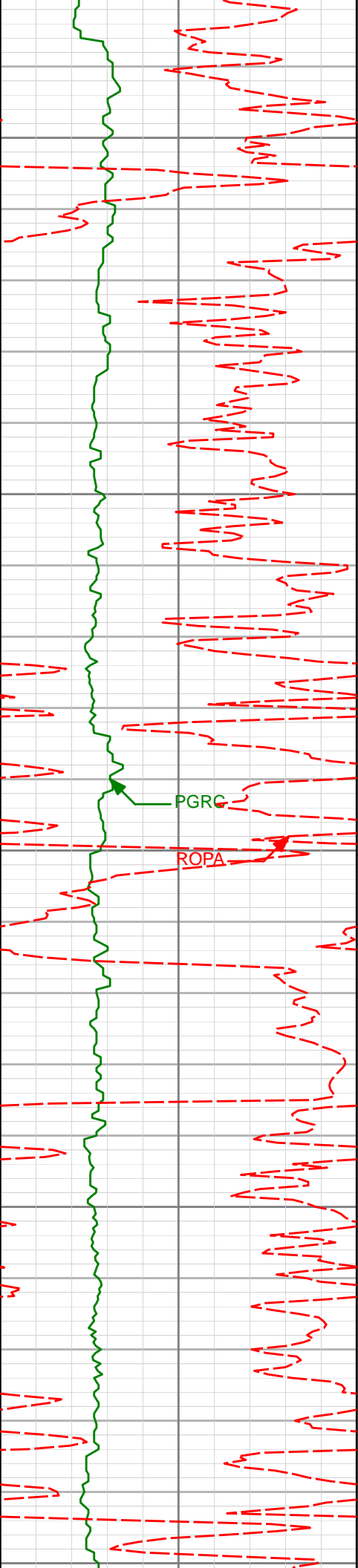
9707'

90.03°

1.23°

7401.73'

2429.08'



9750

9800

9850

9900

9950

9801'

90.12°

359.58°

7401.60'

2523.07'

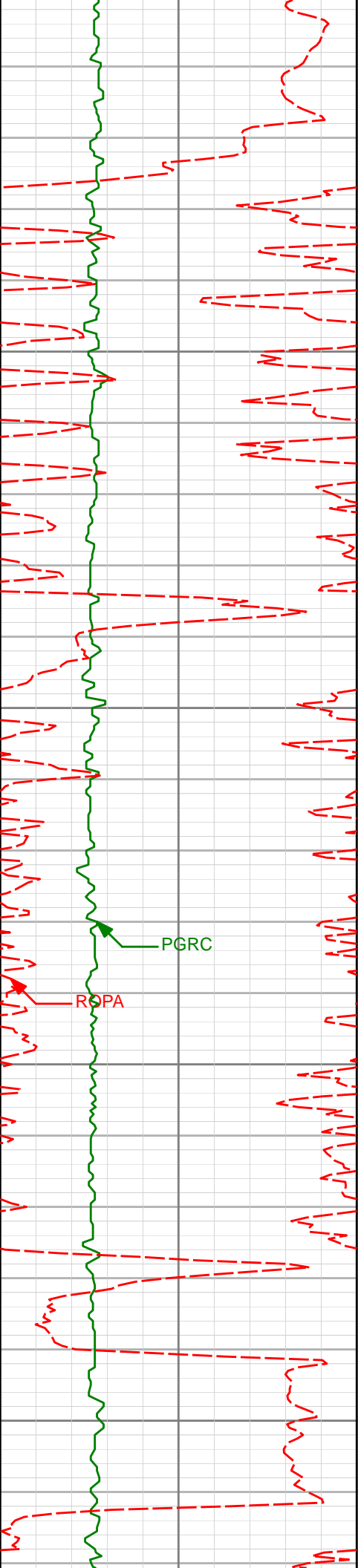
9895'

90.09°

0.34°

7401.43'

2617.05'



10000
10050
10100
10150

9987'

89.72°

1.37°

7401.59'

2709.05'

10079'

89.69°

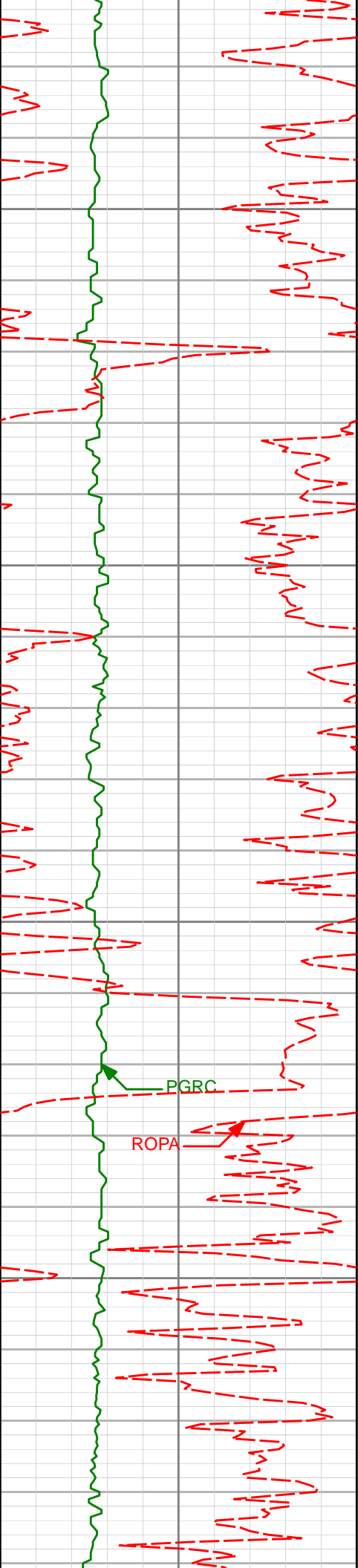
0.88°

7402.06'

2801.05'

PGRC

ROPA



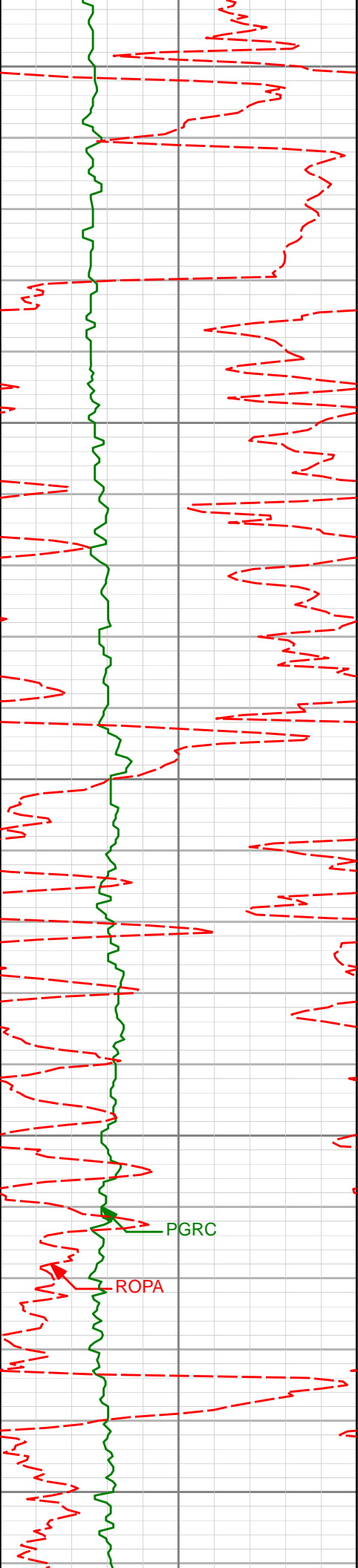
10200

10250

10300

10350

| | | | | |
|--------|--------|-------|----------|----------|
| 10171 | 89.72° | 3.24° | 7402.53 | 2893.03 |
| 10262' | 90.59° | 3.06° | 7402.29' | 2983.97' |
| 10354' | 90.15° | 4.38° | 7401.69' | 3075.87' |



10400

10450

10500

10550

10600

10446'

88.21°

3.70°

7403.01'

3167.74'

10538'

88.46°

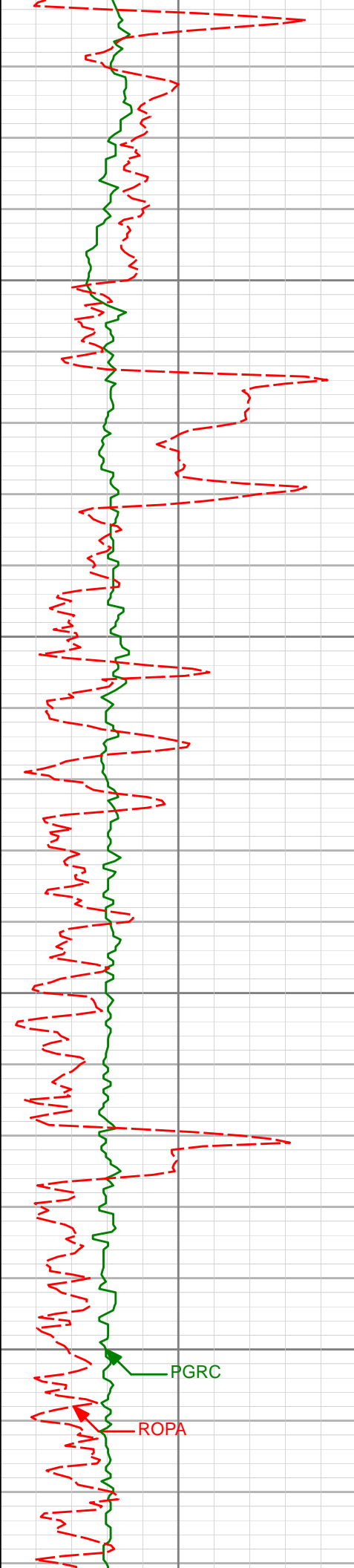
3.24°

7405.68'

3259.63'

PGRC

ROPA



10630'

88.55°

2.96°

7408.08'

3351.54'

10650

10700

10721'

88.77°

2.74°

7410.21'

3442.48'

10750

10800

PGRC

ROPA

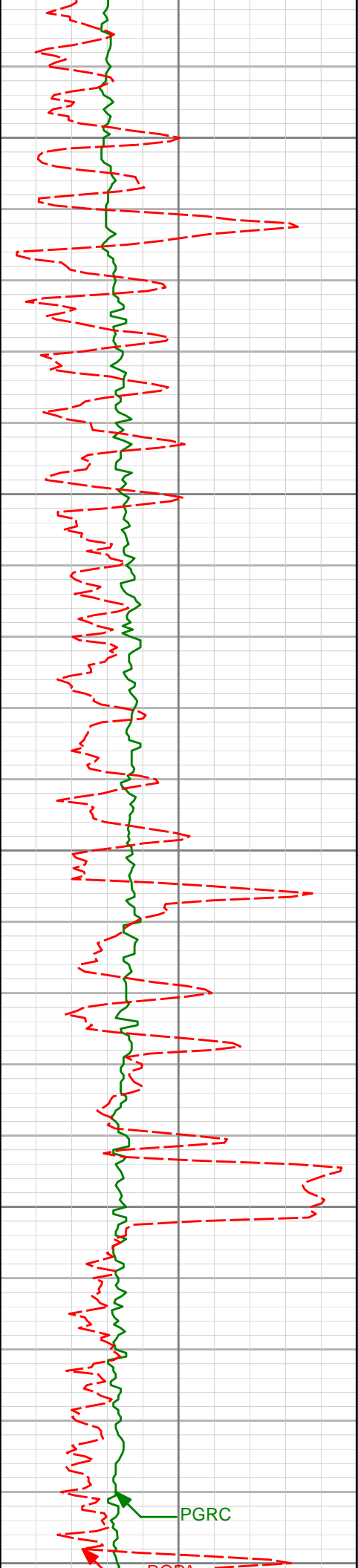
10814'

88.80°

2.14°

7412.18'

3535.43'



10850

10900

10950

11000

11050

10908'

88.77°

1.46°

7414.18'

3629.40'

11002'

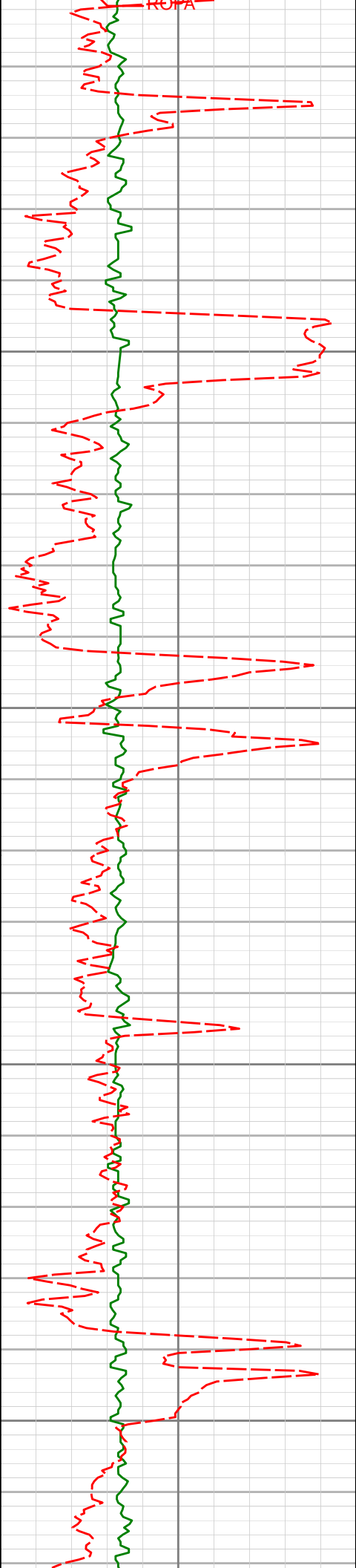
89.23°

1.77°

7415.82'

3723.39'

PGRC



11100

11150

11200

11250

11097'

89.88°

1.76°

7416.55'

3818.38'

