

PCGC: Pressure Case Gamma
PCDC: Pressure Case Directional

[illegible]

WELL INFORMATION

MWD Run Number	100	200			
Date run completed	13-Jun-13	14-Jun-13			
Rig Bit Number	200	300			
Bit Size (in)	8.750	8.750			
Tool Nominal OD (in)	6.750	6.750			
Log Start Depth (TVD, ft)	789.99	5,926.58			
Log End Depth (TVD, ft)	5,926.58	6,666.58			
Drill or Wipe	Drill	Drill			
Drill/Wipe Start Date and Time	12-Jun-13 02:15	13-Jun-13 09:00			
Drill/Wipe End Date and Time	12-Jun-13 23:15	14-Jun-13 04:45			
Min Inc (deg) @ Depth (TVD, ft)	.03 @ 993.99	1.29 @ 5,982.57			
Max Inc (deg) @ Depth (TVD, ft)	15.86 @ 2,763.43	88.40 @ 6,666.58			
Bit TFA(in2) / Bit Type	.78 / PDC	.75 / PDC			
Flow Rate (gpm)	628.42	514.40			
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)	8.80 / 29.00	9.35 / 33.00			
Filtrate CL (ppm)	1,300.00	1,300.00			
pH / Fluid Loss (mptm)	10.60 / 0	9.50 / 7			
PV (cP) / YP (lbf2)	4 / 3.00	8 / 8.00			
% Solids / % Sand	2.7 / 0.25	5.50 / 0.40			
% 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 (deg F) @ C	170.00 / 320.00	170.70 / 320.00			

Max Tool Temp (degF) / Source	158.60 / PCM	172.78 / PCM			
Rm @ Max Tool Temp (degF)	N/A @ N/A	N/A @ N/A			
Lead MWD Engineer	Henry Schmeidler	Henry Schmeidler			
Customer Representative	Martin Suarez	Martin Suarez			

SENSOR INFORMATION

Downhole Processor Information

Tool Type	PCM	PCM			
Software Version	5.84	5.84			
Sub Serial Number	11341333	11341333			
Insert Serial Number	11400829	11400829			
Date and Time Initialized	11-Jun-13 16:51	11-Jun-13 16:51			
Date and Time Read	14-Jun-13 14:29	14-Jun-13 14:21			
ECMB SW Version	N/A	N/A			

Directional Sensor Information

Tool Type	PCDC	PCDC			
Distance From Bit (ft)	56.60	52.11			
Software Version	6.21	6.21			
Sub Serial Number	11341333	11341333			
Sonde Serial Number	11638536	11638536			
Sensor ID Number	N/A	N/A			
Toolface Offset (deg)	57.86	193.31			

Gamma Ray Sensor Information

Tool Type	PCG	PCG			
Distance From Bit (ft)	51.60	47.11			
Recorded Sample Period (sec)	10	10			
Software Version	8.15	8.15			
Sub Serial Number	11341333	11341333			
Insert/Sonde Serial Number	11293345	11293345			

REMARKS

1. All depths are calibrated to the driller's pipe tally and are measured from the Rig 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.
 - ROPA: Average Rate of Penetration is real time data.
 - PGRC: Smooth Pressure Case Gamma Ray Borehole corrected is recorded data.
4. The following smoothing parameters have been applied to the data:
 - All 2" (1:600) logs - 1 ft. interval, 3 ft. coercion distance.
 - All 5" (1:240) logs - .5 ft. interval, .6 ft. coercion distance.
5. INSITE version 7.4.20

