

5" = 100' FEET TVD

COMPANY : ENCANA OIL AND GAS (USA) INC WELL : RODMAN BRUNTZ 2B-26H FIELD : WATTENBERG COUNTY : WELD STATE : COLORADO COUNTRY : U.S.A. UWI : 05-123-38181										COMPANY : ENCANA OIL AND GAS (USA) INC WELL : RODMAN BRUNTZ 2B-26H FIELD : WATTENBERG COUNTY : WELD STATE : COLORADO COUNTRY : U.S.A. UWI : 05-123-38181									
WELL LOCATION LAT:40°6'55.764"N LONG:104°44'59.244"W N:1285804.61 ft E:3209815.60 ft SEC:26 TWP:2N RANGE:66W										OTHER SERVICES DIRECTIONAL ROP									
DEPTH REF. : RKB REF. HEIGHT : 13.000 ft GROUND LEVEL : 5079.000 ft										RKB to Ground Level G.L. to MEAN SEA LEVEL									
BOREHOLE RECORD										DEVIATION RECORD									
HOLE SIZE in	FROM ft	TO ft	INCLINATION deg		FROM ft	TO ft													
12.25	0	1229	0 - 7		0	6906													
8.75	1229	7818	7 - 85		6906	7799													
6.125	7818	14214	85 - 92		7799	14214													
CASING RECORD																			
CASING SIZE in	FROM ft	TO ft																	
9.625	0	1218																	
7	0	7792																	
										DRILLING CO. : ENSIGN RIG: 124 LWD UNIT NO. : C-70 SPUD DATE: 12/31/2013 LWD START DATE: 01/02/2014 LWD END DATE: 01/12/2014									
										DISTRICT : CASPER DEPTH : 5000 ft DEPTH : 14214 ft TOTAL DEPTH : 14214 ft									

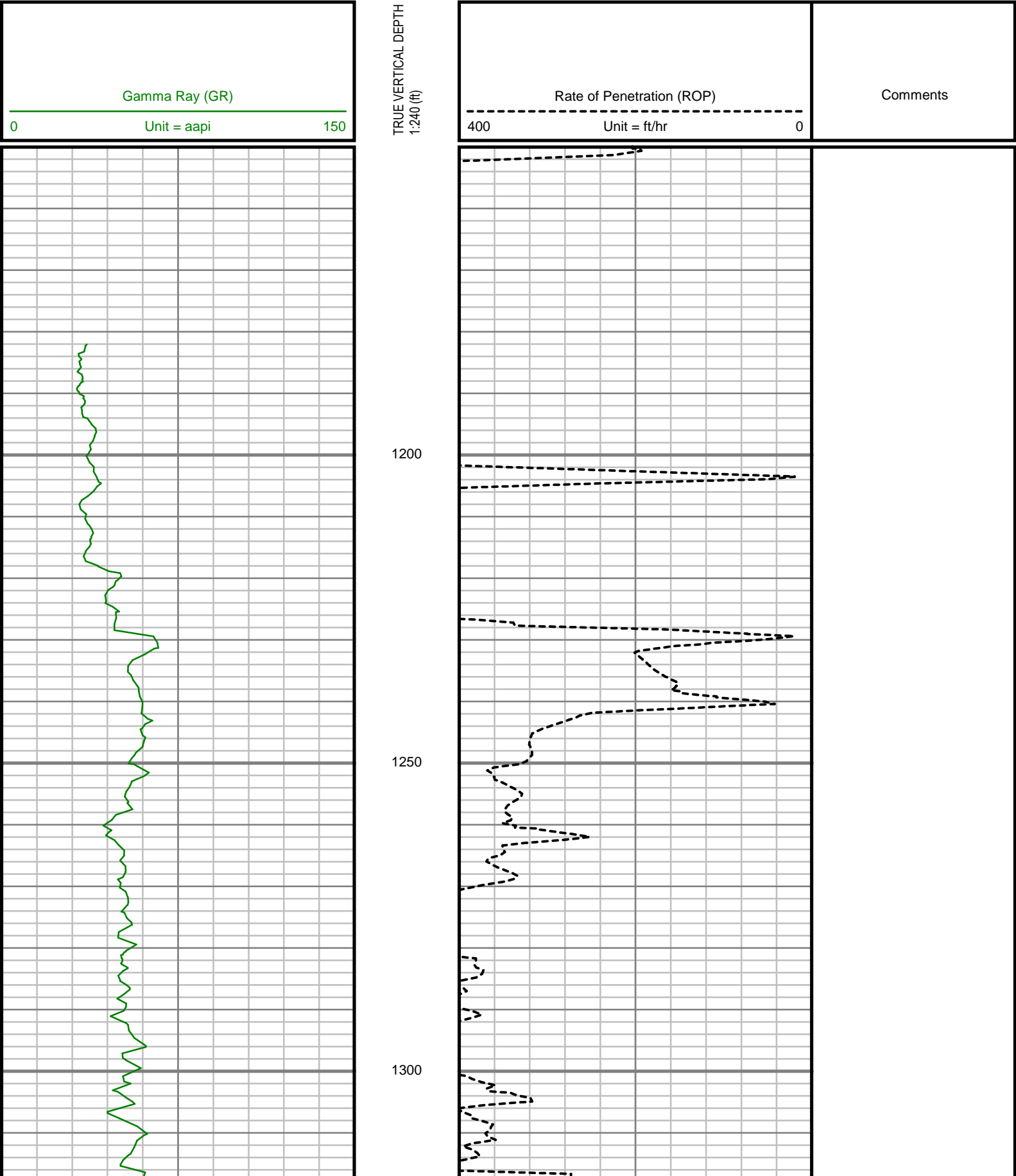
Run Data						
RUN NUMBER	1	2	3	4		
START DATE	12/31/2013	01/02/2014	01/06/2014	01/08/2014		
START TIME	2130	1100	1500	0900		
END DATE	01/01/2014	01/04/2014	01/08/2014	01/12/2014		
END TIME	0430	2200	0730	1800		
DEPTH IN (ft)	96	1229	7818	9672		
DEPTH OUT (ft)	1229	7818	9672	14214		
LOG TOP (ft)	-	5000	7771	9622		
LOG BOTTOM (ft)	-	7771	9622	14162		
HOLE SIZE (in)	12.25	8.75	6.125	6.125		
MUD DATA @ (ft)	1229	7818	9672	13126		
MUD TYPE	WATER-BASED	WATER-BASED	WATER-BASED	WATER-BASED		
DENSITY (lb / gal)	8.5	10.65	10.5	10.7		
VISCOSITY (s / qt)	27	40	37	48		
pH	7.2	8.3	8.3	8.2		
FLUID LOSS (cm3 / 30)	-	-	-	-		
SALINITY (ppm)	-	-	-	-		
Rm (ohmm @ deg F)	-	-	-	-		
Rmf (ohmm @ deg F)	-	-	-	-		
MAX TEMP (deg F)	85	110	212			
Rm @ MAX TEMP (ohmm)	-	-	-	-		
LWD ENGINEER #1	M. SMITH	M. SMITH	M. SMITH	M. SMITH		
LWD ENGINEER #2	J. SMITH	J. SMITH	J. SMITH	J. SMITH		
LWD ENGINEER #3	-	-	-	-		
LOG WITNESS #1	D. HILDRETH	D. HILDRETH	D. HILDRETH	D. HILDRETH		
LOG WITNESS #2	-	-	-	-		

Remarks
ENCANA OIL AND GAS (USA) INC PRODUCTION AFE# 13175437
SCIENTIFIC DRILLING INTERNATIONAL JOB# 98152
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 = 0380
BIT TO SENSOR OFFSET: SURVEY = 55.38 FT.
RUN #2: MWD / GAMMA RAY LOGGING RUN
SENSORS S/N: PULSER = 128-062 / CONT = 761 / MWD EYE = 0120 / GAMMA RAY = 1021
BIT TO SENSOR OFFSETS: SURVEY = 56.17 FT. / GAMMA RAY = 46.92 FT.
RUN #3: MWD / GAMMA RAY LOGGING RUN
SENSORS S/N: PULSER = 78-077 / CONT = 786 / MWD EYE = 0380 / GAMMA RAY = 1057
BIT TO SENSOR OFFSETS: SURVEY = 59.65 FT. / GAMMA RAY = 50.40 FT.
RUN #4: MWD / GAMMA RAY LOGGING RUN
SENSORS S/N: PULSER = 78-196 / CONT = 761 / MWD EYE = 0120 / GAMMA RAY = 1021
BIT TO SENSOR OFFSETS: SURVEY = 60.78 FT. / GAMMA RAY = 51.53 FT.

[illegible]

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.

ENCANA OIL AND GAS (USA) INC
RODMAN BRUNTZ 2B-26H
WATTENBURG FIELD
WELD COUNTY, COLORADO
05-123-38181





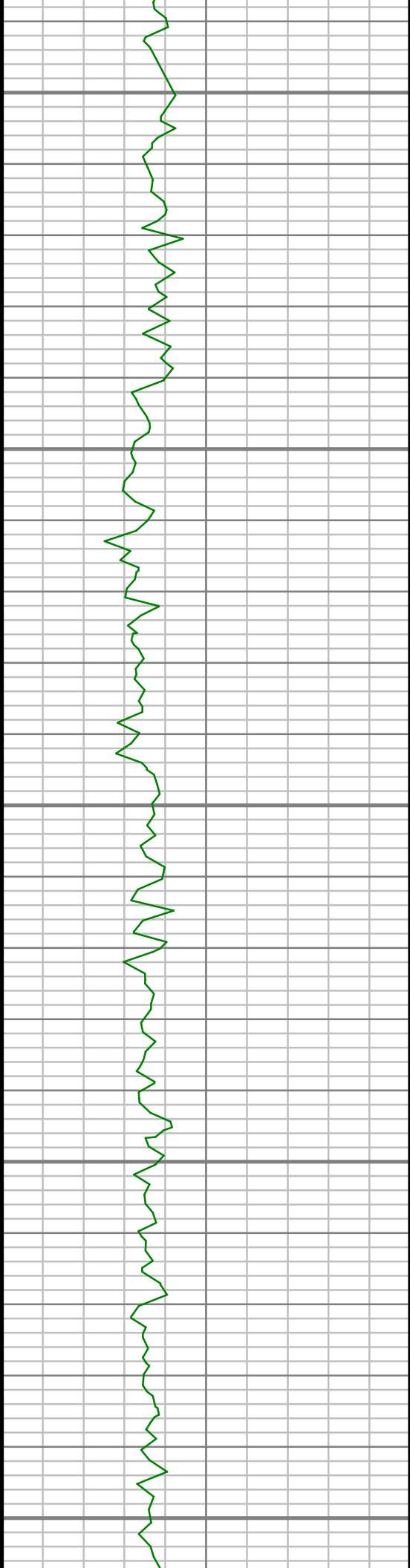
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1400

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1500





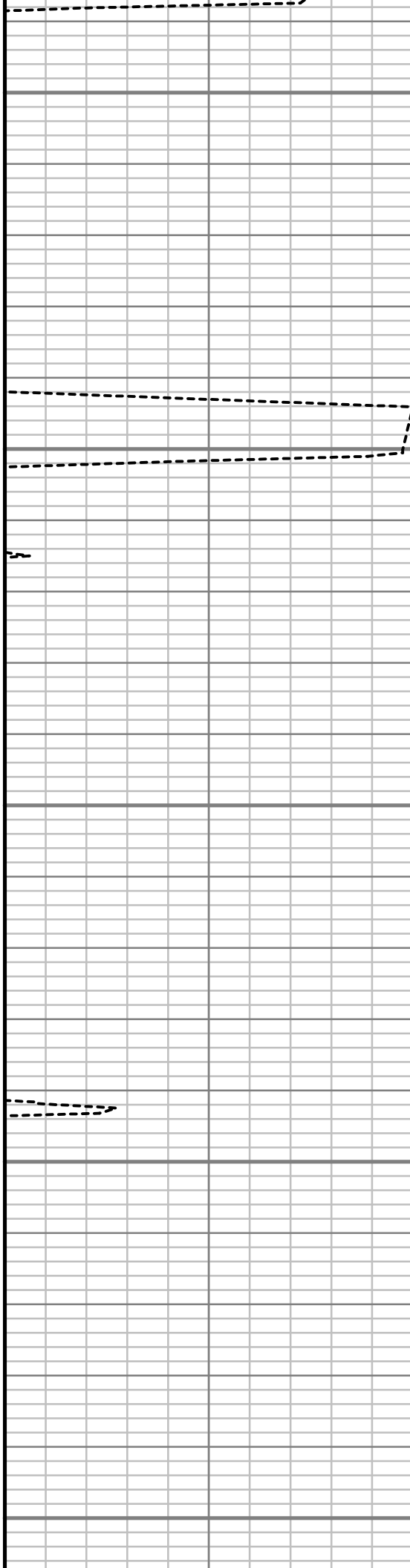
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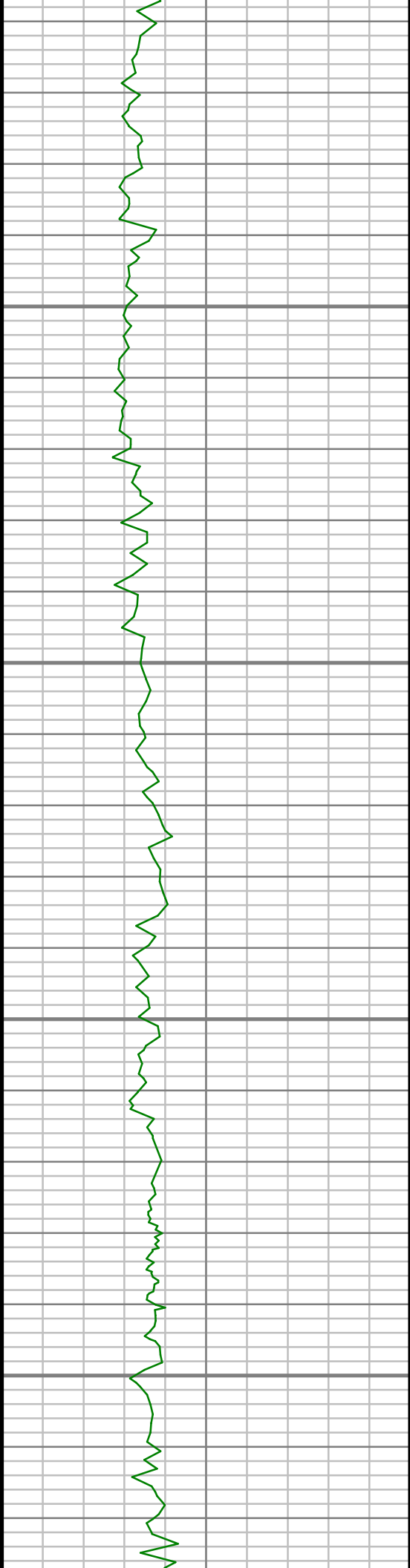
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1700

