PRODIRECTIONAL

5 Inch MD-Gamma Ray Log

(Scale: 5":100' (10'))

Company: Tapstone Energy
Well: Carothers 17-33-7 #1H
Field: Starks Masner
Well ID: 15-077-22165-01-00
Job Number: LKS6120516
Location: Sec. 20 T33S, R7W
Operator 1: J.Treille
Operator 2: B.Bagby

State: Kansas
County: Harper
Country: USA

Elev KB: 22'+1369'=1391'
Elev DF: 22'
Elev GL: 1369'

Comment 1: Lat. 37° 9' 33.73N
Comment 2: Long. 98° 6' 33.99W
Comment 3: Y=179640.59 / X=2113822.32
Comment 4: Mud Density (lb/bbl): 8.4 / Funnel Vis.(sect./qt.): 28.0
Comment 5: Max Temp(DegF.): 153 / Gamma Ray Depths are in ref. to Rig Elev. KB.

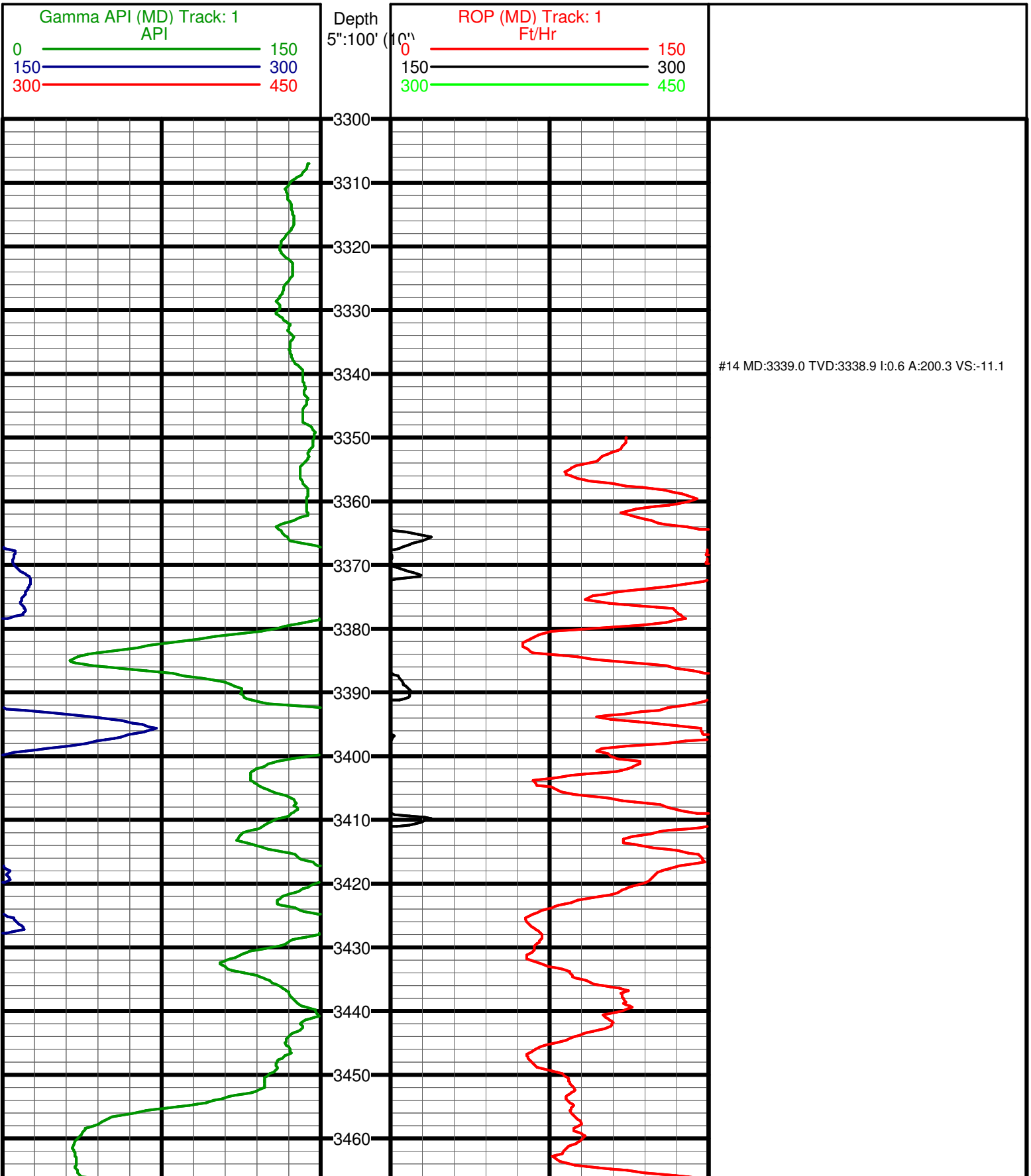
Hole Data			Casing Record		
Size	**From**	**To**	**Size**	**From**	**To**
12 1/4"	0'	804'	9 5/8"	0'	804'
8 3/4"	804'	5,138'	7"	804'	5,138'
6 1/8"	5138'	9,000'			

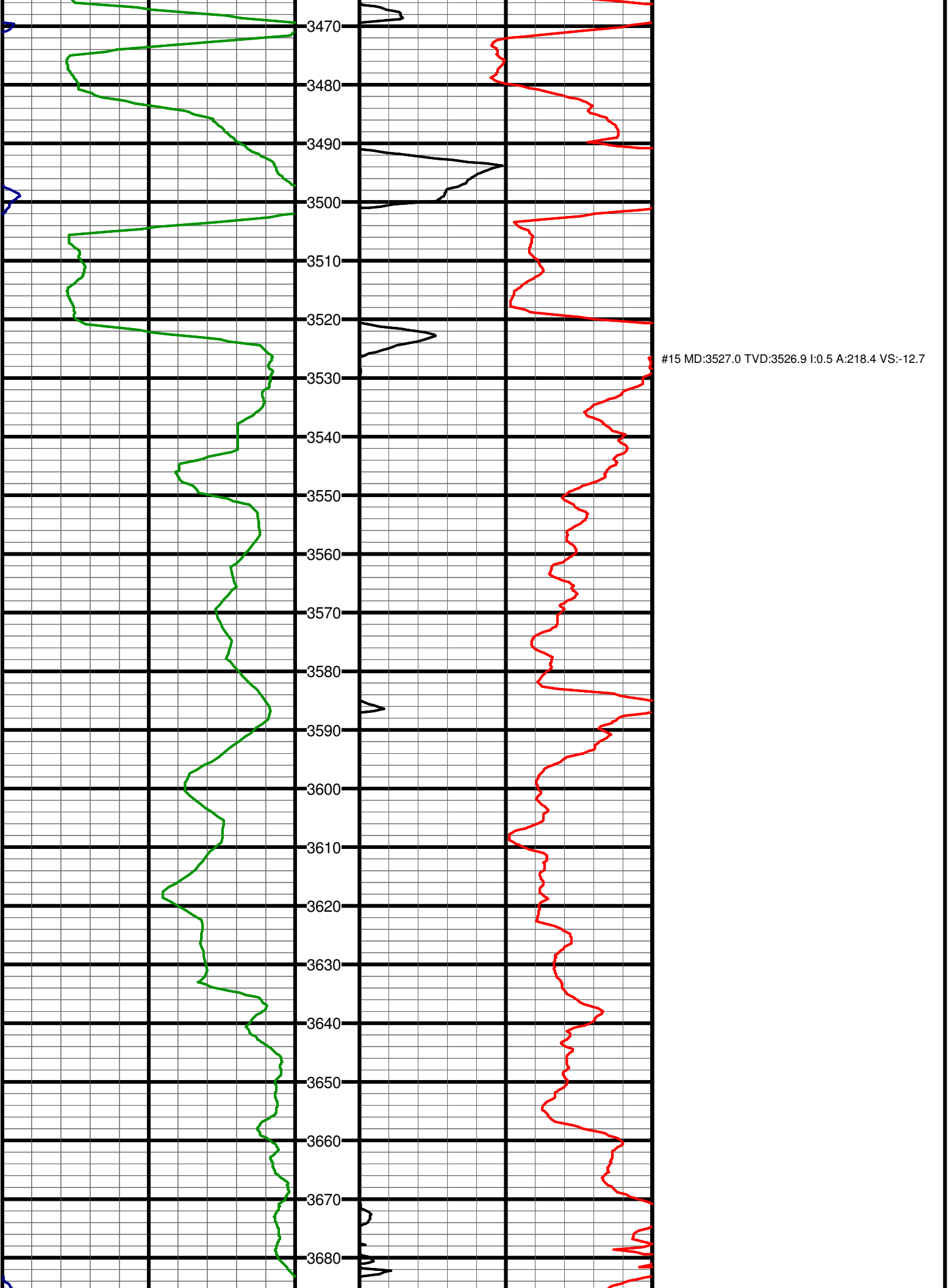
Tool Run Data	Run #1	Run #2	Run #3	Run #4	Run #5
Tool S/N	1103	1103	1979	1103	1979
Cal Factor	4.75	2.81	2.81	2.81	2.81
Gamma Offset	43'	41'	42'	41'	41'
Start Depth	3,307'	5,094'	6,123'	6,432'	7,408'
Start Date	02/20/2016	02/23/2016	02/26/2016	02/26/2016	02/28/2016
Start Time	08:14	21:15	00:00	20:13	17:39
End Depth	5,094'	6,123'	6,432'	7,408'	8,174'
End Date	02/22/2016	02/25/2016	02/26/2016	02/28/2016	03/01/2016
End Time	18:15	17:07	14:19	07:43	03:17

Tool Run Data	Run #6	Run #7	Run #8	Run #9	Run #10
Tool S/N	1103				
Cal Factor	2.81				
Offset	50'				
Start Depth	8,174'				
Start Date	03/01/2016				
Start Time	12:35				
End Depth	8,950'				
End Date	03/02/2016				
End Time	17:40				

Tool Run Data	Run #11	Run #12	Run #13	Run #14	Run #15
Tool S/N					
Cal Factor					
Offset					
Start Depth					
Start Date					
Start Time					
End Depth					

End Date					
End Time					

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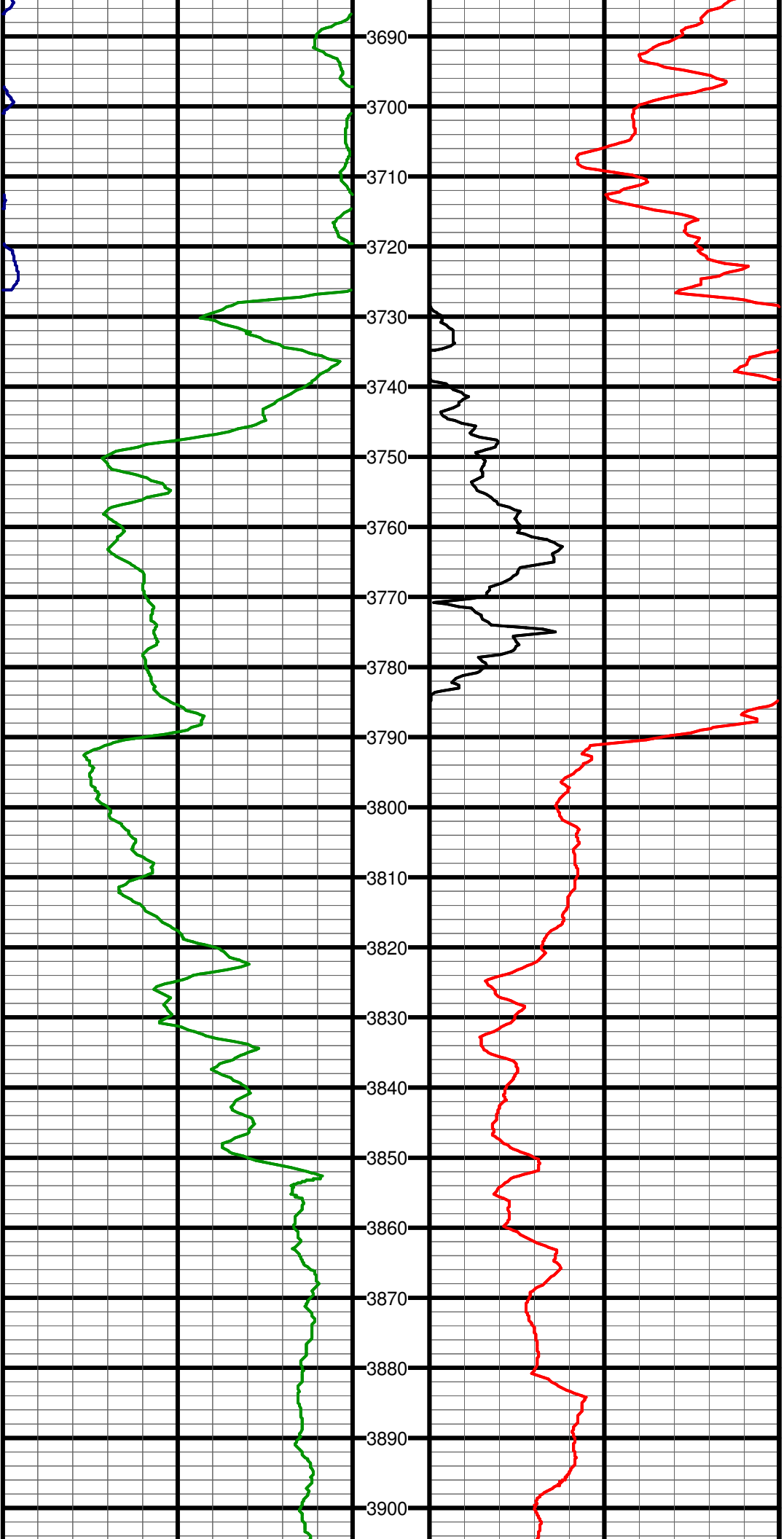
#15 MD:3527.0 TVD:3526.9 I:0.5 A:218.4 VS:-12.7