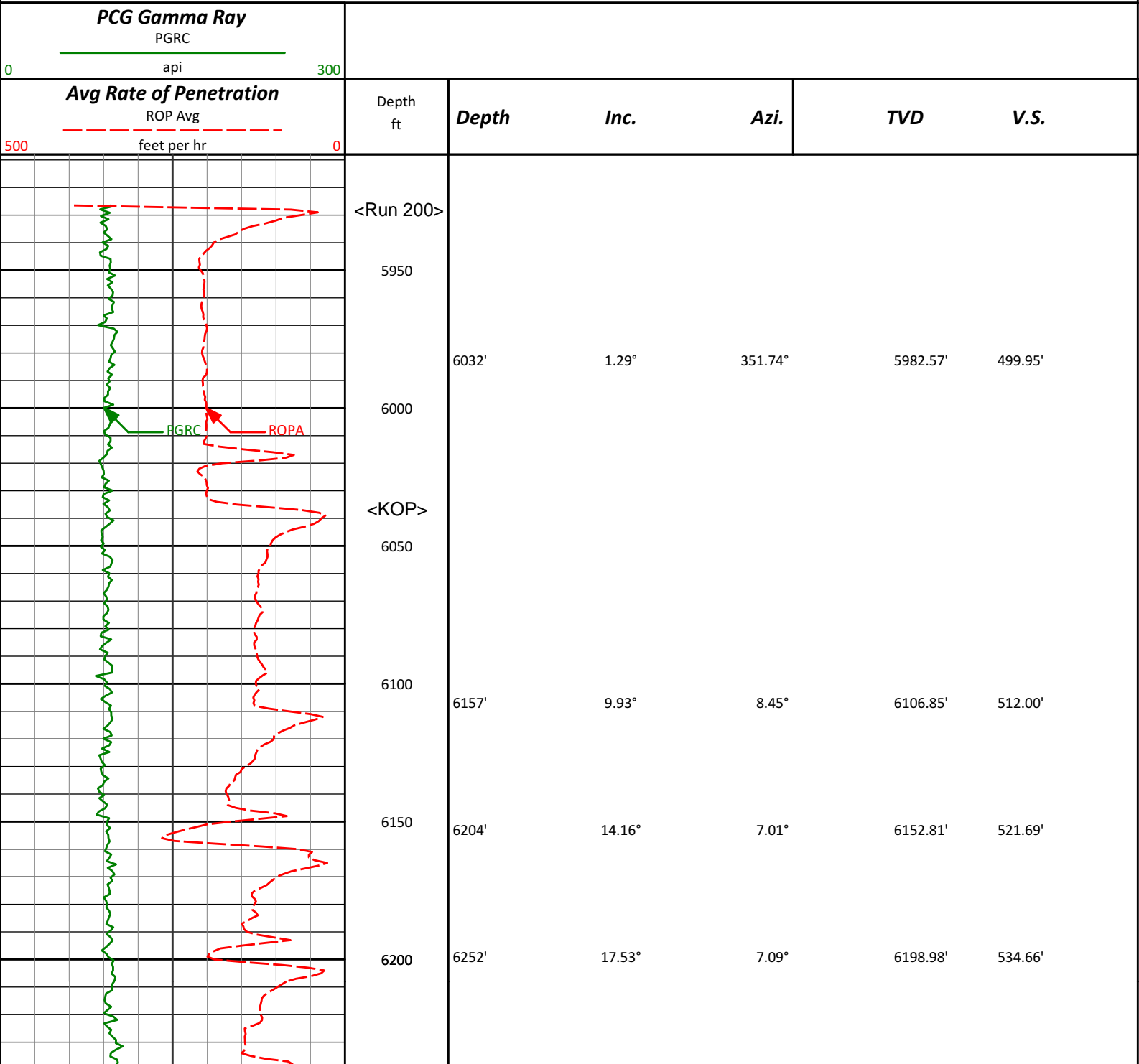
WARRANTY

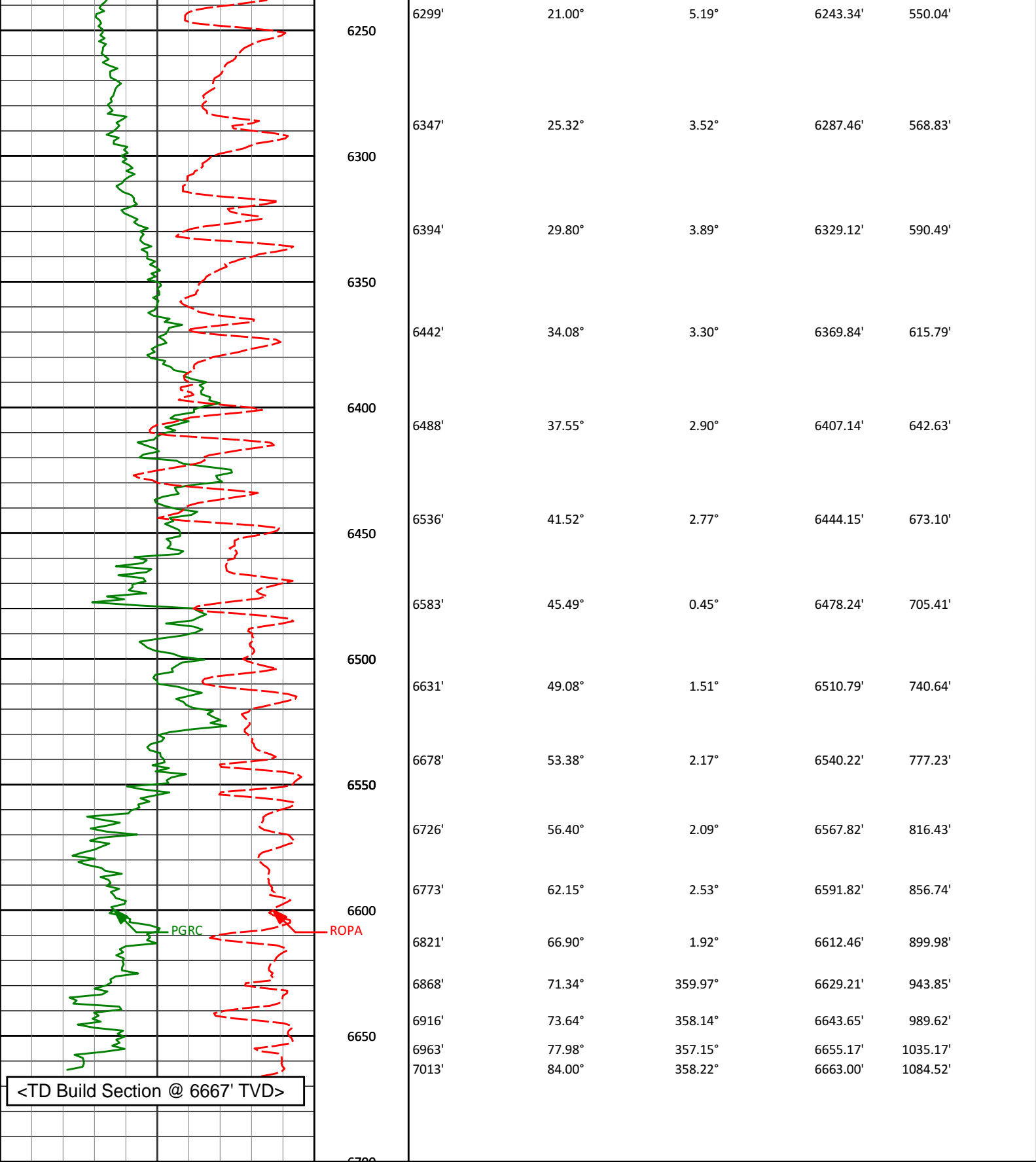
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HALLIBURTON
Sperry Drilling Services
TVD Detail Log 1:600