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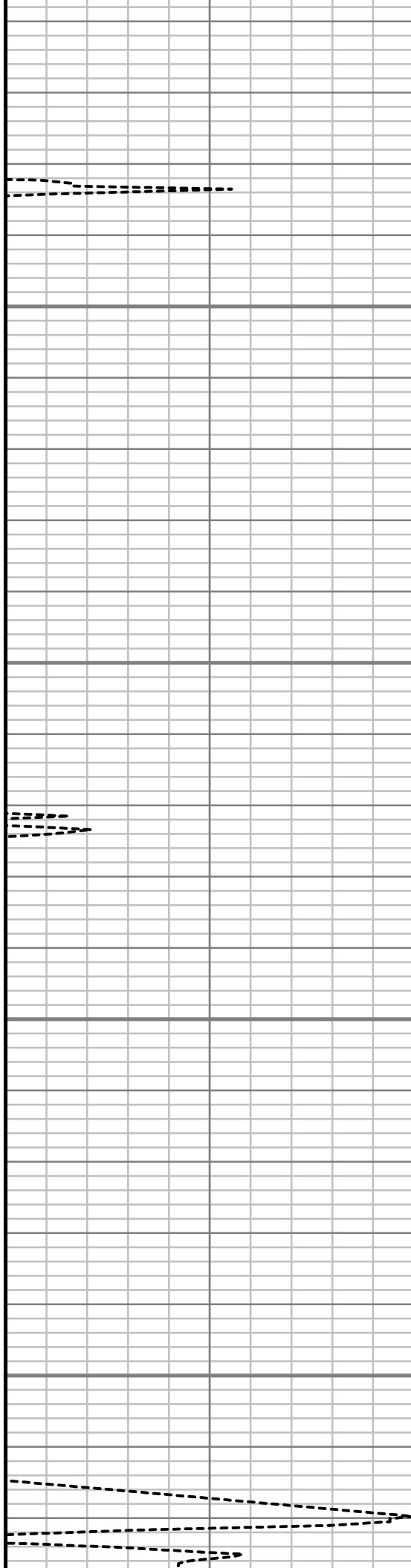


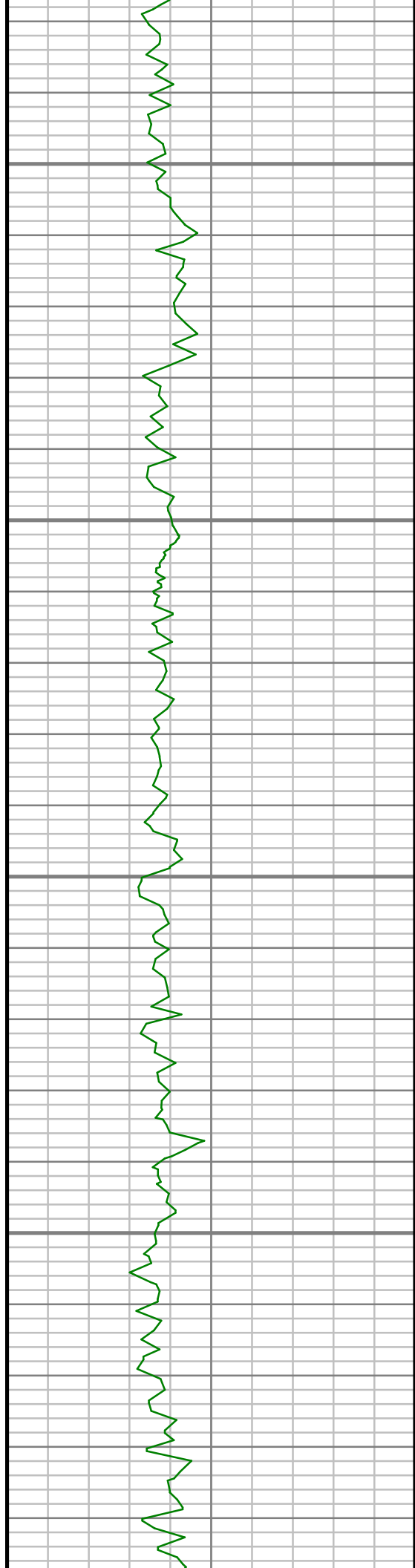
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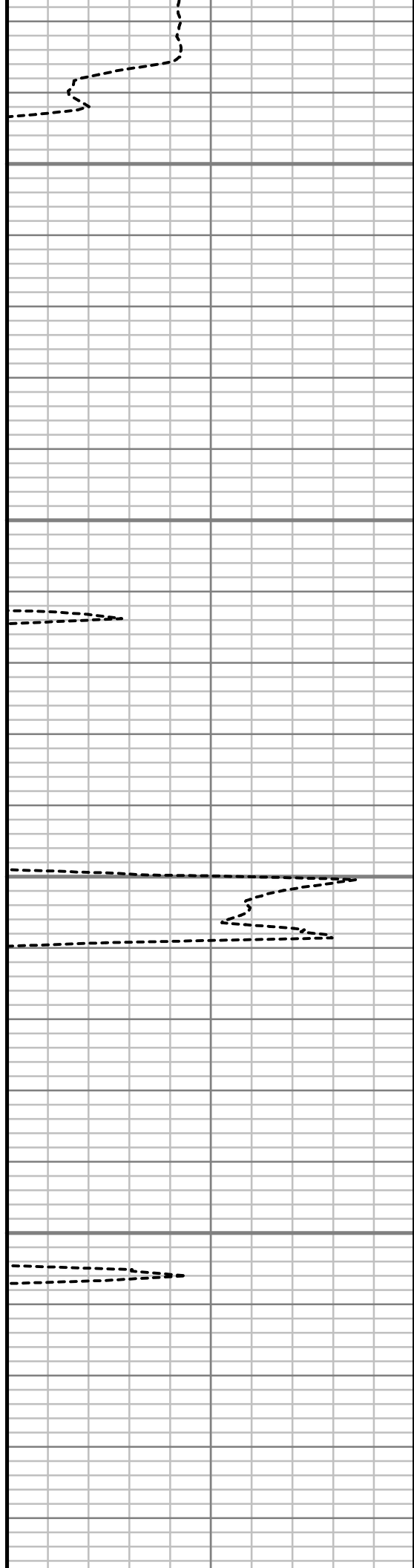


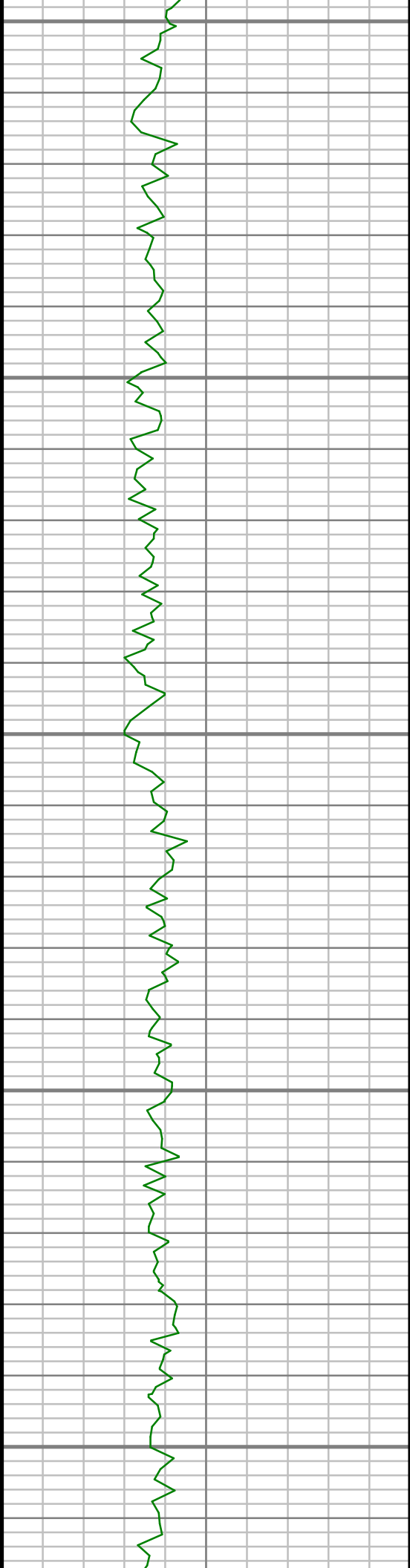
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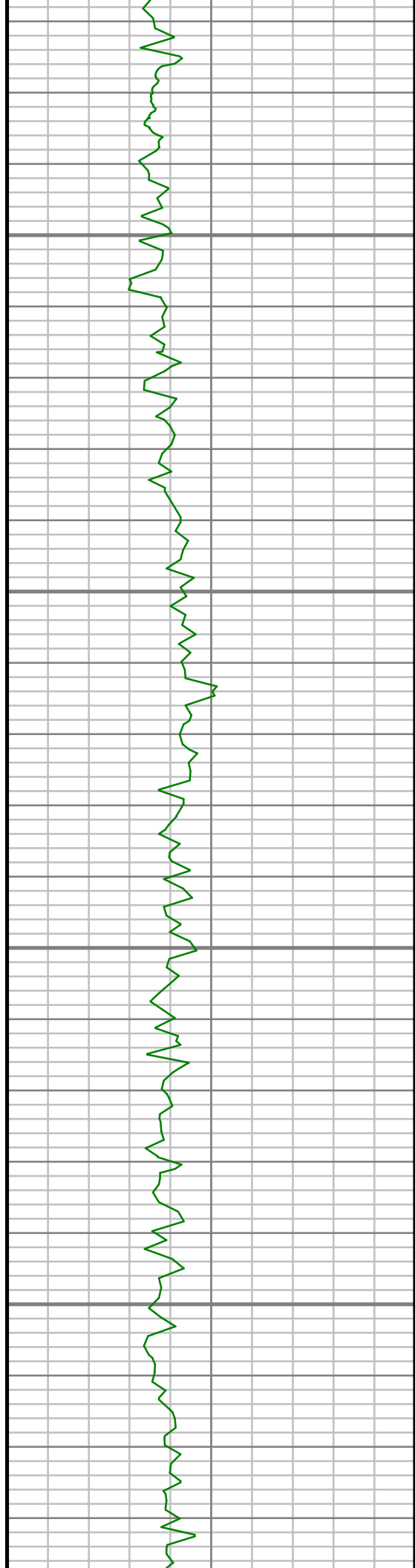
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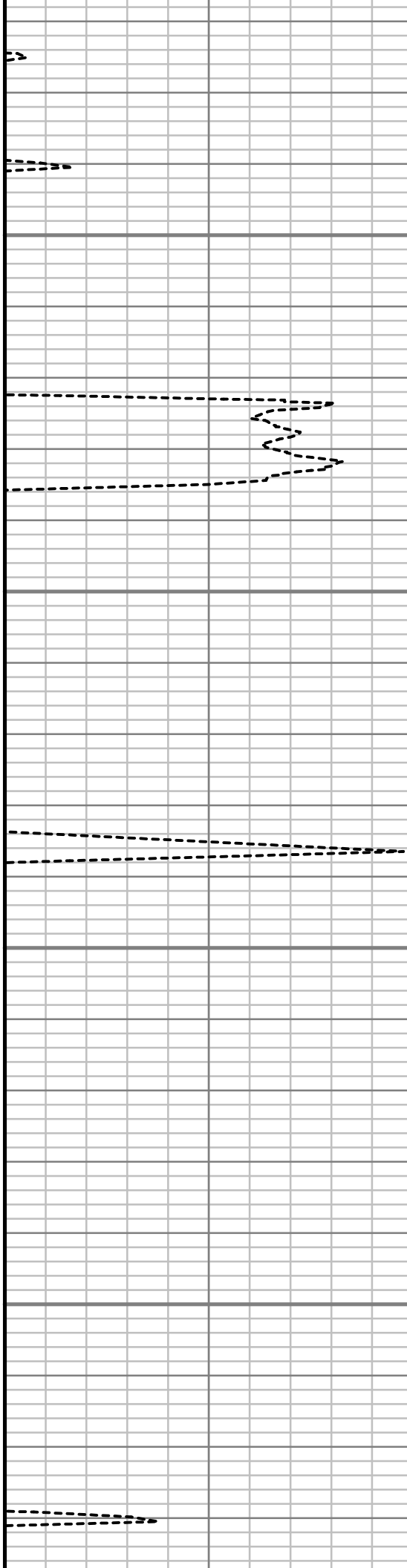