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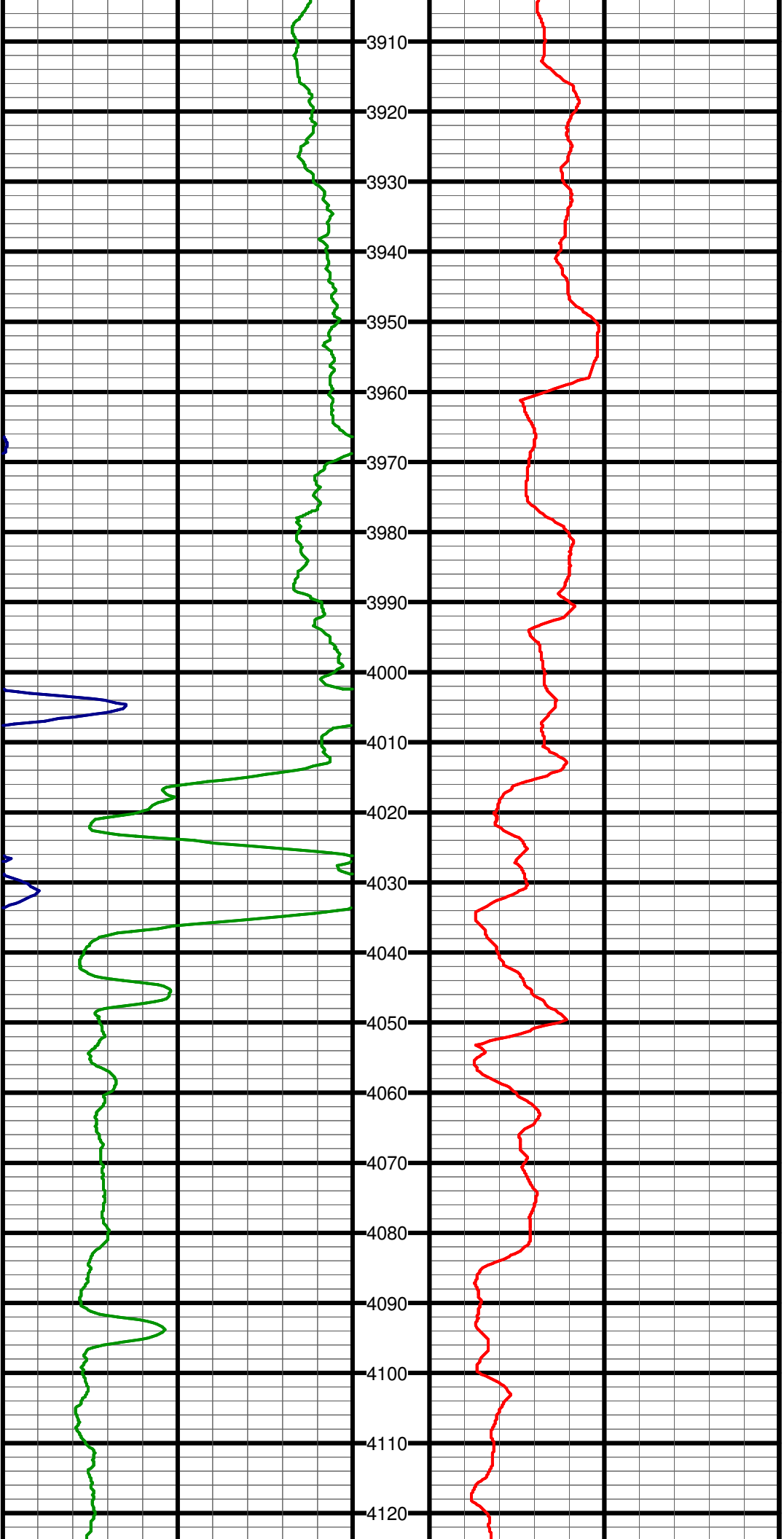
#17 MD:3778.0 TVD:3777.9 I:1.4 A:267.0 VS:-14.4

#18 MD:3809.0 TVD:3808.8 I:3.3 A:342.2 VS:-13.6

#19 MD:3840.0 TVD:3839.7 I:7.3 A:353.6 VS:-10.8

#20 MD:3871.0 TVD:3870.3 I:9.9 A:357.0 VS:-6.2

#21 MD:3902.0 TVD:3900.8 I:11.7 A:359.1 VS:-0.4



#22 MD:3934.0 TVD:3932.0 I:13.5 A:2.5 VS:6.6

#23 MD:3965.0 TVD:3962.0 I:15.6 A:2.8 VS:14.4

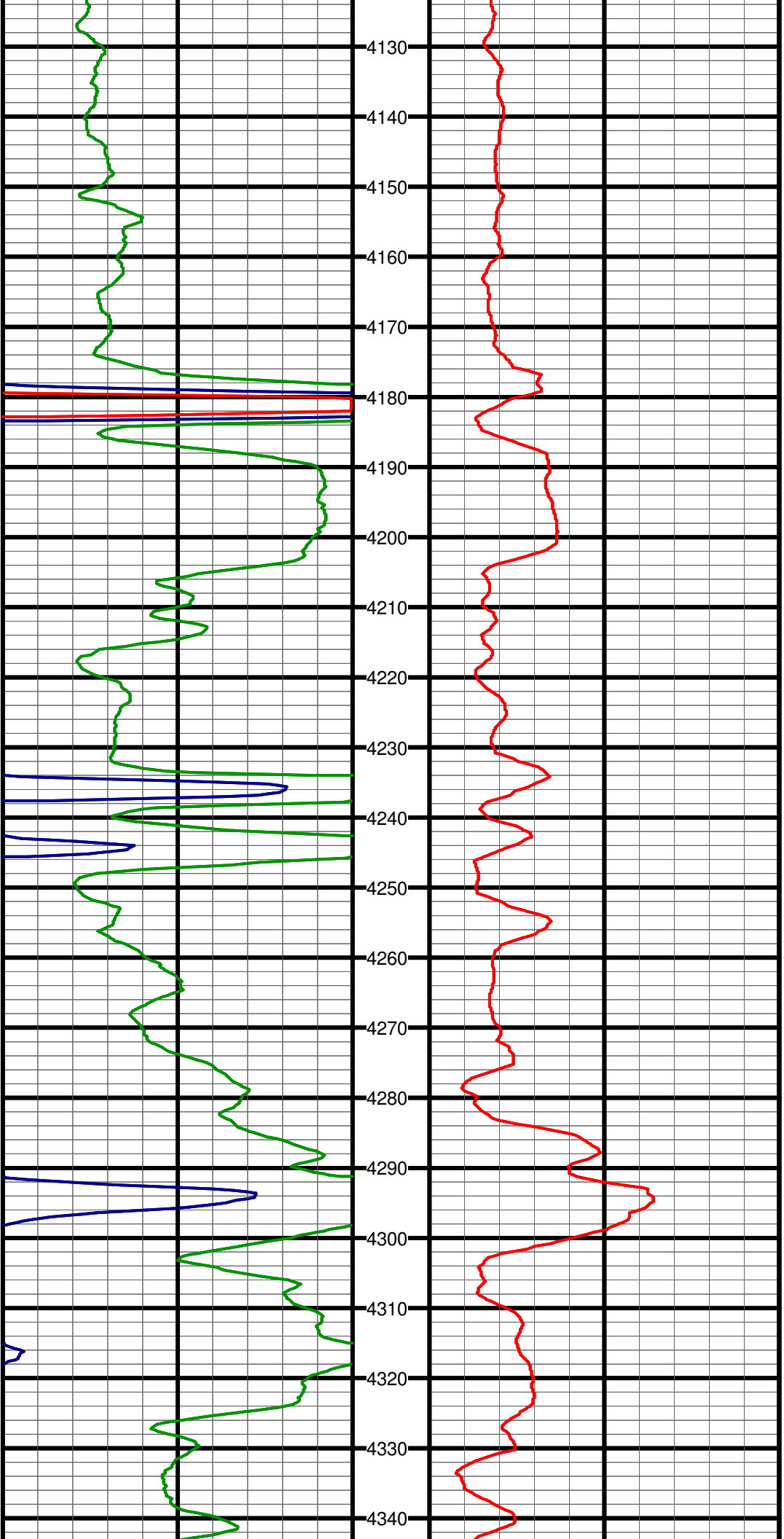
#24 MD:3998.0 TVD:3993.7 I:17.5 A:3.5 VS:23.8

#25 MD:4028.0 TVD:4022.1 I:19.8 A:3.3 VS:33.3

#26 MD:4059.0 TVD:4051.0 I:22.7 A:1.2 VS:44.6

#27 MD:4090.0 TVD:4079.3 I:25.6 A:2.9 VS:57.2

#28 MD:4121.0 TVD:4106.9 I:28.5 A:3.5 VS:71.3



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#30 MD:4183.0 TVD:4160.0 I:33.2 A:4.3 VS:103.1

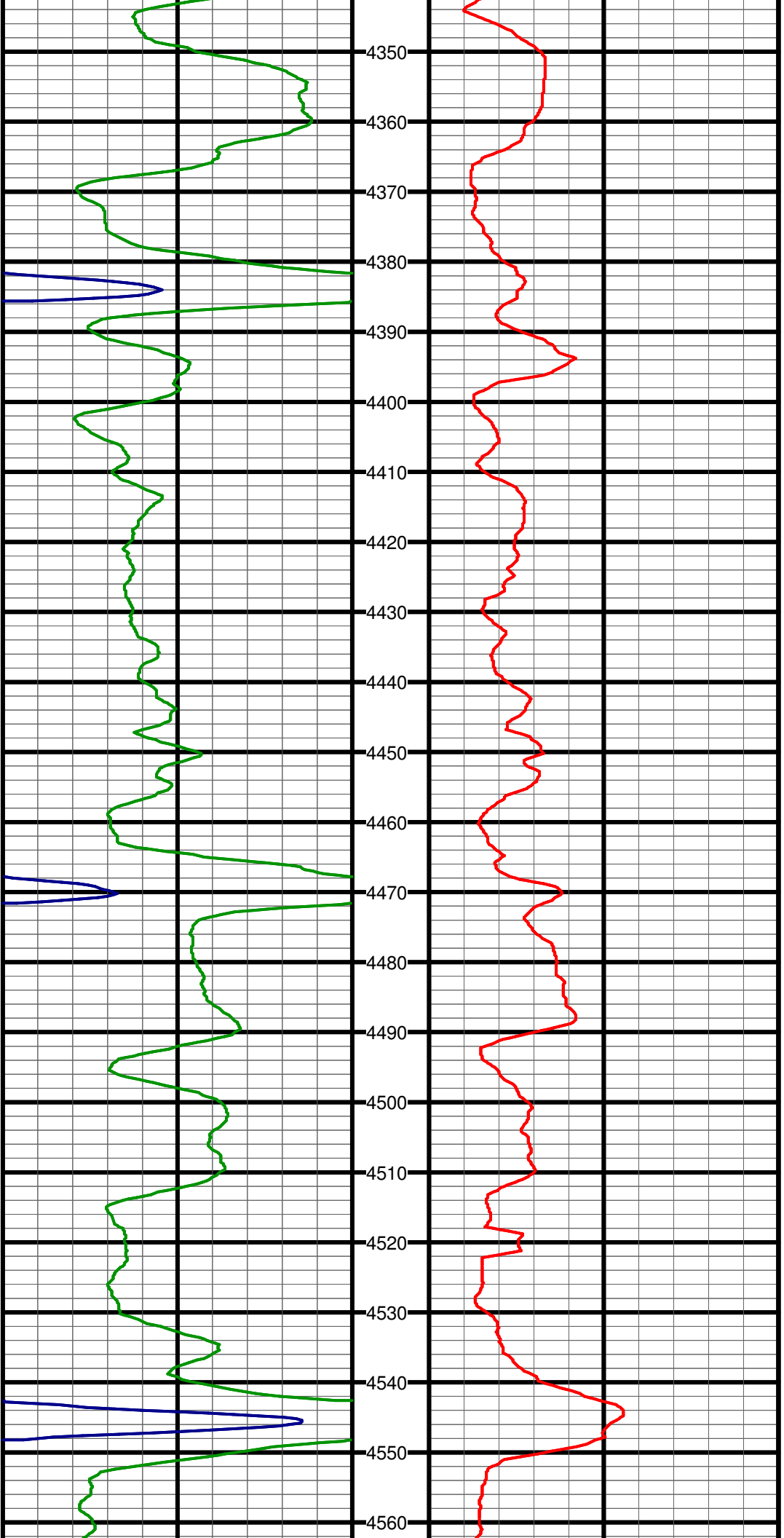
#31 MD:4214.0 TVD:4185.6 I:35.7 A:4.4 VS:120.6

#32 MD:4245.0 TVD:4210.4 I:37.8 A:3.6 VS:139.1

#33 MD:4276.0 TVD:4234.7 I:39.2 A:2.8 VS:158.3

#34 MD:4307.0 TVD:4258.5 I:40.2 A:2.6 VS:178.1

#35 MD:4338.0 TVD:4281.9 I:42.2 A:2.4 VS:198.5



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#37 MD:4401.0 TVD:4326.7 I:47.3 A:3.5 VS:242.7