Noble Energy, Inc
Leeroy B11-79HNM
H&P 315
T5N R64W

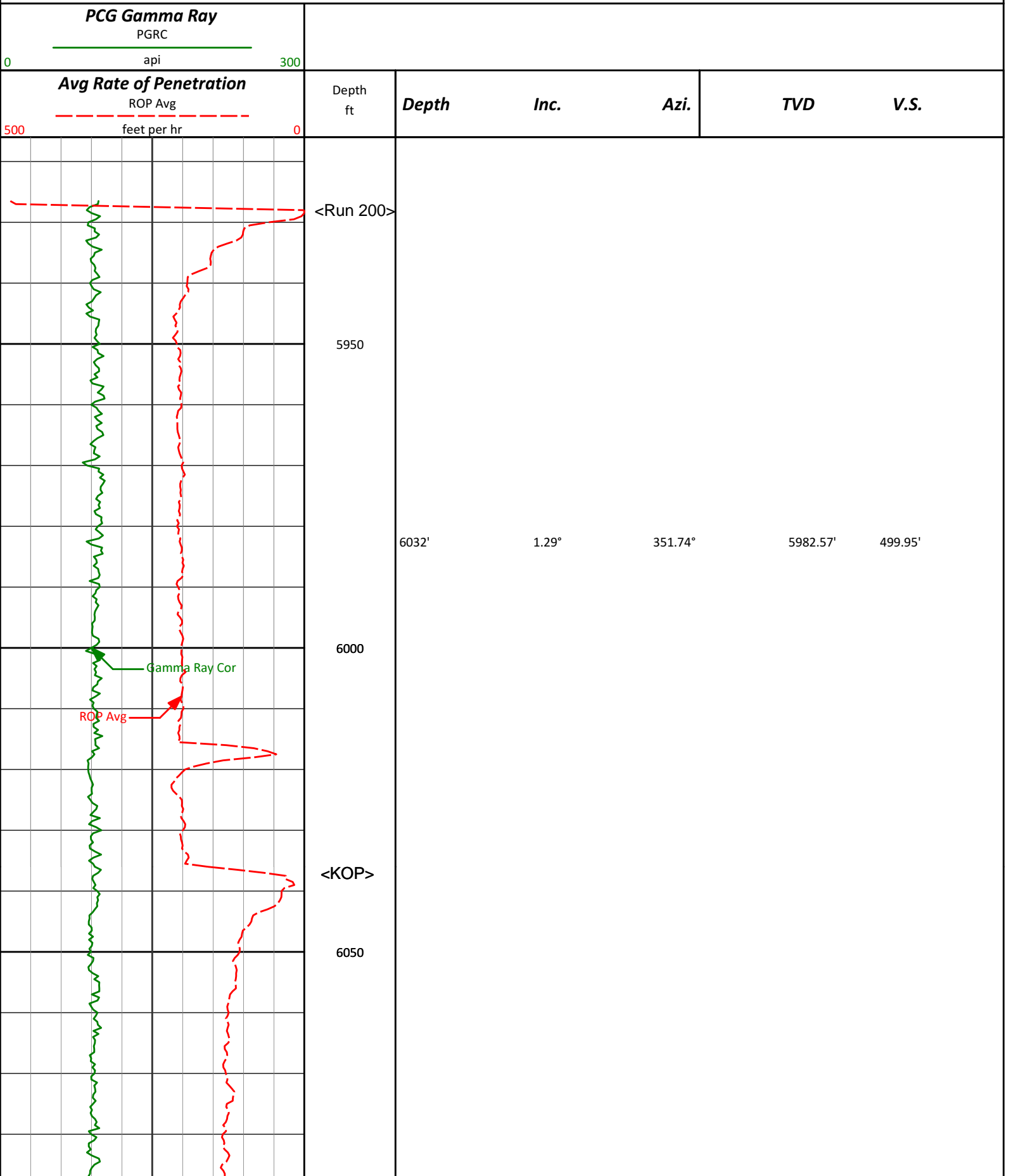


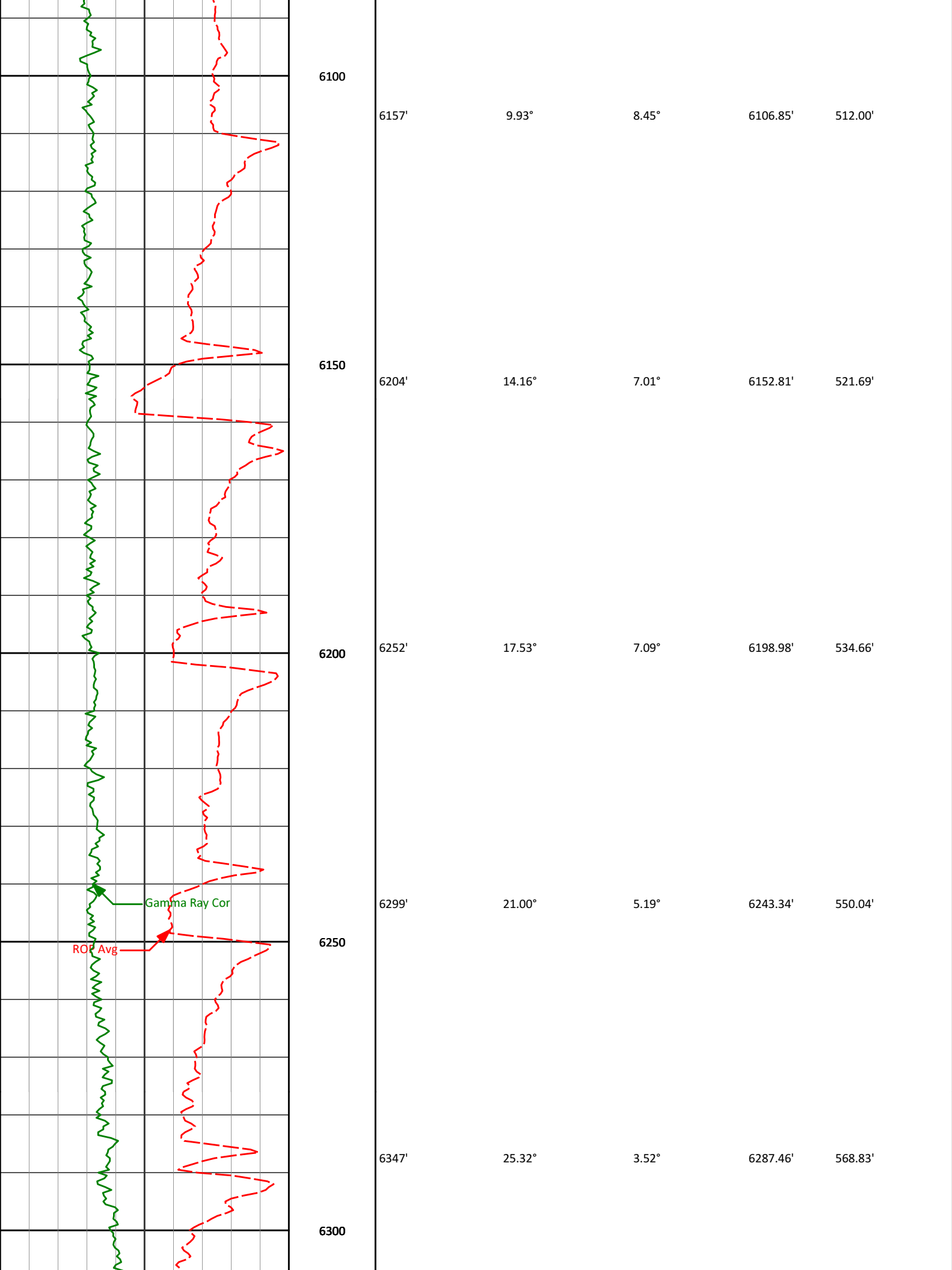


