

**PCDC - Pressure Case Directional**  
**PCGK - Pressure Case Gamma**

**1 : 600 / 1 : 240**

Country : <b>USA</b>			
Field : <b>Wattenberg</b>			
Location : <b>Lat: 40° 19' 56.71" North</b> <b>Long: 104° 48' 46.84" West</b>			
Well : <b>SHABLE K08-69-1HN</b>			
Company : <b>Noble</b>			
Rig : <b>H&amp;P 321</b>			
LOCATION			
Latitude : <b>40° 19' 56.71" North</b> Longitude : <b>104° 48' 46.84" West</b>			
UTM Easting = <b>3,191,522.640 ft</b> UTM Northing = <b>1,364,683.260 ft</b>			
Company : <b>Noble</b>			
Rig : <b>H&amp;P 321</b>			
Well : <b>SHABLE K08-69-1HN</b>			
Field : <b>Wattenberg</b>			
Country : <b>USA</b>			
API Number : <b>05-123-39561</b>			
Permanent Datum : <b>Ground Level</b>			
Log Measured From : <b>Drill Floor</b>			
Drilling Measured From : <b>Drill Floor</b>			
Elevation : <b>4715.00 ft</b>			
30.00 ft Above Permanent Datum			
<b>TVD LOG</b>			
Depth Logged : <b>640.99 ft To 6,996.99 ft</b>			
Date Logged : <b>07-Aug-14 To 11-Aug-14</b>			
Total Depth MD : <b>7,393.00 ft TVD : 6,996.99 ft</b>			
Spud Date : <b>07-Aug-14</b>			
Unit No. : <b>11210424</b>			
Job No. : <b>CA-XX-0901563498</b>			
Plot Type : <b>Final</b>			
Plot Date : <b>13-Aug-14</b>			
Run No.			
Size			
From			
To			
0100			
8,750 in			
630.99 ft			
6,295.06 ft			
0200			
8,750 in			
6,295.06 ft			
6,996.99 ft			
Run No.			
Size			
From			
To			
9.625 in			
37.90 lbp			
SURFACE			
630.99 ft			

**WELL INFORMATION**

MWD Run Number	100	200		
Date run completed	10-Aug-14	11-Aug-14		
Rig Bit Number	2	3		
Bit Size (in)	8.750	8.750		
Tool Nominal OD (in)	6.880	6.880		
Log Start Depth (TVD, ft)	640.99	6,295.06		
Log End Depth (TVD, ft)	6,295.06	6,996.99		
Drill or Wipe	Drill	Drill		
Drill/Wipe Start Date and Time	08-Aug-14 17:48	10-Aug-14 15:50		
Drill/Wipe End Date and Time	09-Aug-14 17:28	11-Aug-14 00:39		
Min Inc (deg) @ Depth (TVD, ft)	0.15 @ 999.98	0.14 @ 6,327.06		
Max Inc (deg) @ Depth (TVD, ft)	14.54 @ 3,873.93	83.08 @ 6,993.73		
Bit TFA(in2) / Bit Type	1.05 / PDC	1.74 / PDC		
Flow Rate (gpm)	592.80	600.00		
Max AV (fpm) / CV (fpm) @ MWD	N/A / N/A	N/A / N/A		
Fluid Type	Fresh Water Gel	Fresh Water Gel		
Density (ppg) / Viscosity (spqt)	9.10 / 36.00	10.00 / 44.00		
Filtrate CL (ppm)	1,400.00	1,300.00		
pH / Fluid Loss (mptm)	9.90 / 7	9.40 / 6		
PV (cP) / YP (lbf/ft2)	8 / 7.00	12 / 14.00		
% Solids / % Sand	5.00 / 0.20	8.50 / 0.10		
% Oil / Oil:Water Ratio	N/A / N/A	N/A / N/A		
Rm @ Measured Temp (degF)	N/A @ N/A	N/A @ N/A		
Rmf @ Measured Temp (degF)	N/A @ N/A	N/A @ N/A		
Rmc @ Measured Temp (degF)	N/A @ N/A	N/A @ N/A		

Max Tool Temp (degF) / Source	167.00 / PCM	171.20 / PCM			
Rm @ Max Tool Temp (degF)	N/A @ 167.00	N/A @ 171.20			
Lead MWD Engineer	Robert Barnes	Robert Barnes			
Customer Representative	Jim Turner	Jim Turner			

## SENSOR INFORMATION

### Downhole Processor Information

Tool Type	PCM	PCM			
Software Version	5.93	5.93			
Sub Serial Number	241717	241717			
Insert Serial Number	11620311	11620311			
Date and Time Initialized	08-Aug-14 10:48	01-Jan-70 00:00			
Date and Time Read	11-Aug-14 06:19	11-Aug-14 06:26			
ECMB SW Version	N/A	N/A			

### Directional Sensor Information

Tool Type	PCDC	PCDC			
Distance From Bit (ft)	56.00	54.00			
Software Version	6.21	6.21			
Sub Serial Number	241717	241717			
Sonde Serial Number	10993517	10993517			
Sensor ID Number	N/A	N/A			
Toolface Offset (deg)	334.79	66.13			

### Gamma Ray Sensor Information

Tool Type	PCG	PCG			
Distance From Bit (ft)	49.11	46.94			
Recorded Sample Period (sec)	10	10			
Software Version	8.15	8.15			
Sub Serial Number	241717	241717			
Insert/Sonde Serial Number	11579832	11579832			

## REMARKS

1. All depths are calibrated to driller's pipe tally and are true vertical depth from the Drill Floor.
2. No depth corrections have been made for pipe stretch or compression.
3. Critical annular velocities are calculated using the "Power Law" model for water based fluids and the "Brigham Plastic" model for oil and synthetic based fluids.
4. All data presented is recorded data unless otherwise specified.
5. The following smoothing parameters have been applied to the data:
  - 1:600 Log  
PGRC (Gamma CG) and ROPA (Average Rate of Penetration)  
Interval Resolution: 1.0 ft  
Interval Distance: 3.0 ft
  - 1:240 Log  
PGRC (Gamma CG):  
Interval Resolution: 0.5 ft  
Interval Distance: 0.6 ft
  - ROPA (Average Rate of Penetration):  
Interval Resolution: 0.5 ft

Interval Resolution: 1.2 ft

6. Insite Version v8.0.10

## WARRANTY

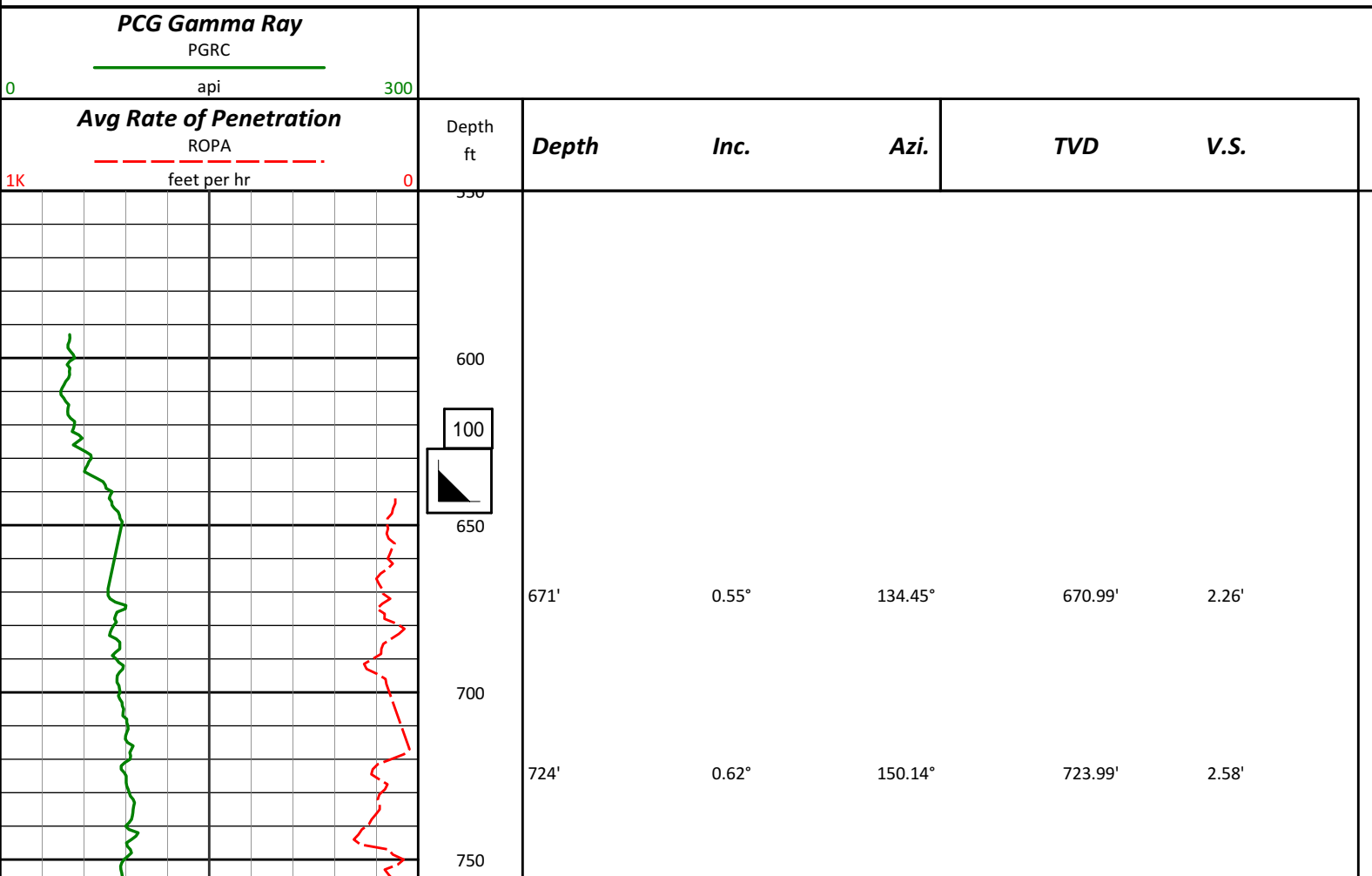
HALLIBURTON WILL USE ITS BEST EFFORTS TO FURNISH CUSTOMERS WITH ACCURATE INFORMATION AND INTERPRETATIONS THAT ARE PART OF, AND INCIDENT TO, THE SERVICES PROVIDED. HOWEVER, HALLIBURTON CANNOT AND DOES NOT WARRANT THE ACCURACY OR CORRECTNESS OF SUCH INFORMATION AND INTERPRETATIONS. UNDER NO CIRCUMSTANCES 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.

