



1:600 / 1:240

[illegible]

WELL INFORMATION

MWD Run Number	100	200			
Date run completed	15-Jun-16	18-Jun-16			
Rig Bit Number	2	3			
Bit Size (in)	8.500	8.500			
Tool Nominal OD (in)	6.750	6.750			
Log Start Depth (TVD, ft)	1,922.96	5,893.27			
Log End Depth (TVD, ft)	5,893.27	5,812.21			
Drill or Wipe	Drill	Drill			
Drill/Wipe Start Date and Time	14-Jun-16 04:30	15-Jun-16 22:45			
Drill/Wipe End Date and Time	15-Jun-16 12:00	18-Jun-16 05:00			
Min Inc (deg) @ Depth (TVD, ft)	0.21 @ 1,982.96	87.98 @ 5,865.00			
Max Inc (deg) @ Depth (TVD, ft)	91.88 @ 5,894.49	92.97 @ 5,861.88			
Bit TFA(in2) / Bit Type	1.20 / PDC	1.20 / PDC			
Flow Rate (gpm)	600.00	600.00			
Max AV (fpm) / CV (fpm) @ MWD	N/A / N/A	N/A / N/A			
Fluid Type	Diesel Mud Base	Diesel Mud Base			
Density (ppg) / Viscosity (spqt)	9.90 / 45.00	10.15 / 52.00			
Filtrate CL (ppm)	35,000.00	34,000.00			
pH / Fluid Loss (mptm)	N/A / N/A	N/A / N/A			
PV (cP) / YP (lbf2)	13 / 6.00	20 / 12.00			
% Solids / % Sand	11.50 / 0	15.40 / 0			
% Oil / Oil:Water Ratio	N/A / N/A	63.00 /			
Rm @ Measured Temp (degF)	N/A @ N/A	N/A @ N/A			
Rmf @ Measured Temp (degF)	N/A @ N/A	N/A @ N/A			
Rmc @ Measured Temp (degF)	N/A @ N/A	N/A @ N/A			
Max Tool Temp (in) @ Temp (degF)	122.12 / 204.12	274.12 / 204.12			

Max Tool Temp (degF) / Source	188.10 / PCM	251.40 / PCM			
Rm @ Max Tool Temp (degF)	N/A @ N/A	N/A @ N/A			
Lead MWD Engineer	Paul Kock	Paul Kock			
Customer Representative	Charles Collver	Charles Collver			

SENSOR INFORMATION

Downhole Processor Information

Tool Type	PCM	PCM			
Software Version	5.93	5.93			
Sub Serial Number	11341339	11341339			
Insert Serial Number	11400840	11620293			
Date and Time Initialized	13-Jun-16 10:39	15-Jun-16 16:06			
Date and Time Read	15-Jun-16 19:38	18-Jun-16 15:22			
ECMB SW Version	N/A	N/A			

Directional Sensor Information

Tool Type	PCDC	PCDC			
Distance From Bit (ft)	63.00	64.00			
Software Version	6.33	6.33			
Sub Serial Number	11341339	11341339			
Sonde Serial Number	11478012	11062039			
Sensor ID Number	N/A	N/A			
Toolface Offset (deg)	133.70	273.70			

Gamma Ray Sensor Information

Tool Type	PCG	PCG			
Distance From Bit (ft)	50.67	57.26			
Recorded Sample Period (sec)	10	10			
Software Version	8.15	8.15			
Sub Serial Number	11341339	11341339			
Insert/Sonde Serial Number	11293344	11680919			

DDSr-Sonde Sensor Information

Tool Type	DDSr-Sonde				
Distance From Bit (ft)	48.38				
Recorded Sample Period (sec)	12				
Software Version	80.88				
Sub Serial Number	11341332				
Insert Serial Number	12664612				
Sensor ID Number	12481				

REMARKS

1. All depths are calibrated to driller's pipe tally and are true vertical depths from the drill floor.
2. No depth corrections have been made for pipe stretch or compression.
3. All data presented is recorded (memory data) unless otherwise stated.
4. The following smoothing parameters have been applied to the data:

Main Log 1:600 (2"):

(ROPA - Avg Rate of Penetration)

Interval: 1.0 ft, Coercion Distance: 3.0 ft, Gap fill: 5.0 ft

(PGRC - Gamma Ray Cor)

Interval: 1.0 ft, Coercion Distance: 3.0 ft, Gap fill: 5.0 ft

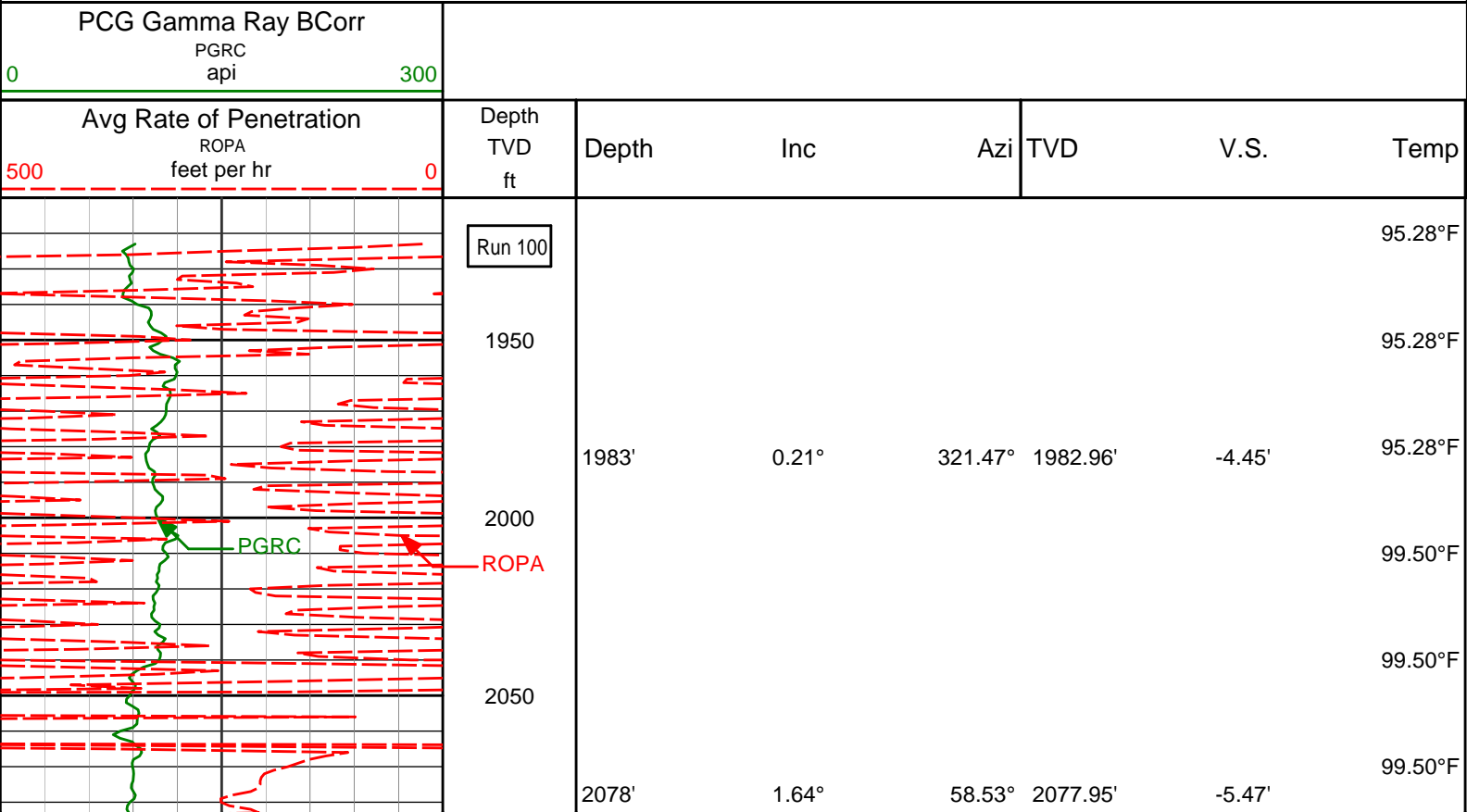
Detail Log 1:240 (5"):
(ROPA - Avg Rate of Penetration)
Interval: 0.5 ft, Coercion Distance: 1.2 ft, Gap fill: 3.0 ft
(PGRC - Gamma Ray Cor)
Interval: 0.5 ft, Coercion Distance: 0.6 ft, Gap fill: 3.0 ft

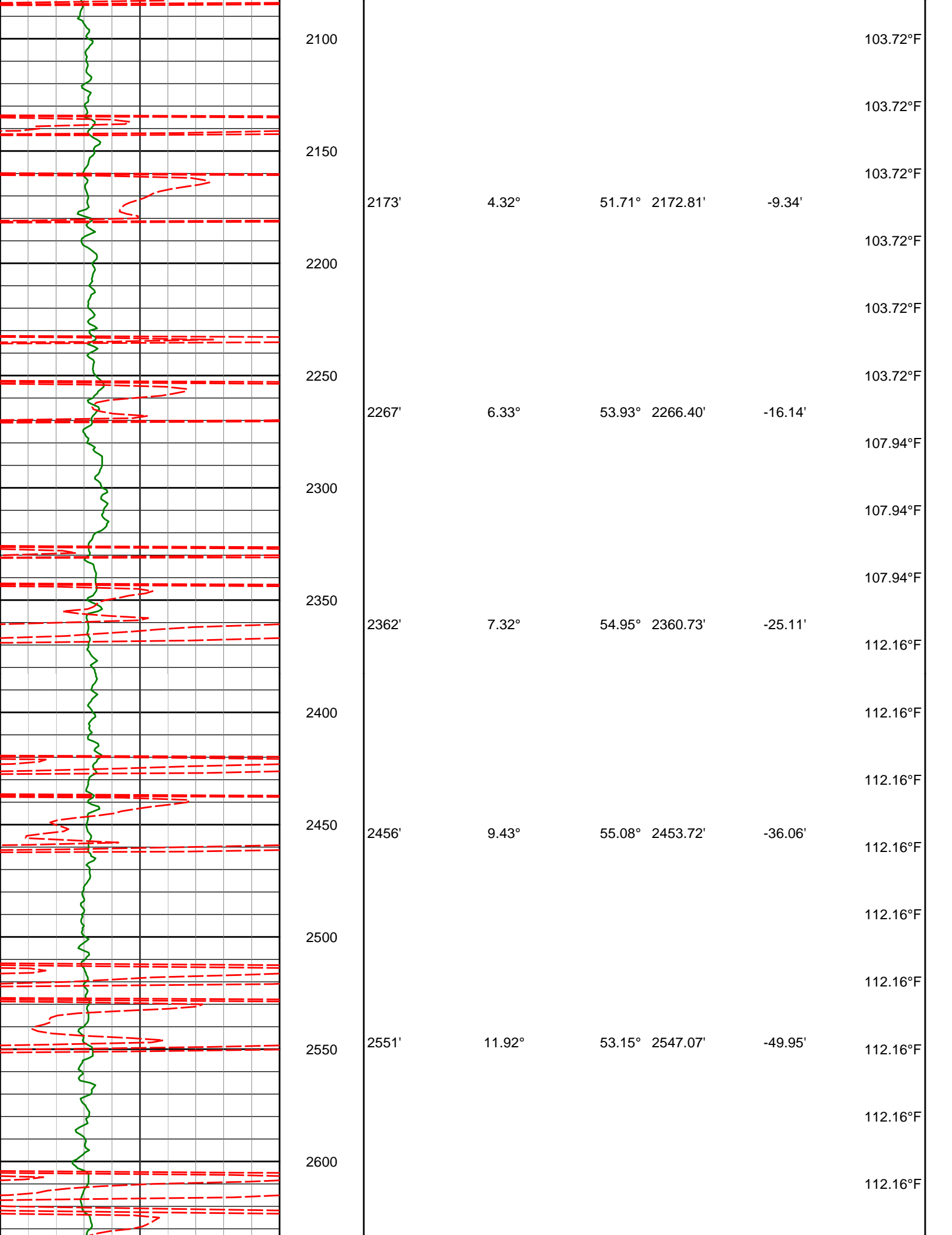
5. Surveys corrected by Surcon starting at 1983 ft.