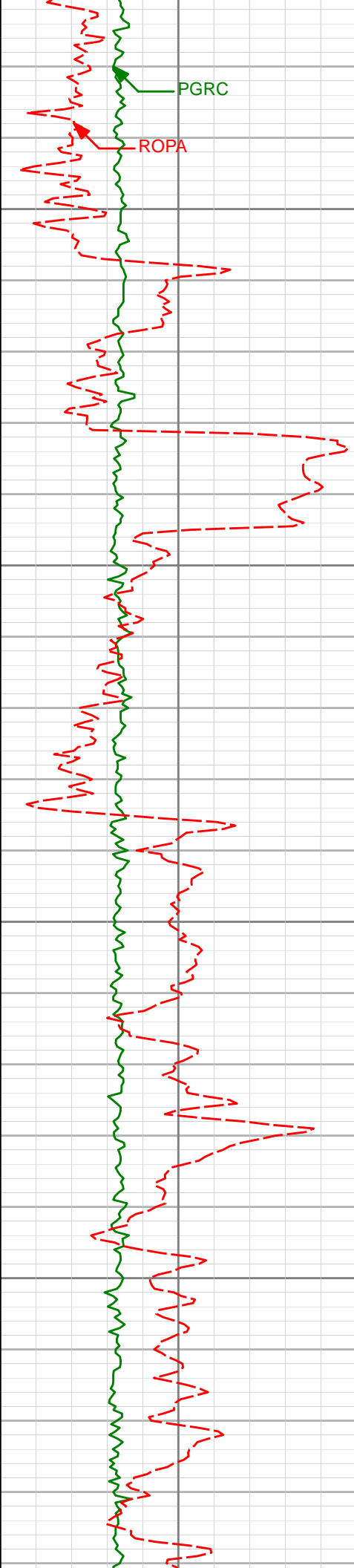
11191'

89.85°

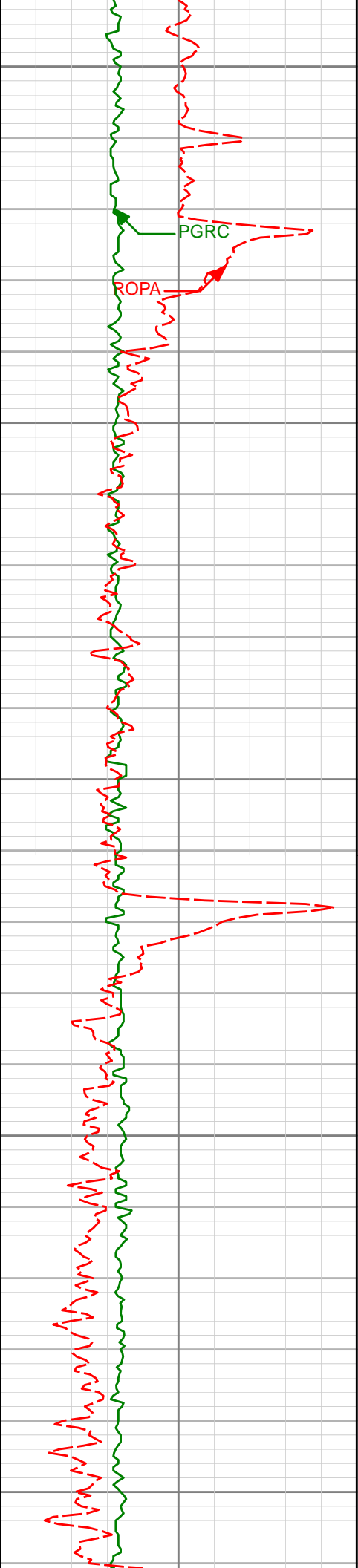
1.69°

7416.78'

3912.37'



| | | | | | |
|-------|--------|--------|-------|----------|----------|
| | 11286' | 89.69° | 1.47° | 7417.16' | 4007.37' |
| 11300 | | | | | |
| | | | | | |
| | | | | | |
| 11350 | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | 11380' | 90.25° | 1.68° | 7417.21' | 4101.36' |
| 11400 | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| 11450 | | | | | |
| | | | | | |
| | | | | | |
| | 11474' | 90.99° | 1.94° | 7416.19' | 4195.35' |



11500

11550

11600

11650

11700

11568'

90.09°

1.97°

7415.30'

4289.34'

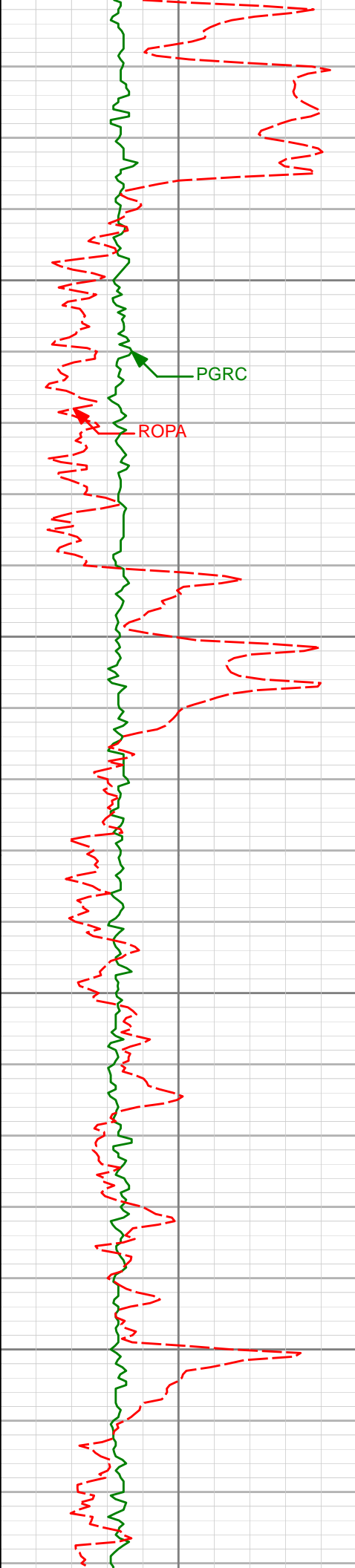
11663'

89.66°

1.63°

7415.51'

4384.33'



11750

11757'

90.80°

0.96°

7415.13'

4478.33'

11800

11850

11852'

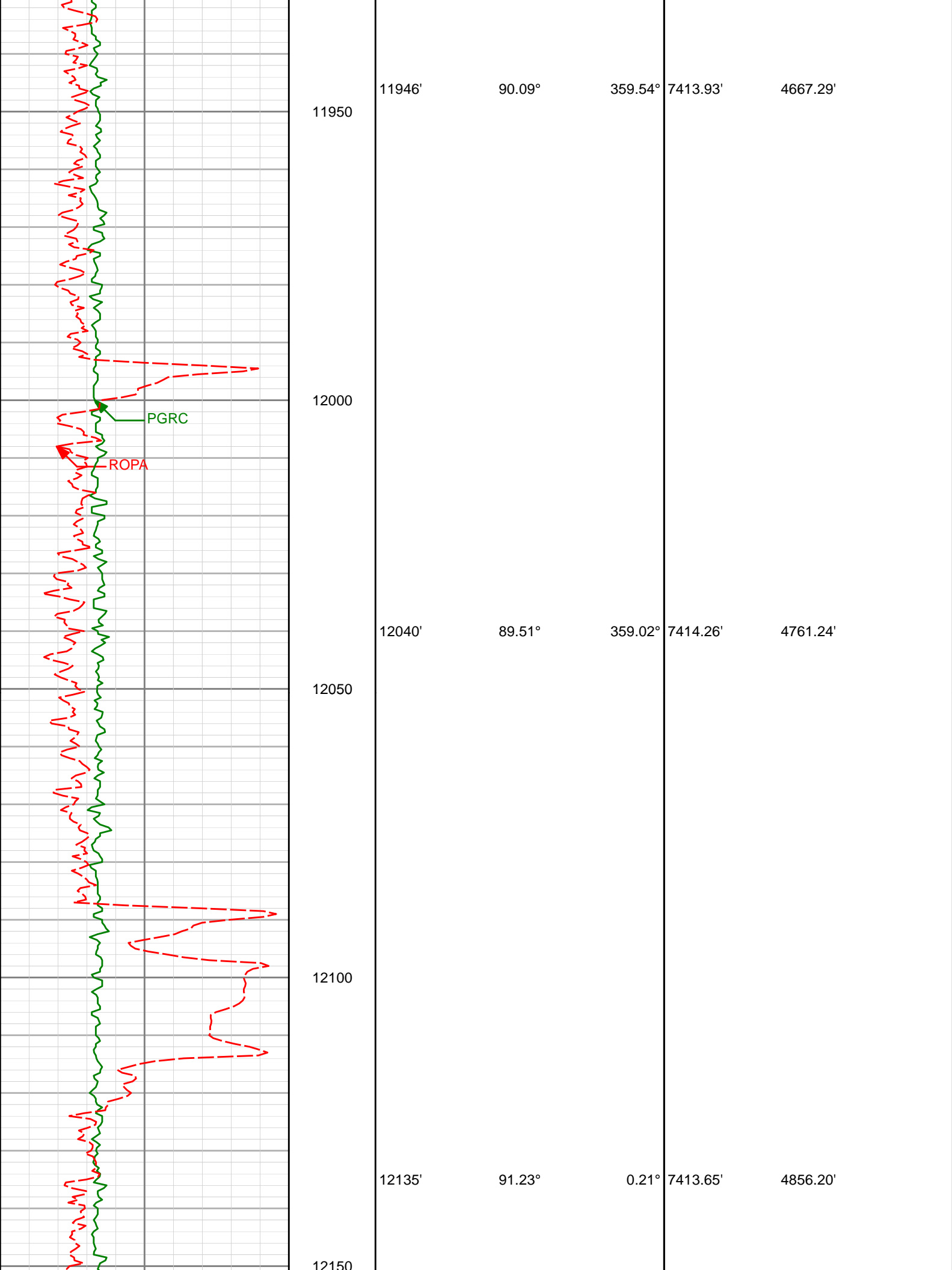
90.28°

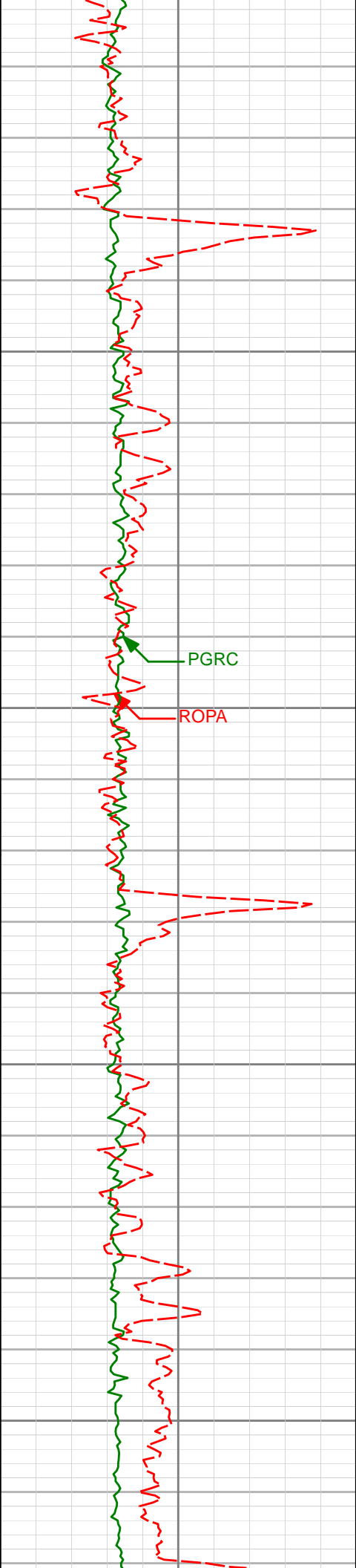
0.08°

7414.24'

4573.32'

11900





12200

12229'

91.23°

359.94°

7411.63'

4950.16'

12250

PGRC

ROPA

12300

12323'

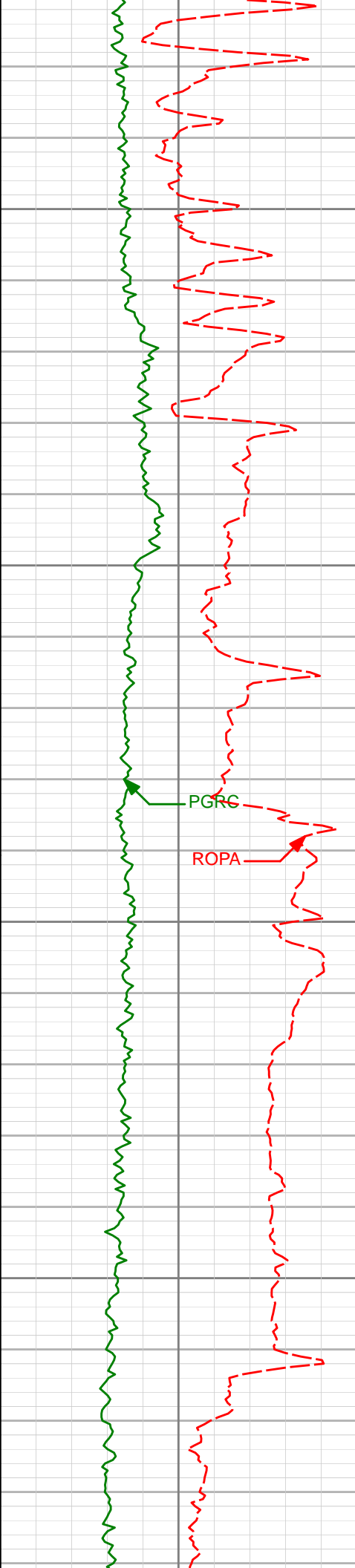
91.26°

359.62°

7409.59'

5044.11'

12350



12400

12417'

91.48°

359.81°

7407.34'

5138.05'

12450

PGRC

ROPA

12500

Run 300

12511'

