



1 : 240

WELL INFORMATION

| | | | | | |
|---|------------------|-------------------|-------------------|-------------------|--|
| MWD Run Number | 100 | 200 | 300 | 400 | |
| Date run completed | 10-Nov-17 | 11-Nov-17 | 12-Nov-17 | 16-Nov-17 | |
| Rig Bit Number | 2 | 3 | 4 | 5 | |
| Bit Size (in) | 8.500 | 6.125 | 6.125 | 6.125 | |
| Tool Nominal OD (in) | 6.75 | 4.75 | 4.75 | 4.75 | |
| Log Start Depth (MD, ft) | 1,876.00 | 5,979.00 | 7,444.00 | 7,802.00 | |
| Log End Depth (MD, ft) | 5,979.00 | 7,444.00 | 7,802.00 | 15,700.00 | |
| Drill or Wipe | Drill | Drill | Drill | Drill | |
| Drill/Wipe Start Date and Time | 09-Nov-17 07:45 | 10-Nov-17 20:45 | 11-Nov-17 18:00 | 12-Nov-17 21:50 | |
| Drill/Wipe End Date and Time | 09-Nov-17 21:00 | 11-Nov-17 07:30 | 12-Nov-17 09:30 | 16-Nov-17 00:55 | |
| Min Inc (deg) @ Depth (MD, ft) | 2.13 @ 5,866.00 | 0.95 @ 6,806.00 | 53.22 @ 7,479.00 | 85.23 @ 11,812.00 | |
| Max Inc (deg) @ Depth (MD, ft) | 19.13 @ 3,083.00 | 46.48 @ 7,390.00 | 82.71 @ 7,757.00 | 95.20 @ 9,819.00 | |
| Bit TFA(in2) / Bit Type | 0.75 / PDC | 0.75 / PDC | 0.75 / PDC | 0.75 / PDC | |
| Flow Rate (gpm) | 586.78 | 274.00 | 244.29 | 295.56 | |
| Max AV (fpm) / CV (fpm) @ MWD | 441.4 / 536.5 | 1,860.7 / 1,000.0 | 1,957.6 / 1,000.0 | 1,860.7 / 968.5 | |
| Fluid Type | Diesel Mud Base | Diesel Mud Base | Diesel Mud Base | Diesel Mud Base | |
| Density (ppg) / Viscosity (spqt) | 9.05 / 69.00 | 9.00 / 68.00 | 9.35 / 70.00 | 9.40 / 75.00 | |
| Filtrate CL (ppm) | 35,000.00 | 36,000.00 | 33,000.00 | 33,000.00 | |
| pH / API Filtrate (mptm) | N/A | N/A / 0 | N/A / 0 | N/A / 0 | |
| PV (cP) / YP (lbf2) | 22 / 12.00 | 18 / 11.00 | 24 / 10.00 | 23 / 11.00 | |
| % Solids / % Sand | 8.00 / 0 | 8 / 0 | 9 / 0 | 9.50 / 0 | |
| % Oil / Oil:Water Ratio | 70.00 / 76:24 | 66 / 73:27 | 67.00 / 74:26 | 70.00 / 77:23 | |
| Rm @ Measured Temp (degF) | N/A @ N/A | 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 | N/A @ N/A | |
| Rmc @ Measured Temp (degF) | N/A @ N/A | N/A @ N/A | N/A @ N/A | N/A @ N/A | |
| Max Tool Temp (deg F) @ Depth (MD, ft) | N/A | N/A | N/A | N/A | |

| | | | | | |
|-------------------------------|-----------------|-----------------|-----------------|-----------------|--|
| Max Tool Temp (degF) / Source | N/A | N/A | N/A | N/A | |
| Rm @ Max Tool Temp (degF) | N/A @ 164.10 | N/A @ N/A | N/A @ N/A | N/A @ N/A | |
| Lead MWD Engineer | Max Trainoff | Max Trainoff | Max Trainoff | Max Trainoff | |
| Customer Representative | Jackie McKinley | Jackie McKinley | Jackie McKinley | Jackie McKinley | |

SENSOR INFORMATION

Downhole Processor Information

| | | | | | |
|---------------------------|--------------------|--------------------|--------------------|--------------------|--|
| Tool Type | Sperry Next Gen | Sperry Net Gen | Sperry Next Gen | Sperry Next Gen | |
| Software Version | N/A | N/A | N/A | N/A | |
| Sub Serial Number | N/A | N/A | N/A | N/A | |
| Insert Serial Number | N/A | N/A | N/A | N/A | |
| Date and Time Initialized | 01-Jan-70 00:00:00 | 01-Jan-70 00:00:00 | 01-Jan-70 00:00:00 | 01-Jan-70 00:00:00 | |
| Date and Time Read | 01-Jan-70 00:00:00 | 01-Jan-70 00:00:00 | 01-Jan-70 00:00:00 | 01-Jan-70 00:00:00 | |
| ECMB SW Version | N/A | N/A | N/A | N/A | |

Directional Sensor Information

| | | | | | |
|------------------------|--------------------|--------------------|--------------------|--------------------|--|
| Tool Type | Sperry Next Gen DM | Sperry Next Gen DM | Sperry Next Gen DM | Sperry Next Gen DM | |
| Distance From Bit (ft) | 46 | 48 | 45 | 48 | |
| Software Version | N/A | N/A | N/A | N/A | |
| Sub Serial Number | N/A | N/A | N/A | N/A | |
| Sonde Serial Number | N/A | N/A | N/A | N/A | |
| Sensor ID Number | N/A | N/A | N/A | N/A | |
| Toolface Offset (deg) | N/A | N/A | N/A | N/A | |

Gamma Ray Sensor Information

| | | | | | |
|------------------------------|--------------------|--------------------|--------------------|--------------------|--|
| Tool Type | Sperry Next Gen GM | Sperry Next Gen GM | Sperry Next Gen GM | Sperry Next Gen GM | |
| Distance From Bit (ft) | 39.50 | 43.47 | 39.85 | 43.47 | |
| Recorded Sample Period (sec) | N/A | N/A | N/A | N/A | |
| Software Version | N/A | N/A | N/A | N/A | |
| Sub Serial Number | N/A | N/A | N/A | N/A | |
| Insert/Sonde Serial Number | N/A | N/A | N/A | N/A | |

REMARKS

1. All depths are calibrated 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 runs were drilled with sperry Next Gen MWD tools. Directional Module SN: D046, Gamma Module SN: G040

4. All data presented is recorded data unless otherwise stated.

5. All gamma data was corrected for collar thickness only.

6. The following smoothing parameters have been applied to the data:

GR (Gamma Ray):
Interval Resolution: 0.5ft
Interval Distance: 0.6ft
Gap Fill: 3.0ft

ROPA (Average Rate of Penetration):
Interval Resolution: 0.5ft
Interval Distance: 1.2ft
Gap Fill: 3.0ft

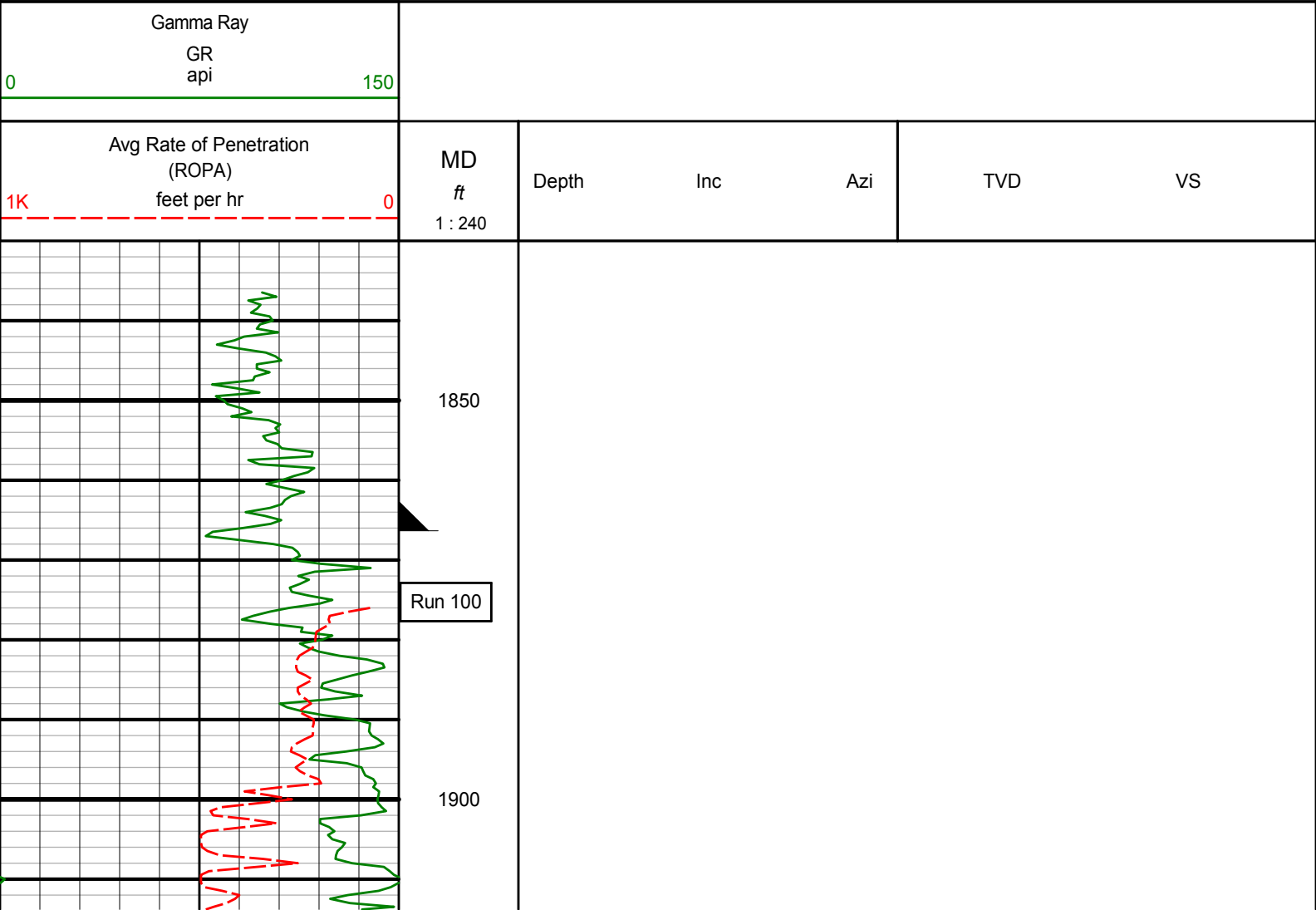
7. Surveys from 1916-15582 corrected by Sperry Survey Management

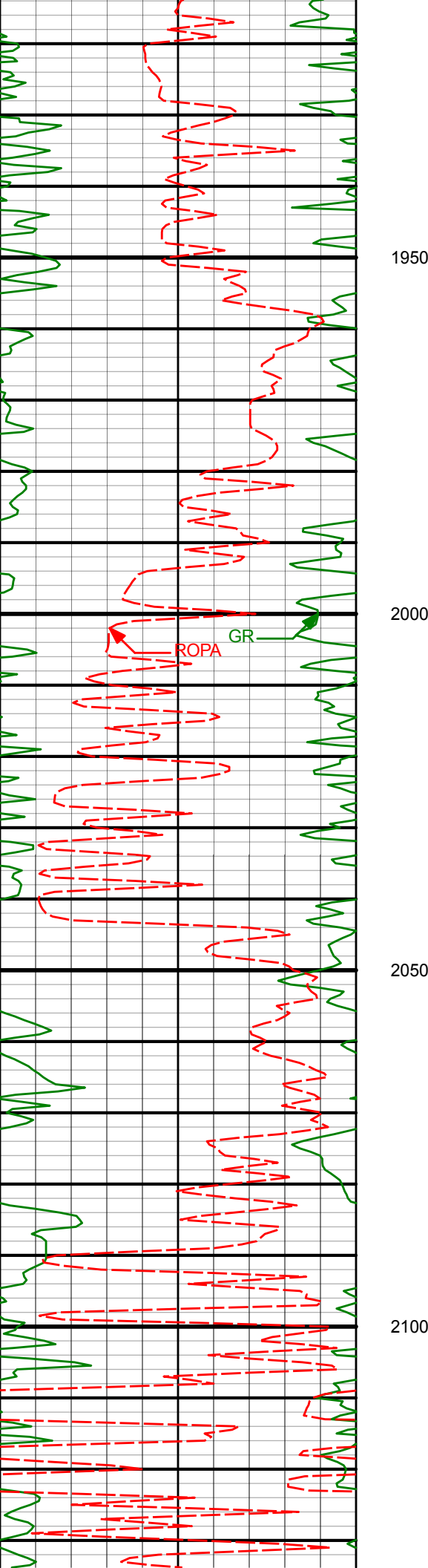
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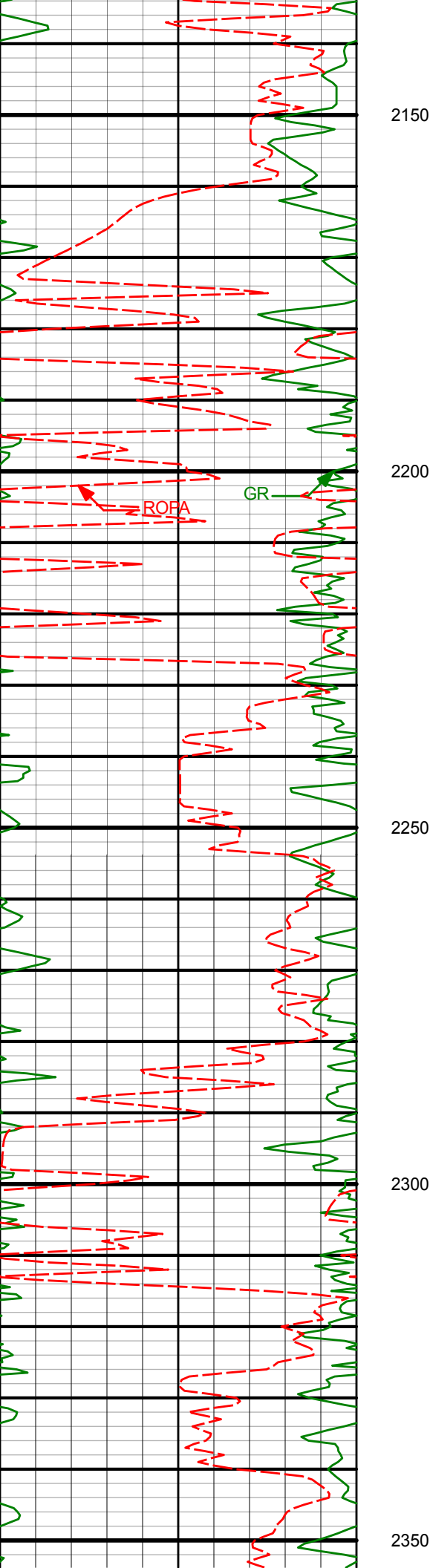
HALLIBURTON

Detail Log 1:240





| | | | | |
|-------|--------|---------|----------|----------|
| 1916' | 17.24° | 231.26° | 1864.89' | -282.10' |
| 2006' | 16.48° | 230.35° | 1951.02' | -298.81' |
| 2096' | 16.02° | 228.13° | 2037.43' | -315.45' |



2150

2200

2250

2300

2350

2186'

15.31°

225.43°

2124.08'

-332.27'

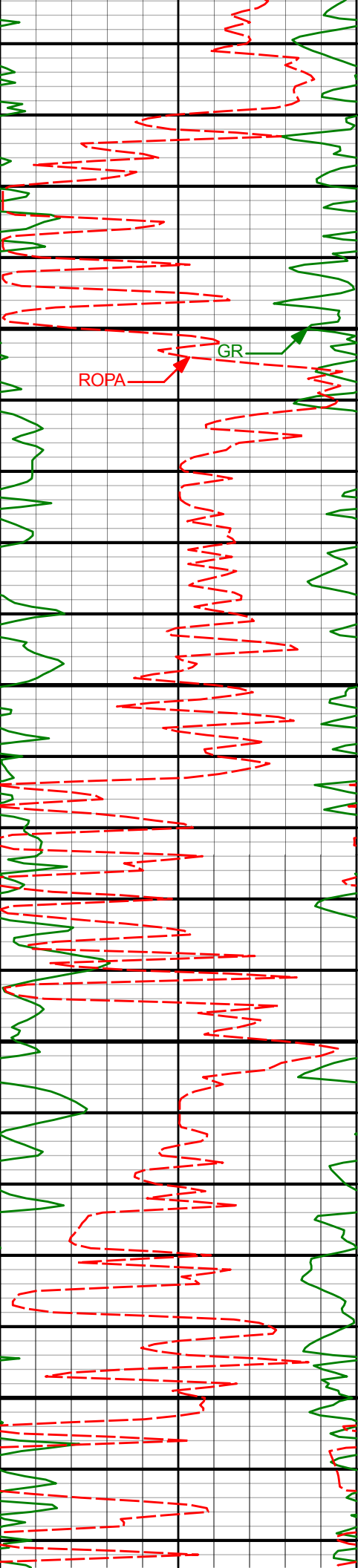
2276'

15.82°

228.81°

2210.79'

-348.88'



| | | | | |
|-------|--------|---------|----------|----------|
| 2365' | 18.03° | 235.25° | 2295.93' | -364.95' |
|-------|--------|---------|----------|----------|

2400

ROPA

GR

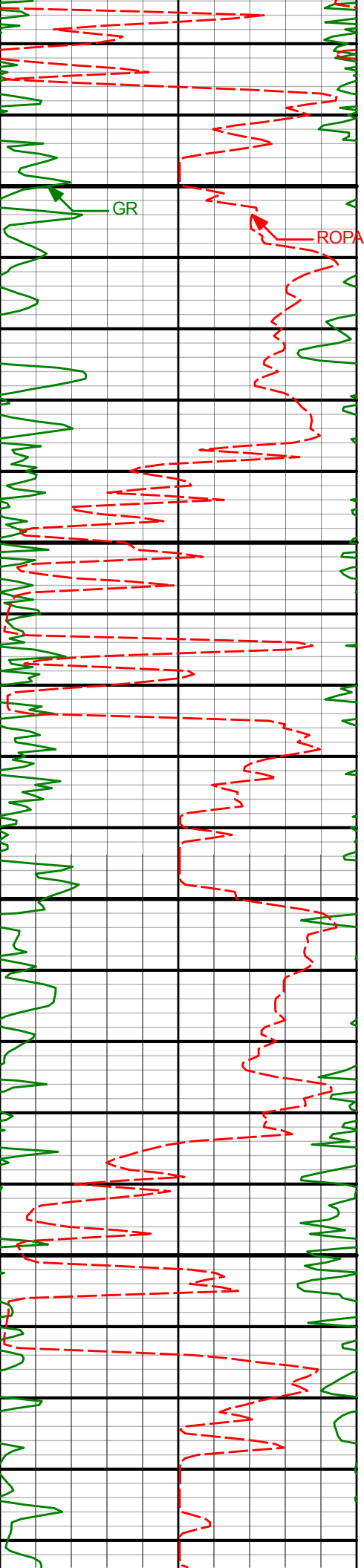
2450

| | | | | |
|-------|--------|---------|----------|----------|
| 2455' | 17.28° | 236.33° | 2381.69' | -380.54' |
|-------|--------|---------|----------|----------|

2500

2550

| | | | | |
|-------|--------|---------|----------|----------|
| 2545' | 15.41° | 232.38° | 2468.05' | -395.48' |
|-------|--------|---------|----------|----------|



2600

2650

2700

2750

2635'

15.99°

234.32°

2554.70'

-410.23'

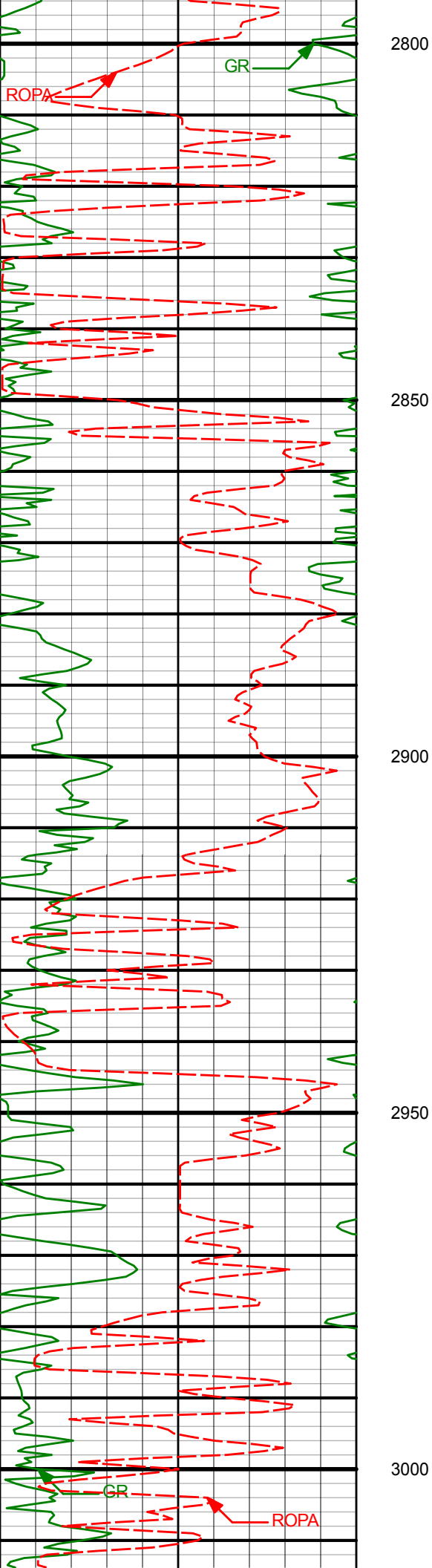
2724'

17.15°

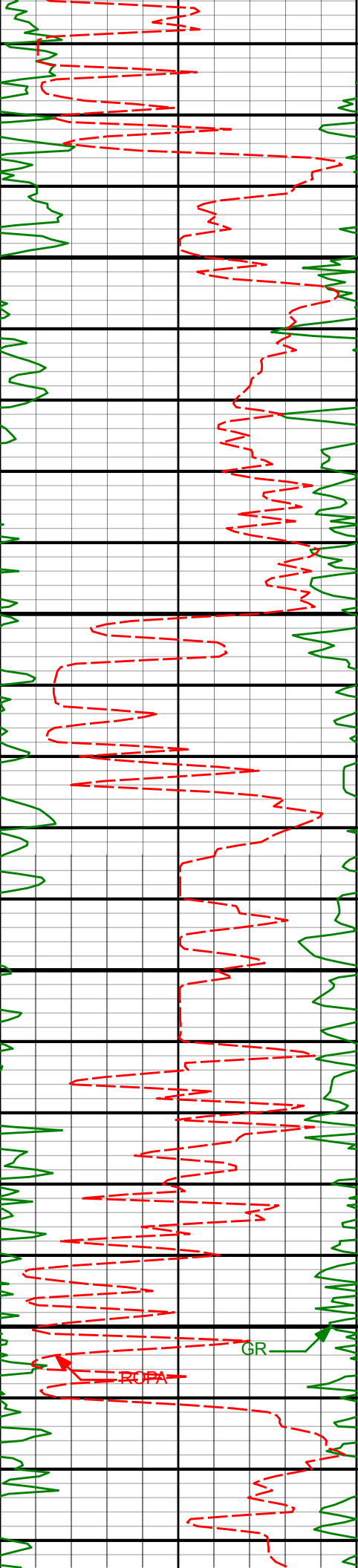
237.02°

2640.00'