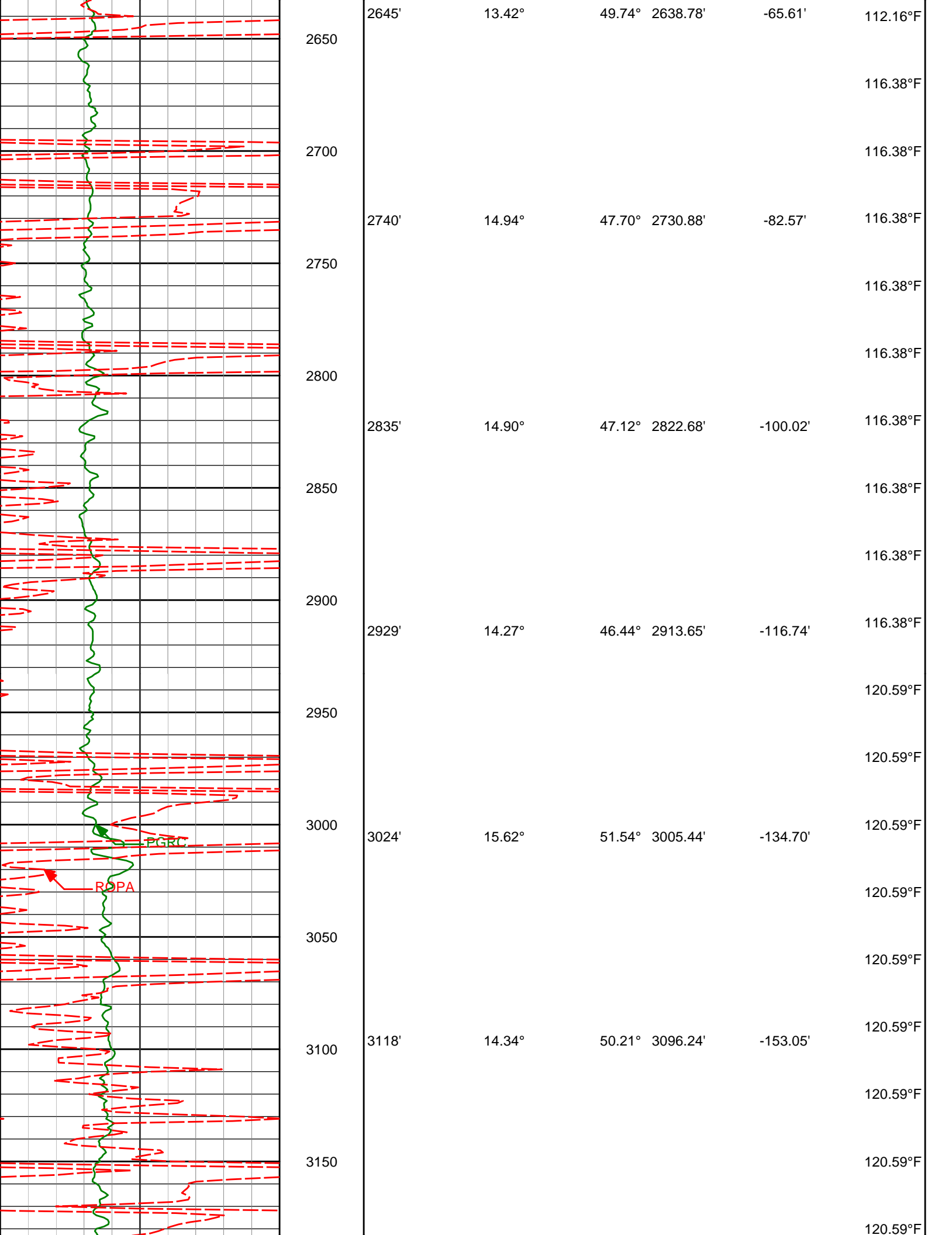
WARRANTY

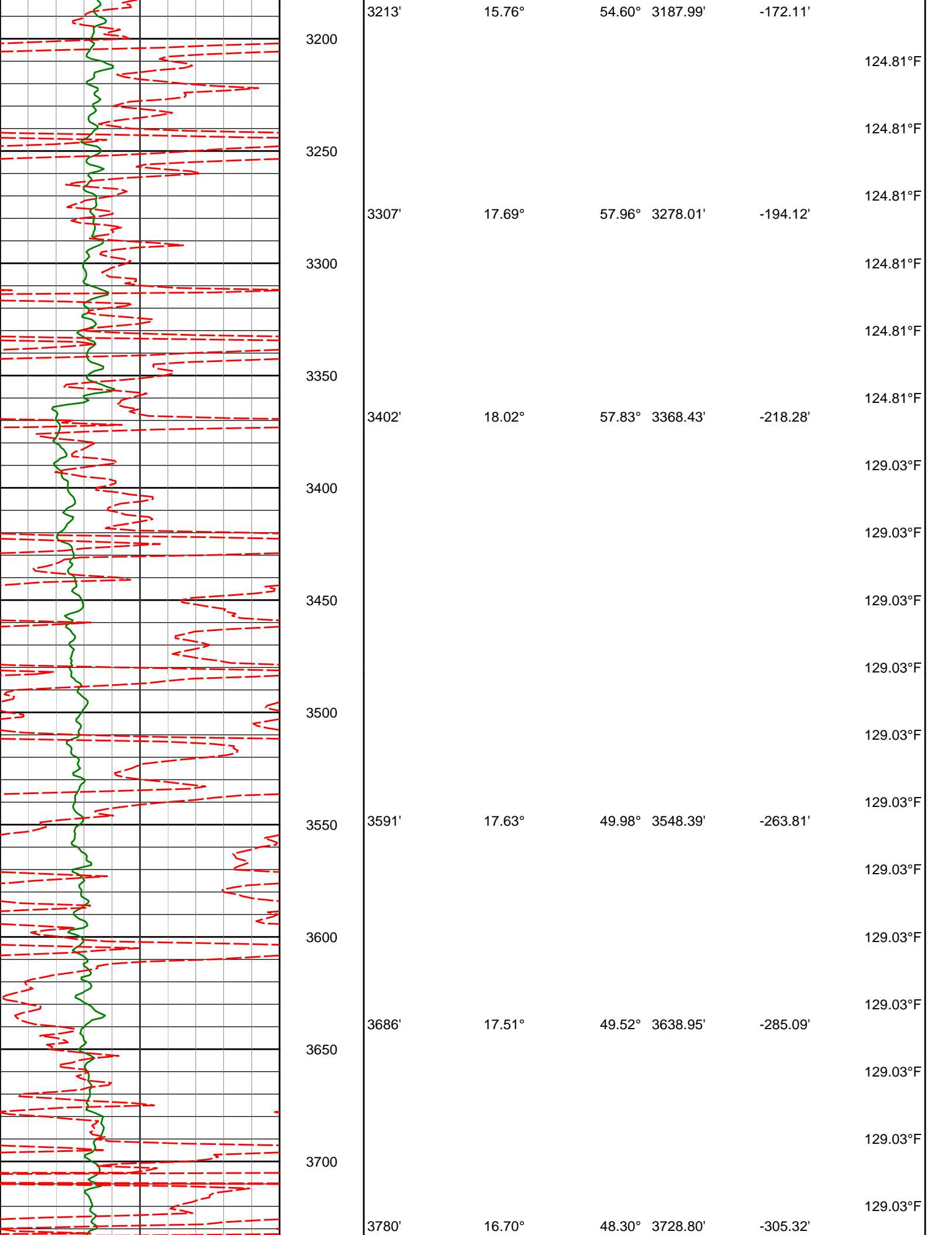
HALLIBURTON WILL USE ITS BEST EFFORTS TO FURNISH CUSTOMERS WITH ACCURATE INFORMATION AND INTERPRETATIONS THAT ARE PART OF, AND INCIDENT TO, THE SERVICES PROVIDED. HOWEVER, HALLIBURTON CANNOT AND DOES NOT WARRANT THE ACCURACY OR CORRECTNESS OF SUCH INFORMATION AND INTERPRETATIONS. UNDER NO CIRCUMSTANCES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