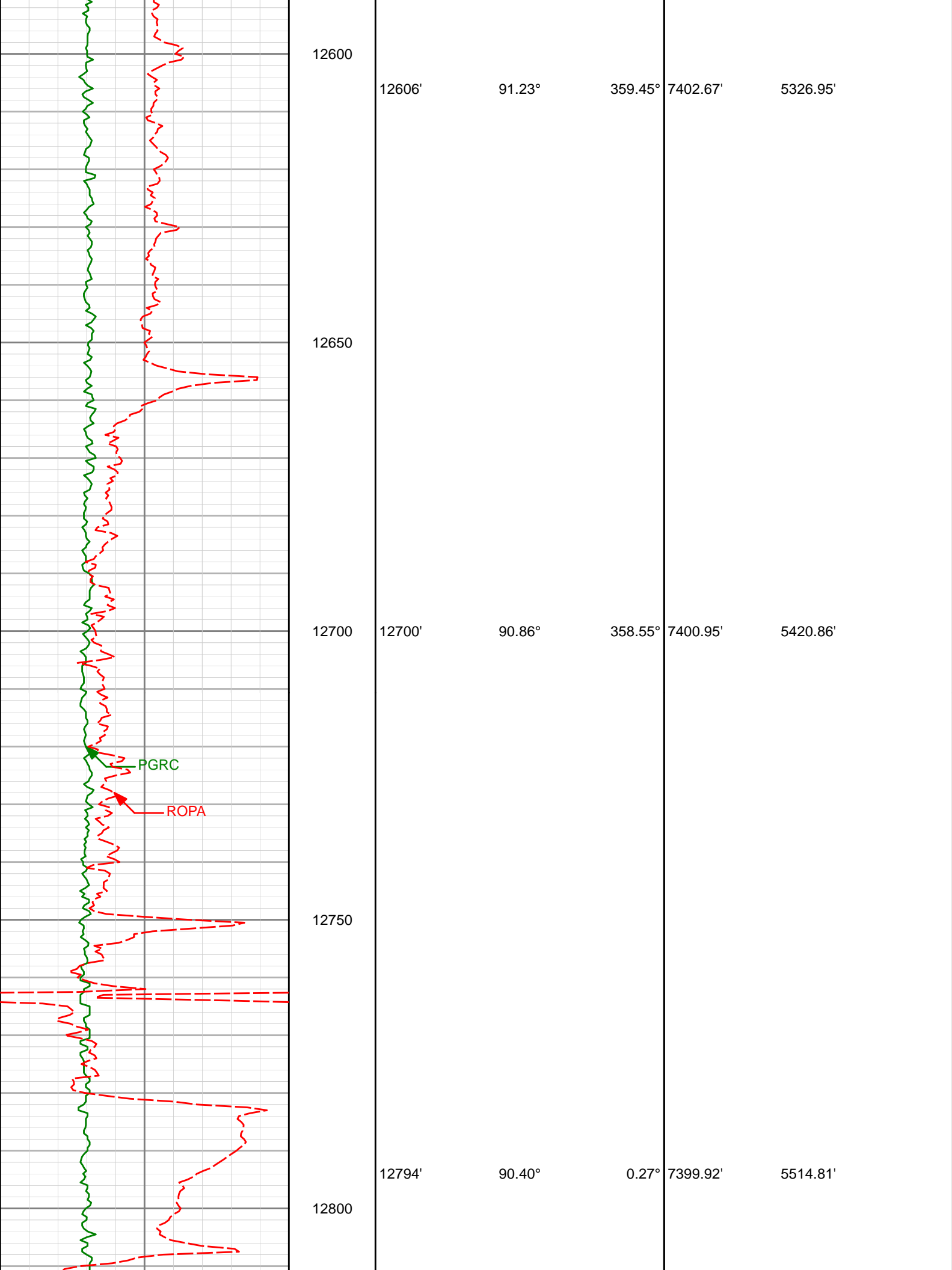
91.48°

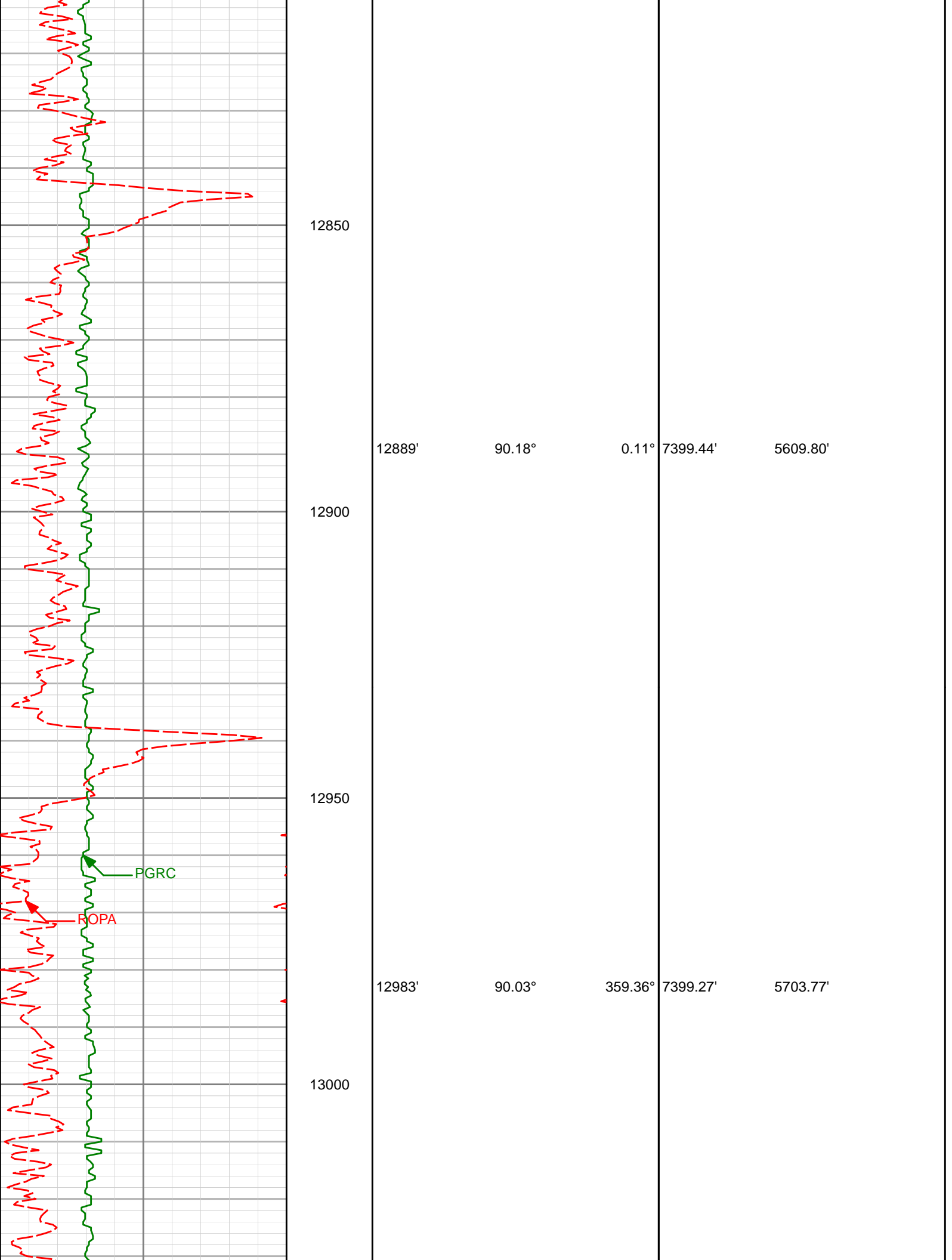
0.04°

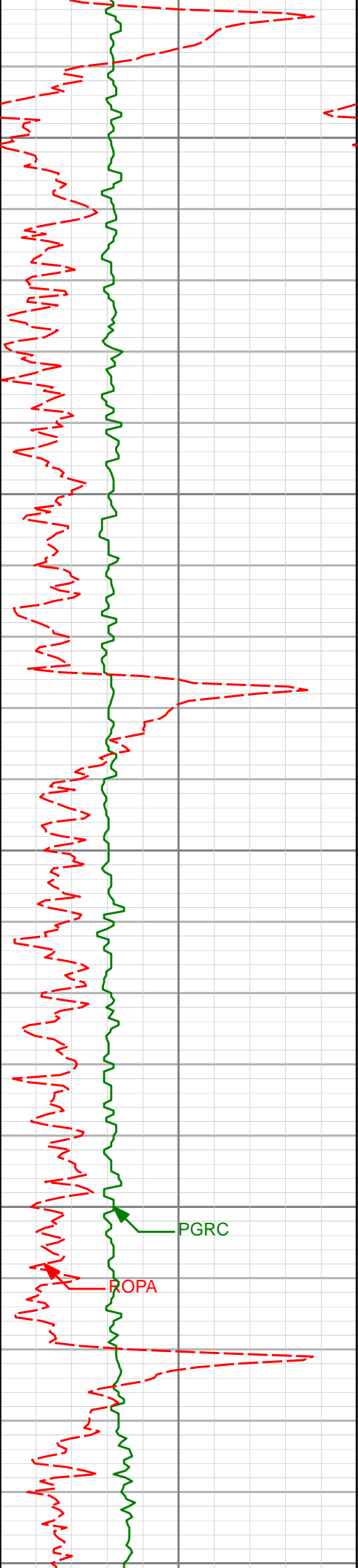
7404.91'

5232.00'

12550







13050

13077'

89.82°

359.36°

7399.39'

5797.72'

13100

13150

13171'

89.45°

358.83°

7399.99'

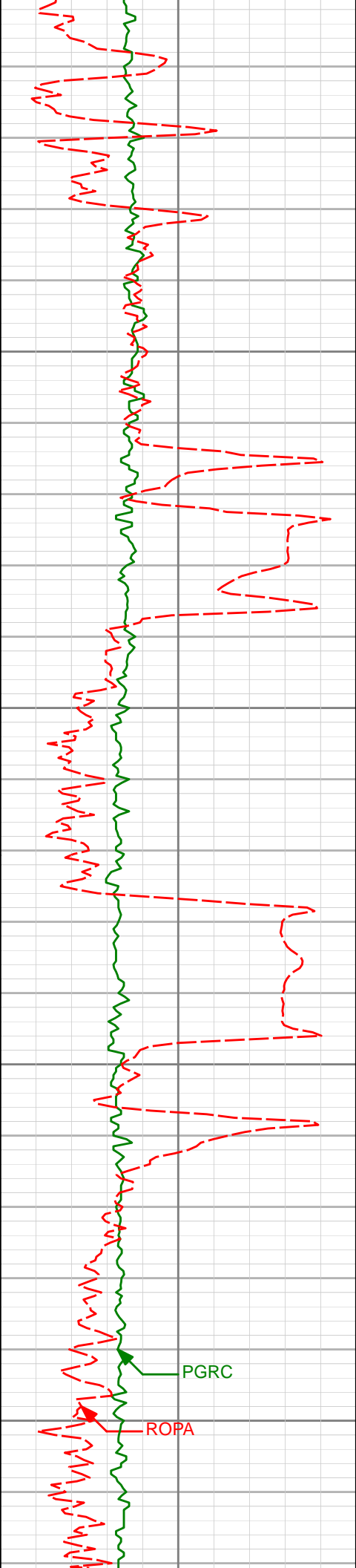
5891.66'

13200

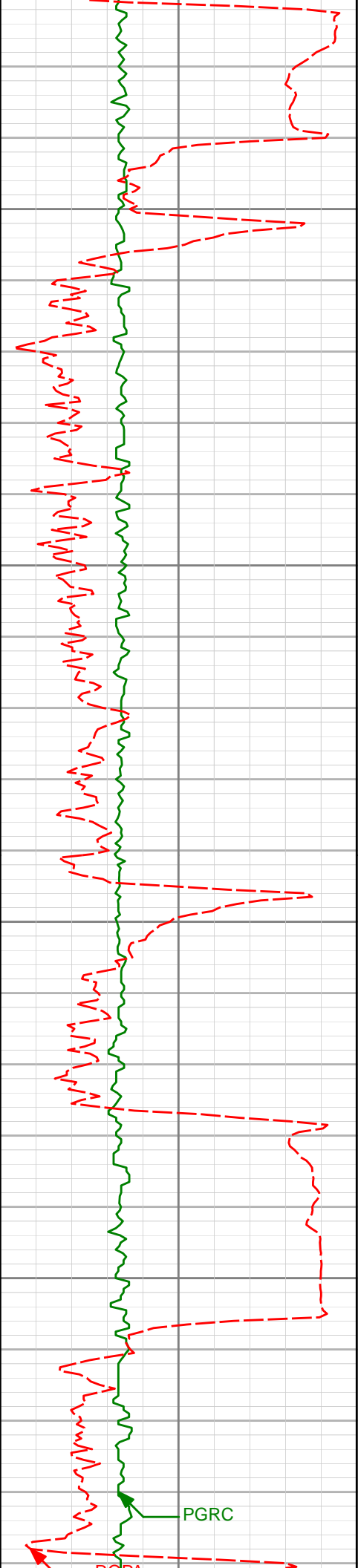
PGRC

ROPA

13250



| | | | | | |
|--------|--------|---------|----------|----------|--|
| 13200 | | | | | |
| 13266' | 88.92° | 358.13° | 7401.34' | 5986.55' | |
| 13300 | | | | | |
| 13350 | | | | | |
| 13360' | 88.86° | 358.74° | 7403.16' | 6080.43' | |
| 13400 | | | | | |
| 13450 | | | | | |
| 13454' | 89.02° | 359.44° | 7404.90' | 6174.35' | |



13500

13550

13600

13650

13549'

13644'

89.11°

90.43°

359.59°

0.73°

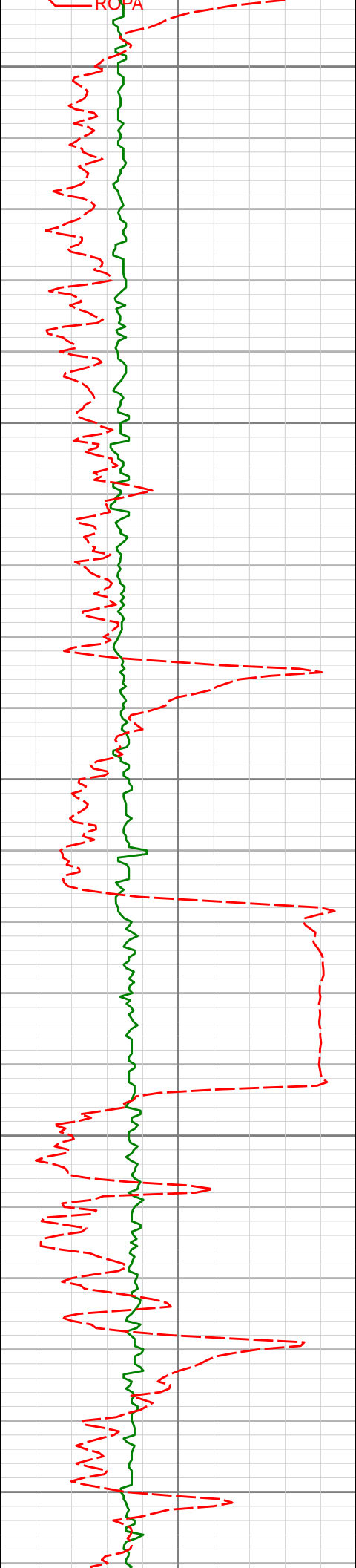
7406.45'