-424.75'



| | | | | |
|-------|--------|---------|----------|----------|
| 2814' | 15.98° | 235.77° | 2726.26' | -439.18' |
| 2904' | 16.79° | 232.48° | 2812.61' | -454.29' |
| 2994' | 15.57° | 228.69° | 2899.04' | -470.40' |



3050

3083'

19.13°

224.69°

2983.98'

-488.87'

3100

3150

3173'

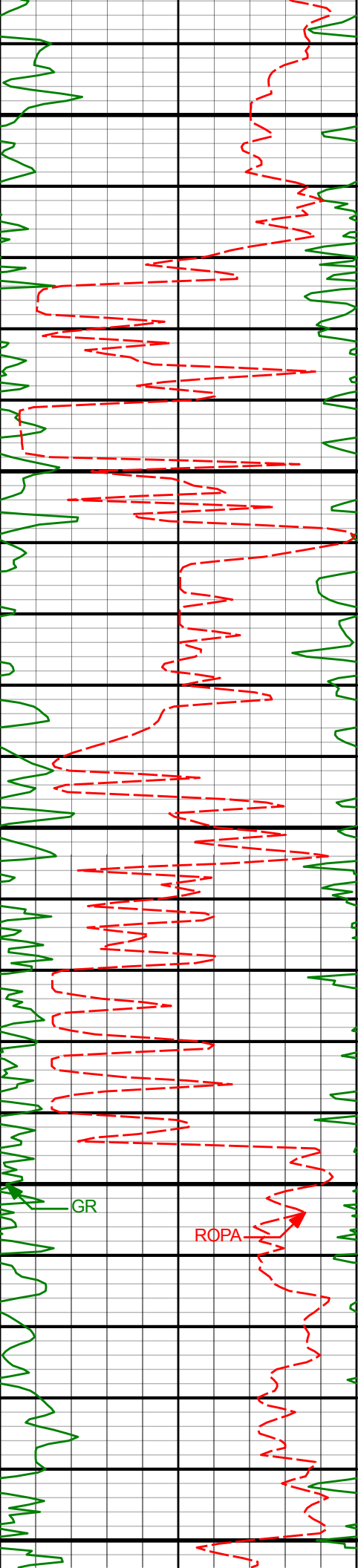
18.86°

223.85°

3069.08'

-510.06'

3200



3250

3263'

18.80°

229.09°

3154.27'

-530.28'

3300

3350

3353'

17.05°

227.64°

3239.90'

-548.90'

3400

GR

ROPA

3450

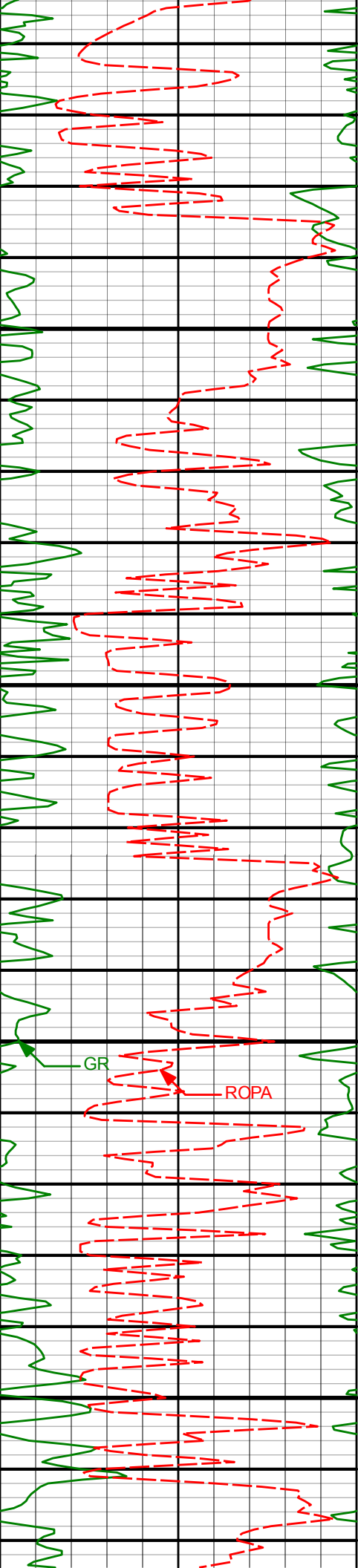
3443'

17.28°

233.89°

3325.90'

-565.89'



3500

3550

3600

3650

3532'

16.31°

235.83°

3411.10'

-580.94'

3622'

14.10°

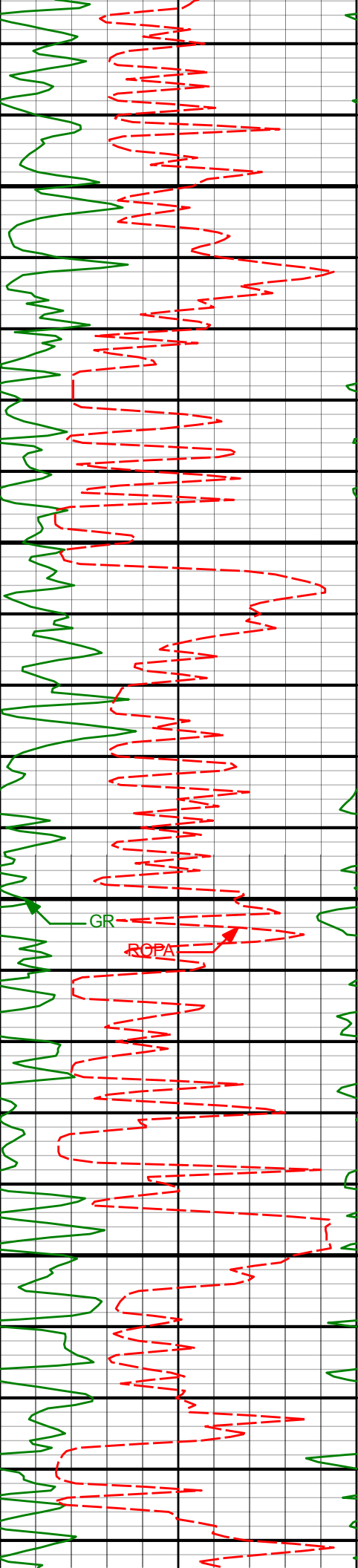
232.63°

3497.95'

-594.90'

GR

ROPA



3700

3711'

11.64°

227.98°

3584.71'

-607.66'

3750

3800

3801'

9.43°

228.48°

3673.19'

-618.76'

3850

3891'

7.71°

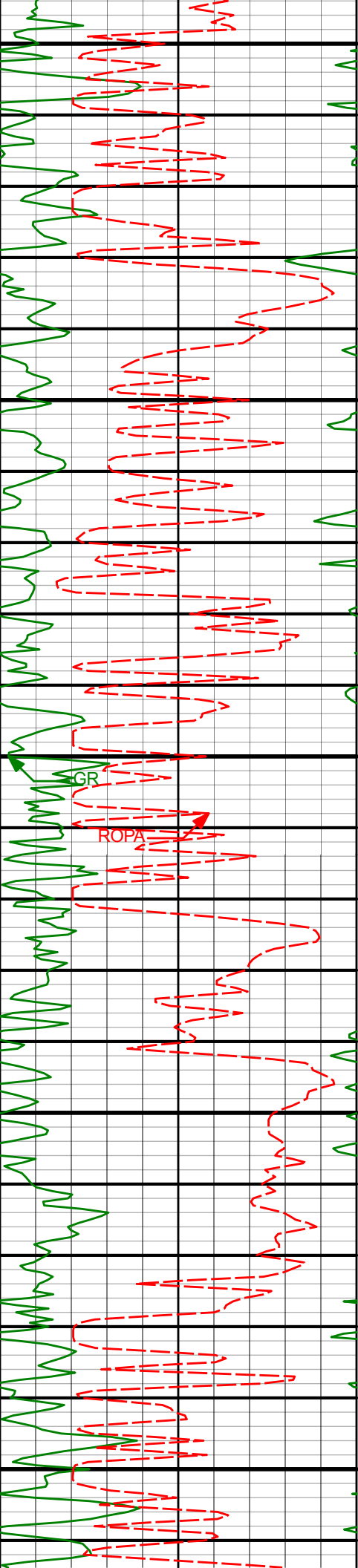
231.63°

3762.18'

-627.51'

GR

ROPA



3900

3950

4000

4050

4100

3981'

6.00°

238.04°

3851.53'

-633.84'

GR

ROPA

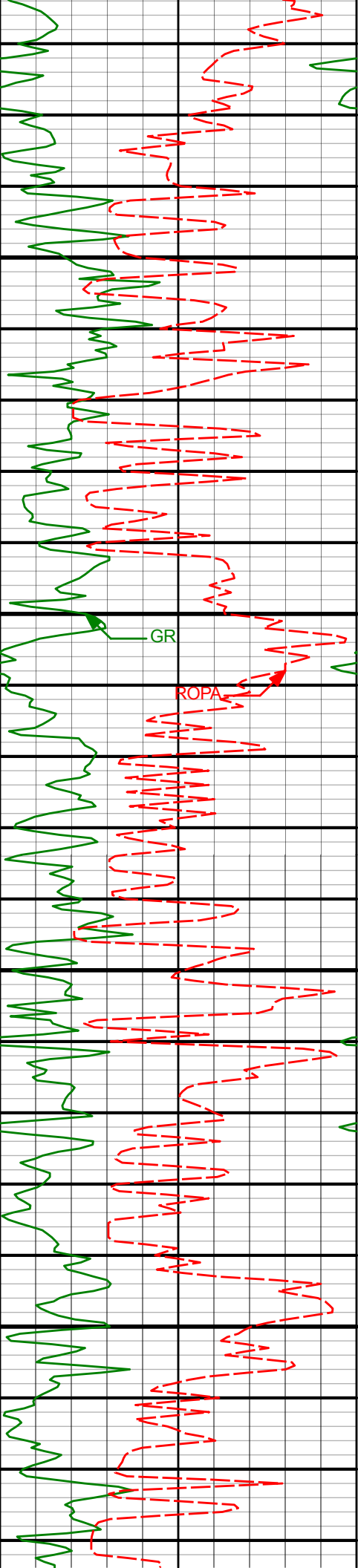
4071'

7.19°

243.88°

3940.94'

-638.91'



4150

4160'

6.86°

247.06°

4029.27'

-643.54'

4200

GR

ROPA

4250

4250'

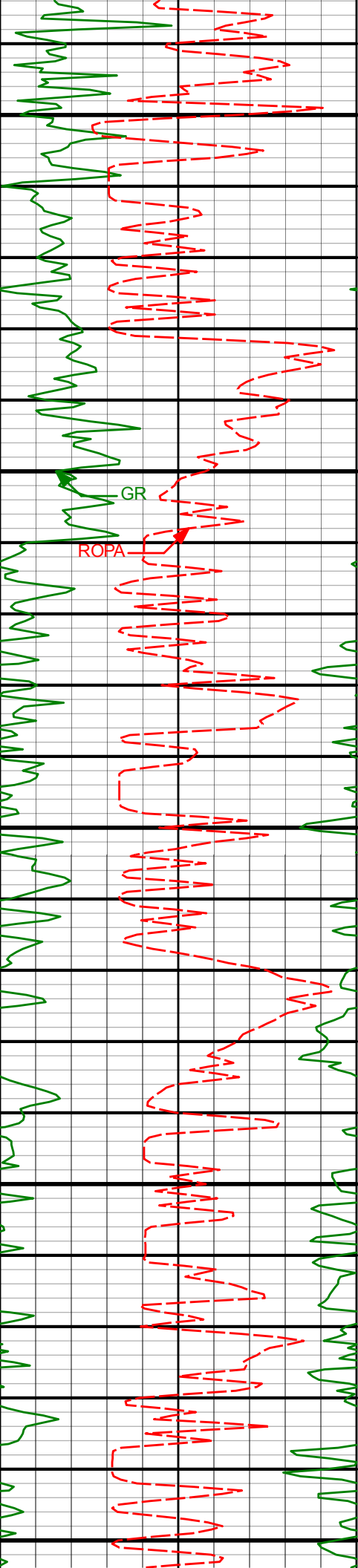
5.59°

249.79°

4118.74'

-647.25'

4300



4350

4400

4450

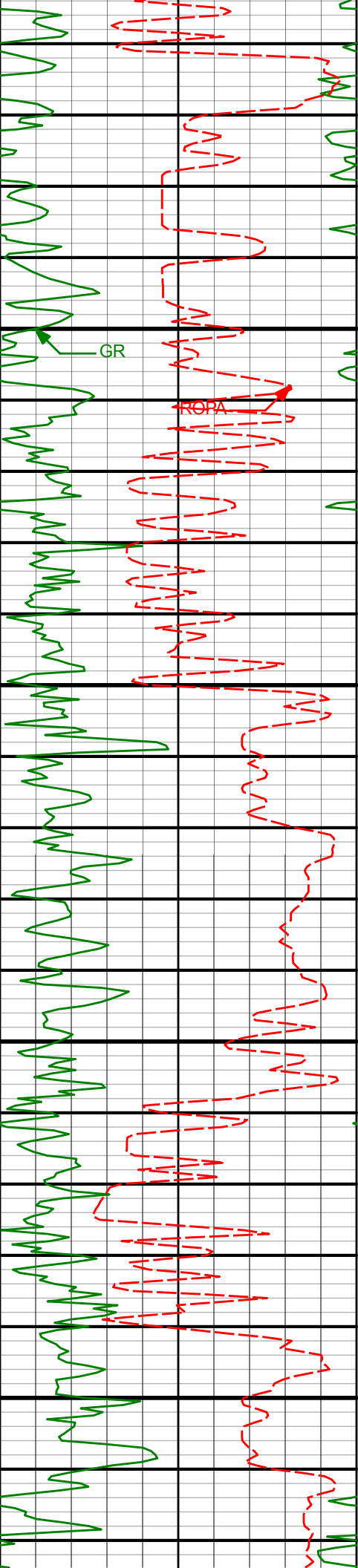
4500

4550

4340' 4.90° 253.52° 4208.36' -649.94'

4430' 4.52° 256.88° 4298.05' -651.92'

4519' 4.34° 261.75° 4386.79' -653.27'



4600

4650

4700

4750

4609'

4699'

3.99°

4.02°

267.66°

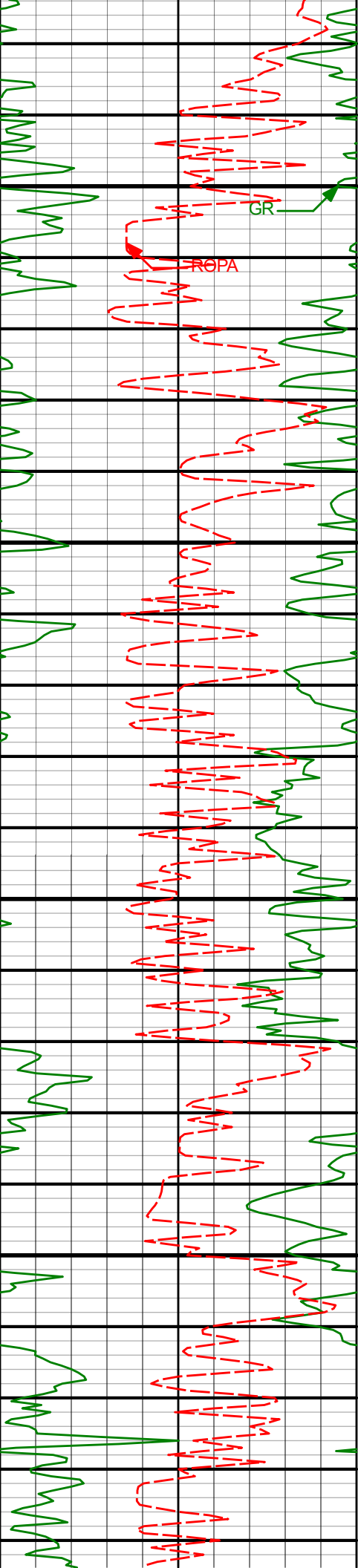
249.78°

4476.55'

4566.34'

-653.96'

-655.24'



4800

4850

4900

4950

4789'

3.42°

228.18°

4656.15'

-658.17'

4878'

3.82°

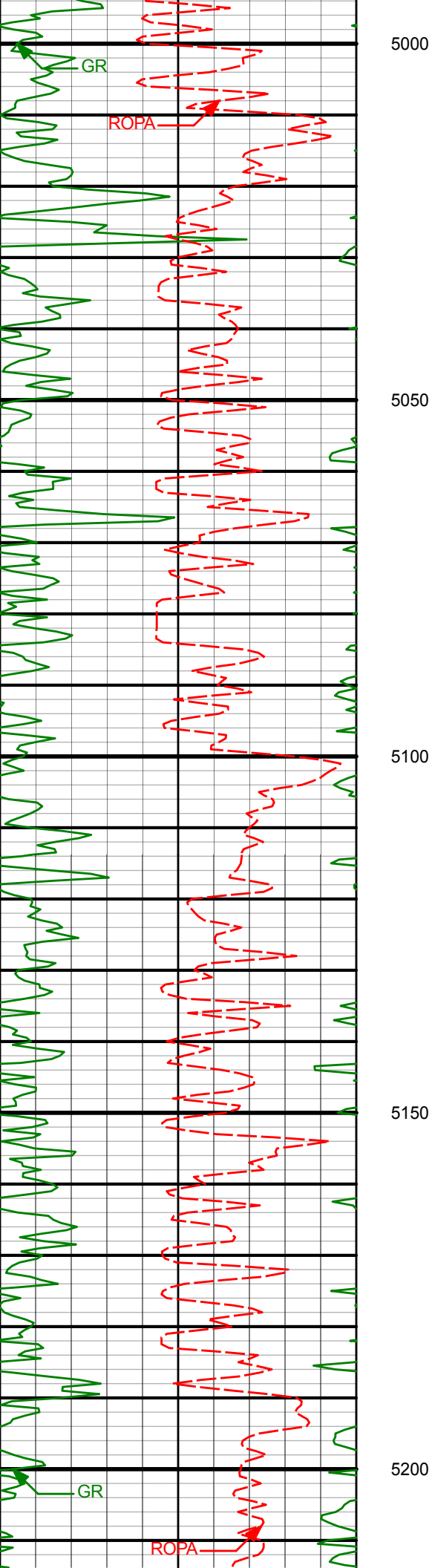
237.00°

4744.97'

-661.61'

ROPA

GR



5058'

3.23°

231.50°

4924.63'

-668.13'

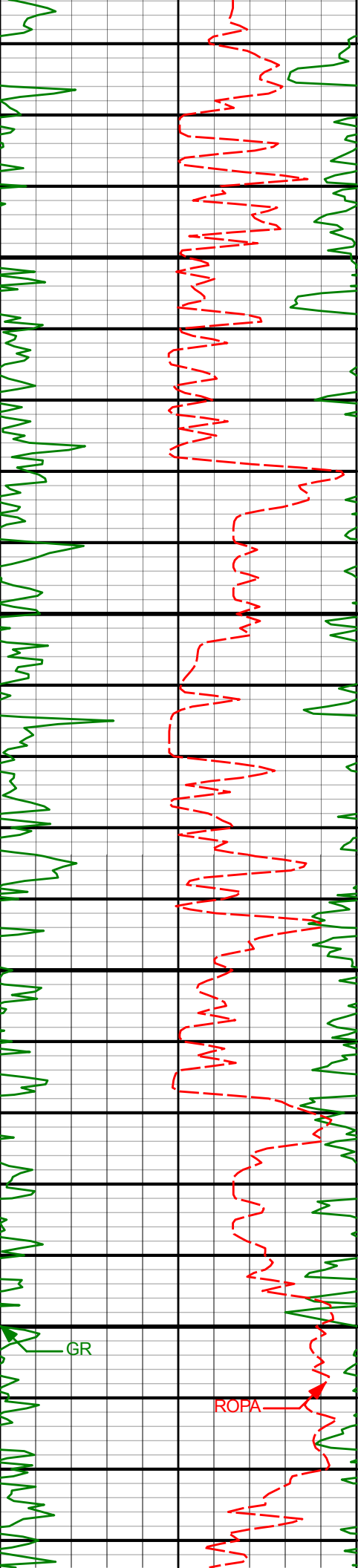
5148'

2.90°

214.07°

5014.51'

-671.63'



| | | | | |
|-------|-------|---------|----------|----------|
| 5237' | 3.17° | 198.66° | 5103.38' | -675.85' |
|-------|-------|---------|----------|----------|

5250

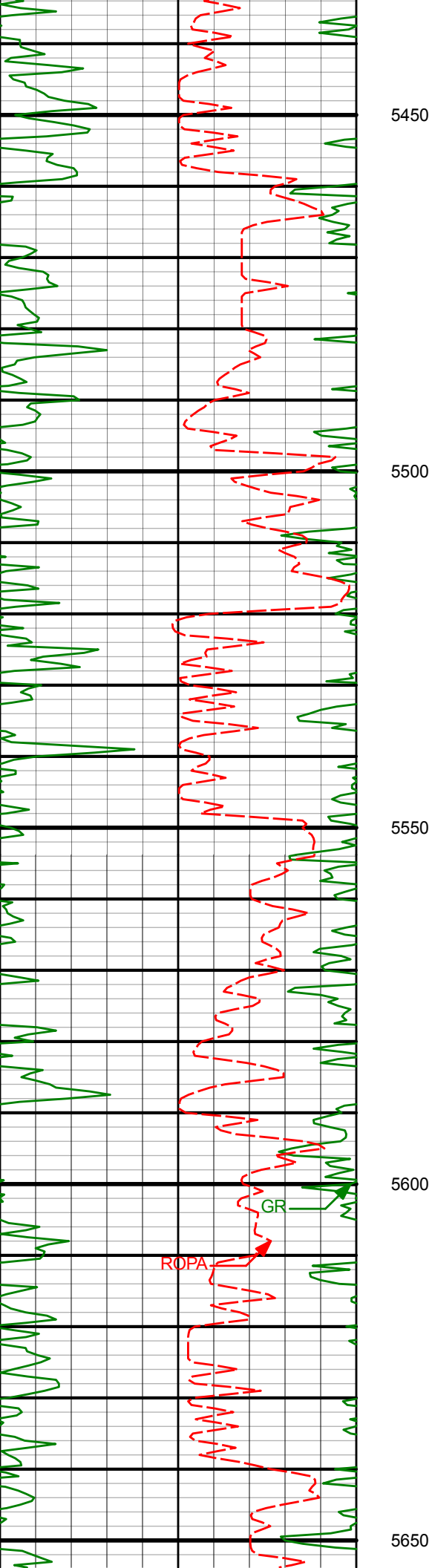
5300

| | | | | |
|-------|-------|---------|----------|----------|
| 5327' | 2.79° | 193.29° | 5193.26' | -680.35' |
|-------|-------|---------|----------|----------|