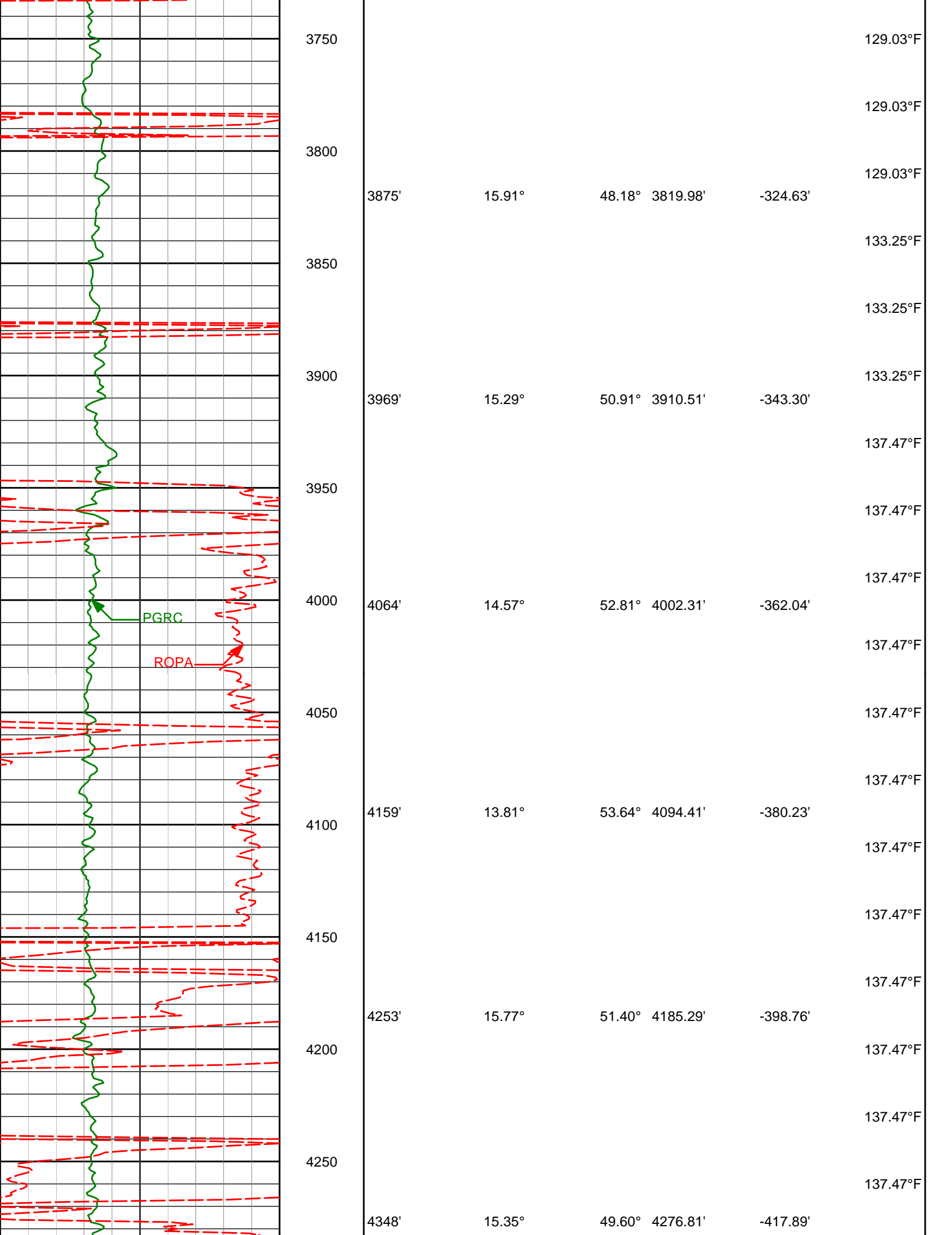
TVD Main Log 1:600 Scale

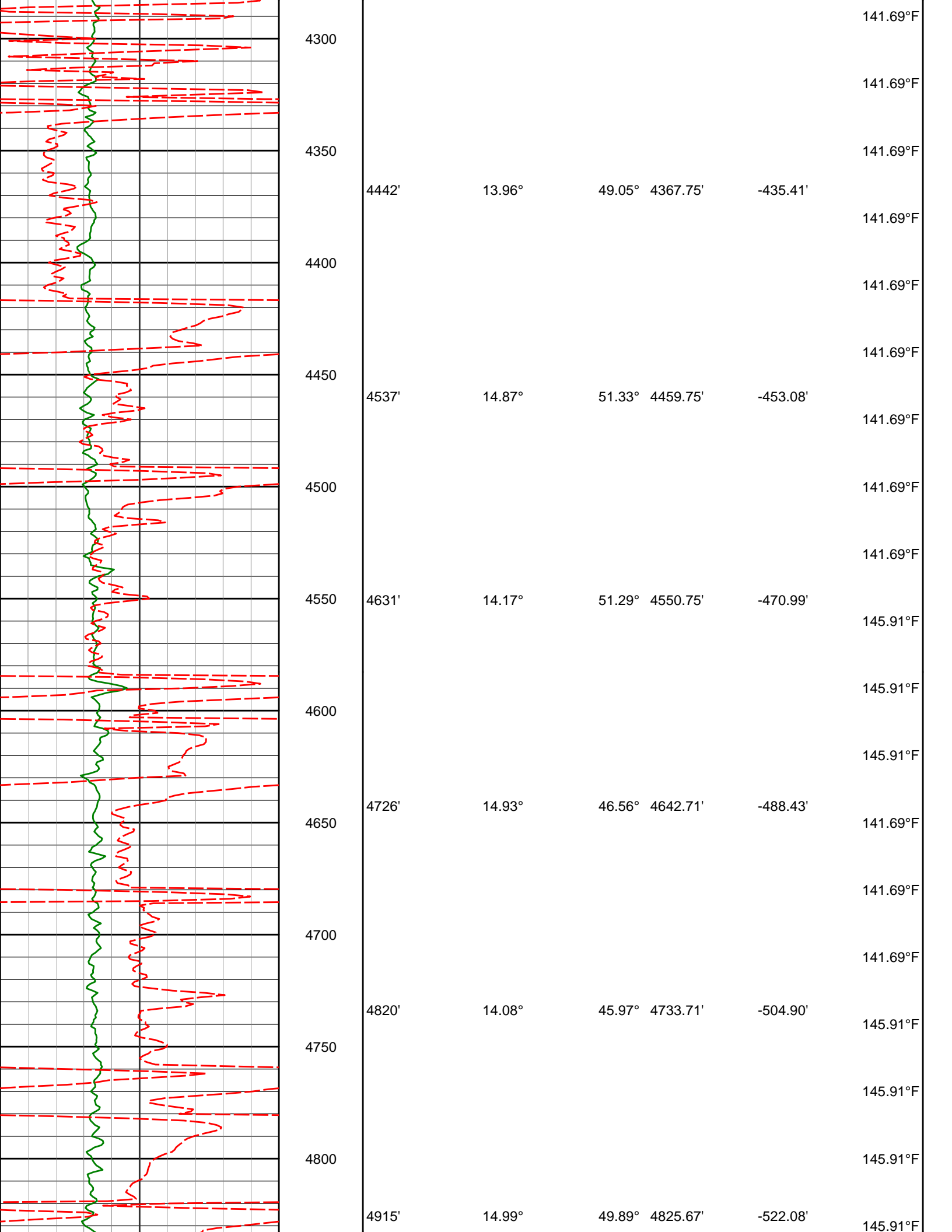


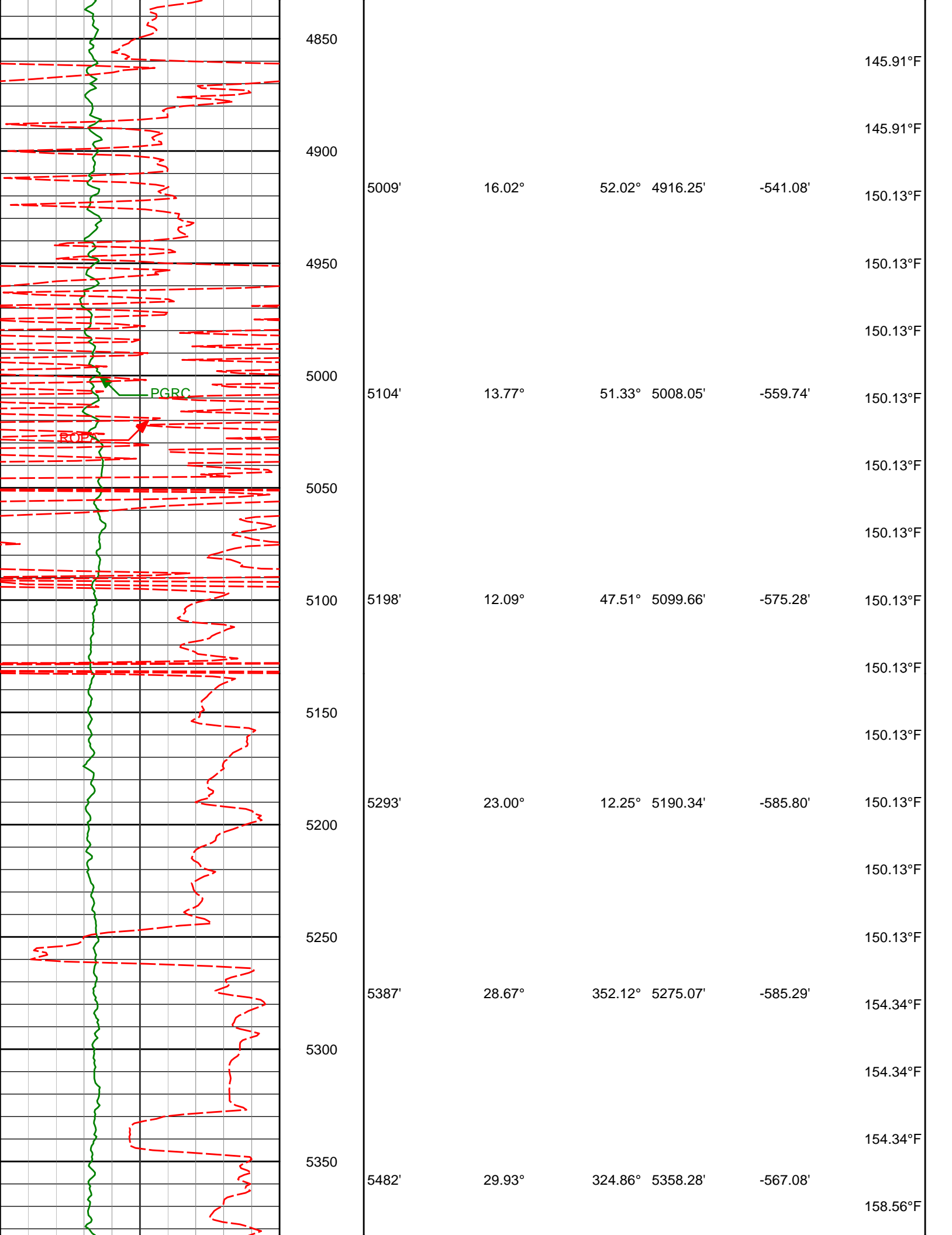


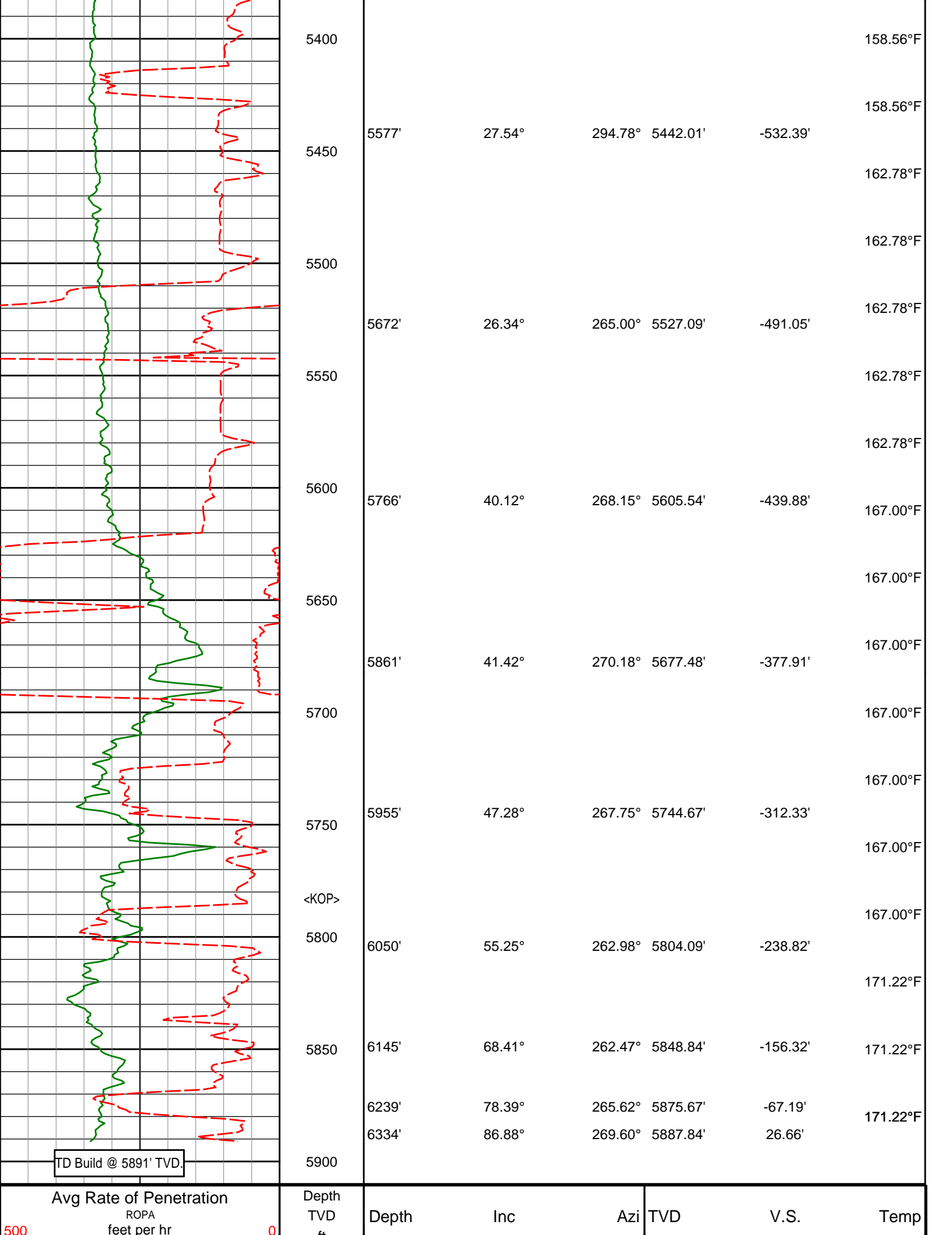


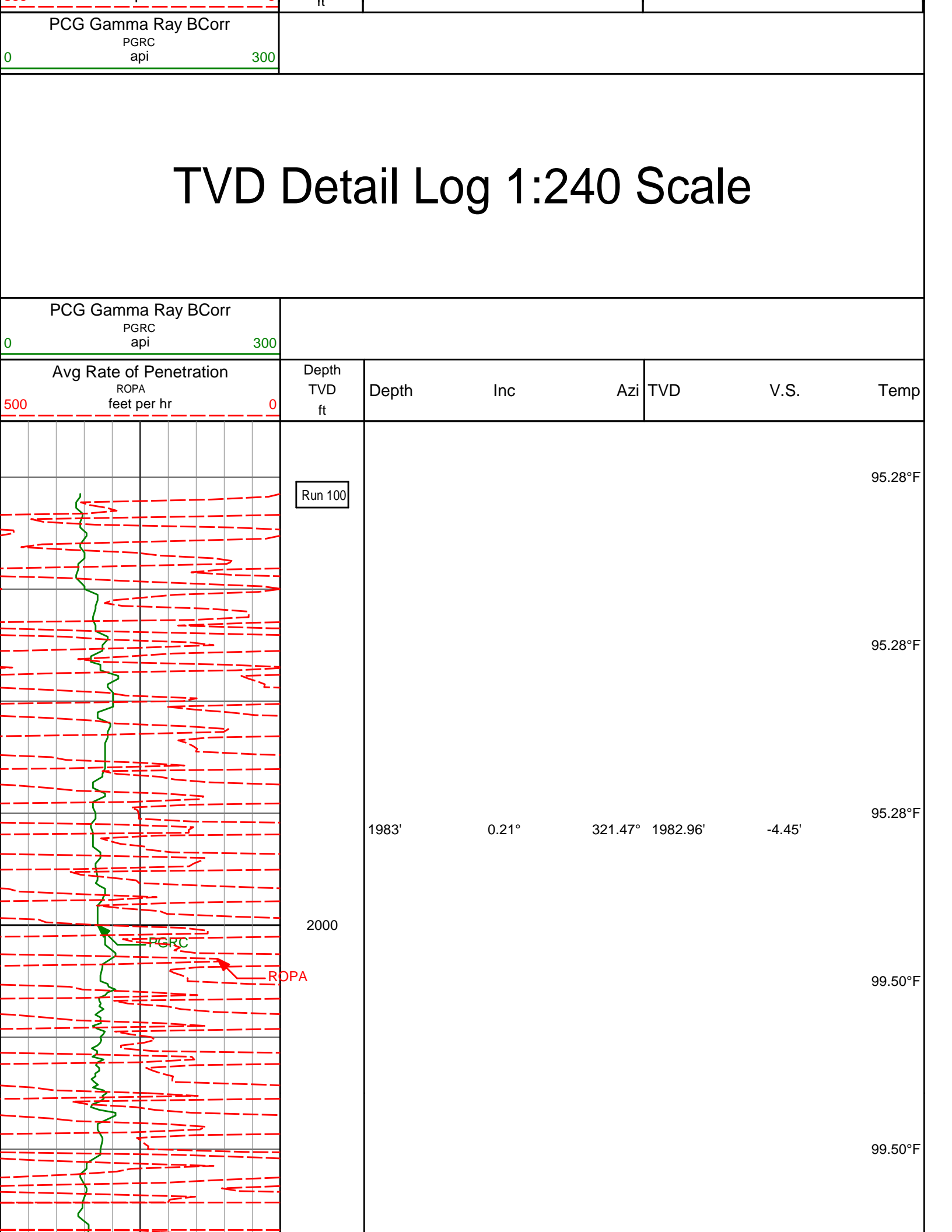


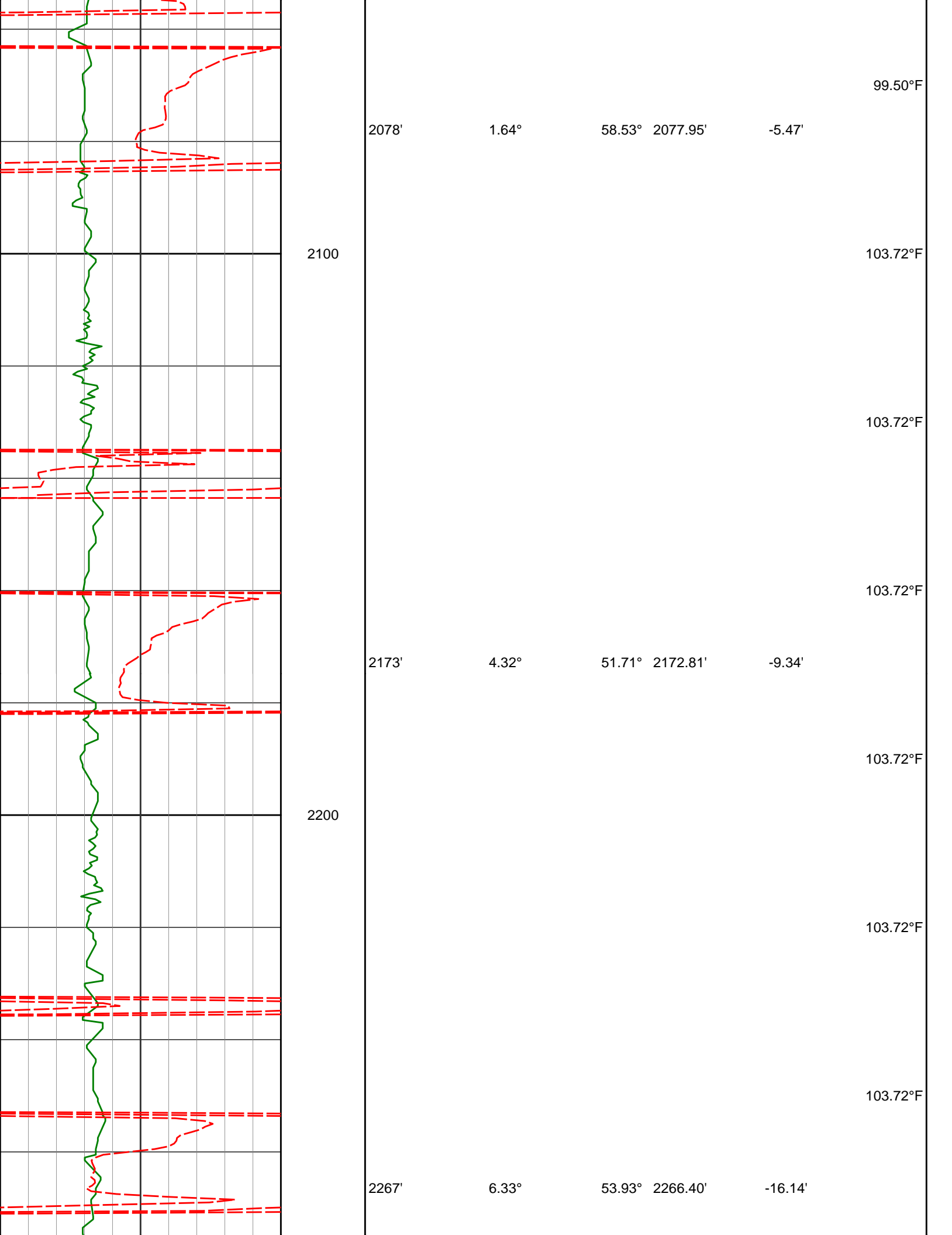


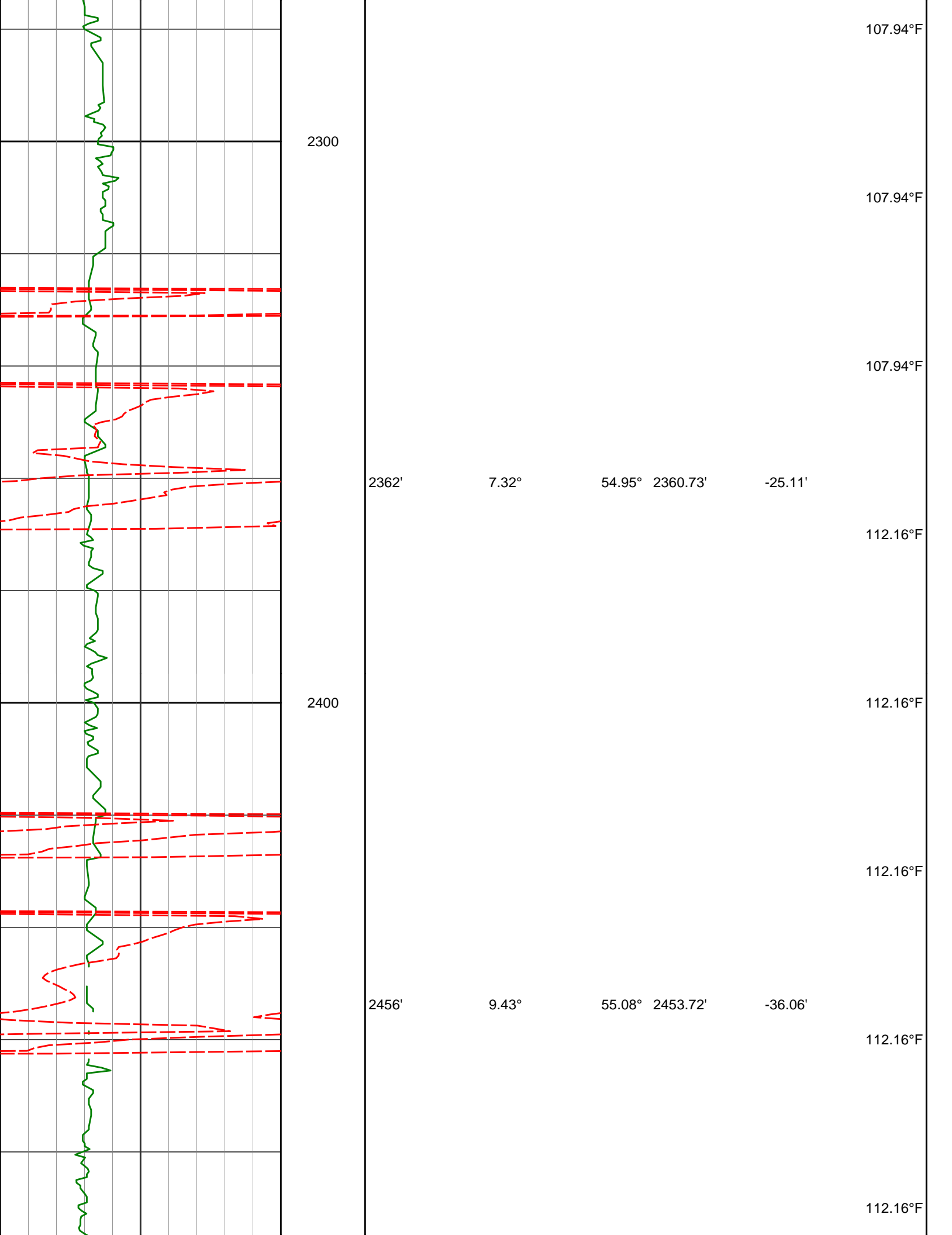


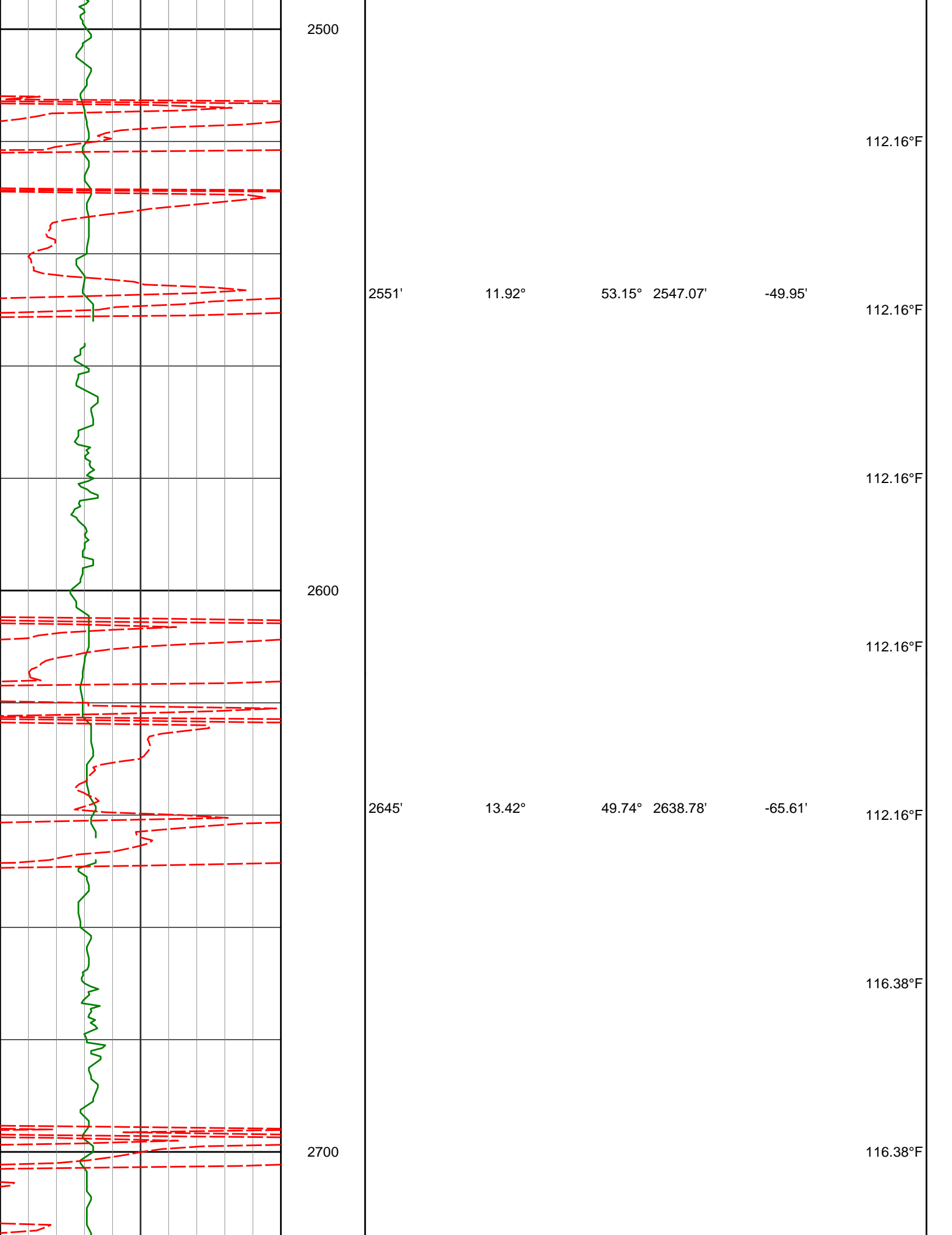


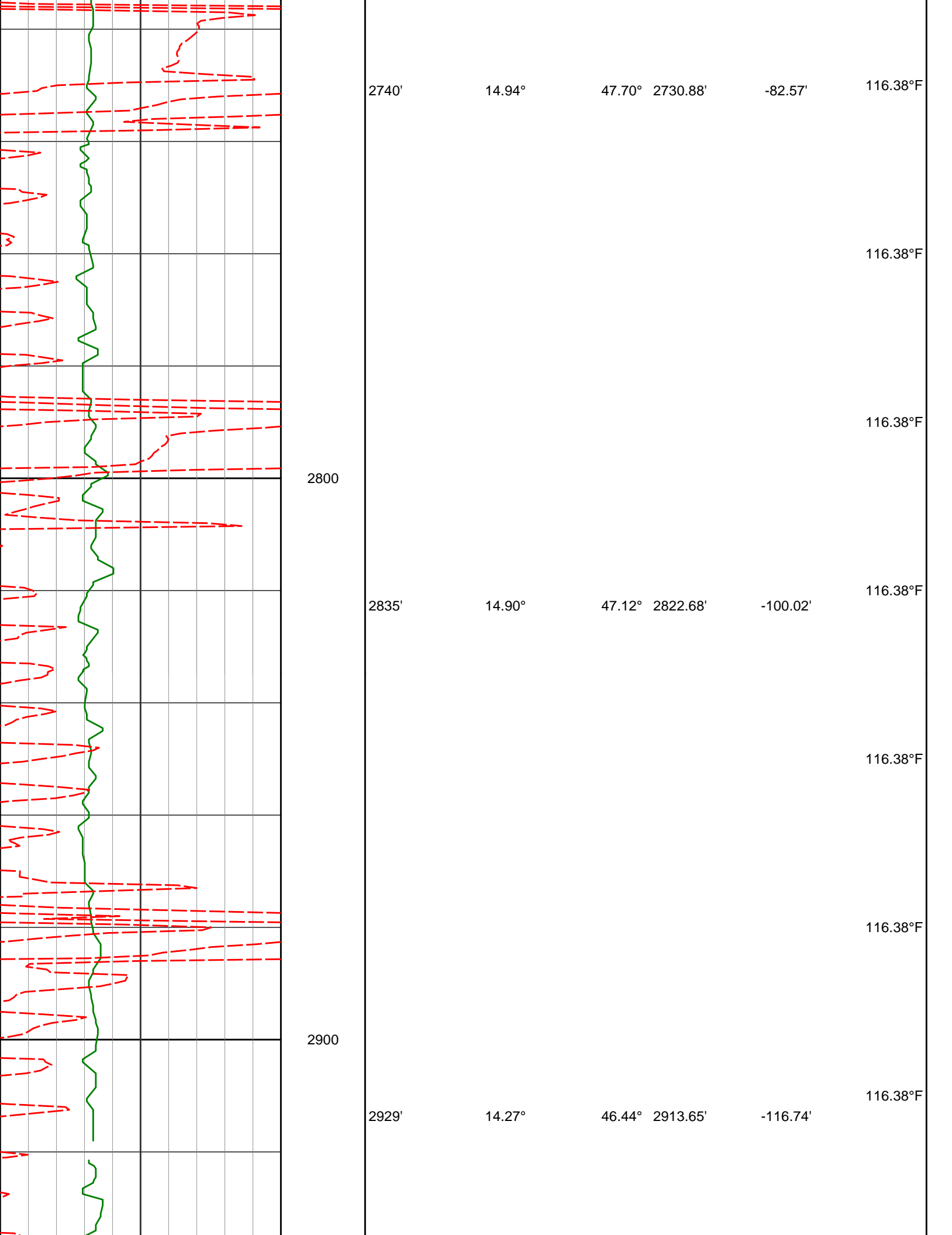


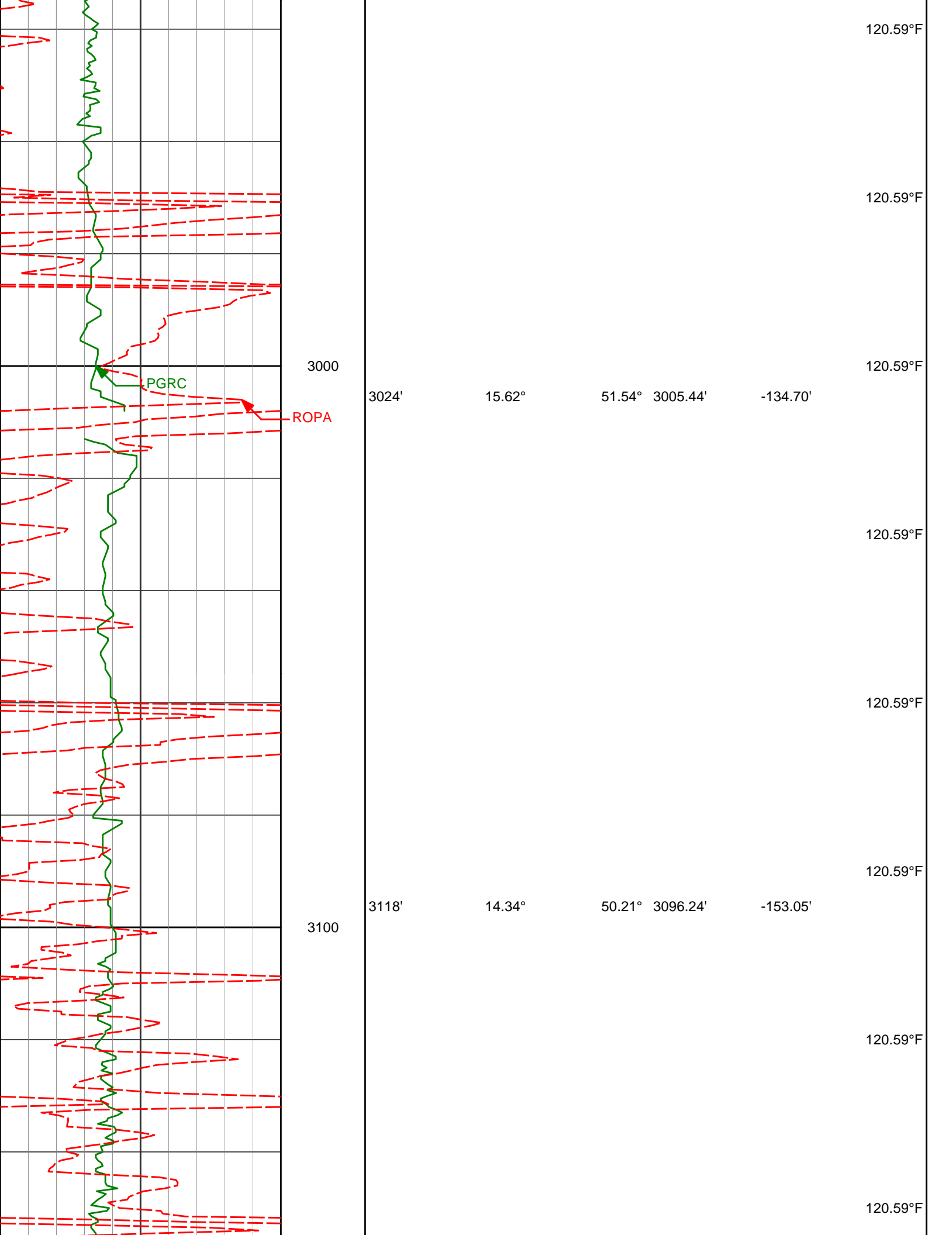


