



GAMMA RAY

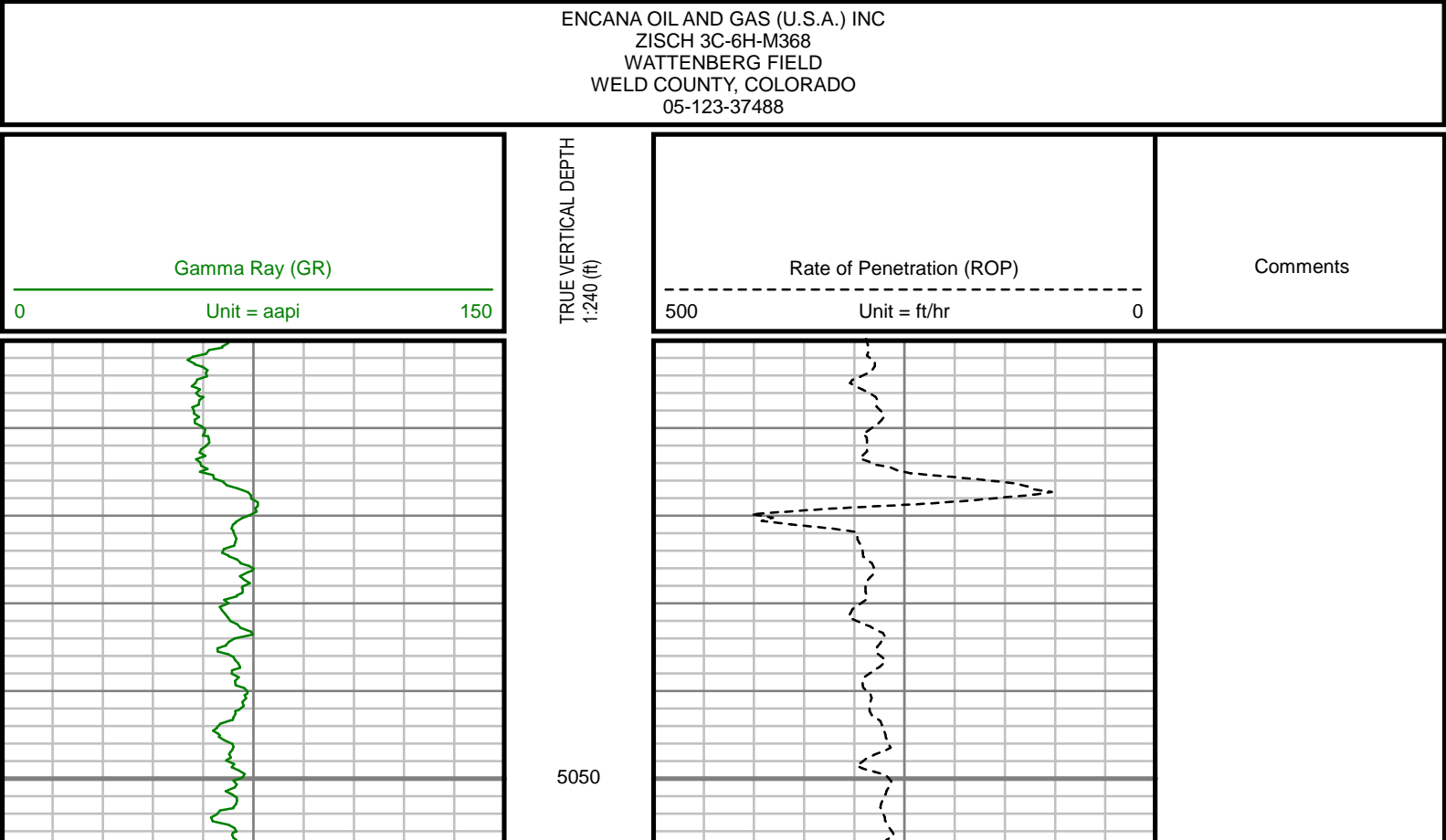
5" = 100' FEET TWD

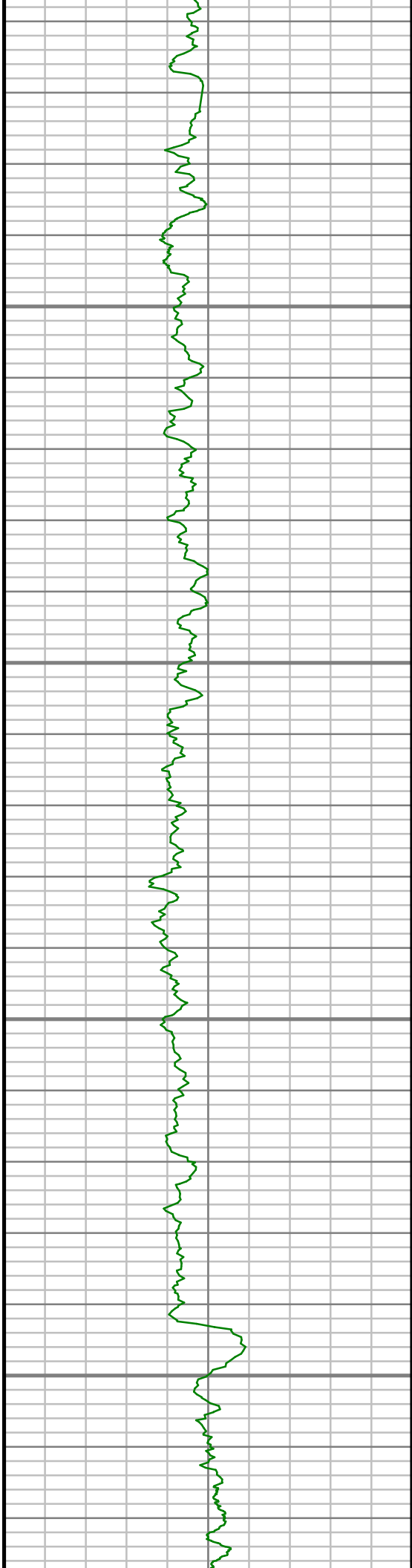
COMPANY : ENCANA OIL AND GAS (U.S.A.) INC						COMPANY : ENCANA OIL AND GAS (U.S.A.) INC					
WELL : ZISCH 3C-6H-M368						WELL : ZISCH 3C-6H-M368					
FIELD : WATTENBERG						FIELD : WATTENBERG					
COUNTY : WELD						COUNTY : WELD					
STATE : COLORADO						STATE : COLORADO					
COUNTRY : U.S.A.						COUNTRY : U.S.A.					
UWI : 05-123-37488						UWI : 05-123-37488					
DEPTH REF. : RKB						DEPTH REF. : RKB					
REF. HEIGHT : 13.000 ft						REF. HEIGHT : 13.000 ft					
GROUND LEVEL : 5163.000 ft						GROUND LEVEL : 5163.000 ft					
BOREHOLE RECORD						DEVIATION RECORD					
HOLE SIZE in	FROM ft	TO ft	INCLINATION deg	FROM ft	TO ft						
12.25	0	860	0 - 6	0	860						
8.75	860	7453	6 - 87	860	7453						
6.125	7453	11390	87 - 89	7453	11390						
CASING RECORD											
CASING SIZE in	FROM ft	TO ft									
9.625	0	842									
7	0	7438									
DRILLING CO.: ENSIGN						OTHER SERVICES					
RLG: 124						DIRECTIONAL					
LMD UNIT NO.: C70-EW4#8DISTRICT: CASPER						ROP					
SPUD DATE: 06/17/2014											
LMD START DATE: 06/22/2014											
LMD END DATE: 06/27/2014											
TOTAL DEPTH: 11390 ft											

