



GAMMA RAY

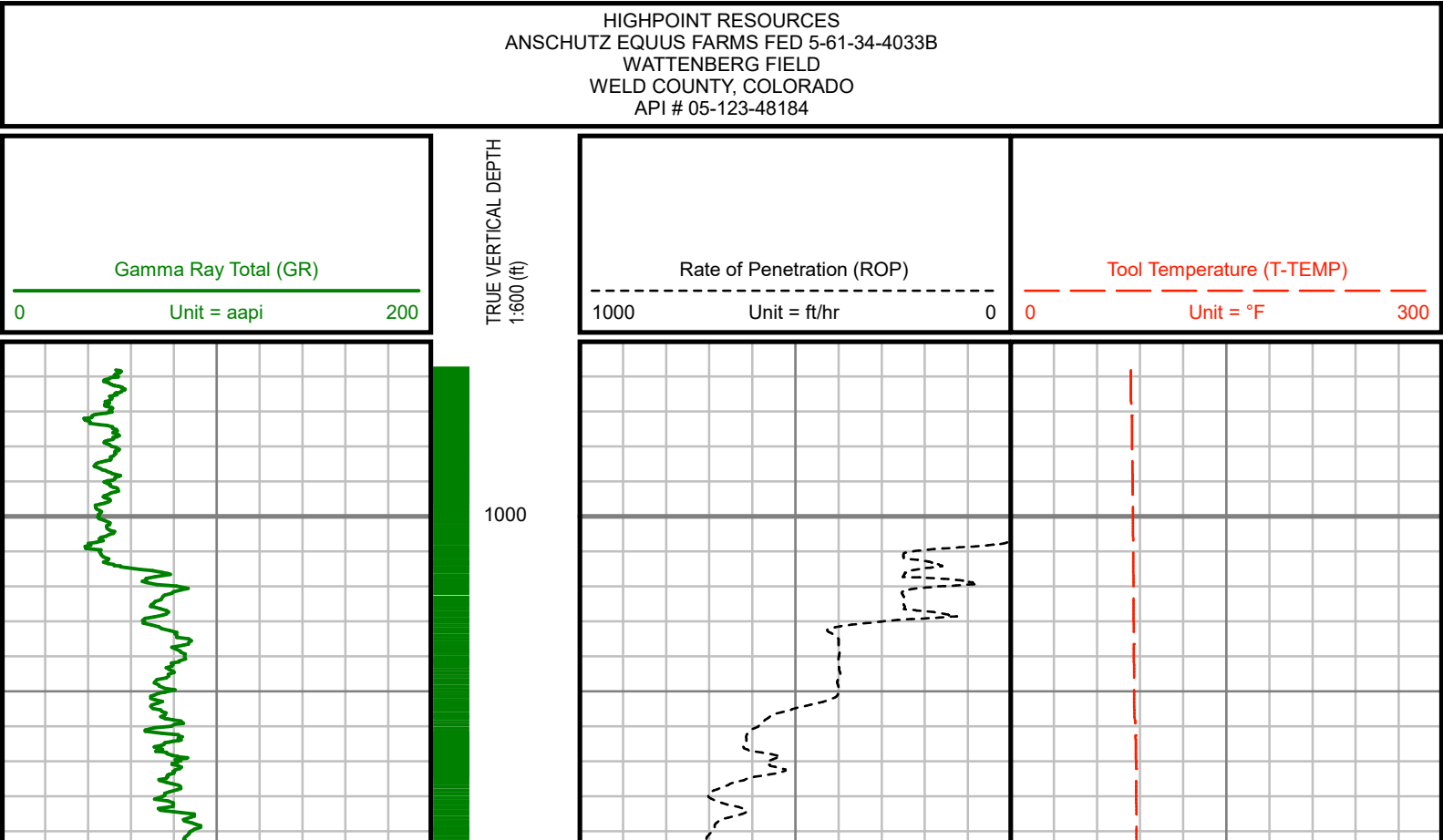
2" = 100' TVD

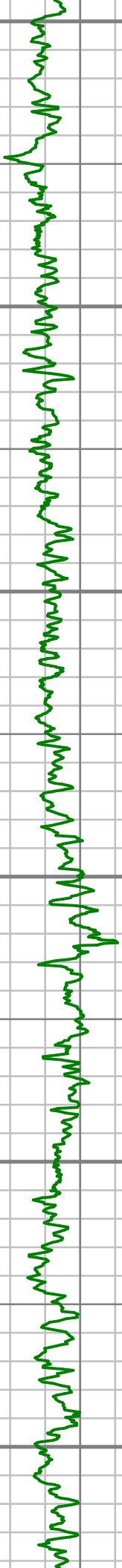
COMPANY : HIGHPOINT RESOURCES									
WELL : ANSCHUTZ EQUUS FARMS FED 5-61-34-4033B									
FIELD : WATTENBERG									
COUNTY : WELD									
STATE : COLORADO									
COUNTRY : U.S.A.									
UWI : 05-123-48184									
WELL LOCATION LAT:40°21'17.020"N LONG:104°11'11.790"W N:1374778.62 ft E:3366024.07 ft SEC:34 TWP:5N RANGE:61W									
DEPTH REF. : RKB REF. HEIGHT : 16.500 ft RKB to Ground Level GROUND LEVEL : 4479.600 ft G.L. to MEAN SEA LEVEL									
BOREHOLE RECORD					DEVIATION RECORD				
HOLE SIZE in	FROM ft	TO ft	INCLINATION deg	FROM ft	TO ft				
13.5	0	1010	0 - 20	0	2239				
8.75	1010	6278	20 - 0	2239	3648				
6.125	6278	15952	0 - 1	3648	5247				
			0	5247	5286				
			0 - 90	5286	6306				
			90 - +/-2	6306	15952				
CASING RECORD									
CASING SIZE in	FROM ft	TO ft							
9.625	0	1010							
7	0	6267							
DRILLING CO. : CADE RIG : 24						LMD UNIT NO. : KIT MDD PLDISTRICT: CASPER SPUD DATE: 01/15/2019 LMD START DATE: 03/07/2019 LMD END DATE: 03/16/2019			
						DEPTH : 1010 ft DEPTH : 03/16/2019			
						TOTAL DEPTH : 15952 ft			