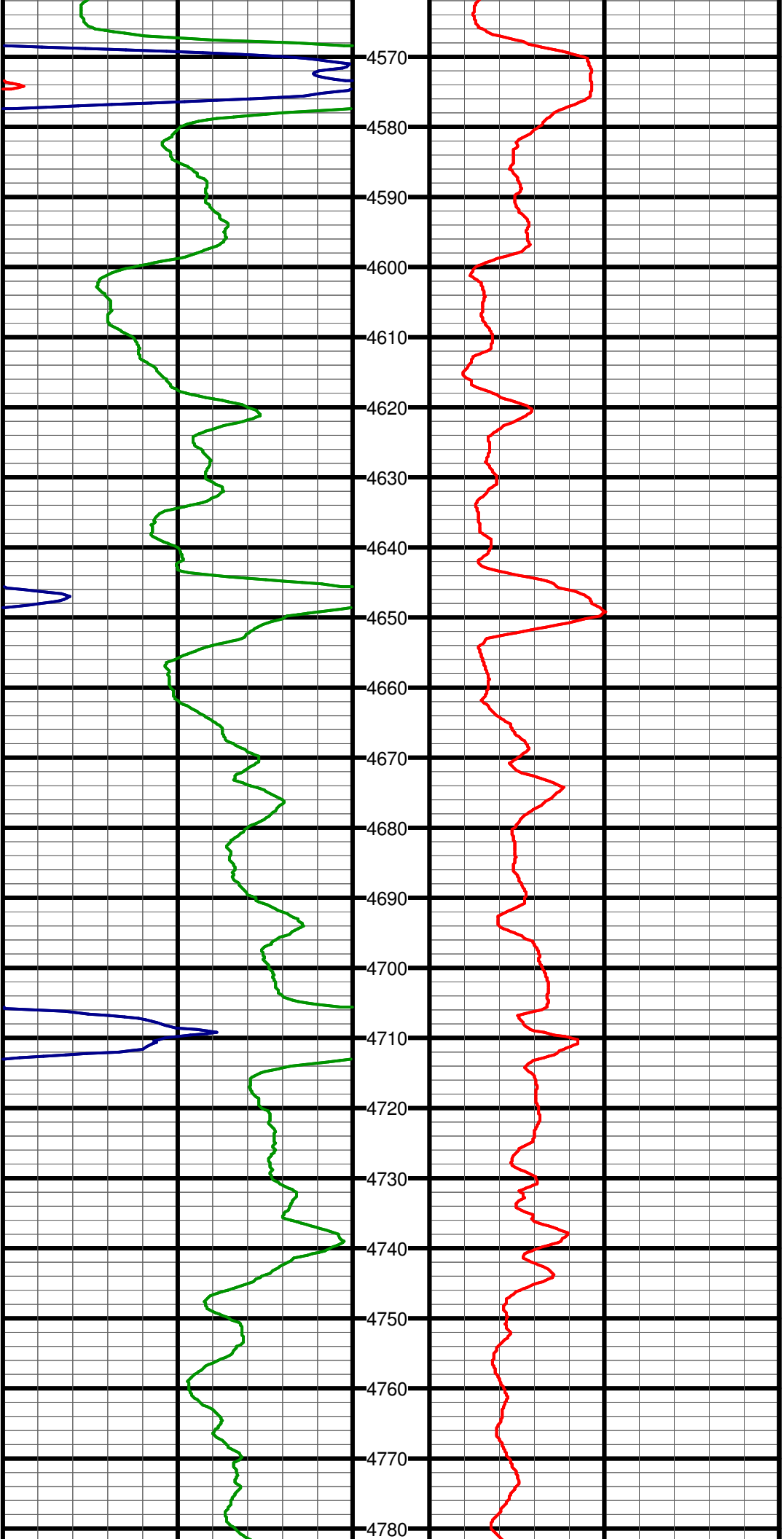
#38 MD:4433.0 TVD:4347.8 I:50.0 A:2.7 VS:266.6

#39 MD:4463.0 TVD:4366.7 I:51.9 A:2.2 VS:289.9

#40 MD:4495.0 TVD:4386.0 I:54.0 A:0.0 VS:315.4

#41 MD:4527.0 TVD:4404.3 I:56.3 A:358.2 VS:341.7

#42 MD:4558.0 TVD:4420.9 I:58.8 A:358.0 VS:367.8



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#44 MD:4621.0 TVD:4451.8 I:61.8 A:358.0 VS:422.7

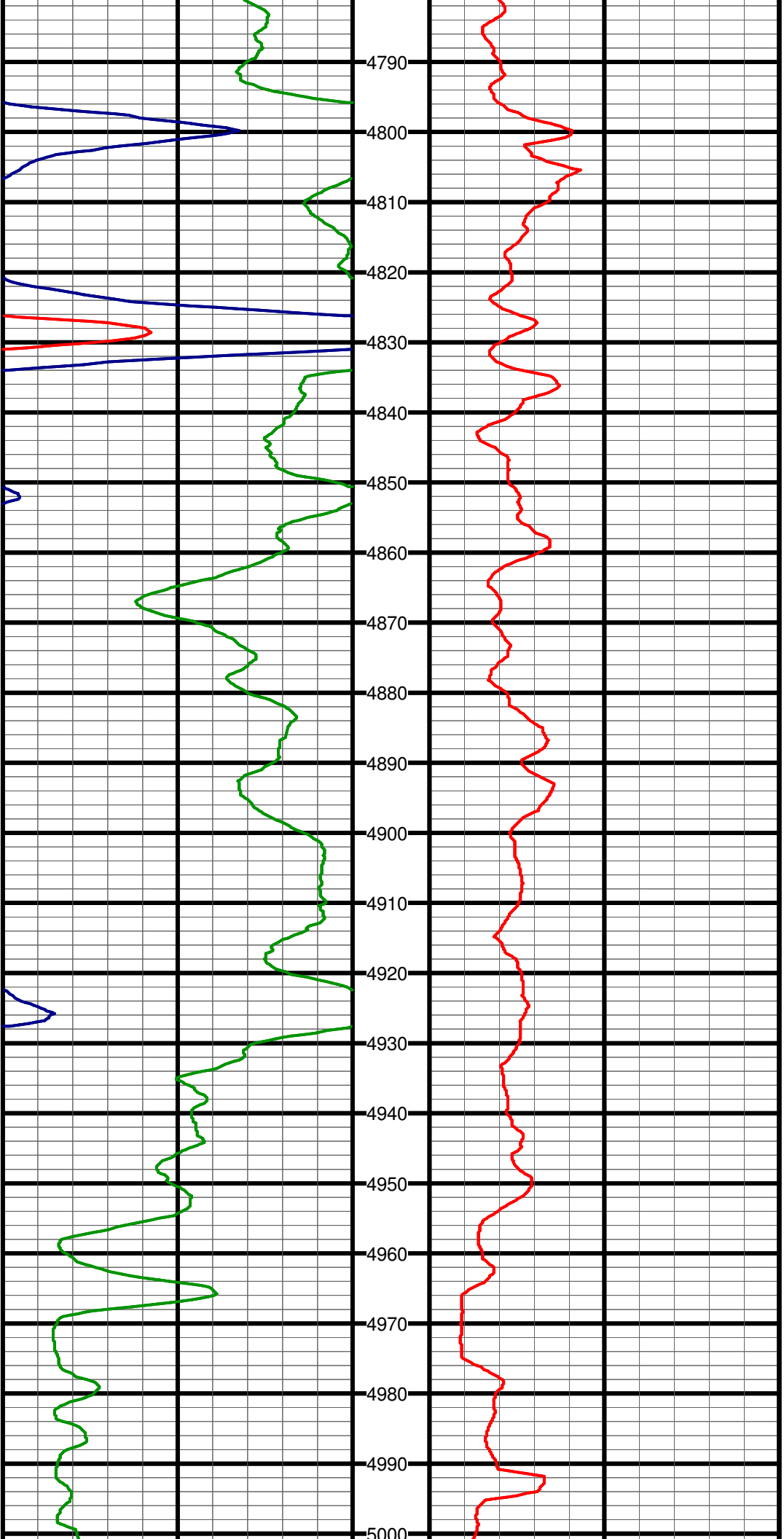
#45 MD:4653.0 TVD:4466.8 I:62.3 A:357.6 VS:451.0

#46 MD:4685.0 TVD:4481.5 I:62.8 A:357.4 VS:479.4

#47 MD:4717.0 TVD:4496.0 I:63.4 A:357.8 VS:507.9

#48 MD:4748.0 TVD:4509.7 I:64.0 A:357.6 VS:535.7

#49 MD:4780.0 TVD:4523.6 I:64.7 A:357.5 VS:564.5



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#52 MD:4874.0 TVD:4560.9 I:69.9 A:357.6 VS:650.6

#53 MD:4905.0 TVD:4570.8 I:72.7 A:358.0 VS:680.0

#54 MD:4937.0 TVD:4579.6 I:75.3 A:358.6 VS:710.7

#55 MD:4969.0 TVD:4587.3 I:77.1 A:359.9 VS:741.8

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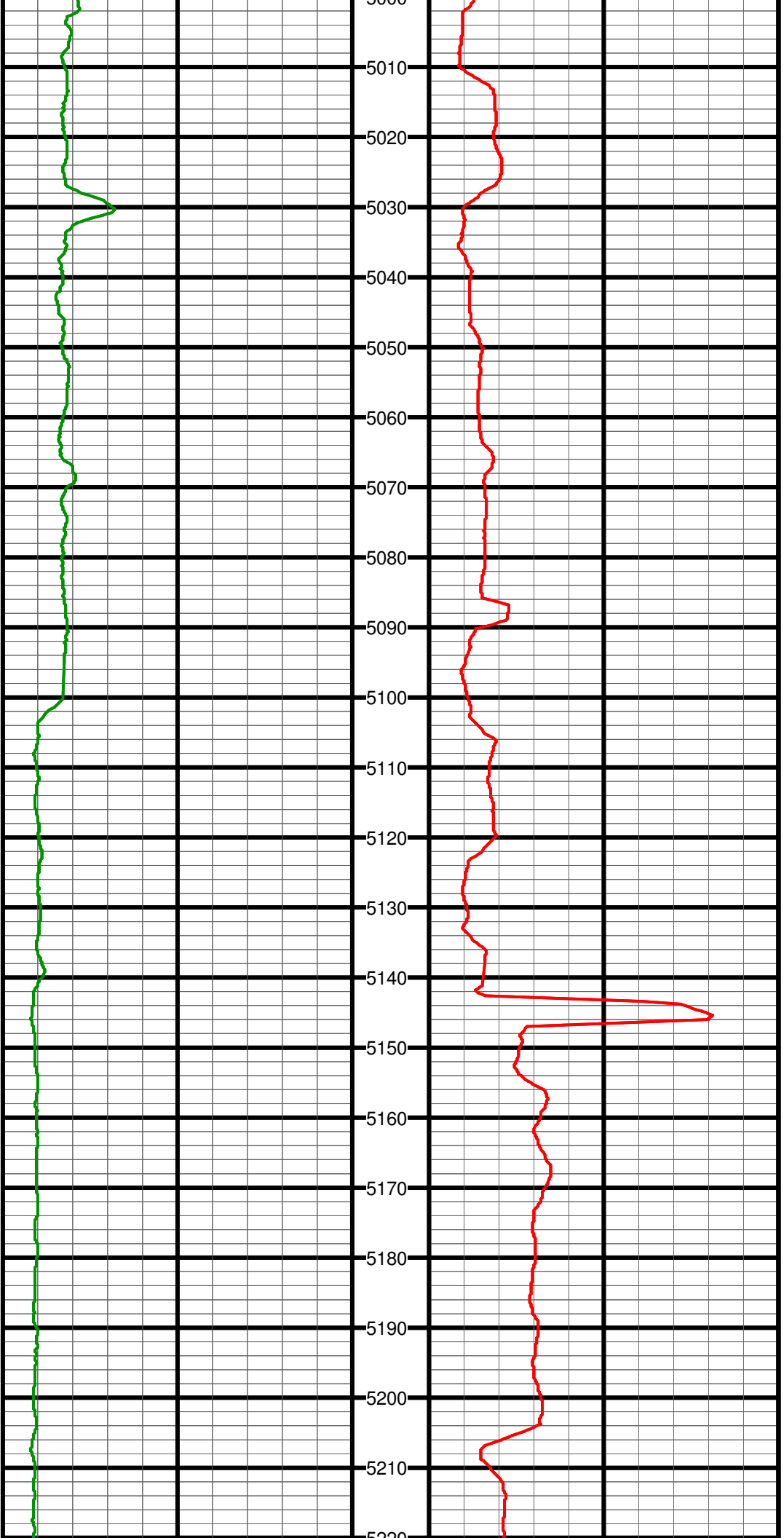

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#57 MD:5032.0 TVD:4598.5 I:82.4 A:1.6 VS:803.8

#58 MD:5063.0 TVD:4602.1 I:84.3 A:1.4 VS:834.5

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#61 MD:5182.0 TVD:4606.3 I:90.4 A:2.0 VS:953.3

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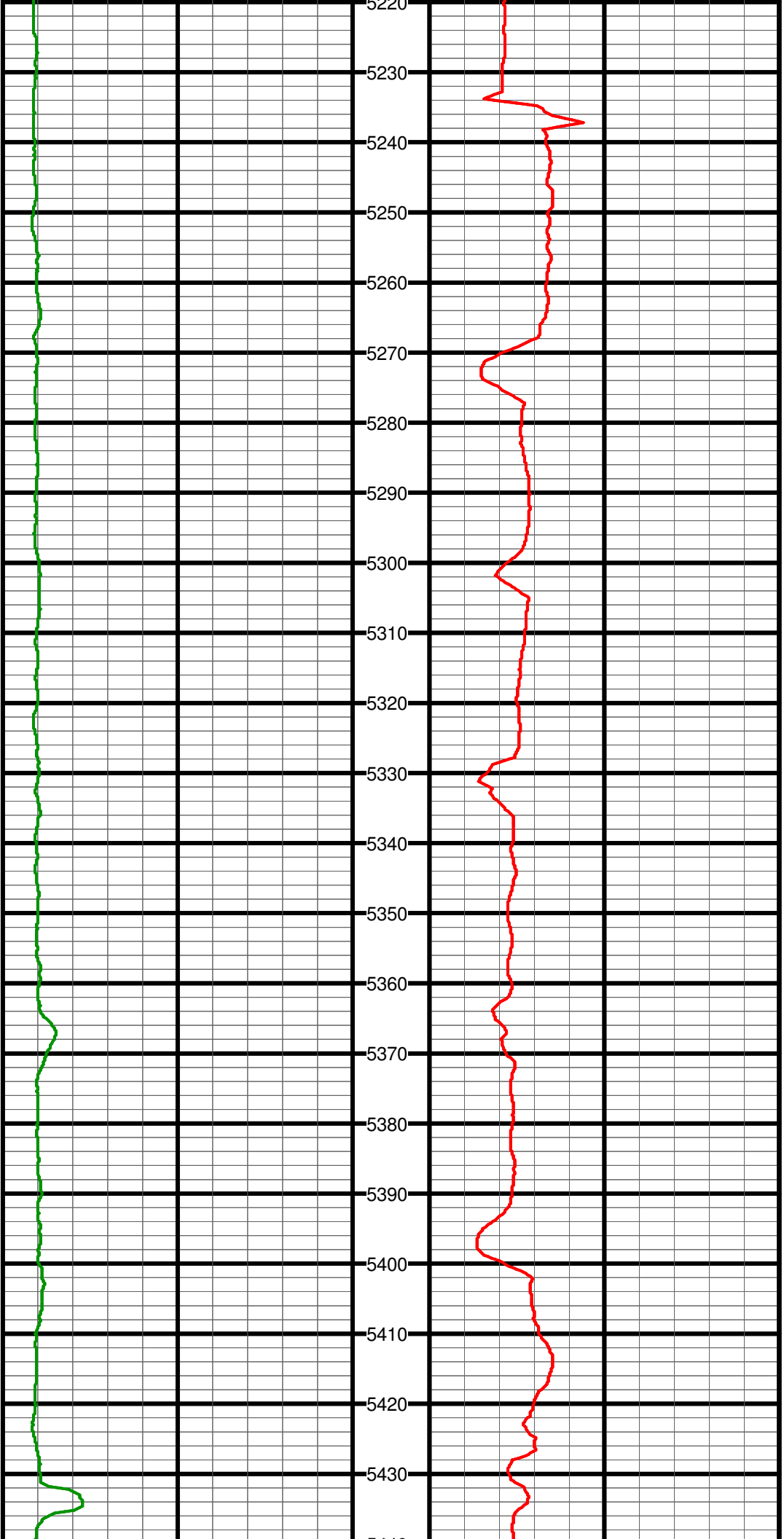