Run Data						
RUN NUMBER	1	2	3			
START DATE	06/19/2014	06/20/2014	06/24/2014			
START TIME	0200	0800	1700			
END DATE	06/19/2014	06/23/2014	06/28/2014			
END TIME	1055	0700	0150			
DEPTH IN (ft)	96	860	7453			
DEPTH OUT (ft)	860	7453	11390			
LOG TOP (ft)	-	5000	7412			
LOG BOTTOM (ft)	-	7412	11390			
HOLE SIZE (in)	12.25	8.75	6.125			
MUD DATA @ (ft)	860	7453	11390			
MUD TYPE	WATER-BASED	WATER-BASED	WATER-BASED			
DENSITY (lb / gal)	9.8	10.4	10.8			
VISCOSITY (s / qt)	38	44	39			
pH	7.8	8.8	8.4			
FLUID LOSS (cm3 / 30)	-	-	-			
SALINITY (ppm)	-	-	-			
Rm (ohmm @ deg F)	-	-	-			
Rmf (ohmm @ deg F)	-	-	-			
MAX TEMP (deg F)	91	164	219			
Rm @ MAX TEMP (ohmm)	-	-	-			
LWD ENGINEER #1	M. SMITH	M. SMITH	M. SMITH			
LWD ENGINEER #2	J. SMITH	T. WHEELER	T. WHEELER			
LWD ENGINEER #3	-	-	-			
LOG WITNESS #1	D. HILDRETH	D. HILDRETH	D. HILDRETH			
LOG WITNESS #2	-	-	-			

Remarks
ENCANA OIL AND GAS (U.S.A.) INC PRODUCTION AFE# 13178945
SCIENTIFIC DRILLING INTERNATIONAL JOB# 164210
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 CURVE
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO RATE OF PENETRATION CURVE
RUN #1: MWD / DIRECTIONAL RUN
SENSORS S/N: CONT = 1011 / MWD EYE = 862
BIT TO SENSOR OFFSET: SURVEY = 59.08 FT.
RUN #2: MWD / GAMMA RAY / PROPAGATION RESISTIVITY LOGGING RUN
SENSORS S/N: PULSER = 128-328 / CONT = 831 / MWD EYE = 429 / PRT = 352 / GAMMA RAY = 1074
BIT TO SENSOR OFFSETS: SURVEY = 63.03 FT. / RESISTIVITY = 47.07 FT. / GAMMA RAY = 41.33 FT.
RUN #3: MWD / GAMMA RAY LOGGING RUN
SENSORS S/N: PULSER = 78-042 / CONT = 114 / MWD EYE = 862 / GAMMA RAY = 1035
BIT TO SENSOR OFFSETS: SURVEY = 67.09 FT. / GAMMA RAY = 53.11 FT.
MNEMONICS LIST:
GR = GAMMA RAY
ROP = RATE OF PENETRATION

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.