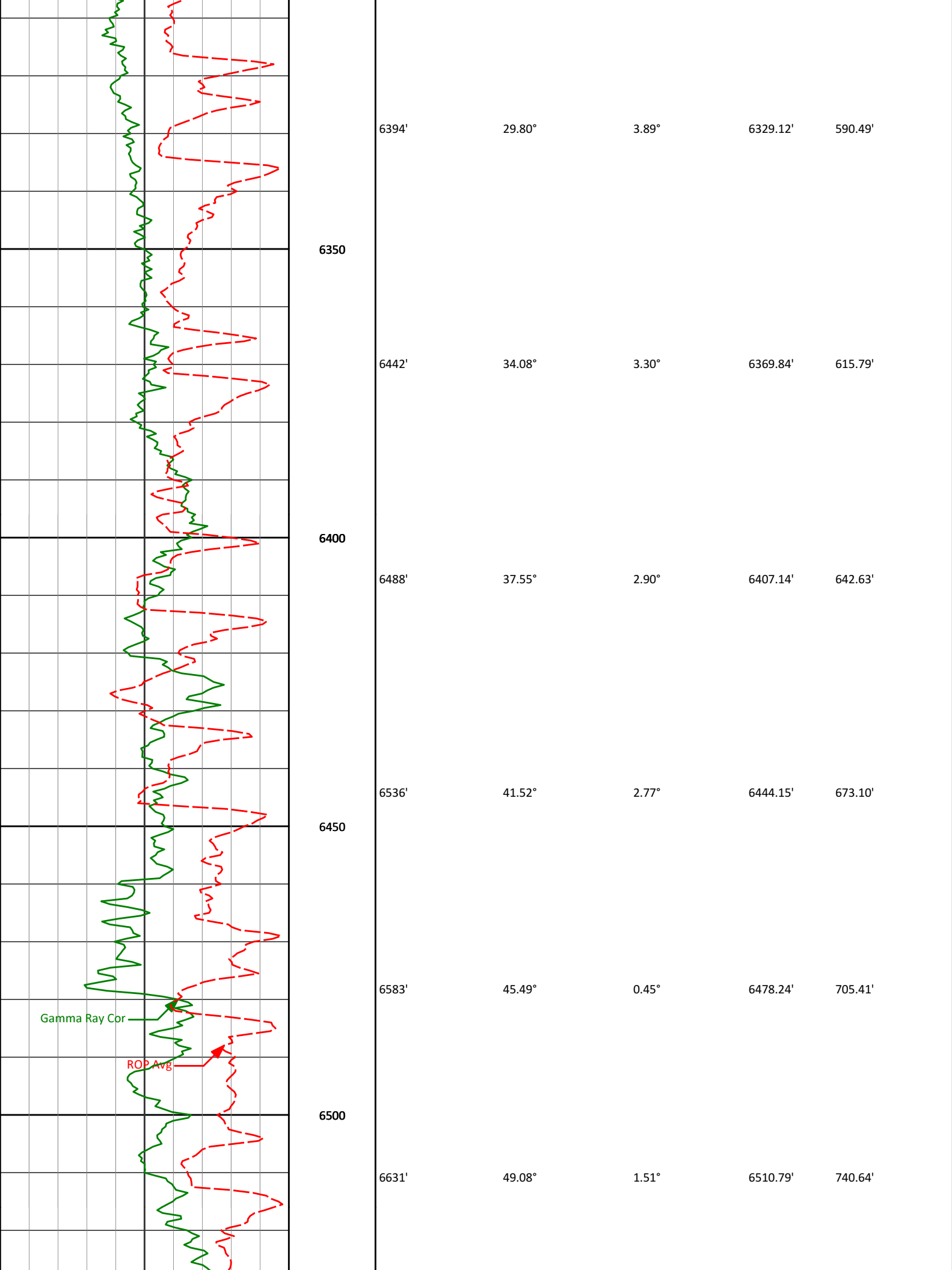
Avg Rate of Penetration <div> <div>ROP Avg</div> <div>feet per hr</div> </div> <div>5000</div>	Depth ft	Depth	Inc.	Azi.	TVD	V.S.
PCG Gamma Ray <div>PGRC</div> <div>api</div> <div>0</div> <div>300</div>						