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#65 MD:5308.0 TVD:4605.5 I:90.6 A:1.4 VS:1079.3

#66 MD:5339.0 TVD:4605.1 I:90.7 A:0.9 VS:1110.2

#67 MD:5371.0 TVD:4604.9 I:90.3 A:1.5 VS:1142.2

#68 MD:5401.0 TVD:4604.8 I:90.0 A:1.4 VS:1172.2

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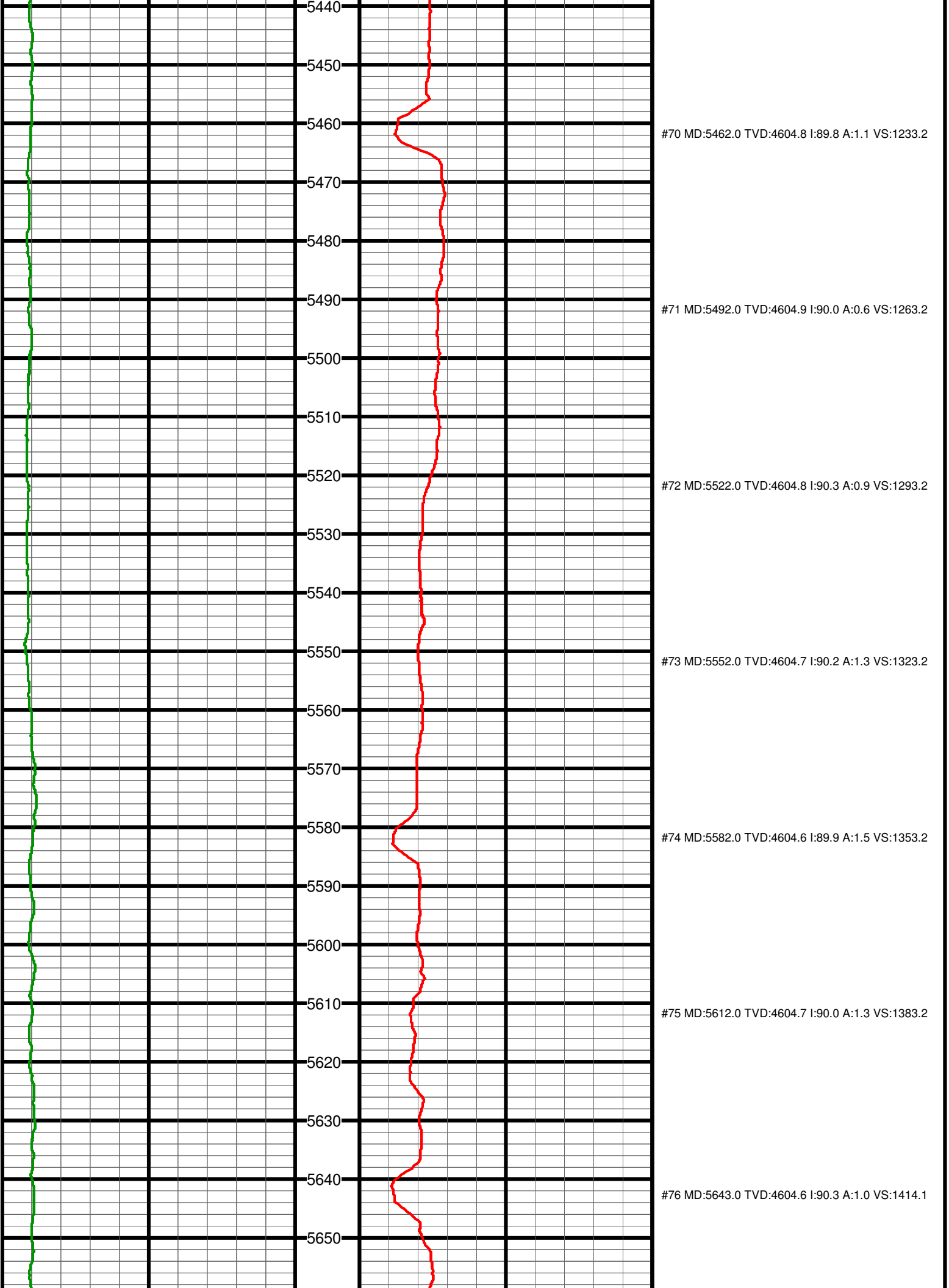
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#71 MD:5492.0 TVD:4604.9 I:90.0 A:0.6 VS:1263.2
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#74 MD:5582.0 TVD:4604.6 I:89.9 A:1.5 VS:1353.2
#75 MD:5612.0 TVD:4604.7 I:90.0 A:1.3 VS:1383.2
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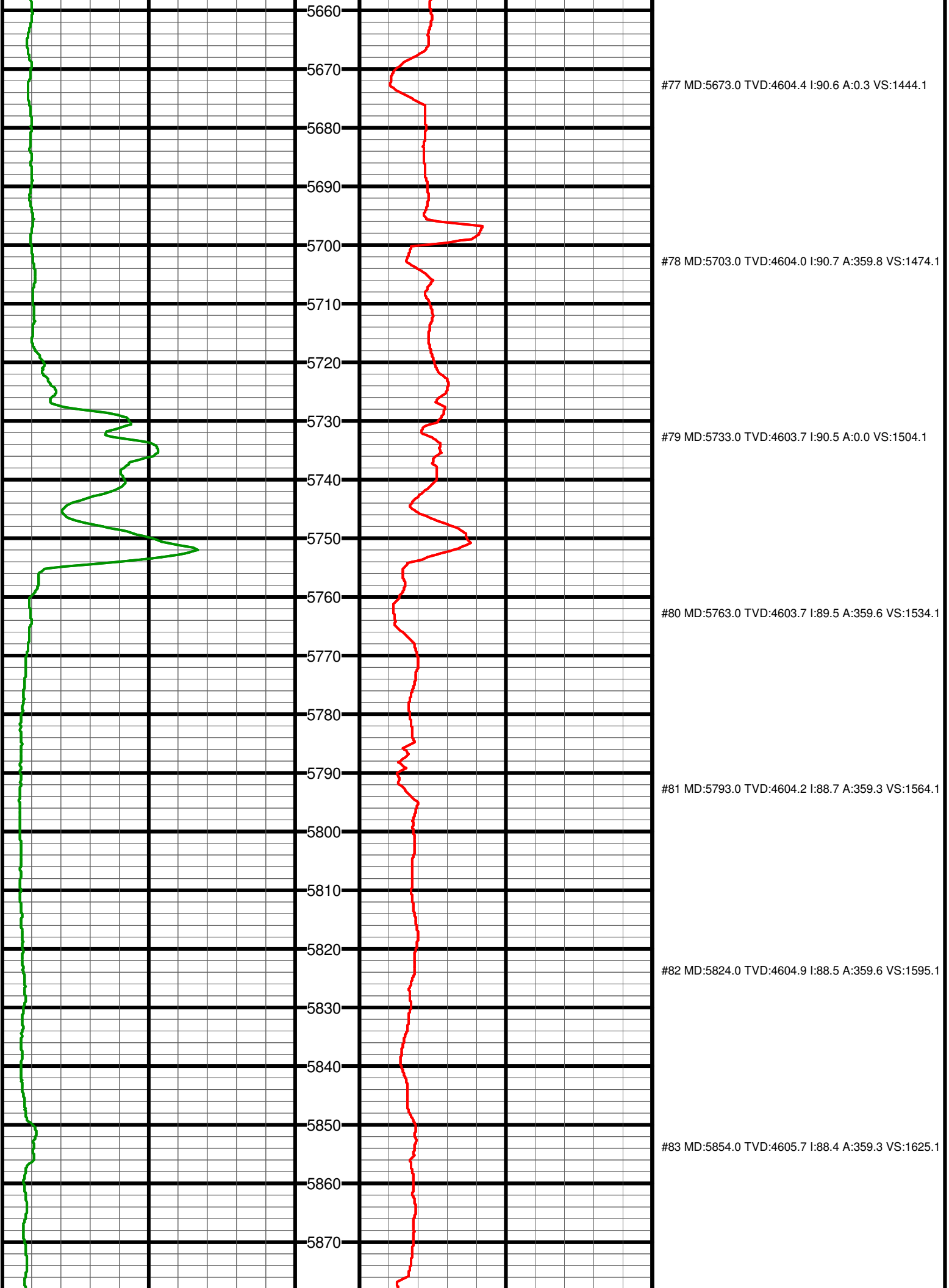
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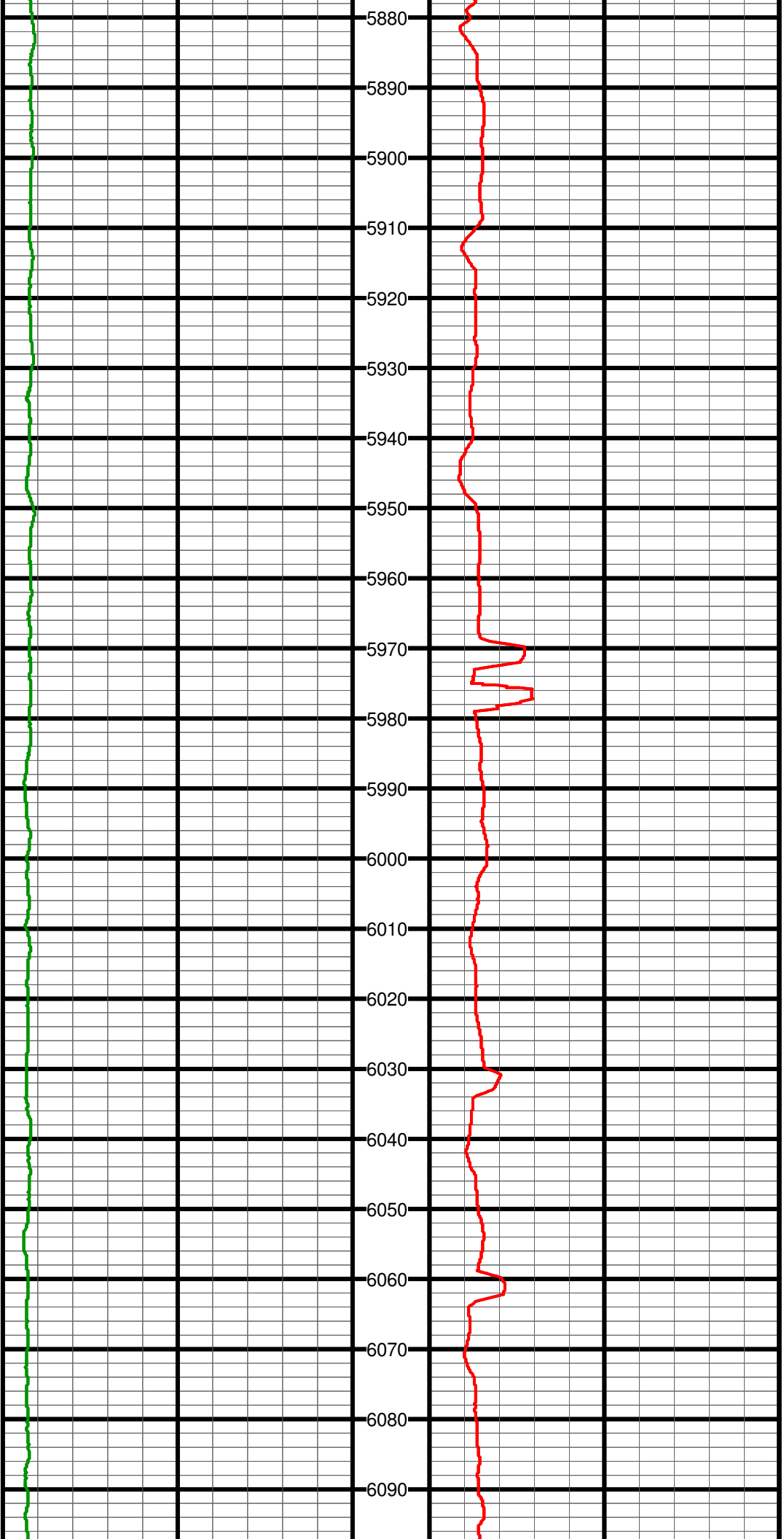
#77 MD:5673.0 TVD:4604.4 I:90.6 A:0.3 VS:1444.1
#78 MD:5703.0 TVD:4604.0 I:90.7 A:359.8 VS:1474.1
#79 MD:5733.0 TVD:4603.7 I:90.5 A:0.0 VS:1504.1
#80 MD:5763.0 TVD:4603.7 I:89.5 A:359.6 VS:1534.1
#81 MD:5793.0 TVD:4604.2 I:88.7 A:359.3 VS:1564.1
#82 MD:5824.0 TVD:4604.9 I:88.5 A:359.6 VS:1595.1
#83 MD:5854.0 TVD:4605.7 I:88.4 A:359.3 VS:1625.1