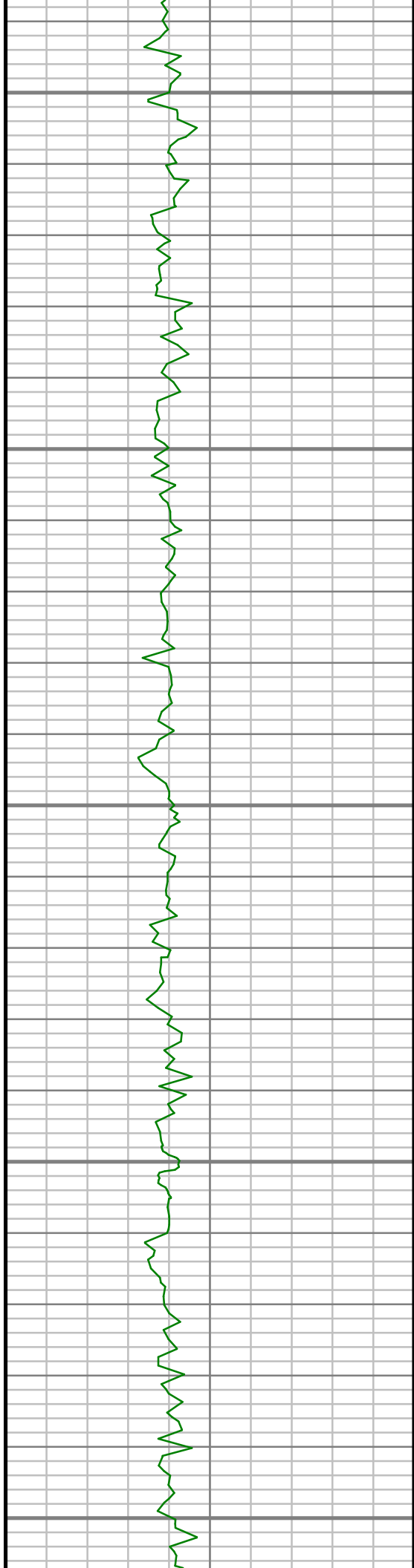
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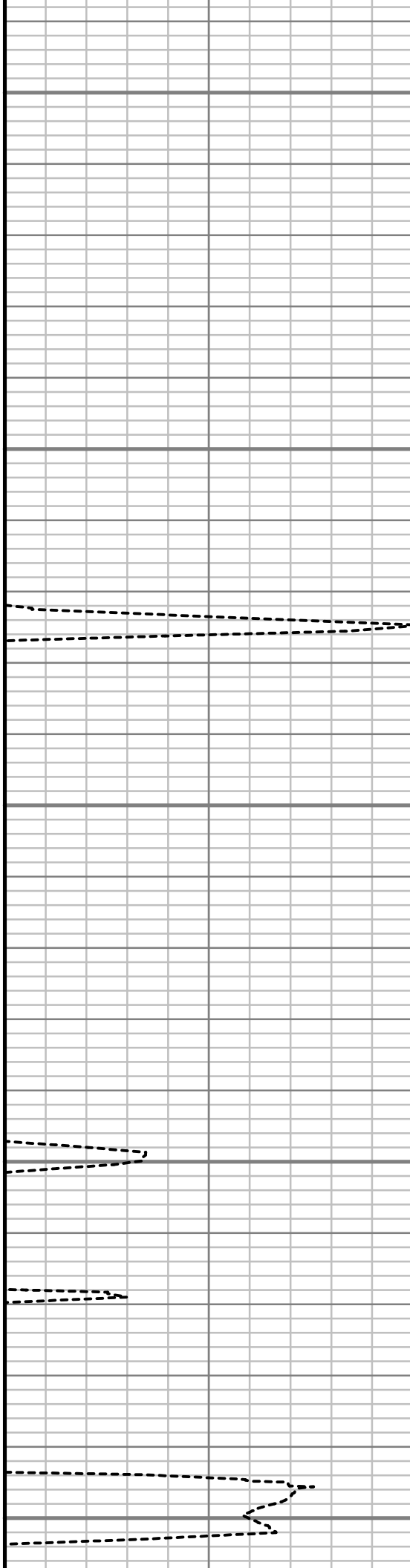
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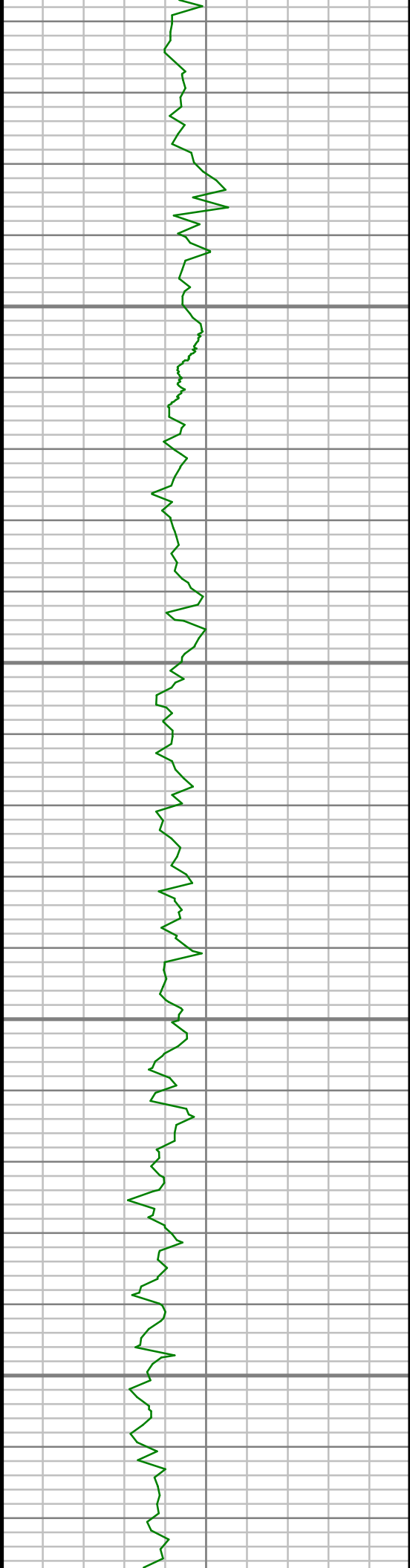
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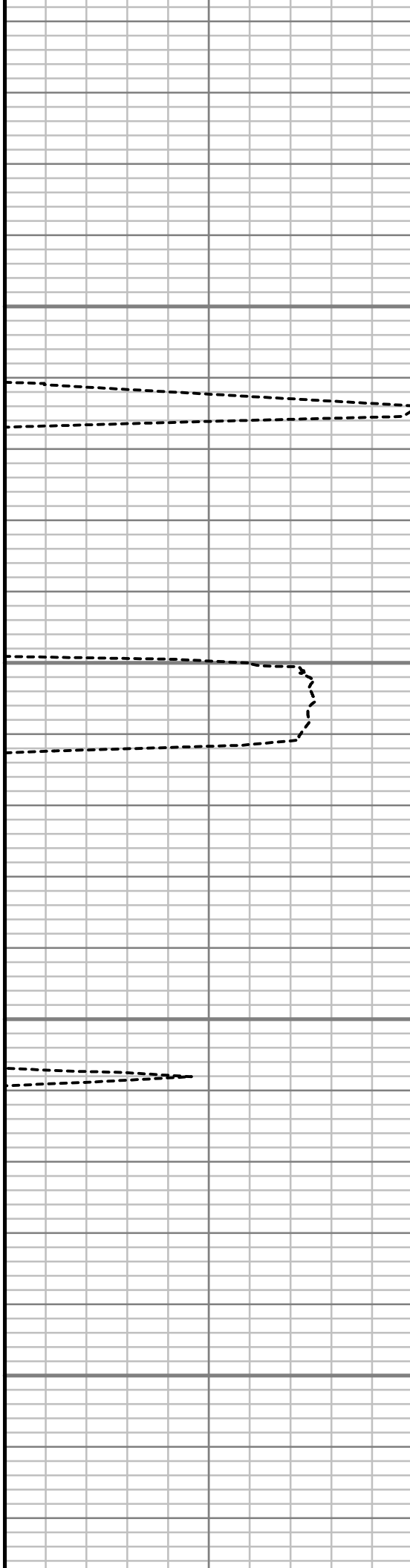


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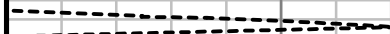


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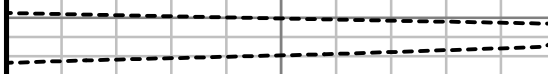


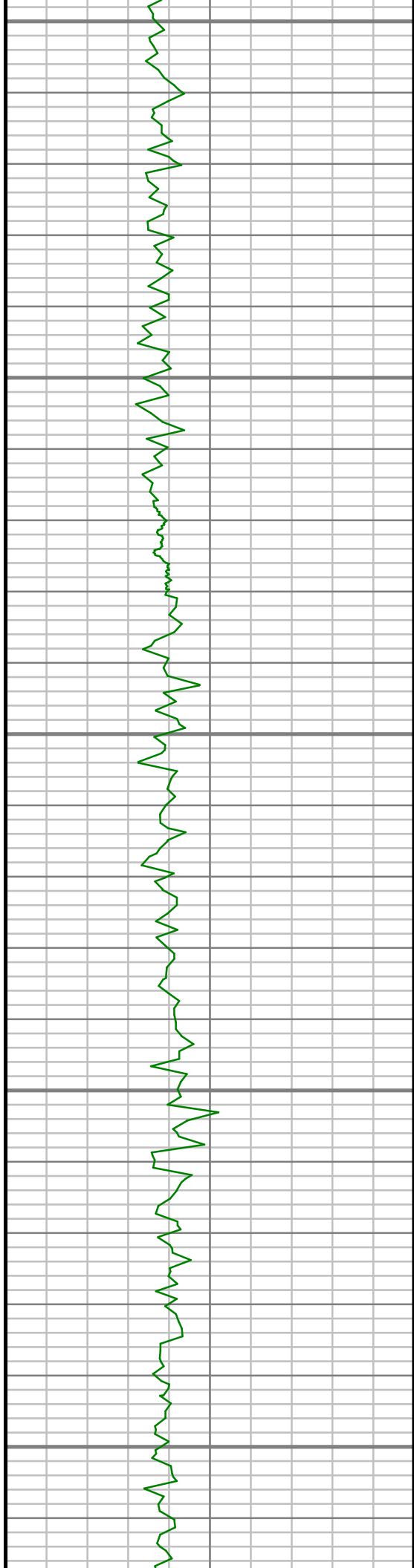
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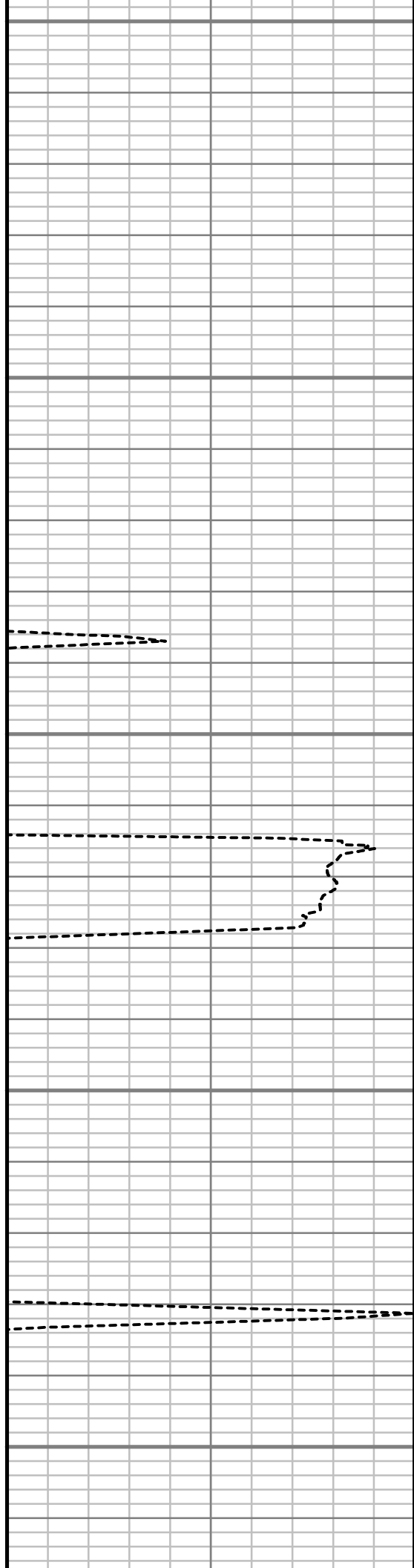
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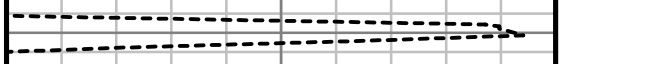
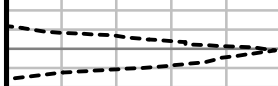
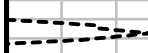