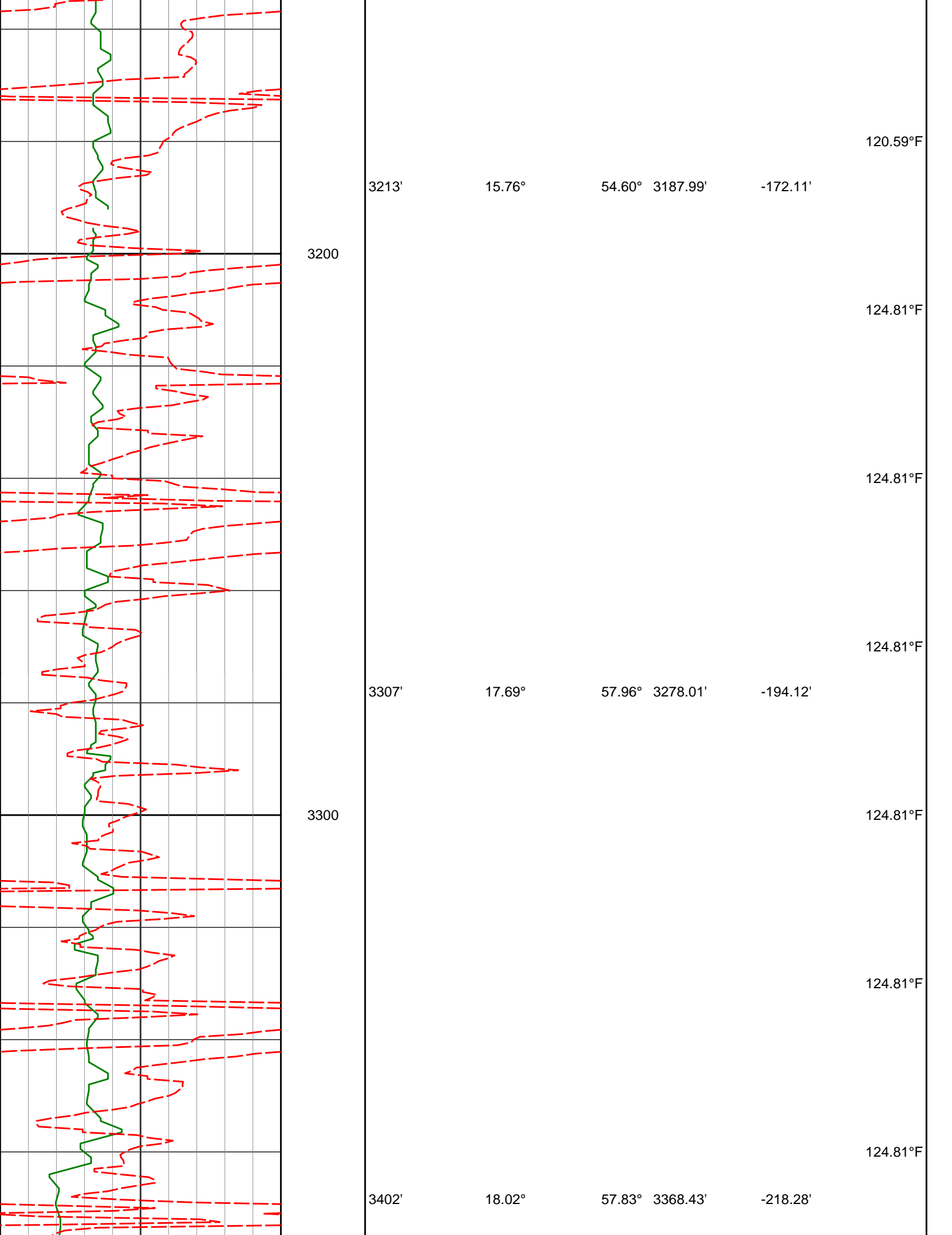


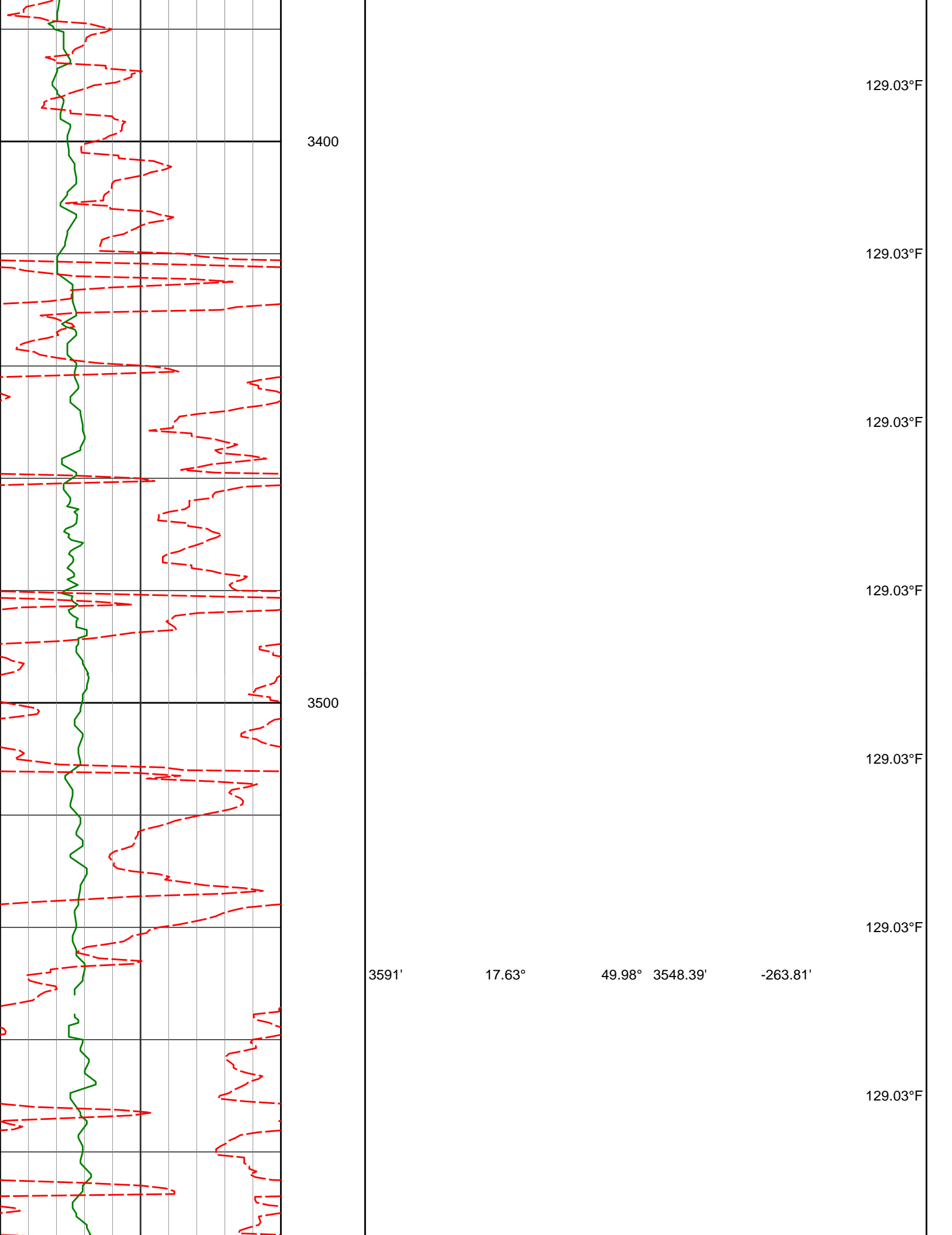


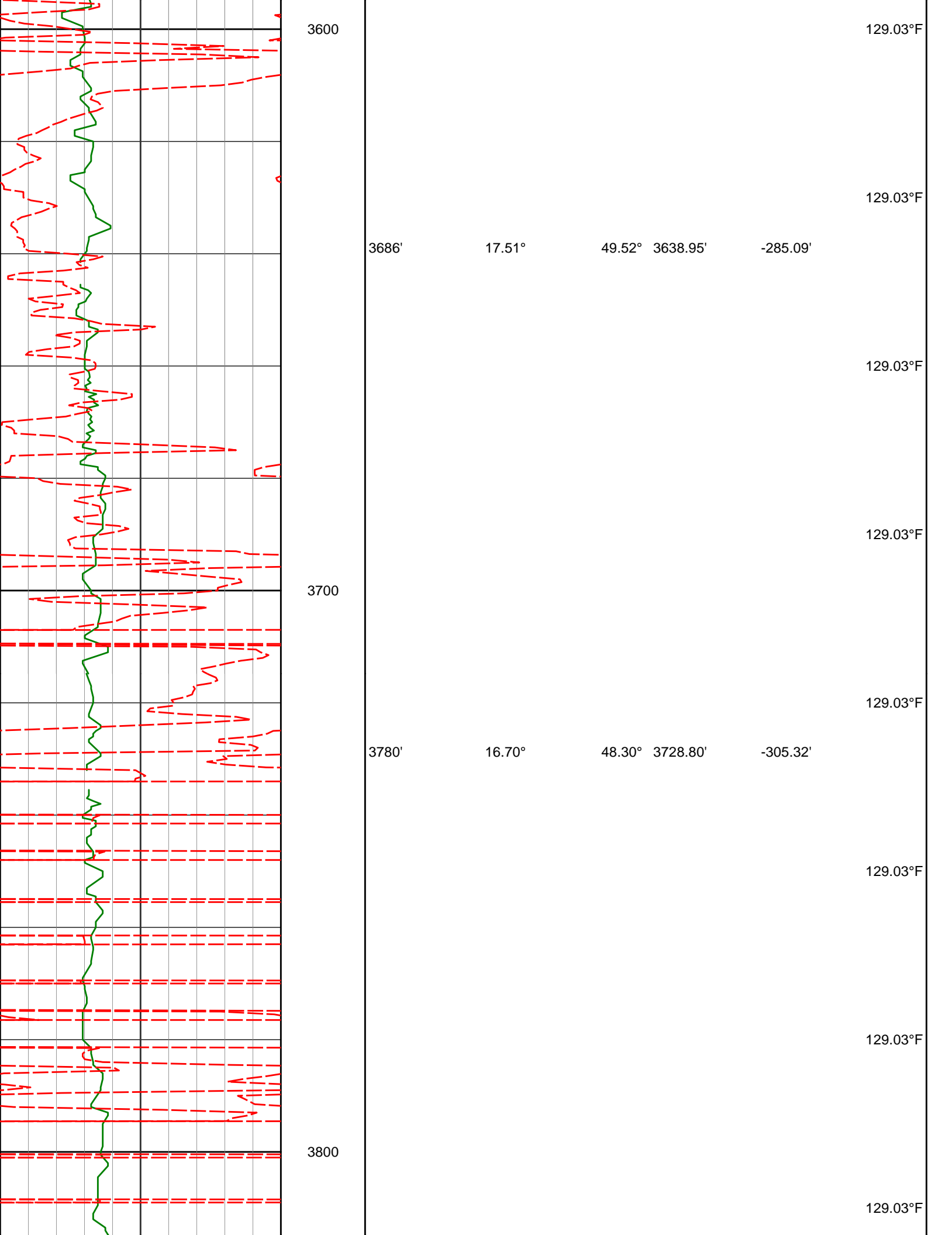


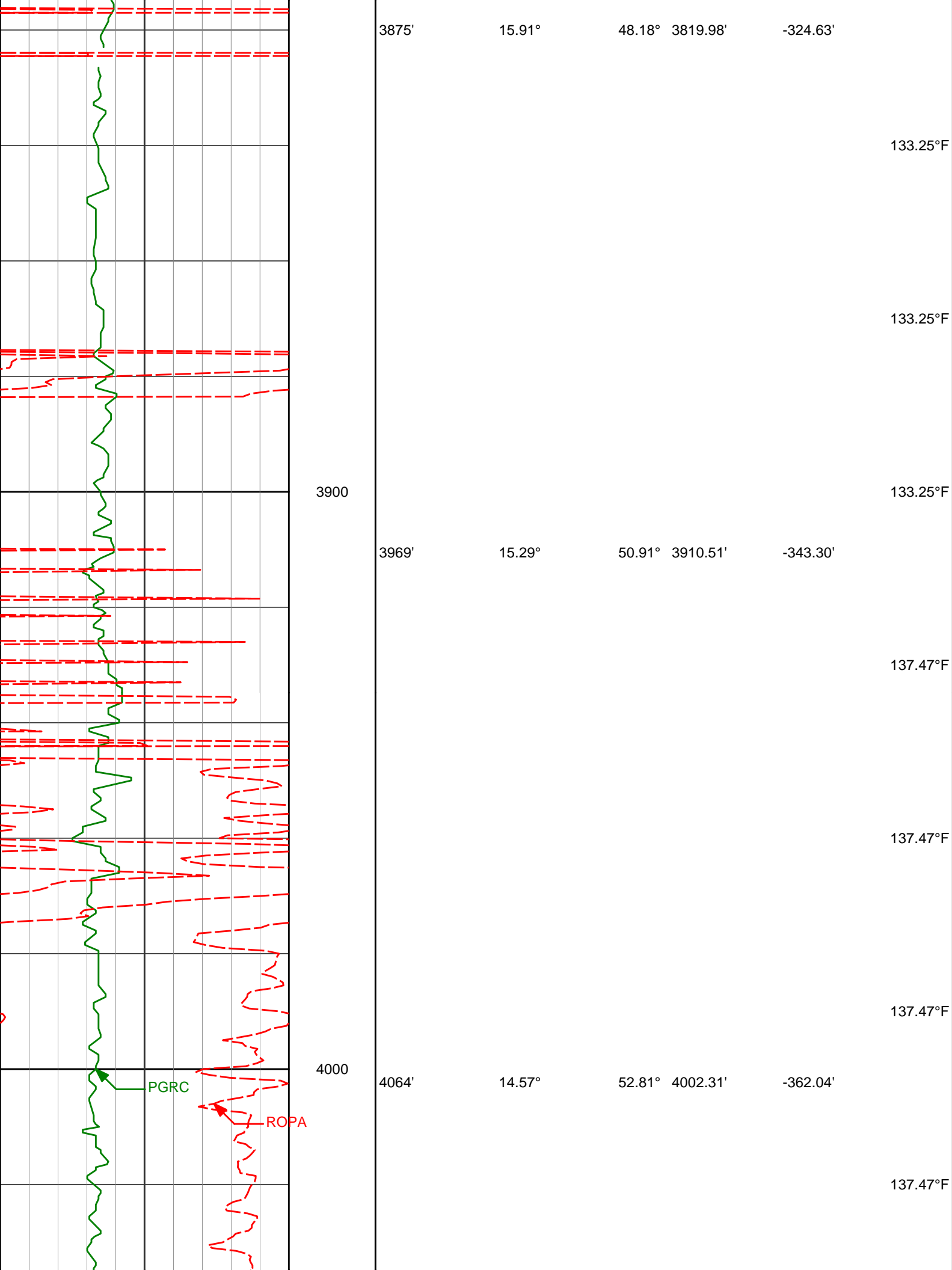


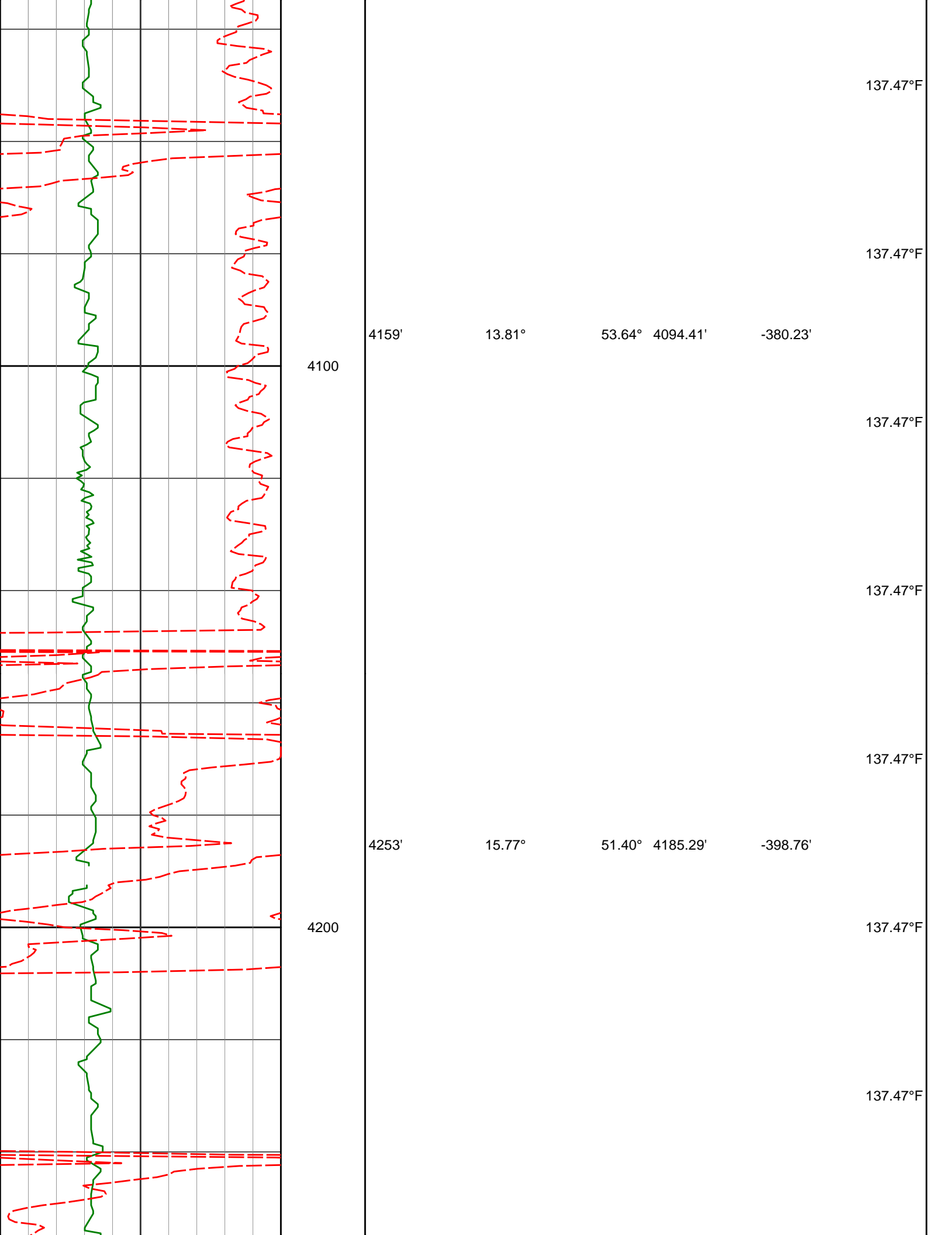


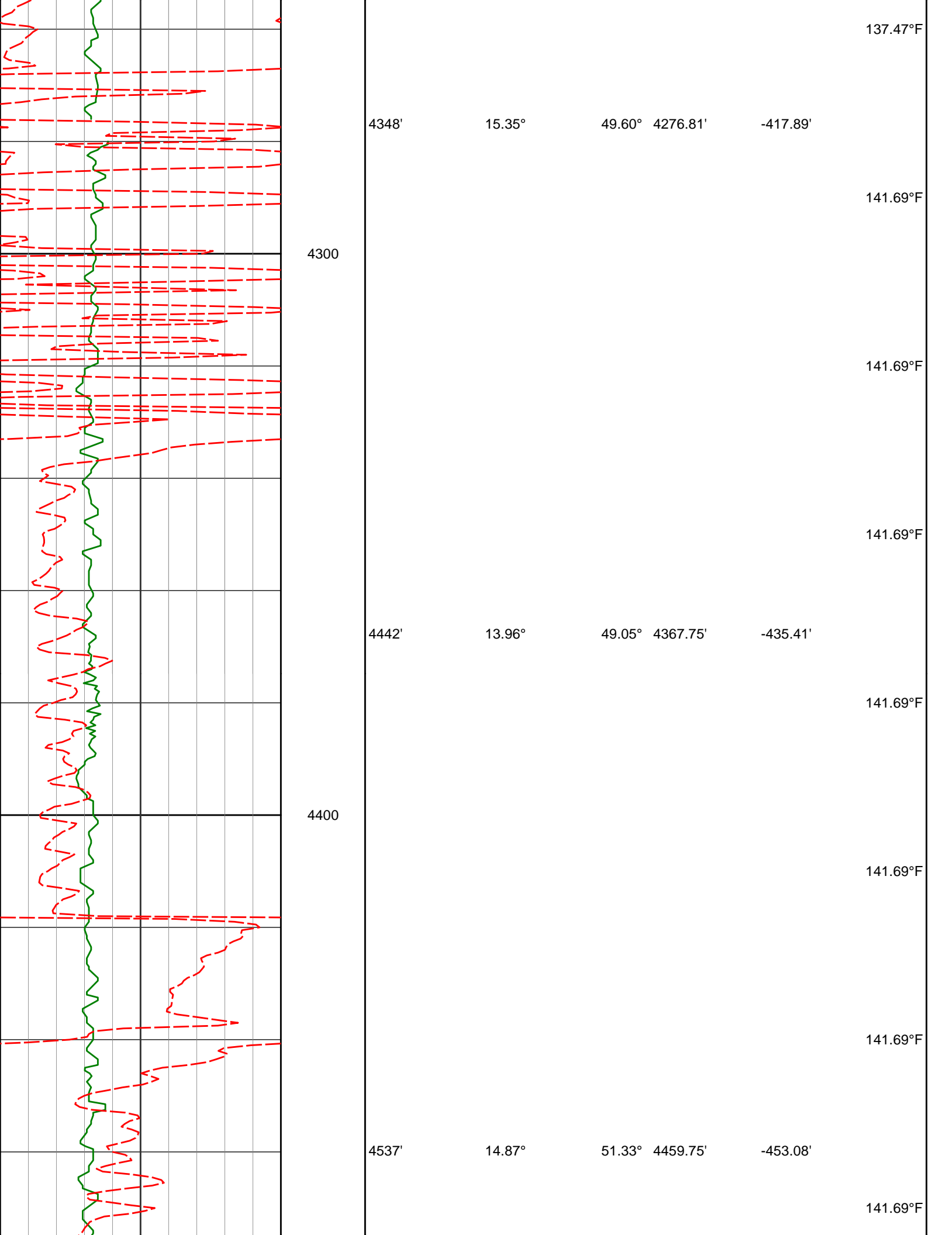


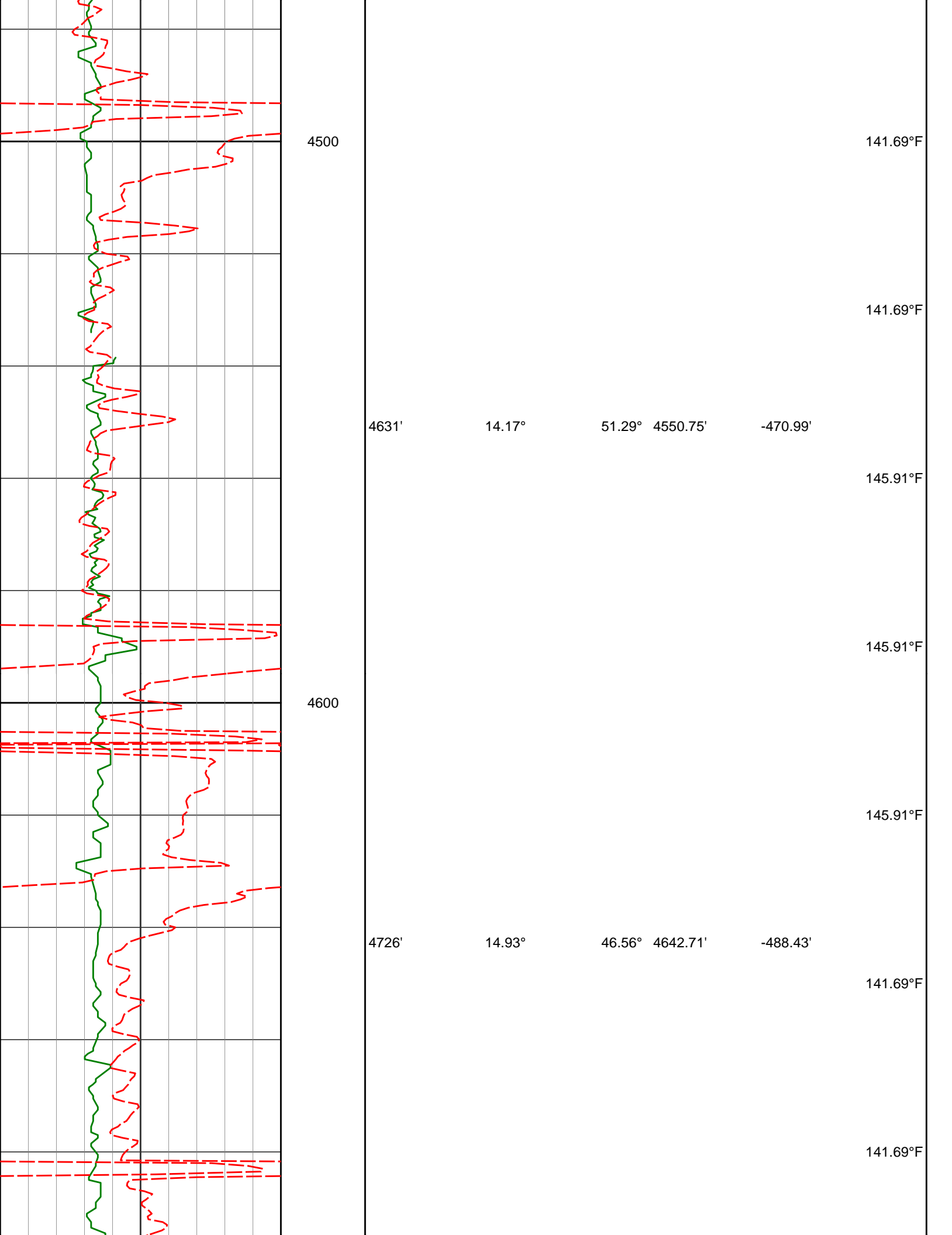


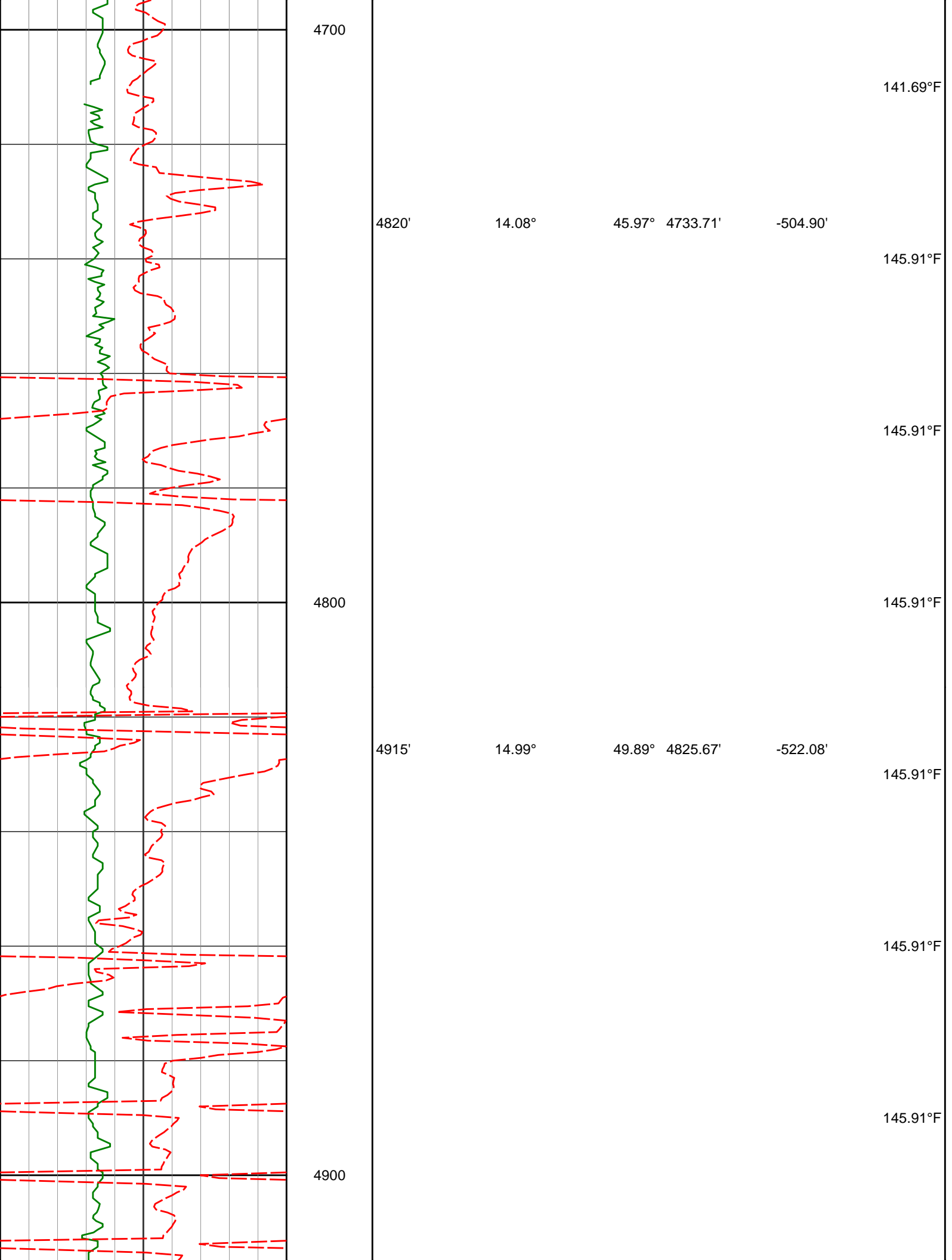


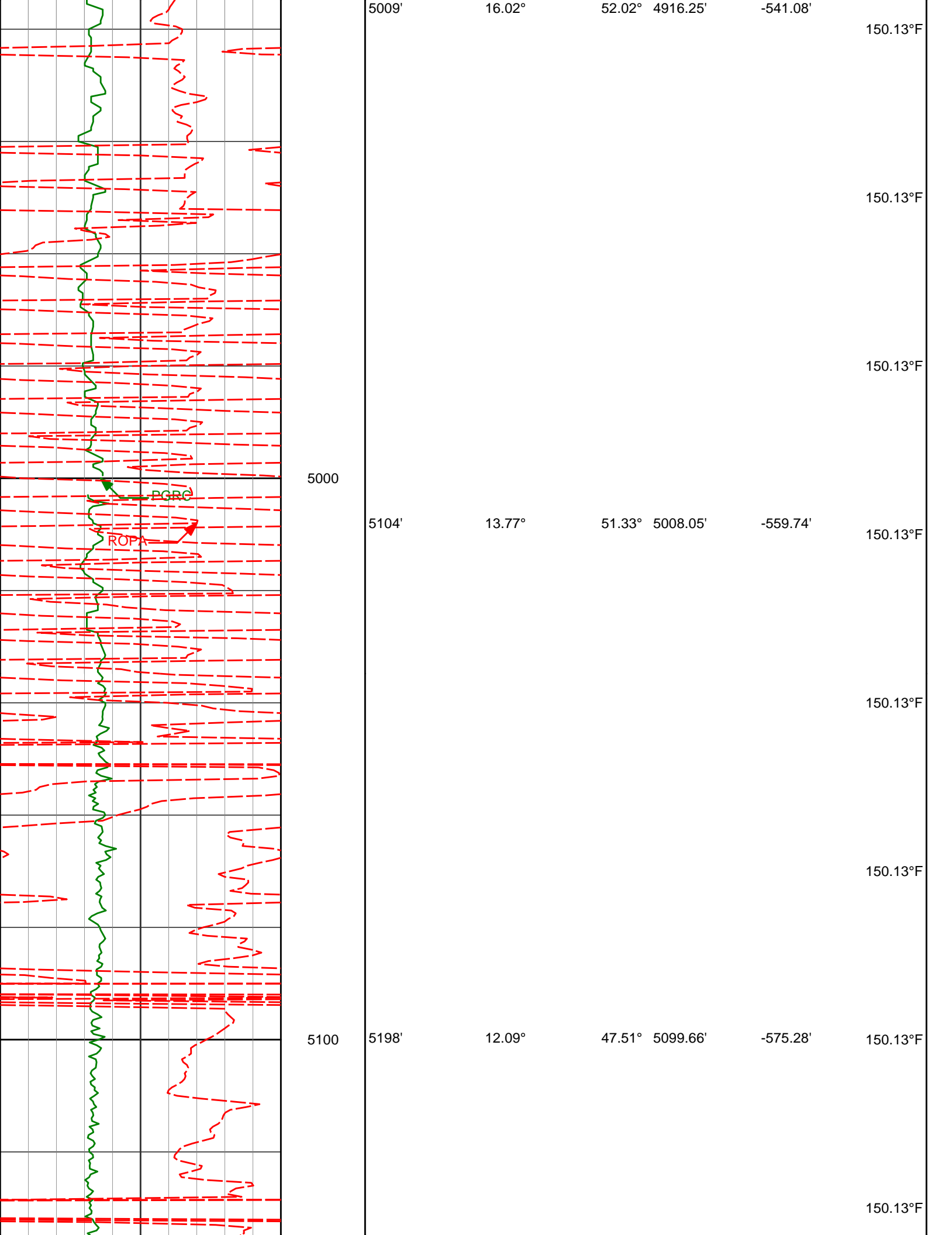


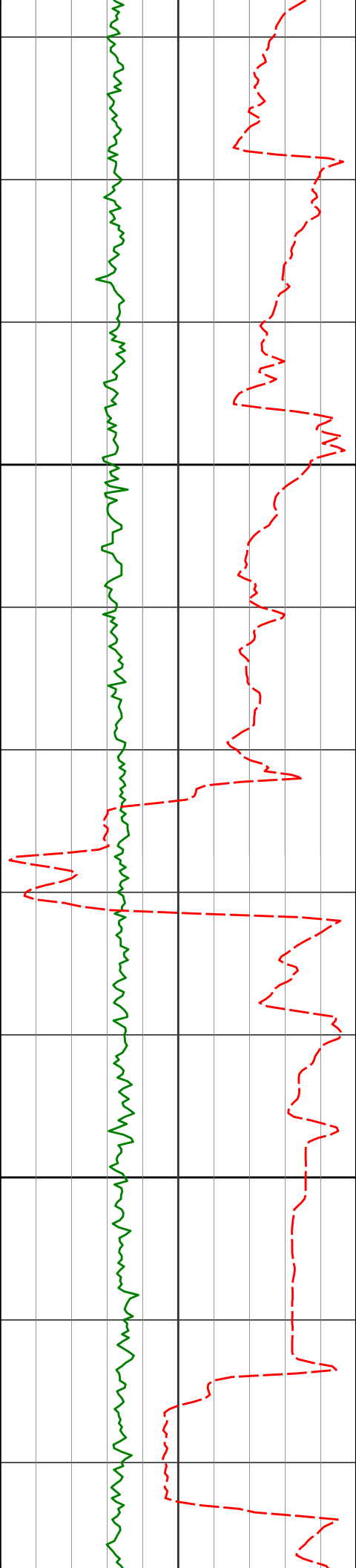