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#87 MD:5975.0 TVD:4609.4 I:88.5 A:359.9 VS:1746.1

#88 MD:6006.0 TVD:4610.1 I:89.0 A:359.9 VS:1777.0

#89 MD:6036.0 TVD:4610.4 I:89.9 A:359.9 VS:1807.0

#90 MD:6066.0 TVD:4610.1 I:91.1 A:0.1 VS:1837.0

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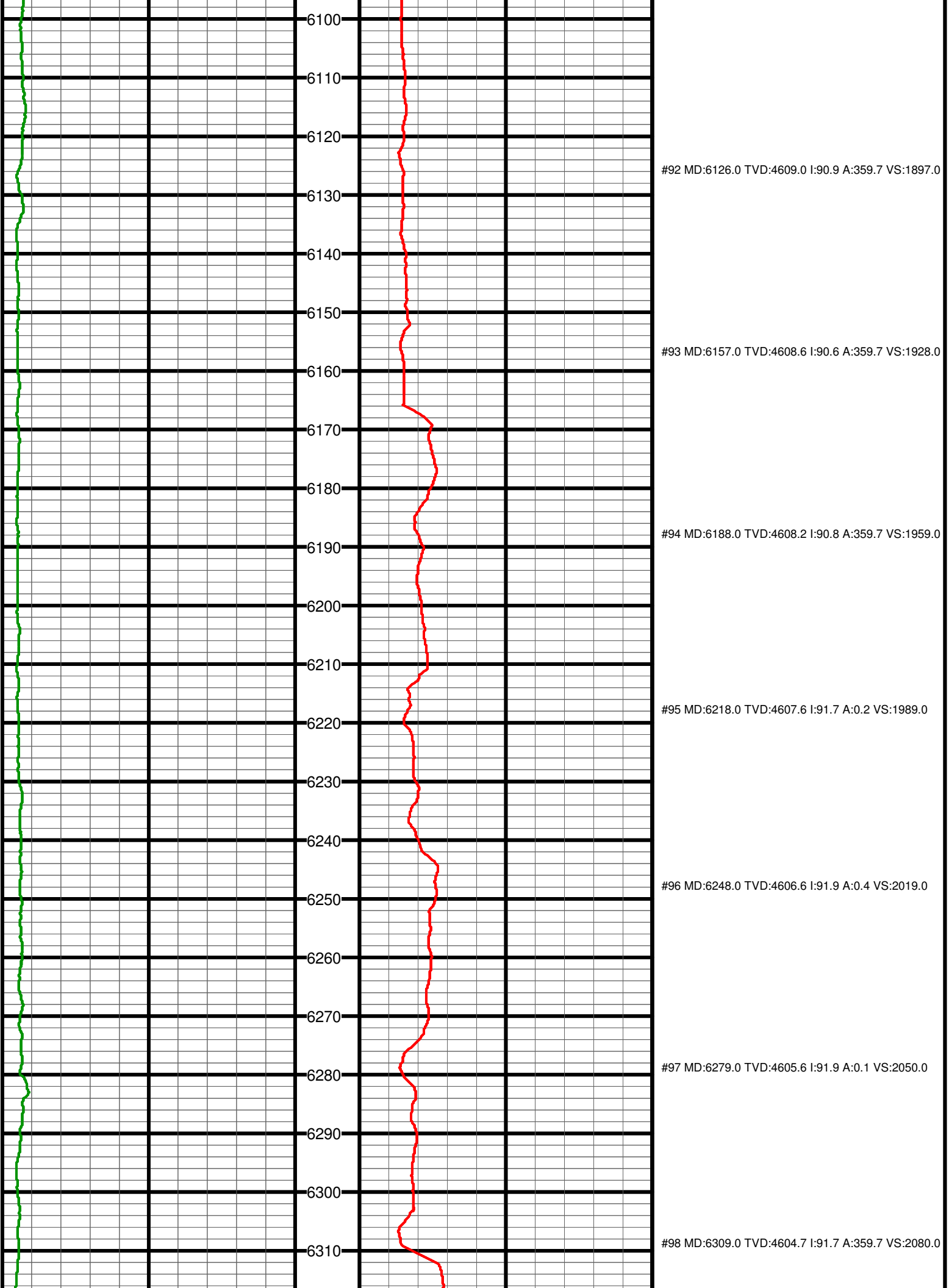
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#93 MD:6157.0 TVD:4608.6 I:90.6 A:359.7 VS:1928.0
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#95 MD:6218.0 TVD:4607.6 I:91.7 A:0.2 VS:1989.0
#96 MD:6248.0 TVD:4606.6 I:91.9 A:0.4 VS:2019.0
#97 MD:6279.0 TVD:4605.6 I:91.9 A:0.1 VS:2050.0
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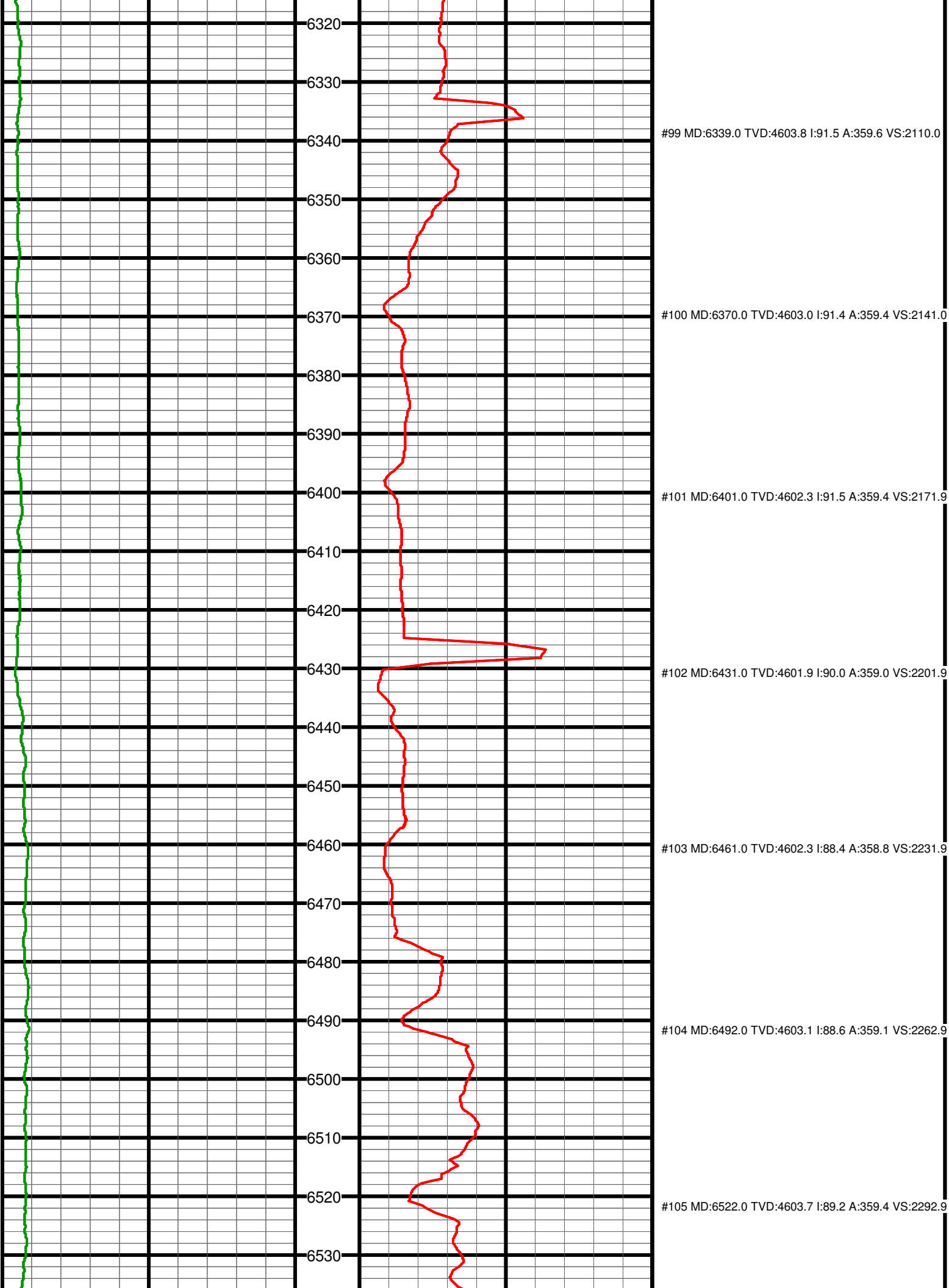
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#102 MD:6431.0 TVD:4601.9 I:90.0 A:359.0 VS:2201.9
#103 MD:6461.0 TVD:4602.3 I:88.4 A:358.8 VS:2231.9
#104 MD:6492.0 TVD:4603.1 I:88.6 A:359.1 VS:2262.9
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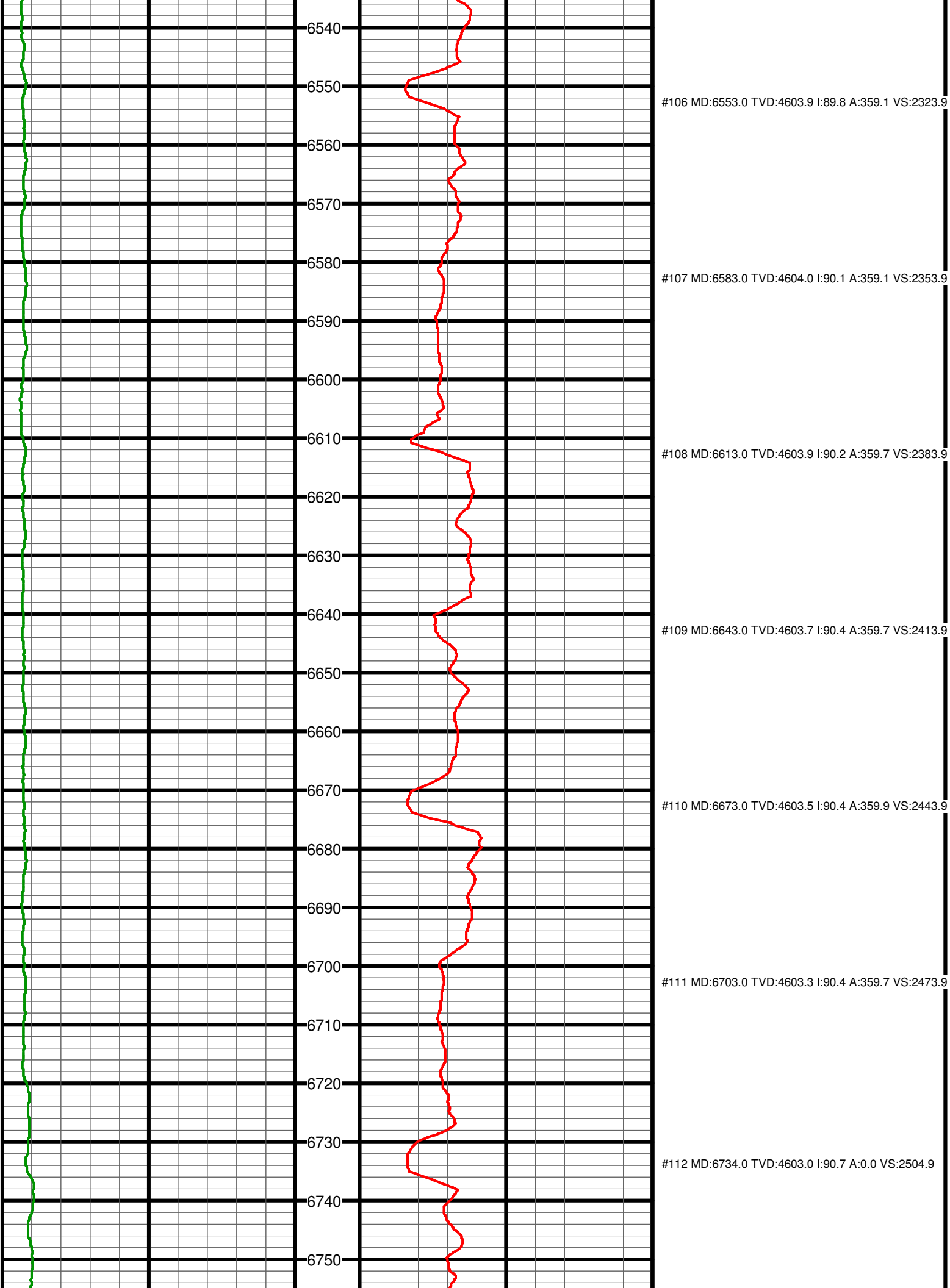
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#107 MD:6583.0 TVD:4604.0 I:90.1 A:359.1 VS:2353.9
#108 MD:6613.0 TVD:4603.9 I:90.2 A:359.7 VS:2383.9
#109 MD:6643.0 TVD:4603.7 I:90.4 A:359.7 VS:2413.9
#110 MD:6673.0 TVD:4603.5 I:90.4 A:359.9 VS:2443.9
#111 MD:6703.0 TVD:4603.3 I:90.4 A:359.7 VS:2473.9
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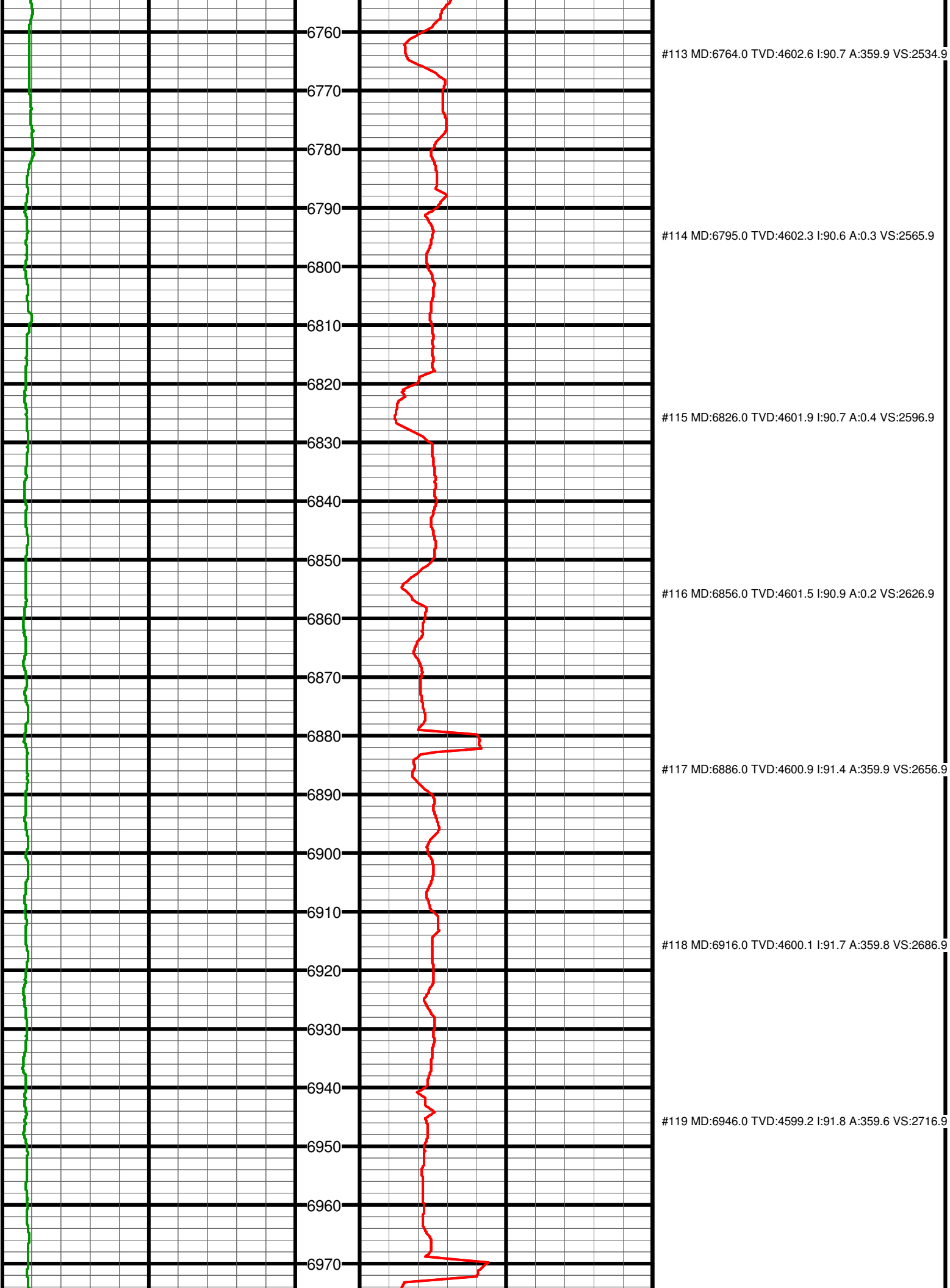
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#113 MD:6764.0 TVD:4602.6 I:90.7 A:359.9 VS:2534.9
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#115 MD:6826.0 TVD:4601.9 I:90.7 A:0.4 VS:2596.9
#116 MD:6856.0 TVD:4601.5 I:90.9 A:0.2 VS:2626.9
#117 MD:6886.0 TVD:4600.9 I:91.4 A:359.9 VS:2656.9