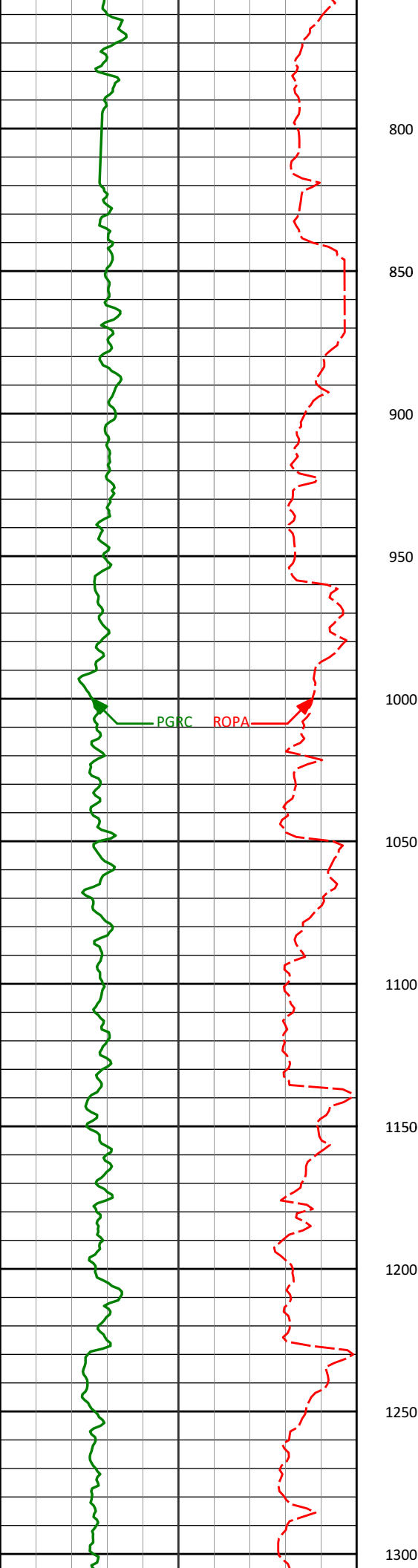
# HALLIBURTON

## Sperry Drilling Services

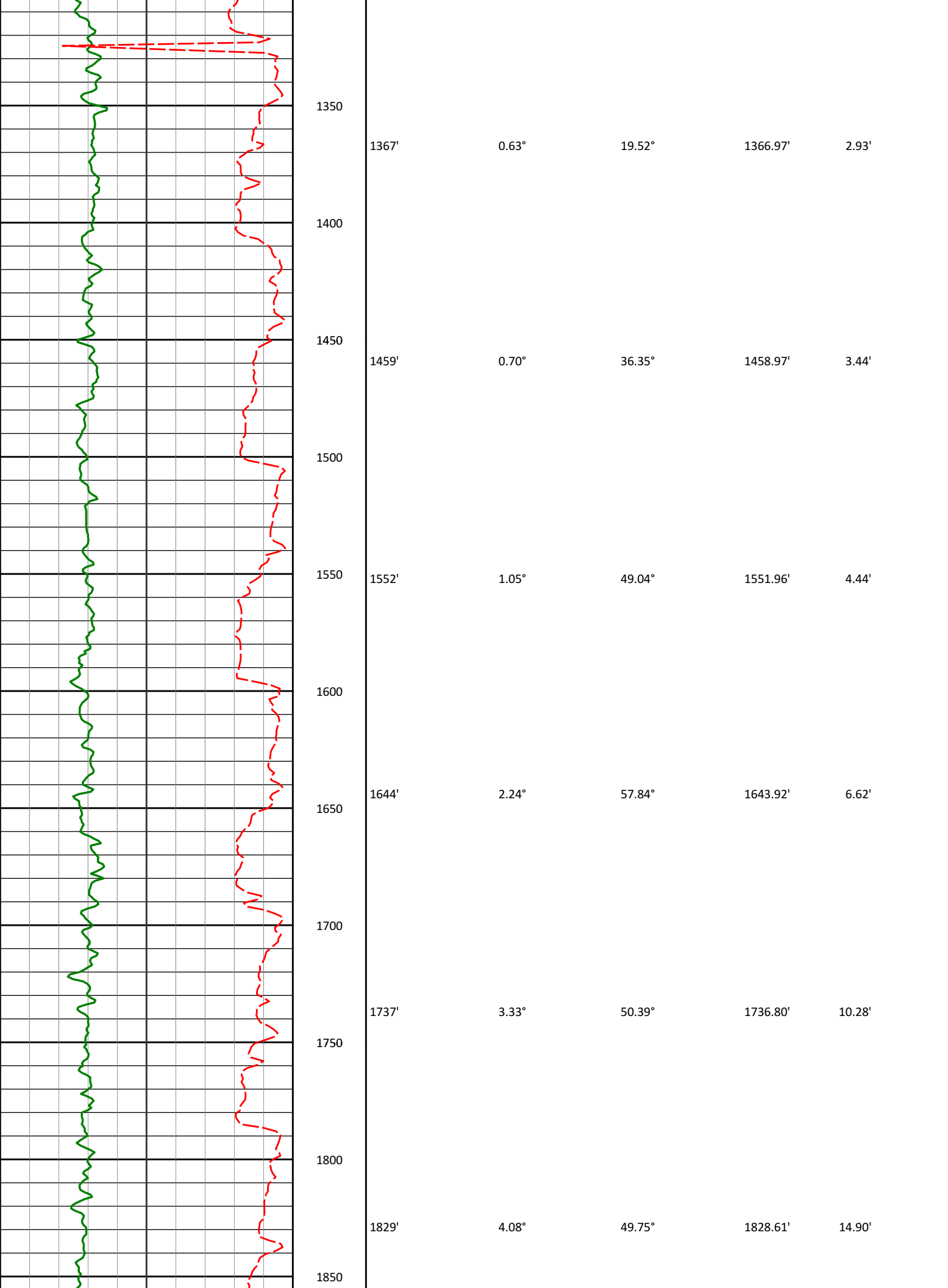
### TVD Correlation Log 1:600

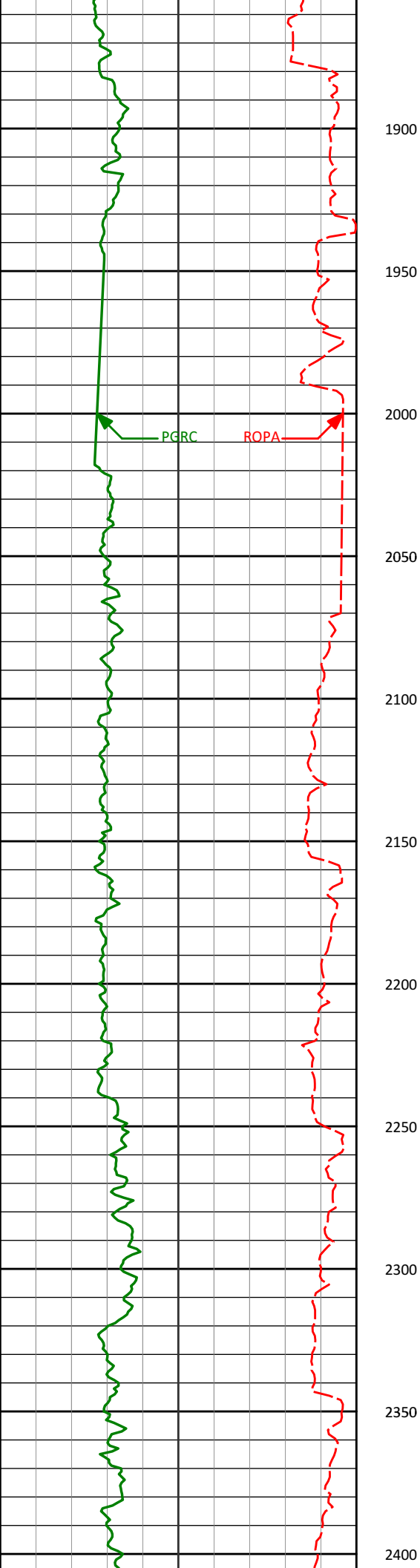
Noble Energy  
Shable K08-69-1HN  
H&P 321  
Sec. 7-T4N-R66W



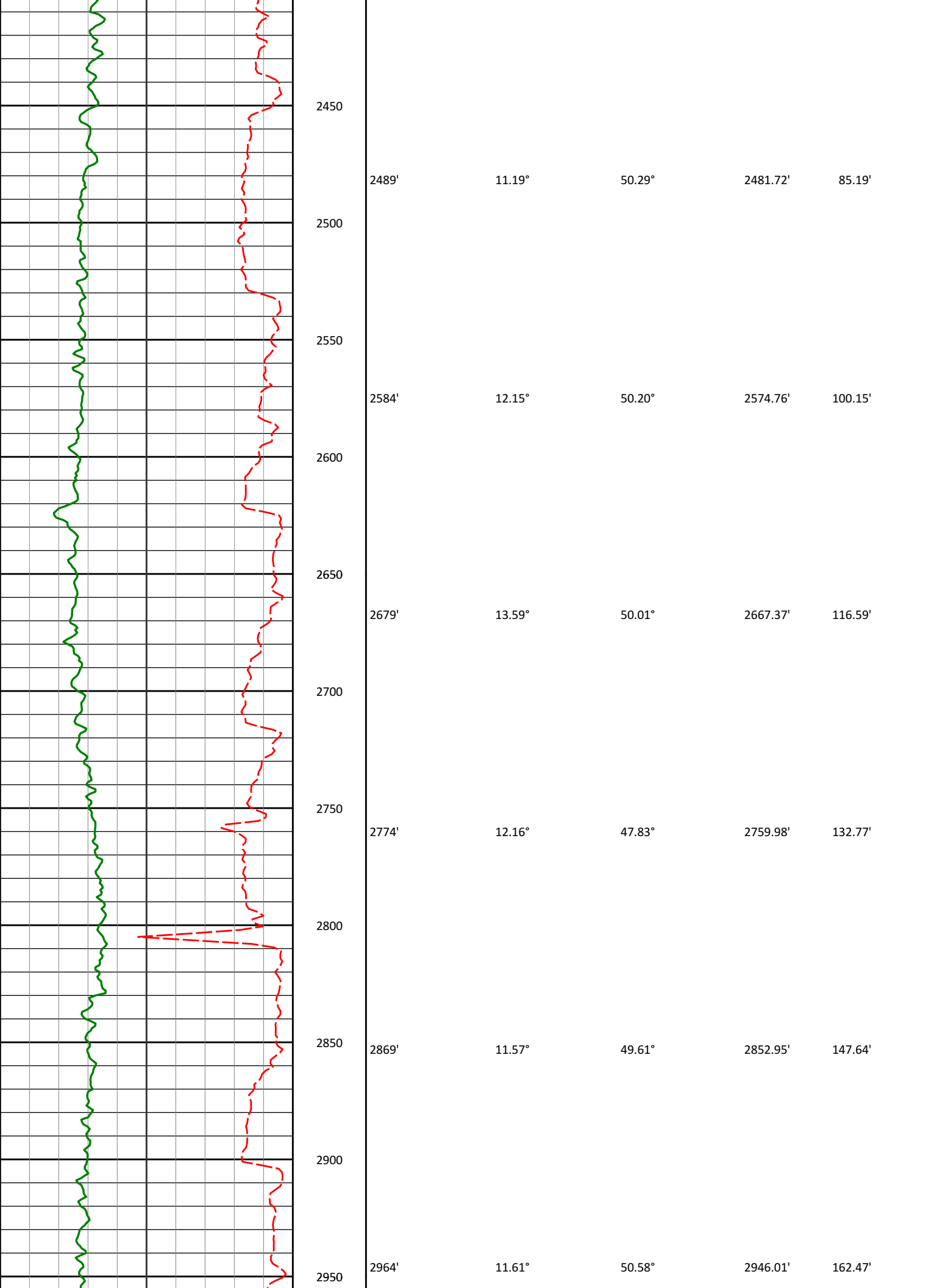


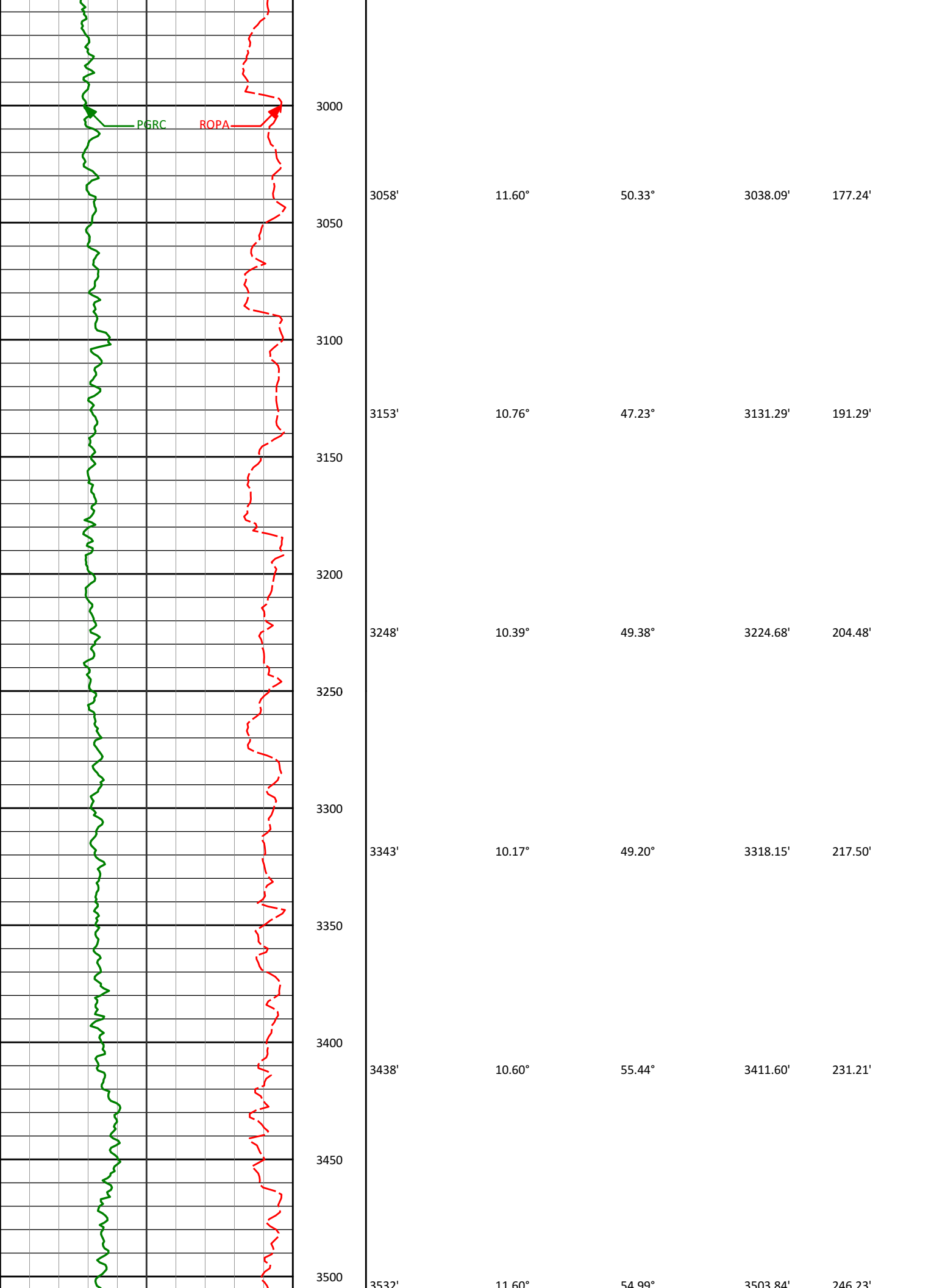
815'	0.59°	141.07°	814.98'	3.11'
907'	0.44°	170.57°	906.98'	3.45'
1000'	0.15°	139.44°	999.98'	3.58'
1092'	0.22°	307.72°	1091.98'	3.52'
1183'	0.28°	306.97°	1182.98'	3.21'
1275'	0.29°	321.84°	1274.97'	2.89'