5200

5300

5293'

5387'

23.00°

28.67°

12.25°

352.12°

5190.34'

5275.07'

-585.80'

-585.29'

150.13°F

150.13°F

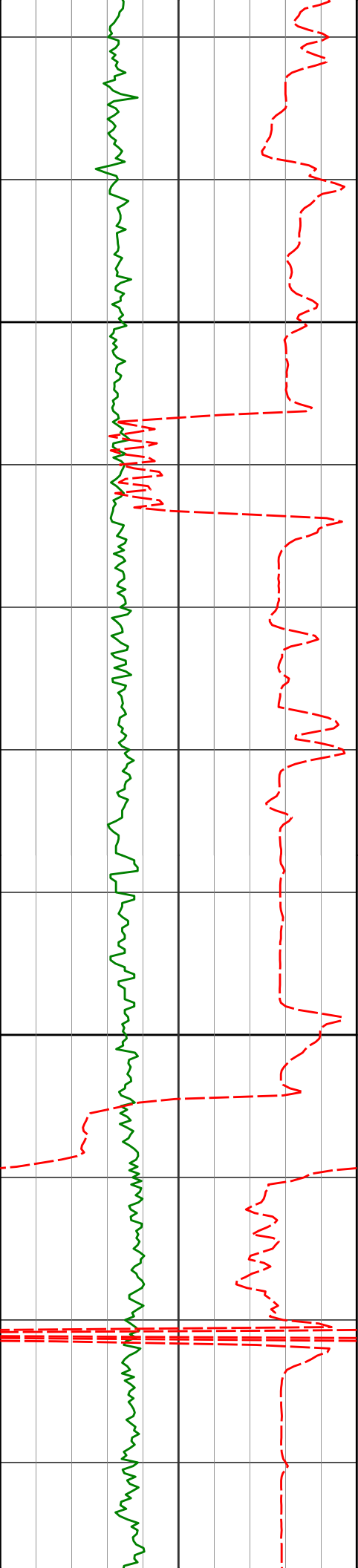
150.13°F

150.13°F

154.34°F

154.34°F

154.34°F



5482'

29.93°

324.86°

5358.28'

-567.08'

5400

5577'

27.54°

294.78°

5442.01'

-532.39'

5500

5672'

26.34°

265.00°

5527.09'

-491.05'

158.56°F

158.56°F

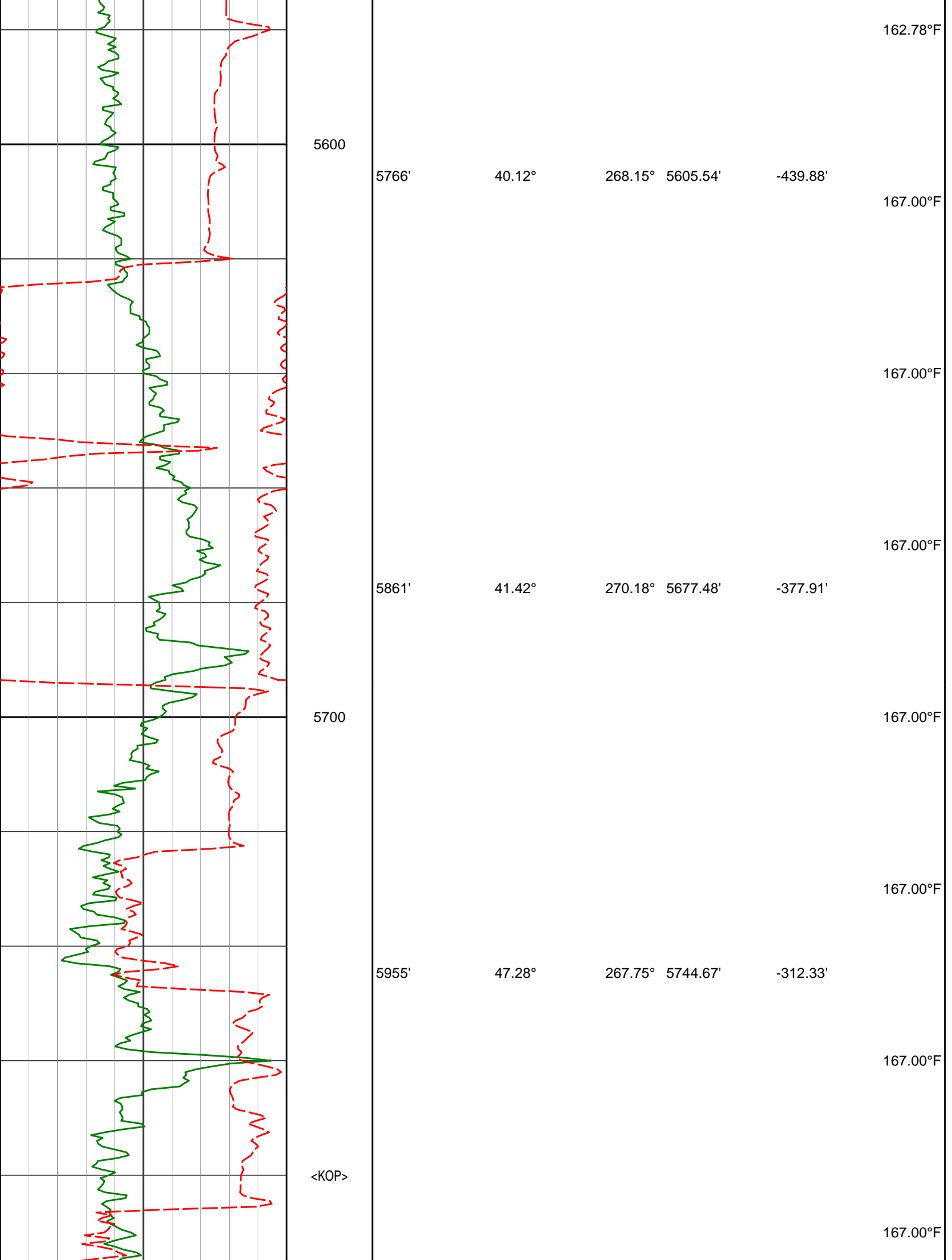