#118 MD:6916.0 TVD:4600.1 I:91.7 A:359.8 VS:2686.9
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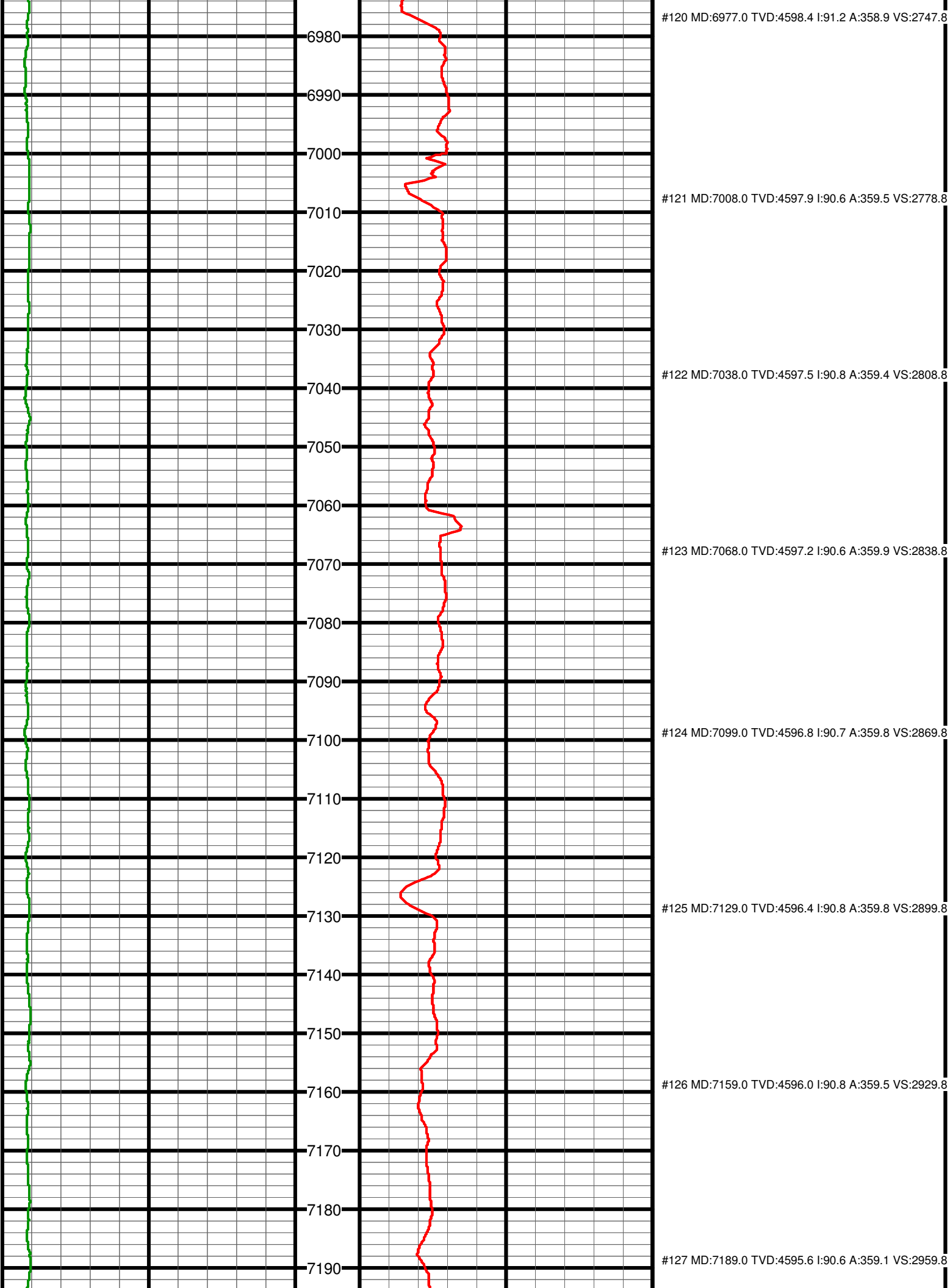
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#123 MD:7068.0 TVD:4597.2 I:90.6 A:359.9 VS:2838.8
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#125 MD:7129.0 TVD:4596.4 I:90.8 A:359.8 VS:2899.8
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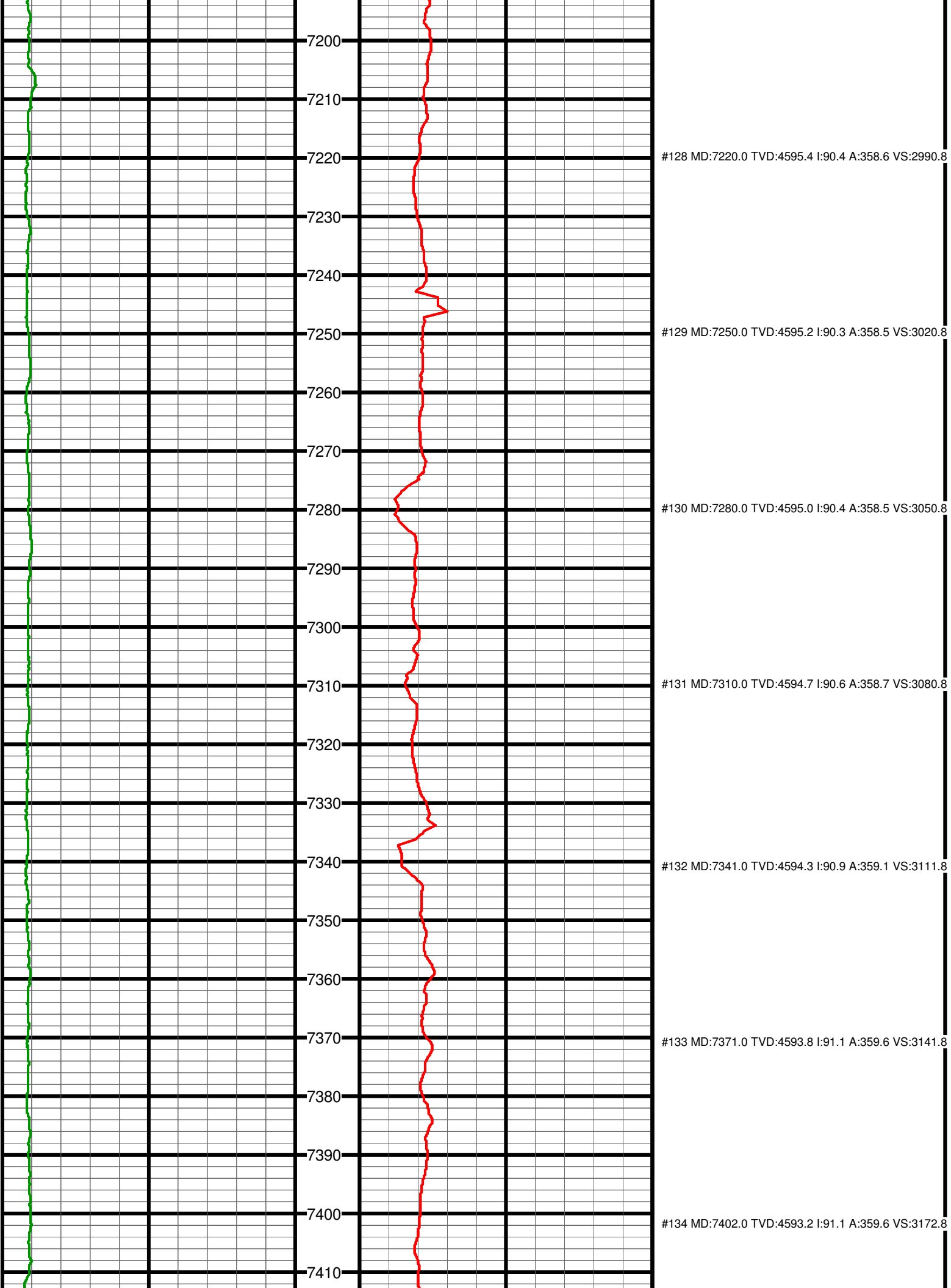
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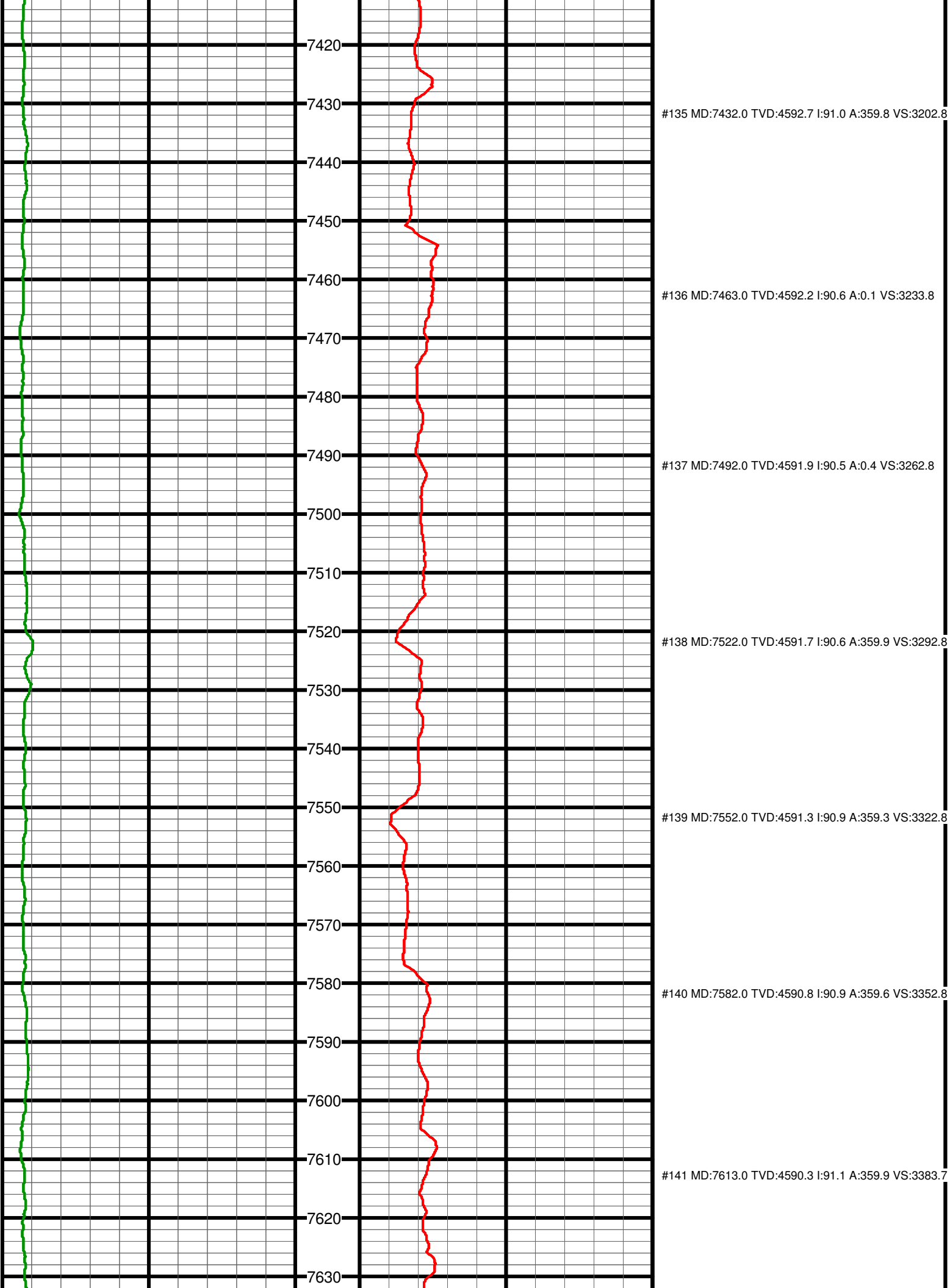
#129 MD:7250.0 TVD:4595.2 I:90.3 A:358.5 VS:3020.8
#130 MD:7280.0 TVD:4595.0 I:90.4 A:358.5 VS:3050.8
#131 MD:7310.0 TVD:4594.7 I:90.6 A:358.7 VS:3080.8
#132 MD:7341.0 TVD:4594.3 I:90.9 A:359.1 VS:3111.8
#133 MD:7371.0 TVD:4593.8 I:91.1 A:359.6 VS:3141.8
#134 MD:7402.0 TVD:4593.2 I:91.1 A:359.6 VS:3172.8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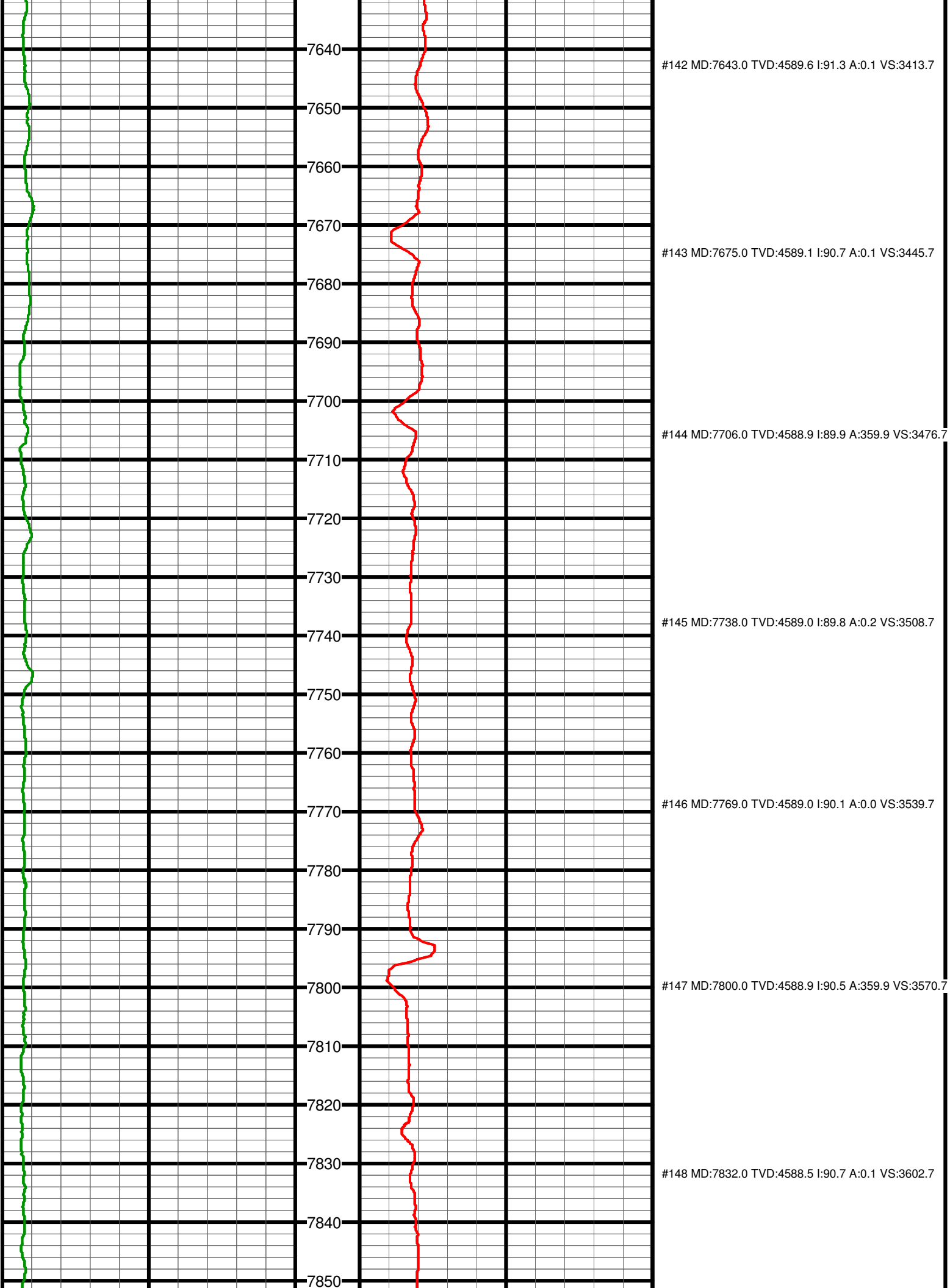
#135 MD:7432.0 TVD:4592.7 I:91.0 A:359.8 VS:3202.8
#136 MD:7463.0 TVD:4592.2 I:90.6 A:0.1 VS:3233.8
#137 MD:7492.0 TVD:4591.9 I:90.5 A:0.4 VS:3262.8
#138 MD:7522.0 TVD:4591.7 I:90.6 A:359.9 VS:3292.8
#139 MD:7552.0 TVD:4591.3 I:90.9 A:359.3 VS:3322.8
#140 MD:7582.0 TVD:4590.8 I:90.9 A:359.6 VS:3352.8
#141 MD:7613.0 TVD:4590.3 I:91.1 A:359.9 VS:3383.7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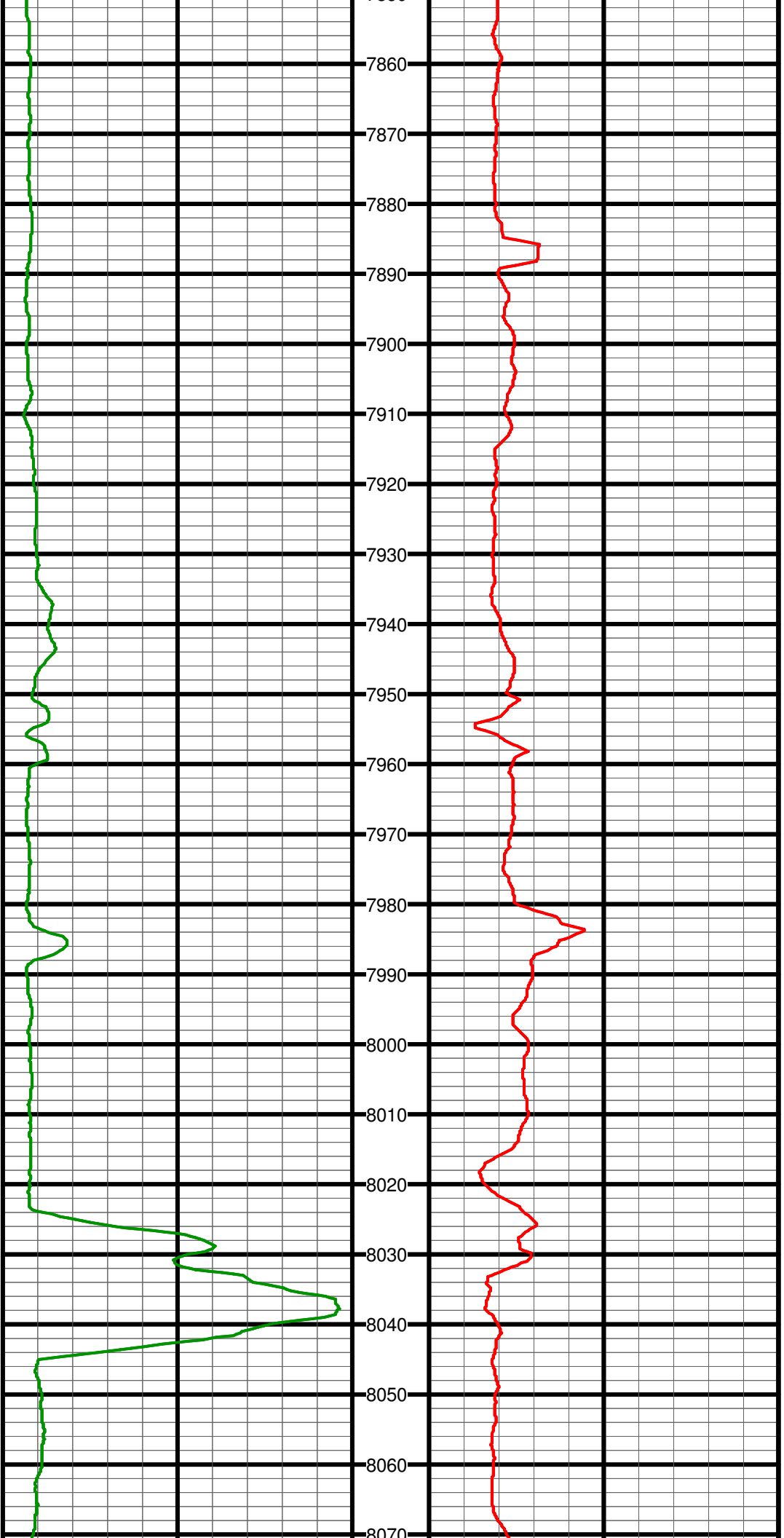
#142 MD:7643.0 TVD:4589.6 I:91.3 A:0.1 VS:3413.7
#143 MD:7675.0 TVD:4589.1 I:90.7 A:0.1 VS:3445.7
#144 MD:7706.0 TVD:4588.9 I:89.9 A:359.9 VS:3476.7
#145 MD:7738.0 TVD:4589.0 I:89.8 A:0.2 VS:3508.7
#146 MD:7769.0 TVD:4589.0 I:90.1 A:0.0 VS:3539.7
#147 MD:7800.0 TVD:4588.9 I:90.5 A:359.9 VS:3570.7
#148 MD:7832.0 TVD:4588.5 I:90.7 A:0.1 VS:3602.7