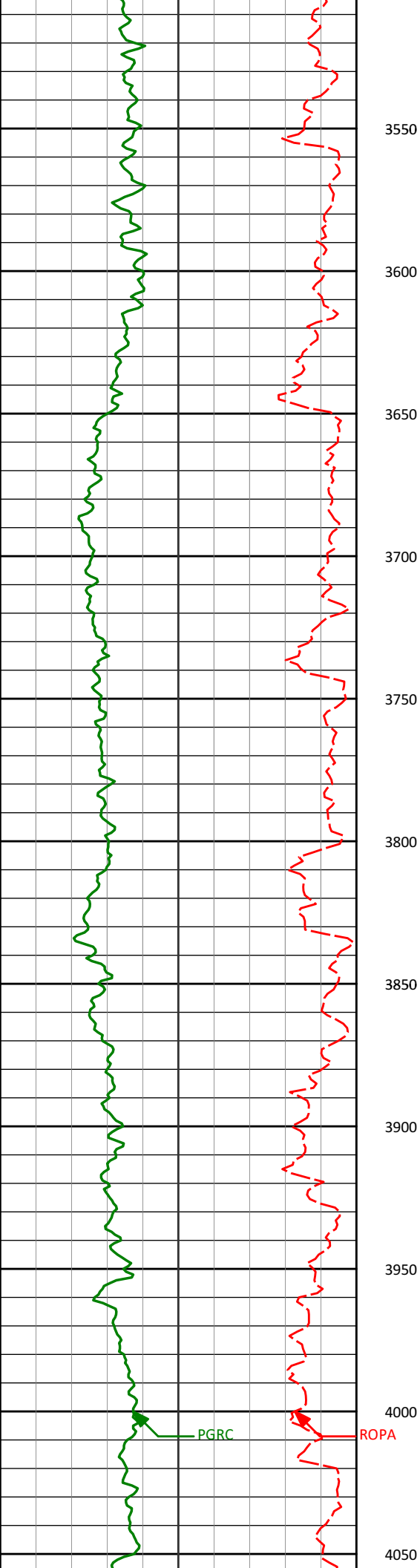


1921'	4.82°	48.60°	1920.33'	20.37'
2015'	6.02°	49.54°	2013.91'	27.17'
2110'	7.46°	49.71°	2108.25'	35.78'
2205'	7.88°	50.79°	2202.40'	45.65'
2300'	9.98°	49.80°	2296.25'	57.13'
2394'	11.55°	49.48°	2388.59'	70.68'

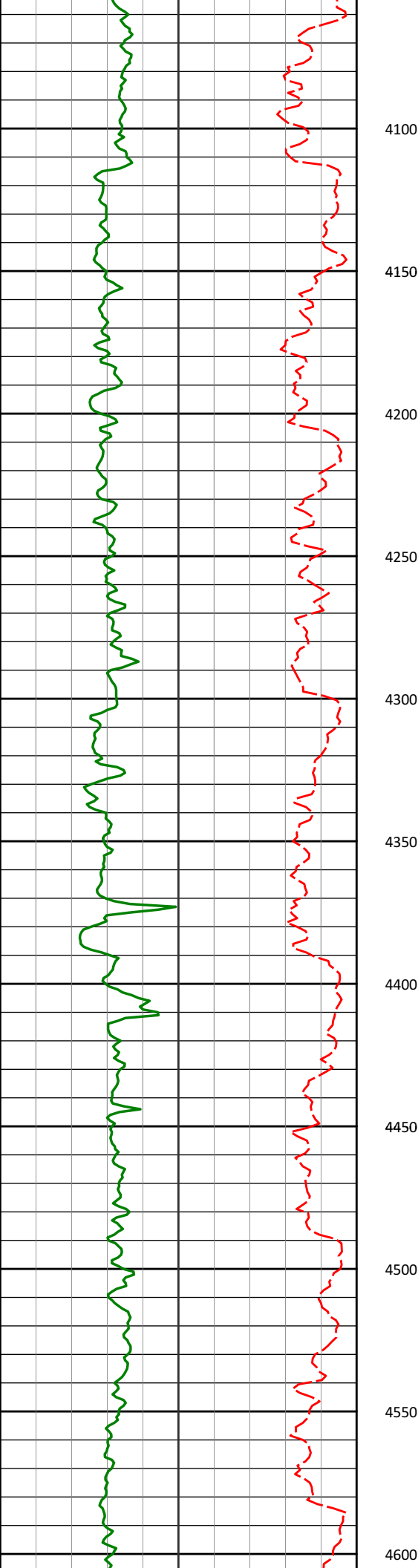




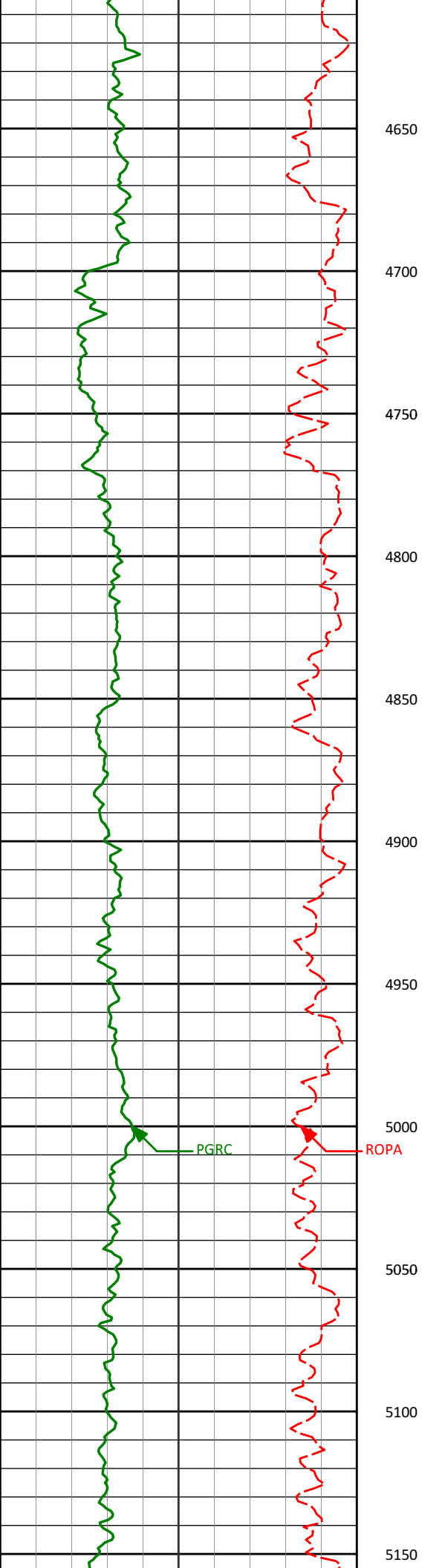




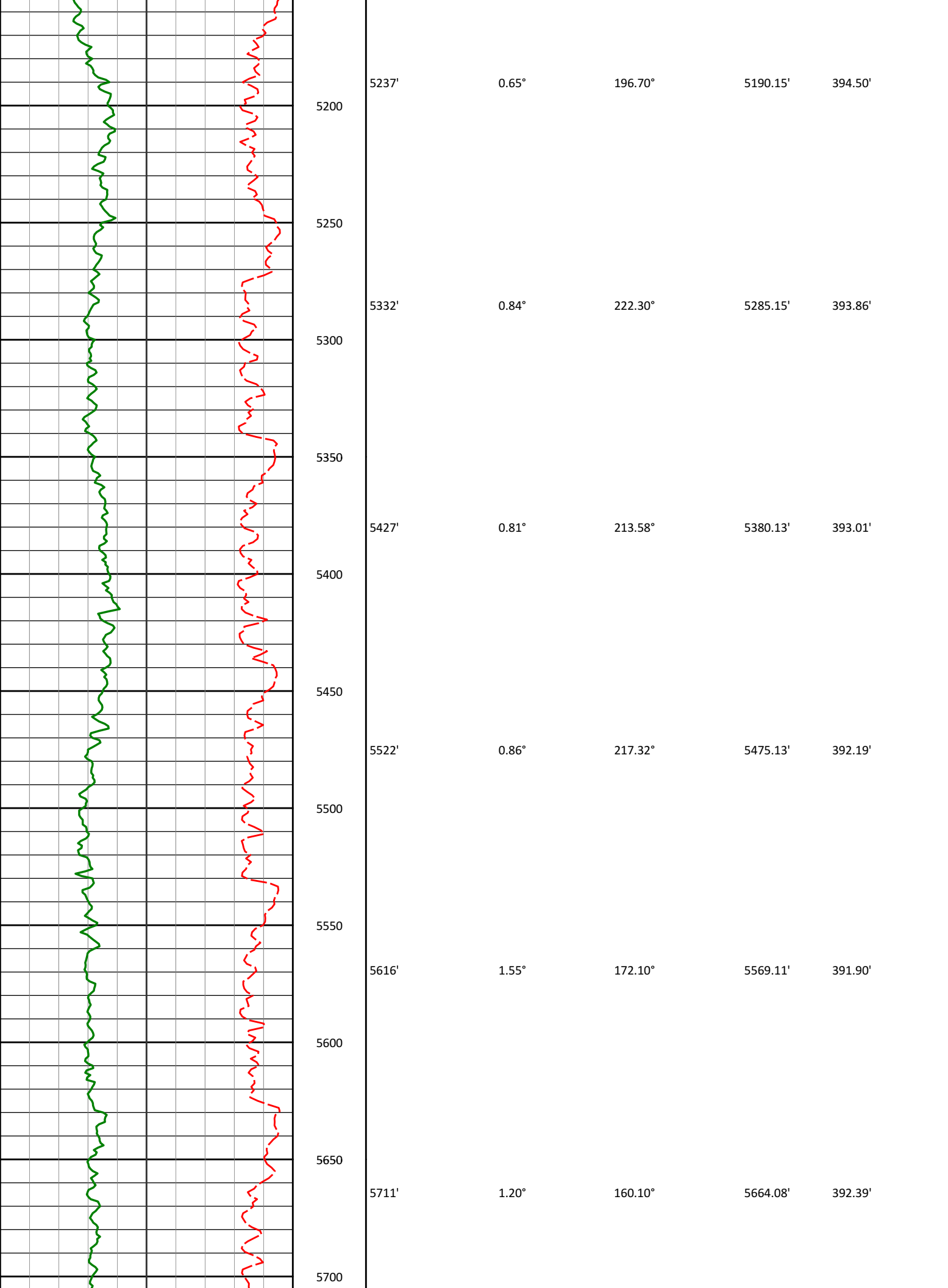
3552	11.00°	51.55°	3595.87'	270.23'
3600				
3627'	11.12°	49.52°	3596.98'	261.19'
3675				
3700				
3722'	11.76°	51.61°	3690.09'	275.93'
3770				
3800				
3817'	13.65°	50.35°	3782.76'	292.36'
3865				
3900				
3911'	14.54°	48.94°	3873.93'	310.02'
3960				
4000				
4006'	12.86°	46.63°	3966.23'	326.93'
4050				