5350

5400

| | | | | |
|-------|-------|---------|----------|----------|
| 5417' | 3.07° | 207.73° | 5283.14' | -684.63' |
|-------|-------|---------|----------|----------|



5507'

2.62°

228.14°

5373.04'

-688.16'

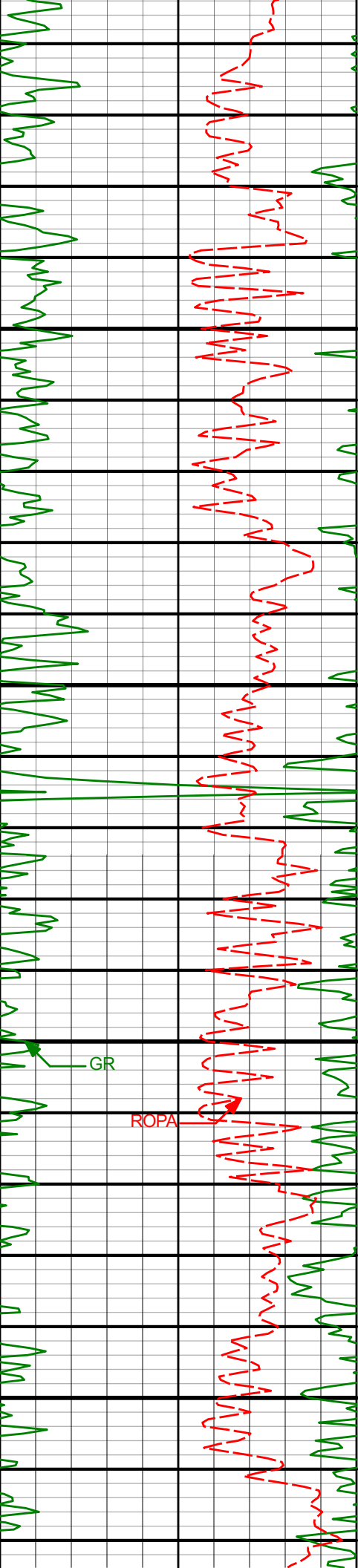
5596'

2.57°

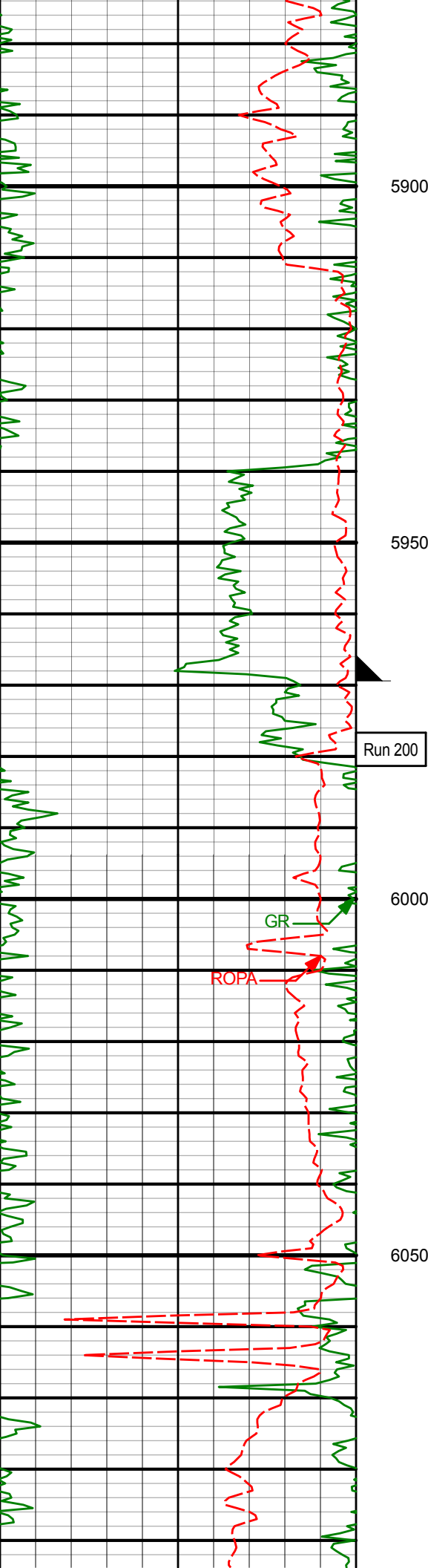
242.14°

5461.95'

-690.48'



| | | | | |
|-------|-------|---------|----------|----------|
| 5686' | 2.59° | 254.82° | 5551.85' | -692.00' |
| 5700 | | | | |
| 5750 | | | | |
| 5776' | 2.36° | 256.13° | 5641.77' | -693.02' |
| 5800 | | | | |
| 5850 | | | | |
| 5866' | 2.13° | 261.13° | 5731.70' | -693.76' |



| | | | | |
|-------|-------|---------|----------|----------|
| 5933' | 2.25° | 273.99° | 5798.65' | -693.89' |
|-------|-------|---------|----------|----------|

5950

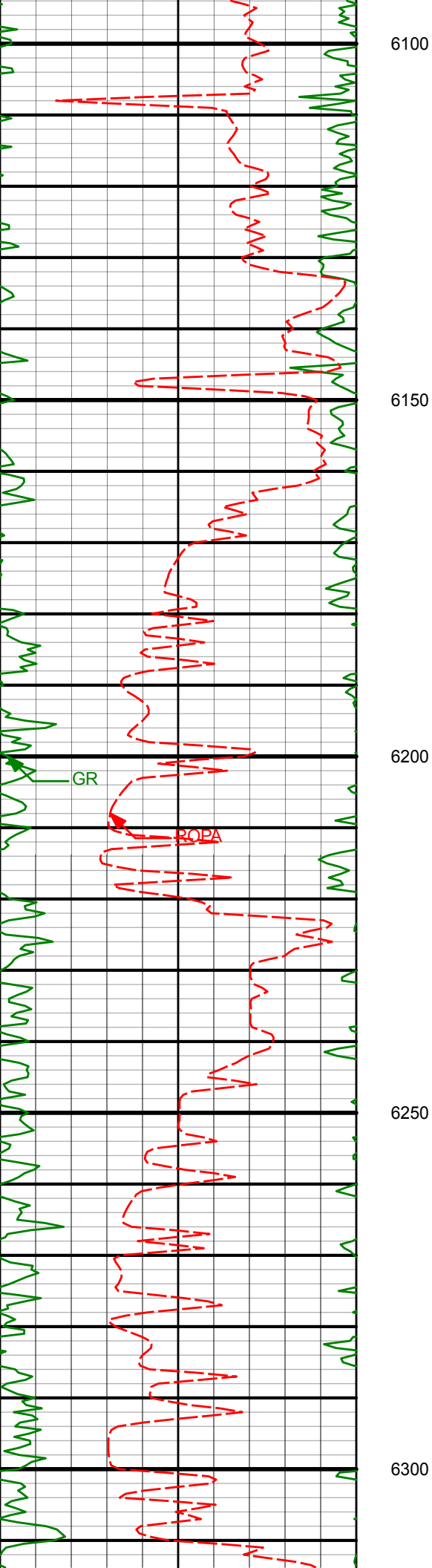
Run 200

6000

| | | | | |
|-------|-------|---------|----------|----------|
| 5999' | 2.64° | 279.39° | 5864.59' | -693.58' |
|-------|-------|---------|----------|----------|

6050

| | | | | |
|-------|-------|---------|----------|----------|
| 6088' | 3.47° | 239.27° | 5953.48' | -694.67' |
|-------|-------|---------|----------|----------|



6178'

3.23°

205.61°

6043.33'

-698.39'

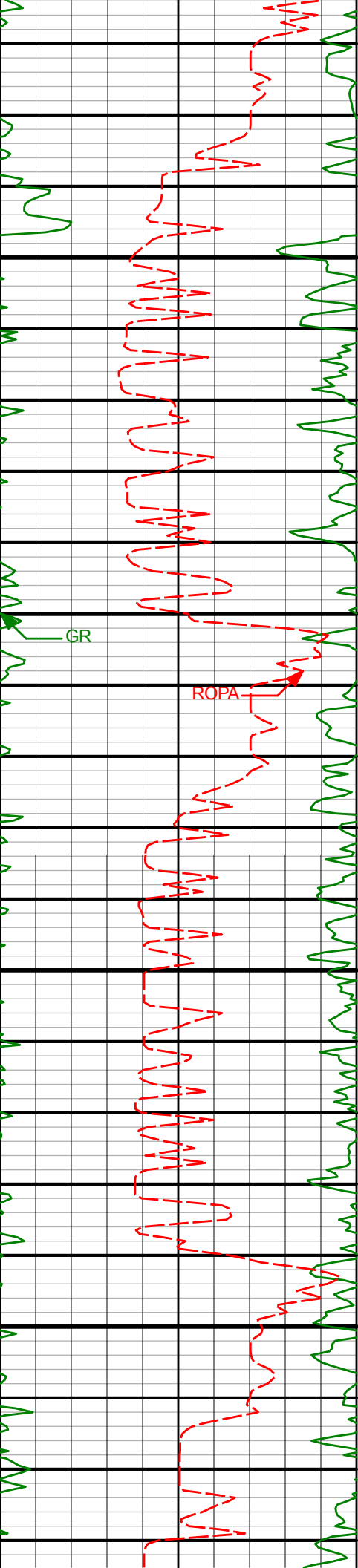
6268'

2.11°

210.85°

6133.23'

-702.13'



6350

6358'

1.67°

240.25°

6223.18'

-704.23'

6400

GR

ROPA

6450

6447'

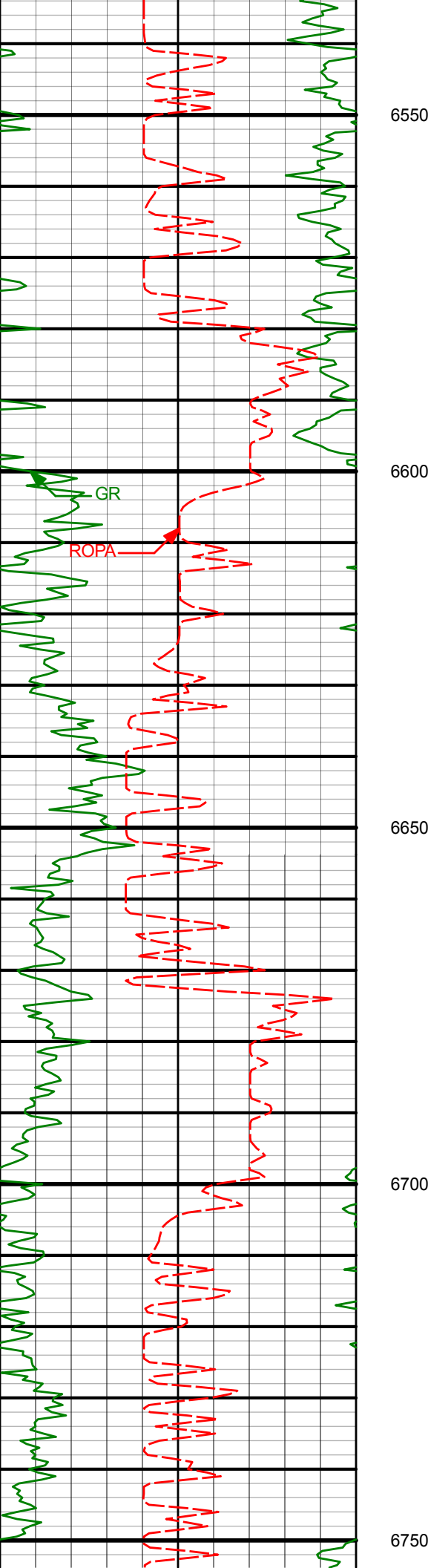
1.82°

246.63°

6312.14'

-705.46'

6500



6537'

1.61°

250.70°

6402.10'

-706.47'

6550

6600

6627'

1.20°

235.00°

6492.07'

-707.45'

6650

6700

6717'

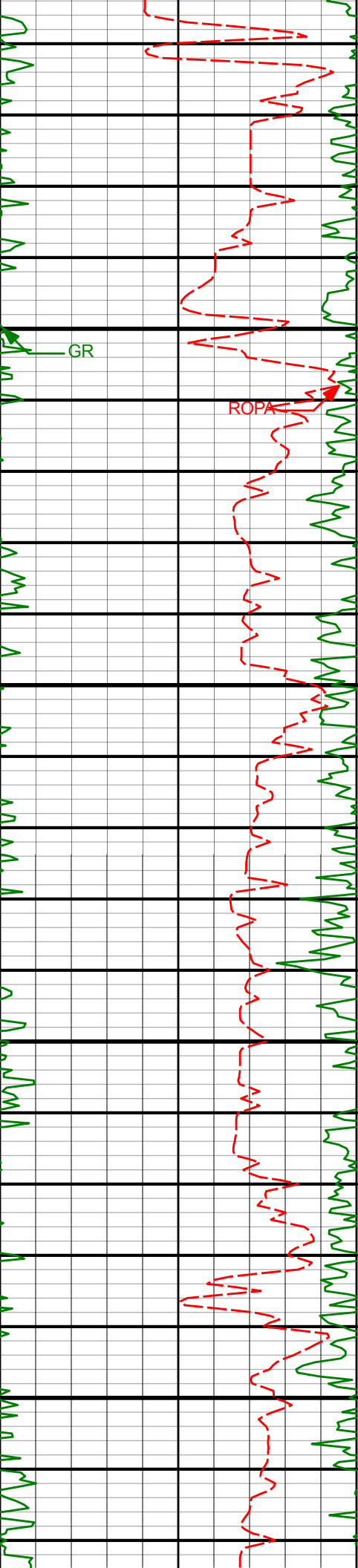
1.08°

251.19°

6582.06'

-708.28'

6750



6800

6850

6900

6950

6806'

6896'

0.95°

6.74°

237.91°

14.55°

6671.04'

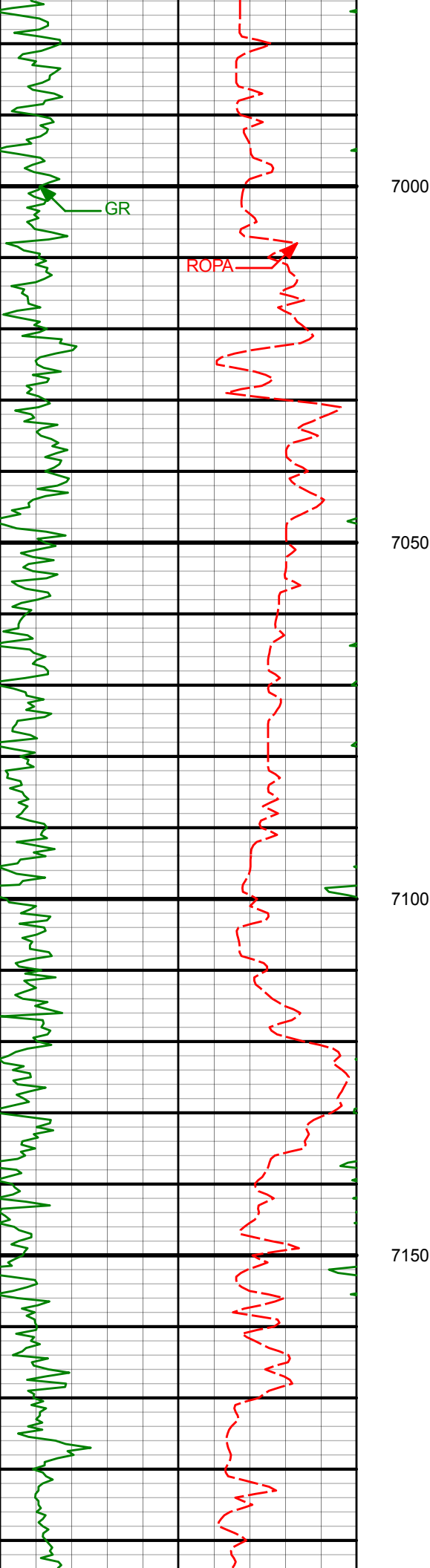
6760.85'

-708.96'

-704.23'

ROPA

GR



6986'

11.70°

26.61°

6849.67'

-690.88'

7075'

18.57°

30.83°

6935.53'

-670.50'

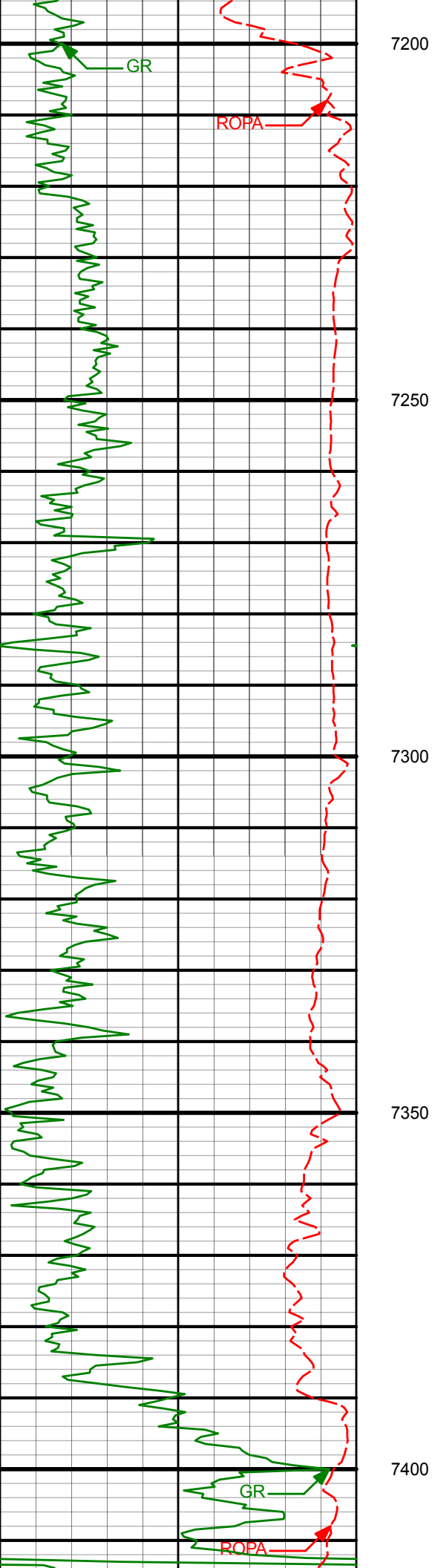
7165'

23.60°

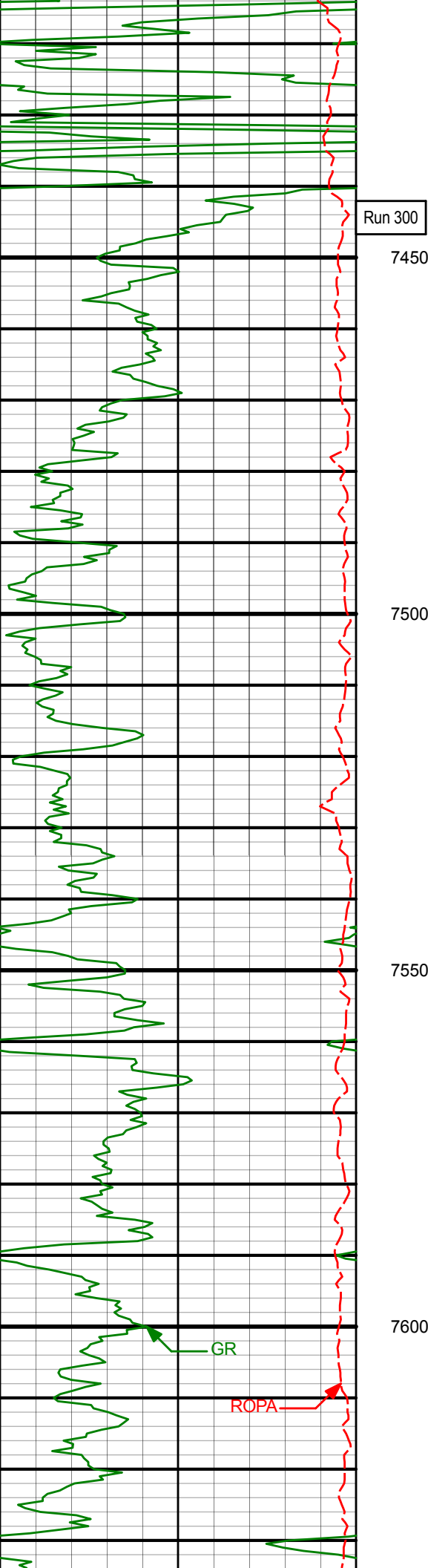
33.98°

7019.48'

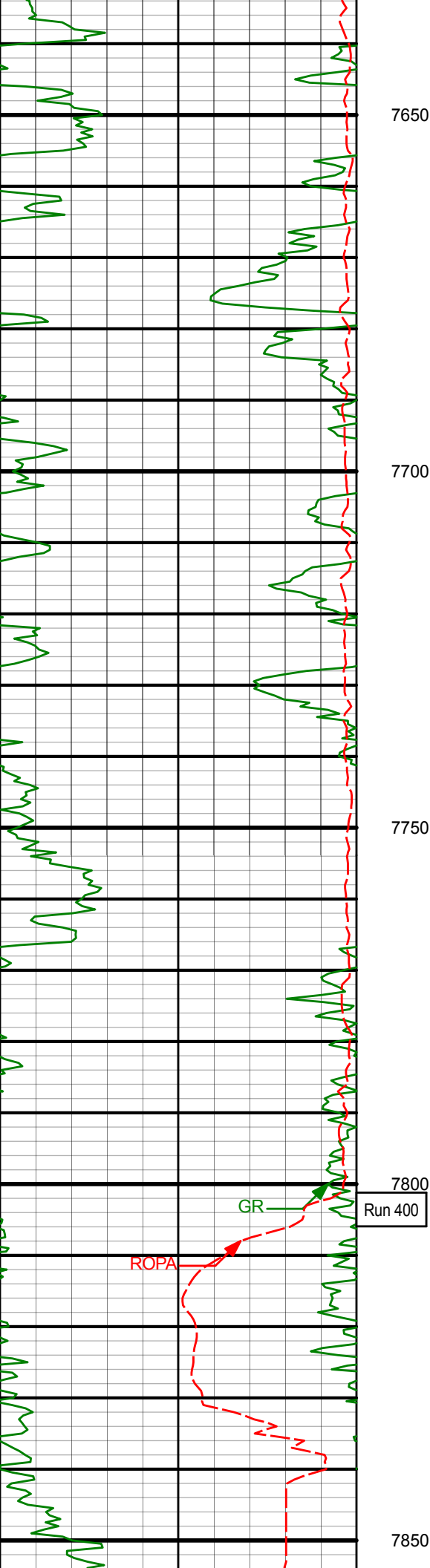
-643.04'