#149 MD:7864.0 TVD:4588.1 I:90.9 A:0.2 VS:3634.7

#150 MD:7895.0 TVD:4587.5 I:91.2 A:0.2 VS:3665.7

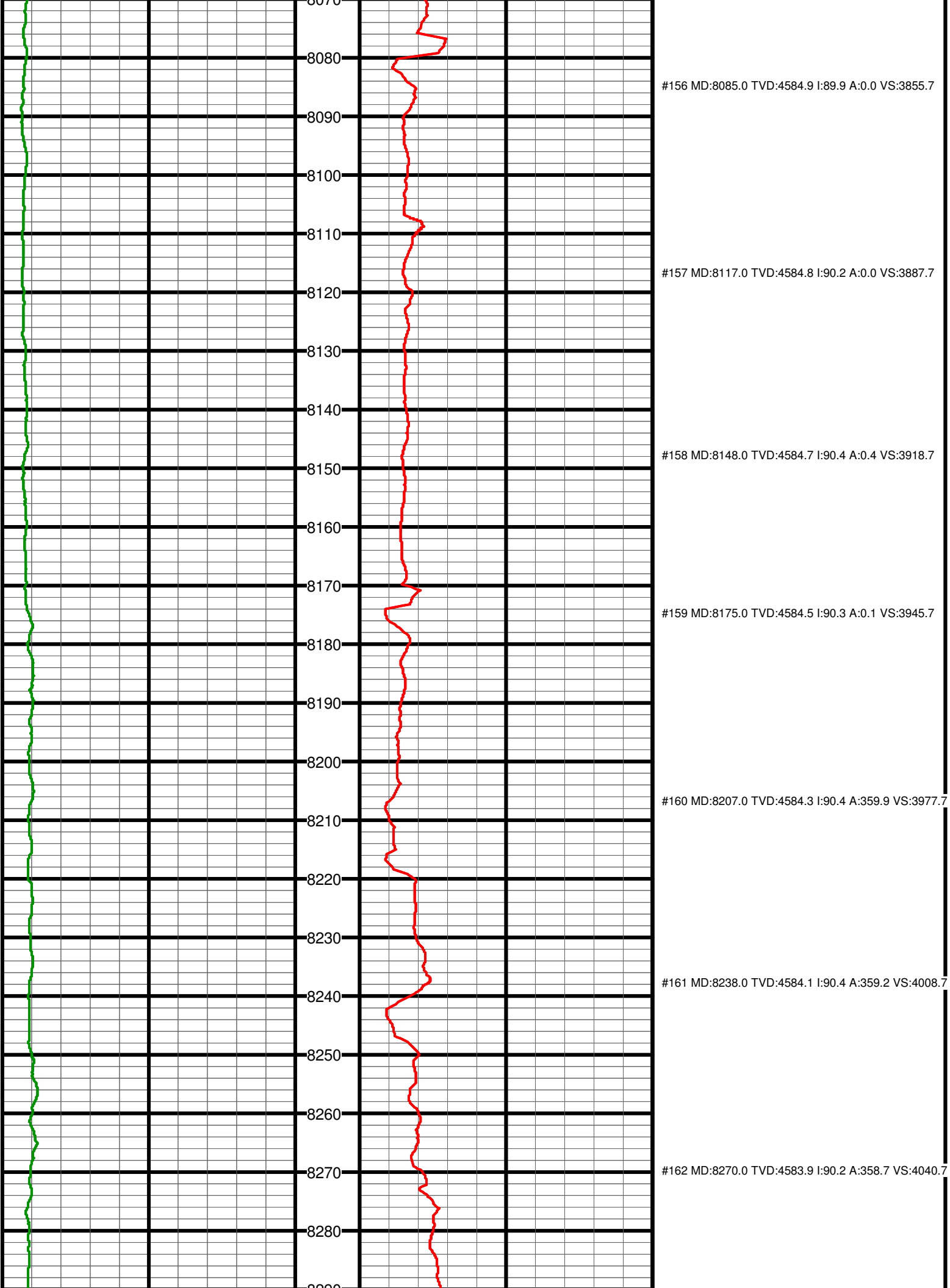
#151 MD:7927.0 TVD:4586.8 I:91.2 A:0.2 VS:3697.7