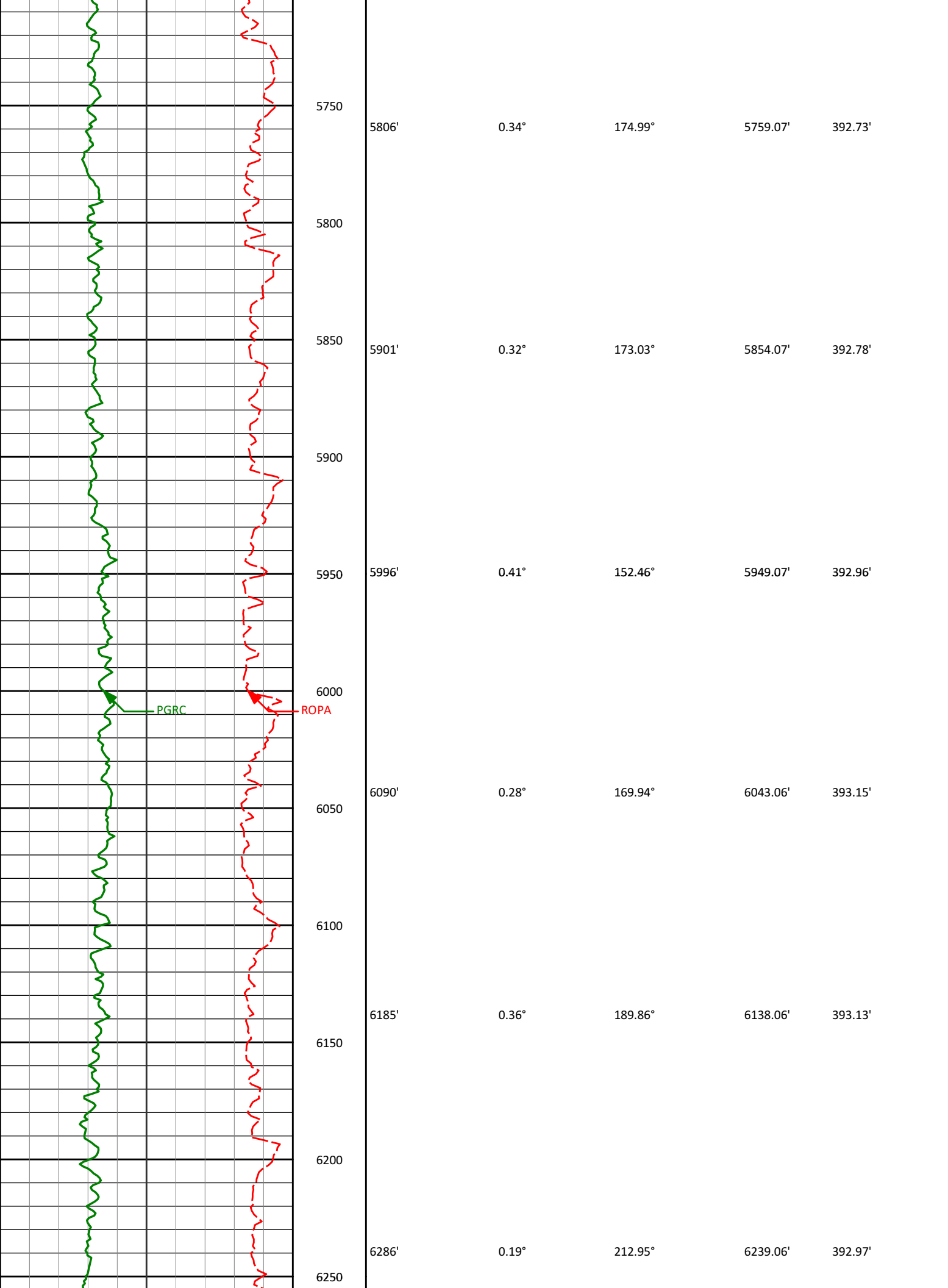


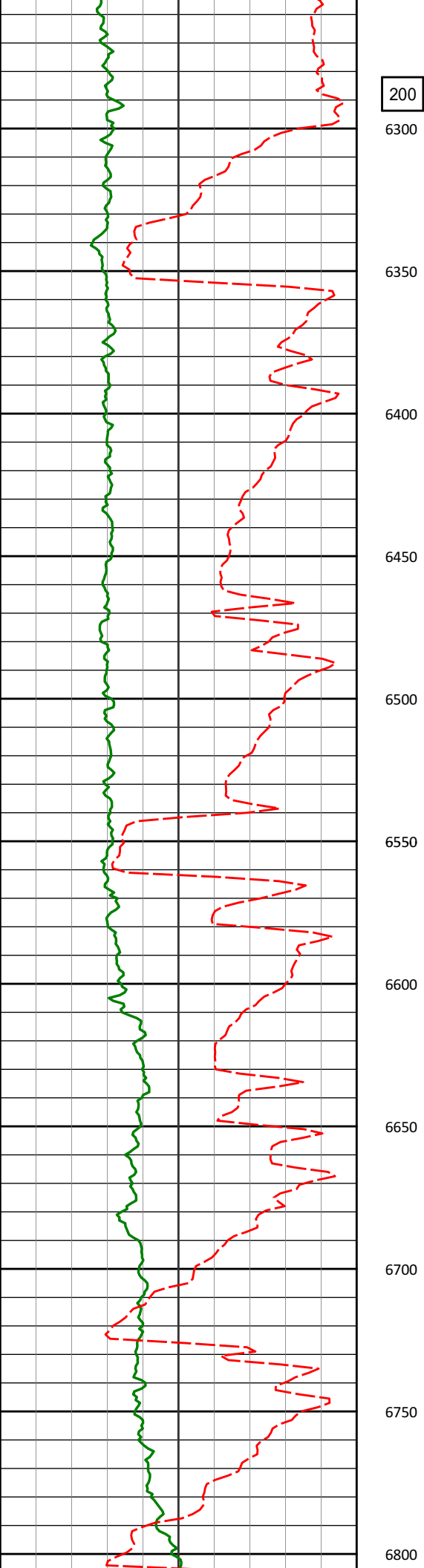
4101'	11.00°	50.02°	4059.17'	341.77'
4195'	9.94°	47.46°	4151.60'	354.79'
4290'	8.48°	44.03°	4245.38'	365.86'
4385'	6.52°	35.53°	4339.56'	374.01'
4479'	5.88°	33.18°	4433.01'	379.88'
4574'	4.42°	41.15°	4527.63'	385.06'



4669'	3.63°	40.18°	4622.39'	389.48'
4650				
4700				
4764'	2.94°	33.36°	4717.24'	392.83'
4750				
4800				
4858'	1.34°	35.60°	4811.17'	394.84'
4850				
4900				
4953'	0.44°	202.19°	4906.16'	395.36'
4950				
5000				
5048'	0.42°	208.89°	5001.16'	395.04'
5050				
5100				
5143'	0.41°	196.79°	5096.16'	394.77'
5150				







200

6300

6374'

0.14°

202.61°

6327.06'

392.85'

6350

6400

6468'

7.53°

89.65°

6420.79'

398.97'

6450

6500

6563'

17.37°

87.34°

6513.44'

419.42'

6550

6600

6658'

22.19°

85.65°

6602.81'

451.52'

6650

6700

6753'

29.43°

85.35°

6688.28'

492.77'

6750

6800

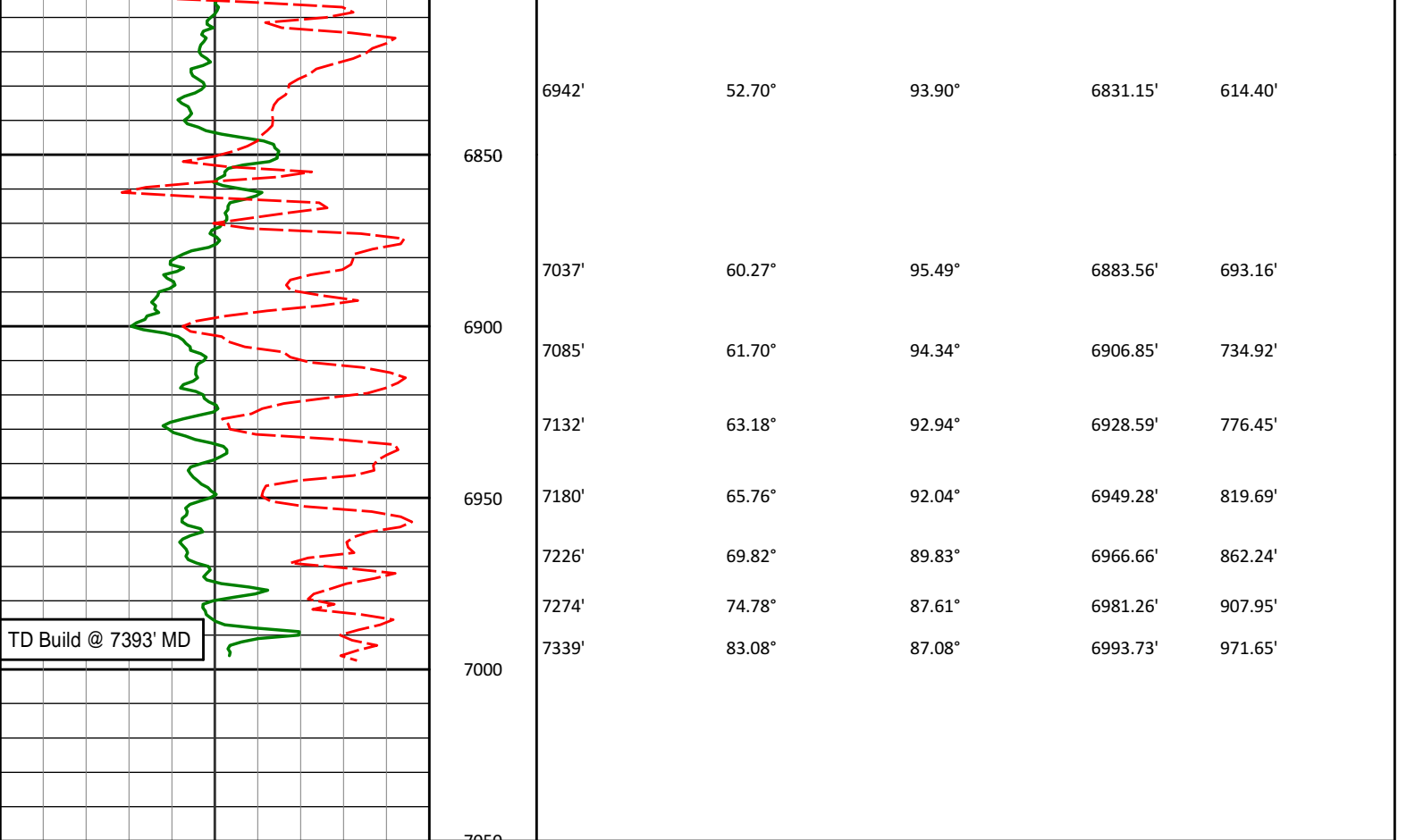
6848'

39.90°

88.86°

6766.32'

546.69'



<div><div>Avg Rate of Penetration</div><div>ROPA</div><div>feet per hr</div></div>		Depth ft	Depth	Inc.	Azi.	TVD	V.S.
<div><div>PCG Gamma Ray</div><div>PGRC</div><div>api</div></div>							

HALLIBURTON

Sperry Drilling Services

TVD Detail Log 1:240

Noble Energy

Shable K08-69-1HN

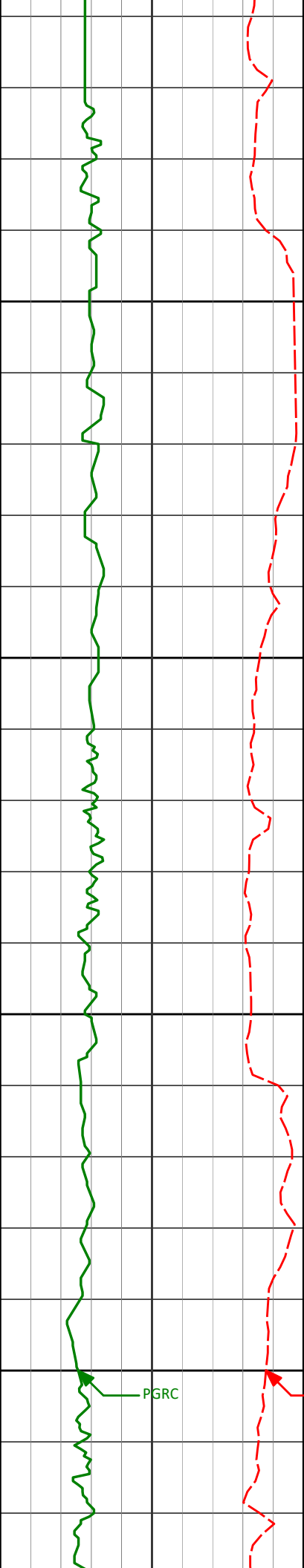
H&P 321

Sec. 7-T4N-R66W

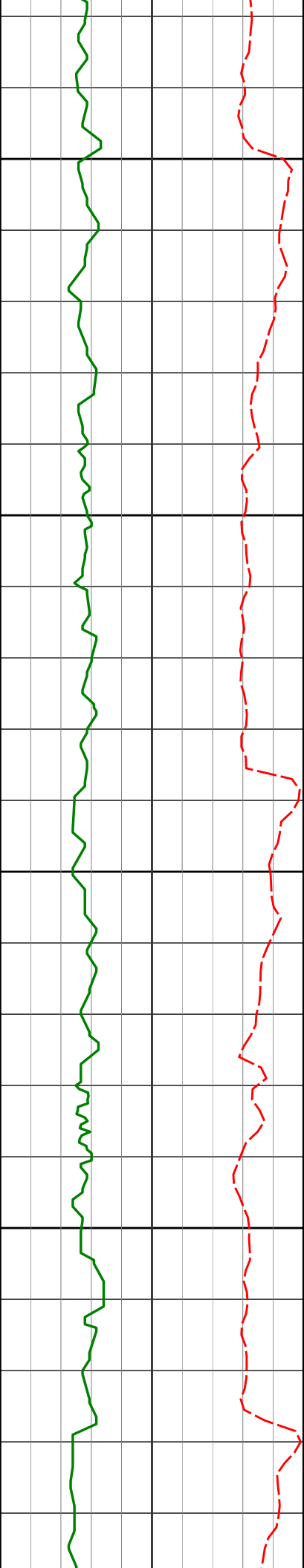
<div><div>PCG Gamma Ray</div><div>PGRC</div><div>api</div></div>							
<div><div>Avg Rate of Penetration</div><div>ROPA</div><div>feet per hr</div></div>		Depth ft	Depth	Inc.	Azi.	TVD	V.S.







	815'	0.59°	141.07°	814.98'	3.11'
850					
900	907'	0.44°	170.57°	906.98'	3.45'
950					
1000	1000'	0.15°	139.44°	999.98'	3.58'



1050

1092'

0.22°

307.72°

1091.98'

3.52'

1100

1150

1183'