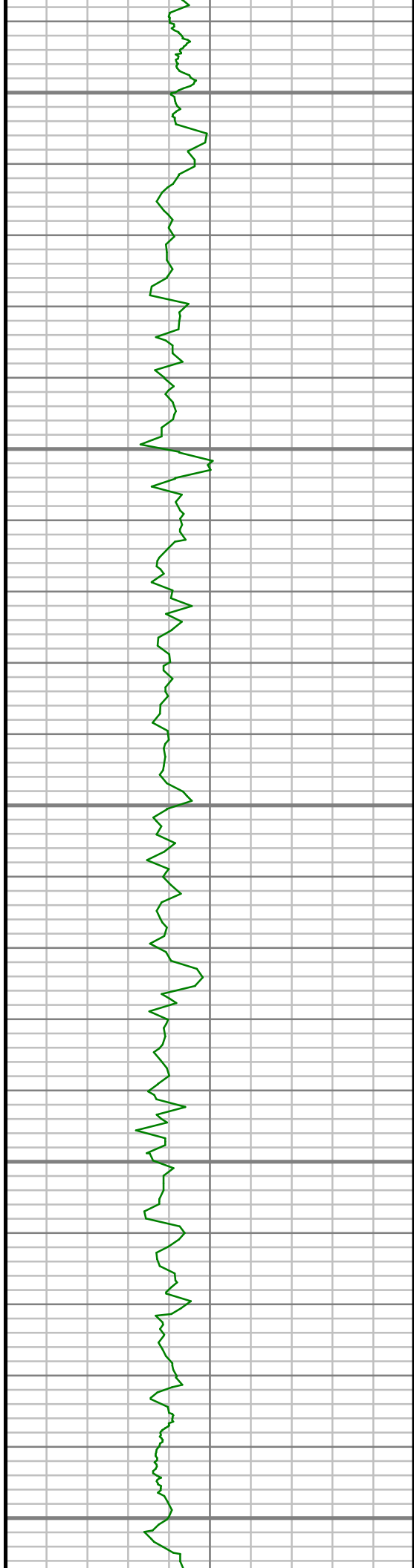
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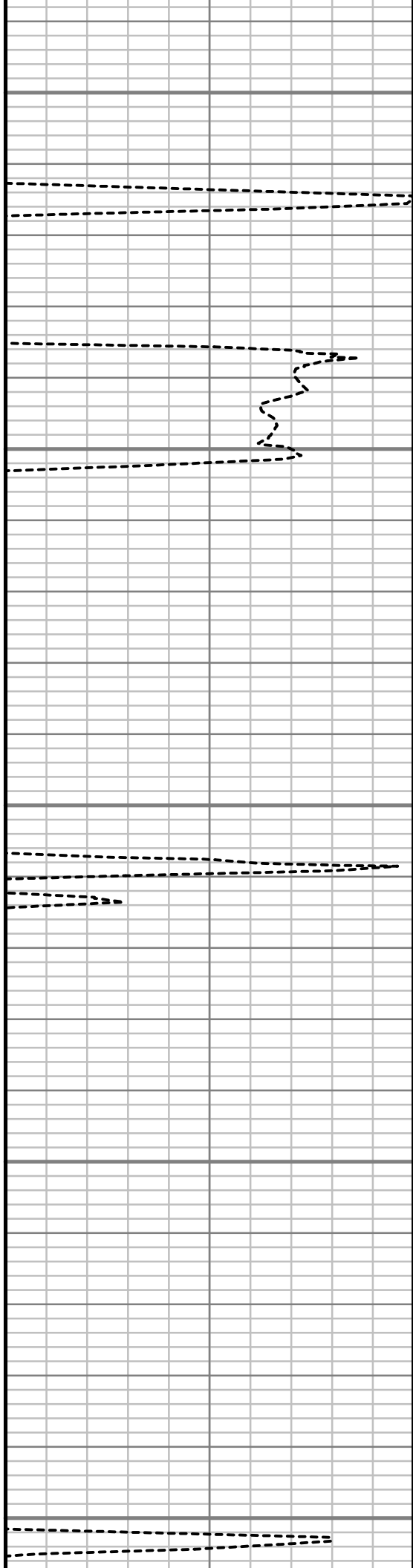
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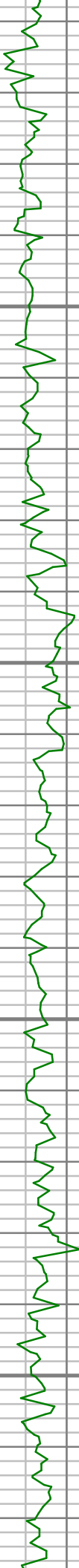
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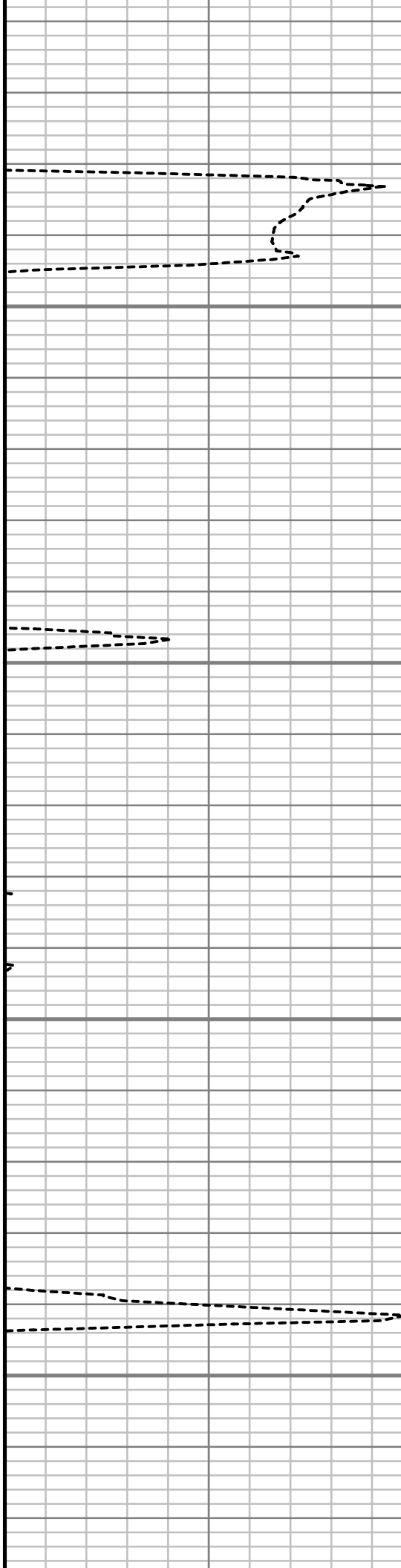


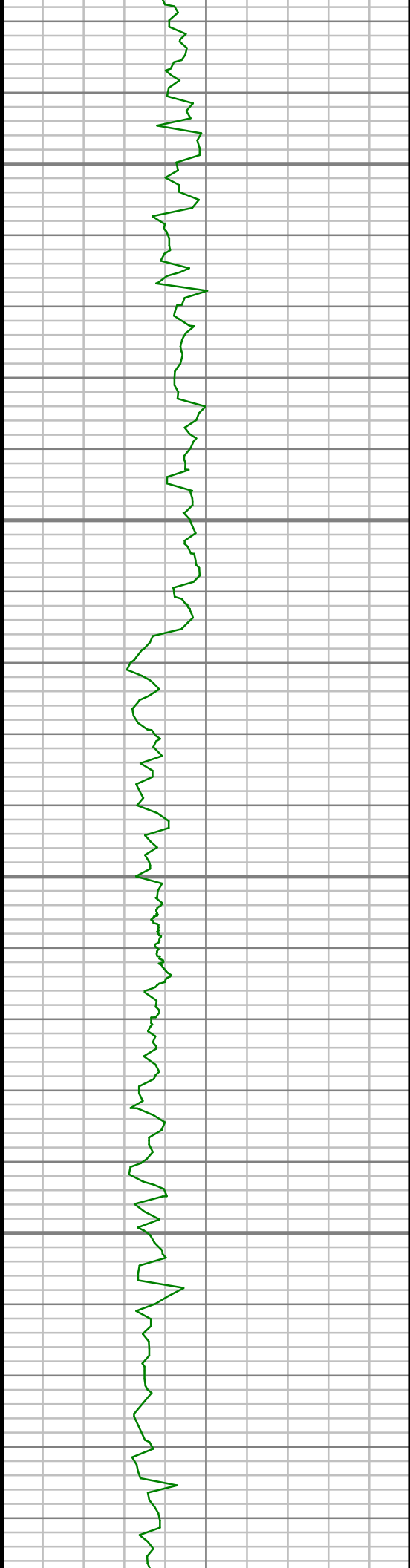
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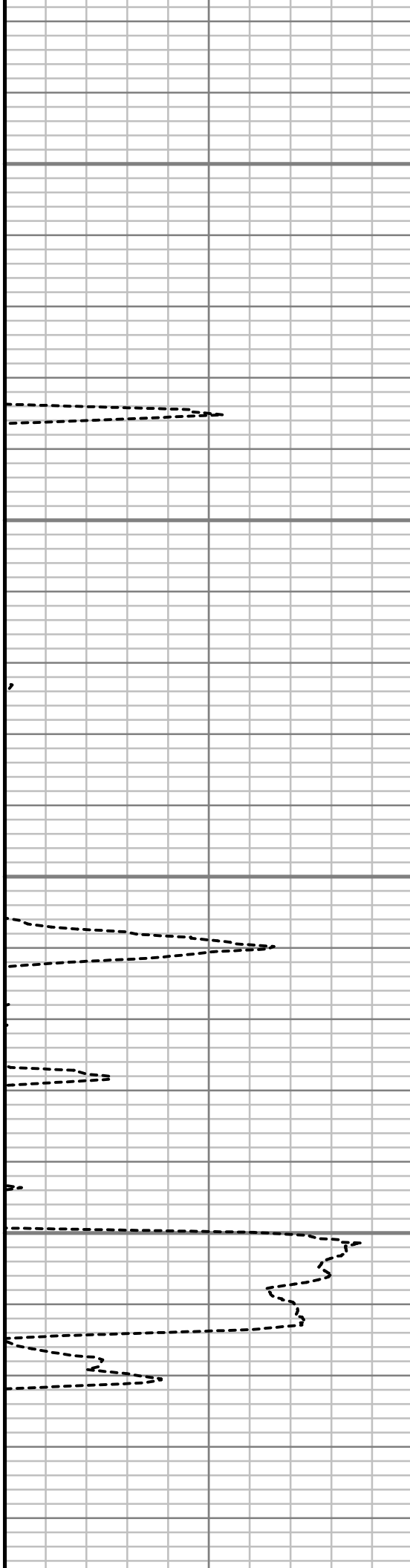


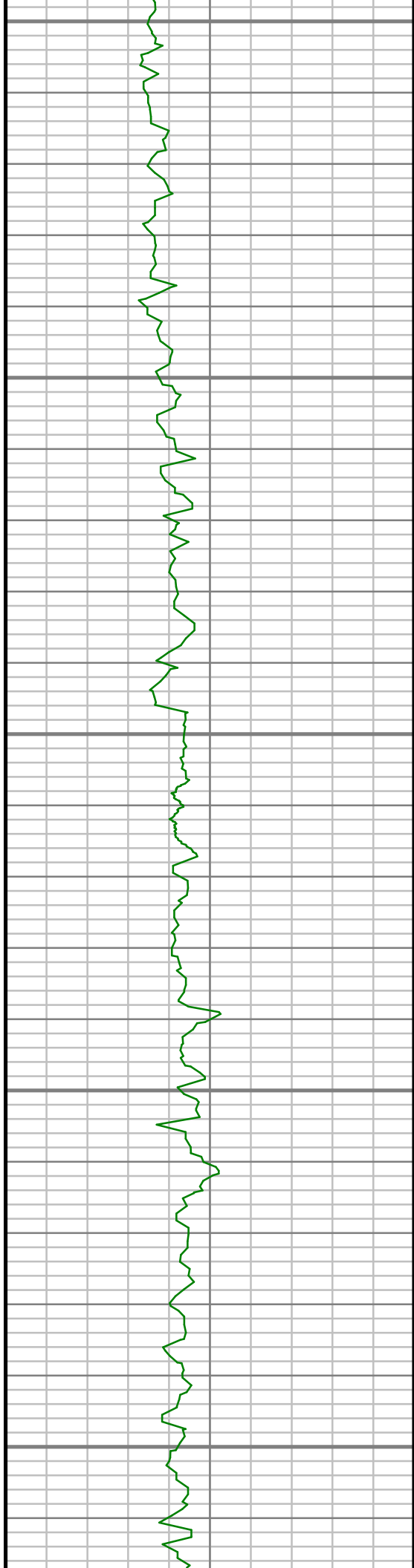
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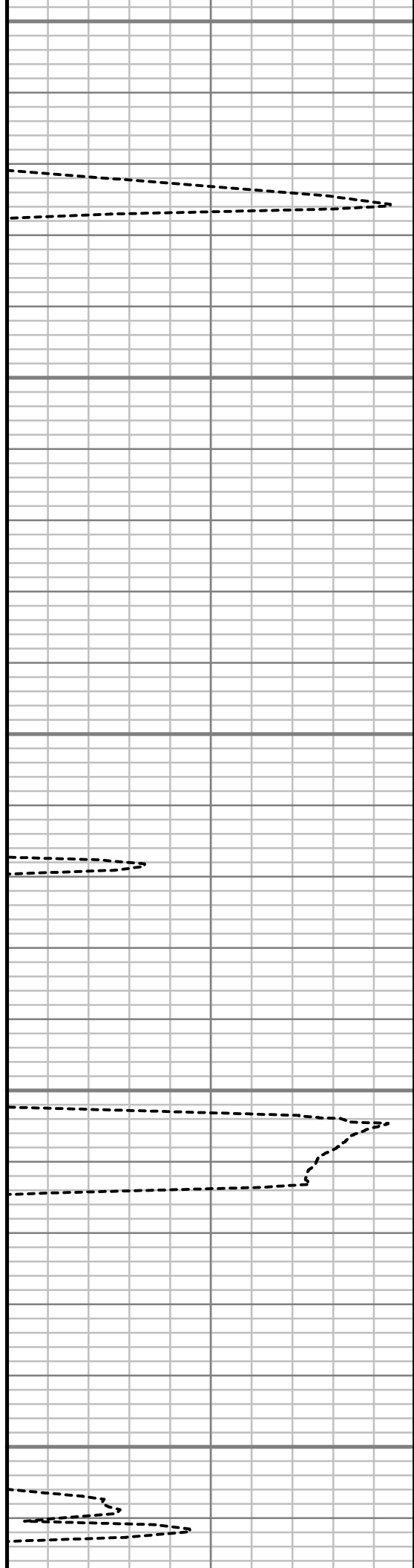
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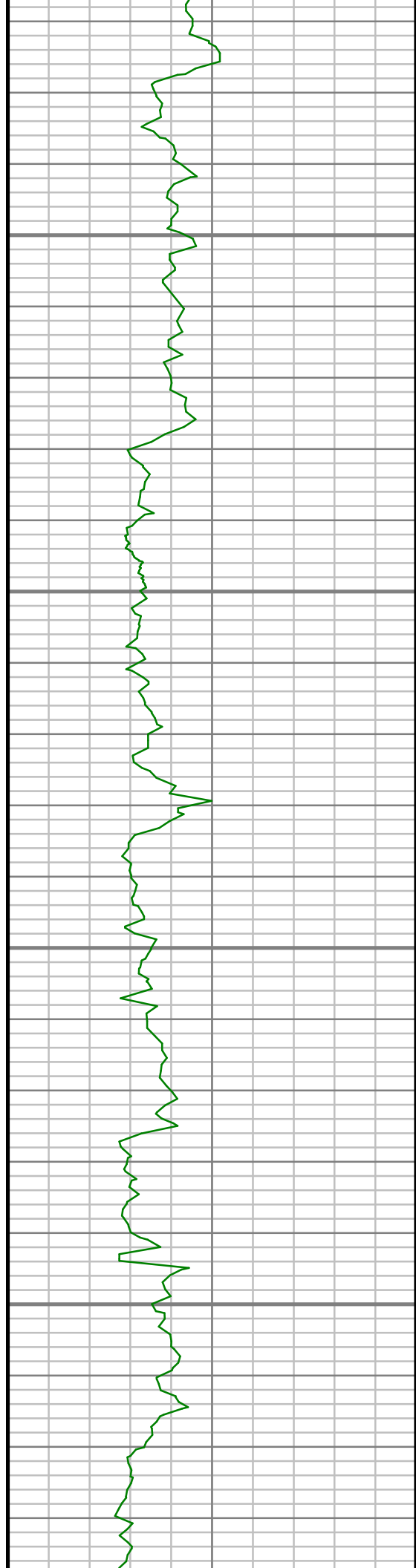
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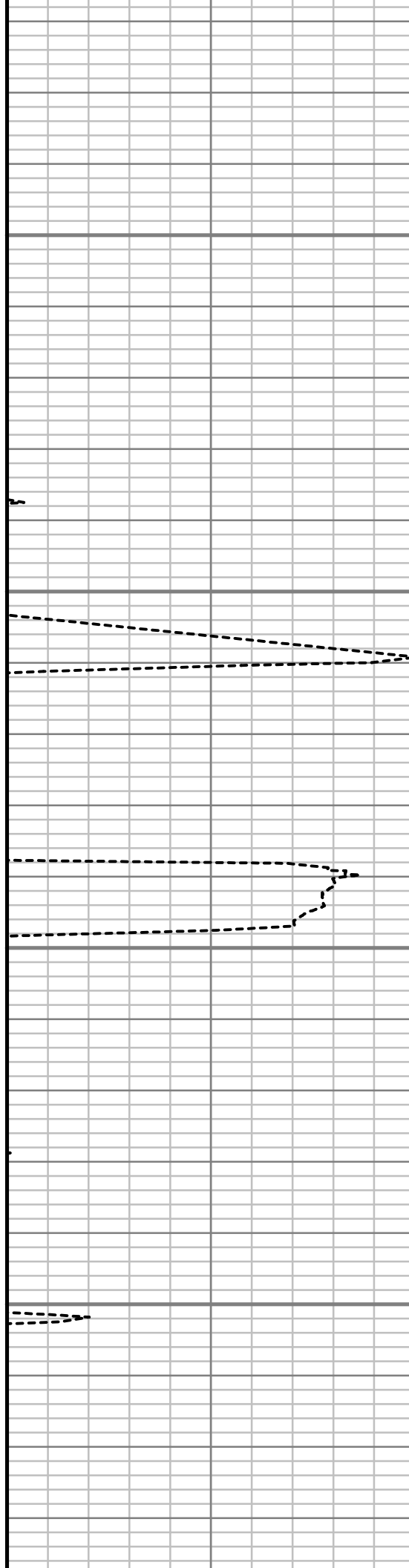