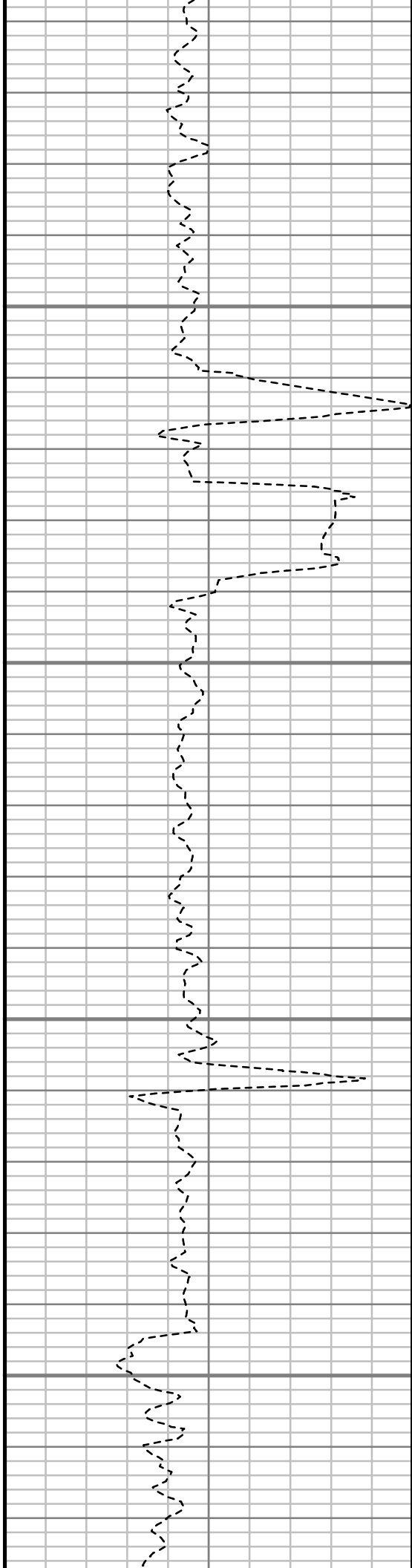


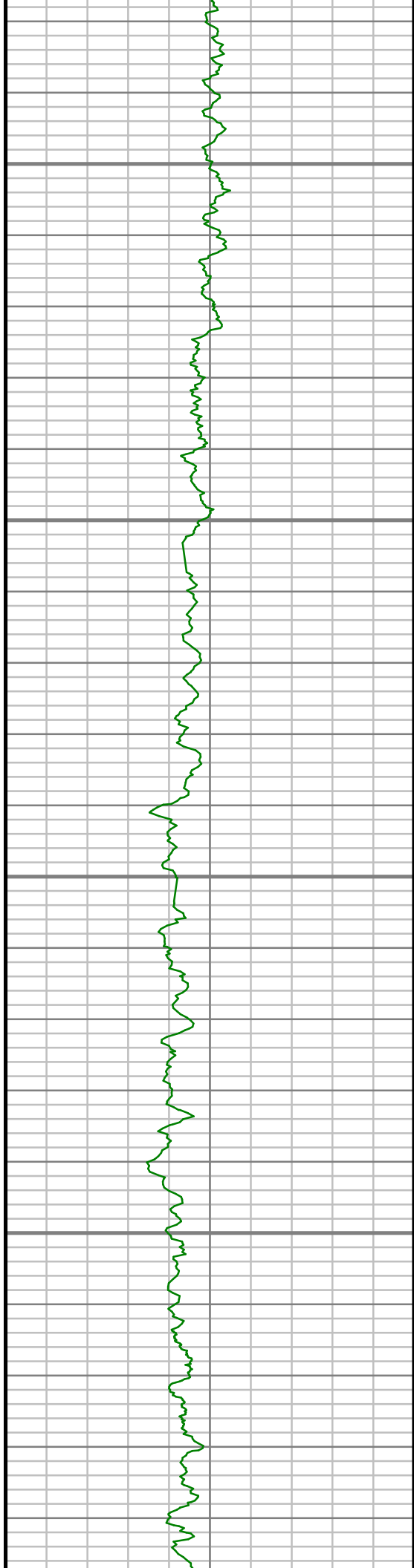
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5150

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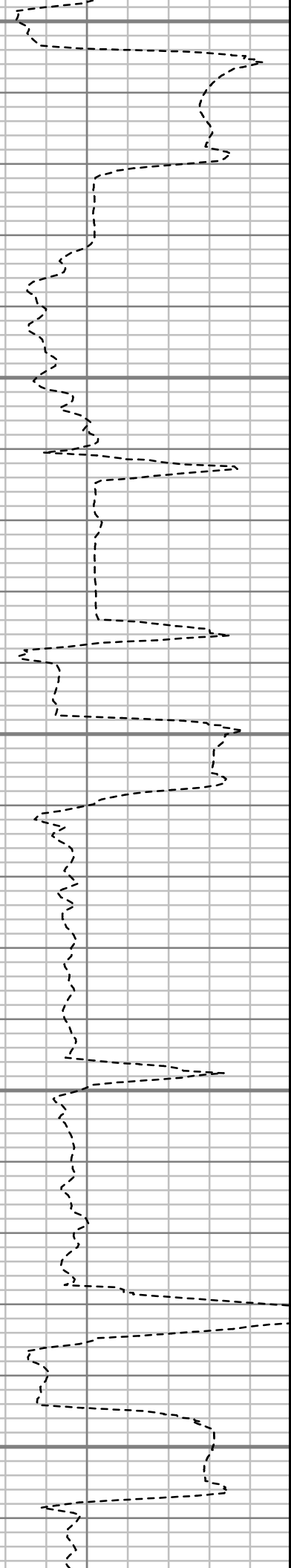
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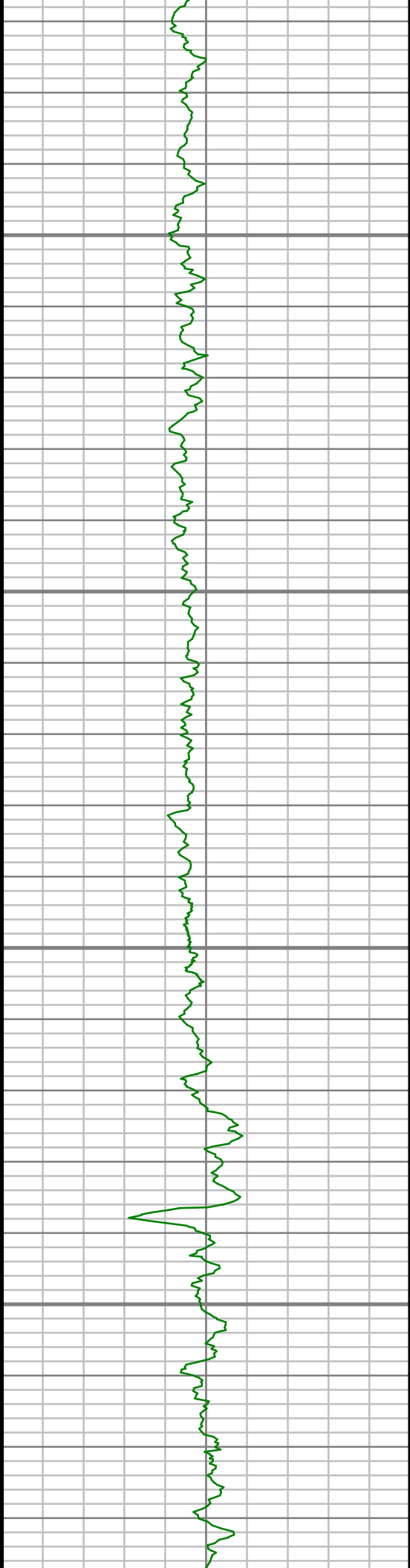
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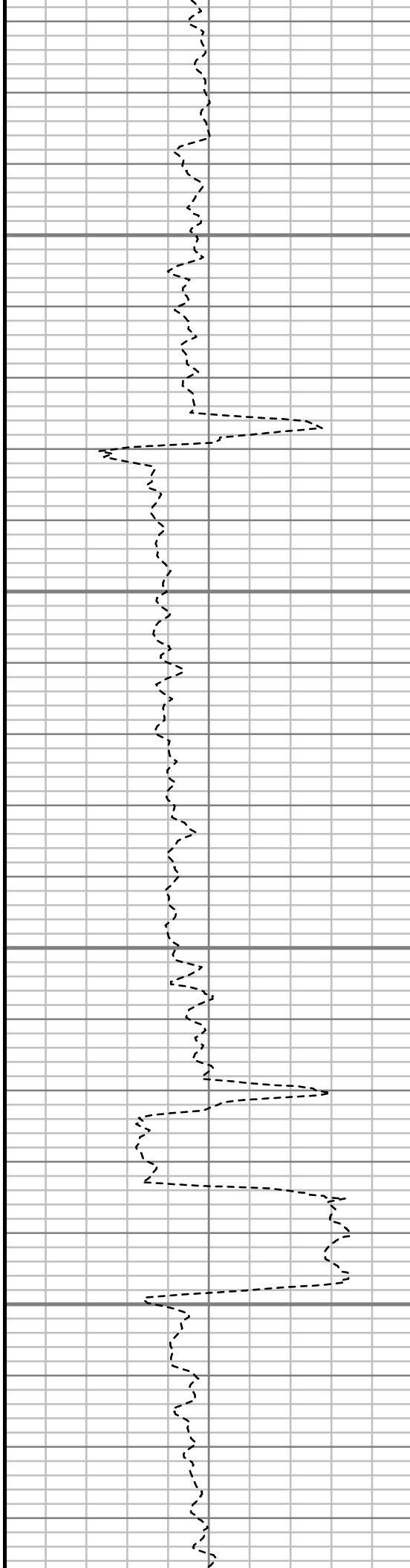