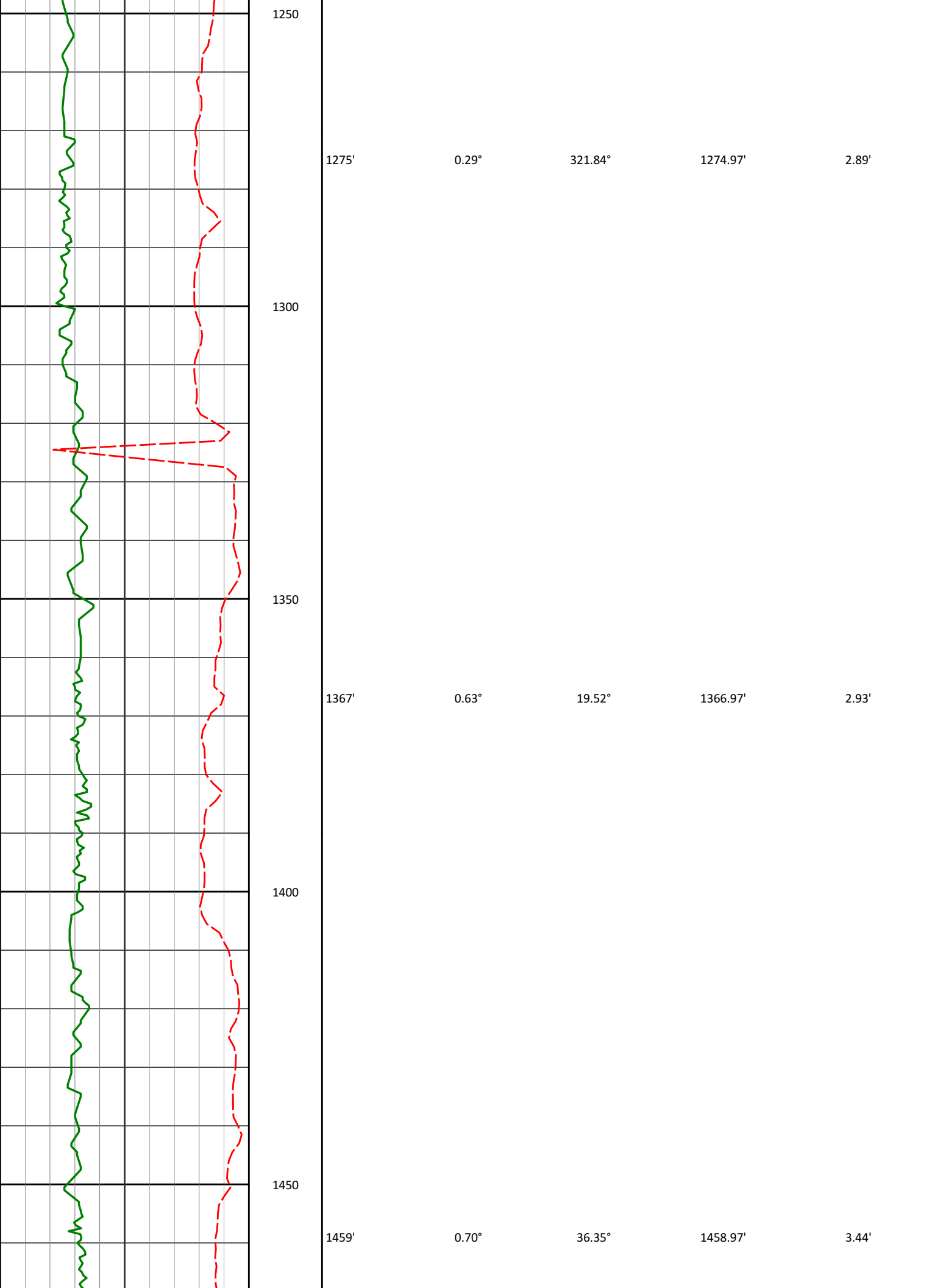
0.28°

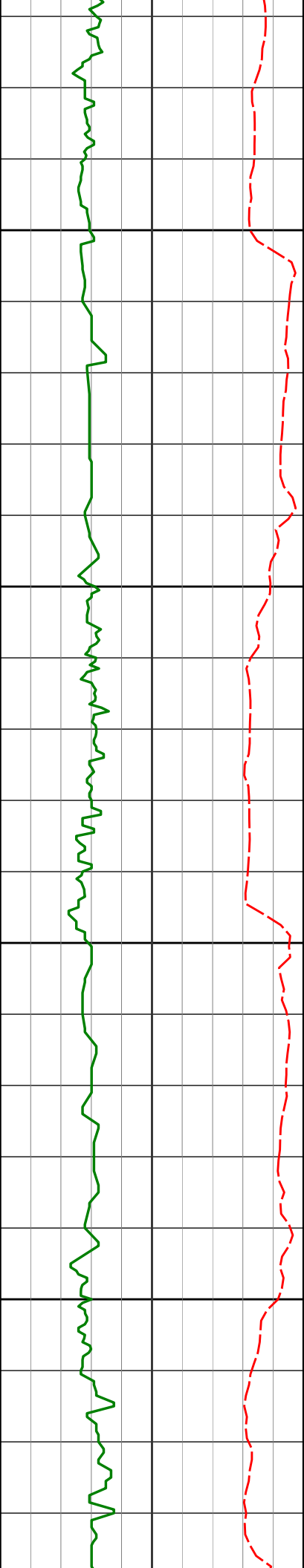
306.97°

1182.98'

3.21'

1200





1500

1550

1600

1650

1552'

1.05°

49.04°

1551.96'

4.44'

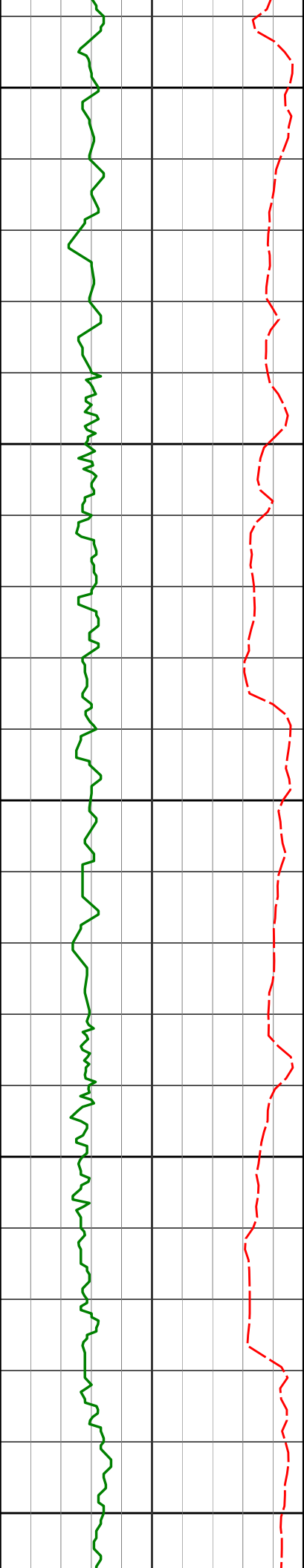
1644'

2.24°

57.84°

1643.92'

6.62'



1700

1737'

3.33°

50.39°

1736.80'

10.28'

1750

1800

1829'

4.08°

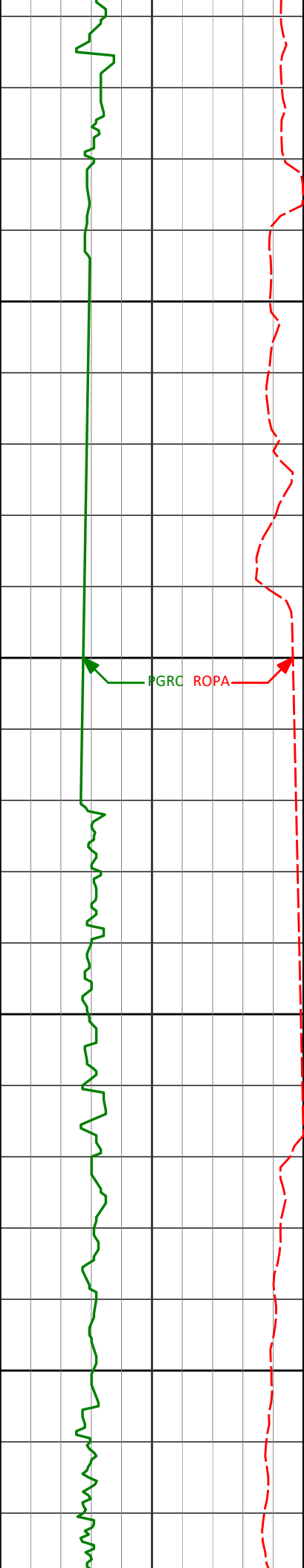
49.75°

1828.61'

14.90'

1850

1900



1950

2000

2050

2100

1921'

4.82°

48.60°

1920.33'

20.37'

2015'

6.02°

49.54°

2013.91'

27.17'

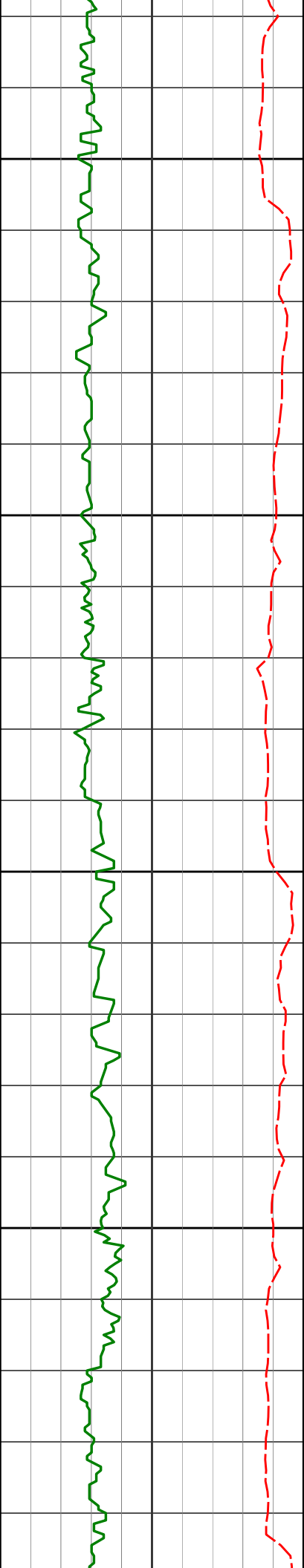
2110'

7.46°

49.71°

2108.25'

35.78'



2150

2200

2250

2300

2205'

7.88°

50.79°

2202.40'

45.65'

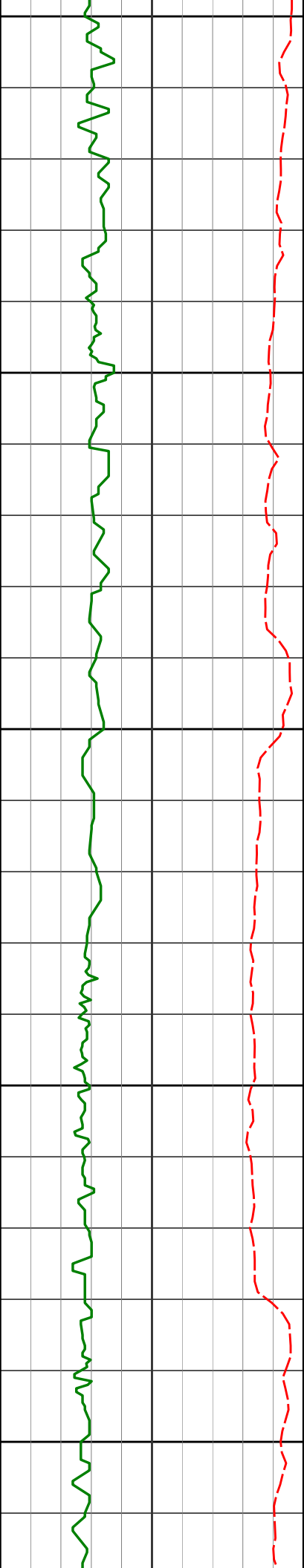
2300'

9.98°

49.80°

2296.25'

57.13'



2350

2394'

11.55°

49.48°

2388.59'

70.68'

2400

2450

2489'

11.19°

50.29°

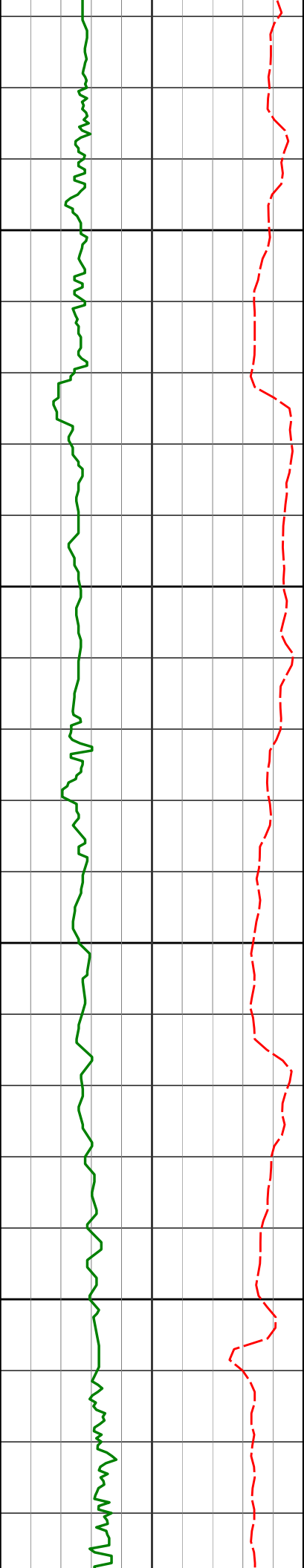
2481.72'

85.19'

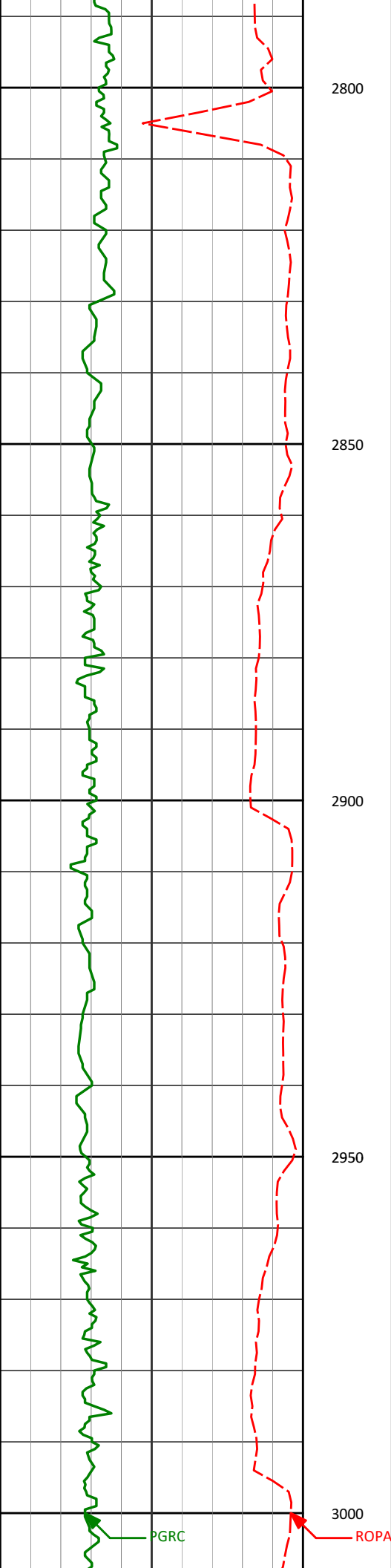
2500

2550





2584'	12.15°	50.20°	2574.76'	100.15'
2600				
2650				
2679'	13.59°	50.01°	2667.37'	116.59'
2700				
2750				
2774'	12.16°	47.83°	2759.98'	132.77'