Run Data						
RUN NUMBER	1	2				
START DATE	03/07/2019	03/11/2019				
START TIME	18:00	17:00				
END DATE	03/10/2019	03/16/2019				
END TIME	20:15	20:15				
DEPTH IN (ft)	1010	6278				
DEPTH OUT (ft)	6278	15952				
LOG TOP (ft)	1010	6222				
LOG BOTTOM (ft)	6222	15952				
HOLE SIZE (in)	8.75	6.125				
MUD DATA @ (ft)	6278	15952				
MUD TYPE	WATER-BASED	WATER-BASED				
DENSITY (lb / gal)	10	8.8				
VISCOSITY (s / qt)	39	40				
pH	-	-				
FLUID LOSS (cm3 / 30)	-	-				
SALINITY (mg/L)	-	-				
Rm (ohmm @ deg F)	-	-				
Rmf (ohmm @ deg F)	-	-				
MAX TEMP (deg F)	171	235				
Rm @ MAX TEMP (ohmm)	-	-				
LWD ENGINEER #1	M. BAILY	M. SMITH				
LWD ENGINEER #2	P. FLAVIUS	P. FLAVIUS				
LWD ENGINEER #3	-	-				
LOG WITNESS #1	A. ROWE	A. ROWE				
LOG WITNESS #2	-	-				

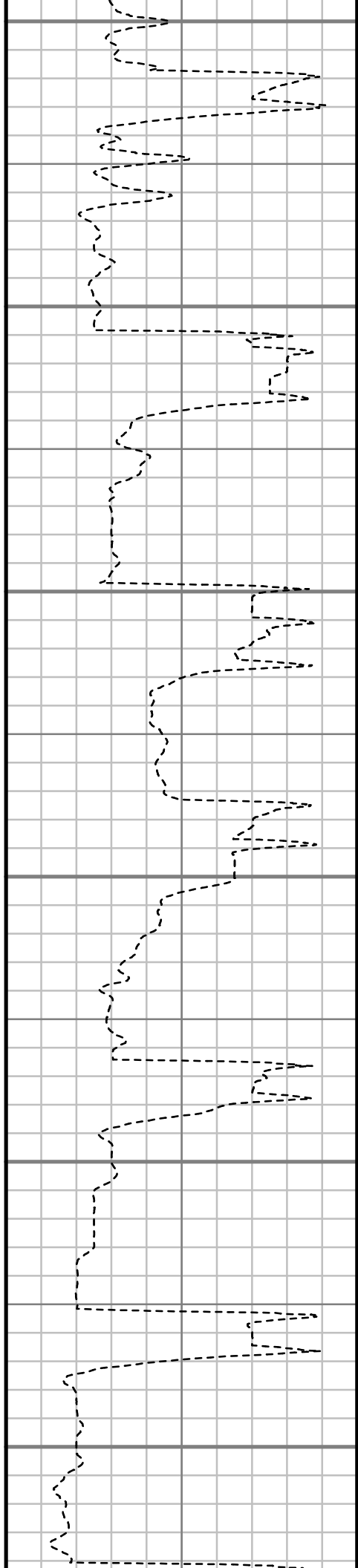
Remarks
HIGHPOINT RESOURCES AFE# 20405D
SCIENTIFIC DRILLING INTERNATIONAL JOB# OP.017064
ALL REFERENCES IN THE DEPTH TRACK ARE AT BIT DEPTH.
ALL DATA IS MEMORY DATA UNLESS STATED OTHERWISE.
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO GAMMA RAY TOTAL CURVE
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO RATE OF PENETRATION CURVE
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO TOOL TEMPERATURE CURVE
RUN #1: MWD / GAMMA RAY LOGGING RUN
SENSORS S/N: PULSER = 128-171 / CONT = 303 / MWD EYE = 1450 / GAMMA RAY = 1291
BIT TO SENSOR OFFSETS: SURVEY = 59.83 FT. / GAMMA RAY = 55.83 FT.
RUN #2: MWD / GAMMA RAY LOGGING RUN
SENSORS S/N: PULSER = 78-242 / CONT = 150 / MWD EYE = 1806 / GAMMA RAY = 1484
BIT TO SENSOR OFFSETS: SURVEY = 56.25 FT. / GAMMA RAY = 52.25 FT.
MNEMONICS LIST:
GR = GAMMA RAY TOTAL
ROP = RATE OF PENETRATION
T-TEMP = TOOL TEMPERATURE

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions as set out in our current price schedule.





1100
1200
1300
1400
1500
1600





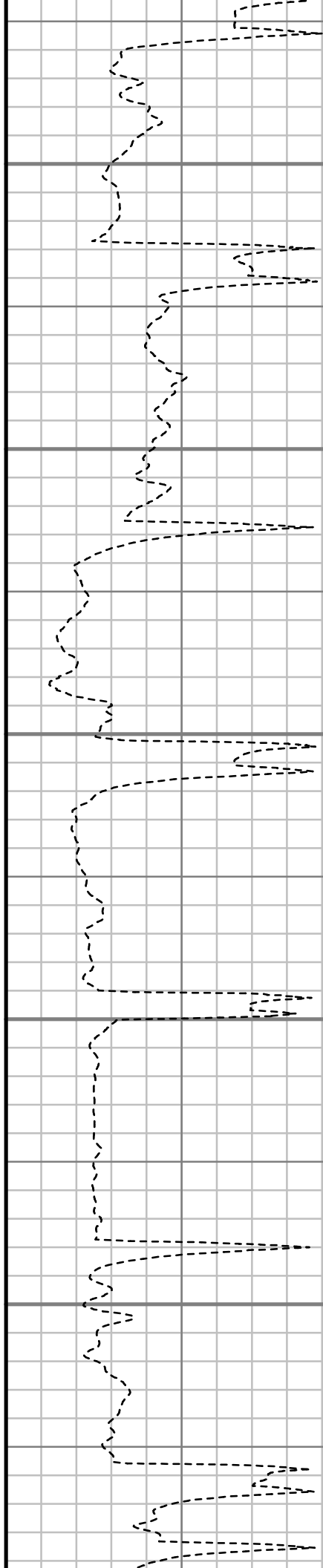
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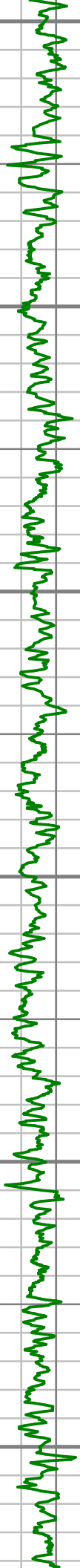
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2100