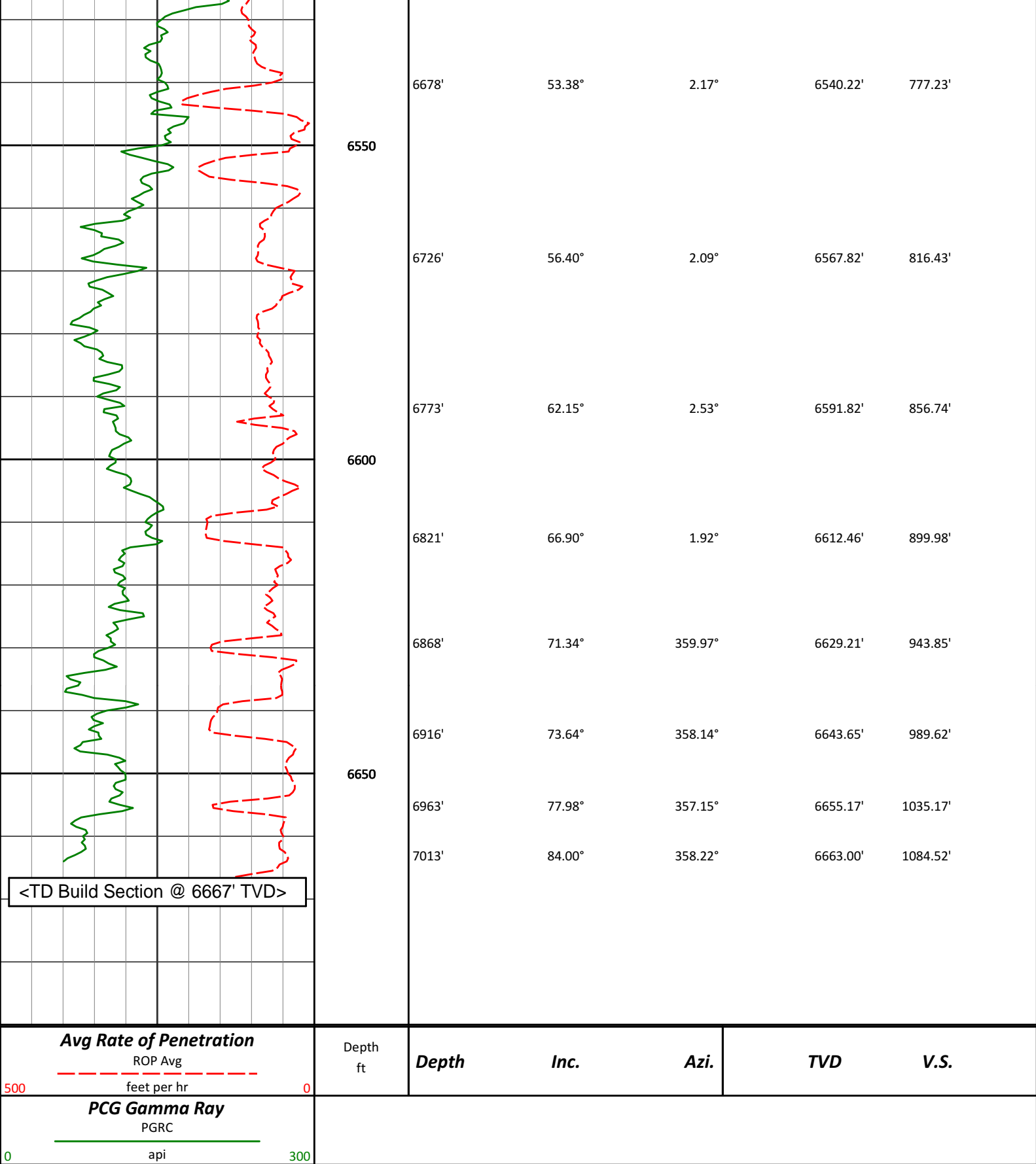
TVD Detail Log 1:240

Noble Energy, Inc
Leeroy B11-79HNM
H&P 315
T5N R64W









HALLIBURTON

DIRECTIONAL SURVEY REPORT

Noble Energy
Leeroy B11-79HNM
Wattenberg
Weld Colorado

Well Colorado
USA
CA-XX-0900481583
Surface surveys at 260 ft, 508 ft and 754 ft have had azimuths corrected to grid north, but were not taken by Halliburton.

Last survey is a projection from 7013 ft MD to TD at 7067 ft MD.