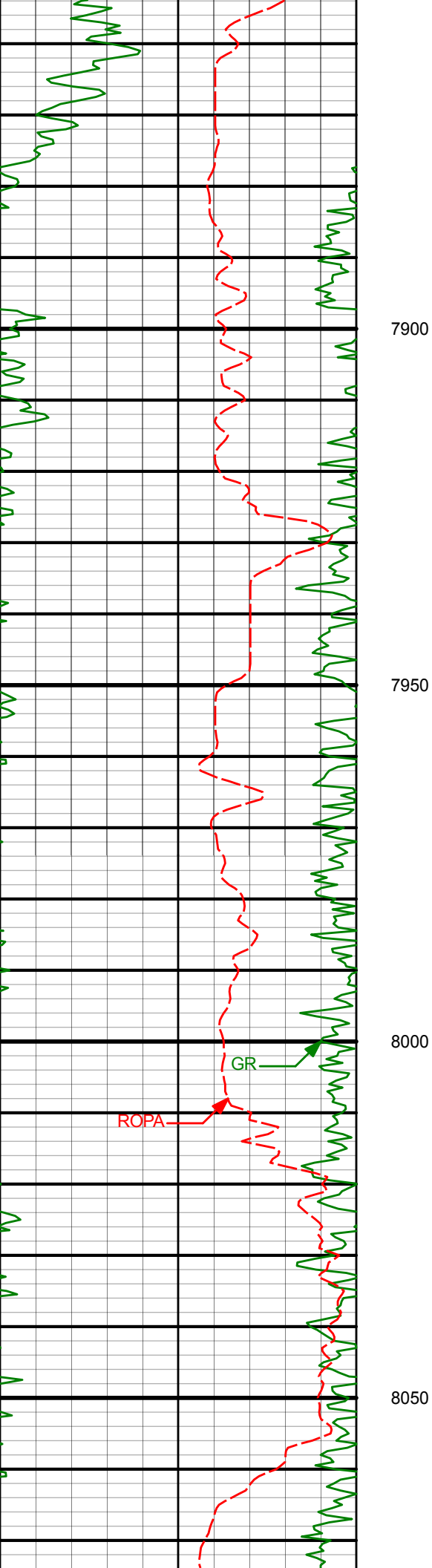
| | | | | |
|-------|--------|--------|----------|----------|
| 7255' | 31.50° | 37.29° | 7099.22' | -609.07' |
| 7298' | 37.31° | 41.22° | 7134.68' | -590.14' |
| 7345' | 41.71° | 45.54° | 7170.94' | -568.24' |
| 7390' | 46.48° | 44.81° | 7203.25' | -545.92' |



| | | | | |
|-------|--------|--------|----------|----------|
| 7434' | 51.35° | 38.82° | 7232.17' | -520.95' |
| 7450 | | | | |
| 7479' | 53.22° | 28.67° | 7259.74' | -491.18' |
| 7500 | | | | |
| 7509' | 53.36° | 24.47° | 7277.68' | -469.56' |
| 7538' | 53.41° | 19.42° | 7294.98' | -447.89' |
| 7550 | | | | |
| 7568' | 55.34° | 13.81° | 7312.47' | -424.46' |
| 7598' | 58.02° | 7.88° | 7328.96' | -399.81' |
| 7600 | | | | |
| 7628' | 60.02° | 1.27° | 7344.41' | -374.17' |



| | | | | |
|-------|--------|---------|----------|----------|
| 7658' | 64.53° | 357.13° | 7358.37' | -347.64' |
| 7688' | 69.54° | 355.10° | 7370.07' | -320.11' |
| 7757' | 82.71° | 351.55° | 7386.58' | -253.83' |
| 7794' | 89.43° | 349.81° | 7389.12' | -217.50' |



7883'

90.15°

349.21°

7389.44'

-130.17'

7973'

89.98°

348.66°

7389.34'

-42.04'

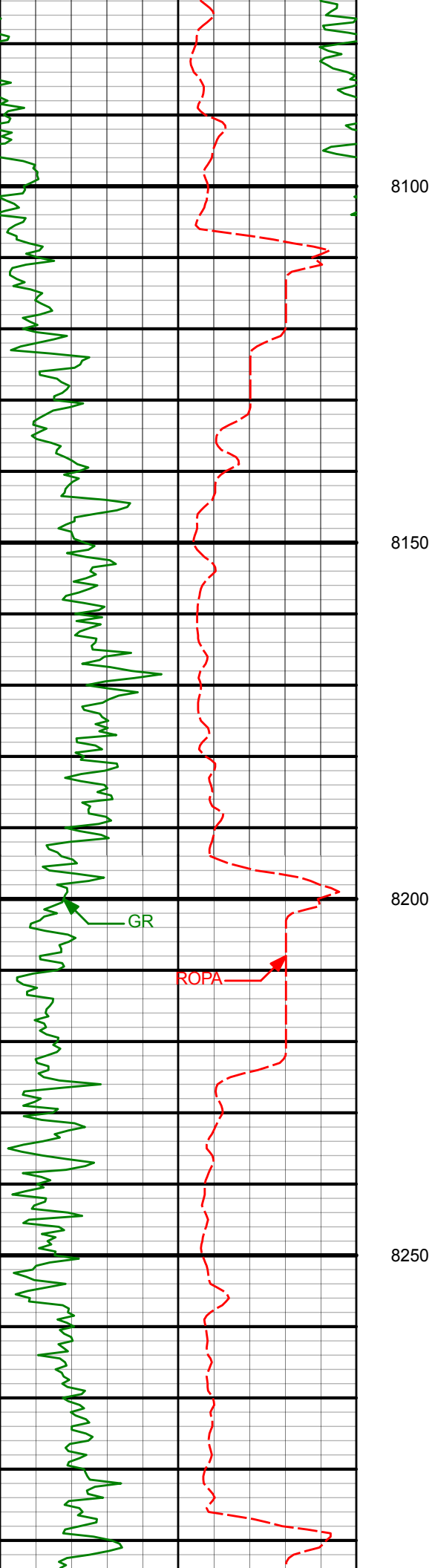
8063'

91.57°

350.33°

7388.12'

46.26'



8153'

90.82°

350.67°

7386.24'

134.83'

8200

GR

ROPA

8243'

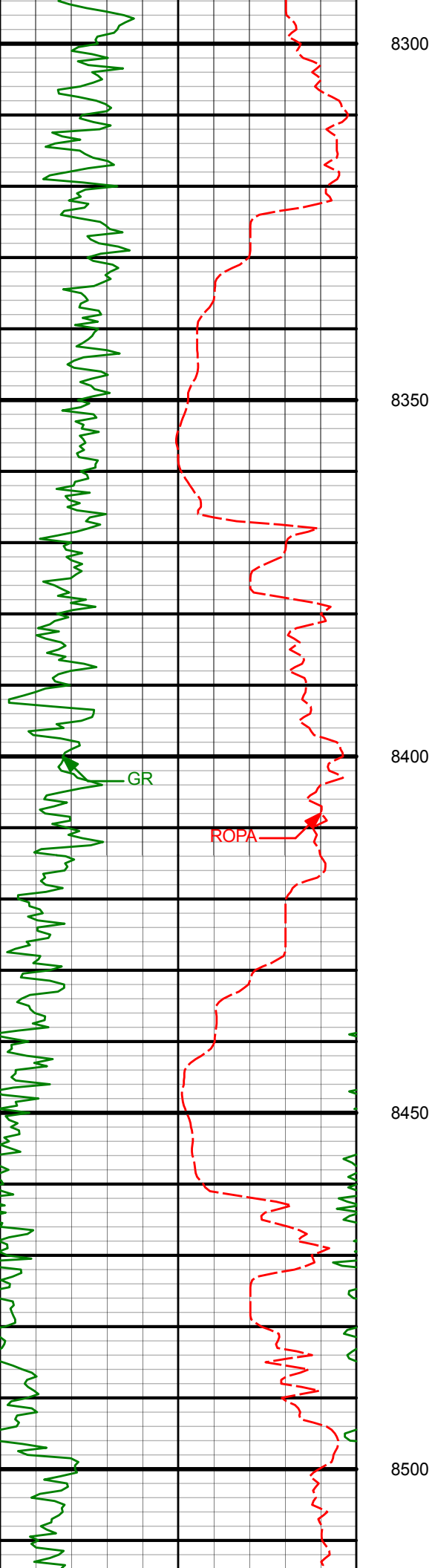
90.19°

349.50°

7385.45'

223.31'

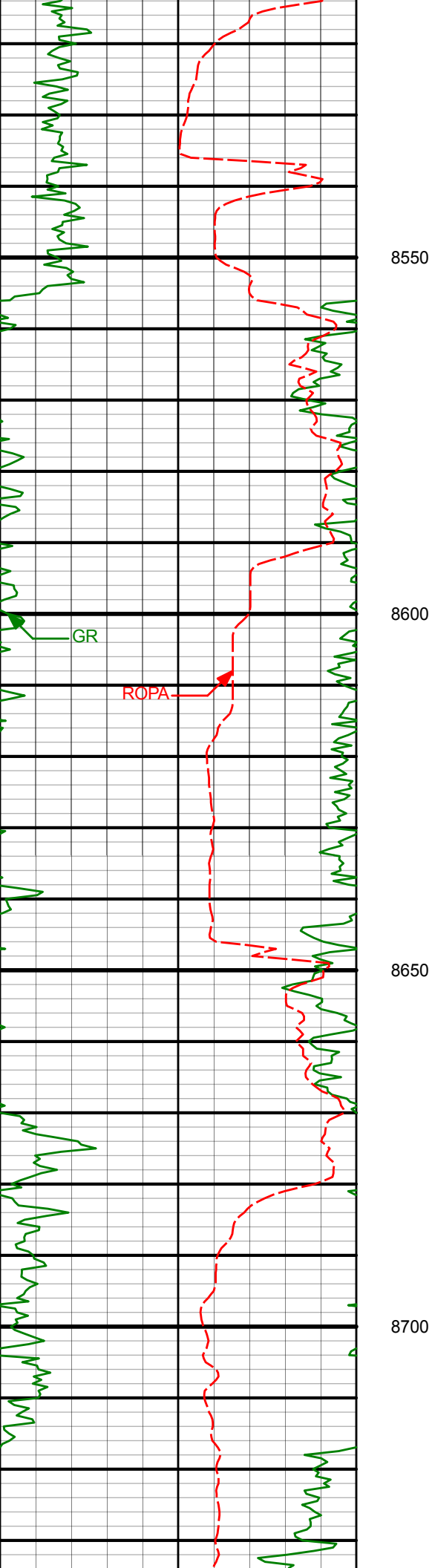
8250



8333' 90.73° 349.77° 7384.73' 311.65'

8422' 92.16° 352.28° 7382.48' 399.37'

8512' 93.17° 355.54° 7378.29' 488.64'



8602'

91.49°

357.35°

7374.62'

578.32'

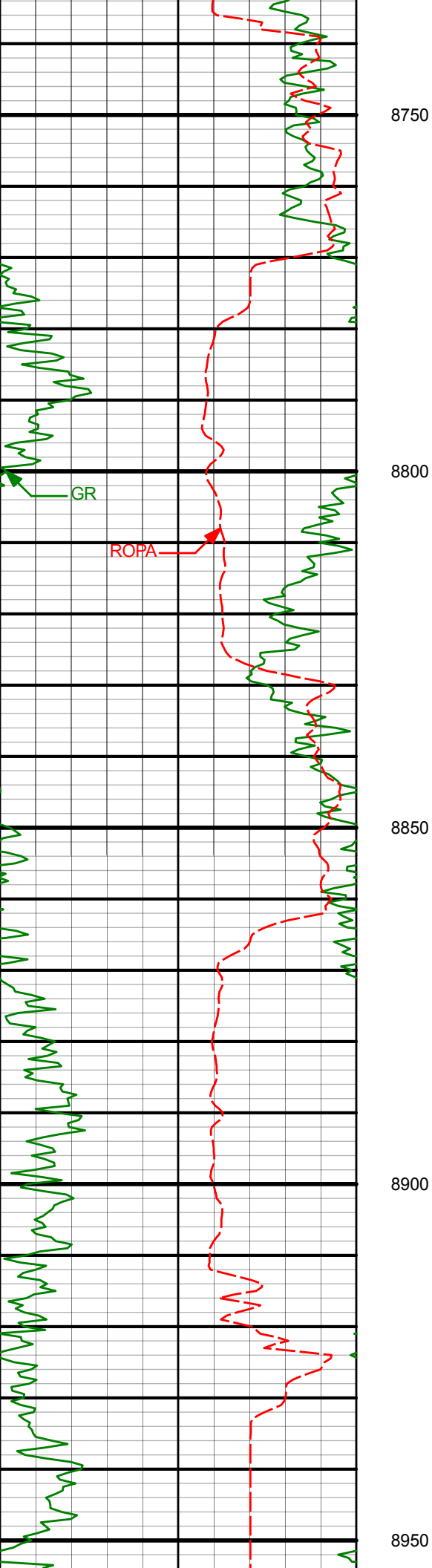
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356.68°

7373.60'

668.13'



8782'

89.60°

357.03°

7374.06'

757.93'

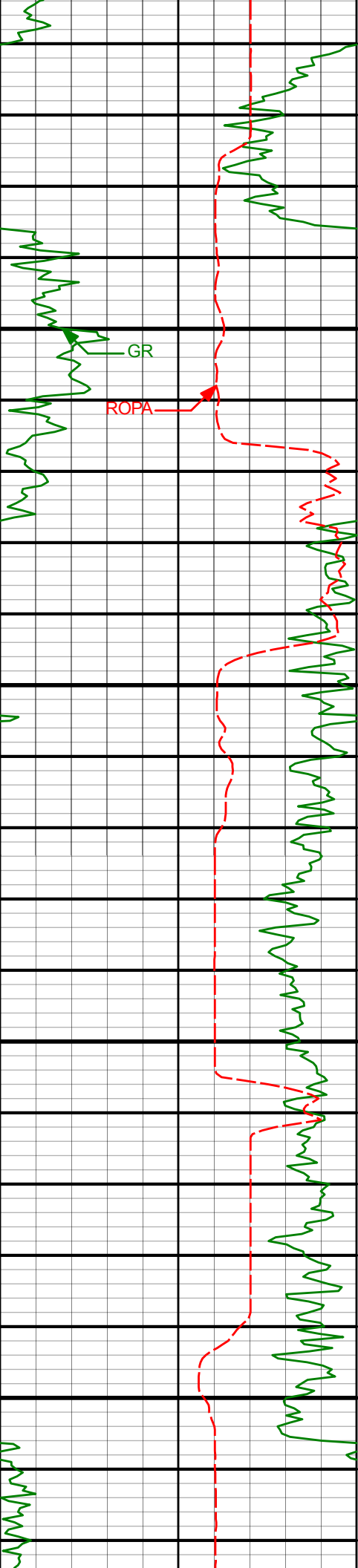
8876'

90.23°

359.73°

7374.20'

851.85'



8970'

89.94°

358.32°

7374.06'

945.81'

9000

9050

9100

9150

9064'

91.57°

358.61°

7372.82'

1039.73'

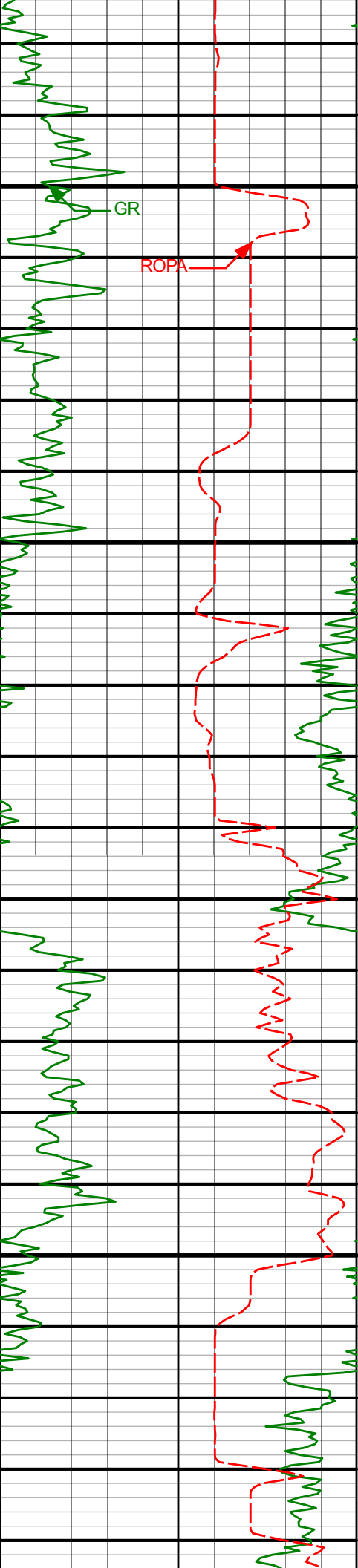
9159'

91.36°

358.32°

7370.39'

1134.63'



9200

GR

ROPA

9250

9253'

90.40°

358.30°

7368.94'

1228.54'

9300

9350

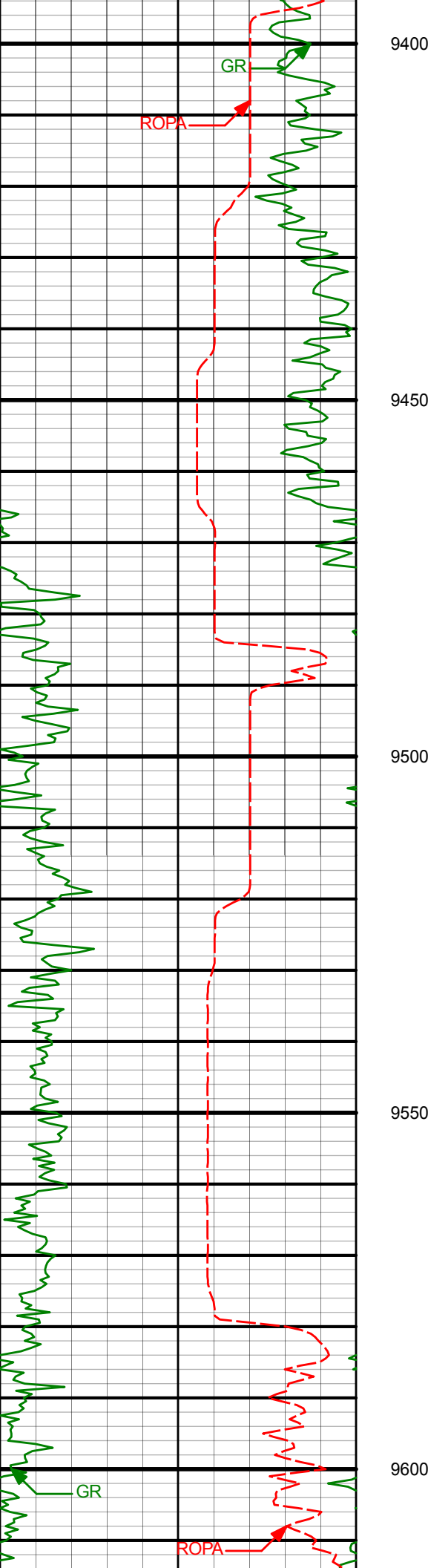
9347'

91.92°

0.70°

7367.04'

1322.50'



9400

9450

9500

9550

9600

9442'

91.70°

0.22°

7364.04'

1417.45'

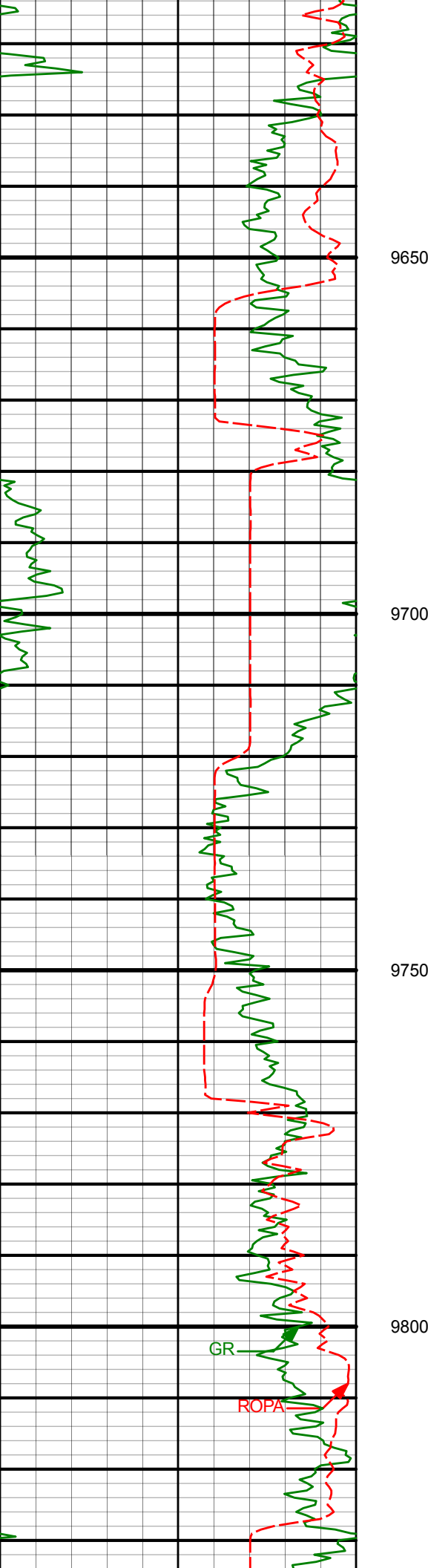
9536'

90.82°

359.43°

7361.98'

1511.41'



9630'

91.78°

358.88°

7359.85'

1605.36'

9650

9700

9725'

93.38°

0.83°

7355.56'

1700.24'