7406.83'

6269.30'

6364.28'

PGRC



13700

13738'

90.99°

0.39°

7405.67'

6458.27'

13750

13800

13832'

91.48°

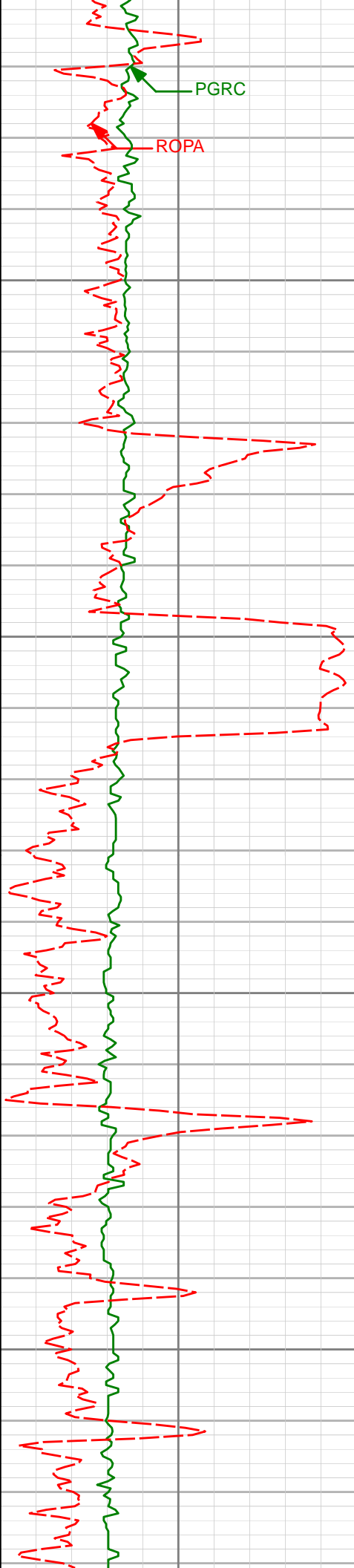
1.61°

7403.64'

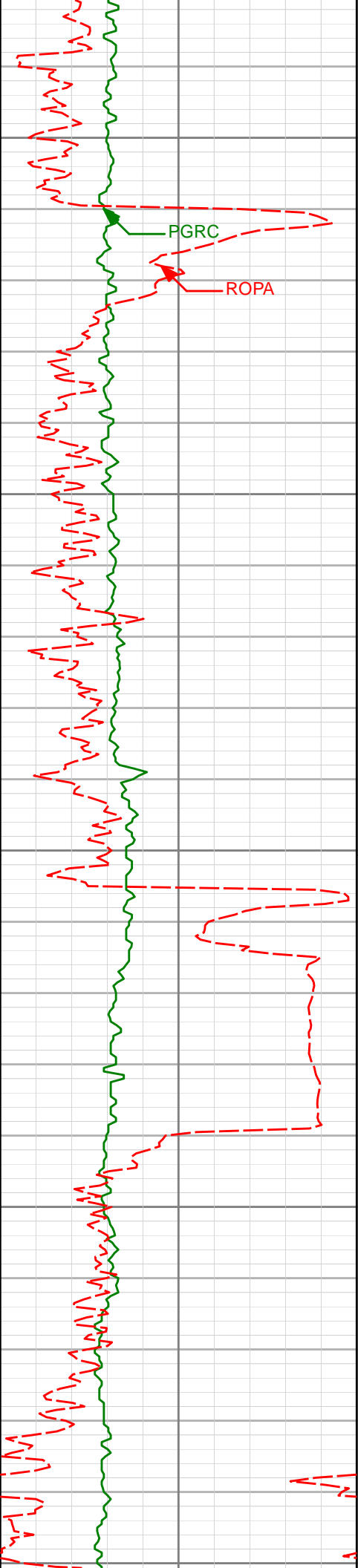
6552.24'

13850

13900



| | | | | |
|--------|--------|-------|----------|----------|
| 13927' | 91.02° | 1.88° | 7401.57' | 6647.21' |
| 13950 | | | | |
| 14000 | | | | |
| 14021' | 91.48° | 2.52° | 7399.52' | 6741.18' |
| 14050 | | | | |
| 14100 | | | | |
| 14115' | 91.23° | 2.20° | 7397.29' | 6835.13' |



14150

PGRC

ROPA

14200

14209'

90.68°

1.98°

7395.73'

6929.10'

14250

14300

14303'

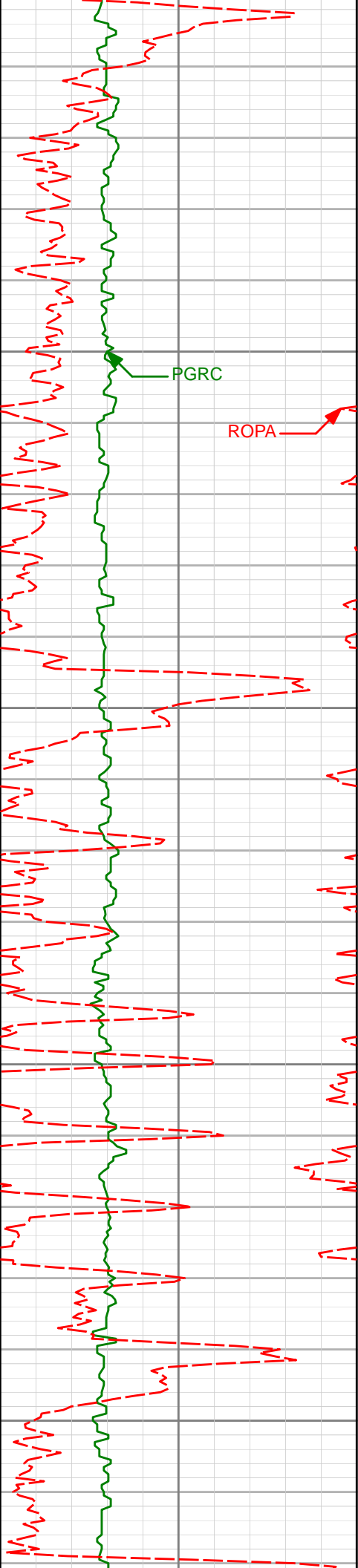
90.37°

3.82°

7394.87'

7023.05'

14350



14398'

14400

14450

14500

14550

14398'

90.40°

2.67°

7394.23'

7117.98'

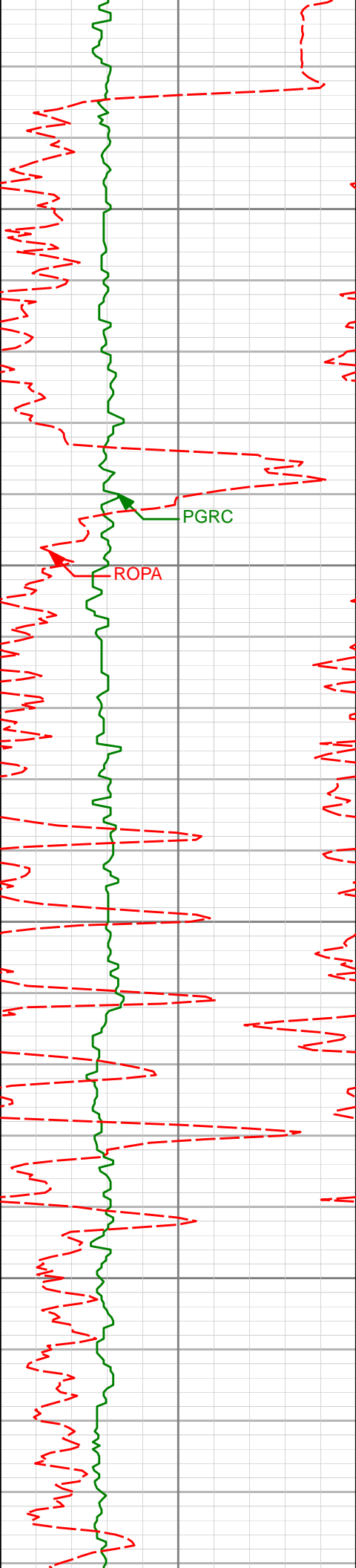
14492'

90.55°

2.72°

7393.45'

7211.94'



14600

14650

14700

14750

14586'

89.51°

3.48°

7393.40'

7305.89'

14680'

89.48°

2.01°

7394.23'

7399.84'

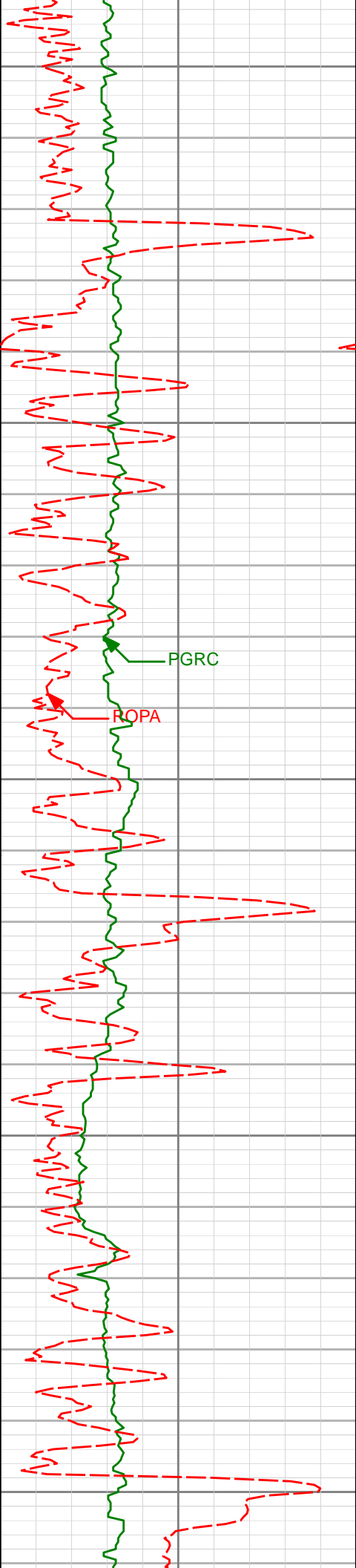
14774'

89.62°

2.21°

7394.97'

7493.83'



14800

14850

14900

14950

15000

14868'

14963'

89.51°

89.17°

0.75°

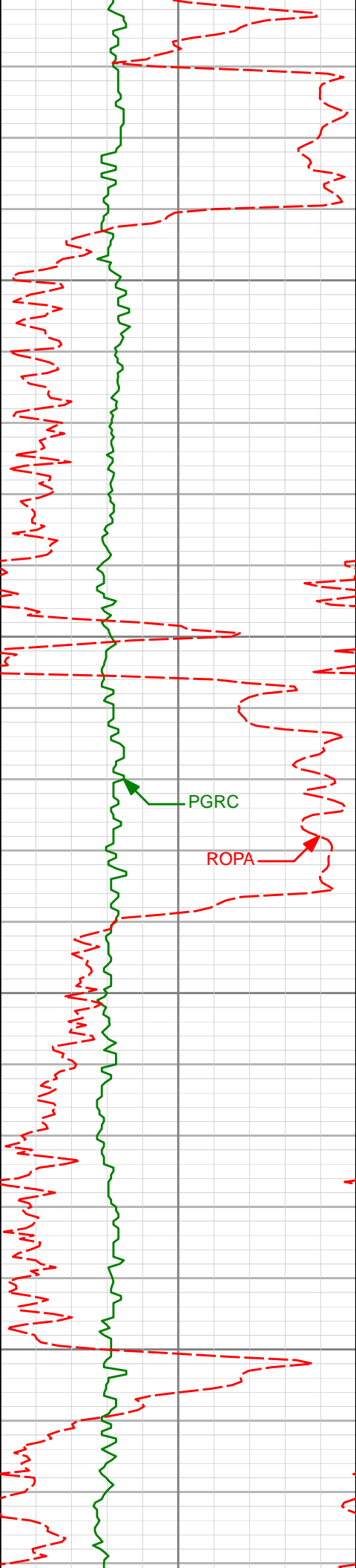
0.10°

7395.68'

7396.77'

7587.82'

7682.81'



15050

15057'

88.40°

1.05°

7398.77'

7776.78'

15100

PGRC

ROPA

15150

15151'