158.56°F

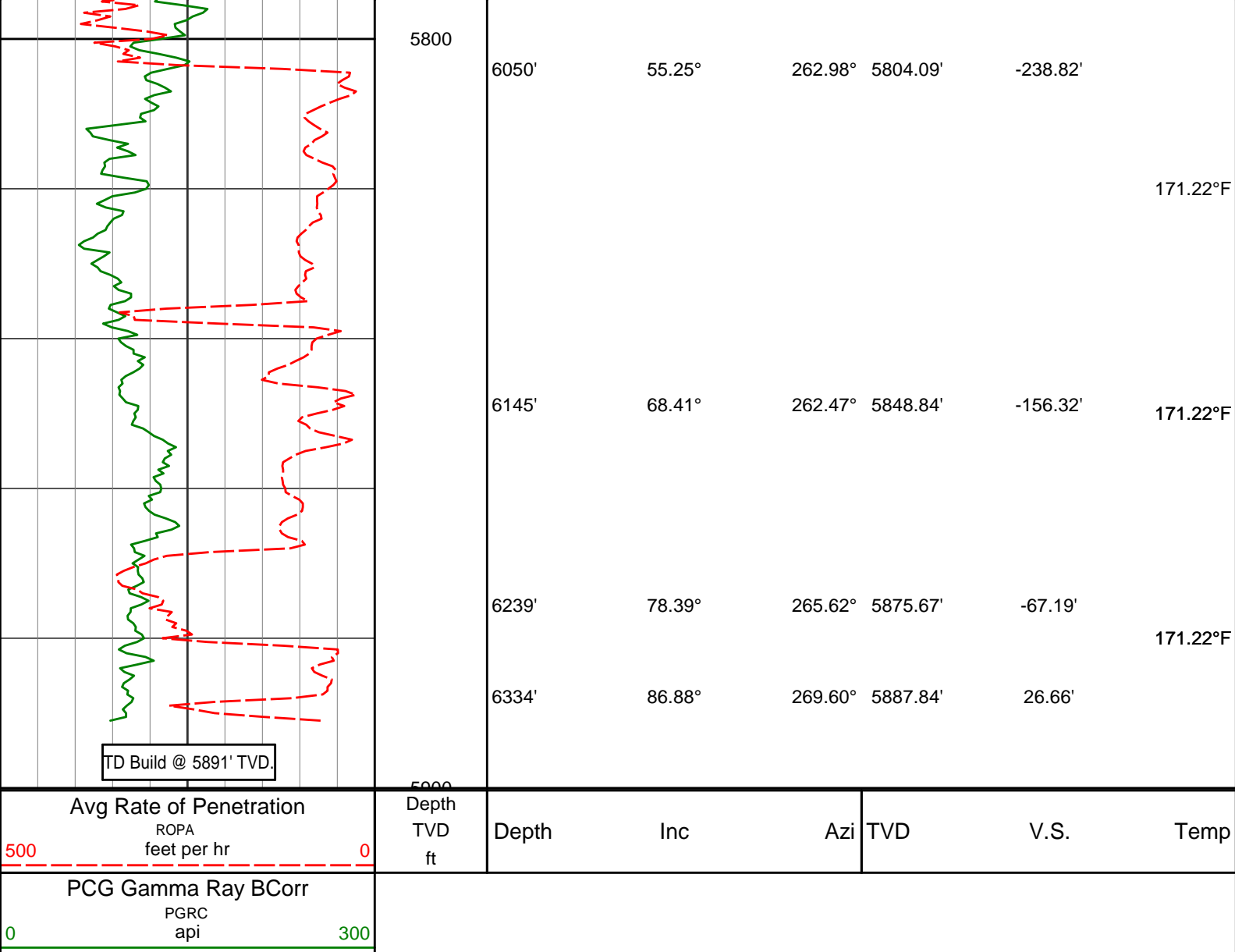
162.78°F

162.78°F

162.78°F

162.78°F





HALLIBURTON

DIRECTIONAL SURVEY REPORT

Noble Energy
Heston LD06-630
Wattenberg
Weld Colorado
USA
CA-XX-0903354598

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
81.00	0.33	174.96	81.00	0.23 S	0.02 E	-0.03	0.41
176.00	0.49	189.25	176.00	0.91 S	0.02 W	-0.01	0.20
271.00	0.68	192.69	270.99	1.86 S	0.21 W	0.15	0.20
365.00	0.62	200.60	364.99	2.88 S	0.51 W	0.42	0.11
460.00	0.15	223.23	459.98	3.45 S	0.78 W	0.66	0.51
554.00	0.08	53.04	553.98	3.50 S	0.81 W	0.69	0.24
649.00	0.07	294.42	648.98	3.44 S	0.81 W	0.70	0.14
743.00	0.04	296.11	742.98	3.40 S	0.89 W	0.78	0.03
838.00	0.05	97.47	837.98	3.39 S	0.88 W	0.77	0.09
932.00	0.42	83.28	931.98	3.35 S	0.50 W	0.39	0.40
1027.00	0.16	149.07	1026.98	3.43 S	0.08 W	-0.03	0.40
1121.00	0.08	31.45	1120.98	3.42 S	0.00 E	-0.03	0.20