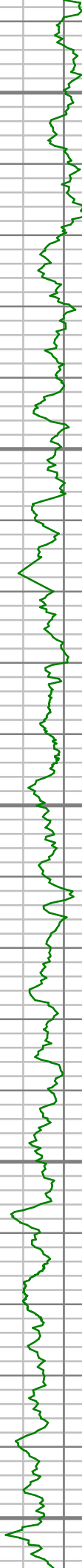
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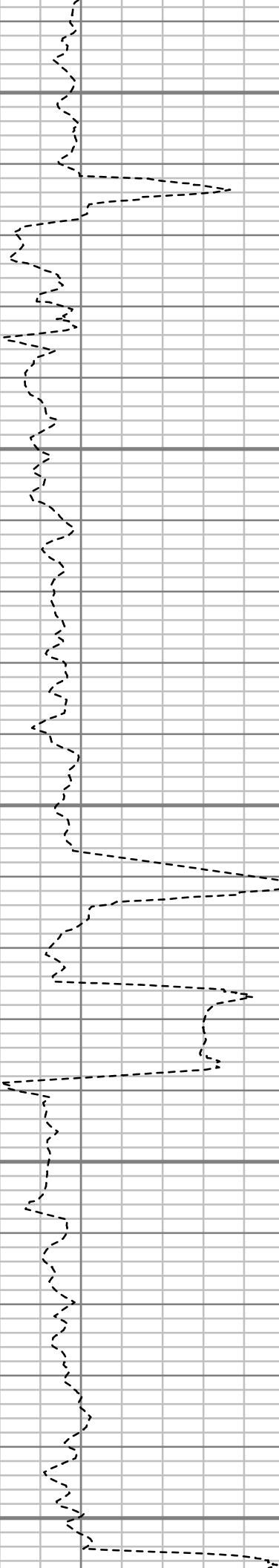
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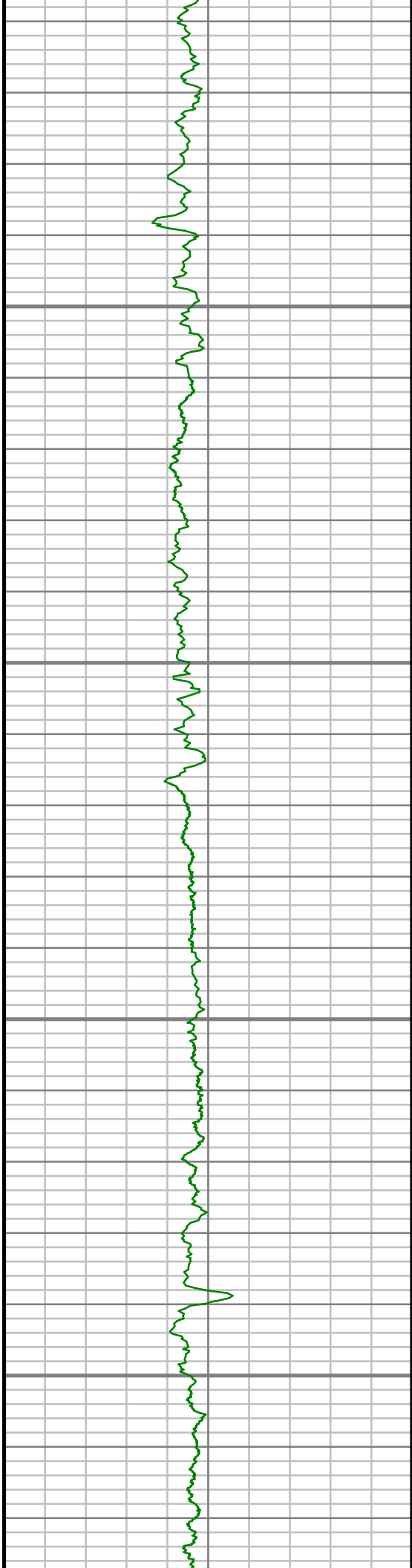
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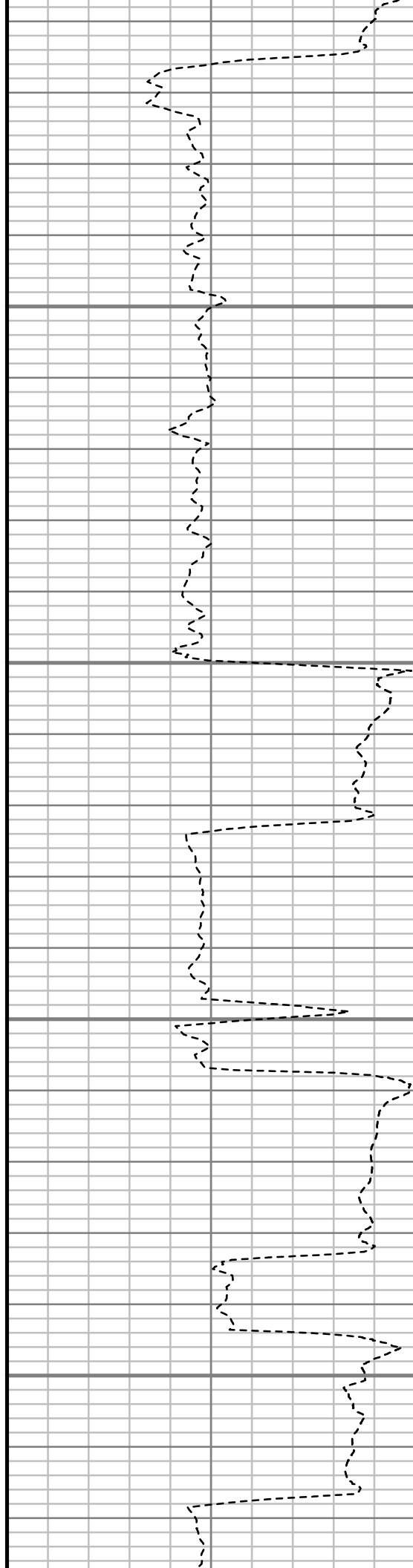