9750

9800

GR

ROPA

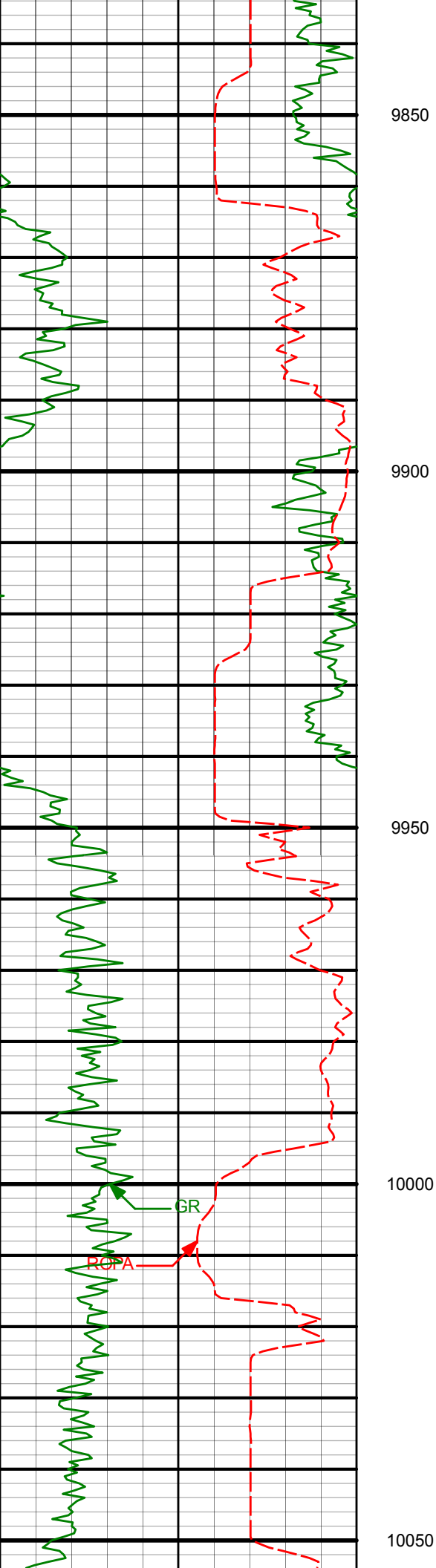
9819'

95.20°

2.86°

7348.53'

1793.95'



9913'

93.84°

4.42°

7341.13'

1887.53'

9950

10000

10007'

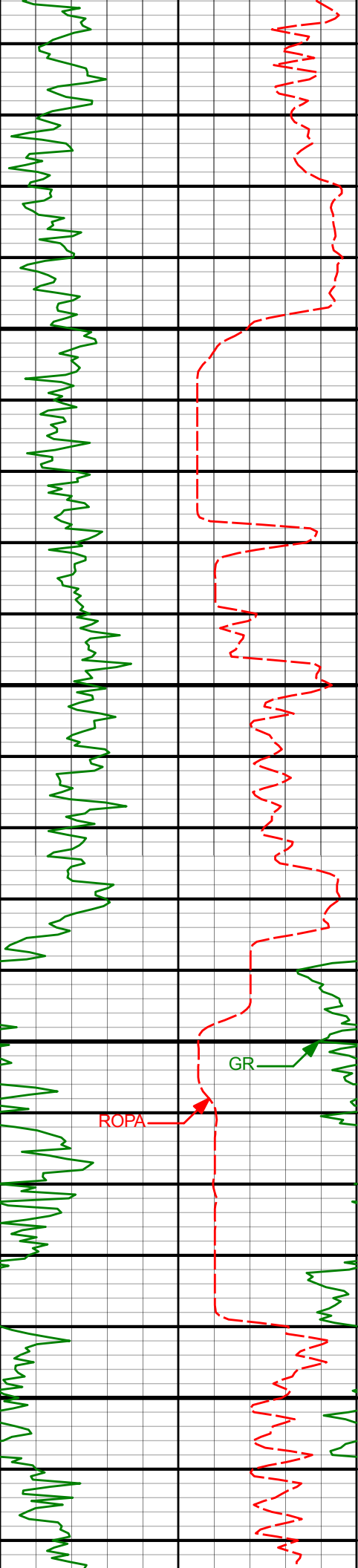
91.66°

2.87°

7336.61'

1981.28'

10050



10100

10102'

89.18°

1.83°

7335.92'

2076.22'

10150

10200

10196'

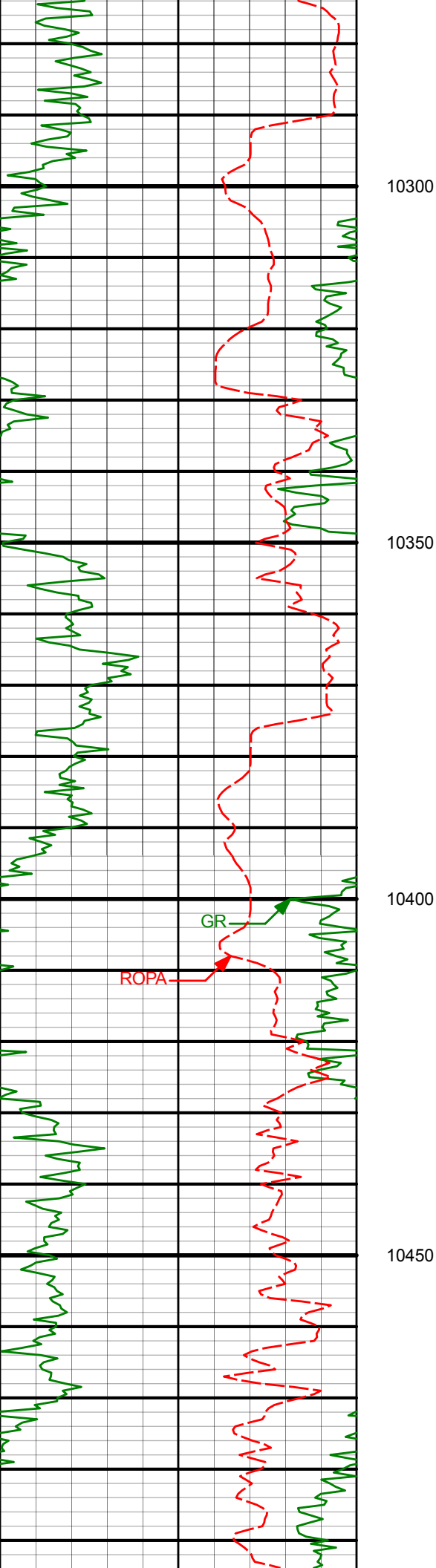
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0.22°

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2170.18'

10250



10286' 88.76° 359.43° 7341.30' 2260.13'

10300

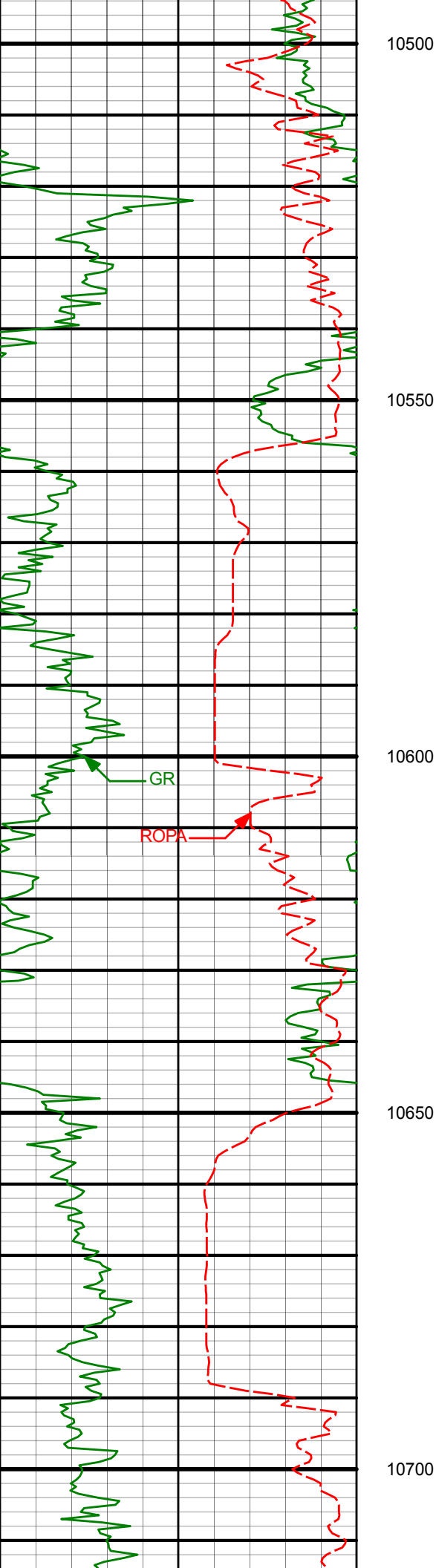
10350

10375' 90.40° 358.88° 7341.96' 2349.09'

10400

10450

10465' 89.43° 358.44° 7342.09' 2439.04'



10555'

89.43°

359.38°

7342.98'

2528.99'

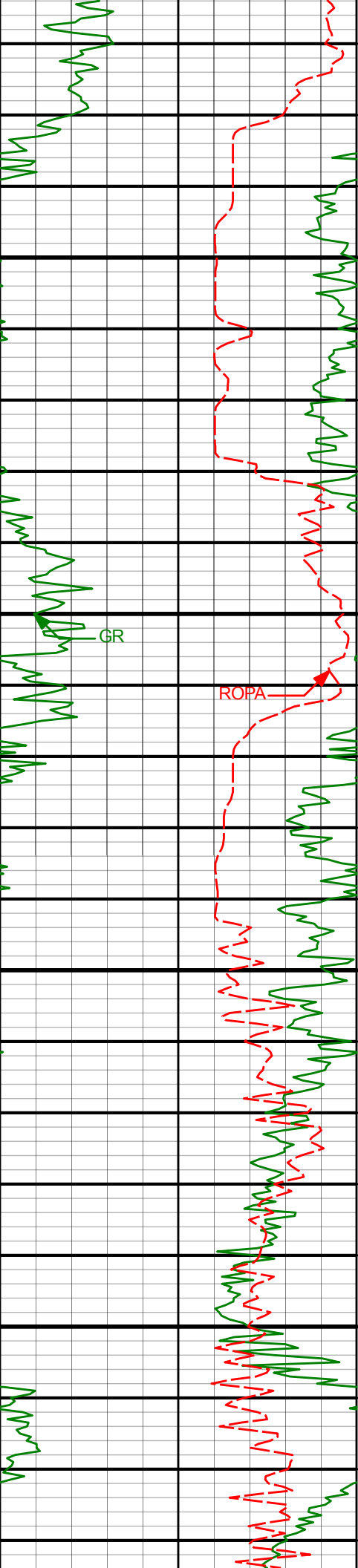
10645'

89.68°

359.97°

7343.67'

2618.98'



10750

10800

10850

10900

10734'

89.14°

2.51°

7344.58'

2707.96'

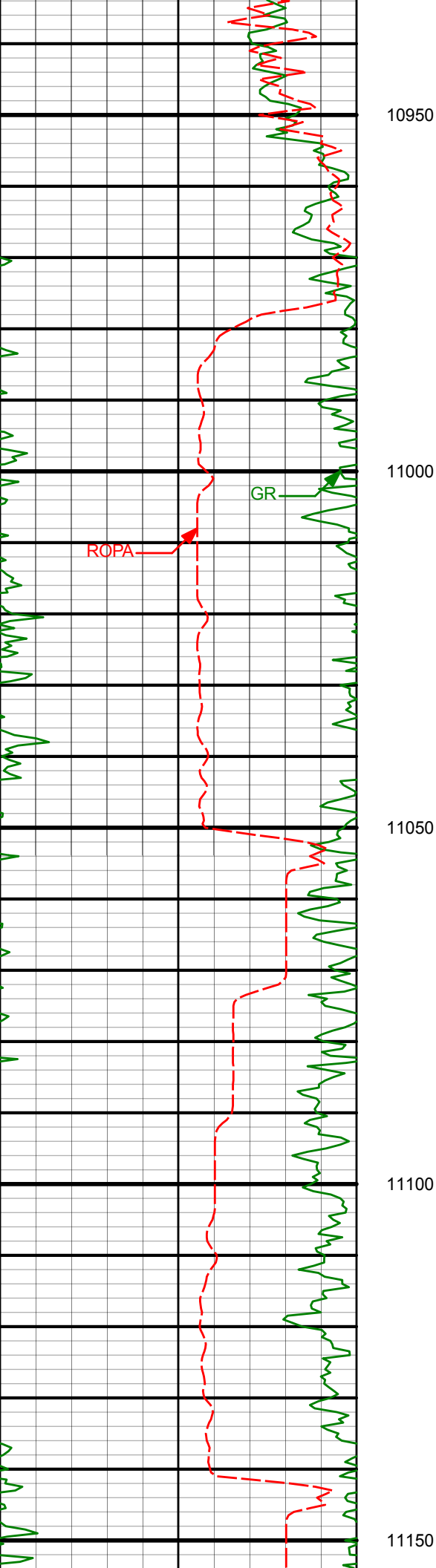
10914'

86.83°

2.59°

7350.91'

2887.73'



10950

11000

11050

11100

11150

ROPA

GR

11004'

88.47°

1.61°

7354.60'

2977.62'

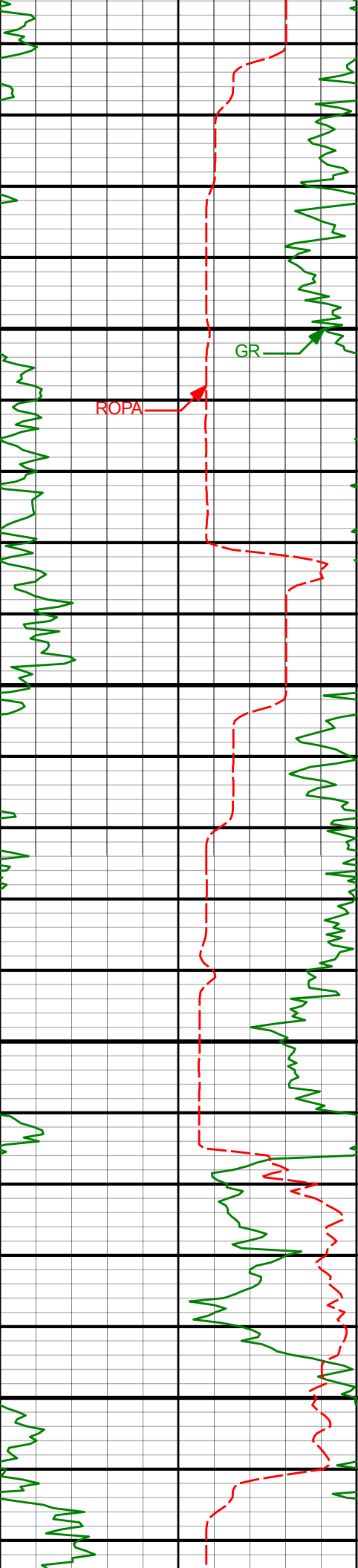
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88.47°

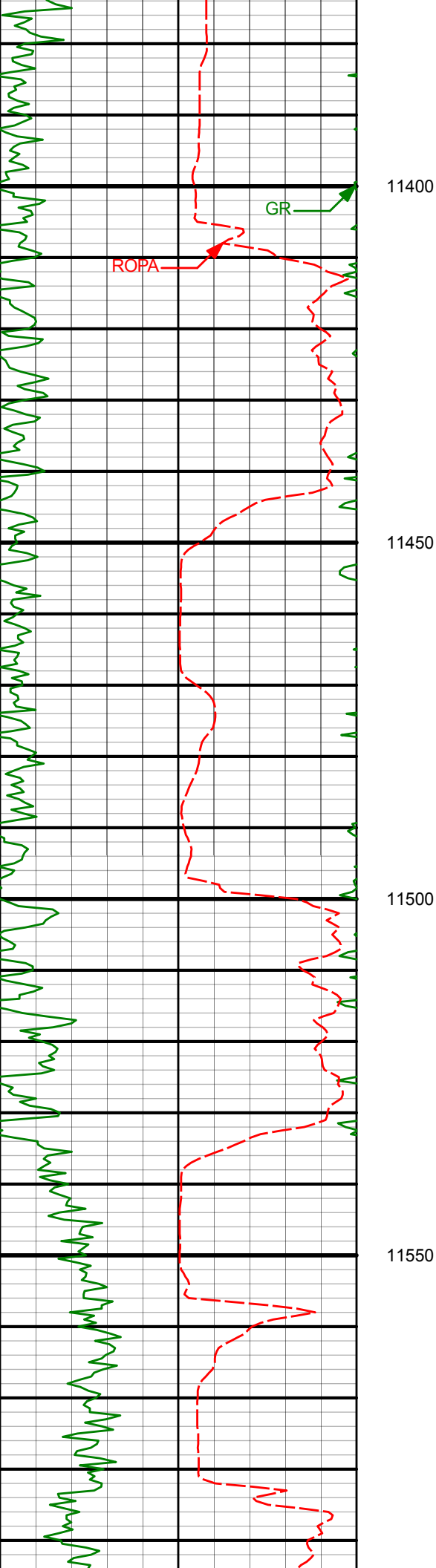
1.33°

7356.98'

3066.58'



| | | | | |
|--------|--------|-------|----------|----------|
| 11183' | 88.43° | 1.14° | 7359.42' | 3156.54' |
| 11200 | | | | |
| 11250 | | | | |
| 11273' | 88.80° | 0.75° | 7361.59' | 3246.52' |
| 11300 | | | | |
| 11350 | | | | |
| 11363' | 89.85° | 3.20° | 7362.65' | 3336.48' |



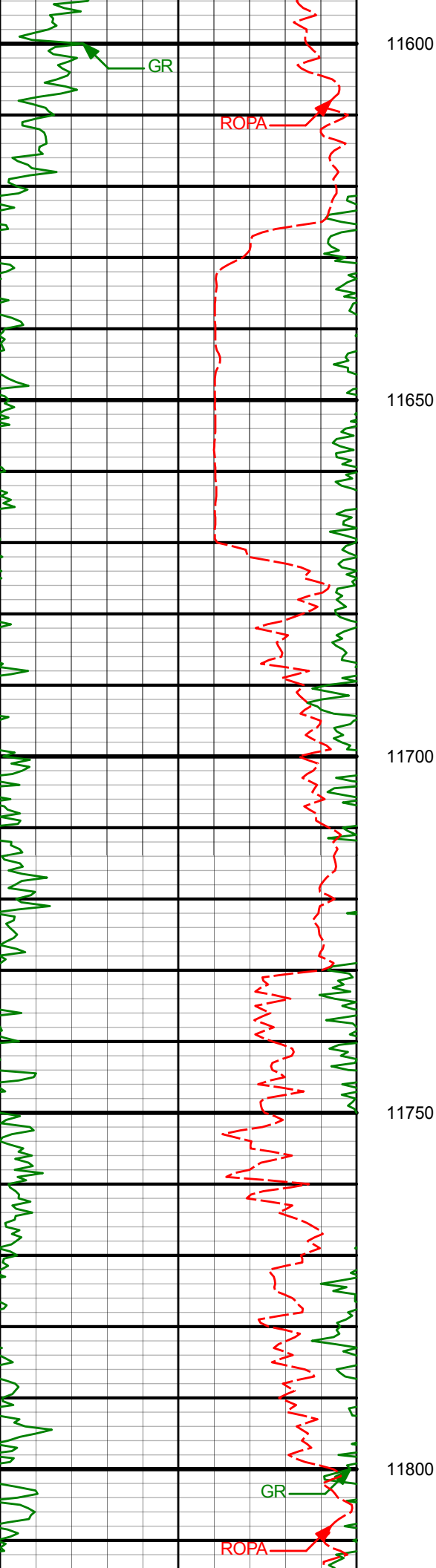
11542'

88.13°

5.79°

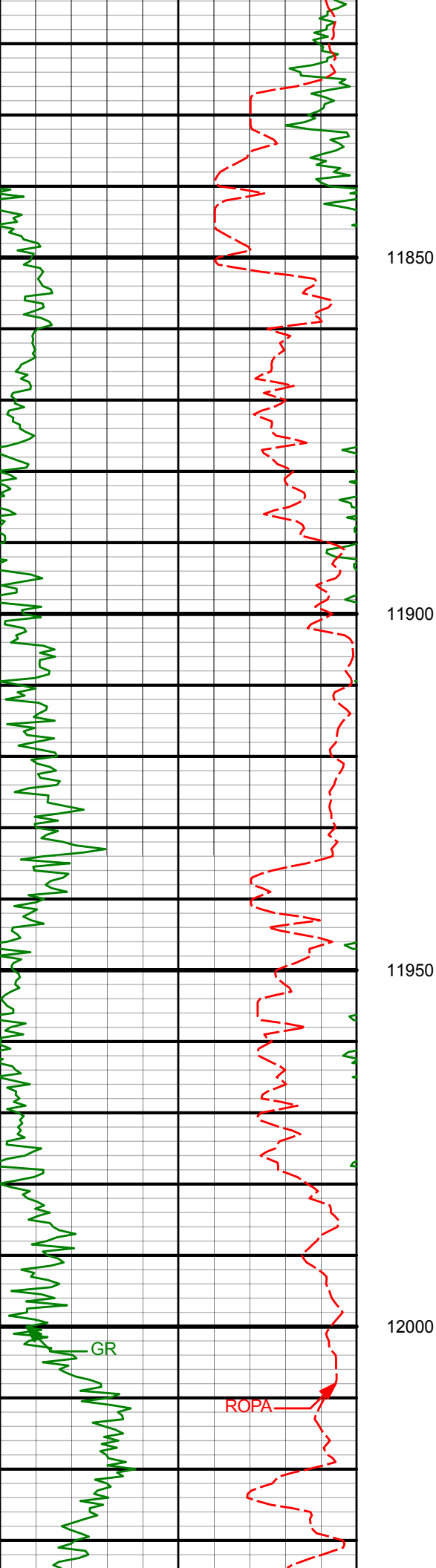
7365.80'

3515.02'



11632' 86.06° 3.25° 7370.35' 3604.69'

11812' 85.23° 0.97° 7384.02' 3784.09'



11850

11900

11950

12000

11901'

85.45°

359.55°

7391.25'

3872.79'

11991'

87.92°

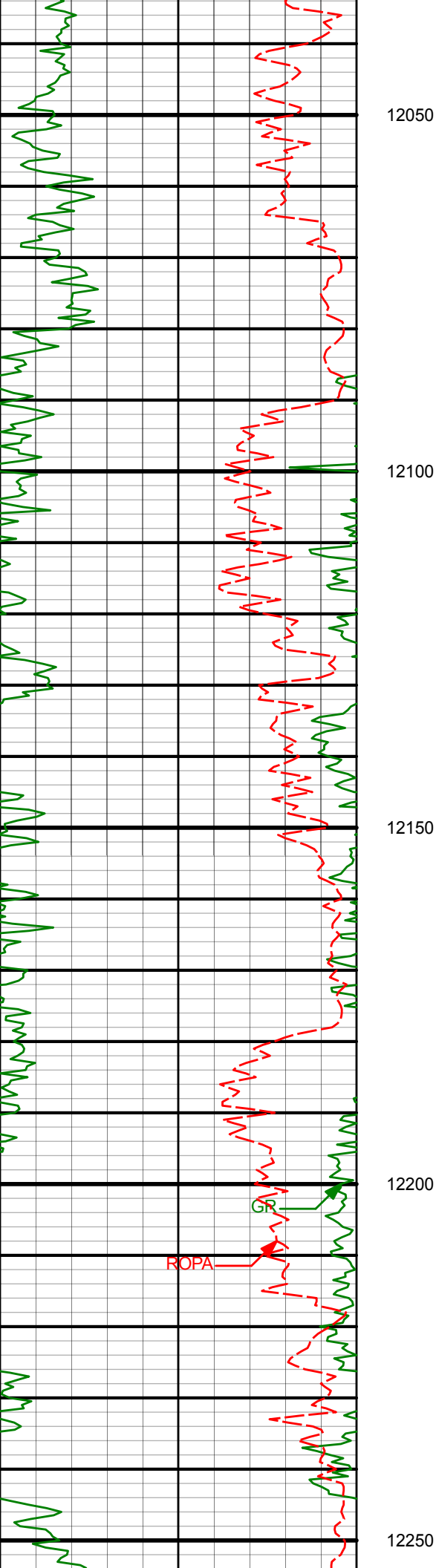
358.18°

7396.46'