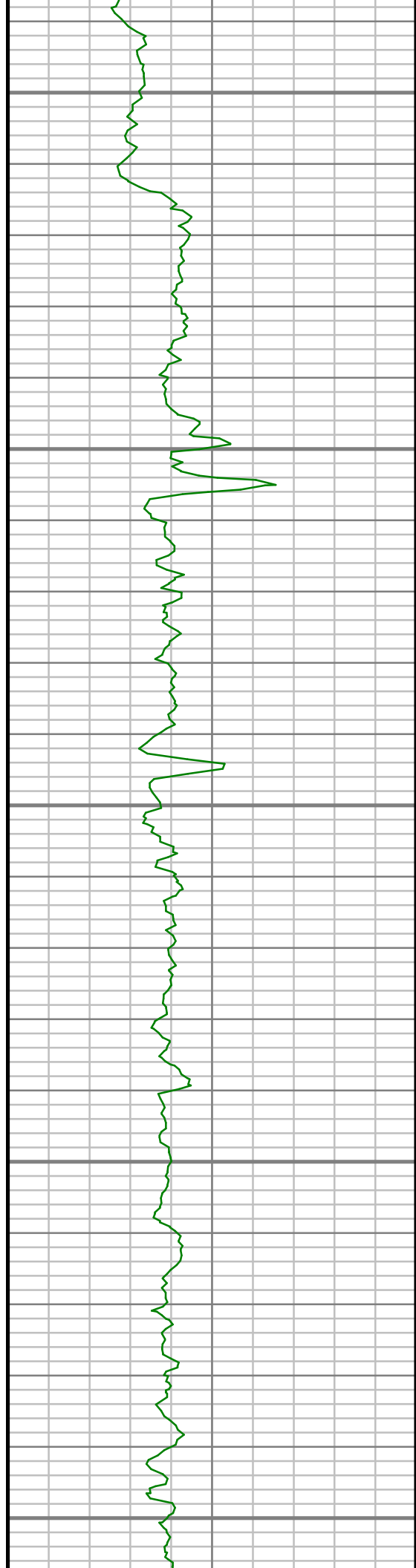
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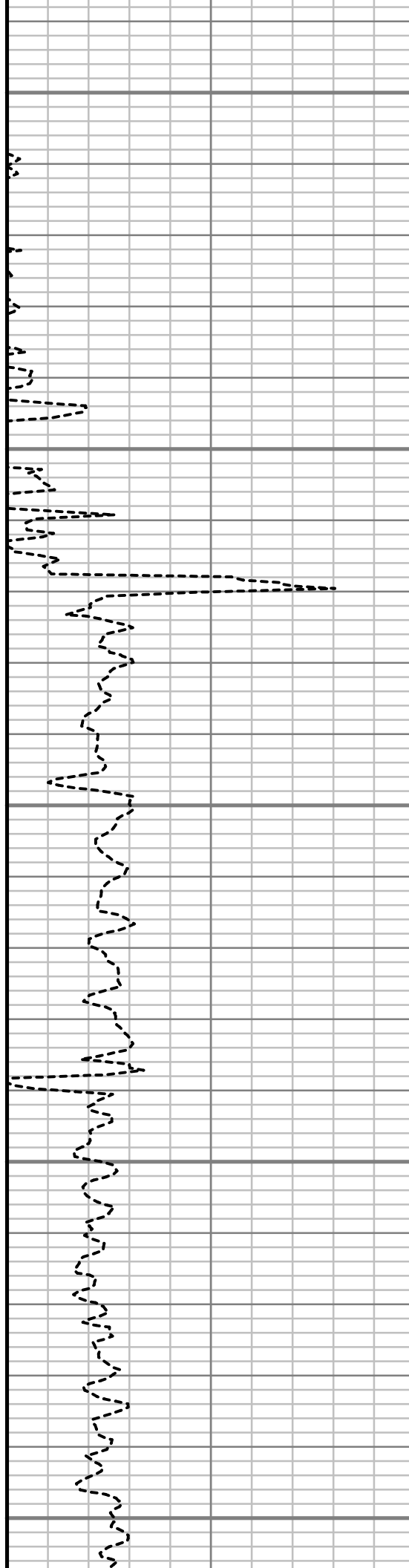
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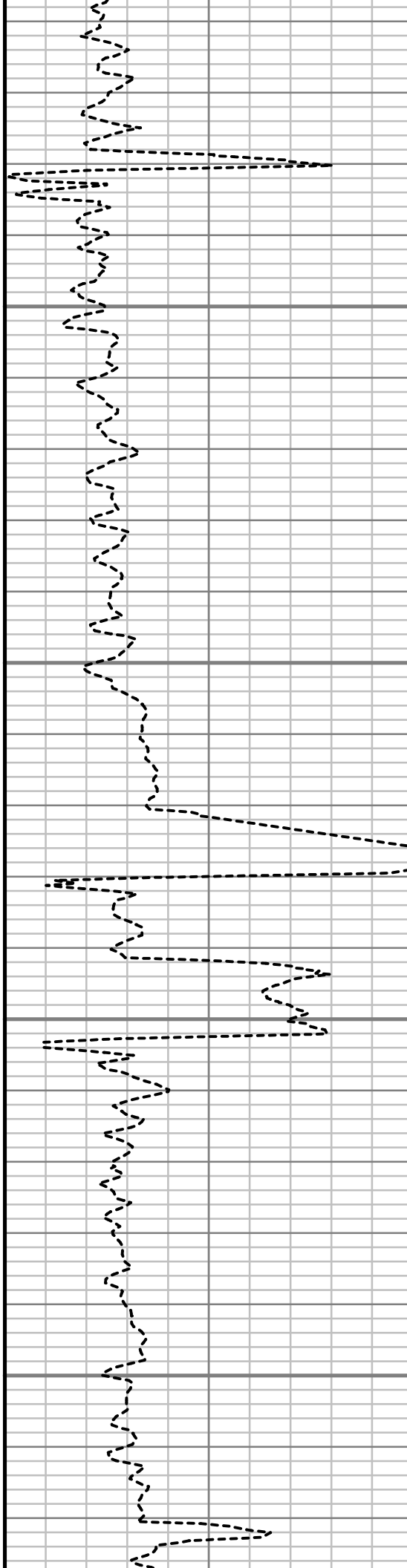


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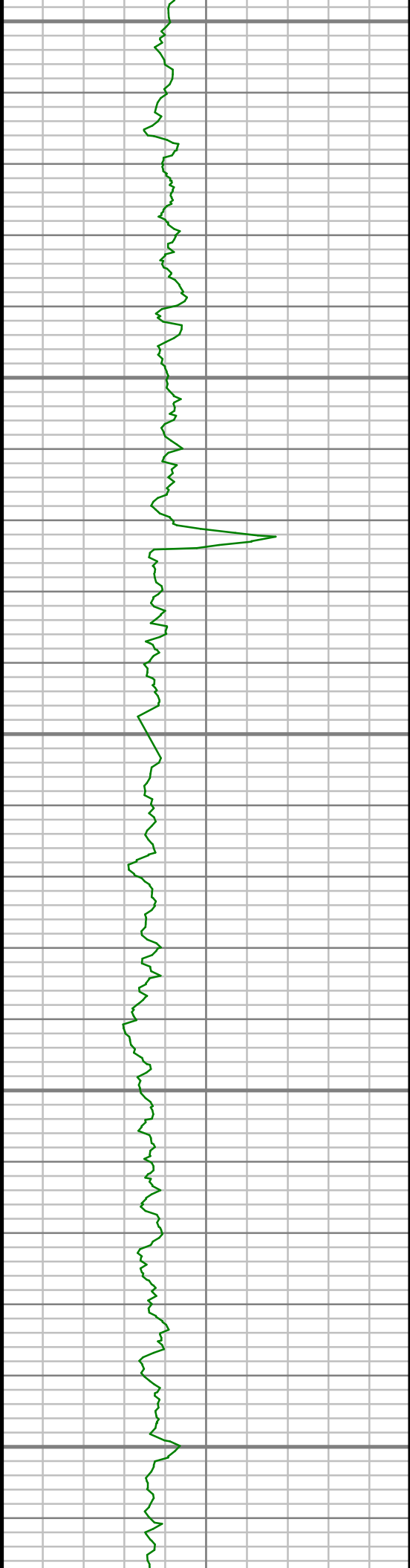
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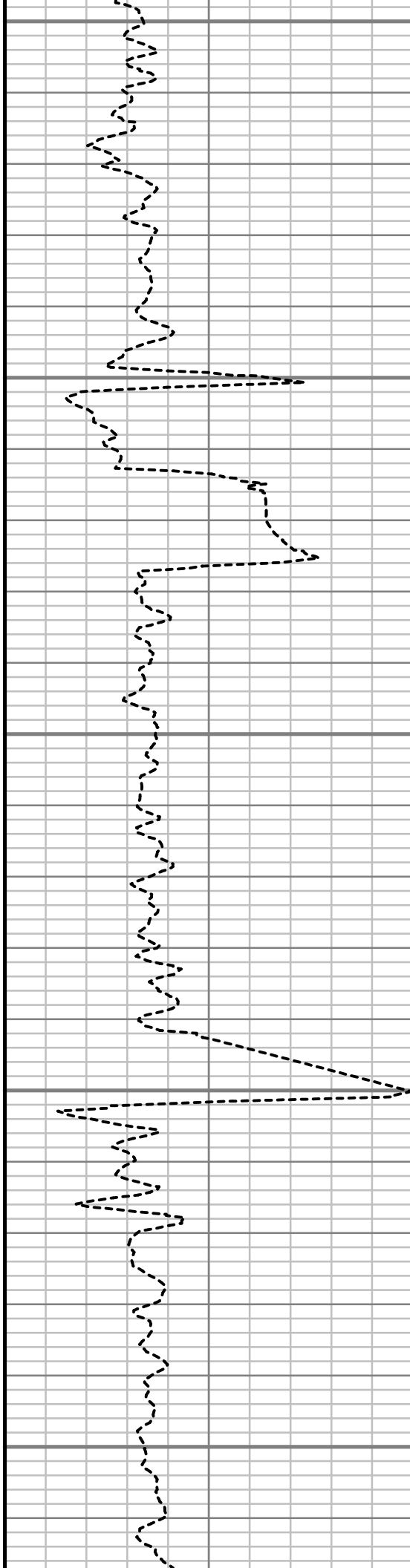
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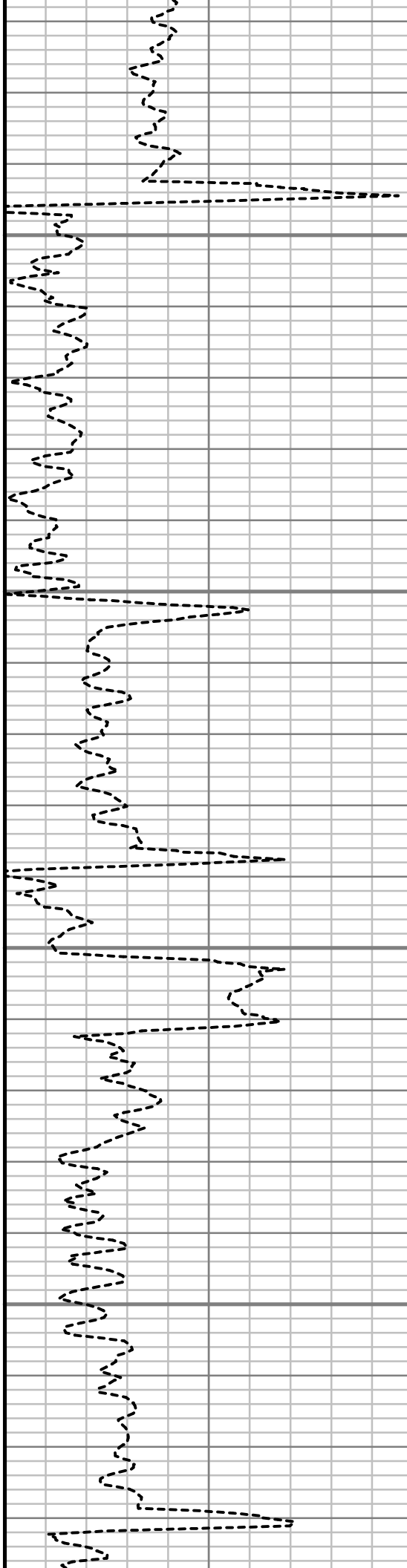