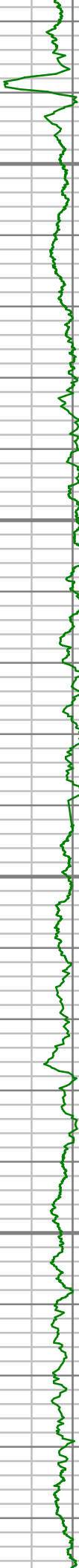
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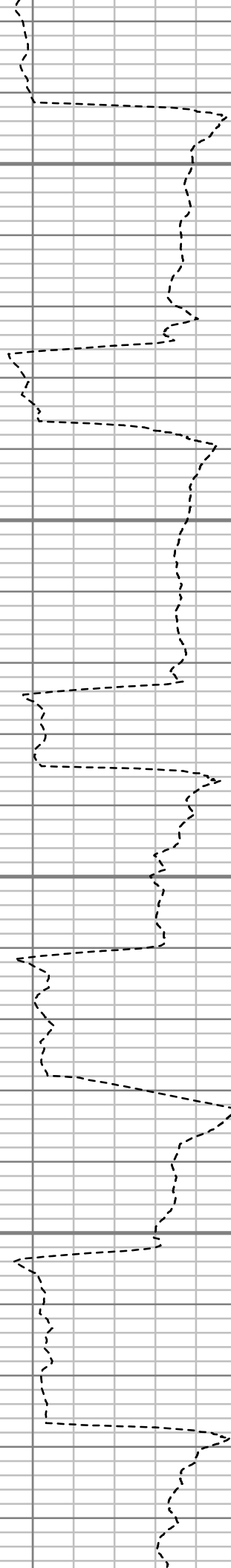


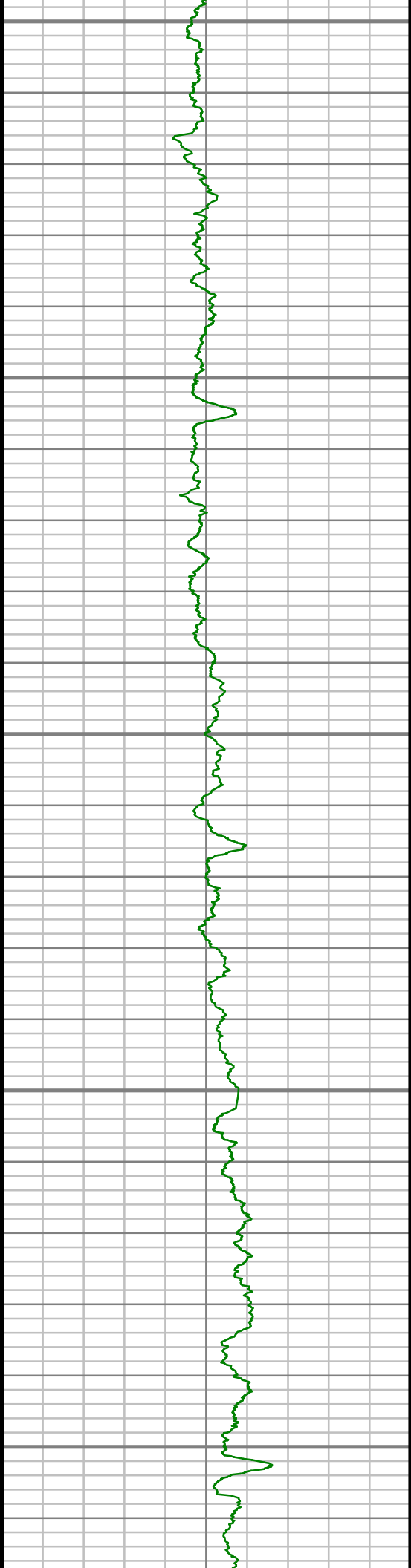
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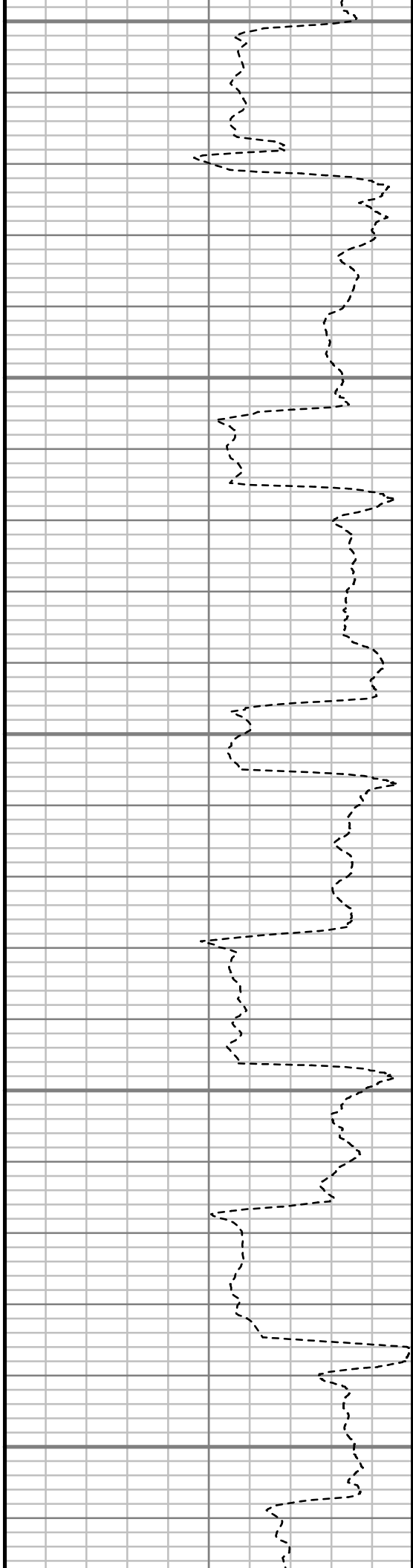
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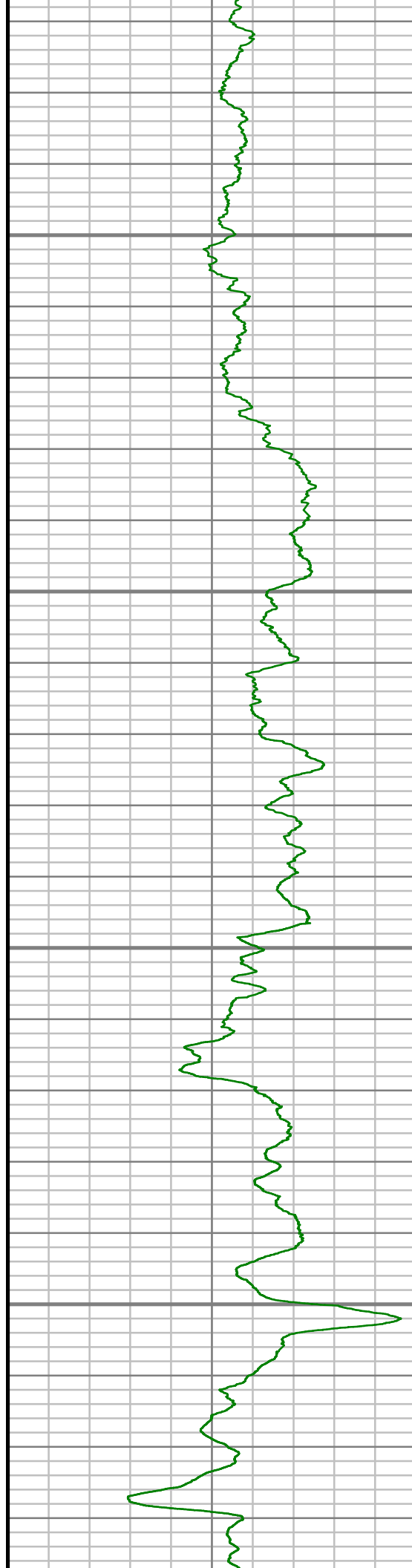
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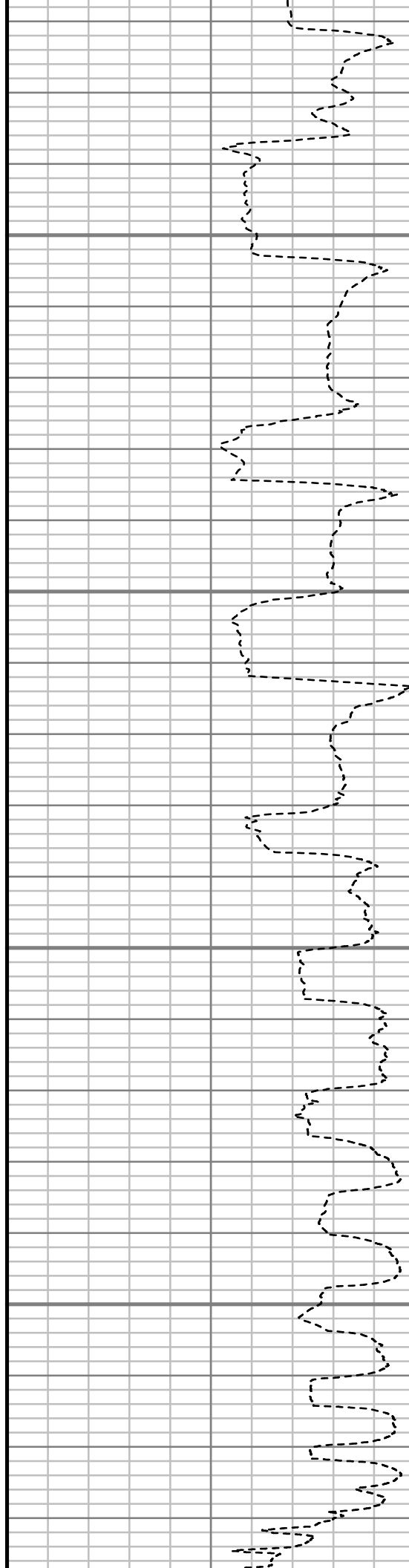