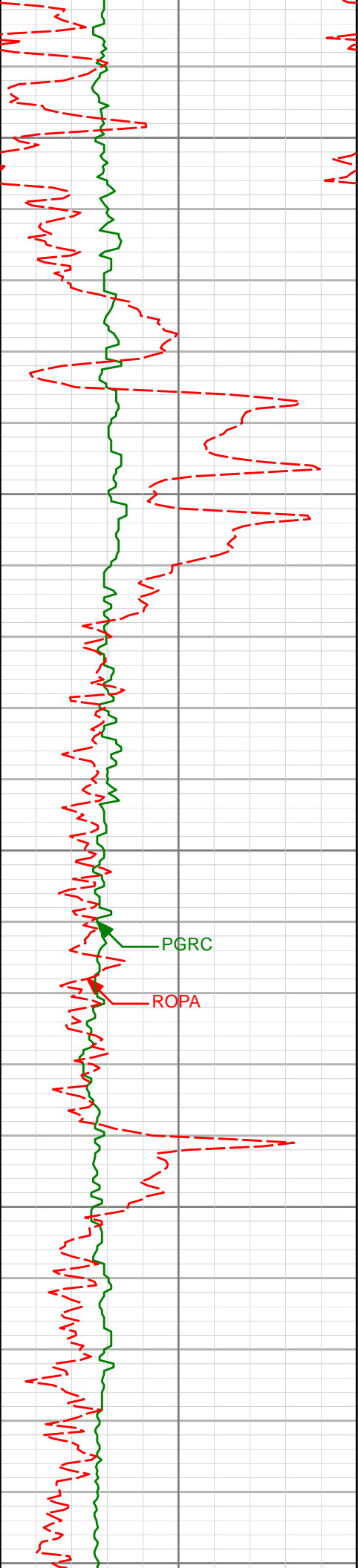
90.18°

2.09°

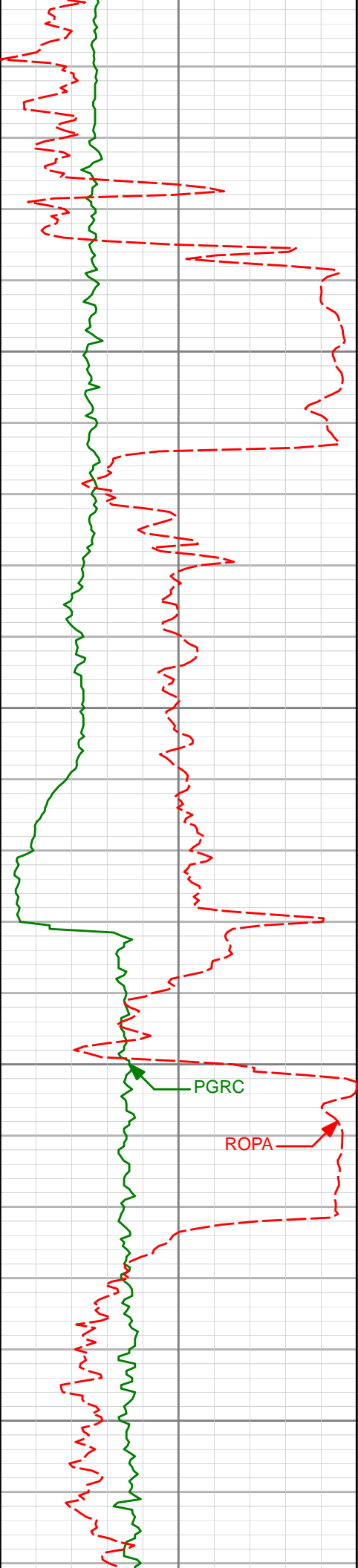
7399.93'

7870.76'

15200



| | | | | | |
|-------|--------|--------|-------|----------|----------|
| 15250 | 15246' | 90.46° | 1.29° | 7399.40' | 7965.76' |
| 15300 | | | | | |
| 15350 | 15340' | 90.43° | 0.62° | 7398.67' | 8059.75' |
| 15400 | | | | | |
| 15450 | 15435' | 90.25° | 0.13° | 7398.11' | 8154.74' |



15500

15550

15600

15650

PGRC

ROPA

15529'

89.29°

0.83°

7398.49'

8248.73'

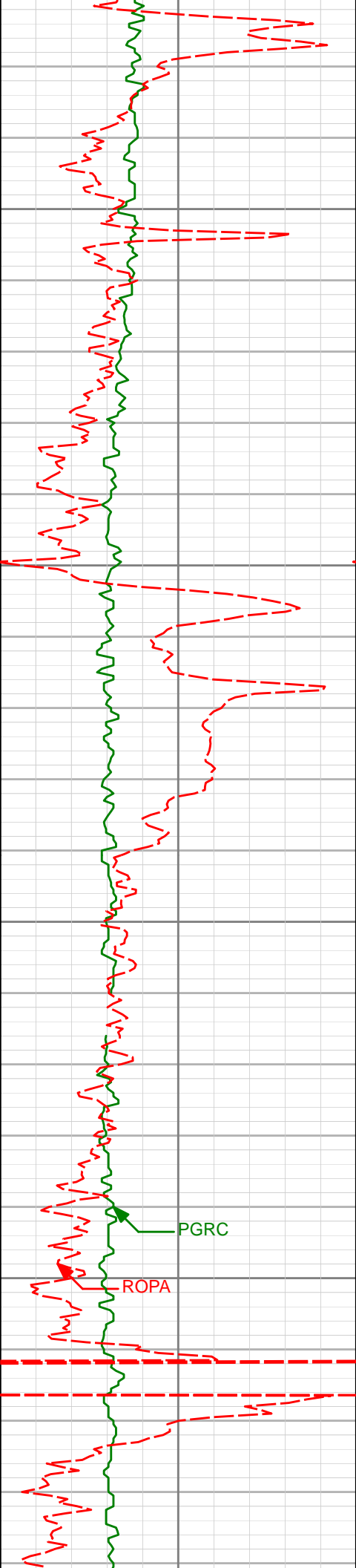
15623'

89.91°

1.80°

7399.14'

8342.73'



15700

15718'

89.85°

1.38°

7399.34'

8437.73'

15750

15800

15812'

89.78°

1.08°

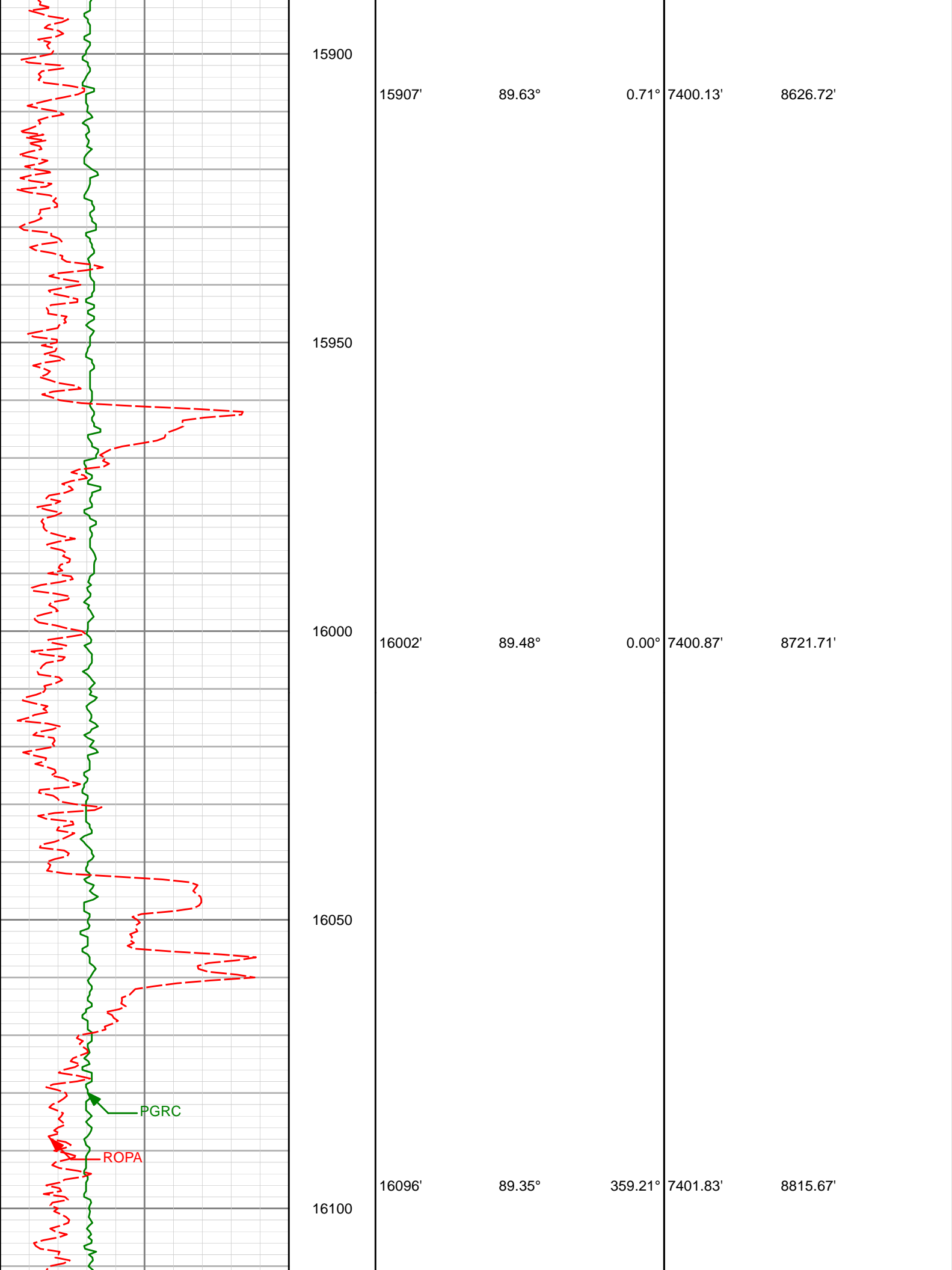
7399.64'

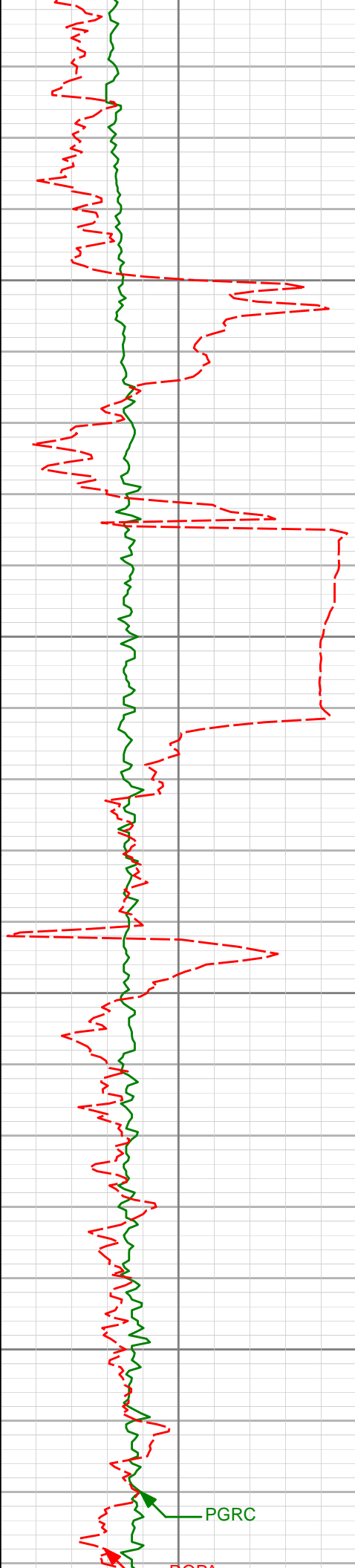
8531.72'

15850

PGRC

ROPA





16150

16191'

90.15°

359.28°

7402.25'

8910.62'

16200

16250

16285'

89.69°

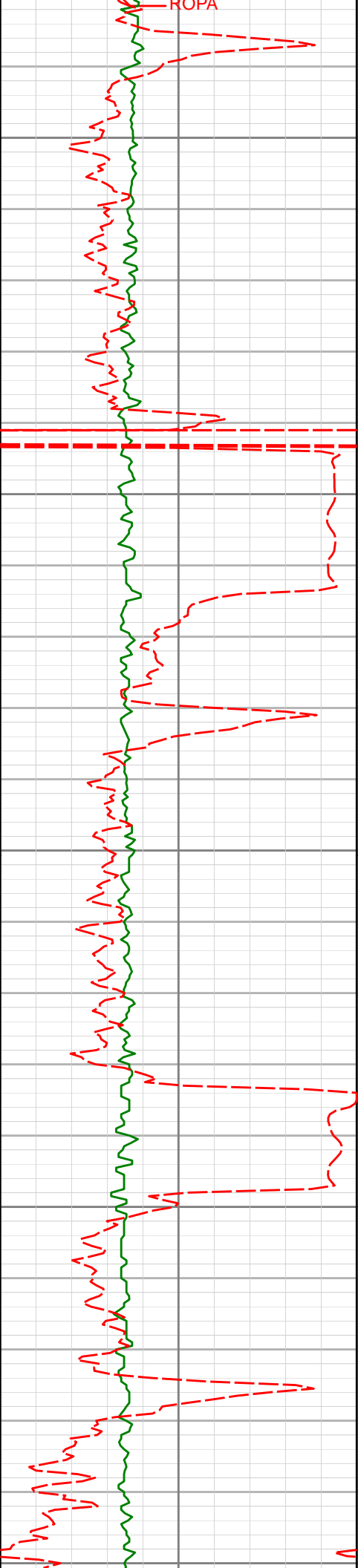
359.56°

7402.38'

9004.57'

16300

PGRC



16350

16380'

89.63°

359.45°

7402.94'

9099.53'

16400

16450

16474'

91.23°

1.28°

7402.24'

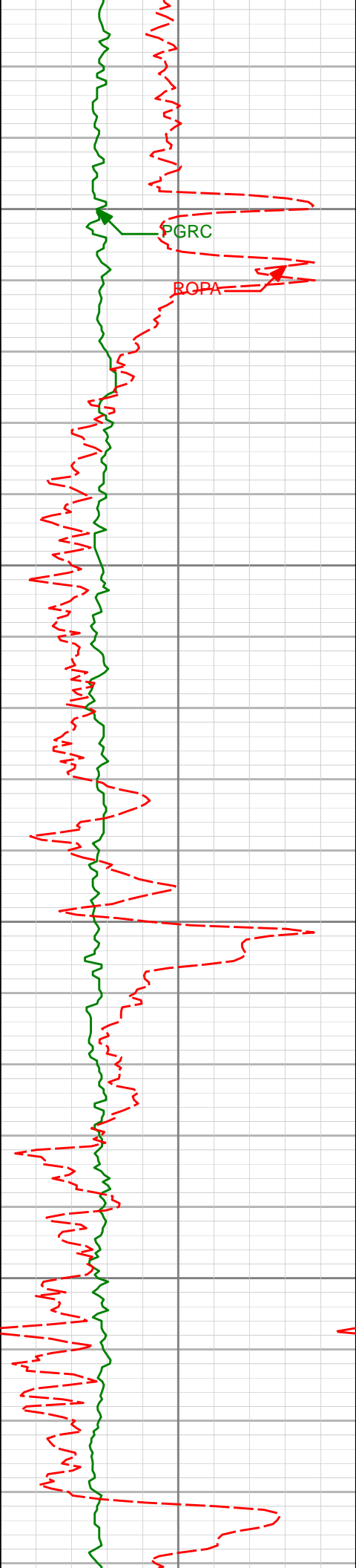
9193.52'

16500

16550



| | | | | |
|--------|--------|-------|----------|----------|
| 16550 | | | | |
| 16568' | 91.57° | 1.38° | 7399.94' | 9287.49' |
| 16600 | | | | |
| 16650 | | | | |
| 16663' | 91.66° | 3.83° | 7397.26' | 9382.41' |
| 16700 | | | | |
| 16750 | | | | |
| 16757' | 91.66° | 4.64° | 7394.54' | 9476.23' |