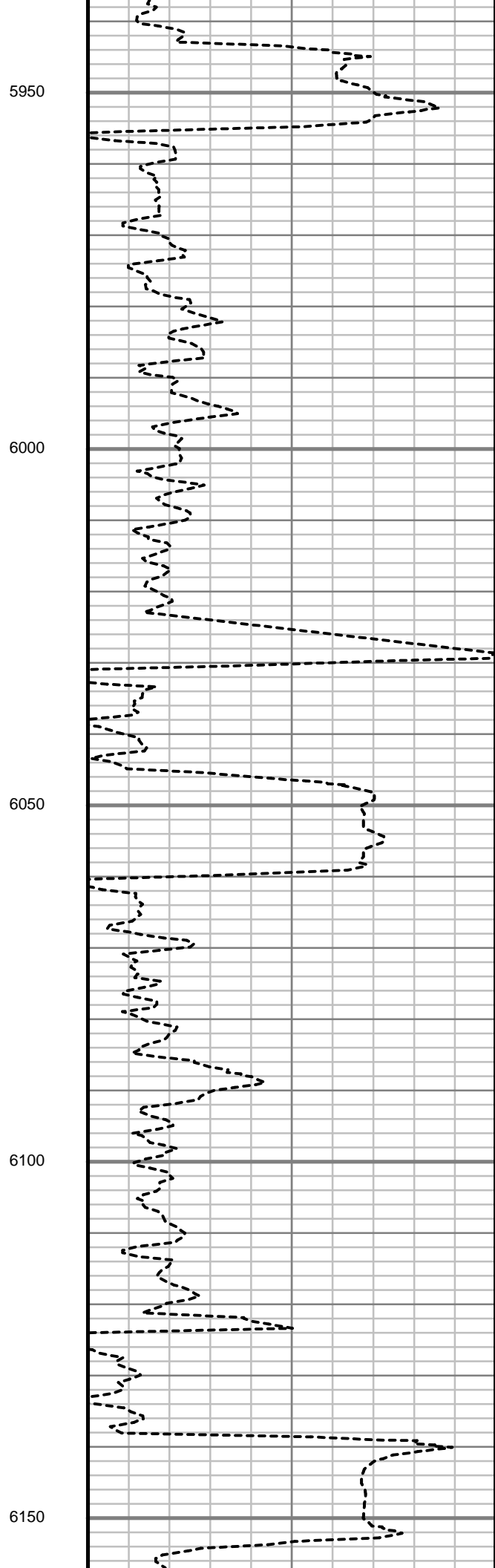
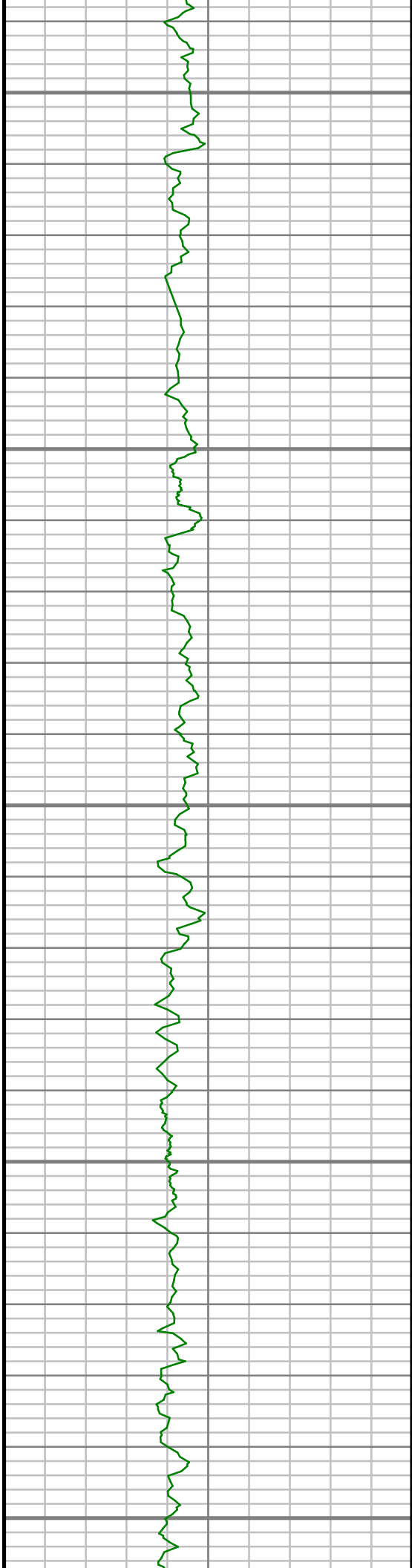
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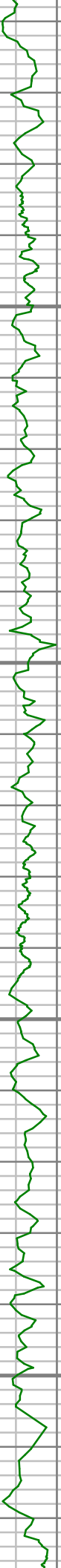
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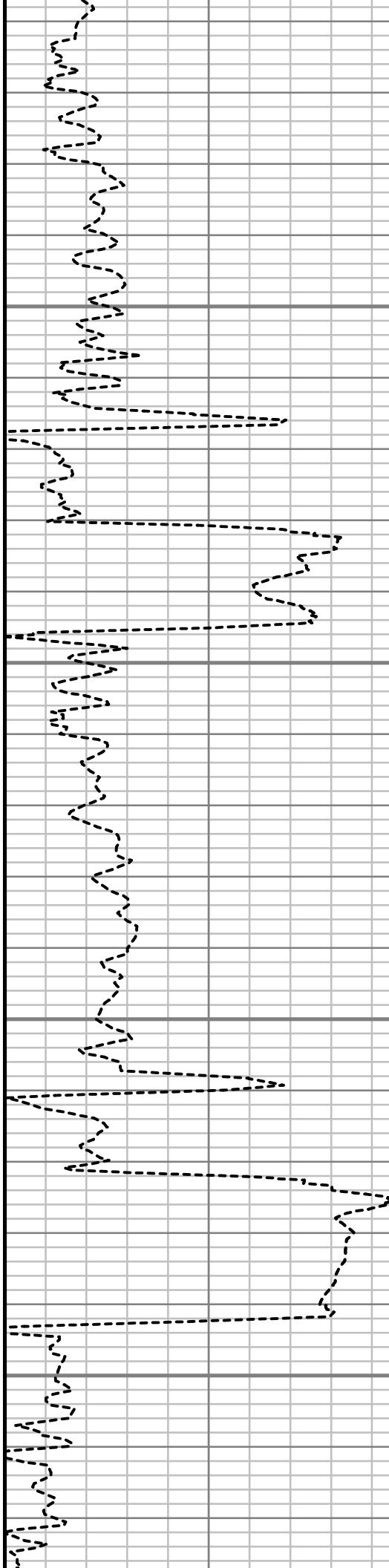


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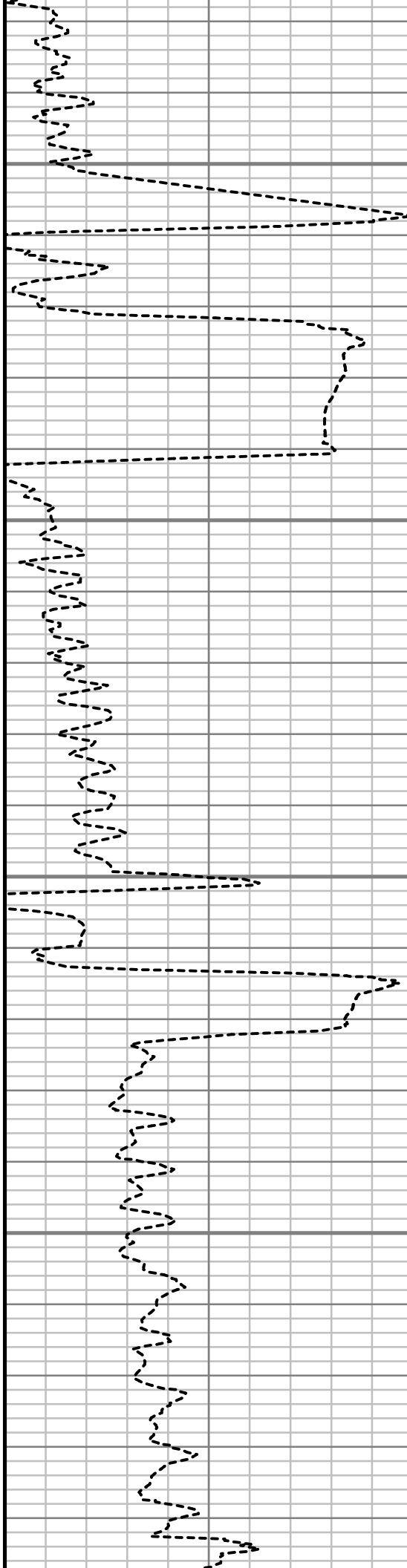