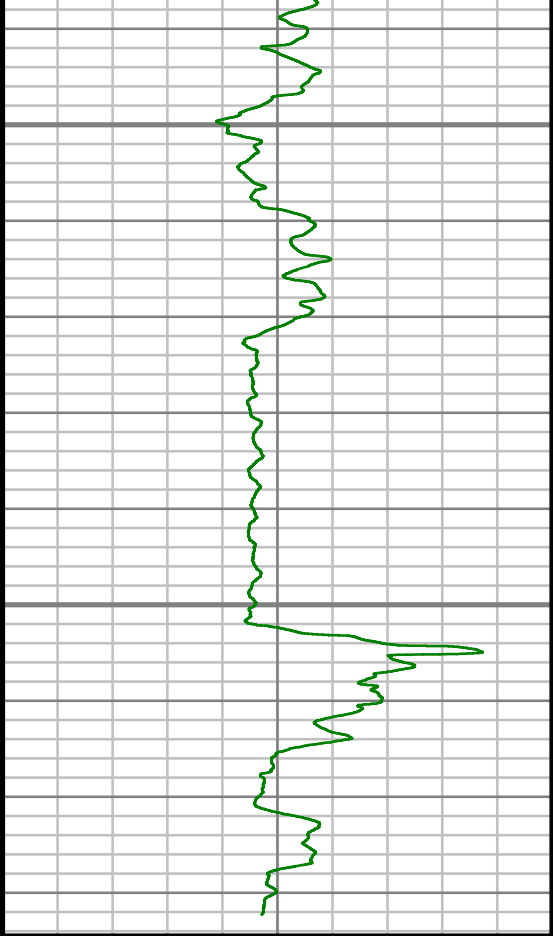
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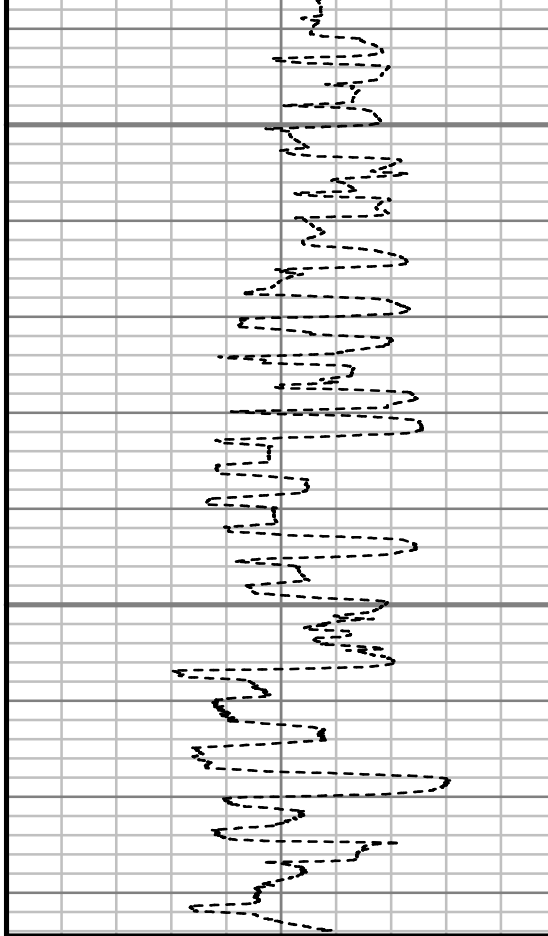
Gamma Ray (GR)

0 Unit = aapi 150

7050

7100

TRUE VERTICAL DEPTH
1:240 (ft)



Rate of Penetration (ROP)

500 Unit = ft/hr 0

Comments

MWD Survey Report

Well Location	ZISCH/DRIETH
Well Name	ZISCH 3C-6H-M368
Survey Date	6/18/2014
Latitude	40°14'53.484"N
Longitude	105°3'10.116"W
Btotal	52606 nT
Dip	66.77 deg
Magnetic Declination	8.68 deg
North Reference	True North
Grid Correction	None
Depth Reference	RKB (13.00 ft)
Calculation Method	Minimum Curvature
Section (VS) Ref	0.00N (ft), 0.00E (ft), 90.00Azim (deg)
Operator(s)	JEFFREY SMITH, MARK SMITH, TIM WHEELER

Well Notes

SURVEYS FROM 100 FT. - 800 FT. WERE ACQUIRED BY VES SURVEY INTERNATIONAL GYRO.