2200

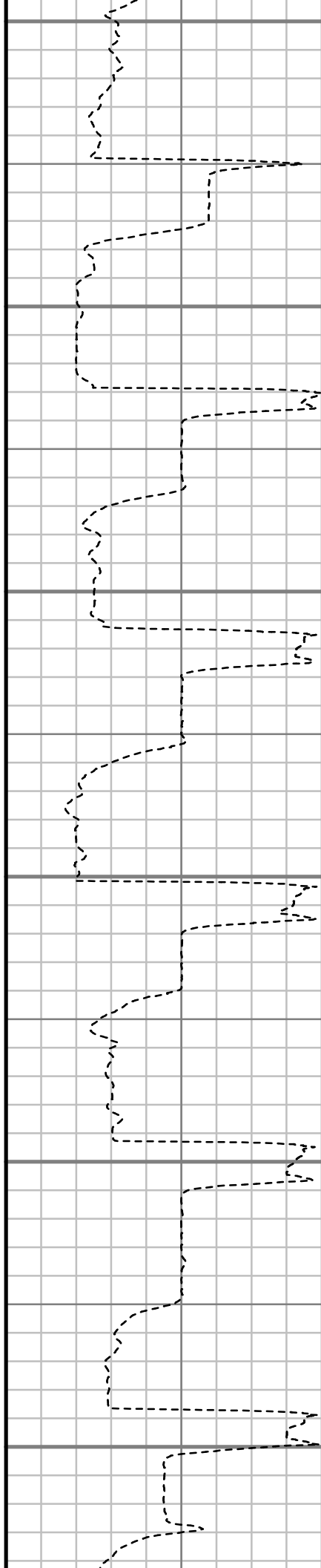
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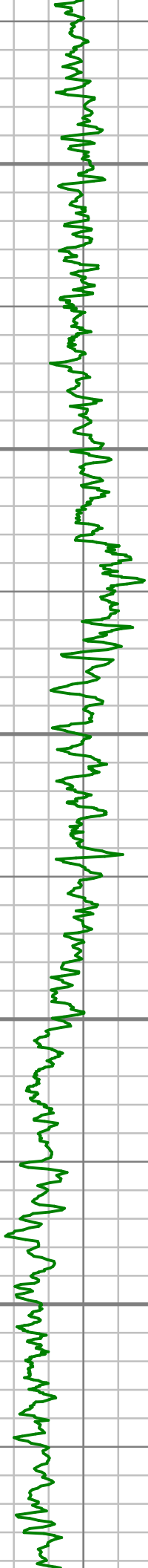
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2700





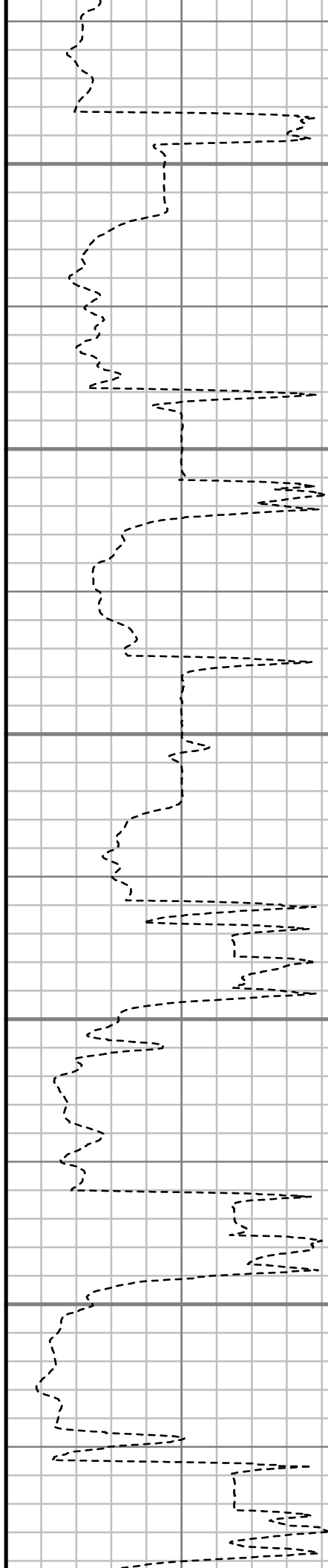
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2900