2869'

11.57°

49.61°

2852.95'

147.64'

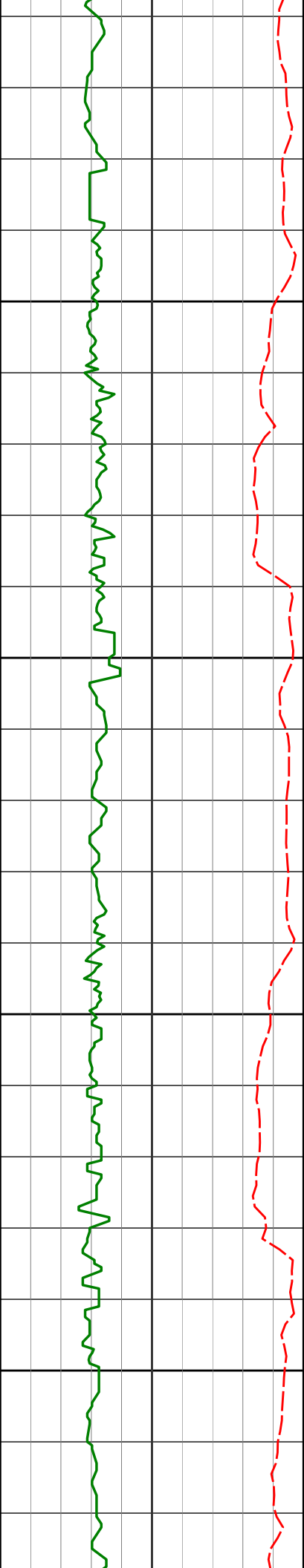
2964'

11.61°

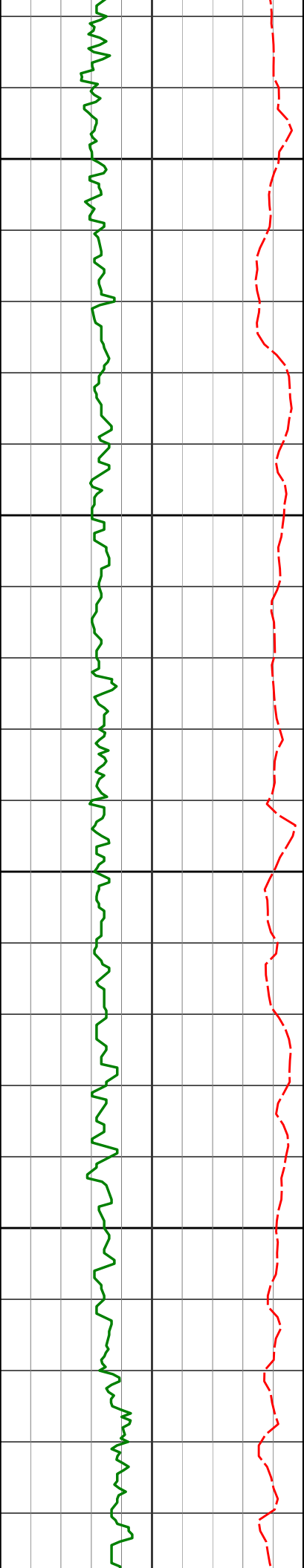
50.58°

2946.01'

162.47'



3058'	11.60°	50.33°	3038.09'	177.24'
3050				
3100				
3153'	10.76°	47.23°	3131.29'	191.29'
3150				
3200				
3248'	10.39°	49.38°	3224.68'	204.48'



3250

3300

3350

3400

3343'

10.17°

49.20°

3318.15'

217.50'

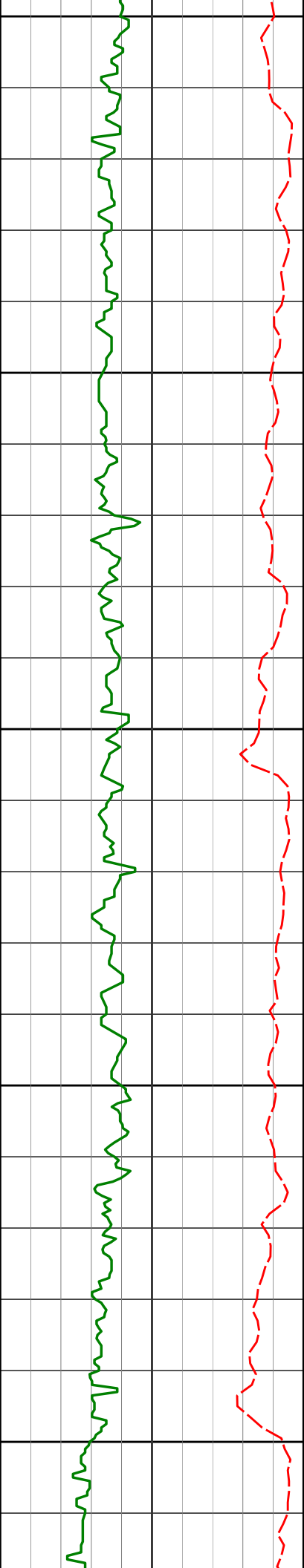
3438'

10.60°

55.44°

3411.60'

231.21'



3450

3500

3550

3600

3650

3532'

11.60°

54.99°

3503.84'

246.23'

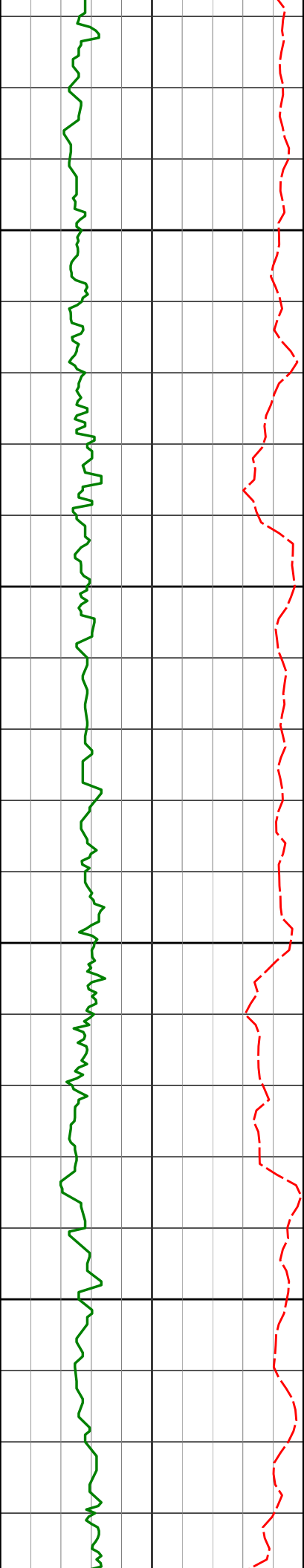
3627'

11.12°

49.52°

3596.98'

261.19'



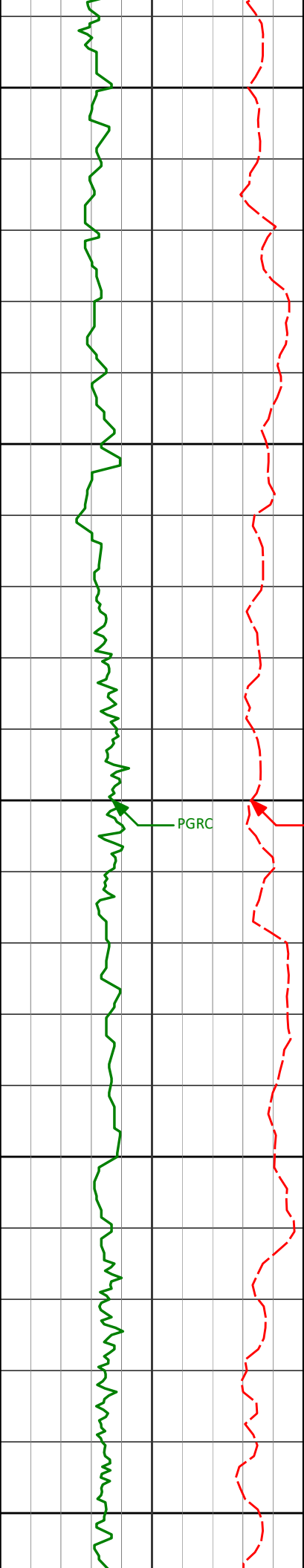
3700

3750

3800

3850

3722'	11.76°	51.61°	3690.09'	275.93'
3817'	13.65°	50.35°	3782.76'	292.36'
3911'	14.54°	48.94°	3873.93'	310.02'



3900

3950

4000

4050

4100

4006'

12.86°

46.63°

3966.23'

326.93'

PGRC

ROPA

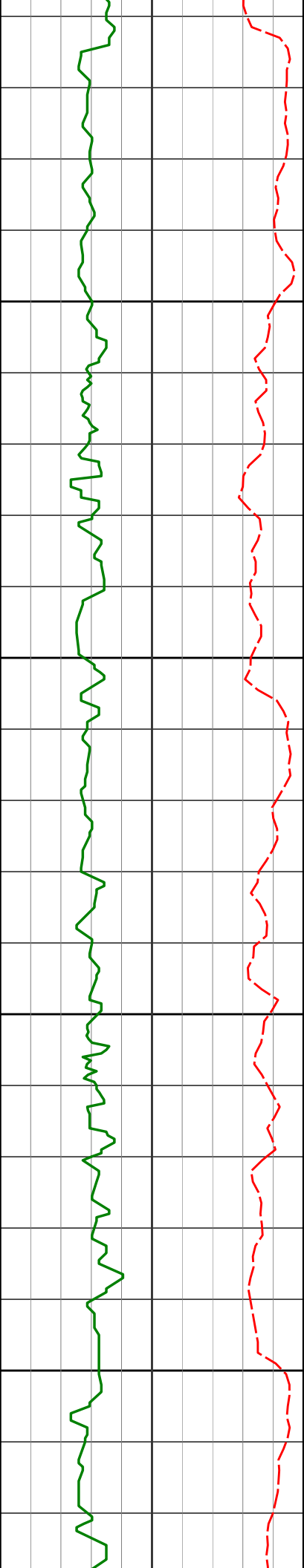
4101'

11.00°

50.02°

4059.17'

341.77'



4150

4195'

9.94°

47.46°

4151.60'

354.79'

4200

4250

4290'

8.48°

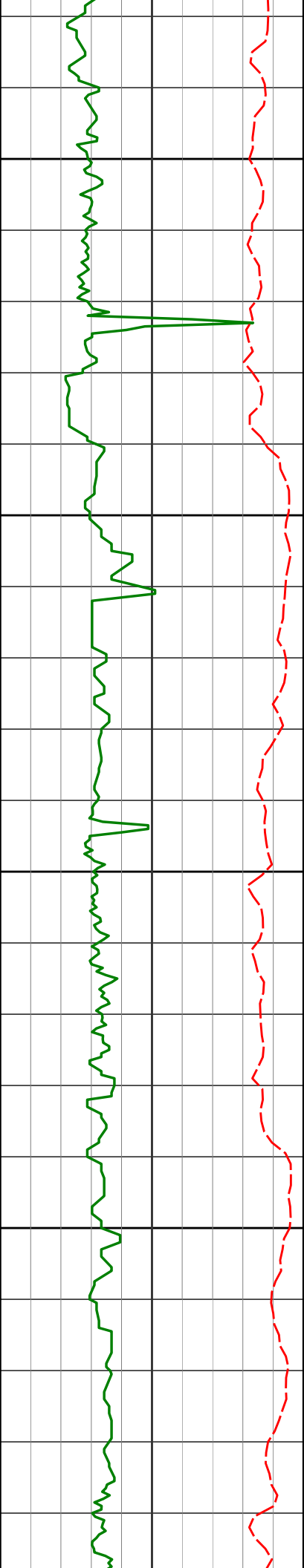
44.03°

4245.38'

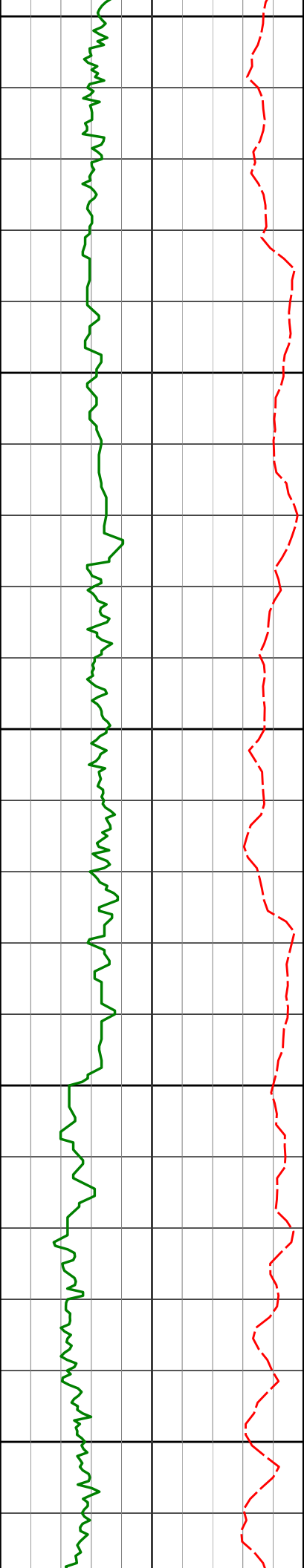
365.86'