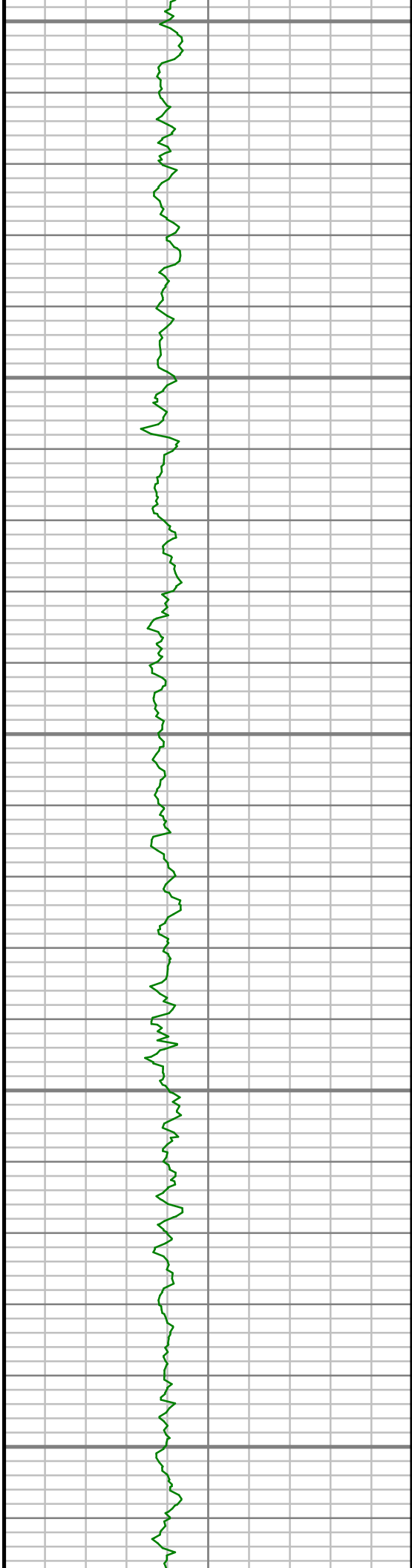
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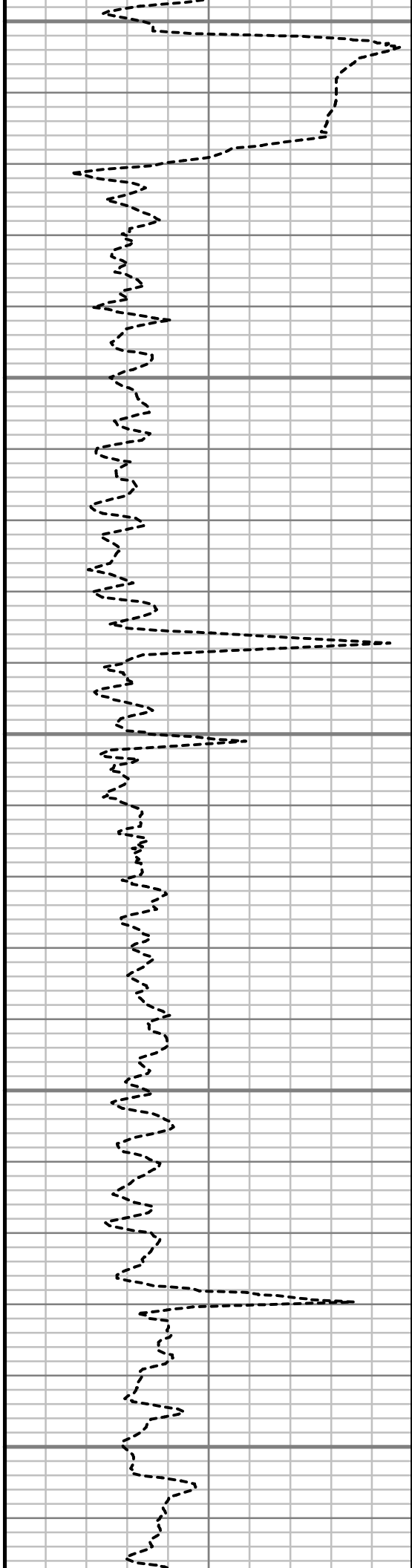
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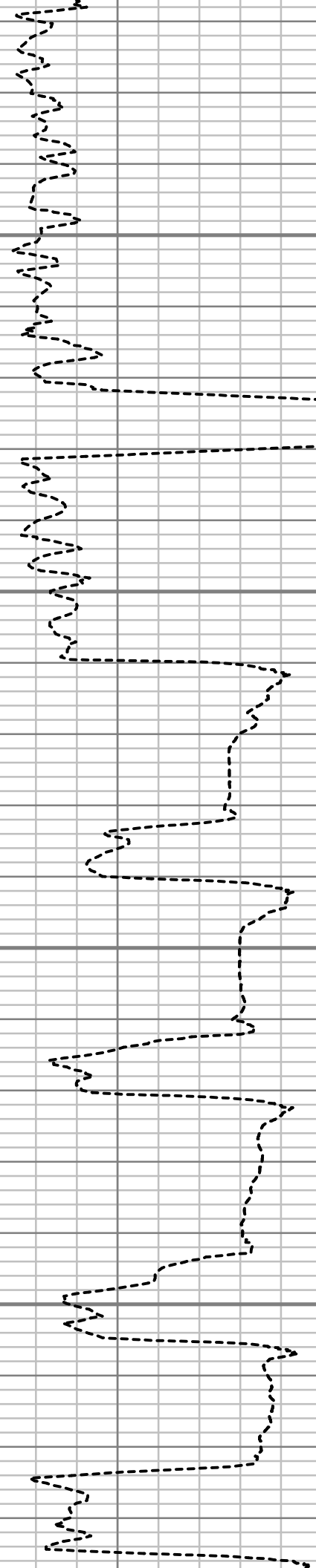
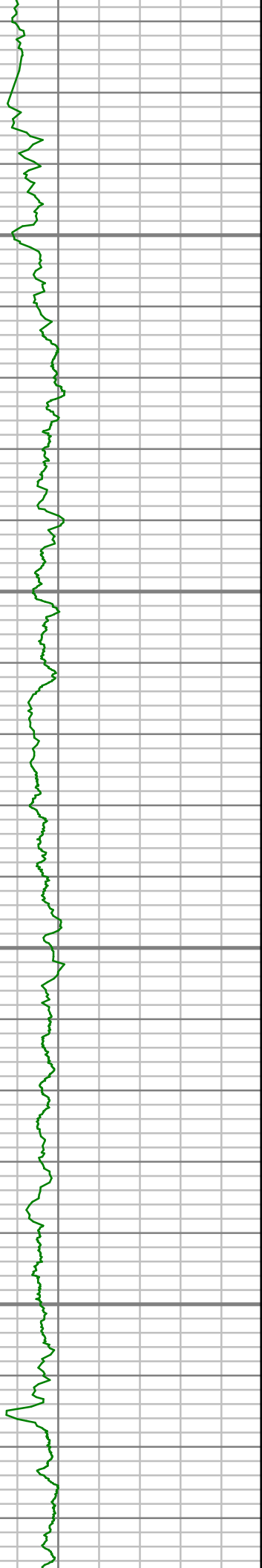
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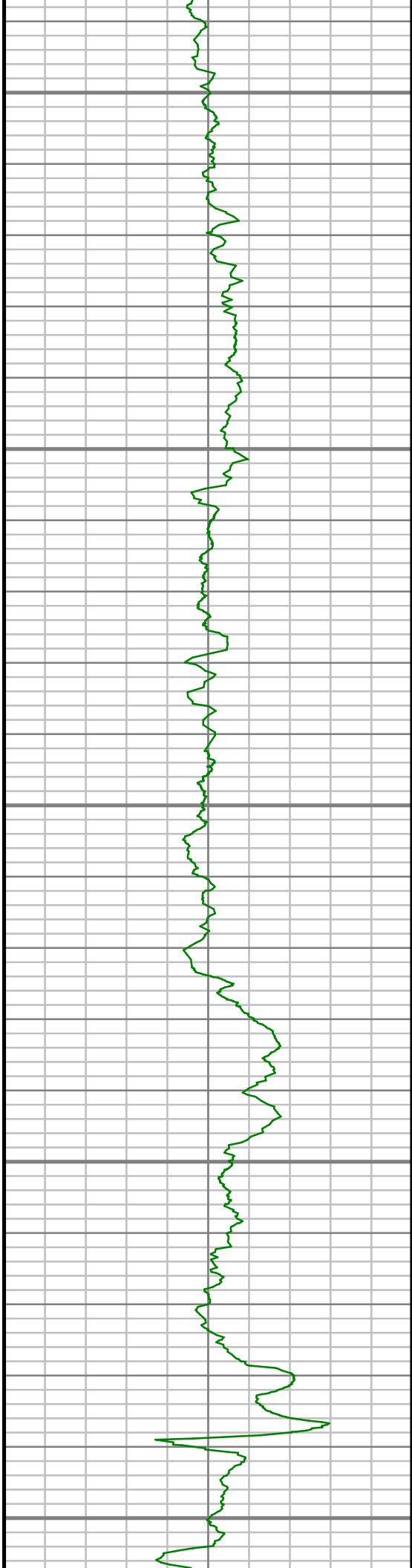
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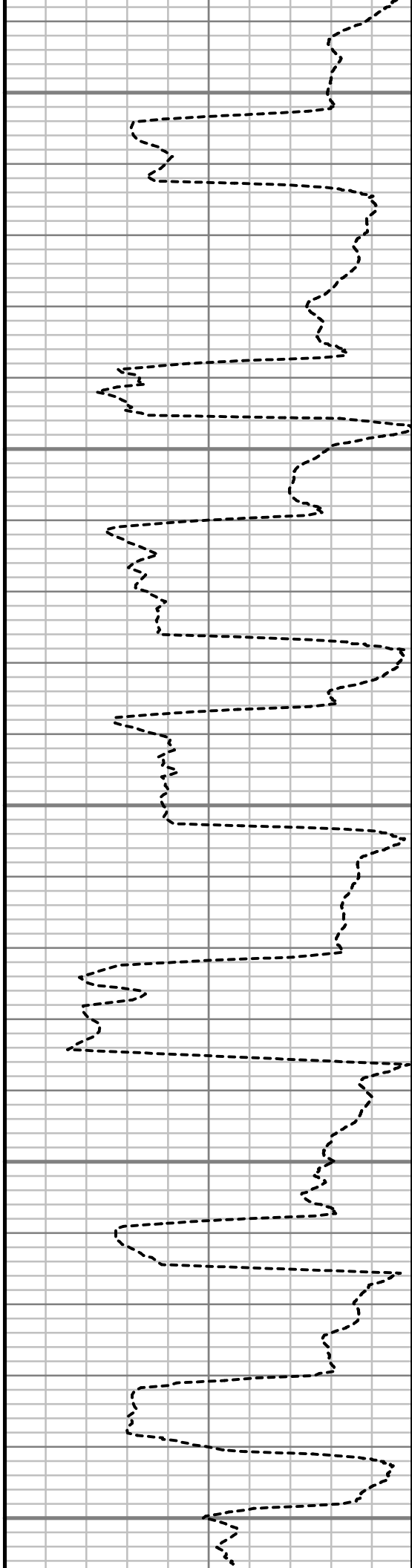
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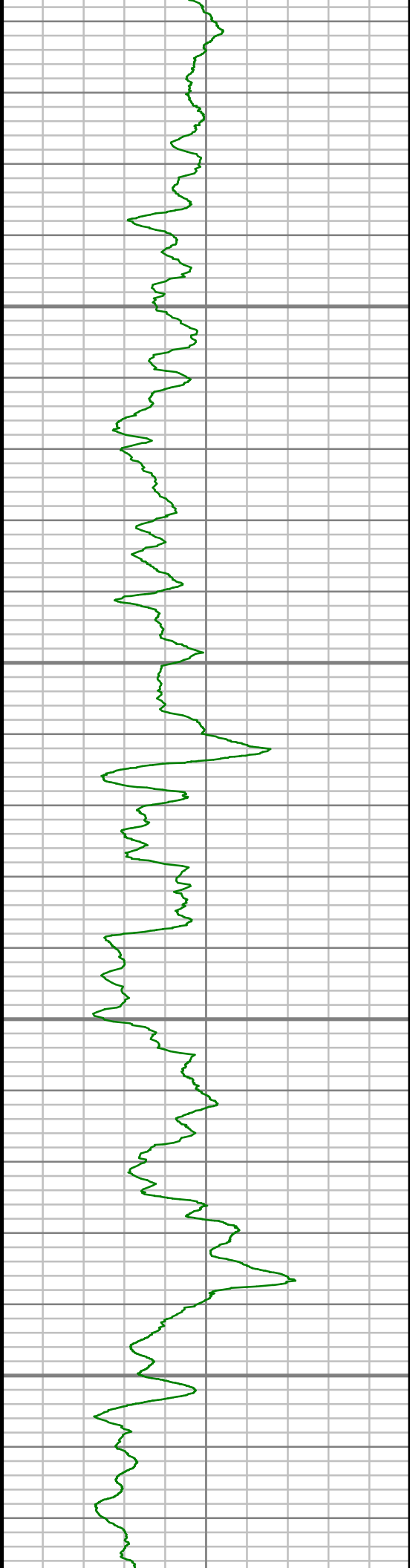
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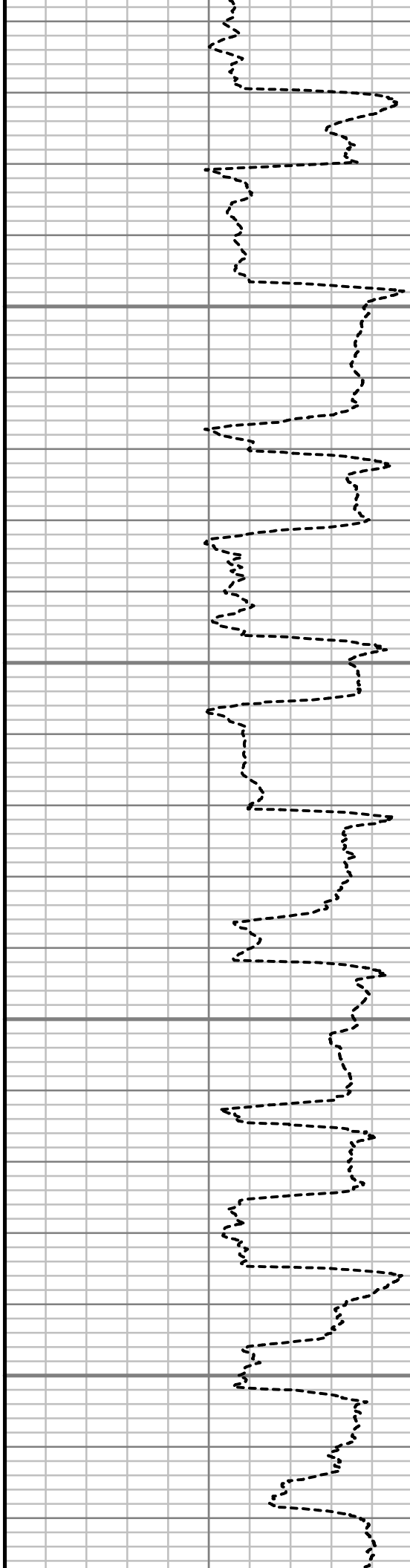