3000

3100

3200





3300

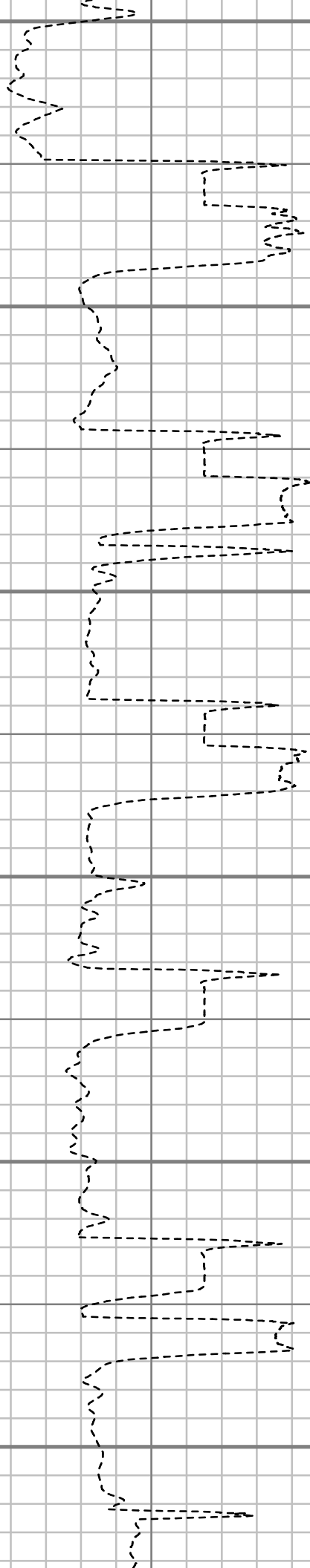
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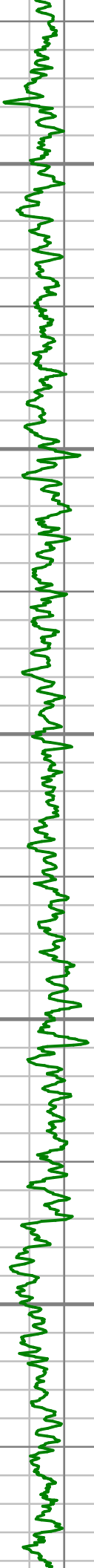
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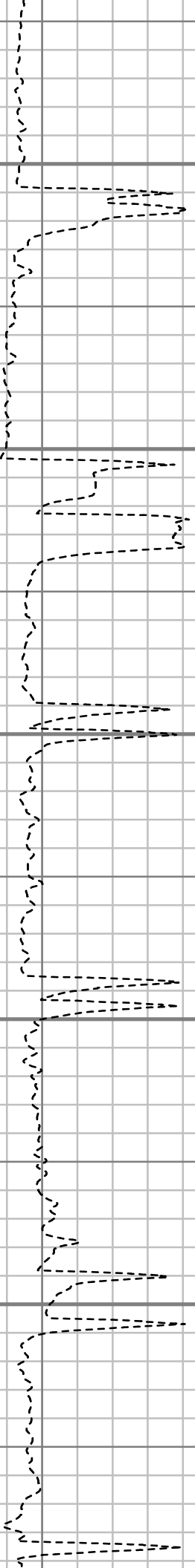
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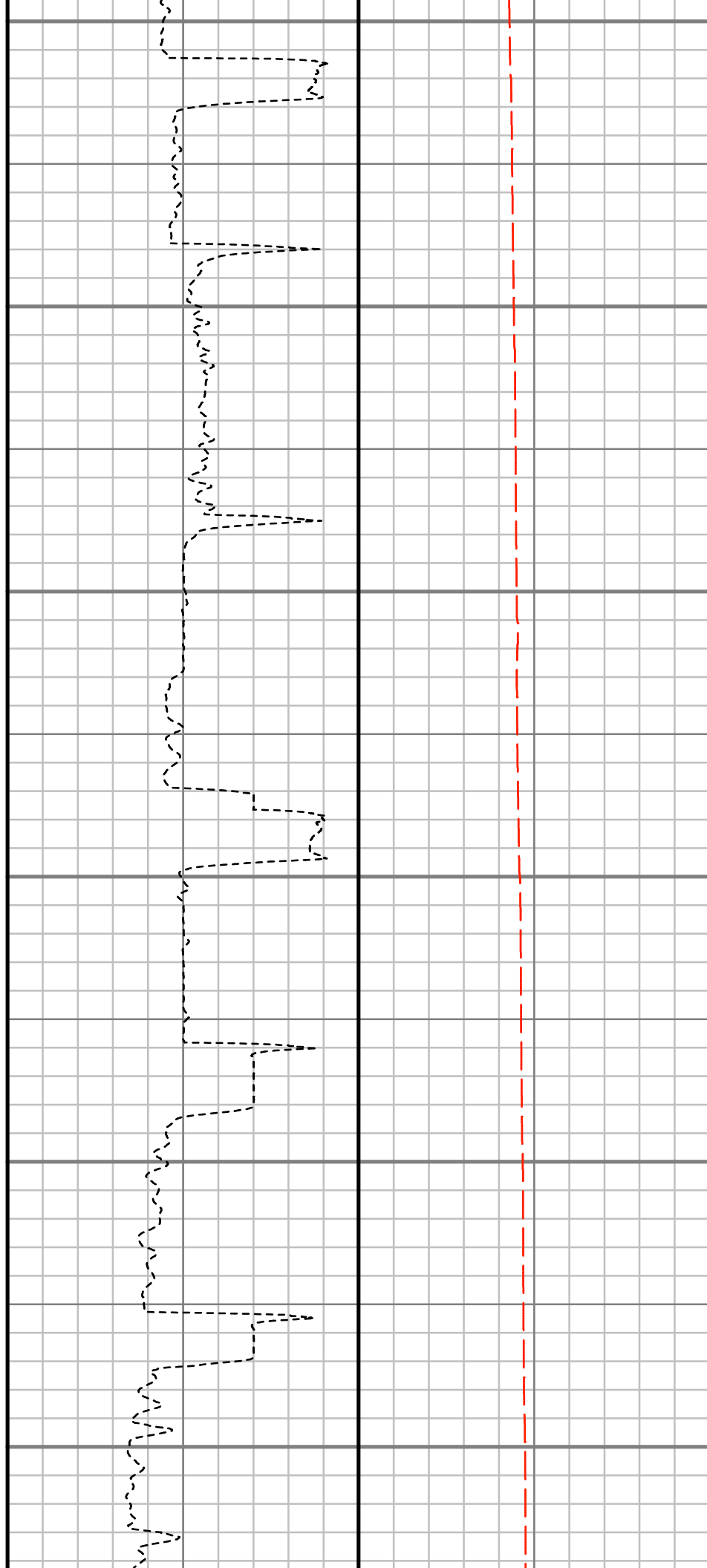