3962.59'

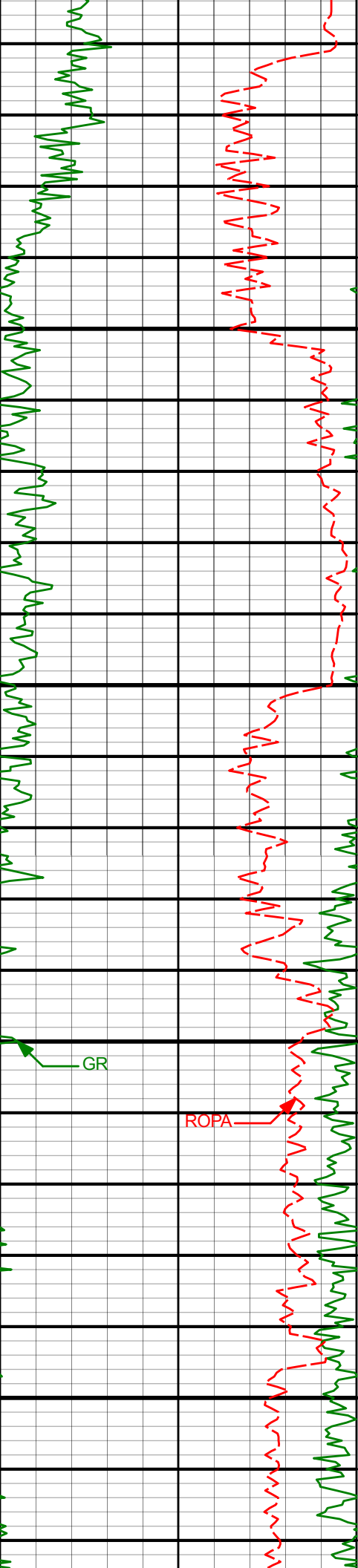
GR

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93.00° 355.47° 7395.73' 4052.35'

93.13° 356.31° 7390.92' 4141.92'



12300

12350

12400

12450

12261'

91.82°

358.61°

7387.02'

4231.69'

12350'

90.57°

359.94°

7385.17'

4320.64'

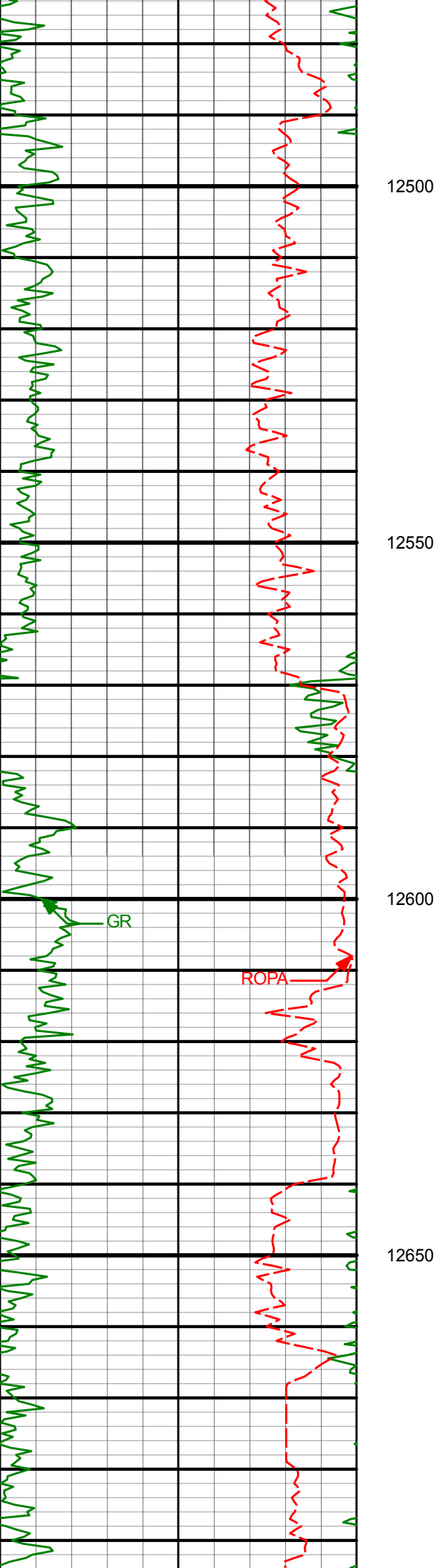
12440'

90.31°

359.65°

7384.48'

4410.63'



12500

12530'

89.77°

359.11°

7384.41'

4500.60'

12550

12600

12620'

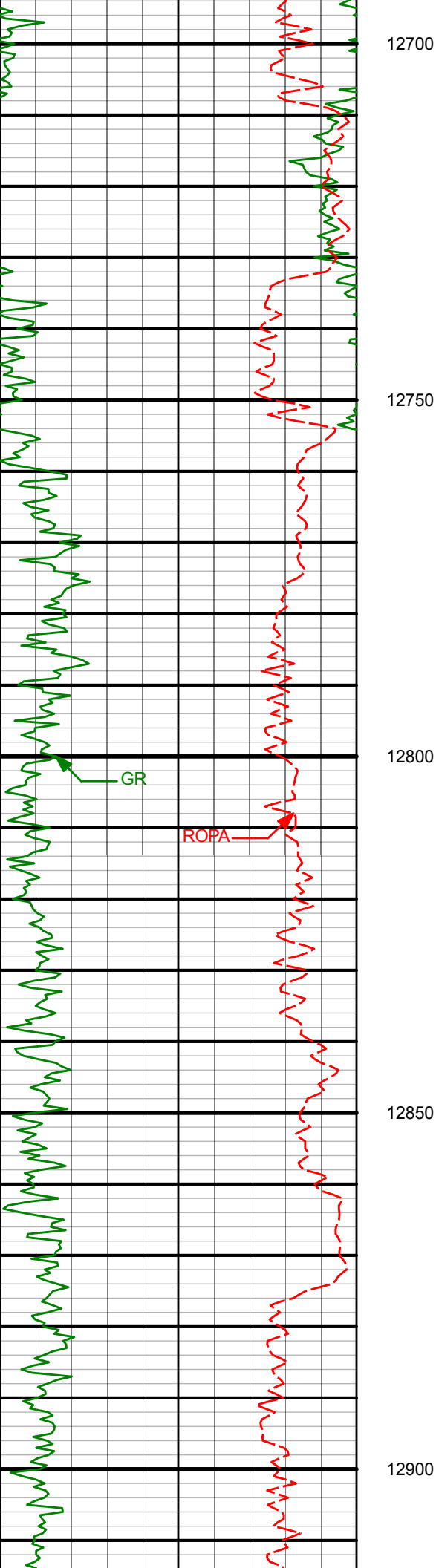
89.68°

358.26°

7384.84'

4590.55'

12650



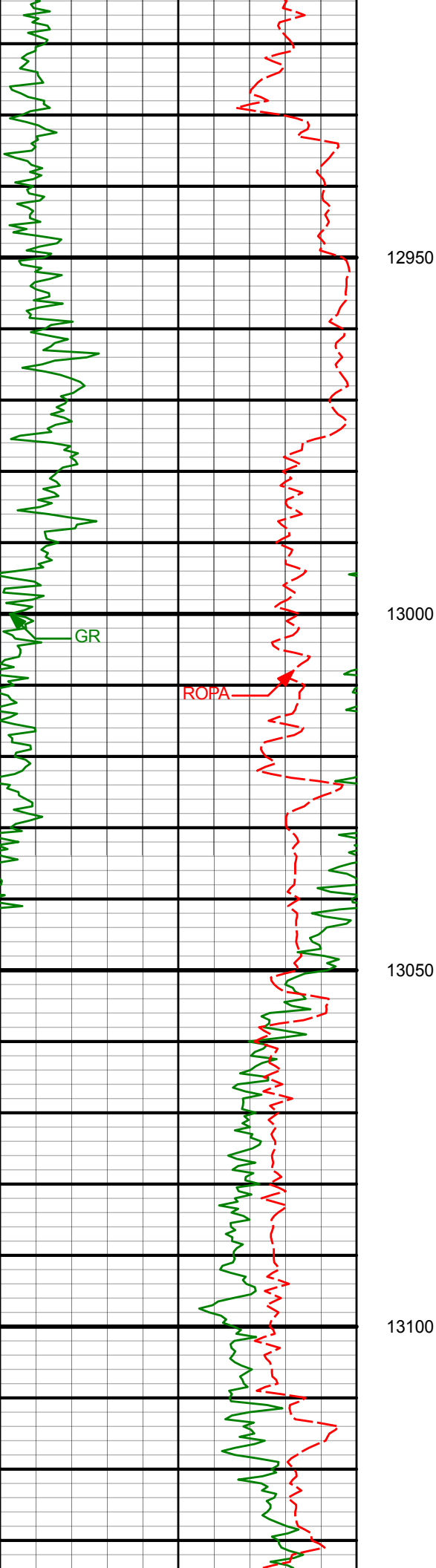
12710' 89.77° 359.54° 7385.27' 4680.51'

12799' 90.86° 359.93° 7384.78' 4769.49'

12889' 89.22° 359.79° 7384.71' 4859.48'

GR

ROPA



12979'

89.47°

2.24°

7385.74'

4949.47'

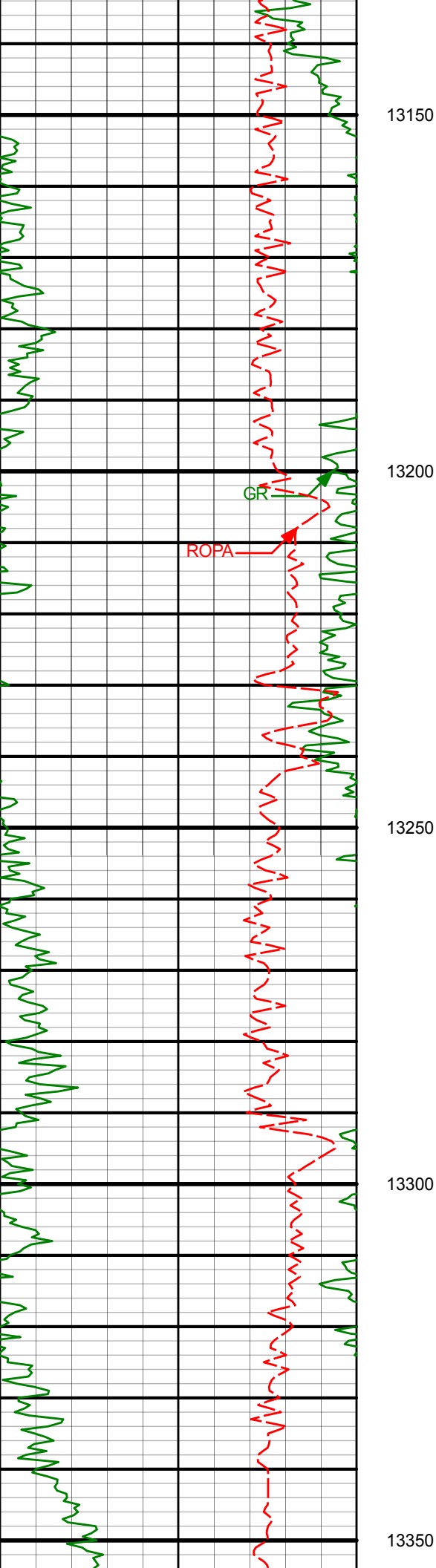
13069'

88.93°

1.49°

7386.99'

5039.44'



13159'

88.59°

1.32°

7388.93'

5129.41'

13248'

88.34°

1.09°

7391.31'

5218.37'

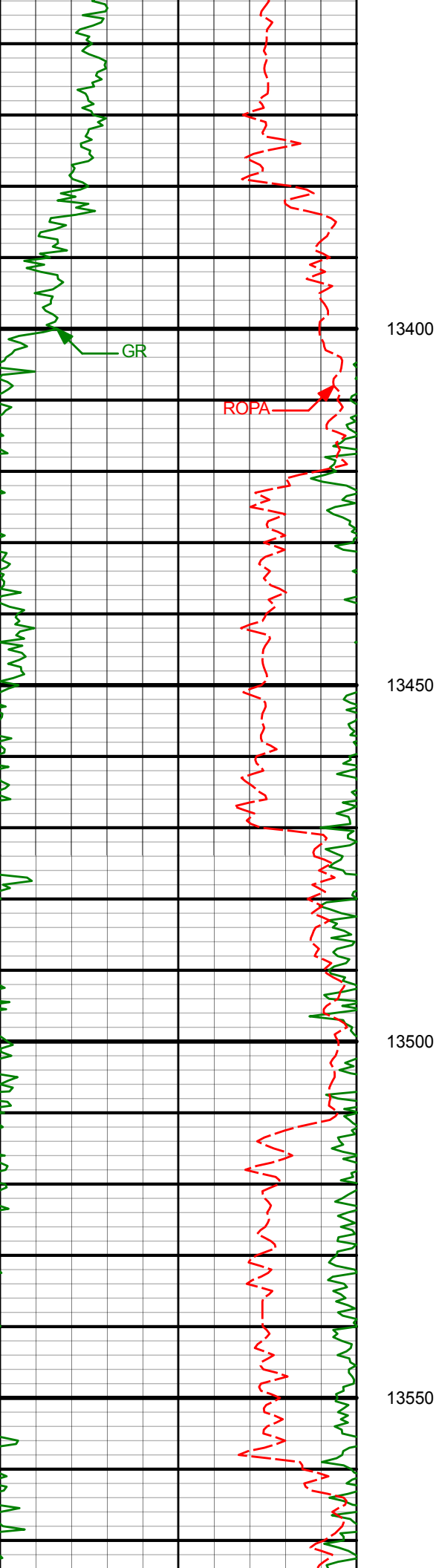
13338'

87.32°

0.67°

7394.72'

5308.30'



13428'

87.63°

0.86°

7398.68'

5398.22'

13518'

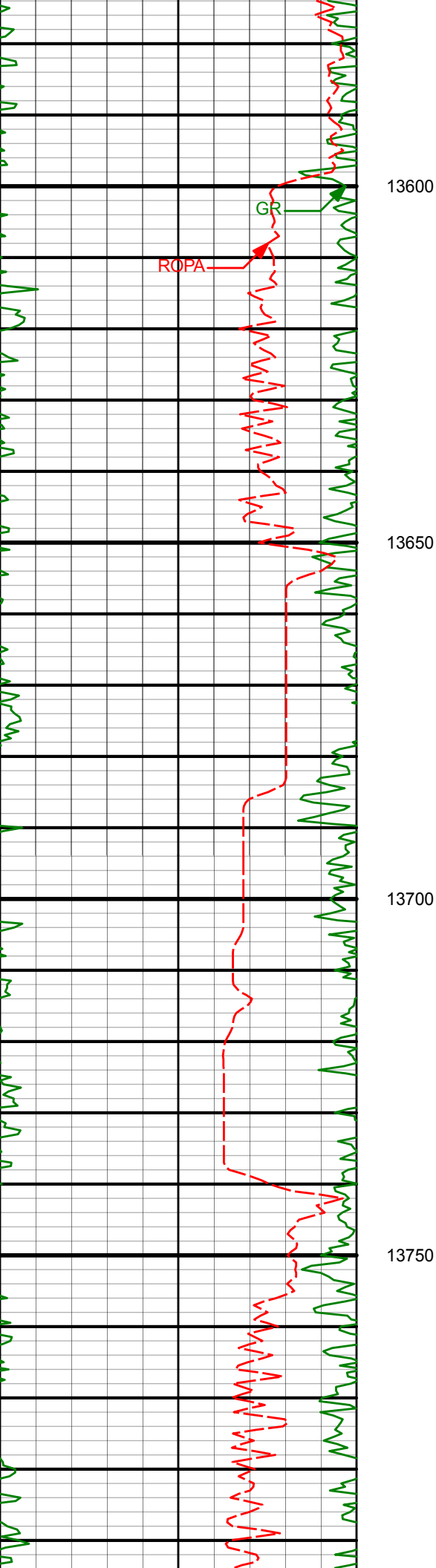
89.27°

1.26°

7401.11'

5488.18'

13550



13607'

90.52°

2.49°

7401.28'

5577.15'

13600

13650

13700

13750

13697'

90.02°

1.89°

7400.85'

5667.12'

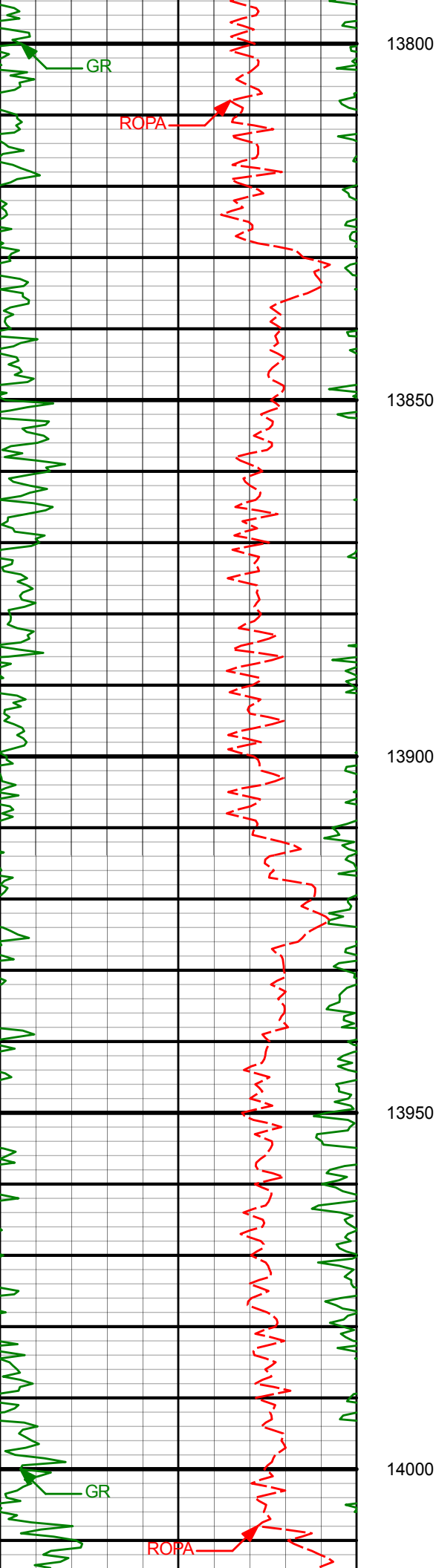
13787'

89.85°

1.57°

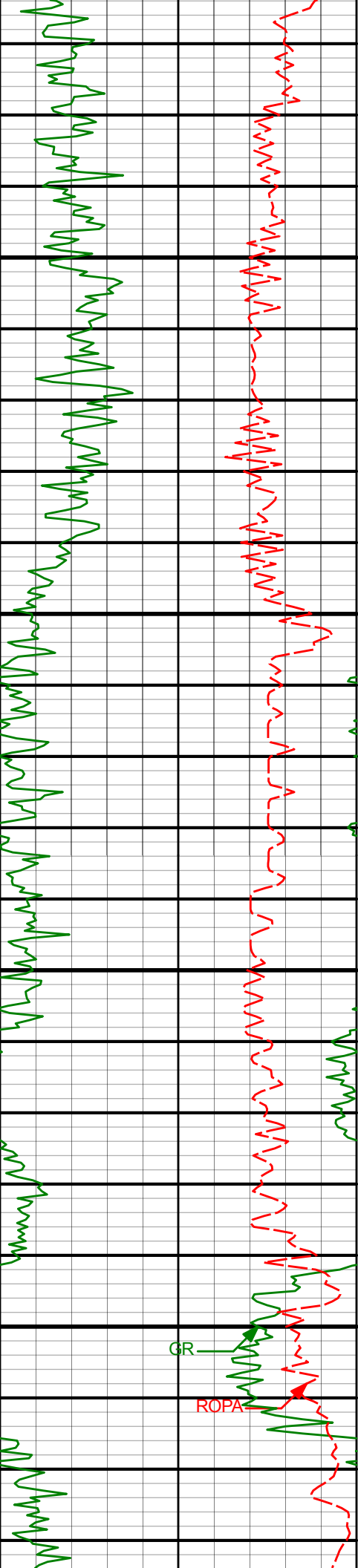
7400.95'

5757.10'



| | | | | |
|--------|--------|-------|----------|----------|
| 13877' | 89.64° | 1.04° | 7401.34' | 5847.09' |
|--------|--------|-------|----------|----------|

| | | | | |
|--------|--------|---------|----------|----------|
| 13967' | 89.39° | 359.63° | 7402.10' | 5937.09' |
|--------|--------|---------|----------|----------|



14050

14056'

89.31°

359.26°

7403.11'

6026.06'

14100

14150

14146'

88.97°

358.45°

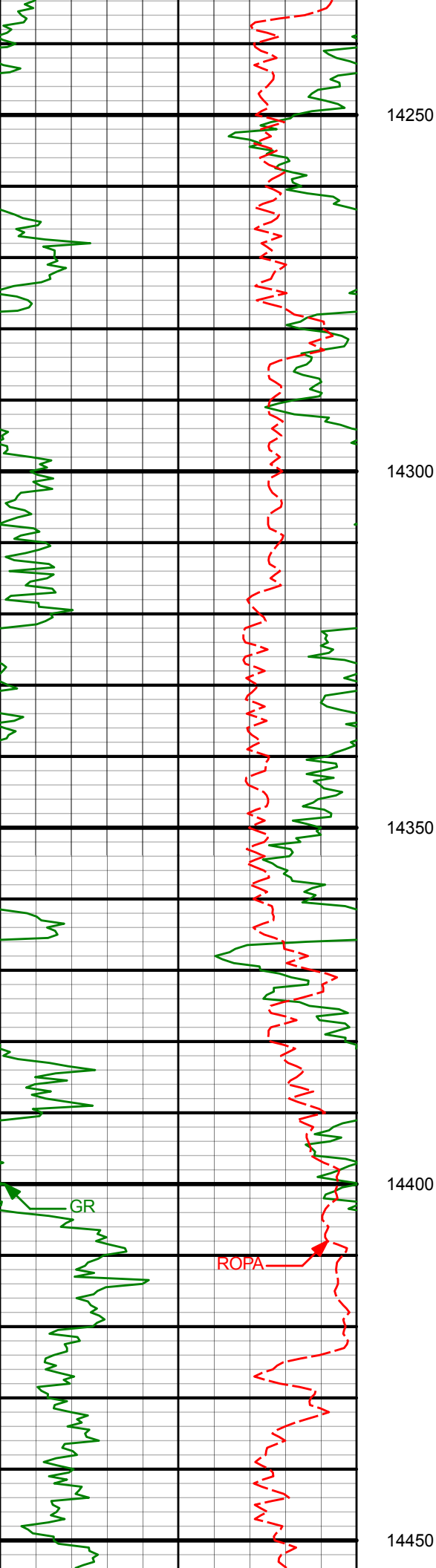
7404.46'