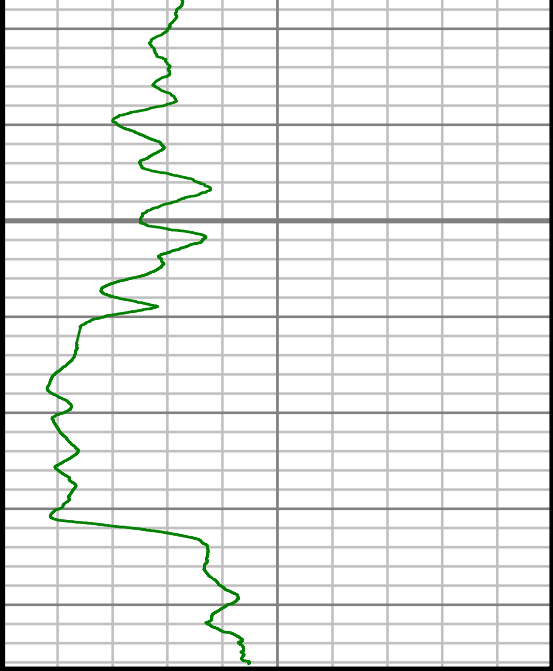
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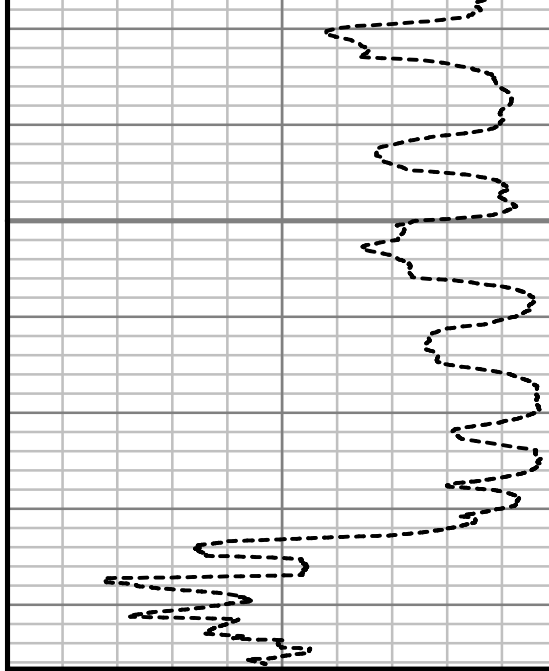


Gamma Ray (GR)

0 Unit = aapi 150

7500

TRUE VERTICAL DEPTH
1:240 (ft)



Rate of Penetration (ROP)

400 Unit = ft/hr 0

Comments

Survey Report

Customer Name:	ENCANA OIL AND GAS (USA) INC						
Site Name:	RODMAN BRUNTZ						
Well Name:	RODMAN BRUNTZ 2B-26H						
Survey:	RODMAN BRUNTZ 2B-26H						
Survey Date:	12/31/2013						
Magnetic Declination:	8.49 deg						
North Reference:	True North						
Calculation Method:	Minimum Curvature						
Section (VS) Ref:	0.00N (ft), 0.00E (ft), 180.00Azim (deg)						
MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid
527.00	0.35	38.74	527.00	-1.24	1.24	1.00	0.07
806.00	0.36	22.25	805.99	-2.70	2.70	1.85	0.04
898.00	0.77	320.46	897.99	-3.45	3.45	1.57	0.74
991.00	0.44	308.74	990.98	-4.16	4.16	0.89	0.38
1084.00	0.61	323.38	1083.98	-4.77	4.77	0.32	0.23
1172.00	1.29	320.82	1171.97	-5.91	5.91	-0.59	0.78
1264.00	1.48	299.08	1263.94	-7.29	7.29	-2.28	0.60
1450.00	4.57	301.22	1449.66	-12.30	12.30	-10.71	1.66

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
1636.00	5.93	309.55	1634.88	-22.26	22.26	-24.46	0.84
1822.00	6.18	304.20	1819.84	-34.01	34.01	-40.15	0.33
2010.00	5.79	295.60	2006.82	-43.79	43.79	-57.07	0.52
2199.00	5.56	307.79	2194.90	-53.52	53.52	-72.90	0.65
2389.00	5.49	304.22	2384.02	-64.27	64.27	-87.69	0.18
2578.00	4.44	323.88	2572.32	-75.26	75.26	-99.48	1.05
2768.00	3.56	314.18	2761.86	-85.32	85.32	-108.05	0.58
2958.00	5.08	305.70	2951.31	-94.35	94.35	-119.12	0.87
3147.00	5.01	306.50	3139.58	-104.14	104.14	-132.56	0.05
3336.00	4.06	304.35	3327.98	-112.83	112.83	-144.72	0.51
3526.00	5.29	305.69	3517.35	-121.74	121.74	-157.40	0.65
3715.00	3.23	296.77	3705.82	-129.23	129.23	-169.23	1.15
3905.00	4.96	307.32	3895.33	-136.62	136.62	-180.54	0.99
4094.00	6.78	302.01	4083.33	-147.49	147.49	-196.50	1.00
4284.00	5.54	298.38	4272.23	-157.79	157.79	-214.07	0.69
4473.00	7.25	304.38	4460.05	-168.86	168.86	-231.94	0.97
4664.00	6.25	307.06	4649.72	-181.94	181.94	-250.19	0.55
4853.00	6.88	313.94	4837.49	-195.98	195.98	-266.54	0.53
5043.00	6.33	310.41	5026.23	-210.67	210.67	-282.71	0.36
5233.00	6.53	303.46	5215.03	-223.41	223.41	-299.69	0.42

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
5422.00	6.07	312.73	5402.90	-236.11	236.11	-316.00	0.59
5612.00	5.36	321.04	5591.96	-249.83	249.83	-328.96	0.57
5802.00	3.60	340.14	5781.38	-262.34	262.34	-336.56	1.20
5991.00	1.69	325.64	5970.17	-270.22	270.22	-340.15	1.06
6180.00	2.60	307.67	6159.04	-275.14	275.14	-345.11	0.59
6370.00	2.77	279.20	6348.84	-278.50	278.50	-353.05	0.70
6559.00	5.01	291.70	6537.39	-282.29	282.29	-365.23	1.26
6748.00	5.73	302.40	6725.57	-290.39	290.39	-380.86	0.65
6906.00	3.81	308.90	6883.01	-297.92	297.92	-391.62	1.26
6938.00	3.21	291.60	6914.95	-298.92	298.92	-393.28	3.78
6969.00	3.04	240.08	6945.91	-298.83	298.83	-394.80	8.78
7001.00	5.58	211.79	6977.82	-297.08	297.08	-396.35	10.14
7033.00	7.66	200.95	7009.61	-293.77	293.77	-397.94	7.55
7064.00	10.24	197.88	7040.23	-289.21	289.21	-399.52	8.44
7096.00	14.27	198.73	7071.49	-282.77	282.77	-401.66	12.61
7127.00	16.76	195.99	7101.36	-274.85	274.85	-404.12	8.36
7159.00	18.33	194.06	7131.87	-265.54	265.54	-406.62	5.22
7191.00	20.19	192.55	7162.08	-255.27	255.27	-409.04	6.04
7222.00	23.26	187.34	7190.88	-243.97	243.97	-410.98	11.69

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
7254.00	27.29	183.84	7219.81	-230.37	230.37	-412.28	13.42
7285.00	29.41	182.20	7247.09	-215.68	215.68	-413.05	7.28
7317.00	31.08	180.41	7274.73	-199.56	199.56	-413.41	5.93
7349.00	34.29	177.71	7301.66	-182.29	182.29	-413.11	11.02
7380.00	37.78	177.09	7326.73	-164.07	164.07	-412.28	11.31
7412.00	39.40	177.59	7351.74	-144.14	144.14	-411.35	5.14
7443.00	41.93	179.44	7375.25	-123.95	123.95	-410.84	9.06
7475.00	46.11	180.60	7398.26	-101.71	101.71	-410.85	13.30
7507.00	50.49	182.13	7419.54	-77.84	77.84	-411.43	14.15
7538.00	53.38	182.05	7438.65	-53.45	53.45	-412.32	9.33
7570.00	56.88	180.87	7456.95	-27.21	27.21	-412.99	11.34
7601.00	61.33	179.47	7472.86	-0.61	0.61	-413.06	14.87
7633.00	66.18	179.14	7487.01	28.08	-28.08	-412.71	15.17
7665.00	69.27	178.83	7499.14	57.68	-57.68	-412.18	9.71
7696.00	72.12	178.37	7509.39	86.92	-86.92	-411.47	9.31
7728.00	76.01	178.39	7518.17	117.68	-117.68	-410.60	12.15
7799.00	85.05	178.87	7529.84	187.62	-187.62	-408.93	12.74
7830.00	87.54	179.61	7531.85	218.55	-218.55	-408.52	8.40
7923.00	89.02	179.74	7534.64	311.50	-311.50	-407.99	1.60
8016.00	88.15	180.53	7536.93	404.47	-404.47	-408.21	1.27

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
8109.00	87.82	179.19	7540.20	497.41	-497.41	-407.99	1.48
8202.00	88.76	180.12	7542.98	590.36	-590.36	-407.43	1.42
8295.00	89.26	179.34	7544.58	683.35	-683.35	-406.98	1.00
8388.00	89.26	180.74	7545.78	776.34	-776.34	-407.04	1.51
8481.00	90.54	180.76	7545.94	869.33	-869.33	-408.25	1.38
8574.00	89.66	179.83	7545.78	962.33	-962.33	-408.73	1.37
8667.00	90.27	179.31	7545.83	1055.32	-1055.32	-408.04	0.86
8760.00	90.03	179.60	7545.59	1148.32	-1148.32	-407.15	0.40
8853.00	90.34	177.28	7545.29	1241.28	-1241.28	-404.61	2.51
8946.00	89.70	177.29	7545.26	1334.17	-1334.17	-400.21	0.69
9039.00	90.47	177.85	7545.12	1427.09	-1427.09	-396.26	1.02
9132.00	90.37	177.96	7544.44	1520.02	-1520.02	-392.86	0.16
9226.00	90.07	176.37	7544.08	1613.90	-1613.90	-388.21	1.73
9321.00	91.11	176.44	7543.11	1708.71	-1708.71	-382.25	1.10
9416.00	90.07	176.15	7542.13	1803.50	-1803.50	-376.11	1.14
9511.00	89.66	176.63	7542.36	1898.31	-1898.31	-370.12	0.66
9606.00	89.66	176.49	7542.91	1993.14	-1993.14	-364.42	0.14
9701.00	90.13	178.18	7543.08	2088.03	-2088.03	-360.00	1.85
9795.00	91.14	177.35	7542.03	2181.96	-2181.96	-356.34	1.39

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
9890.00	91.51	178.48	7539.84	2276.87	-2276.87	-352.89	1.25
9985.00	92.28	178.19	7536.69	2371.77	-2371.77	-350.13	0.87
10080.00	91.58	178.78	7533.49	2466.68	-2466.68	-347.62	0.97
10175.00	90.27	177.91	7531.96	2561.63	-2561.63	-344.87	1.66
10270.00	89.60	177.88	7532.08	2656.56	-2656.56	-341.39	0.71
10365.00	90.40	178.46	7532.08	2751.51	-2751.51	-338.35	1.04
10460.00	89.80	178.81	7531.91	2846.49	-2846.49	-336.09	0.74
10555.00	90.27	177.90	7531.85	2941.45	-2941.45	-333.37	1.08
10649.00	89.87	177.97	7531.74	3035.39	-3035.39	-329.98	0.43
10743.00	89.93	177.36	7531.91	3129.31	-3129.31	-326.16	0.66
10838.00	89.36	177.89	7532.49	3224.22	-3224.22	-322.22	0.82
10933.00	89.60	178.41	7533.35	3319.17	-3319.17	-319.16	0.60
11028.00	90.10	177.78	7533.60	3414.12	-3414.12	-316.00	0.85
11123.00	90.20	179.08	7533.35	3509.08	-3509.08	-313.41	1.37
11217.00	90.47	177.28	7532.80	3603.02	-3603.02	-310.42	1.94
11312.00	90.44	178.03	7532.05	3697.94	-3697.94	-306.52	0.79
11407.00	90.00	178.47	7531.69	3792.90	-3792.90	-303.62	0.65
11502.00	89.60	179.02	7532.02	3887.87	-3887.87	-301.53	0.72
11596.00	90.74	178.92	7531.75	3981.85	-3981.85	-299.85	1.22
11691.00	88.39	177.06	7532.47	4076.78	-4076.78	-296.52	3.16

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
11785.00	89.46	178.15	7534.23	4170.68	-4170.68	-292.59	1.63
11880.00	90.13	178.05	7534.56	4265.63	-4265.63	-289.44	0.71
11974.00	90.54	178.26	7534.01	4359.58	-4359.58	-286.41	0.48
12069.00	90.91	179.59	7532.82	4454.55	-4454.55	-284.62	1.46
12164.00	90.47	179.17	7531.67	4549.54	-4549.54	-283.60	0.64
12259.00	90.13	177.72	7531.17	4644.50	-4644.50	-281.02	1.57
12354.00	90.20	177.32	7530.89	4739.41	-4739.41	-276.91	0.43
12449.00	90.67	179.37	7530.17	4834.36	-4834.36	-274.16	2.21
12543.00	89.03	181.44	7530.42	4928.35	-4928.35	-274.82	2.82
12638.00	88.42	182.52	7532.53	5023.27	-5023.27	-278.10	1.30
12734.00	89.19	183.31	7534.52	5119.12	-5119.12	-282.98	1.15
12828.00	90.27	183.57	7534.96	5212.95	-5212.95	-288.62	1.18
12923.00	90.74	185.03	7534.13	5307.68	-5307.68	-295.74	1.62
13018.00	89.93	184.84	7533.57	5402.32	-5402.32	-303.92	0.87
13112.00	90.94	183.56	7532.86	5496.06	-5496.06	-310.80	1.73
13207.00	89.06	181.95	7532.86	5590.95	-5590.95	-315.37	2.60
13302.00	88.76	181.81	7534.66	5685.88	-5685.88	-318.49	0.35
13397.00	88.79	182.39	7536.69	5780.79	-5780.79	-321.97	0.61
13491.00	89.43	182.62	7538.15	5874.69	-5874.69	-326.07	0.72

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft
13586.00	89.33	181.28	7539.18	5969.63	-5969.63	-329.31	1.42
13681.00	89.97	181.48	7539.77	6064.60	-6064.60	-331.60	0.70
13776.00	91.11	181.17	7538.88	6159.57	-6159.57	-333.79	1.25
13870.00	90.44	180.07	7537.61	6253.55	-6253.55	-334.80	1.37
13965.00	91.54	179.56	7535.97	6348.53	-6348.53	-334.49	1.28
14060.00	92.58	178.15	7532.55	6443.45	-6443.45	-332.59	1.85
14151.00	92.82	176.72	7528.26	6534.25	-6534.25	-328.52	1.58

5" = 100' FEET TVD