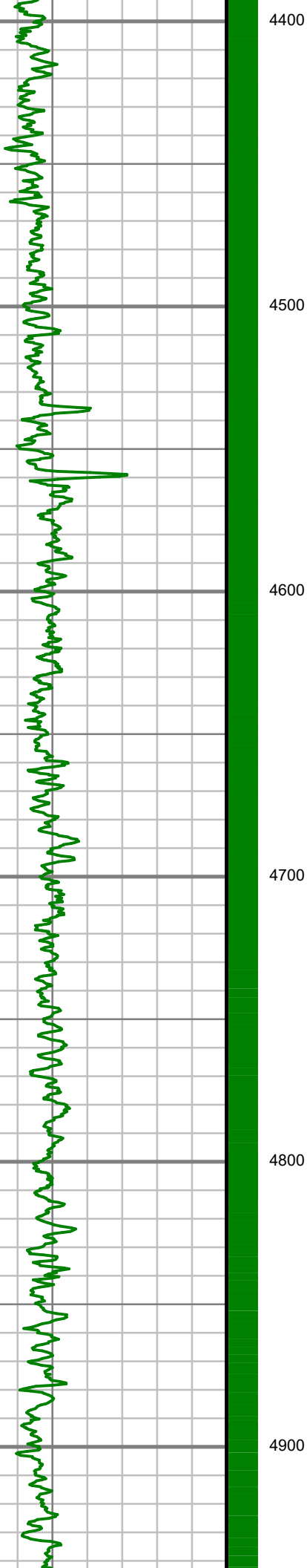
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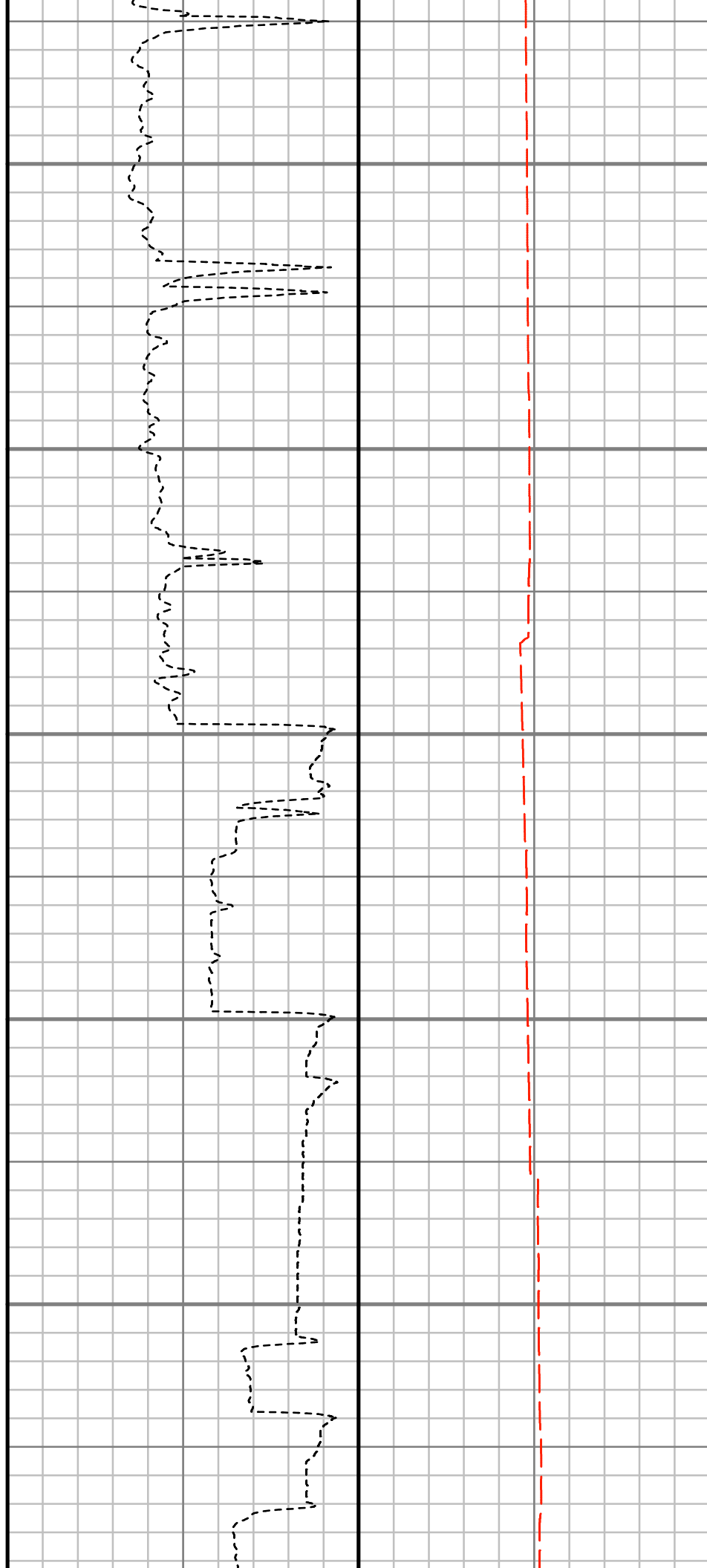
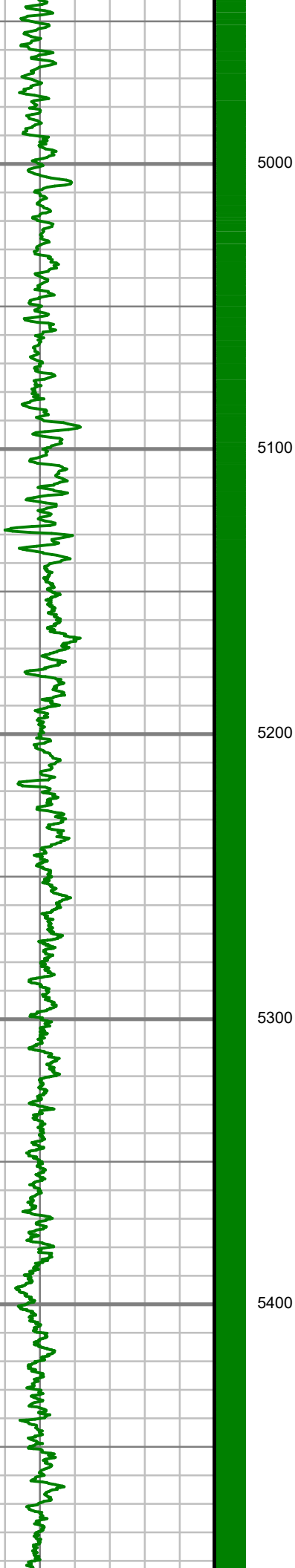
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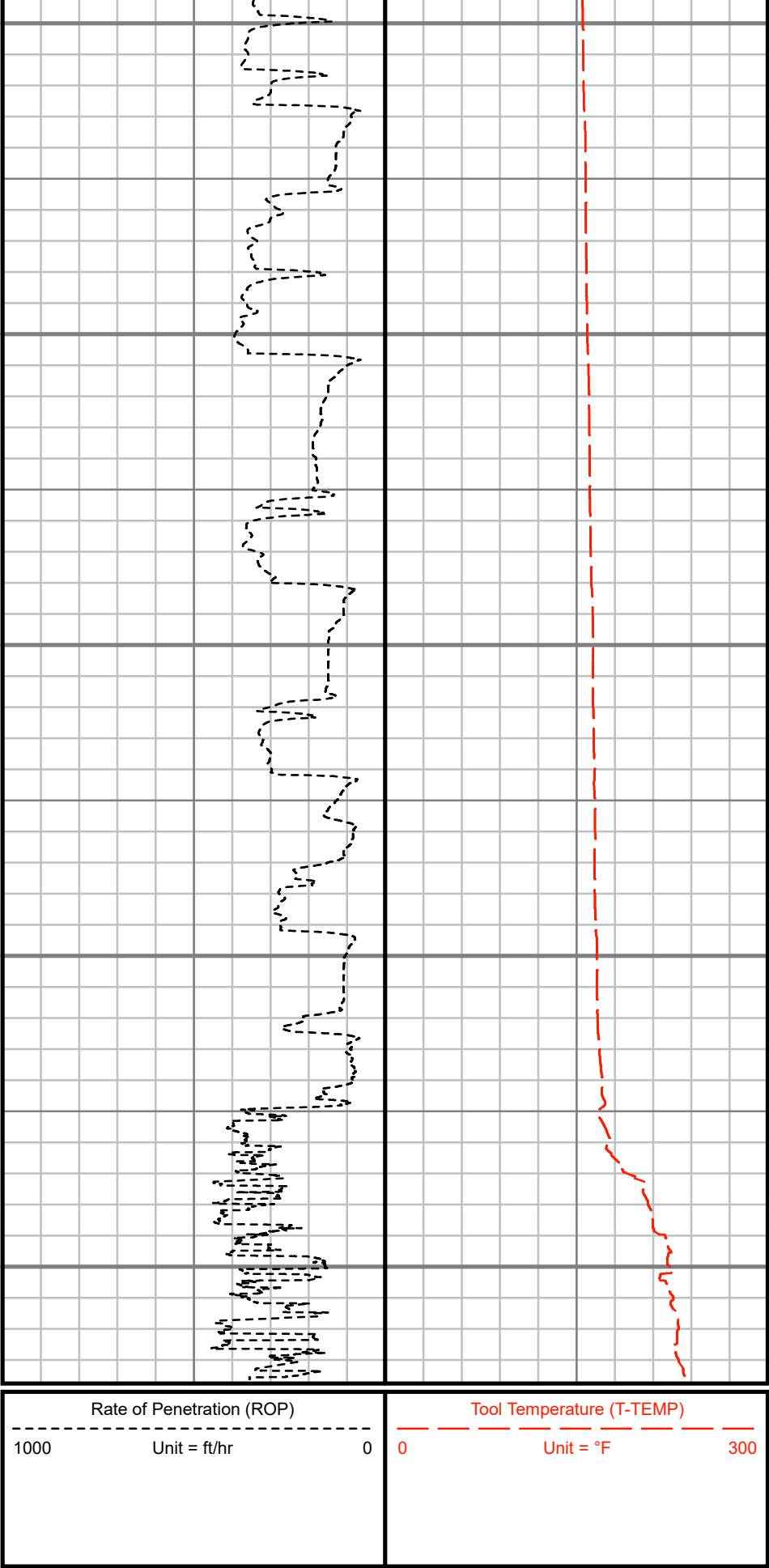
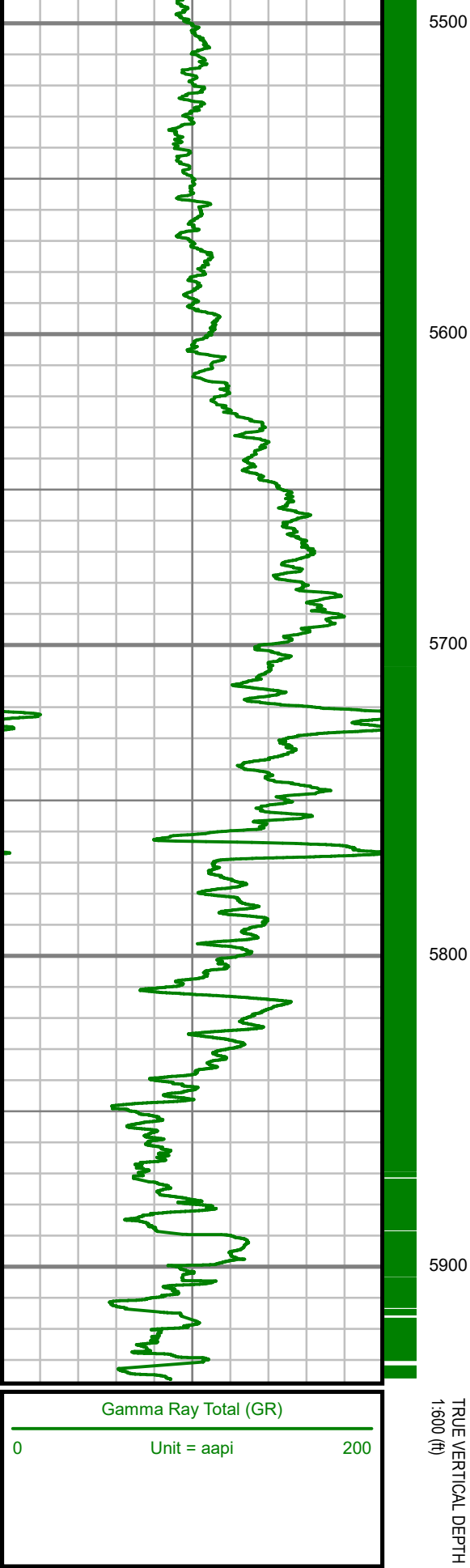
4200