6116.01'

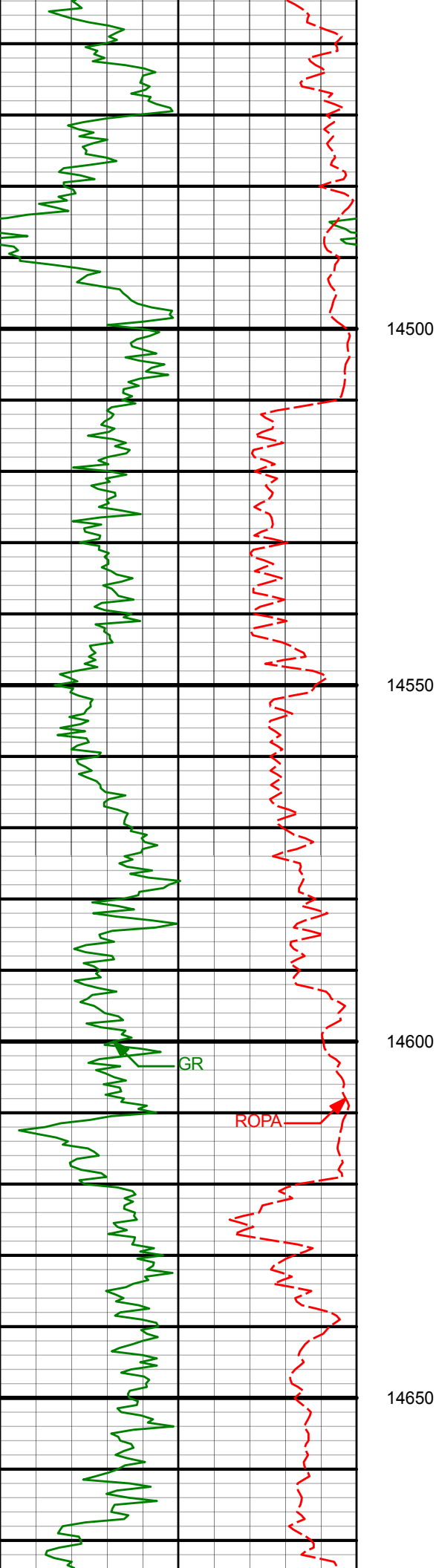
14200

GR

ROPA



| | | | | |
|--------|--------|---------|----------|----------|
| 14236' | 90.52° | 358.20° | 7404.86' | 6205.93' |
| 14326' | 91.03° | 358.37° | 7403.64' | 6295.85' |
| 14416' | 93.13° | 0.05° | 7400.38' | 6385.75' |



14505'

93.93°

2.46°

7394.90'

6474.57'

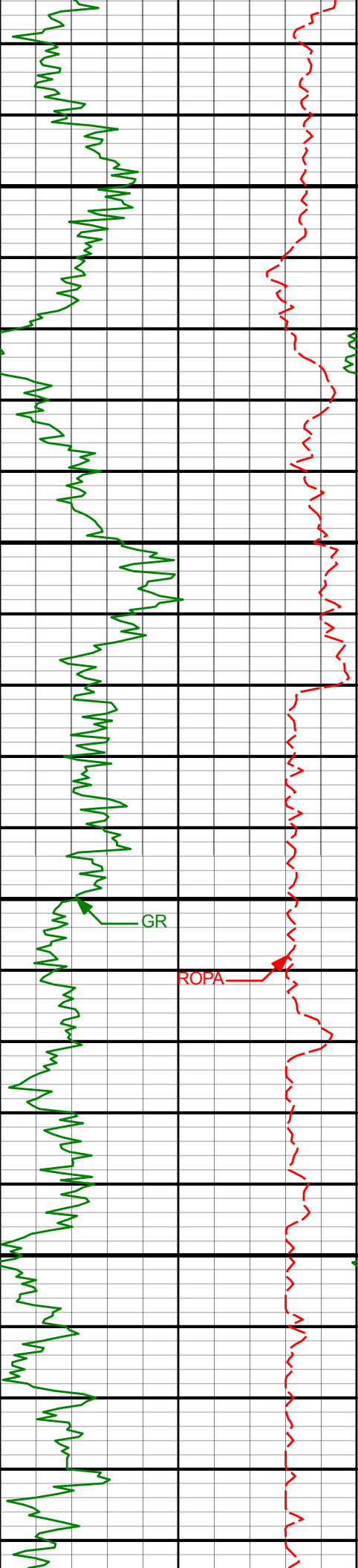
14595'

93.34°

3.08°

7389.19'

6564.33'



| | | | | |
|--------|--------|-------|----------|----------|
| 14685' | 91.24° | 3.49° | 7385.59' | 6654.15' |
|--------|--------|-------|----------|----------|

14700

14750

| | | | | |
|--------|--------|-------|----------|----------|
| 14775' | 90.02° | 3.61° | 7384.60' | 6744.03' |
|--------|--------|-------|----------|----------|

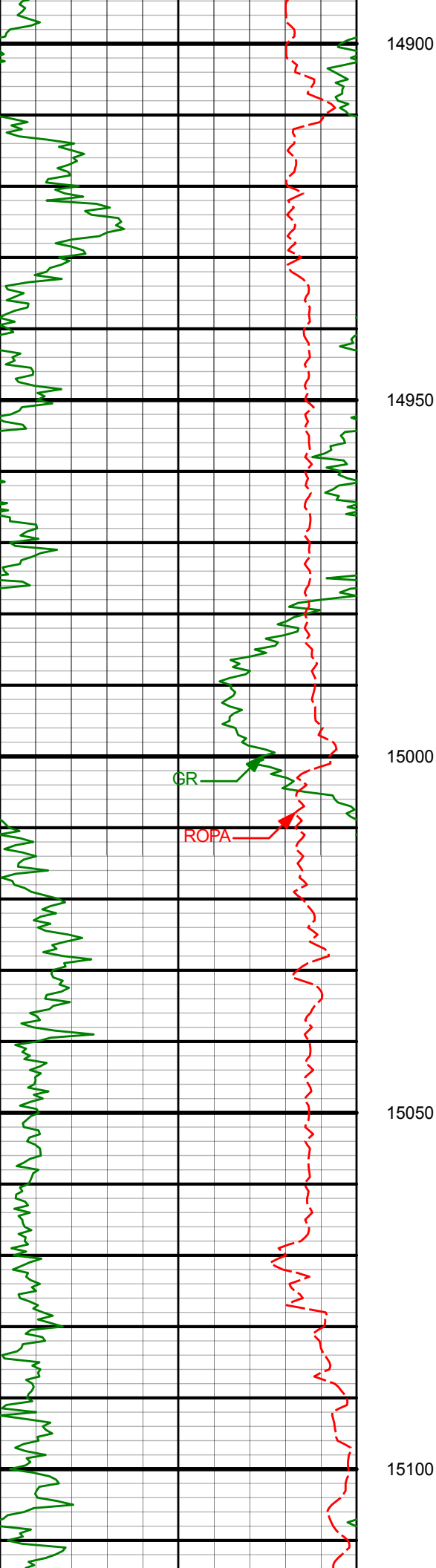
14800

GR

ROPA

14850

| | | | | |
|--------|--------|-------|----------|----------|
| 14864' | 89.98° | 2.89° | 7384.60' | 6832.93' |
|--------|--------|-------|----------|----------|



14954'

90.31°

2.29°

7384.37'

6922.88'

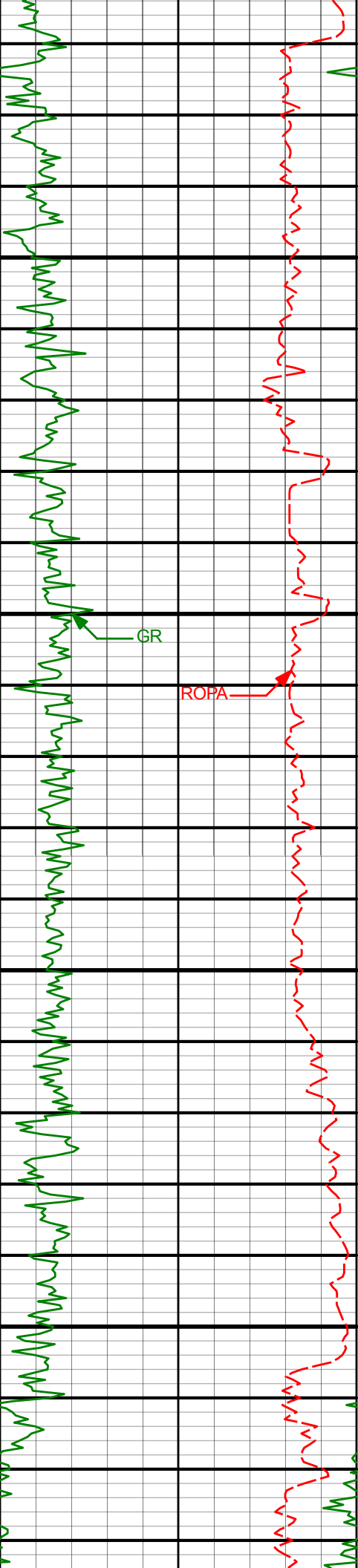
15044'

90.90°

1.36°

7383.42'

7012.86'



15150

15200

15250

15300

15134'

89.56°

2.96°

7383.06'

7102.82'

15224'

88.43°

2.45°

7384.64'

7192.74'

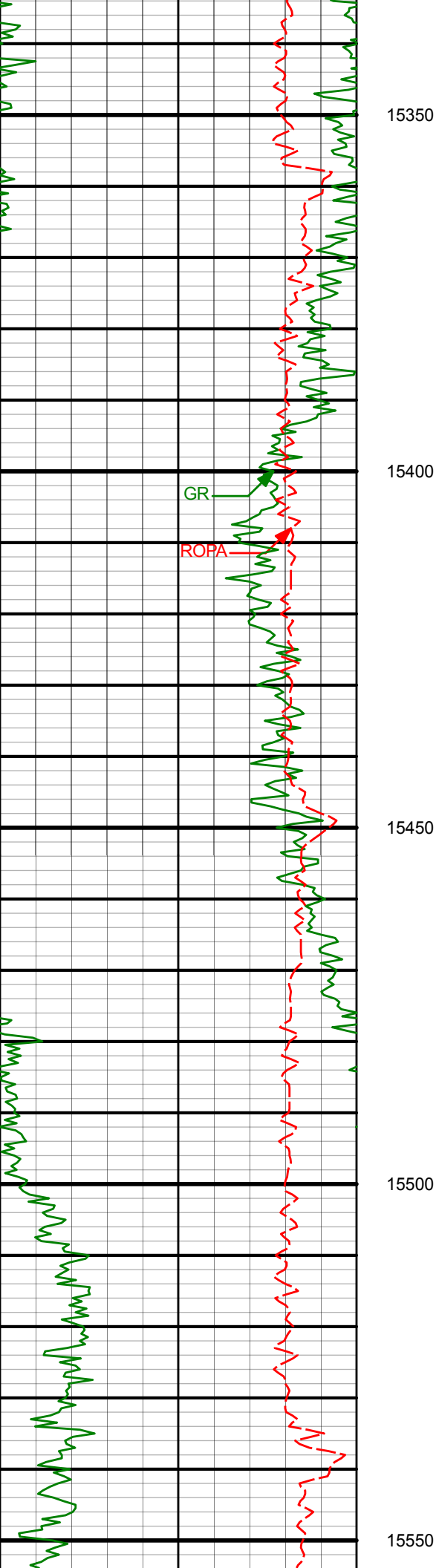
15313'

89.73°

1.05°

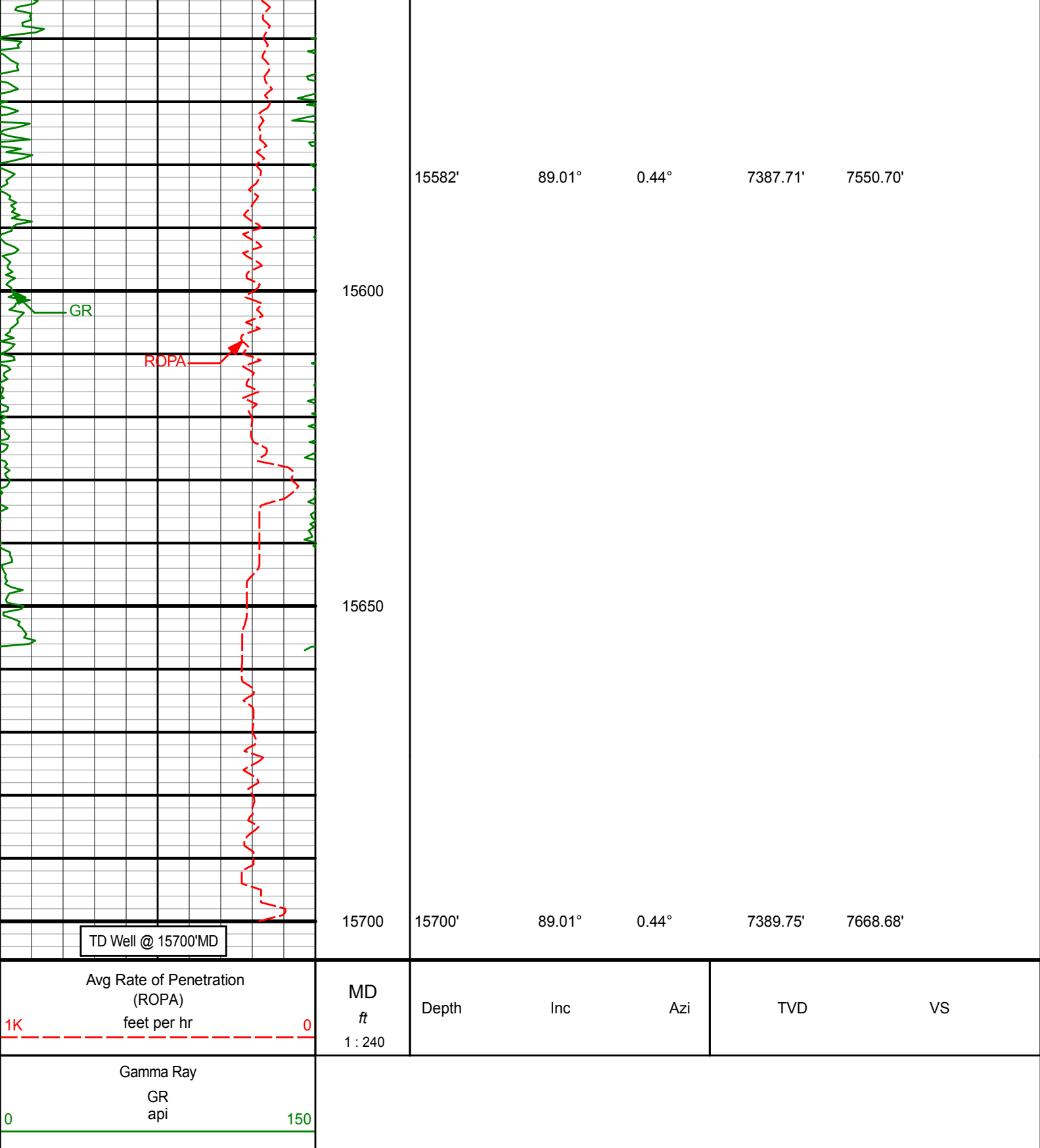
7386.07'

7281.71'



| | | | | |
|--------|--------|-------|----------|----------|
| 15403' | 89.77° | 0.66° | 7386.47' | 7371.71' |
|--------|--------|-------|----------|----------|

| | | | | |
|--------|--------|-------|----------|----------|
| 15493' | 89.81° | 0.48° | 7386.80' | 7461.71' |
|--------|--------|-------|----------|----------|



HALLIBURTON

DIRECTIONAL SURVEY REPORT
Anardarko Petroleum Corp

| <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> |
|--------------------------------------|----------------------------------|--------------------------------|--------------------------------------|----------------------------|-----------------------------|--|-------------------------------|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 N | 0.00 E | 0.00 | TIE-IN |
| 13.00 | 0.00 | 0.00 | 13.00 | 0.00 N | 0.00 E | 0.00 | 0.00 |
| 133.00 | 0.22 | 239.81 | 133.00 | 0.12 S | 0.20 W | -0.12 | 0.18 |
| 165.00 | 0.70 | 160.62 | 165.00 | 0.33 S | 0.19 W | -0.33 | 2.17 |
| 197.00 | 0.75 | 213.01 | 197.00 | 0.69 S | 0.24 W | -0.69 | 2.01 |
| 228.00 | 1.63 | 198.68 | 227.99 | 1.28 S | 0.49 W | -1.28 | 2.97 |
| 260.00 | 2.20 | 198.77 | 259.97 | 2.29 S | 0.83 W | -2.30 | 1.78 |
| 323.00 | 1.85 | 202.90 | 322.93 | 4.37 S | 1.62 W | -4.39 | 0.60 |
| 355.00 | 2.07 | 213.27 | 354.91 | 5.33 S | 2.13 W | -5.36 | 1.30 |
| 387.00 | 2.20 | 213.01 | 386.89 | 6.33 S | 2.79 W | -6.36 | 0.41 |
| 419.00 | 2.90 | 223.90 | 418.86 | 7.43 S | 3.68 W | -7.47 | 2.65 |
| 450.00 | 3.21 | 230.41 | 449.82 | 8.55 S | 4.89 W | -8.60 | 1.50 |
| 482.00 | 4.13 | 233.75 | 481.75 | 9.80 S | 6.51 W | -9.87 | 2.95 |
| 514.00 | 4.26 | 236.12 | 513.66 | 11.14 S | 8.43 W | -11.24 | 0.68 |
| 546.00 | 4.48 | 226.89 | 545.57 | 12.66 S | 10.33 W | -12.77 | 2.30 |
| 577.00 | 5.19 | 219.68 | 576.46 | 14.57 S | 12.11 W | -14.70 | 3.01 |
| 608.00 | 5.71 | 216.96 | 607.32 | 16.88 S | 13.93 W | -17.03 | 1.87 |
| 640.00 | 6.33 | 220.21 | 639.14 | 19.50 S | 16.03 W | -19.67 | 2.21 |
| 672.00 | 7.56 | 214.06 | 670.91 | 22.59 S | 18.35 W | -22.79 | 4.49 |
| 703.00 | 8.35 | 212.92 | 701.61 | 26.17 S | 20.71 W | -26.39 | 2.60 |
| 735.00 | 9.05 | 211.77 | 733.24 | 30.26 S | 23.30 W | -30.51 | 2.25 |
| 767.00 | 9.54 | 214.32 | 764.82 | 34.59 S | 26.12 W | -34.87 | 2.00 |
| 798.00 | 10.77 | 211.95 | 795.34 | 39.17 S | 29.10 W | -39.48 | 4.19 |
| 830.00 | 11.87 | 213.80 | 826.71 | 44.44 S | 32.51 W | -44.79 | 3.62 |
| 862.00 | 12.08 | 213.80 | 858.02 | 49.96 S | 36.21 W | -50.35 | 0.66 |
| 893.00 | 12.17 | 214.15 | 888.33 | 55.36 S | 39.85 W | -55.79 | 0.37 |
| 925.00 | 13.14 | 213.97 | 919.55 | 61.16 S | 43.77 W | -61.64 | 3.03 |
| 957.00 | 13.58 | 216.17 | 950.68 | 67.21 S | 48.02 W | -67.74 | 2.10 |
| 988.00 | 13.89 | 213.62 | 980.80 | 73.25 S | 52.23 W | -73.82 | 2.19 |
| 1020.00 | 14.55 | 215.55 | 1011.82 | 79.72 S | 56.69 W | -80.34 | 2.54 |
| 1051.00 | 15.60 | 216.08 | 1041.75 | 86.26 S | 61.41 W | -86.93 | 3.42 |
| 1083.00 | 16.39 | 216.35 | 1072.51 | 93.37 S | 66.62 W | -94.10 | 2.48 |
| 1114.00 | 16.35 | 217.31 | 1102.25 | 100.36 S | 71.86 W | -101.15 | 0.88 |
| 1146.00 | 16.83 | 215.99 | 1132.92 | 107.69 S | 77.31 W | -108.54 | 1.91 |
| 1178.00 | 17.93 | 215.03 | 1163.46 | 115.48 S | 82.86 W | -116.38 | 3.55 |
| 1210.00 | 18.15 | 214.94 | 1193.89 | 123.59 S | 88.54 W | -124.56 | 0.69 |
| 1241.00 | 18.06 | 213.18 | 1223.35 | 131.57 S | 93.94 W | -132.60 | 1.79 |
| 1305.00 | 17.75 | 216.17 | 1284.25 | 147.75 S | 105.13 W | -148.90 | 1.52 |
| 1336.00 | 17.80 | 216.96 | 1313.77 | 155.35 S | 110.76 W | -156.56 | 0.79 |
| 1368.00 | 17.53 | 219.33 | 1344.26 | 162.99 S | 116.76 W | -164.26 | 2.40 |
| 1400.00 | 17.71 | 219.60 | 1374.76 | 170.47 S | 122.92 W | -171.81 | 0.62 |
| 1431.00 | 18.28 | 221.53 | 1404.25 | 177.74 S | 129.14 W | -179.15 | 2.66 |
| 1463.00 | 18.02 | 222.15 | 1434.65 | 185.17 S | 135.79 W | -186.65 | 1.01 |
| 1494.00 | 18.37 | 222.85 | 1464.10 | 192.30 S | 142.33 W | -193.86 | 1.33 |
| 1526.00 | 18.94 | 221.62 | 1494.42 | 199.88 S | 149.21 W | -201.51 | 2.16 |
| 1558.00 | 19.07 | 222.59 | 1524.68 | 207.61 S | 156.20 W | -209.32 | 1.07 |
| 1590.00 | 19.38 | 225.31 | 1554.90 | 215.20 S | 163.51 W | -216.98 | 2.96 |
| 1621.00 | 19.16 | 226.80 | 1584.16 | 222.30 S | 170.88 W | -224.16 | 1.74 |
| 1652.00 | 19.03 | 228.30 | 1613.45 | 229.14 S | 178.36 W | -231.09 | 1.64 |
| 1684.00 | 18.28 | 230.93 | 1643.77 | 235.77 S | 186.15 W | -237.81 | 3.52 |
| 1715.00 | 18.06 | 232.34 | 1673.23 | 241.77 S | 193.73 W | -243.89 | 1.59 |
| 1747.00 | 17.62 | 231.02 | 1703.69 | 247.85 S | 201.42 W | -250.05 | 1.87 |
| 1779.00 | 17.80 | 230.93 | 1734.17 | 253.98 S | 208.98 W | -256.26 | 0.57 |
| 1811.00 | 17.80 | 232.08 | 1764.64 | 260.07 S | 216.64 W | -262.44 | 1.10 |
| 1829.00 | 17.27 | 231.81 | 1781.80 | 263.41 S | 220.91 W | -265.83 | 2.98 |
| 1916.00 | 17.24 | 231.26 | 1864.89 | 279.46 S | 241.11 W | -282.10 | 0.19 |
| 2006.00 | 16.48 | 230.35 | 1951.02 | 295.95 S | 261.34 W | -298.81 | 0.90 |
| 2096.00 | 16.02 | 228.13 | 2037.43 | 312.39 S | 280.42 W | -315.45 | 0.86 |
| 2186.00 | 15.31 | 225.43 | 2124.08 | 329.01 S | 298.13 W | -332.27 | 1.13 |
| 2276.00 | 15.82 | 228.81 | 2210.79 | 345.43 S | 315.83 W | -348.88 | 1.16 |
| 2365.00 | 18.03 | 235.25 | 2295.93 | 361.27 S | 336.28 W | -364.95 | 3.25 |
| 2455.00 | 17.28 | 236.33 | 2381.69 | 376.62 S | 358.85 W | -380.54 | 0.90 |
| 2545.00 | 15.41 | 232.38 | 2468.05 | 391.34 S | 379.45 W | -395.48 | 2.42 |
| 2635.00 | 15.99 | 234.32 | 2554.70 | 405.87 S | 398.99 W | -410.23 | 0.87 |
| 2724.00 | 17.15 | 237.02 | 2640.00 | 420.16 S | 419.96 W | -424.75 | 1.57 |