1121.00	0.06	21.15	1120.98	3.49 S	0.00 E	-0.12	0.22
1216.00	0.19	59.95	1215.98	3.37 S	0.16 E	-0.27	0.16
1310.00	0.30	96.88	1309.98	3.32 S	0.54 E	-0.64	0.20
1405.00	0.31	103.92	1404.98	3.41 S	1.03 E	-1.14	0.04
1499.00	0.59	140.64	1498.98	3.85 S	1.59 E	-1.71	0.41
1594.00	0.60	146.09	1593.97	4.64 S	2.17 E	-2.32	0.06
1688.00	0.35	146.77	1687.97	5.29 S	2.61 E	-2.78	0.27
1783.00	0.39	94.63	1782.97	5.55 S	3.09 E	-3.27	0.34
1877.00	0.54	101.17	1876.96	5.67 S	3.84 E	-4.02	0.17
1906.00	0.41	94.90	1905.96	5.70 S	4.08 E	-4.26	0.48
1983.00	0.21	321.47	1982.96	5.62 S	4.27 E	-4.45	0.74
2078.00	1.64	58.53	2077.95	4.77 S	5.32 E	-5.47	1.77
2173.00	4.32	51.71	2172.81	1.85 S	9.29 E	-9.34	2.84
2267.00	6.33	53.93	2266.40	3.40 N	16.26 E	-16.14	2.15
2362.00	7.32	54.95	2360.73	9.96 N	25.45 E	-25.11	1.05
2456.00	9.43	55.08	2453.72	17.81 N	36.67 E	-36.06	2.24
2551.00	11.92	53.15	2547.07	28.14 N	50.89 E	-49.95	2.65
2645.00	13.42	49.74	2638.78	41.02 N	66.99 E	-65.61	1.79
2740.00	14.94	47.70	2730.88	56.38 N	84.46 E	-82.57	1.68
2835.00	14.90	47.12	2822.68	72.93 N	102.46 E	-100.02	0.16
2929.00	14.27	46.44	2913.65	89.14 N	119.71 E	-116.74	0.69
3024.00	15.62	51.54	3005.44	105.16 N	138.21 E	-134.70	1.98
3118.00	14.34	50.21	3096.24	120.48 N	157.07 E	-153.05	1.40
3213.00	15.76	54.60	3187.99	135.49 N	176.62 E	-172.11	1.91
3307.00	17.69	57.96	3278.01	150.46 N	199.14 E	-194.12	2.29
3402.00	18.02	57.83	3368.43	165.94 N	223.81 E	-218.28	0.36
3591.00	17.63	49.98	3548.39	199.91 N	270.48 E	-263.81	1.29
3686.00	17.51	49.52	3638.95	218.44 N	292.37 E	-285.09	0.19
3780.00	16.70	48.30	3728.80	236.61 N	313.21 E	-305.32	0.95
3875.00	15.91	48.18	3819.98	254.37 N	333.10 E	-324.63	0.83
3969.00	15.29	50.91	3910.51	270.78 N	352.33 E	-343.30	1.02
4064.00	14.57	52.81	4002.31	285.90 N	371.57 E	-362.04	0.92
4159.00	13.81	53.64	4094.41	299.84 N	390.22 E	-380.23	0.83
4253.00	15.77	51.40	4185.29	314.46 N	409.24 E	-398.76	2.17
4348.00	15.35	49.60	4276.81	330.67 N	428.91 E	-417.89	0.67
4442.00	13.96	49.05	4367.75	346.16 N	446.95 E	-435.41	1.49
4537.00	14.87	51.33	4459.75	361.29 N	465.12 E	-453.08	1.13
4631.00	14.17	51.29	4550.75	376.02 N	483.51 E	-470.99	0.74
4726.00	14.93	46.56	4642.71	391.71 N	501.48 E	-488.43	1.49
4820.00	14.08	45.97	4733.71	407.99 N	518.49 E	-504.90	0.93
4915.00	14.99	49.89	4825.67	423.93 N	536.20 E	-522.08	1.41
5009.00	16.02	52.02	4916.25	439.75 N	555.72 E	-541.08	1.25
5104.00	13.77	51.33	5008.05	454.88 N	574.89 E	-559.74	2.38
5198.00	12.09	47.51	5099.66	468.52 N	590.88 E	-575.28	2.00
5293.00	23.00	12.25	5190.34	493.52 N	602.22 E	-585.80	15.55
5387.00	28.67	352.12	5275.07	533.91 N	603.03 E	-585.29	11.04
5482.00	29.93	324.86	5358.28	576.06 N	586.19 E	-567.08	14.01
5577.00	27.54	294.78	5442.01	604.80 N	552.42 E	-532.39	15.28
5672.00	26.34	265.00	5527.09	612.20 N	511.30 E	-491.05	14.13
5766.00	40.12	268.15	5605.54	609.39 N	460.01 E	-439.88	14.77
5861.00	41.42	270.18	5677.48	608.50 N	397.98 E	-377.91	1.96
5955.00	47.28	267.75	5744.67	607.24 N	332.32 E	-312.33	6.49
6050.00	55.25	262.98	5804.09	601.09 N	258.57 E	-238.82	9.25
6145.00	68.41	262.47	5848.84	590.49 N	175.68 E	-156.32	13.86
6239.00	78.39	265.62	5875.67	581.22 N	86.21 E	-67.19	11.09
6334.00	86.88	269.60	5887.84	577.33 N	7.82 W	26.66	9.85
6429.00	86.60	270.30	5893.24	577.25 N	102.67 W	121.45	0.79
6523.00	91.88	269.83	5894.49	577.36 N	196.63 W	215.36	5.64
6618.00	90.00	269.81	5892.93	577.06 N	291.61 W	310.28	1.98
6712.00	89.81	269.45	5893.09	576.45 N	385.61 W	404.21	0.43
6810.00	89.86	269.12	5893.37	575.23 N	483.60 W	502.11	0.34
6904.00	90.02	269.32	5893.47	573.95 N	577.59 W	596.01	0.27
6999.00	90.41	268.73	5893.11	572.33 N	672.58 W	690.89	0.74
7093.00	90.41	268.48	5892.44	570.04 N	766.55 W	784.74	0.27
7188.00	90.62	268.00	5891.58	567.13 N	861.50 W	879.54	0.55
7282.00	90.93	268.27	5890.31	564.07 N	955.44 W	973.34	0.44
7376.00	91.02	267.59	5888.71	560.67 N	1049.36 W	1067.10	0.73
7471.00	88.89	267.63	5888.79	556.71 N	1144.27 W	1161.83	2.24
7566.00	88.61	268.22	5890.86	553.27 N	1239.19 W	1256.58	0.69
7660.00	90.06	269.51	5891.95	551.41 N	1333.16 W	1350.44	2.06
7754.00	90.15	269.75	5891.78	550.80 N	1427.16 W	1444.37	0.27
7849.00	90.15	269.74	5891.53	550.38 N	1522.16 W	1539.31	0.01

7944.00	90.64	270.54	5890.88	550.61 N	1617.15 W	1634.26	0.99
8038.00	90.83	269.80	5889.67	550.89 N	1711.14 W	1728.21	0.81
8133.00	91.53	268.81	5887.71	549.74 N	1806.11 W	1823.09	1.28
8227.00	90.70	267.53	5885.88	546.74 N	1900.05 W	1916.88	1.62
8322.00	91.01	267.22	5884.47	542.39 N	1994.94 W	2011.57	0.46
8417.00	91.26	266.21	5882.58	536.94 N	2089.76 W	2106.17	1.10
8511.00	91.53	266.51	5880.30	530.98 N	2183.54 W	2199.71	0.43
8606.00	90.30	267.76	5878.78	526.23 N	2278.41 W	2294.37	1.85
8700.00	90.27	267.17	5878.31	522.07 N	2372.31 W	2388.09	0.63
8795.00	90.09	267.55	5878.01	517.70 N	2467.21 W	2482.79	0.44
8889.00	89.96	266.90	5877.97	513.15 N	2561.10 W	2576.48	0.71
8984.00	89.84	267.16	5878.14	508.22 N	2655.97 W	2671.14	0.30
9079.00	89.40	266.13	5878.77	502.66 N	2750.81 W	2765.75	1.18
9173.00	89.80	268.27	5879.42	498.07 N	2844.69 W	2859.43	2.32
9268.00	90.42	269.74	5879.24	496.42 N	2939.67 W	2954.30	1.68
9362.00	90.45	269.97	5878.53	496.19 N	3033.67 W	3048.24	0.25
9456.00	90.42	270.80	5877.81	496.82 N	3127.66 W	3142.21	0.88
9551.00	90.76	270.36	5876.84	497.78 N	3222.65 W	3237.18	0.59
9646.00	90.73	270.31	5875.60	498.33 N	3317.64 W	3332.14	0.06
9740.00	90.17	269.96	5874.86	498.56 N	3411.64 W	3426.09	0.70
9835.00	91.19	269.80	5873.74	498.36 N	3506.63 W	3521.02	1.09
9929.00	92.02	270.35	5871.10	498.48 N	3600.59 W	3614.94	1.06
10024.00	91.53	269.54	5868.16	498.39 N	3695.54 W	3709.84	1.00
10118.00	91.72	270.02	5865.49	498.03 N	3789.51 W	3803.74	0.55
10213.00	90.76	269.00	5863.44	497.21 N	3884.48 W	3898.63	1.47
10307.00	90.91	268.57	5862.07	495.22 N	3978.45 W	3992.49	0.48
10402.00	90.45	268.00	5860.94	492.38 N	4073.40 W	4087.29	0.77
10497.00	88.32	267.32	5861.96	488.50 N	4168.31 W	4182.03	2.35
10591.00	87.98	267.43	5865.00	484.20 N	4262.16 W	4275.69	0.38
10686.00	88.85	267.50	5867.62	480.00 N	4357.03 W	4370.37	0.92
10780.00	90.17	268.17	5868.43	476.45 N	4450.95 W	4464.13	1.57
10875.00	90.69	268.72	5867.71	473.87 N	4545.92 W	4558.96	0.80
10970.00	90.08	267.73	5867.08	470.93 N	4640.87 W	4653.76	1.22
11064.00	91.62	268.80	5865.68	468.08 N	4734.81 W	4747.56	1.99
11159.00	92.97	270.33	5861.88	467.36 N	4829.73 W	4842.40	2.15
11253.00	89.77	268.69	5859.63	466.55 N	4923.68 W	4936.28	3.82
11348.00	91.47	269.07	5858.60	464.70 N	5018.65 W	5031.14	1.83
11442.00	92.02	268.64	5855.74	462.82 N	5112.59 W	5124.97	0.74
11537.00	92.23	267.45	5852.22	459.58 N	5207.47 W	5219.69	1.27
11631.00	91.47	266.44	5849.18	454.57 N	5301.28 W	5313.29	1.34
11726.00	90.33	267.04	5847.69	449.17 N	5396.11 W	5407.90	1.36
11821.00	90.23	267.97	5847.23	445.04 N	5491.02 W	5502.62	0.98
11915.00	90.60	268.39	5846.55	442.05 N	5584.97 W	5596.42	0.60
12010.00	90.78	267.80	5845.40	438.89 N	5679.91 W	5691.21	0.65
12104.00	90.91	267.82	5844.02	435.30 N	5773.83 W	5784.96	0.14
12293.00	90.76	268.20	5841.26	428.74 N	5962.70 W	5973.51	0.22
12388.00	90.60	267.60	5840.13	425.26 N	6057.63 W	6068.28	0.65
12483.00	91.09	267.97	5838.73	421.59 N	6152.55 W	6163.03	0.65
12577.00	91.22	267.56	5836.84	417.92 N	6246.46 W	6256.77	0.46
12672.00	90.42	267.54	5835.48	413.86 N	6341.36 W	6351.49	0.84
12766.00	90.23	267.71	5834.94	409.97 N	6435.28 W	6445.23	0.27
12861.00	89.95	266.73	5834.80	405.36 N	6530.16 W	6539.91	1.07
12956.00	90.48	267.26	5834.44	400.38 N	6625.03 W	6634.57	0.79
13051.00	90.08	267.01	5833.98	395.63 N	6719.91 W	6729.24	0.50
13145.00	90.33	268.68	5833.64	392.10 N	6813.84 W	6823.01	1.80
13240.00	90.17	268.78	5833.22	389.99 N	6908.82 W	6917.86	0.20
13334.00	90.63	269.07	5832.57	388.23 N	7002.80 W	7011.74	0.58
13429.00	90.73	268.51	5831.44	386.22 N	7097.77 W	7106.59	0.60
13524.00	90.57	268.14	5830.36	383.44 N	7192.72 W	7201.40	0.42
13618.00	90.39	268.06	5829.58	380.33 N	7286.67 W	7295.20	0.21
13713.00	89.86	266.90	5829.37	376.15 N	7381.57 W	7389.92	1.34
13807.00	89.49	266.66	5829.90	370.87 N	7475.42 W	7483.54	0.47
13901.00	89.59	267.24	5830.66	365.87 N	7569.29 W	7577.19	0.63
13996.00	89.40	267.00	5831.49	361.10 N	7664.16 W	7671.86	0.32
14090.00	89.86	268.37	5832.10	357.30 N	7758.08 W	7765.61	1.54
14185.00	90.04	268.28	5832.18	354.52 N	7853.04 W	7860.43	0.21
14280.00	90.63	268.45	5831.63	351.81 N	7948.00 W	7955.25	0.65
14374.00	91.03	268.23	5830.27	349.09 N	8041.95 W	8049.06	0.49
14469.00	89.43	270.04	5829.88	347.65 N	8136.93 W	8143.94	2.54
14563.00	89.34	269.82	5830.89	347.54 N	8230.93 W	8237.88	0.25
14657.00	89.43	269.60	5831.90	347.06 N	8324.92 W	8331.81	0.25

14752.00	90.39	269.83	5832.05	346.59 N	8419.92 W	8426.74	1.04
14846.00	90.69	269.58	5831.17	346.11 N	8513.91 W	8520.67	0.42
14941.00	91.09	269.56	5829.69	345.39 N	8608.90 W	8615.58	0.42
15035.00	91.37	269.42	5827.67	344.56 N	8702.87 W	8709.48	0.33
15130.00	91.74	269.33	5825.09	343.52 N	8797.83 W	8804.35	0.40
15225.00	90.04	269.13	5823.62	342.24 N	8892.81 W	8899.24	1.80
15319.00	90.11	269.38	5823.50	341.02 N	8986.80 W	8993.14	0.28
15414.00	89.83	268.81	5823.55	339.52 N	9081.79 W	9088.03	0.67
15509.00	89.61	269.63	5824.01	338.23 N	9176.78 W	9182.92	0.89
15603.00	89.18	269.42	5825.00	337.45 N	9270.77 W	9276.84	0.51
15698.00	89.99	269.82	5825.69	336.82 N	9365.76 W	9371.76	0.95
15793.00	91.31	270.03	5824.61	336.70 N	9460.75 W	9466.70	1.41
15887.00	91.56	269.57	5822.26	336.37 N	9554.72 W	9560.61	0.56
15982.00	91.71	269.66	5819.55	335.73 N	9649.68 W	9655.50	0.18
16076.00	91.65	269.51	5816.79	335.05 N	9743.64 W	9749.38	0.17
16176.00	91.58	269.38	5813.97	334.08 N	9843.59 W	9849.25	0.15
16240.00	91.58	269.38	5812.21	333.39 N	9907.57 W	9913.17	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 271.87 DEGREES (GRID)
A TOTAL CORRECTION OF 6.93 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED**

**HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.
HORIZONTAL DISPLACEMENT(CLOSURE) AT 16240.00 FEET
IS 9913.17 FEET ALONG 271.93 DEGREES (GRID)**

**Surveys from 0' to 1906' are Gyro surveys.
Surveys corrected by Surcon starting at 1983 ft.
Last survey is a projection to the bit at TD.**