4300





	4385'	6.52°	35.53°	4339.56'	374.01'
4350					
4400					
4479'		5.88°	33.18°	4433.01'	379.88'
4450					
4500					
4574'		4.42°	41.15°	4527.63'	385.06'



4550

4600

4669'

3.63°

40.18°

4622.39'

389.48'

4650

4700

4764'

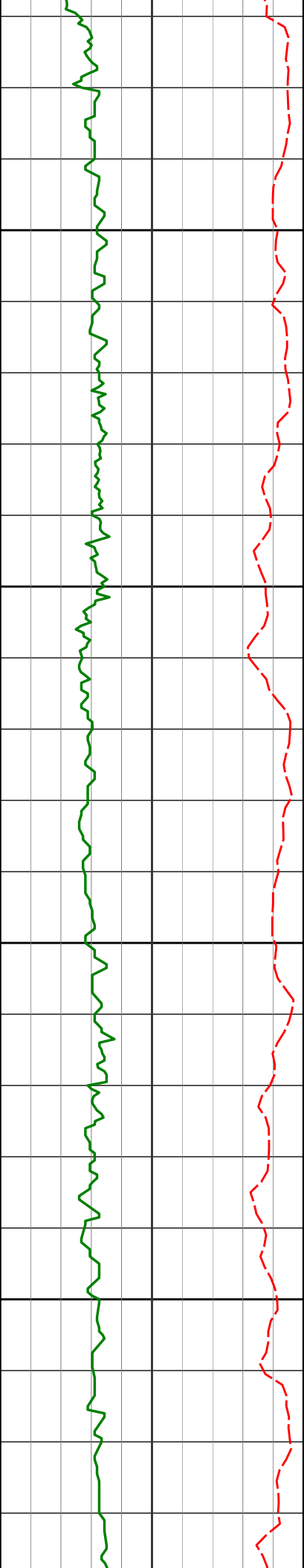
2.94°

33.36°

4717.24'

392.83'

4750



4800

4858'

1.34°

35.60°

4811.17'

394.84'

4850

4900

4953'

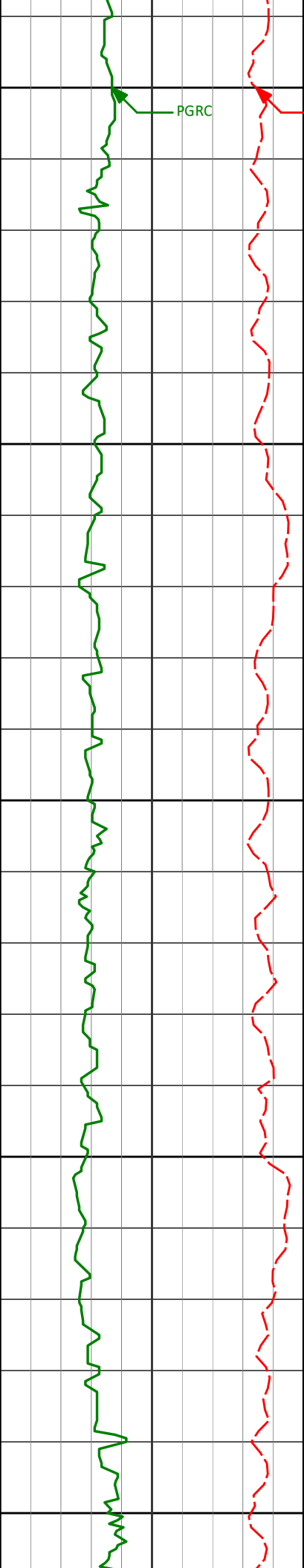
0.44°

202.19°

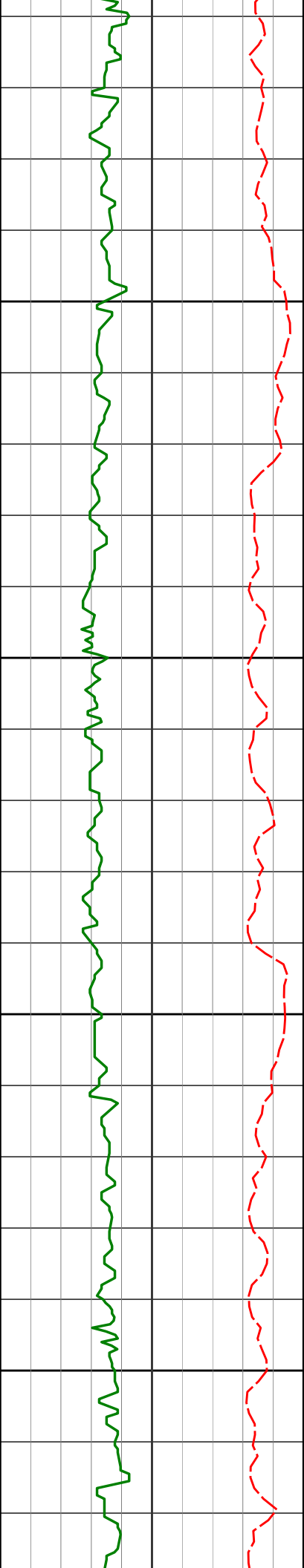
4906.16'

395.36'

4950



5000	5048'	0.42°	208.89°	5001.16'	395.04'
5050					
5100	5143'	0.41°	196.79°	5096.16'	394.77'
5150					
5200	5237'	0.65°	196.70°	5190.15'	394.50'



5250

5300

5350

5400

5332'

0.84°

222.30°

5285.15'

393.86'

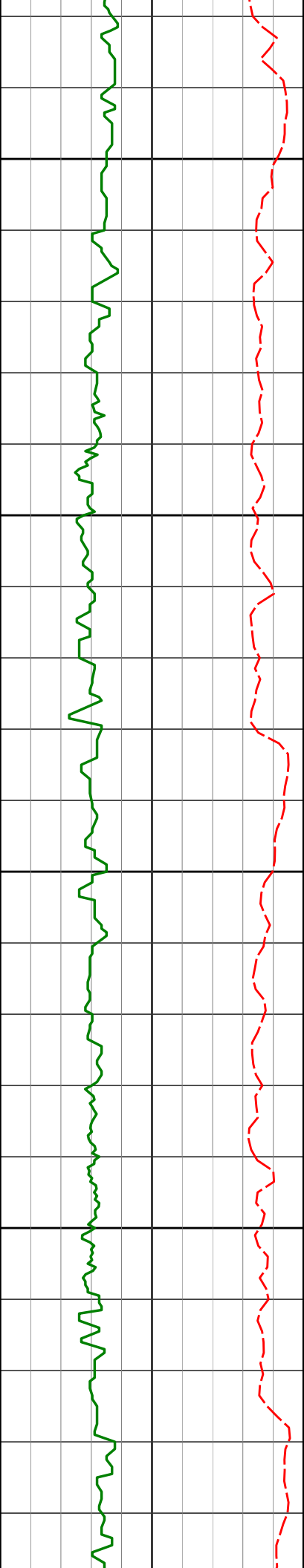
5427'

0.81°

213.58°

5380.13'

393.01'



5450

5522'

0.86°

217.32°

5475.13'

392.19'

5500

5550

5616'

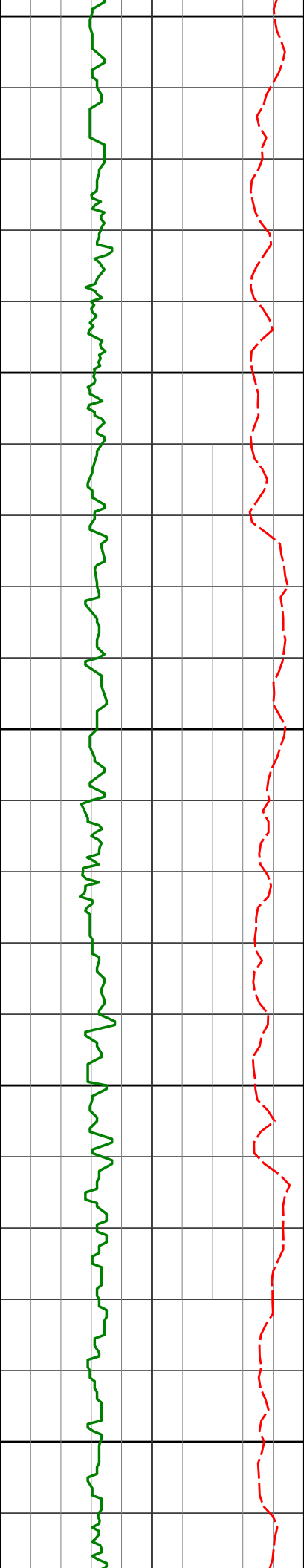
1.55°

172.10°

5569.11'

391.90'

5600



5650

5711'

1.20°

160.10°

5664.08'

392.39'

5700

5750

5806'

0.34°

174.99°

5759.07'

392.73'

5800

5850

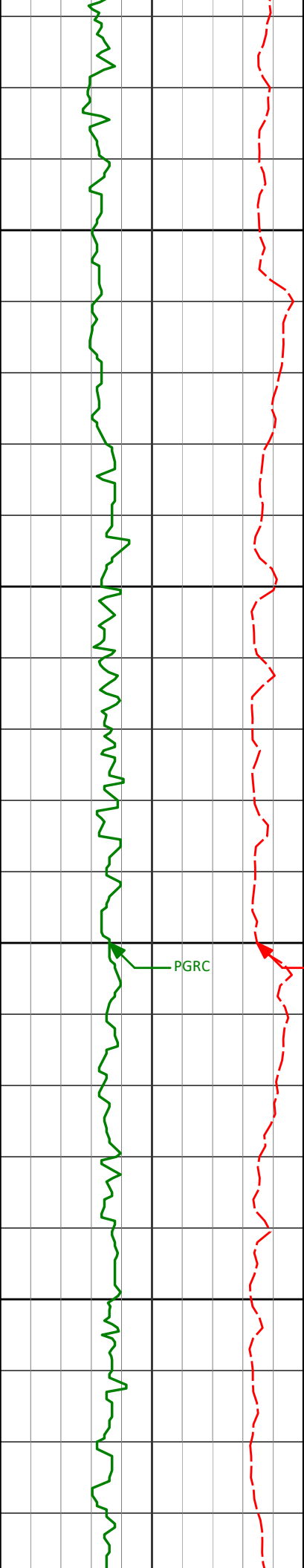
5901'

0.32°

173.03°

5854.07'

392.78'



5900

5950

6000

6050

PGRC

ROPA

5996'

0.41°

152.46°

5949.07'

392.96'

6090'

0.28°

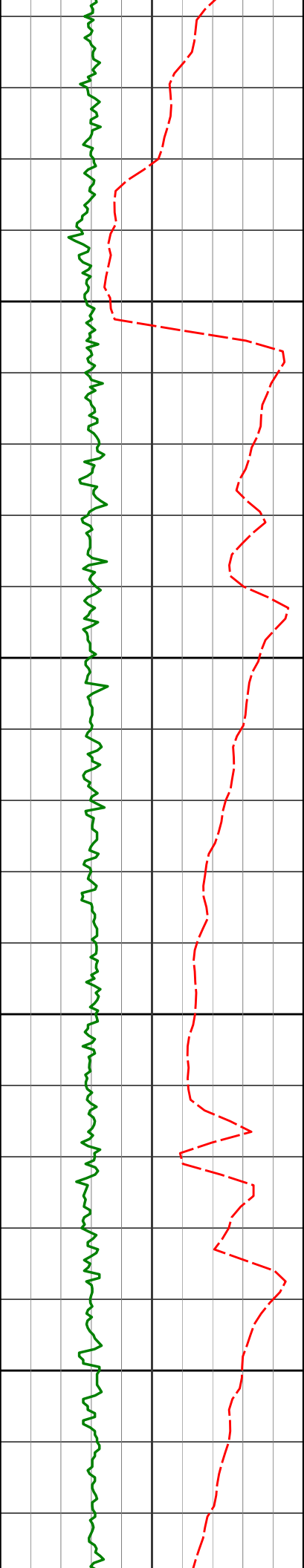
169.94°

6043.06'

393.15'







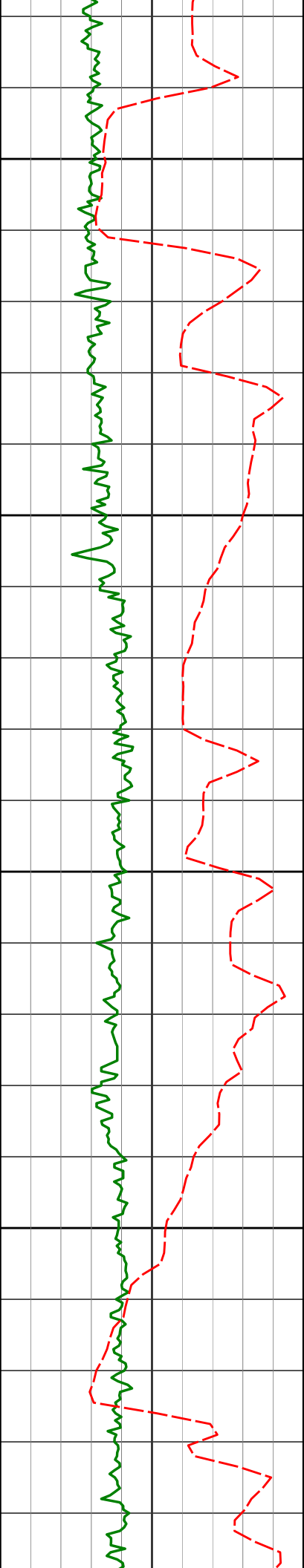
6350

6400

6450

6500

6374'	0.14°	202.61°	6327.06'	392.85'
6468'	7.53°	89.65°	6420.79'	398.97'
6563'	17.37°	87.34°	6513.44'	419.42'