Wagner 28N-E10 HZ

| Measured Depth (feet) | Inclination (degrees) | Direction (degrees) | Vertical Depth (feet) | Latitude (feet) | Departure (feet) | Vertical Section (feet) | Dogleg (deg/100ft) |
|-----------------------|-----------------------|---------------------|-----------------------|-----------------|------------------|-------------------------|--------------------|
| 2814.00 | 15.98 | 235.77 | 2726.26 | 434.35 S | 441.33 W | -439.18 | 1.37 |
| 2904.00 | 16.79 | 232.48 | 2812.61 | 449.24 S | 461.88 W | -454.29 | 1.37 |
| 2994.00 | 15.57 | 228.69 | 2899.04 | 465.13 S | 481.27 W | -470.40 | 1.79 |
| 3083.00 | 19.13 | 224.69 | 2983.98 | 483.39 S | 500.50 W | -488.87 | 4.21 |
| 3173.00 | 18.86 | 223.85 | 3069.08 | 504.36 S | 520.95 W | -510.06 | 0.43 |
| 3263.00 | 18.80 | 229.09 | 3154.27 | 524.35 S | 541.99 W | -530.28 | 1.88 |
| 3353.00 | 17.05 | 227.64 | 3239.90 | 542.74 S | 562.70 W | -548.90 | 2.01 |
| 3443.00 | 17.28 | 233.89 | 3325.90 | 559.51 S | 583.25 W | -565.89 | 2.06 |
| 3532.00 | 16.31 | 235.83 | 3411.10 | 574.33 S | 604.28 W | -580.94 | 1.26 |
| 3622.00 | 14.10 | 232.63 | 3497.95 | 588.08 S | 623.45 W | -594.90 | 2.63 |
| 3711.00 | 11.64 | 227.98 | 3584.71 | 600.67 S | 638.73 W | -607.66 | 3.00 |
| 3801.00 | 9.43 | 228.48 | 3673.19 | 611.64 S | 651.00 W | -618.76 | 2.45 |
| 3891.00 | 7.71 | 231.63 | 3762.18 | 620.27 S | 661.25 W | -627.51 | 1.98 |
| 3981.00 | 6.00 | 238.04 | 3851.53 | 626.51 S | 669.98 W | -633.84 | 2.08 |
| 4071.00 | 7.19 | 243.88 | 3940.94 | 631.48 S | 679.02 W | -638.91 | 1.52 |
| 4160.00 | 6.86 | 247.06 | 4029.27 | 636.01 S | 688.92 W | -643.54 | 0.57 |
| 4250.00 | 5.59 | 249.79 | 4118.74 | 639.62 S | 697.99 W | -647.25 | 1.46 |
| 4340.00 | 4.90 | 253.52 | 4208.36 | 642.22 S | 705.79 W | -649.94 | 0.85 |
| 4430.00 | 4.52 | 256.88 | 4298.05 | 644.12 S | 712.93 W | -651.92 | 0.52 |
| 4519.00 | 4.34 | 261.75 | 4386.79 | 645.40 S | 719.68 W | -653.27 | 0.47 |
| 4609.00 | 3.99 | 267.66 | 4476.55 | 646.01 S | 726.17 W | -653.96 | 0.61 |
| 4699.00 | 4.02 | 249.78 | 4566.34 | 647.23 S | 732.26 W | -655.24 | 1.38 |
| 4789.00 | 3.42 | 228.18 | 4656.15 | 650.11 S | 737.22 W | -658.17 | 1.68 |
| 4878.00 | 3.82 | 237.00 | 4744.97 | 653.49 S | 741.69 W | -661.61 | 0.77 |
| 5058.00 | 3.23 | 231.50 | 4924.63 | 659.92 S | 750.69 W | -668.13 | 0.38 |
| 5148.00 | 2.90 | 214.07 | 5014.51 | 663.38 S | 753.94 W | -671.63 | 1.09 |
| 5237.00 | 3.17 | 198.66 | 5103.38 | 667.58 S | 755.99 W | -675.85 | 0.96 |
| 5327.00 | 2.79 | 193.29 | 5193.26 | 672.06 S | 757.29 W | -680.35 | 0.53 |
| 5417.00 | 3.07 | 207.73 | 5283.14 | 676.32 S | 758.91 W | -684.63 | 0.87 |
| 5507.00 | 2.62 | 228.14 | 5373.04 | 679.83 S | 761.56 W | -688.16 | 1.22 |
| 5596.00 | 2.57 | 242.14 | 5461.95 | 682.11 S | 764.84 W | -690.48 | 0.71 |
| 5686.00 | 2.59 | 254.82 | 5551.85 | 683.59 S | 768.59 W | -692.00 | 0.63 |
| 5776.00 | 2.36 | 256.13 | 5641.77 | 684.57 S | 772.35 W | -693.02 | 0.26 |
| 5866.00 | 2.13 | 261.13 | 5731.70 | 685.27 S | 775.80 W | -693.76 | 0.34 |
| 5933.00 | 2.25 | 273.99 | 5798.65 | 685.37 S | 778.35 W | -693.89 | 0.76 |
| 5999.00 | 2.64 | 279.39 | 5864.59 | 685.03 S | 781.14 W | -693.58 | 0.68 |
| 6088.00 | 3.47 | 239.27 | 5953.48 | 686.08 S | 785.48 W | -694.67 | 2.52 |
| 6178.00 | 3.23 | 205.61 | 6043.33 | 689.76 S | 788.92 W | -698.39 | 2.17 |
| 6268.00 | 2.11 | 210.85 | 6133.23 | 693.48 S | 790.87 W | -702.13 | 1.27 |
| 6358.00 | 1.67 | 240.25 | 6223.18 | 695.55 S | 792.86 W | -704.23 | 1.17 |
| 6447.00 | 1.82 | 246.63 | 6312.14 | 696.76 S | 795.28 W | -705.46 | 0.27 |
| 6537.00 | 1.61 | 250.70 | 6402.10 | 697.74 S | 797.79 W | -706.47 | 0.27 |
| 6627.00 | 1.20 | 235.00 | 6492.07 | 698.70 S | 799.75 W | -707.45 | 0.62 |
| 6717.00 | 1.08 | 251.19 | 6582.06 | 699.51 S | 801.32 W | -708.28 | 0.38 |
| 6806.00 | 0.95 | 237.91 | 6671.04 | 700.17 S | 802.74 W | -708.96 | 0.30 |
| 6896.00 | 6.74 | 14.55 | 6760.85 | 695.45 S | 802.04 W | -704.23 | 8.29 |
| 6986.00 | 11.70 | 26.61 | 6849.67 | 682.17 S | 796.62 W | -690.88 | 5.88 |
| 7075.00 | 18.57 | 30.83 | 6935.53 | 661.90 S | 785.30 W | -670.50 | 7.81 |
| 7165.00 | 23.60 | 33.98 | 7019.48 | 634.63 S | 767.88 W | -643.04 | 5.73 |
| 7255.00 | 31.50 | 37.29 | 7099.22 | 600.93 S | 743.52 W | -609.07 | 8.93 |
| 7298.00 | 37.31 | 41.22 | 7134.68 | 582.17 S | 728.11 W | -590.14 | 14.46 |
| 7345.00 | 41.71 | 45.54 | 7170.94 | 560.49 S | 707.55 W | -568.24 | 11.04 |
| 7390.00 | 46.48 | 44.81 | 7203.25 | 538.42 S | 685.36 W | -545.92 | 10.65 |
| 7434.00 | 51.35 | 38.82 | 7232.17 | 513.69 S | 663.32 W | -520.95 | 15.08 |
| 7479.00 | 53.22 | 28.67 | 7259.74 | 484.13 S | 643.62 W | -491.18 | 18.31 |
| 7509.00 | 53.36 | 24.47 | 7277.68 | 462.63 S | 632.87 W | -469.56 | 11.24 |
| 7538.00 | 53.41 | 19.42 | 7294.98 | 441.05 S | 624.17 W | -447.89 | 13.97 |
| 7568.00 | 55.34 | 13.81 | 7312.47 | 417.70 S | 617.22 W | -424.46 | 16.51 |
| 7598.00 | 58.02 | 7.88 | 7328.96 | 393.09 S | 612.52 W | -399.81 | 18.77 |
| 7628.00 | 60.02 | 1.27 | 7344.41 | 367.48 S | 610.49 W | -374.17 | 20.04 |

Wagner 28N-E10 HZ

| Measured Depth (feet) | Inclination (degrees) | Direction (degrees) | Vertical Depth (feet) | Latitude (feet) | Departure (feet) | Vertical Section (feet) | Dogleg (deg/100ft) |
|-----------------------|-----------------------|---------------------|-----------------------|-----------------|------------------|-------------------------|--------------------|
| 7658.00 | 64.53 | 357.13 | 7358.37 | 340.94 S | 610.88 W | -347.64 | 19.37 |
| 7688.00 | 69.54 | 355.10 | 7370.07 | 313.39 S | 612.76 W | -320.11 | 17.82 |
| 7757.00 | 82.71 | 351.55 | 7386.58 | 247.02 S | 620.58 W | -253.83 | 19.72 |
| 7794.00 | 89.43 | 349.81 | 7389.12 | 210.62 S | 626.56 W | -217.50 | 18.77 |
| 7883.00 | 90.15 | 349.21 | 7389.44 | 123.11 S | 642.76 W | -130.17 | 1.05 |
| 7973.00 | 89.98 | 348.66 | 7389.34 | 34.78 S | 660.03 W | -42.04 | 0.64 |
| 8063.00 | 91.57 | 350.33 | 7388.12 | 53.70 N | 676.43 W | 46.26 | 2.56 |
| 8153.00 | 90.82 | 350.67 | 7386.24 | 142.44 N | 691.28 W | 134.83 | 0.92 |
| 8243.00 | 90.19 | 349.50 | 7385.45 | 231.09 N | 706.77 W | 223.31 | 1.47 |
| 8333.00 | 90.73 | 349.77 | 7384.73 | 319.62 N | 722.97 W | 311.65 | 0.67 |
| 8422.00 | 92.16 | 352.28 | 7382.48 | 407.49 N | 736.85 W | 399.37 | 3.25 |
| 8512.00 | 93.17 | 355.54 | 7378.29 | 496.88 N | 746.38 W | 488.64 | 3.78 |
| 8602.00 | 91.49 | 357.35 | 7374.62 | 586.62 N | 751.96 W | 578.32 | 2.74 |
| 8692.00 | 89.81 | 356.68 | 7373.60 | 676.49 N | 756.65 W | 668.13 | 2.01 |
| 8782.00 | 89.60 | 357.03 | 7374.06 | 766.35 N | 761.59 W | 757.93 | 0.46 |
| 8876.00 | 90.23 | 359.73 | 7374.20 | 860.31 N | 764.25 W | 851.85 | 2.94 |
| 8970.00 | 89.94 | 358.32 | 7374.06 | 954.29 N | 765.85 W | 945.81 | 1.53 |
| 9064.00 | 91.57 | 358.61 | 7372.82 | 1048.24 N | 768.37 W | 1039.73 | 1.77 |
| 9159.00 | 91.36 | 358.32 | 7370.39 | 1143.18 N | 770.92 W | 1134.63 | 0.38 |
| 9253.00 | 90.40 | 358.30 | 7368.94 | 1237.13 N | 773.69 W | 1228.54 | 1.03 |
| 9347.00 | 91.92 | 0.70 | 7367.04 | 1331.09 N | 774.51 W | 1322.50 | 3.01 |
| 9442.00 | 91.70 | 0.22 | 7364.04 | 1426.04 N | 773.76 W | 1417.45 | 0.55 |
| 9536.00 | 90.82 | 359.43 | 7361.98 | 1520.02 N | 774.05 W | 1511.41 | 1.26 |
| 9630.00 | 91.78 | 358.88 | 7359.85 | 1613.98 N | 775.43 W | 1605.36 | 1.18 |
| 9725.00 | 93.38 | 0.83 | 7355.56 | 1708.88 N | 775.67 W | 1700.24 | 2.65 |
| 9819.00 | 95.20 | 2.86 | 7348.53 | 1802.56 N | 772.66 W | 1793.95 | 2.89 |
| 9913.00 | 93.84 | 4.42 | 7341.13 | 1896.07 N | 766.71 W | 1887.53 | 2.20 |
| 10007.00 | 91.66 | 2.87 | 7336.61 | 1989.76 N | 760.75 W | 1981.28 | 2.85 |
| 10102.00 | 89.18 | 1.83 | 7335.92 | 2084.67 N | 756.85 W | 2076.22 | 2.83 |
| 10196.00 | 87.67 | 0.22 | 7338.50 | 2178.62 N | 755.17 W | 2170.18 | 2.35 |
| 10286.00 | 88.76 | 359.43 | 7341.30 | 2268.57 N | 755.44 W | 2260.13 | 1.50 |
| 10375.00 | 90.40 | 358.88 | 7341.96 | 2357.55 N | 756.75 W | 2349.09 | 1.94 |
| 10465.00 | 89.43 | 358.44 | 7342.09 | 2447.53 N | 758.86 W | 2439.04 | 1.18 |
| 10555.00 | 89.43 | 359.38 | 7342.98 | 2537.51 N | 760.57 W | 2528.99 | 1.05 |
| 10645.00 | 89.68 | 359.97 | 7343.67 | 2627.50 N | 761.07 W | 2618.98 | 0.71 |
| 10734.00 | 89.14 | 2.51 | 7344.58 | 2716.47 N | 759.15 W | 2707.96 | 2.91 |
| 10914.00 | 86.83 | 2.59 | 7350.91 | 2896.17 N | 751.15 W | 2887.73 | 1.28 |
| 11004.00 | 88.47 | 1.61 | 7354.60 | 2986.03 N | 747.86 W | 2977.62 | 2.12 |
| 11093.00 | 88.47 | 1.33 | 7356.98 | 3074.97 N | 745.58 W | 3066.58 | 0.31 |
| 11183.00 | 88.43 | 1.14 | 7359.42 | 3164.91 N | 743.64 W | 3156.54 | 0.22 |
| 11273.00 | 88.80 | 0.75 | 7361.59 | 3254.87 N | 742.16 W | 3246.52 | 0.60 |
| 11363.00 | 89.85 | 3.20 | 7362.65 | 3344.81 N | 739.05 W | 3336.48 | 2.96 |
| 11542.00 | 88.13 | 5.79 | 7365.80 | 3523.21 N | 725.03 W | 3515.02 | 1.74 |
| 11632.00 | 86.06 | 3.25 | 7370.35 | 3612.80 N | 717.94 W | 3604.69 | 3.63 |
| 11812.00 | 85.23 | 0.97 | 7384.02 | 3792.14 N | 711.32 W | 3784.09 | 1.34 |
| 11901.00 | 85.45 | 359.55 | 7391.25 | 3880.85 N | 710.92 W | 3872.79 | 1.61 |
| 11991.00 | 87.92 | 358.18 | 7396.46 | 3970.67 N | 712.70 W | 3962.59 | 3.15 |
| 12081.00 | 93.00 | 355.47 | 7395.73 | 4060.49 N | 717.68 W | 4052.35 | 6.39 |
| 12171.00 | 93.13 | 356.31 | 7390.92 | 4150.13 N | 724.12 W | 4141.92 | 0.95 |
| 12261.00 | 91.82 | 358.61 | 7387.02 | 4239.95 N | 728.10 W | 4231.69 | 2.93 |
| 12350.00 | 90.57 | 359.94 | 7385.17 | 4328.92 N | 729.23 W | 4320.64 | 2.05 |
| 12440.00 | 90.31 | 359.65 | 7384.48 | 4418.92 N | 729.55 W | 4410.63 | 0.42 |
| 12530.00 | 89.77 | 359.11 | 7384.41 | 4508.91 N | 730.52 W | 4500.60 | 0.85 |
| 12620.00 | 89.68 | 358.26 | 7384.84 | 4598.88 N | 732.58 W | 4590.55 | 0.96 |
| 12710.00 | 89.77 | 359.54 | 7385.27 | 4688.86 N | 734.31 W | 4680.51 | 1.43 |
| 12799.00 | 90.86 | 359.93 | 7384.78 | 4777.86 N | 734.72 W | 4769.49 | 1.30 |
| 12889.00 | 89.22 | 359.79 | 7384.71 | 4867.86 N | 734.94 W | 4859.48 | 1.83 |
| 12979.00 | 89.47 | 2.24 | 7385.74 | 4957.83 N | 733.35 W | 4949.47 | 2.74 |
| 13069.00 | 88.93 | 1.49 | 7386.99 | 5047.77 N | 730.42 W | 5039.44 | 1.04 |
| 13159.00 | 88.59 | 1.32 | 7388.93 | 5137.72 N | 728.22 W | 5129.41 | 0.41 |

Wagner 28N-E10 HZ

| Measured Depth (feet) | Inclination (degrees) | Direction (degrees) | Vertical Depth (feet) | Latitude (feet) | Departure (feet) | Vertical Section (feet) | Dogleg (deg/100ft) |
|-----------------------------|--------------------------|------------------------|-----------------------------|--------------------|---------------------|-------------------------------|-----------------------|
| 13248.00 | 88.34 | 1.09 | 7391.31 | 5226.67 N | 726.35 W | 5218.37 | 0.39 |
| 13338.00 | 87.32 | 0.67 | 7394.72 | 5316.60 N | 724.96 W | 5308.30 | 1.22 |
| 13428.00 | 87.63 | 0.86 | 7398.68 | 5406.50 N | 723.76 W | 5398.22 | 0.40 |
| 13518.00 | 89.27 | 1.26 | 7401.11 | 5496.45 N | 722.10 W | 5488.18 | 1.87 |
| 13607.00 | 90.52 | 2.49 | 7401.28 | 5585.40 N | 719.20 W | 5577.15 | 1.98 |
| 13697.00 | 90.02 | 1.89 | 7400.85 | 5675.33 N | 715.76 W | 5667.12 | 0.87 |
| 13787.00 | 89.85 | 1.57 | 7400.95 | 5765.29 N | 713.04 W | 5757.10 | 0.40 |
| 13877.00 | 89.64 | 1.04 | 7401.34 | 5855.27 N | 710.99 W | 5847.09 | 0.64 |
| 13967.00 | 89.39 | 359.63 | 7402.10 | 5945.26 N | 710.47 W | 5937.09 | 1.59 |
| 14056.00 | 89.31 | 359.26 | 7403.11 | 6034.25 N | 711.33 W | 6026.06 | 0.43 |
| 14146.00 | 88.97 | 358.45 | 7404.46 | 6124.22 N | 713.13 W | 6116.01 | 0.98 |
| 14236.00 | 90.52 | 358.20 | 7404.86 | 6214.18 N | 715.76 W | 6205.93 | 1.75 |
| 14326.00 | 91.03 | 358.37 | 7403.64 | 6304.13 N | 718.46 W | 6295.85 | 0.59 |
| 14416.00 | 93.13 | 0.05 | 7400.38 | 6394.05 N | 719.70 W | 6385.75 | 2.99 |
| 14505.00 | 93.93 | 2.46 | 7394.90 | 6482.85 N | 717.75 W | 6474.57 | 2.85 |
| 14595.00 | 93.34 | 3.08 | 7389.19 | 6572.57 N | 713.41 W | 6564.33 | 0.95 |
| 14685.00 | 91.24 | 3.49 | 7385.59 | 6662.34 N | 708.26 W | 6654.15 | 2.38 |
| 14775.00 | 90.02 | 3.61 | 7384.60 | 6752.16 N | 702.68 W | 6744.03 | 1.36 |
| 14864.00 | 89.98 | 2.89 | 7384.60 | 6841.02 N | 697.64 W | 6832.93 | 0.81 |
| 14954.00 | 90.31 | 2.29 | 7384.37 | 6930.93 N | 693.57 W | 6922.88 | 0.77 |
| 15044.00 | 90.90 | 1.36 | 7383.42 | 7020.87 N | 690.71 W | 7012.86 | 1.21 |
| 15134.00 | 89.56 | 2.96 | 7383.06 | 7110.80 N | 687.31 W | 7102.82 | 2.32 |
| 15224.00 | 88.43 | 2.45 | 7384.64 | 7200.69 N | 683.07 W | 7192.74 | 1.38 |
| 15313.00 | 89.73 | 1.05 | 7386.07 | 7289.63 N | 680.35 W | 7281.71 | 2.15 |
| 15403.00 | 89.77 | 0.66 | 7386.47 | 7379.62 N | 679.00 W | 7371.71 | 0.43 |
| 15493.00 | 89.81 | 0.48 | 7386.80 | 7469.62 N | 678.10 W | 7461.71 | 0.22 |
| 15582.00 | 89.01 | 0.44 | 7387.71 | 7558.61 N | 677.39 W | 7550.70 | 0.90 |
| 15700.00 | 89.01 | 0.44 | 7389.75 | 7676.59 N | 676.49 W | 7668.68 | 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 0.63 DEGREES (TRUE)
A TOTAL CORRECTION OF 8.15 DEG FROM MAGNETIC NORTH TO TRUE NORTH HAS BEEN APPLIED**

**HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.
HORIZONTAL DISPLACEMENT(CLOSURE) AT 15700.00 FEET
IS 7706.34 FEET ALONG 354.96 DEGREES (TRUE)**