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
260.00	0.30	315.00	260.00	0.48 N	0.48 W	0.49	0.12
508.00	0.20	329.80	508.00	1.31 N	1.16 W	1.34	0.05
754.00	0.20	359.60	753.99	2.11 N	1.38 W	2.14	0.04
901.00	0.21	82.68	900.99	2.41 N	1.11 W	2.43	0.19
994.00	0.03	267.19	993.99	2.43 N	0.97 W	2.45	0.26
1086.00	0.25	239.87	1085.99	2.32 N	1.16 W	2.35	0.24
1178.00	0.54	302.39	1177.99	2.46 N	1.70 W	2.49	0.52
1270.00	1.05	278.71	1269.98	2.82 N	2.90 W	2.87	0.65
1362.00	1.39	277.53	1361.96	3.09 N	4.84 W	3.19	0.37
1457.00	1.25	288.71	1456.94	3.57 N	6.97 W	3.71	0.31
1552.00	1.23	319.38	1551.92	4.68 N	8.61 W	4.85	0.69
1647.00	4.76	340.15	1646.77	9.16 N	10.62 W	9.38	3.83
1742.00	6.39	343.57	1741.32	17.94 N	13.45 W	18.21	1.75
1837.00	8.74	345.72	1835.49	30.01 N	16.73 W	30.34	2.49
1932.00	10.74	342.30	1929.11	45.44 N	21.20 W	45.86	2.19
2027.00	9.83	341.60	2022.59	61.56 N	26.45 W	62.09	0.97
2122.00	12.30	343.74	2115.81	78.98 N	31.84 W	79.61	2.64
2217.00	10.64	342.32	2208.91	97.05 N	37.34 W	97.78	1.77
2312.00	13.30	339.43	2301.84	115.64 N	43.84 W	116.50	2.87
2407.00	13.30	340.18	2394.29	136.15 N	51.39 W	137.16	0.18
2501.00	11.12	338.48	2486.16	154.76 N	58.38 W	155.91	2.35
2596.00	11.71	344.99	2579.28	172.59 N	64.24 W	173.86	1.49
2691.00	14.63	347.35	2671.78	193.61 N	69.36 W	194.98	3.12
2786.00	15.86	347.43	2763.43	217.99 N	74.82 W	219.46	1.29
2881.00	13.70	349.87	2855.28	241.74 N	79.62 W	243.30	2.37
2976.00	14.23	349.25	2947.48	264.28 N	83.78 W	265.93	0.58
3071.00	13.44	349.48	3039.72	286.61 N	87.97 W	288.33	0.83
3166.00	11.44	351.10	3132.48	306.77 N	91.44 W	308.56	2.14
3261.00	10.09	342.65	3225.82	324.03 N	95.38 W	325.89	2.18
3356.00	10.70	348.14	3319.26	340.60 N	99.68 W	342.55	1.22
3451.00	10.61	349.60	3412.62	357.84 N	103.07 W	359.85	0.30
3546.00	9.38	354.07	3506.18	374.14 N	105.45 W	376.20	1.53
3641.00	9.78	341.00	3599.87	389.47 N	108.88 W	391.59	2.32
3736.00	11.43	342.14	3693.24	406.06 N	114.39 W	408.29	1.75
3831.00	10.87	343.36	3786.45	423.60 N	119.84 W	425.94	0.64
3926.00	9.74	338.85	3879.91	439.68 N	125.31 W	442.13	1.46
4020.00	8.09	331.67	3972.78	452.92 N	131.31 W	455.48	2.11
4115.00	7.08	334.66	4066.95	464.09 N	136.99 W	466.77	1.14
4210.00	5.56	338.91	4161.37	473.68 N	141.15 W	476.44	1.67
4305.00	3.79	2.29	4256.05	481.11 N	142.69 W	483.90	2.70
4400.00	1.55	53.08	4350.96	485.02 N	141.53 W	487.79	3.22
4495.00	1.34	81.71	4445.93	485.95 N	139.41 W	488.68	0.78
4780.00	1.65	280.24	4730.89	487.16 N	140.15 W	489.90	1.04
4875.00	1.98	281.14	4825.84	487.72 N	143.10 W	490.52	0.35
4970.00	2.10	279.61	4920.78	488.33 N	146.43 W	491.20	0.14
5065.00	2.16	253.87	5015.72	488.13 N	149.87 W	491.06	1.00
5160.00	1.18	260.87	5110.68	487.47 N	152.55 W	490.46	1.05
5444.00	0.85	310.49	5394.64	488.38 N	157.04 W	491.46	0.32
5729.00	0.91	356.97	5679.61	492.01 N	158.77 W	495.12	0.24
5919.00	0.83	19.07	5869.59	494.82 N	158.40 W	497.92	0.18
6032.00	1.29	351.74	5982.57	496.85 N	158.31 W	499.95	0.59
6157.00	9.93	8.45	6106.85	508.93 N	156.93 W	512.00	6.96
6204.00	14.16	7.01	6152.81	518.64 N	155.63 W	521.69	9.02
6252.00	17.53	7.09	6198.98	531.65 N	154.02 W	534.66	7.02
6299.00	21.00	5.19	6243.34	547.07 N	152.39 W	550.04	7.50
6347.00	25.32	3.52	6287.46	565.88 N	150.98 W	568.83	9.10
6394.00	29.80	3.89	6329.12	587.58 N	149.57 W	590.49	9.54
6442.00	34.08	3.30	6369.84	612.92 N	147.98 W	615.79	8.94
6488.00	37.55	2.90	6407.14	639.79 N	146.53 W	642.63	7.56
6536.00	41.52	2.77	6444.15	670.30 N	145.02 W	673.10	8.27
6583.00	45.49	0.45	6478.24	702.63 N	144.14 W	705.41	9.10

6631.00	49.08	1.51	6510.79	737.89 N	143.52 W	740.64	7.65
6678.00	53.38	2.17	6540.22	774.51 N	142.34 W	777.23	9.21
6726.00	56.40	2.09	6567.82	813.74 N	140.88 W	816.43	6.29
6773.00	62.15	2.53	6591.82	854.09 N	139.25 W	856.74	12.26
6821.00	66.90	1.92	6612.46	897.38 N	137.57 W	899.98	9.96
6868.00	71.34	359.97	6629.21	941.28 N	136.86 W	943.85	10.21
6916.00	73.64	358.14	6643.65	987.04 N	137.62 W	989.62	6.01
6963.00	77.98	357.15	6655.17	1032.56 N	139.50 W	1035.17	9.46
7013.00	84.00	358.22	6663.00	1081.87 N	141.49 W	1084.52	12.22
7067.00	88.40	358.50	6666.58	1135.72 N	143.03 W	1138.38	8.16

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 358.84 DEGREES (GRID)
 A TOTAL CORRECTION OF 7.90 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED
 HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.
 HORIZONTAL DISPLACEMENT(CLOSURE) AT 7067.00 FEET
 IS 1144.69 FEET ALONG 352.82 DEGREES (GRID)