16800

16850

16900

16950

16851'

16946'

91.27°

91.42°

3.08°

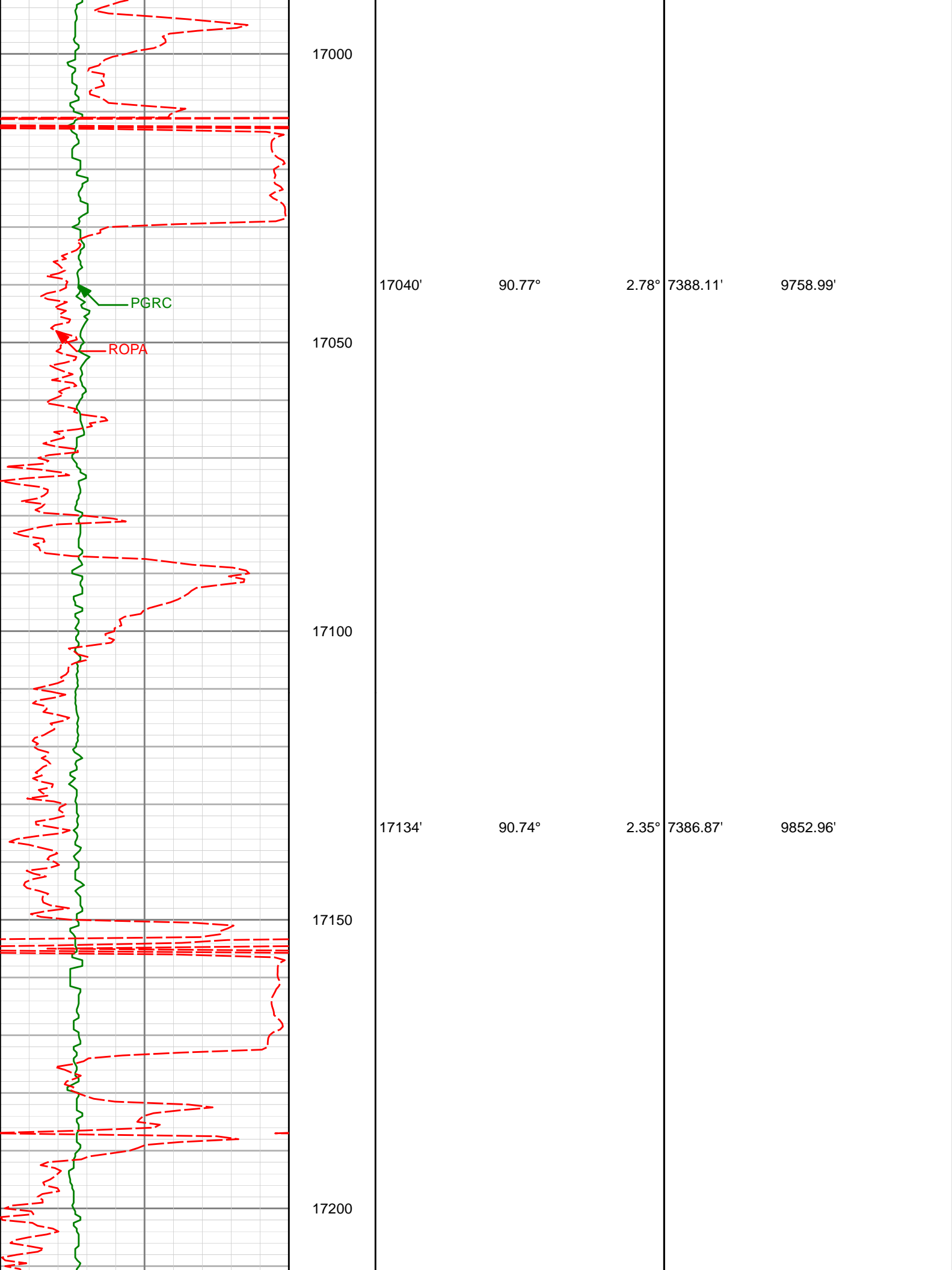
2.11°

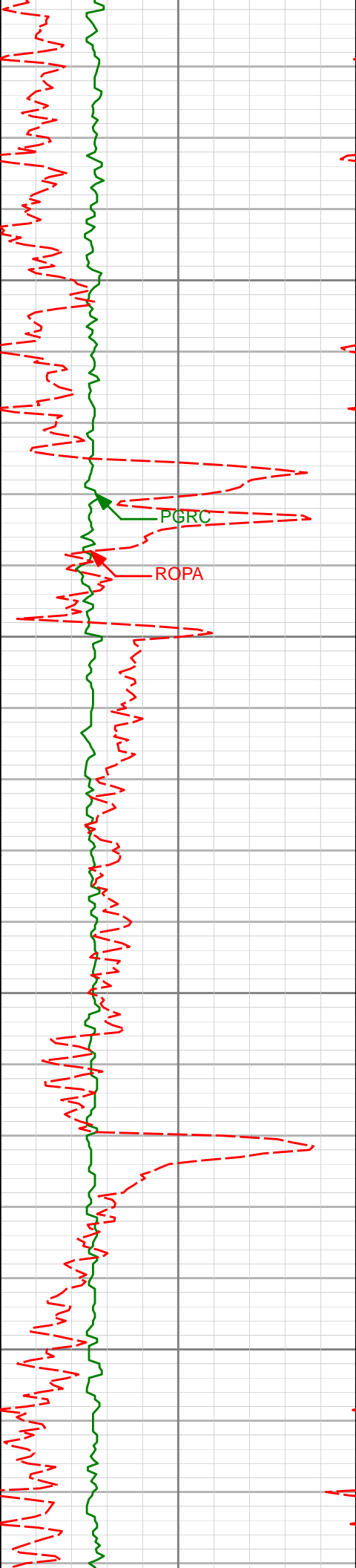
7392.13'

7389.90'

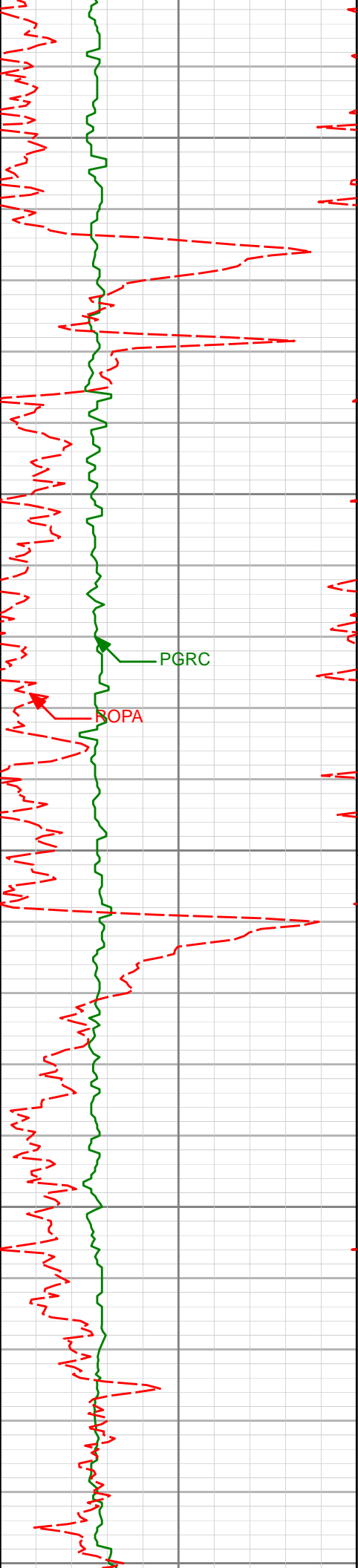
9570.09'

9665.04'





| | | | | |
|--------|--------|---------|----------|-----------|
| 17228' | 90.65° | 3.49° | 7385.73' | 9946.90' |
| 17250 | | | | |
| 17300 | | | | |
| 17323' | 89.38° | 1.21° | 7385.70' | 10041.87' |
| 17350 | | | | |
| 17400 | | | | |
| 17418' | 88.49° | 359.76° | 7387.47' | 10136.85' |



17450

17500

17550

17600

17650

17512'

88.61°

359.13°

7389.85'

10230.77'

PGRC

ROPA

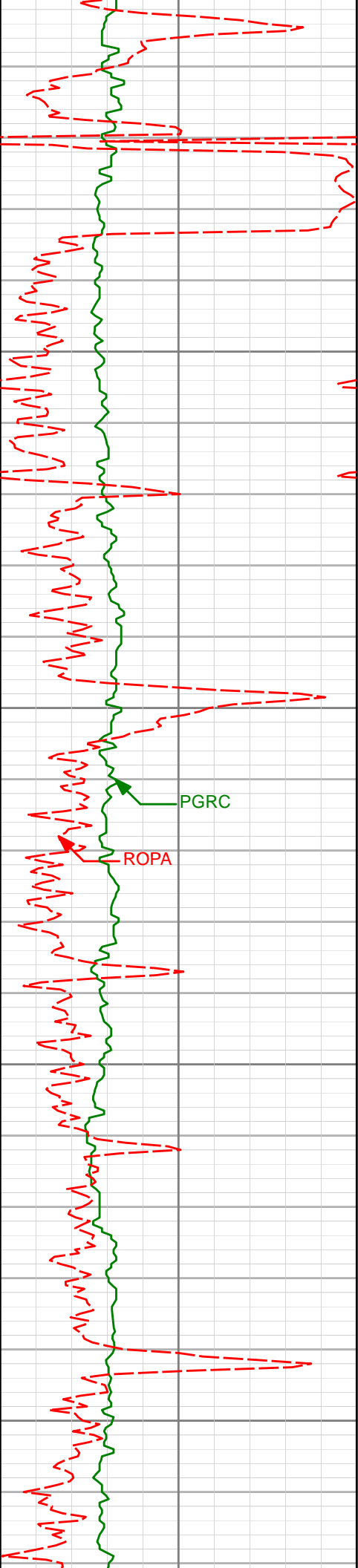
17606'

88.68°

358.48°

7392.07'

10324.67'



17700

17700'

88.55°

358.55°

7394.34'

10418.54'

17750

PGRC

ROPA

17800

17794'

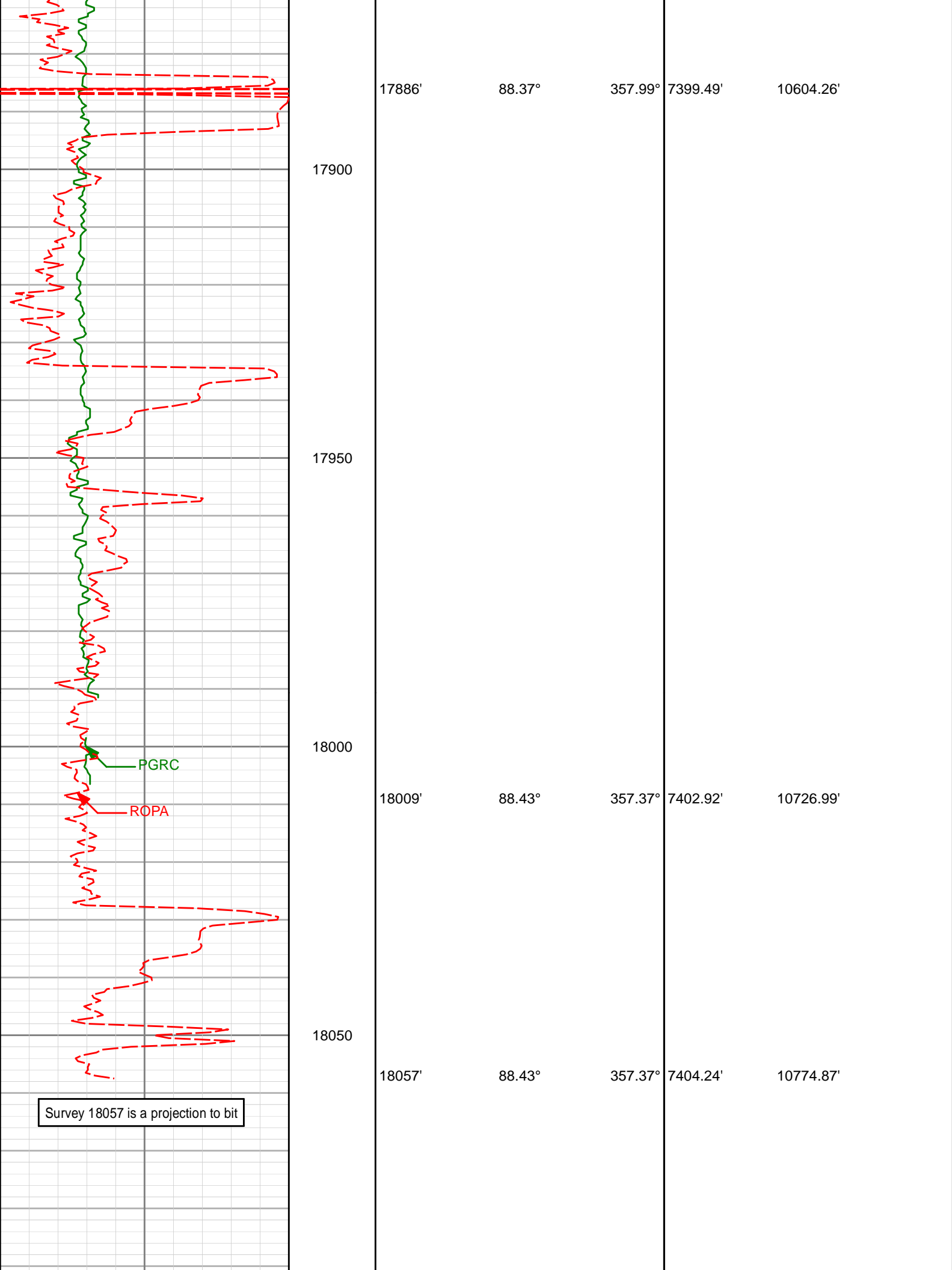
88.37°

358.56°

7396.87'

10512.41'

17850



| | | | | | | |
|--|-----|----------|-------|-----|-----|-----|
| | | 181.00 | | | | |
| Avg Rate of Penetration (ROPA) feet per hr | | MD ft | | | | |
| 500 | 0 | | Depth | Inc | Azi | TVD |
| PCG Gamma Ray BCorr (PGRC) api | | | | | | |
| 0 | 300 | | | | | |