4300









SURVEY REPORT

ANSCHUTZ EQUUS FARMS FED 5-61-34-4033B

COMPUTED SURVEYS

CUSTOMER HIGHPOINT RESOURCES
PROJECT ANSCHUTZ EQUUS FARMS FED
5-61-34-4033B
FIELD WATTENBERG

WELL INFORMATION

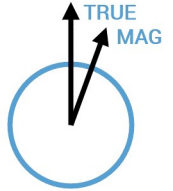
Lat/Long 40° 21' 17.02" N, 104° 11' 11.79" W
Northing 1,374,778.62 ft
Easting 3,366,024.07 ft
UWI 05-123-48184

MAP INFORMATION

North Reference True North
Grid Correction
System US State Plane 1983
Datum North American Datum 1983 (GRS 1980)
Map Zone Colorado North: 0501

VERTICAL SECTION REFERENCE

+N/-S 0 ft
+E/-W 0 ft
Proposal Direction 269.74°
Calculation Method Minimum Curvature



GEOMAGNETIC REFERENCE INFORMATION

Local Gravity: 999.110 mG [computed]

MD	MODEL	DATE	DECLINATION	MAG TO TRUE
961-15894 ft	HDGM2018	06 Mar 2019	8.10°	add 8.1°

WELL NOTES

OPERATORS

A. FARQUHAR, M. BAILY, M. SMITH, P. FLAVIUS

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
960.50	3.91	55.85	958.04	-41.33	29.34	41.20	Invalid
1059.00	3.71	51.61	1056.32	-46.63	33.21	46.48	0.35
1149.00	4.91	45.30	1146.07	-51.67	37.72	51.50	1.43
1241.00	6.98	41.80	1237.57	-58.22	44.66	58.02	2.28
1331.00	9.74	40.67	1326.60	-66.88	54.51	66.63	3.07
1422.00	11.83	40.40	1415.99	-77.99	67.45	77.69	2.30
1512.00	13.52	41.75	1503.80	-91.04	82.33	90.68	1.91
1603.00	15.31	43.83	1591.93	-106.52	98.93	106.08	2.04
1694.00	17.80	40.48	1679.15	-123.97	118.19	123.44	2.93
1784.00	19.82	37.53	1764.34	-142.30	140.75	141.67	2.47
1875.00	20.44	36.07	1849.78	-161.16	165.83	160.42	0.88
1966.00	20.81	39.88	1934.95	-180.99	191.08	180.14	1.53
2057.00	19.36	43.35	2020.42	-201.82	214.46	200.86	2.06
2148.00	19.94	41.88	2106.12	-222.64	236.98	221.58	0.83
2239.00	20.32	43.34	2191.56	-243.94	260.02	242.78	0.69
2330.00	20.54	42.56	2276.84	-265.69	283.27	264.42	0.38
2424.00	20.19	38.59	2364.97	-287.07	308.09	285.69	1.52
2518.00	18.33	35.85	2453.71	-305.96	332.75	304.47	2.20
2612.00	15.89	35.68	2543.54	-322.22	355.18	320.63	2.60
2706.00	13.77	41.09	2634.41	-337.17	374.07	335.49	2.69