6550

6600

6650

6700

6658'

22.19°

85.65°

6602.81'

451.52'

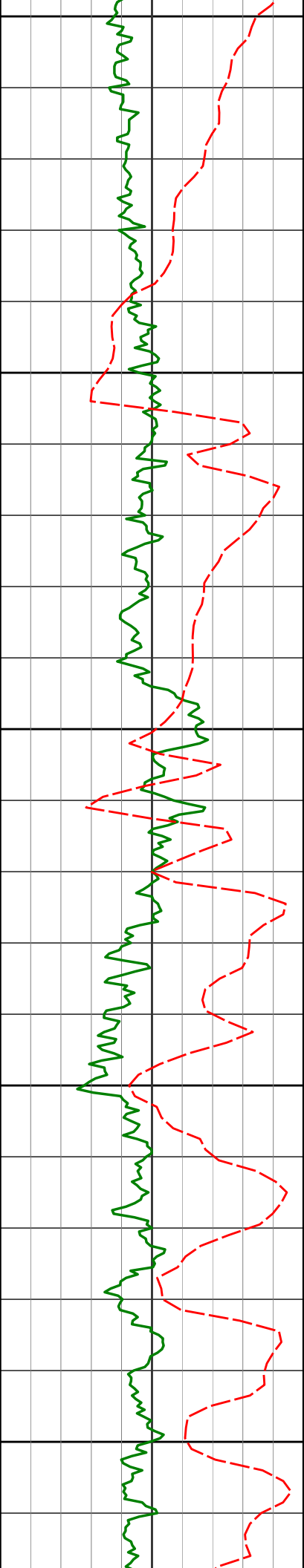
6753'

29.43°

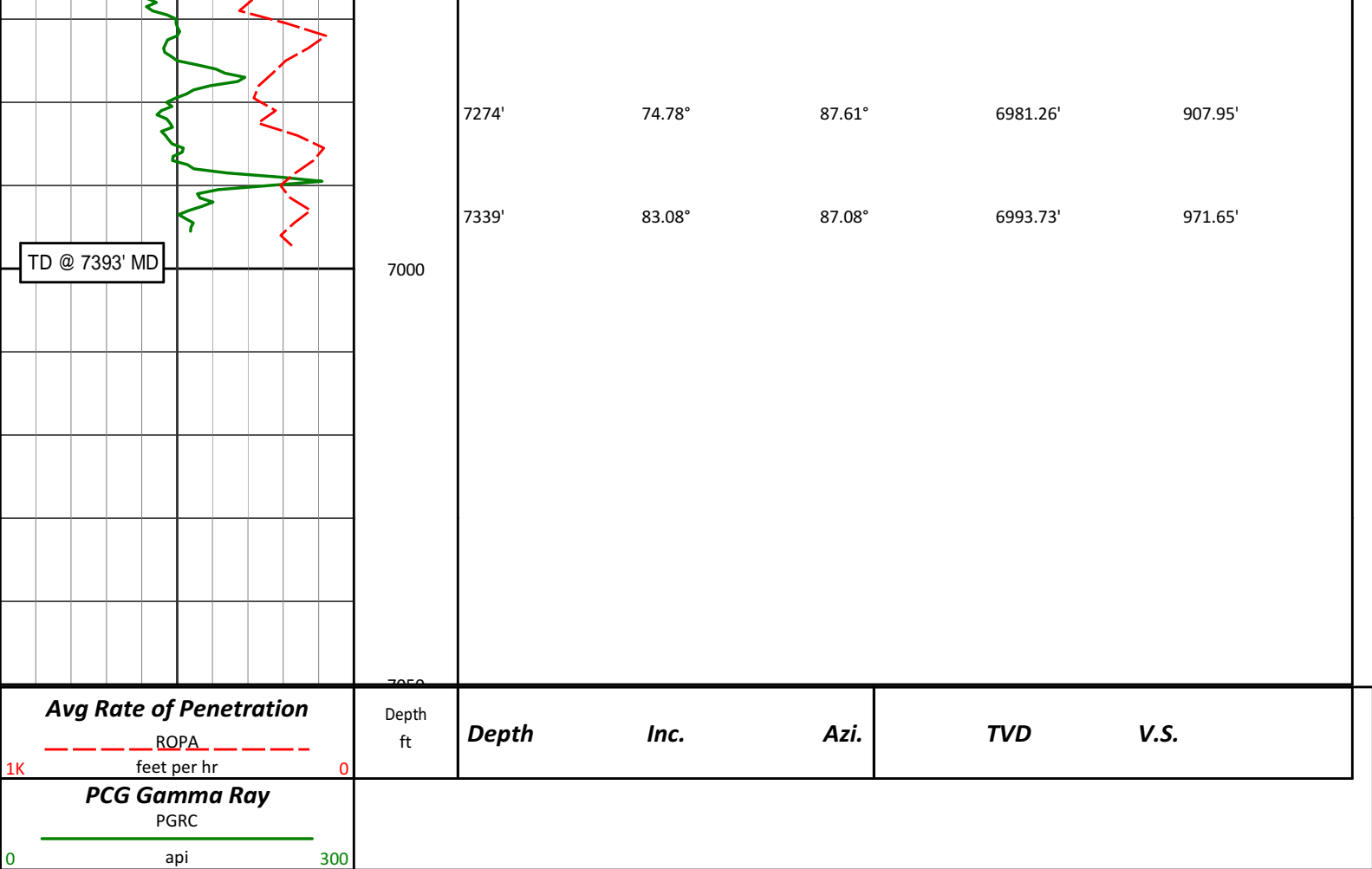
85.35°

6688.28'

492.77'



6750				
6848'	39.90°	88.86°	6766.32'	546.69'
6800				
6942'	52.70°	93.90°	6831.15'	614.40'
6850				
7037'	60.27°	95.49°	6883.56'	693.16'
6900				
7085'	61.70°	94.34°	6906.85'	734.92'
7132'	63.18°	92.94°	6928.59'	776.45'
6950				
7180'	65.76°	92.04°	6949.28'	819.69'
7226'	69.82°	89.83°	6966.66'	862.24'



**HALLIBURTON**

**DIRECTIONAL SURVEY REPORT**

Noble  
SHABLE K08-69-1HN  
Wattenberg  
Weld Colorado  
USA  
CA-XX-0901563498

Measured Depth (feet)	Inclination (degrees)	Direction (degrees)	Vertical Depth (feet)	Latitude (feet)	Departure (feet)	Vertical Section (feet)	Dogleg (deg/100ft)
0.00	0.00	0.00	0.00	0.00 N	0.00 E	0.00	TIE-IN
671.00	0.55	134.45	670.99	2.26 S	2.30 E	2.26	0.08
724.00	0.62	150.14	723.99	2.68 S	2.62 E	2.58	0.33
815.00	0.59	141.07	814.98	3.47 S	3.16 E	3.11	0.11
907.00	0.44	170.57	906.98	4.19 S	3.52 E	3.45	0.33
1000.00	0.15	139.44	999.98	4.64 S	3.66 E	3.58	0.35
1092.00	0.22	307.72	1091.98	4.62 S	3.59 E	3.52	0.40
1183.00	0.28	306.97	1182.98	4.38 S	3.28 E	3.21	0.07
1275.00	0.29	321.84	1274.97	4.06 S	2.96 E	2.89	0.08
1367.00	0.63	19.52	1366.97	3.40 S	2.98 E	2.93	0.58
1459.00	0.70	36.35	1458.97	2.47 S	3.48 E	3.44	0.22
1552.00	1.05	49.04	1551.96	1.45 S	4.46 E	4.44	0.43
1644.00	2.24	57.84	1643.92	0.06 N	6.62 E	6.62	1.32
1737.00	3.33	50.39	1736.80	2.74 N	10.24 E	10.28	1.23
1829.00	4.08	49.75	1828.61	6.56 N	14.80 E	14.90	0.82
1921.00	4.82	48.60	1920.33	11.23 N	20.20 E	20.37	0.81
2015.00	6.02	49.54	2013.91	17.04 N	26.91 E	27.17	1.28
2110.00	7.46	49.71	2108.25	24.27 N	35.40 E	35.78	1.52

2205.00	7.88	50.79	2202.40	32.37 N	45.15 E	45.65	0.47
2300.00	9.98	49.80	2296.25	41.80 N	56.49 E	57.13	2.22
2394.00	11.55	49.48	2388.59	53.17 N	69.86 E	70.68	1.67
2489.00	11.19	50.29	2481.72	65.24 N	84.18 E	85.19	0.41
2584.00	12.15	50.20	2574.76	77.53 N	98.96 E	100.15	1.01
2679.00	13.59	50.01	2667.37	91.10 N	115.19 E	116.59	1.52
2774.00	12.16	47.83	2759.98	104.99 N	131.16 E	132.77	1.59
2869.00	11.57	49.61	2852.95	117.89 N	145.83 E	147.64	0.73
2964.00	11.61	50.58	2946.01	130.13 N	160.47 E	162.47	0.21
3058.00	11.60	50.33	3038.09	142.17 N	175.05 E	177.24	0.05
3153.00	10.76	47.23	3131.29	154.29 N	188.91 E	191.29	1.09
3248.00	10.39	49.38	3224.68	165.89 N	201.93 E	204.48	0.57
3343.00	10.17	49.20	3318.15	176.94 N	214.78 E	217.50	0.23
3438.00	10.60	55.44	3411.60	187.38 N	228.32 E	231.21	1.27
3532.00	11.60	54.99	3503.84	197.71 N	243.18 E	246.23	1.07
3627.00	11.12	49.52	3596.98	209.14 N	257.98 E	261.19	1.24
3722.00	11.76	51.61	3690.09	221.09 N	272.53 E	275.93	0.80
3817.00	13.65	50.35	3782.76	234.26 N	288.75 E	292.36	2.01
3911.00	14.54	48.94	3873.93	249.09 N	306.19 E	310.02	1.01
4006.00	12.86	46.63	3966.23	264.18 N	322.87 E	326.93	1.86
4101.00	11.00	50.02	4059.17	277.27 N	337.50 E	341.77	2.09
4195.00	9.94	47.46	4151.60	288.52 N	350.35 E	354.79	1.23
4290.00	8.48	44.03	4245.38	299.10 N	361.26 E	365.86	1.64
4385.00	6.52	35.53	4339.56	308.52 N	369.26 E	374.01	2.37
4479.00	5.88	33.18	4433.01	316.90 N	375.00 E	379.88	0.73
4574.00	4.42	41.15	4527.63	323.73 N	380.07 E	385.06	1.71
4669.00	3.63	40.18	4622.39	328.78 N	384.42 E	389.48	0.83
4764.00	2.94	33.36	4717.24	333.11 N	387.70 E	392.83	0.83
4858.00	1.34	35.60	4811.17	336.02 N	389.67 E	394.84	1.70
4953.00	0.44	202.19	4906.16	336.59 N	390.18 E	395.36	1.86
5048.00	0.42	208.89	5001.16	335.94 N	389.87 E	395.04	0.06
5143.00	0.41	196.79	5096.16	335.31 N	389.60 E	394.77	0.09
5237.00	0.65	196.70	5190.15	334.48 N	389.35 E	394.50	0.26
5332.00	0.84	222.30	5285.15	333.45 N	388.73 E	393.86	0.40
5427.00	0.81	213.58	5380.13	332.37 N	387.89 E	393.01	0.14
5522.00	0.86	217.32	5475.13	331.25 N	387.09 E	392.19	0.08
5616.00	1.55	172.10	5569.11	329.43 N	386.83 E	391.90	1.20
5711.00	1.20	160.10	5664.08	327.22 N	387.35 E	392.39	0.48
5806.00	0.34	174.99	5759.07	326.00 N	387.71 E	392.73	0.92
5901.00	0.32	173.03	5854.07	325.46 N	387.77 E	392.78	0.02
5996.00	0.41	152.46	5949.07	324.89 N	387.96 E	392.96	0.17
6090.00	0.28	169.94	6043.06	324.37 N	388.15 E	393.15	0.18
6185.00	0.36	189.86	6138.06	323.85 N	388.14 E	393.13	0.14
6286.00	0.19	212.95	6239.06	323.39 N	388.00 E	392.97	0.20
6374.00	0.14	202.61	6327.06	323.17 N	387.88 E	392.85	0.07
6468.00	7.53	89.65	6420.79	323.10 N	394.00 E	398.97	8.07
6563.00	17.37	87.34	6513.44	323.80 N	414.44 E	419.42	10.37
6658.00	22.19	85.65	6602.81	325.82 N	446.51 E	451.52	5.11
6753.00	29.43	85.35	6688.28	329.08 N	487.72 E	492.77	7.62
6848.00	39.90	88.86	6766.32	331.58 N	541.60 E	546.69	11.22
6942.00	52.70	93.90	6831.15	329.63 N	609.35 E	614.40	14.15
7037.00	60.27	95.49	6883.56	323.11 N	688.22 E	693.16	8.09
7085.00	61.70	94.34	6906.85	319.51 N	730.04 E	734.92	3.64
7132.00	63.18	92.94	6928.59	316.87 N	771.62 E	776.45	4.11
7180.00	65.76	92.04	6949.28	314.99 N	814.89 E	819.69	5.63
7226.00	69.82	89.83	6966.66	314.31 N	857.46 E	862.24	9.88
7274.00	74.78	87.61	6981.26	315.34 N	903.16 E	907.95	11.23
7339.00	83.08	87.08	6993.73	318.30 N	966.82 E	971.65	12.79

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 89.11 DEGREES (GRID)  
A TOTAL CORRECTION OF 7.92 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED

HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.  
HORIZONTAL DISPLACEMENT(CLOSURE) AT 7339.00 FEET  
12.44 FEET (3.88 METERS)