HALLIBURTON

DIRECTIONAL SURVEY REPORT

**APC
Gee 26C-12HZ
Wattenberg
Weld Colorado
USA
CA-XX-0901807945**

| Measured Depth (feet) | Inclination (degrees) | Direction (degrees) | Vertical Depth (feet) | Latitude (feet) | Departure (feet) | Vertical Section (feet) | Dogleg (deg/100ft) |
|-----------------------------|--------------------------|------------------------|-----------------------------|--------------------|---------------------|-------------------------------|-----------------------|
| 978.00 | 0.30 | 112.94 | 977.99 | 1.51 S | 3.03 E | -1.45 | TIE-IN |
| 1117.00 | 0.59 | 189.34 | 1116.99 | 2.36 S | 3.25 E | -2.29 | 0.43 |
| 1212.00 | 0.62 | 211.44 | 1211.98 | 3.28 S | 2.90 E | -3.22 | 0.25 |
| 1307.00 | 1.48 | 140.65 | 1306.97 | 4.67 S | 3.41 E | -4.60 | 1.48 |
| 1401.00 | 3.87 | 117.20 | 1400.86 | 7.06 S | 7.00 E | -6.91 | 2.74 |
| 1496.00 | 5.10 | 118.73 | 1495.57 | 10.55 S | 13.56 E | -10.28 | 1.30 |
| 1591.00 | 6.61 | 119.67 | 1590.07 | 15.29 S | 22.01 E | -14.85 | 1.59 |
| 1681.00 | 7.54 | 123.84 | 1679.38 | 21.14 S | 31.42 E | -20.51 | 1.18 |
| 1773.00 | 9.12 | 126.86 | 1770.41 | 28.88 S | 42.26 E | -28.03 | 1.78 |
| 1864.00 | 11.37 | 120.76 | 1859.96 | 37.79 S | 55.75 E | -36.67 | 2.74 |
| 1957.00 | 12.35 | 113.35 | 1950.98 | 46.42 S | 72.76 E | -44.96 | 1.95 |
| 2049.00 | 13.61 | 109.68 | 2040.62 | 53.97 S | 91.98 E | -52.13 | 1.64 |
| 2141.00 | 16.32 | 101.96 | 2129.51 | 60.29 S | 114.83 E | -58.00 | 3.65 |
| 2234.00 | 18.97 | 100.25 | 2218.12 | 65.69 S | 142.49 E | -62.84 | 2.90 |
| 2326.00 | 20.63 | 98.37 | 2304.68 | 70.71 S | 173.24 E | -67.25 | 1.93 |
| 2419.00 | 22.35 | 92.23 | 2391.22 | 73.79 S | 207.12 E | -69.65 | 3.04 |
| 2511.00 | 20.91 | 90.84 | 2476.74 | 74.71 S | 241.02 E | -69.90 | 1.66 |
| 2602.00 | 21.69 | 87.88 | 2561.53 | 74.32 S | 274.06 E | -68.86 | 1.46 |
| 2695.00 | 19.74 | 86.17 | 2648.51 | 72.64 S | 306.91 E | -66.52 | 2.20 |
| 2787.00 | 18.48 | 85.89 | 2735.44 | 70.55 S | 336.96 E | -63.84 | 1.37 |

HALLIBURTON

Gee 26C-12HZ

| <i>Measured Depth (feet)</i> | <i>Inclination (degrees)</i> | <i>Direction (degrees)</i> | <i>Vertical Depth (feet)</i> | <i>Latitude (feet)</i> | <i>Departure (feet)</i> | <i>Vertical Section (feet)</i> | <i>Dogleg (deg/100ft)</i> |
|--------------------------------------|----------------------------------|--------------------------------|--------------------------------------|----------------------------|-----------------------------|--|-------------------------------|
| 2880.00 | 17.21 | 86.49 | 2823.97 | 68.66 S | 365.39 E | -61.37 | 1.38 |
| 2972.00 | 16.03 | 85.60 | 2912.12 | 66.85 S | 391.64 E | -59.04 | 1.31 |
| 3065.00 | 14.98 | 85.97 | 3001.74 | 65.02 S | 416.44 E | -56.72 | 1.13 |
| 3156.00 | 12.99 | 91.97 | 3090.04 | 64.54 S | 438.39 E | -55.81 | 2.70 |
| 3248.00 | 11.59 | 92.86 | 3179.93 | 65.36 S | 457.96 E | -56.24 | 1.54 |
| 3340.00 | 10.48 | 92.50 | 3270.23 | 66.19 S | 475.55 E | -56.71 | 1.21 |
| 3432.00 | 8.20 | 105.06 | 3361.01 | 68.26 S | 490.25 E | -58.49 | 3.31 |
| 3524.00 | 7.23 | 104.17 | 3452.18 | 71.38 S | 502.20 E | -61.37 | 1.06 |
| 3615.00 | 5.05 | 119.67 | 3542.65 | 74.76 S | 511.23 E | -64.58 | 2.99 |
| 3708.00 | 4.80 | 117.63 | 3635.31 | 78.59 S | 518.23 E | -68.27 | 0.33 |
| 3799.00 | 2.95 | 138.51 | 3726.10 | 82.11 S | 523.16 E | -71.69 | 2.53 |
| 3891.00 | 1.21 | 162.33 | 3818.04 | 84.81 S | 525.02 E | -74.35 | 2.07 |
| 3983.00 | 1.57 | 295.41 | 3910.03 | 85.20 S | 524.18 E | -74.75 | 2.78 |
| 4075.00 | 1.39 | 294.66 | 4002.00 | 84.19 S | 522.03 E | -73.79 | 0.20 |
| 4167.00 | 1.26 | 288.72 | 4093.97 | 83.40 S | 520.05 E | -73.04 | 0.21 |
| 4353.00 | 1.36 | 294.82 | 4279.92 | 81.82 S | 516.11 E | -71.53 | 0.09 |
| 4447.00 | 1.23 | 290.98 | 4373.90 | 80.99 S | 514.16 E | -70.74 | 0.17 |
| 4541.00 | 1.20 | 306.77 | 4467.88 | 80.04 S | 512.43 E | -69.83 | 0.36 |
| 4635.00 | 1.60 | 312.17 | 4561.85 | 78.57 S | 510.67 E | -68.39 | 0.45 |
| 4730.00 | 1.86 | 311.25 | 4656.81 | 76.66 S | 508.53 E | -66.53 | 0.28 |
| 4919.00 | 2.31 | 293.16 | 4845.68 | 73.14 S | 502.72 E | -63.12 | 0.42 |
| 5014.00 | 2.41 | 289.97 | 4940.60 | 71.71 S | 499.08 E | -61.76 | 0.17 |
| 5108.00 | 0.49 | 272.29 | 5034.57 | 71.01 S | 496.82 E | -61.12 | 2.07 |
| 5297.00 | 0.59 | 294.23 | 5223.56 | 70.58 S | 495.13 E | -60.72 | 0.12 |
| 5391.00 | 0.74 | 297.18 | 5317.55 | 70.11 S | 494.14 E | -60.26 | 0.16 |
| 5485.00 | 0.67 | 298.60 | 5411.55 | 69.57 S | 493.12 E | -59.74 | 0.08 |
| 5580.00 | 0.68 | 285.50 | 5506.54 | 69.15 S | 492.09 E | -59.35 | 0.16 |
| 5674.00 | 0.78 | 293.92 | 5600.53 | 68.74 S | 490.97 E | -58.96 | 0.16 |
| 5769.00 | 0.67 | 326.34 | 5695.53 | 68.02 S | 490.07 E | -58.25 | 0.44 |
| 5863.00 | 0.36 | 282.98 | 5789.52 | 67.49 S | 489.48 E | -57.74 | 0.51 |
| 5957.00 | 0.40 | 255.31 | 5883.52 | 67.51 S | 488.87 E | -57.77 | 0.20 |
| 6052.00 | 0.66 | 257.02 | 5978.52 | 67.72 S | 488.02 E | -57.99 | 0.27 |
| 6146.00 | 0.71 | 265.98 | 6072.51 | 67.88 S | 486.91 E | -58.18 | 0.13 |
| 6241.00 | 0.81 | 248.37 | 6167.50 | 68.17 S | 485.70 E | -58.49 | 0.27 |
| 6335.00 | 1.16 | 250.85 | 6261.49 | 68.73 S | 484.18 E | -59.08 | 0.38 |
| 6429.00 | 1.50 | 257.14 | 6355.46 | 69.31 S | 482.08 E | -59.71 | 0.39 |
| 6523.00 | 1.05 | 243.56 | 6449.44 | 69.97 S | 480.11 E | -60.40 | 0.57 |
| 6618.00 | 0.91 | 242.22 | 6544.42 | 70.71 S | 478.67 E | -61.17 | 0.15 |
| 6712.00 | 0.70 | 221.22 | 6638.42 | 71.49 S | 477.63 E | -61.97 | 0.38 |
| 6806.00 | 0.46 | 244.29 | 6732.41 | 72.08 S | 476.91 E | -62.58 | 0.35 |
| 6853.00 | 1.36 | 343.10 | 6779.41 | 71.63 S | 476.58 E | -62.14 | 3.19 |
| 6901.00 | 2.16 | 338.67 | 6827.38 | 70.24 S | 476.08 E | -60.76 | 1.69 |
| 6948.00 | 10.34 | 355.88 | 6874.07 | 65.20 S | 475.46 E | -55.73 | 17.66 |
| 6995.00 | 16.32 | 356.54 | 6919.78 | 54.39 S | 474.75 E | -44.94 | 12.73 |
| 7042.00 | 19.06 | 359.81 | 6964.55 | 40.13 S | 474.33 E | -30.68 | 6.20 |

Gee 26C-12HZ

| <i>Measured Depth (feet)</i> | <i>Inclination (degrees)</i> | <i>Direction (degrees)</i> | <i>Vertical Depth (feet)</i> | <i>Latitude (feet)</i> | <i>Departure (feet)</i> | <i>Vertical Section (feet)</i> | <i>Dogleg (deg/100ft)</i> |
|--------------------------------------|----------------------------------|--------------------------------|--------------------------------------|----------------------------|-----------------------------|--|-------------------------------|
| 7090.00 | 22.91 | 3.40 | 7009.36 | 22.95 S | 474.86 E | -13.50 | 8.45 |
| 7137.00 | 25.07 | 5.78 | 7052.30 | 3.91 S | 476.40 E | 5.57 | 5.03 |
| 7184.00 | 30.26 | 9.18 | 7093.92 | 17.70 N | 479.30 E | 27.23 | 11.54 |
| 7231.00 | 34.33 | 7.69 | 7133.64 | 42.54 N | 482.96 E | 52.14 | 8.82 |
| 7279.00 | 37.48 | 5.87 | 7172.52 | 70.48 N | 486.27 E | 80.14 | 6.93 |
| 7326.00 | 37.98 | 5.29 | 7209.69 | 99.11 N | 489.06 E | 108.82 | 1.30 |
| 7373.00 | 42.75 | 2.52 | 7245.49 | 129.46 N | 491.10 E | 139.21 | 10.84 |
| 7420.00 | 48.30 | 0.82 | 7278.41 | 162.97 N | 492.05 E | 172.73 | 12.09 |
| 7467.00 | 54.71 | 356.20 | 7307.66 | 199.71 N | 491.03 E | 209.44 | 15.65 |
| 7514.00 | 63.65 | 356.84 | 7331.71 | 239.95 N | 488.59 E | 249.63 | 19.06 |
| 7562.00 | 69.05 | 355.51 | 7350.96 | 283.81 N | 485.65 E | 293.41 | 11.53 |
| 7609.00 | 73.18 | 0.74 | 7366.18 | 328.23 N | 484.22 E | 337.79 | 13.71 |
| 7656.00 | 76.95 | 5.39 | 7378.30 | 373.55 N | 486.67 E | 383.16 | 12.48 |
| 7703.00 | 77.82 | 7.92 | 7388.56 | 419.10 N | 491.98 E | 428.81 | 5.57 |
| 7751.00 | 81.95 | 6.03 | 7396.99 | 465.99 N | 497.71 E | 475.80 | 9.44 |
| 7823.00 | 87.19 | 5.84 | 7403.80 | 537.26 N | 505.12 E | 547.21 | 7.28 |
| 7917.00 | 87.16 | 5.30 | 7408.44 | 630.70 N | 514.23 E | 640.81 | 0.57 |
| 8012.00 | 88.77 | 5.66 | 7411.81 | 725.21 N | 523.30 E | 735.47 | 1.74 |
| 8106.00 | 88.92 | 5.67 | 7413.70 | 818.73 N | 532.58 E | 829.16 | 0.16 |
| 8200.00 | 90.62 | 3.84 | 7414.08 | 912.40 N | 540.37 E | 922.97 | 2.66 |
| 8294.00 | 91.11 | 3.92 | 7412.66 | 1006.17 N | 546.73 E | 1016.85 | 0.53 |
| 8388.00 | 90.99 | 2.60 | 7410.94 | 1100.00 N | 552.07 E | 1110.77 | 1.41 |
| 8482.00 | 90.92 | 1.82 | 7409.37 | 1193.92 N | 555.70 E | 1204.74 | 0.83 |
| 8576.00 | 91.08 | 1.07 | 7407.73 | 1287.87 N | 558.07 E | 1298.72 | 0.82 |
| 8671.00 | 89.91 | 359.80 | 7406.91 | 1382.86 N | 558.79 E | 1393.71 | 1.82 |
| 8765.00 | 90.00 | 359.33 | 7406.99 | 1476.86 N | 558.08 E | 1487.67 | 0.51 |
| 8859.00 | 89.91 | 358.60 | 7407.06 | 1570.84 N | 556.38 E | 1581.60 | 0.78 |
| 8953.00 | 90.77 | 359.14 | 7406.50 | 1664.82 N | 554.52 E | 1675.53 | 1.08 |
| 9047.00 | 90.18 | 357.18 | 7405.72 | 1758.77 N | 551.51 E | 1769.39 | 2.18 |
| 9142.00 | 90.59 | 357.92 | 7405.08 | 1853.68 N | 547.44 E | 1864.20 | 0.89 |
| 9236.00 | 90.22 | 1.56 | 7404.42 | 1947.66 N | 547.02 E | 1958.15 | 3.89 |
| 9330.00 | 90.25 | 1.44 | 7404.03 | 2041.62 N | 549.48 E | 2052.15 | 0.13 |
| 9424.00 | 90.18 | 359.71 | 7403.68 | 2135.61 N | 550.42 E | 2146.14 | 1.84 |
| 9518.00 | 90.74 | 359.43 | 7402.93 | 2229.61 N | 549.72 E | 2240.10 | 0.67 |
| 9613.00 | 90.34 | 1.10 | 7402.03 | 2324.60 N | 550.16 E | 2335.08 | 1.81 |
| 9707.00 | 90.03 | 1.23 | 7401.73 | 2418.58 N | 552.07 E | 2429.08 | 0.36 |
| 9801.00 | 90.12 | 359.58 | 7401.60 | 2512.57 N | 552.73 E | 2523.07 | 1.76 |
| 9895.00 | 90.09 | 0.34 | 7401.43 | 2606.57 N | 552.67 E | 2617.05 | 0.81 |
| 9987.00 | 89.72 | 1.37 | 7401.59 | 2698.56 N | 554.04 E | 2709.05 | 1.19 |
| 10079.00 | 89.69 | 0.88 | 7402.06 | 2790.54 N | 555.84 E | 2801.05 | 0.53 |
| 10171.00 | 89.72 | 3.24 | 7402.53 | 2882.47 N | 559.15 E | 2893.03 | 2.57 |
| 10262.00 | 90.59 | 3.06 | 7402.29 | 2973.34 N | 564.15 E | 2983.97 | 0.98 |
| 10354.00 | 90.15 | 4.38 | 7401.69 | 3065.14 N | 570.12 E | 3075.87 | 1.51 |
| 10446.00 | 88.21 | 3.70 | 7403.01 | 3156.90 N | 576.60 E | 3167.74 | 2.23 |
| 10538.00 | 88.46 | 3.24 | 7405.68 | 3248.69 N | 582.17 E | 3259.63 | 0.57 |