ALL SURVEYS FROM 928 FT. - 11390 FT. WERE ACQUIRED BY SCIENTIFIC DRILLING INTERNATIONAL MWD.

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	Closure Direction	Closure Distance	DLS
ft	deg	deg	ft	ft	ft	ft	deg	ft	"/100ft
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid
100.00	0.30	216.33	100.00	-0.16	-0.21	-0.16	216.33	0.26	0.30
200.00	0.47	271.16	200.00	-0.72	-0.41	-0.72	240.14	0.83	0.39
300.00	0.56	281.47	299.99	-1.61	-0.31	-1.61	259.16	1.64	0.13
400.00	2.12	273.03	399.96	-3.94	-0.11	-3.94	268.35	3.94	1.57
500.00	3.51	276.30	499.84	-8.83	0.32	-8.83	272.08	8.83	1.40
600.00	5.23	279.87	599.55	-16.36	1.44	-16.36	275.02	16.42	1.74
700.00	6.57	281.54	699.01	-26.45	3.36	-26.45	277.25	26.67	1.35
800.00	6.83	283.13	798.33	-37.85	5.86	-37.85	278.80	38.30	0.32
928.00	7.16	286.10	925.38	-52.93	9.80	-52.93	280.49	53.83	0.38
1116.00	7.04	283.13	1111.94	-75.41	15.67	-75.41	281.74	77.02	0.21
1302.00	6.79	282.56	1296.58	-97.25	20.65	-97.25	281.99	99.42	0.14
1488.00	6.30	279.17	1481.37	-118.07	24.67	-118.07	281.80	120.62	0.34
1675.00	6.55	273.83	1667.20	-138.84	27.02	-138.84	281.01	141.44	0.35
1861.00	6.08	280.41	1852.07	-159.12	29.51	-159.12	280.51	161.83	0.46
2047.00	5.48	290.21	2037.13	-177.15	34.36	-177.15	280.98	180.45	0.62
2232.00	6.85	293.66	2221.05	-195.54	41.84	-195.54	282.08	199.97	0.76
2418.00	6.92	290.90	2405.71	-216.16	50.28	-216.16	283.10	221.93	0.18
2604.00	6.75	291.33	2590.39	-236.79	58.25	-236.79	283.82	243.85	0.10

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	Closure Direction	Closure Distance	DLS
ft	deg	deg	ft	ft	ft	ft	deg	ft	°/100ft
2789.00	5.59	280.30	2774.33	-255.79	63.81	-255.79	284.01	263.63	0.89
2978.00	5.15	279.19	2962.50	-273.22	66.81	-273.22	283.74	281.27	0.24
3168.00	5.74	275.87	3151.64	-291.09	69.15	-291.09	283.36	299.19	0.35
3359.00	5.66	279.32	3341.69	-309.89	71.65	-309.89	283.02	318.06	0.18
3549.00	6.79	286.86	3530.57	-329.88	76.42	-329.88	283.04	338.62	0.73
3740.00	7.22	285.79	3720.15	-352.24	82.96	-352.24	283.25	361.87	0.23
3930.00	5.80	293.95	3908.92	-372.50	90.11	-372.50	283.60	383.24	0.89
4121.00	5.42	290.35	4099.01	-389.77	97.16	-389.77	284.00	401.70	0.27
4312.00	4.97	290.90	4289.22	-405.95	103.25	-405.95	284.27	418.88	0.24
4502.00	5.07	286.29	4478.49	-421.70	108.54	-421.70	284.43	435.45	0.22
4693.00	4.86	286.45	4668.78	-437.57	113.20	-437.57	284.50	451.98	0.11
4884.00	4.41	280.02	4859.15	-452.56	116.77	-452.56	284.47	467.39	0.36
5074.00	4.96	285.46	5048.52	-467.66	120.23	-467.66	284.42	482.87	0.37
5265.00	5.20	283.62	5238.77	-484.02	124.47	-484.02	284.42	499.77	0.15
5455.00	5.34	265.55	5427.98	-501.20	125.81	-501.20	284.09	516.75	0.87
5645.00	6.16	276.89	5617.03	-520.15	126.34	-520.15	283.65	535.27	0.74
5836.00	5.79	280.48	5806.99	-539.80	129.33	-539.80	283.47	555.07	0.28
6026.00	5.01	277.14	5996.15	-557.45	132.10	-557.45	283.33	572.88	0.44

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	Closure Direction	Closure Distance	DLS
ft	deg	deg	ft	ft	ft	ft	deg	ft	°/100ft
6217.00	5.29	299.39	6186.40	-573.38	137.45	-573.38	283.48	589.63	1.05
6264.00	5.04	297.41	6233.21	-577.10	139.47	-577.10	283.59	593.72	0.64
6312.00	4.62	327.59	6281.04	-580.01	142.07	-580.01	283.76	597.16	5.30
6359.00	6.59	353.11	6327.82	-581.35	146.34	-581.35	284.13	599.49	6.66
6407.00	9.12	7.97	6375.37	-581.15	152.85	-581.15	284.74	600.92	6.72
6454.00	10.66	35.03	6421.70	-578.14	160.10	-578.14	285.48	599.90	10.30
6503.00	12.67	65.00	6469.73	-570.66	166.08	-570.66	286.23	594.34	12.85
6550.00	15.43	76.62	6515.33	-559.90	169.71	-559.90	286.86	585.06	8.37
6598.00	17.53	83.68	6561.36	-546.50	171.99	-546.50	287.47	572.93	6.04
6645.00	19.90	91.59	6605.87	-531.46	172.54	-531.46	287.99	558.77	7.38
6693.00	24.14	91.15	6650.36	-513.48	172.12	-513.48	288.53	541.56	8.83
6740.00	29.82	87.69	6692.23	-492.17	172.40	-492.17	289.30	521.49	12.53
6789.00	33.90	87.80	6733.84	-466.34	173.41	-466.34	290.40	497.54	8.33
6836.00	38.04	88.33	6771.88	-438.75	174.34	-438.75	291.67	472.12	8.83
6884.00	42.14	89.27	6808.59	-407.86	174.98	-407.86	293.22	443.81	8.64
6931.00	45.76	90.44	6842.42	-375.25	175.05	-375.25	295.01	414.07	7.89
6979.00	50.25	91.55	6874.53	-339.59	174.42	-339.59	297.19	381.76	9.52
7026.00	54.57	91.76	6903.19	-302.37	173.34	-302.37	299.83	348.53	9.20