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
2801.00	11.69	43.13	2727.07	-351.25	389.62	349.51	2.24
2895.00	9.71	44.78	2819.43	-363.40	402.20	361.60	2.13
2989.00	9.58	42.79	2912.10	-374.35	413.56	372.50	0.38
3083.00	9.69	44.46	3004.78	-385.25	424.94	383.35	0.32
3178.00	7.85	49.16	3098.66	-395.80	434.89	393.85	2.07
3272.00	6.69	55.21	3191.91	-405.19	442.21	403.21	1.47
3365.00	6.31	56.43	3284.31	-413.92	448.13	411.92	0.44
3460.00	4.19	66.50	3378.91	-421.48	452.40	419.45	2.42
3554.00	2.08	84.24	3472.76	-426.33	453.95	424.30	2.44
3648.00	0.62	106.50	3566.73	-428.52	453.97	426.49	1.62
3741.00	1.52	122.80	3659.72	-430.04	453.16	428.01	1.00
3835.00	0.52	51.39	3753.70	-431.42	452.75	429.39	1.53
3930.00	1.14	16.24	3848.69	-432.02	453.93	429.99	0.81
4023.00	1.52	21.83	3941.67	-432.75	455.96	430.71	0.43
4117.00	0.85	22.83	4035.65	-433.49	457.75	431.44	0.72
4211.00	0.30	120.25	4129.64	-433.98	458.27	431.92	1.00
4305.00	0.64	58.85	4223.64	-434.64	458.42	432.59	0.60
4399.00	1.32	43.73	4317.63	-435.85	459.47	433.79	0.77
4493.00	1.06	4.76	4411.61	-436.68	461.12	434.61	0.88
4588.00	1.29	338.99	4506.59	-436.37	462.99	434.30	0.60

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
4682.00	1.52	343.60	4600.56	-435.65	465.17	433.57	0.27
4776.00	0.58	202.60	4694.55	-435.12	465.92	433.03	2.14
4870.00	0.71	171.53	4788.55	-435.02	464.90	432.94	0.39
4964.00	0.66	211.03	4882.54	-434.82	463.86	432.74	0.50
5058.00	1.25	223.25	4976.53	-433.84	462.66	431.76	0.66
5152.00	0.66	238.63	5070.51	-432.67	461.63	430.60	0.68
5247.00	0.54	249.12	5165.51	-431.78	461.18	429.72	0.17
5342.00	4.30	254.23	5260.41	-427.93	460.06	425.87	3.96
5437.00	13.06	279.05	5354.25	-413.87	460.78	411.81	9.82
5531.00	24.53	278.38	5443.09	-384.00	465.30	381.91	12.20
5625.00	29.03	273.82	5527.00	-341.93	469.67	339.83	5.26
5719.00	33.86	272.67	5607.17	-293.00	472.41	290.88	5.17
5814.00	44.21	269.05	5680.88	-233.28	473.09	231.16	11.15
5907.00	54.24	265.93	5741.54	-163.02	469.87	160.92	11.09
6001.00	60.89	266.76	5791.93	-83.87	464.84	81.78	7.11
6095.00	73.94	268.11	5827.95	2.66	461.01	-4.73	13.94
6189.00	84.97	268.33	5845.14	94.90	458.15	-96.96	11.74
6216.00	87.39	268.71	5846.94	121.83	457.45	-123.88	9.09
6306.00	90.57	267.87	5848.54	211.78	454.76	-213.82	3.65
6400.00	88.86	269.51	5849.00	305.75	452.61	-307.79	2.52

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS %/100ft
6493.00	89.87	271.18	5850.04	398.74	453.17	-400.77	2.10
6587.00	89.50	270.65	5850.56	492.72	454.67	-494.76	0.69
6680.00	88.59	269.86	5852.11	585.70	455.08	-587.74	1.29
6774.00	88.26	270.19	5854.70	679.66	455.12	-681.71	0.50
6868.00	88.39	269.30	5857.45	773.62	454.70	-775.67	0.96
6962.00	88.26	268.92	5860.20	867.57	453.24	-869.61	0.43
7055.00	89.23	269.16	5862.24	960.54	451.69	-962.58	1.08
7148.00	88.83	269.40	5863.82	1053.53	450.52	-1055.56	0.50
7242.00	89.60	269.88	5865.11	1147.52	449.93	-1149.54	0.97
7335.00	89.77	270.03	5865.63	1240.51	449.86	-1242.54	0.24
7429.00	88.89	270.13	5866.73	1334.50	449.99	-1336.54	0.93
7523.00	89.53	269.83	5868.02	1428.49	449.95	-1430.53	0.75
7617.00	89.63	270.62	5868.71	1522.49	450.32	-1524.52	0.86
7710.00	89.36	269.80	5869.53	1615.48	450.66	-1617.52	0.93
7804.00	91.21	270.97	5869.06	1709.47	451.29	-1711.51	2.33
7898.00	90.87	271.38	5867.35	1803.42	453.22	-1805.47	0.56
7993.00	90.64	270.12	5866.10	1898.40	454.47	-1900.45	1.35
8087.00	89.60	268.71	5865.91	1992.39	453.50	-1994.45	1.87
8180.00	89.56	268.51	5866.59	2085.37	451.25	-2087.42	0.21
8274.00	89.30	267.36	5867.53	2179.32	447.86	-2181.35	1.25

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS %/100ft
8368.00	89.09	270.48	5868.85	2273.29	446.10	-2275.31	3.32
8461.00	88.86	271.30	5870.51	2366.25	447.54	-2368.28	0.91
8555.00	89.90	269.47	5871.53	2460.24	448.17	-2462.27	2.24
8650.00	90.54	272.78	5871.16	2555.19	450.02	-2557.24	3.55
8726.00	90.17	271.49	5870.70	2631.12	452.85	-2633.18	1.76
8744.00	89.63	270.97	5870.73	2649.12	453.24	-2651.18	4.14
8838.00	89.93	269.75	5871.09	2743.11	453.83	-2745.17	1.34
8932.00	88.22	267.97	5872.60	2837.08	451.97	-2839.14	2.63
9026.00	88.76	267.29	5875.08	2930.98	448.08	-2933.02	0.92
9120.00	88.76	268.14	5877.11	3024.90	444.33	-3026.92	0.91
9214.00	88.52	268.03	5879.34	3118.83	441.20	-3120.85	0.28
9308.00	89.73	268.95	5880.77	3212.80	438.72	-3214.80	1.62
9403.00	89.70	268.53	5881.25	3307.78	436.64	-3309.77	0.44
9497.00	89.70	268.76	5881.74	3401.76	434.42	-3403.75	0.24
9590.00	88.89	268.96	5882.89	3494.75	432.57	-3496.72	0.89
9683.00	88.29	269.06	5885.17	3587.71	430.97	-3589.68	0.66
9777.00	88.86	269.35	5887.51	3681.68	429.66	-3683.64	0.68
9870.00	89.90	269.49	5888.51	3774.67	428.72	-3776.63	1.13
9963.00	89.97	269.45	5888.62	3867.67	427.86	-3869.62	0.08
10056.00	90.70	270.75	5888.08	3960.66	428.02	-3962.62	1.61