HALLIBURTON

Gee 26C-12HZ

| <i>Measured Depth (feet)</i> | <i>Inclination (degrees)</i> | <i>Direction (degrees)</i> | <i>Vertical Depth (feet)</i> | <i>Latitude (feet)</i> | <i>Departure (feet)</i> | <i>Vertical Section (feet)</i> | <i>Dogleg (deg/100ft)</i> |
|--------------------------------------|----------------------------------|--------------------------------|--------------------------------------|----------------------------|-----------------------------|--|-------------------------------|
| 10630.00 | 88.55 | 2.96 | 7408.08 | 3340.52 N | 587.14 E | 3351.54 | 0.32 |
| 10721.00 | 88.77 | 2.74 | 7410.21 | 3431.38 N | 591.66 E | 3442.48 | 0.34 |
| 10814.00 | 88.80 | 2.14 | 7412.18 | 3524.28 N | 595.62 E | 3535.43 | 0.65 |
| 10908.00 | 88.77 | 1.46 | 7414.18 | 3618.21 N | 598.57 E | 3629.40 | 0.72 |
| 11002.00 | 89.23 | 1.77 | 7415.82 | 3712.16 N | 601.22 E | 3723.39 | 0.59 |
| 11097.00 | 89.88 | 1.76 | 7416.55 | 3807.11 N | 604.15 E | 3818.38 | 0.68 |
| 11191.00 | 89.85 | 1.69 | 7416.78 | 3901.07 N | 606.98 E | 3912.37 | 0.08 |
| 11286.00 | 89.69 | 1.47 | 7417.16 | 3996.03 N | 609.60 E | 4007.37 | 0.29 |
| 11380.00 | 90.25 | 1.68 | 7417.21 | 4089.99 N | 612.18 E | 4101.36 | 0.64 |
| 11474.00 | 90.99 | 1.94 | 7416.19 | 4183.94 N | 615.15 E | 4195.35 | 0.83 |
| 11568.00 | 90.09 | 1.97 | 7415.30 | 4277.88 N | 618.36 E | 4289.34 | 0.96 |
| 11663.00 | 89.66 | 1.63 | 7415.51 | 4372.83 N | 621.34 E | 4384.33 | 0.58 |
| 11757.00 | 90.80 | 0.96 | 7415.13 | 4466.81 N | 623.47 E | 4478.33 | 1.41 |
| 11852.00 | 90.28 | 0.08 | 7414.24 | 4561.80 N | 624.33 E | 4573.32 | 1.08 |
| 11946.00 | 90.09 | 359.54 | 7413.93 | 4655.80 N | 624.02 E | 4667.29 | 0.61 |
| 12040.00 | 89.51 | 359.02 | 7414.26 | 4749.79 N | 622.84 E | 4761.24 | 0.83 |
| 12135.00 | 91.23 | 0.21 | 7413.65 | 4844.78 N | 622.20 E | 4856.20 | 2.20 |
| 12229.00 | 91.23 | 359.94 | 7411.63 | 4938.76 N | 622.32 E | 4950.16 | 0.29 |
| 12323.00 | 91.26 | 359.62 | 7409.59 | 5032.73 N | 621.96 E | 5044.11 | 0.34 |
| 12417.00 | 91.48 | 359.81 | 7407.34 | 5126.70 N | 621.49 E | 5138.05 | 0.31 |
| 12511.00 | 91.48 | 0.04 | 7404.91 | 5220.67 N | 621.37 E | 5232.00 | 0.24 |
| 12606.00 | 91.23 | 359.45 | 7402.67 | 5315.65 N | 620.95 E | 5326.95 | 0.67 |
| 12700.00 | 90.86 | 358.55 | 7400.95 | 5409.61 N | 619.31 E | 5420.86 | 1.04 |
| 12794.00 | 90.40 | 0.27 | 7399.92 | 5503.60 N | 618.34 E | 5514.81 | 1.89 |
| 12889.00 | 90.18 | 0.11 | 7399.44 | 5598.60 N | 618.65 E | 5609.80 | 0.29 |
| 12983.00 | 90.03 | 359.36 | 7399.27 | 5692.60 N | 618.22 E | 5703.77 | 0.81 |
| 13077.00 | 89.82 | 359.36 | 7399.39 | 5786.59 N | 617.17 E | 5797.72 | 0.22 |
| 13171.00 | 89.45 | 358.83 | 7399.99 | 5880.58 N | 615.68 E | 5891.66 | 0.69 |
| 13266.00 | 88.92 | 358.13 | 7401.34 | 5975.53 N | 613.16 E | 5986.55 | 0.92 |
| 13360.00 | 88.86 | 358.74 | 7403.16 | 6069.48 N | 610.60 E | 6080.43 | 0.65 |
| 13454.00 | 89.02 | 359.44 | 7404.90 | 6163.45 N | 609.10 E | 6174.35 | 0.76 |
| 13549.00 | 89.11 | 359.59 | 7406.45 | 6258.43 N | 608.30 E | 6269.30 | 0.18 |
| 13644.00 | 90.43 | 0.73 | 7406.83 | 6353.43 N | 608.56 E | 6364.28 | 1.84 |
| 13738.00 | 90.99 | 0.39 | 7405.67 | 6447.42 N | 609.48 E | 6458.27 | 0.70 |
| 13832.00 | 91.48 | 1.61 | 7403.64 | 6541.38 N | 611.12 E | 6552.24 | 1.40 |
| 13927.00 | 91.02 | 1.88 | 7401.57 | 6636.31 N | 614.02 E | 6647.21 | 0.56 |
| 14021.00 | 91.48 | 2.52 | 7399.52 | 6730.22 N | 617.62 E | 6741.18 | 0.84 |
| 14115.00 | 91.23 | 2.20 | 7397.29 | 6824.11 N | 621.49 E | 6835.13 | 0.43 |
| 14209.00 | 90.68 | 1.98 | 7395.73 | 6918.04 N | 624.92 E | 6929.10 | 0.63 |
| 14303.00 | 90.37 | 3.82 | 7394.87 | 7011.91 N | 629.68 E | 7023.05 | 1.98 |
| 14398.00 | 90.40 | 2.67 | 7394.23 | 7106.75 N | 635.05 E | 7117.98 | 1.21 |
| 14492.00 | 90.55 | 2.72 | 7393.45 | 7200.65 N | 639.47 E | 7211.94 | 0.17 |
| 14586.00 | 89.51 | 3.48 | 7393.40 | 7294.51 N | 644.56 E | 7305.89 | 1.37 |
| 14680.00 | 89.48 | 2.01 | 7394.23 | 7388.39 N | 649.06 E | 7399.84 | 1.56 |
| 14774.00 | 89.62 | 2.21 | 7394.97 | 7482.33 N | 652.52 E | 7493.83 | 0.26 |

HALLIBURTON

Gee 26C-12HZ

| <i>Measured Depth (feet)</i> | <i>Inclination (degrees)</i> | <i>Direction (degrees)</i> | <i>Vertical Depth (feet)</i> | <i>Latitude (feet)</i> | <i>Departure (feet)</i> | <i>Vertical Section (feet)</i> | <i>Dogleg (deg/100ft)</i> |
|--------------------------------------|----------------------------------|--------------------------------|--------------------------------------|----------------------------|-----------------------------|--|-------------------------------|
| 14868.00 | 89.51 | 0.75 | 7395.68 | 7576.29 N | 654.95 E | 7587.82 | 1.56 |
| 14963.00 | 89.17 | 0.10 | 7396.77 | 7671.28 N | 655.65 E | 7682.81 | 0.77 |
| 15057.00 | 88.40 | 1.05 | 7398.77 | 7765.25 N | 656.59 E | 7776.78 | 1.30 |
| 15151.00 | 90.18 | 2.09 | 7399.93 | 7859.20 N | 659.17 E | 7870.76 | 2.19 |
| 15246.00 | 90.46 | 1.29 | 7399.40 | 7954.16 N | 661.97 E | 7965.76 | 0.89 |
| 15340.00 | 90.43 | 0.62 | 7398.67 | 8048.14 N | 663.54 E | 8059.75 | 0.71 |
| 15435.00 | 90.25 | 0.13 | 7398.11 | 8143.14 N | 664.16 E | 8154.74 | 0.55 |
| 15529.00 | 89.29 | 0.83 | 7398.49 | 8237.13 N | 664.95 E | 8248.73 | 1.26 |
| 15623.00 | 89.91 | 1.80 | 7399.14 | 8331.11 N | 667.10 E | 8342.73 | 1.22 |
| 15718.00 | 89.85 | 1.38 | 7399.34 | 8426.07 N | 669.74 E | 8437.73 | 0.45 |
| 15812.00 | 89.78 | 1.08 | 7399.64 | 8520.05 N | 671.76 E | 8531.72 | 0.33 |
| 15907.00 | 89.63 | 0.71 | 7400.13 | 8615.03 N | 673.24 E | 8626.72 | 0.42 |
| 16002.00 | 89.48 | 0.00 | 7400.87 | 8710.03 N | 673.83 E | 8721.71 | 0.76 |
| 16096.00 | 89.35 | 359.21 | 7401.83 | 8804.02 N | 673.18 E | 8815.67 | 0.85 |
| 16191.00 | 90.15 | 359.28 | 7402.25 | 8899.01 N | 671.93 E | 8910.62 | 0.85 |
| 16285.00 | 89.69 | 359.56 | 7402.38 | 8993.00 N | 670.98 E | 9004.57 | 0.57 |
| 16380.00 | 89.63 | 359.45 | 7402.94 | 9088.00 N | 670.16 E | 9099.53 | 0.13 |
| 16474.00 | 91.23 | 1.28 | 7402.24 | 9181.99 N | 670.76 E | 9193.52 | 2.59 |
| 16568.00 | 91.57 | 1.38 | 7399.94 | 9275.93 N | 672.94 E | 9287.49 | 0.38 |
| 16663.00 | 91.66 | 3.83 | 7397.26 | 9370.79 N | 677.25 E | 9382.41 | 2.58 |
| 16757.00 | 91.66 | 4.64 | 7394.54 | 9464.49 N | 684.19 E | 9476.23 | 0.86 |
| 16851.00 | 91.27 | 3.08 | 7392.13 | 9558.25 N | 690.52 E | 9570.09 | 1.71 |
| 16946.00 | 91.42 | 2.11 | 7389.90 | 9653.12 N | 694.82 E | 9665.04 | 1.03 |
| 17040.00 | 90.77 | 2.78 | 7388.11 | 9747.02 N | 698.83 E | 9758.99 | 0.99 |
| 17134.00 | 90.74 | 2.35 | 7386.87 | 9840.92 N | 703.03 E | 9852.96 | 0.46 |
| 17228.00 | 90.65 | 3.49 | 7385.73 | 9934.79 N | 707.82 E | 9946.90 | 1.22 |
| 17323.00 | 89.38 | 1.21 | 7385.70 | 10029.70 N | 711.72 E | 10041.87 | 2.75 |
| 17418.00 | 88.49 | 359.76 | 7387.47 | 10124.67 N | 712.52 E | 10136.85 | 1.79 |
| 17512.00 | 88.61 | 359.13 | 7389.85 | 10218.64 N | 711.61 E | 10230.77 | 0.68 |
| 17606.00 | 88.68 | 358.48 | 7392.07 | 10312.59 N | 709.65 E | 10324.67 | 0.70 |
| 17700.00 | 88.55 | 358.55 | 7394.34 | 10406.53 N | 707.21 E | 10418.54 | 0.16 |
| 17794.00 | 88.37 | 358.56 | 7396.87 | 10500.47 N | 704.84 E | 10512.41 | 0.19 |
| 17886.00 | 88.37 | 357.99 | 7399.49 | 10592.39 N | 702.08 E | 10604.26 | 0.62 |
| 18009.00 | 88.43 | 357.37 | 7402.92 | 10715.24 N | 697.10 E | 10726.99 | 0.51 |
| 18057.00 | 88.43 | 357.37 | 7404.24 | 10763.17 N | 694.90 E | 10774.87 | 0.00 |

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 1.14 DEGREES (TRUE)
A TOTAL CORRECTION OF 8.52 DEG FROM MAGNETIC NORTH TO TRUE NORTH HAS BEEN APPLIED**

**HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.
HORIZONTAL DISPLACEMENT(CLOSURE) AT 18057.00 FEET
IS 10785.58 FEET ALONG 3.69 DEGREES (TRUE)**

Survey Data is tied onto Gyro Data

Final survey is a projection to bit

Surveys have been IFR Corrected