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	Closure Direction	Closure Distance	DLS
ft	deg	deg	ft	ft	ft	ft	deg	ft	°/100ft
7074.00	60.03	90.10	6929.12	-262.00	172.71	-262.00	303.39	313.80	11.72
7121.00	64.64	89.42	6950.93	-220.38	172.89	-220.38	308.11	280.11	9.90
7169.00	68.43	89.12	6970.04	-176.37	173.45	-176.37	314.52	247.37	7.91
7216.00	71.35	88.16	6986.20	-132.25	174.50	-132.25	322.84	218.96	6.51
7265.00	74.54	88.20	7000.57	-85.43	175.99	-85.43	334.11	195.63	6.52
7312.00	78.11	87.47	7011.68	-39.81	177.72	-39.81	347.38	182.12	7.73
7360.00	81.37	87.40	7020.23	7.37	179.84	7.37	2.35	179.99	6.80
7388.00	84.22	87.50	7023.74	35.12	181.07	35.12	10.98	184.45	10.19
7479.00	87.71	87.69	7030.14	125.80	184.88	125.80	34.23	223.62	3.84
7574.00	88.02	90.41	7033.68	220.71	186.45	220.71	49.81	288.92	2.88
7669.00	88.99	92.46	7036.15	315.65	184.06	315.65	59.75	365.39	2.39
7765.00	88.22	92.26	7038.49	411.54	180.11	411.54	66.36	449.22	0.83
7860.00	89.43	93.53	7040.44	506.39	175.31	506.39	70.90	535.88	1.85
7955.00	88.15	92.93	7042.45	601.22	169.96	601.22	74.21	624.78	1.49
8051.00	88.56	91.87	7045.21	697.09	165.94	697.09	76.61	716.57	1.18
8146.00	88.96	91.52	7047.27	792.03	163.13	792.03	78.36	808.65	0.56
8241.00	88.45	90.88	7049.42	886.98	161.13	886.98	79.70	901.50	0.86
8336.00	88.22	91.63	7052.18	981.92	159.05	981.92	80.80	994.71	0.83

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	Closure Direction	Closure Distance	DLS
ft	deg	deg	ft	ft	ft	ft	deg	ft	°/100ft
8432.00	88.79	90.57	7054.69	1077.86	157.20	1077.86	81.70	1089.27	1.25
8527.00	89.50	88.04	7056.11	1172.84	158.36	1172.84	82.31	1183.48	2.77
8622.00	89.09	87.69	7057.28	1267.76	161.89	1267.76	82.72	1278.06	0.56
8718.00	89.19	90.13	7058.71	1363.73	163.71	1363.73	83.15	1373.52	2.54
8813.00	88.62	90.48	7060.53	1458.71	163.20	1458.71	83.62	1467.81	0.70
8908.00	89.23	91.56	7062.31	1553.68	161.51	1553.68	84.07	1562.05	1.30
9004.00	88.12	90.35	7064.53	1649.63	159.91	1649.63	84.46	1657.37	1.71
9099.00	89.19	91.68	7066.76	1744.59	158.22	1744.59	84.82	1751.75	1.80
9194.00	87.58	90.83	7069.44	1839.52	156.14	1839.52	85.15	1846.14	1.92
9289.00	87.95	90.29	7073.14	1934.45	155.22	1934.45	85.41	1940.66	0.69
9384.00	88.69	91.05	7075.93	2029.40	154.11	2029.40	85.66	2035.24	1.12
9480.00	88.22	90.89	7078.52	2125.35	152.50	2125.35	85.90	2130.81	0.52
9575.00	87.88	88.81	7081.75	2220.29	152.75	2220.29	86.06	2225.54	2.21
9670.00	88.09	88.98	7085.09	2315.21	154.57	2315.21	86.18	2320.37	0.28
9765.00	87.88	89.22	7088.43	2410.14	156.07	2410.14	86.30	2415.19	0.32
9861.00	88.52	92.13	7091.44	2506.08	154.94	2506.08	86.46	2510.86	3.10
9956.00	88.15	89.51	7094.20	2601.02	153.58	2601.02	86.62	2605.55	2.78
10051.00	87.88	89.15	7097.49	2695.96	154.69	2695.96	86.72	2700.39	0.47

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	Closure Direction	Closure Distance	DLS
ft	deg	deg	ft	ft	ft	ft	deg	ft	"/100ft
10146.00	88.32	86.89	7100.63	2790.84	157.97	2790.84	86.76	2795.31	2.41
10242.00	89.40	88.81	7102.55	2886.75	161.57	2886.75	86.80	2891.27	2.29
10337.00	89.90	88.87	7103.13	2981.73	163.49	2981.73	86.86	2986.21	0.53
10432.00	89.40	90.26	7103.72	3076.72	164.22	3076.72	86.94	3081.10	1.56
10528.00	87.99	89.82	7105.91	3172.69	164.15	3172.69	87.04	3176.94	1.54
10623.00	87.35	90.01	7109.77	3267.61	164.29	3267.61	87.12	3271.74	0.71
10718.00	86.74	89.99	7114.68	3362.49	164.29	3362.49	87.20	3366.50	0.64
10813.00	87.68	89.71	7119.30	3457.37	164.53	3457.37	87.28	3461.28	1.04
10909.00	87.35	89.58	7123.46	3553.28	165.13	3553.28	87.34	3557.11	0.37
11004.00	89.83	90.84	7125.80	3648.24	164.78	3648.24	87.41	3651.96	2.93
11099.00	88.86	89.92	7126.89	3743.23	164.15	3743.23	87.49	3746.83	1.41
11194.00	89.03	91.07	7128.64	3838.21	163.33	3838.21	87.56	3841.68	1.22
11289.00	88.42	90.46	7130.76	3933.18	162.06	3933.18	87.64	3936.51	0.91
11321.00	88.15	89.88	7131.72	3965.16	161.96	3965.16	87.66	3968.47	2.00

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	Closure Direction	Closure Distance	DLS
ft	deg	deg	ft	ft	ft	ft	deg	ft	°/100ft

5" = 100' FEET TVD