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS %/100ft
10149.00	89.77	269.81	5887.70	4053.65	428.47	-4055.62	1.43
10242.00	90.54	270.53	5887.45	4146.65	428.75	-4148.61	1.13
10335.00	89.87	269.37	5887.13	4239.65	428.67	-4241.61	1.44
10428.00	89.87	269.07	5887.34	4332.64	427.40	-4334.60	0.33
10522.00	89.87	268.03	5887.56	4426.62	425.02	-4428.57	1.10
10617.00	90.20	268.41	5887.51	4521.59	422.07	-4523.52	0.53
10707.00	89.13	268.10	5888.03	4611.55	419.33	-4613.48	1.24
10798.00	89.03	270.55	5889.50	4702.53	418.26	-4704.45	2.69
10889.00	89.06	270.10	5891.02	4793.51	418.78	-4795.44	0.50
10980.00	89.13	269.70	5892.46	4884.50	418.62	-4886.43	0.44
11071.00	89.73	269.78	5893.36	4975.50	418.21	-4977.42	0.67
11162.00	90.20	269.28	5893.41	5066.50	417.46	-5068.42	0.76
11253.00	89.46	269.25	5893.68	5157.49	416.28	-5159.41	0.81
11344.00	89.10	268.59	5894.82	5248.47	414.56	-5250.39	0.83
11435.00	89.40	266.47	5896.02	5339.39	410.65	-5341.29	2.35
11526.00	88.63	267.91	5897.59	5430.29	406.19	-5432.16	1.79
11616.00	88.79	269.55	5899.62	5520.25	404.20	-5522.12	1.84
11707.00	88.39	269.32	5901.85	5611.22	403.30	-5613.08	0.51
11798.00	89.70	271.77	5903.37	5702.19	404.17	-5704.06	3.06
11889.00	90.13	274.52	5903.50	5793.02	409.16	-5794.91	3.06

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS %/100ft
11979.00	88.93	271.99	5904.24	5882.84	414.27	-5884.75	3.11
12070.00	88.63	271.71	5906.19	5973.75	417.20	-5975.69	0.45
12161.00	89.53	270.90	5907.65	6064.71	419.28	-6066.65	1.33
12252.00	90.03	271.22	5908.00	6155.68	420.96	-6157.63	0.65
12342.00	89.93	270.83	5908.02	6245.66	422.58	-6247.62	0.44
12433.00	88.86	270.87	5908.98	6336.64	423.93	-6338.60	1.18
12524.00	88.42	271.47	5911.14	6427.58	425.79	-6429.56	0.82
12615.00	89.53	270.23	5912.76	6518.55	427.15	-6520.53	1.83
12706.00	89.73	270.54	5913.35	6609.54	427.76	-6611.52	0.41
12797.00	90.10	270.40	5913.48	6700.53	428.51	-6702.52	0.43
12887.00	90.97	270.79	5912.64	6790.52	429.45	-6792.51	1.06
12981.00	89.50	271.48	5912.25	6884.48	431.30	-6886.49	1.73
13075.00	89.70	269.04	5912.91	6978.47	431.73	-6980.48	2.60
13169.00	90.60	268.96	5912.66	7072.46	430.09	-7074.46	0.97
13263.00	89.10	268.83	5912.91	7166.45	428.28	-7168.44	1.61
13357.00	88.93	267.49	5914.53	7260.40	425.26	-7262.38	1.44
13451.00	89.70	270.27	5915.66	7354.37	423.42	-7356.34	3.07
13545.00	90.03	270.16	5915.88	7448.37	423.77	-7450.34	0.37
13639.00	90.34	269.84	5915.58	7542.36	423.77	-7544.34	0.47
13733.00	90.60	270.48	5914.81	7636.36	424.04	-7638.34	0.74

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
13828.00	88.86	269.10	5915.25	7731.35	423.69	-7733.33	2.34
13920.00	88.52	269.81	5917.36	7823.32	422.82	-7825.30	0.85
14013.00	88.02	269.10	5920.16	7916.28	421.93	-7918.25	0.93
14106.00	89.03	269.64	5922.56	8009.25	420.91	-8011.21	1.23
14199.00	87.95	269.28	5925.00	8102.21	420.03	-8104.18	1.22
14292.00	88.96	271.03	5927.51	8195.17	420.29	-8197.14	2.18
14385.00	89.73	271.12	5928.57	8288.14	422.03	-8290.11	0.83
14478.00	89.93	270.66	5928.84	8381.12	423.47	-8383.10	0.54
14571.00	89.90	271.51	5928.98	8474.09	425.23	-8476.09	0.92
14663.00	89.30	271.65	5929.62	8566.04	427.76	-8568.05	0.67
14755.00	90.00	269.91	5930.19	8658.02	429.01	-8660.03	2.04
14848.00	89.66	270.30	5930.46	8751.02	429.18	-8753.03	0.55
14941.00	90.60	269.15	5930.24	8844.02	428.73	-8846.03	1.59
15034.00	91.00	269.21	5928.94	8937.00	427.40	-8939.01	0.44
15127.00	89.70	267.76	5928.37	9029.97	424.94	-9031.97	2.09
15219.00	89.36	267.72	5929.12	9121.91	421.31	-9123.90	0.37
15312.00	88.96	268.65	5930.48	9214.87	418.36	-9216.84	1.09
15405.00	88.36	267.98	5932.66	9307.81	415.62	-9309.77	0.97
15498.00	89.36	270.06	5934.51	9400.78	414.03	-9402.73	2.49
15590.00	89.43	271.47	5935.48	9492.76	415.27	-9494.72	1.54

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
15684.00	89.83	272.81	5936.09	9586.67	418.78	-9588.65	1.48
15777.00	90.13	272.23	5936.11	9679.56	422.86	-9681.56	0.71
15871.00	90.27	271.67	5935.78	9773.49	426.06	-9775.50	0.61
15894.00	90.60	271.70	5935.61	9796.48	426.74	-9798.49	1.46

2" = 100' TVD