#152 MD:7959.0 TVD:4586.2 I:90.9 A:0.3 VS:3729.7

#153 MD:7990.0 TVD:4585.8 I:90.9 A:0.3 VS:3760.7

#154 MD:8021.0 TVD:4585.4 I:90.6 A:0.2 VS:3791.7

#155 MD:8053.0 TVD:4585.0 I:90.6 A:0.0 VS:3823.7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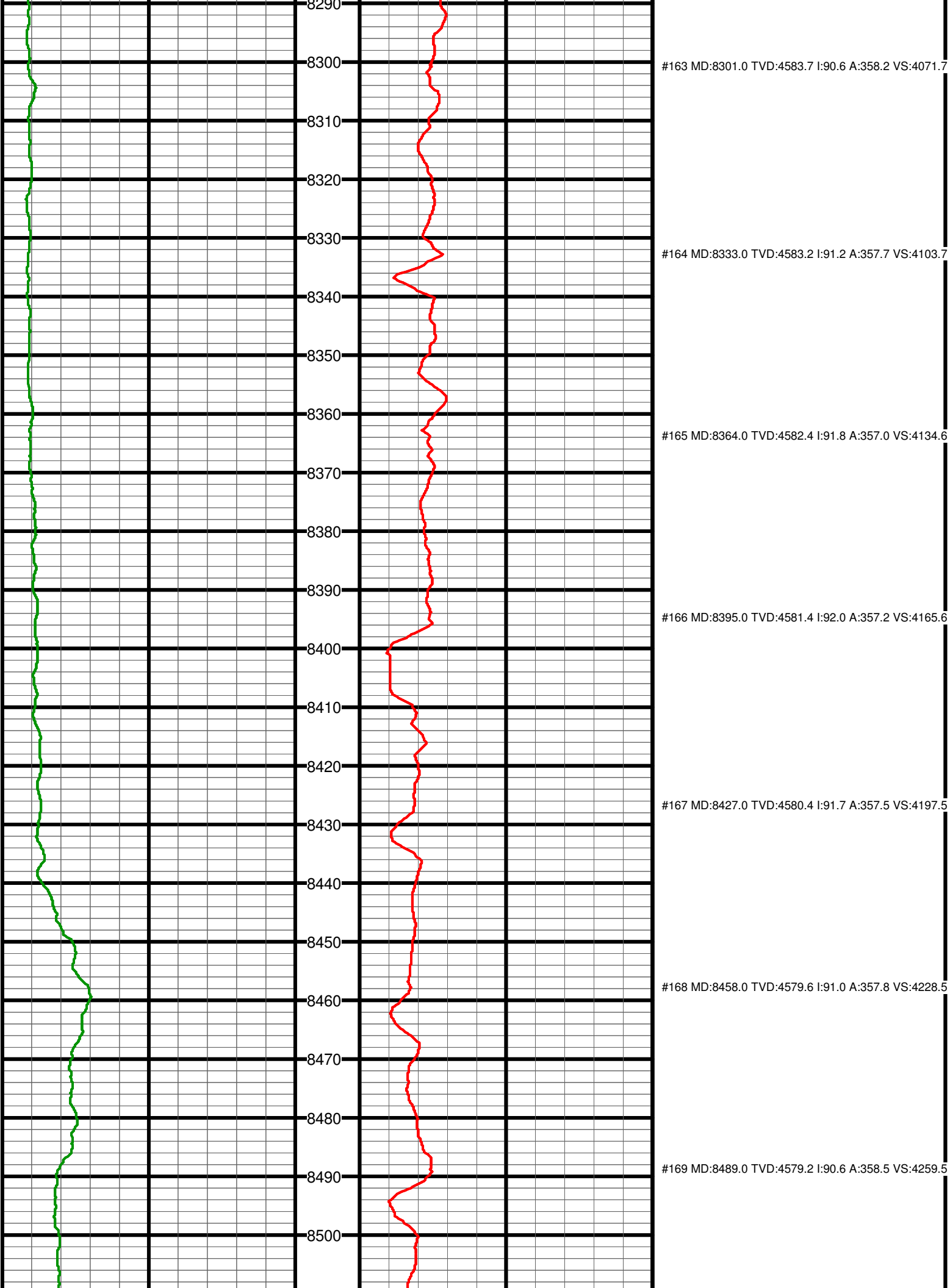
#156 MD:8085.0 TVD:4584.9 I:89.9 A:0.0 VS:3855.7
#157 MD:8117.0 TVD:4584.8 I:90.2 A:0.0 VS:3887.7
#158 MD:8148.0 TVD:4584.7 I:90.4 A:0.4 VS:3918.7
#159 MD:8175.0 TVD:4584.5 I:90.3 A:0.1 VS:3945.7
#160 MD:8207.0 TVD:4584.3 I:90.4 A:359.9 VS:3977.7
#161 MD:8238.0 TVD:4584.1 I:90.4 A:359.2 VS:4008.7
#162 MD:8270.0 TVD:4583.9 I:90.2 A:358.7 VS:4040.7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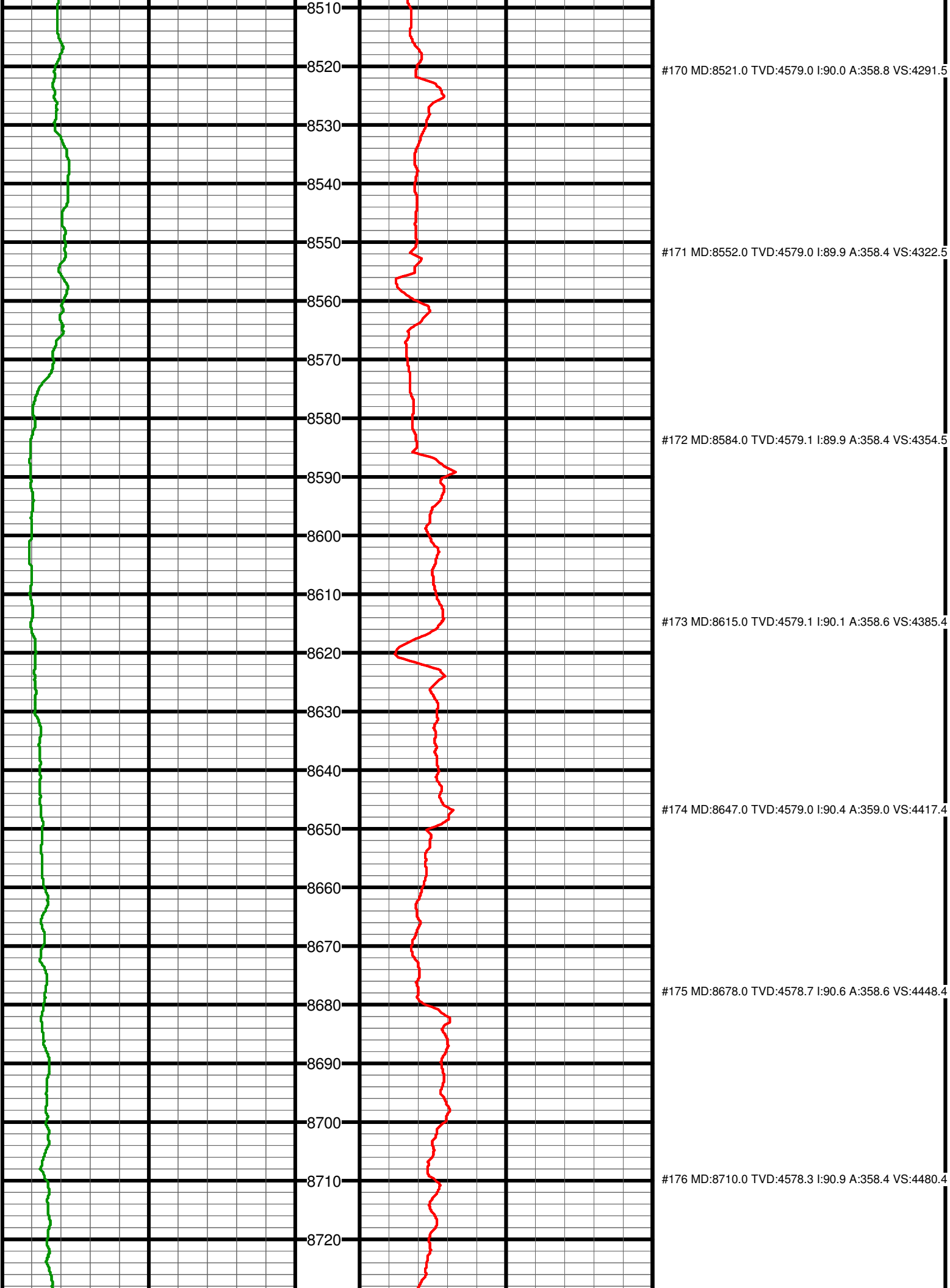
#163 MD:8301.0 TVD:4583.7 I:90.6 A:358.2 VS:4071.7
#164 MD:8333.0 TVD:4583.2 I:91.2 A:357.7 VS:4103.7
#165 MD:8364.0 TVD:4582.4 I:91.8 A:357.0 VS:4134.6
#166 MD:8395.0 TVD:4581.4 I:92.0 A:357.2 VS:4165.6
#167 MD:8427.0 TVD:4580.4 I:91.7 A:357.5 VS:4197.5
#168 MD:8458.0 TVD:4579.6 I:91.0 A:357.8 VS:4228.5
#169 MD:8489.0 TVD:4579.2 I:90.6 A:358.5 VS:4259.5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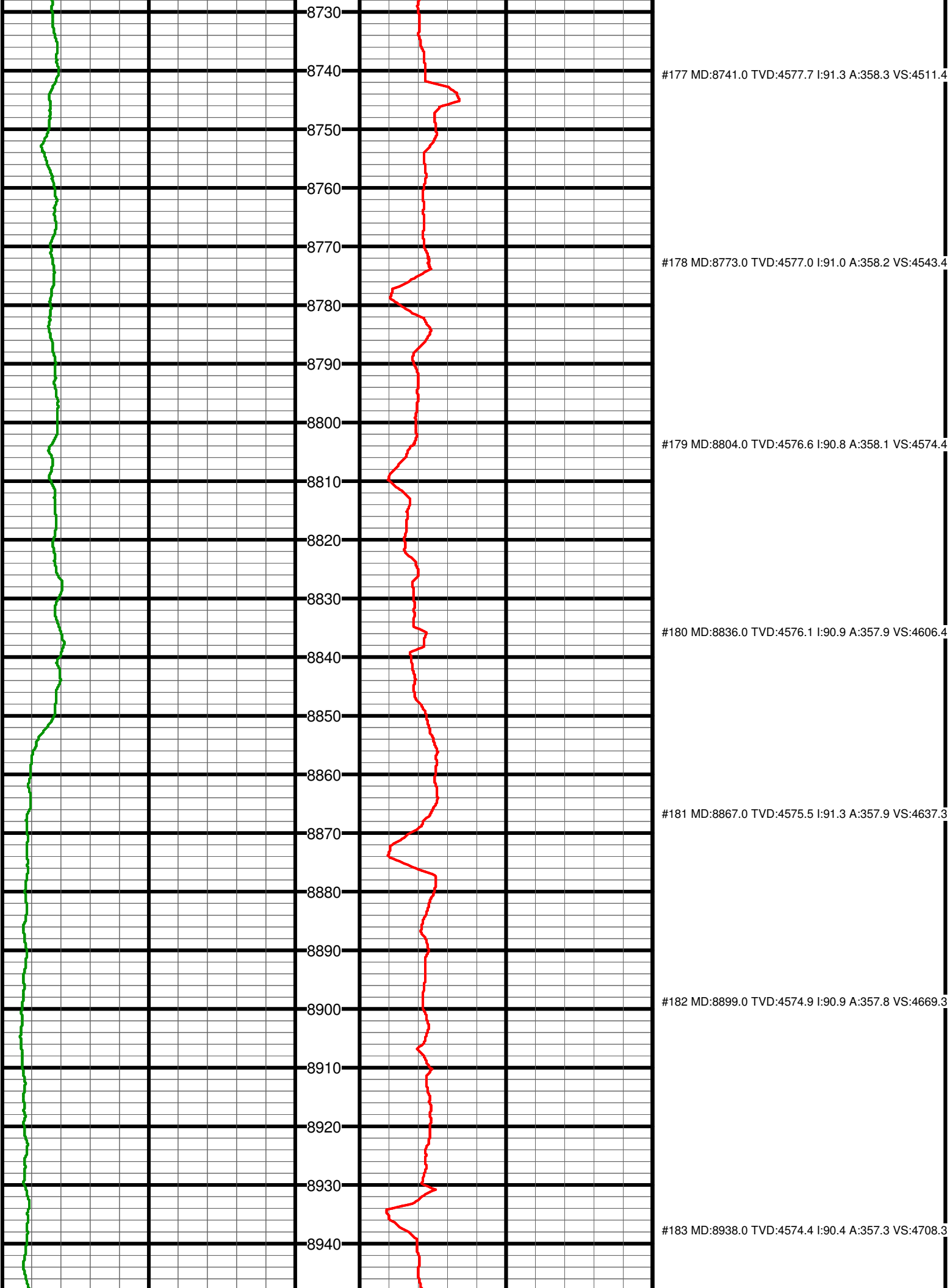
#170 MD:8521.0 TVD:4579.0 I:90.0 A:358.8 VS:4291.5
#171 MD:8552.0 TVD:4579.0 I:89.9 A:358.4 VS:4322.5
#172 MD:8584.0 TVD:4579.1 I:89.9 A:358.4 VS:4354.5
#173 MD:8615.0 TVD:4579.1 I:90.1 A:358.6 VS:4385.4
#174 MD:8647.0 TVD:4579.0 I:90.4 A:359.0 VS:4417.4
#175 MD:8678.0 TVD:4578.7 I:90.6 A:358.6 VS:4448.4
#176 MD:8710.0 TVD:4578.3 I:90.9 A:358.4 VS:4480.4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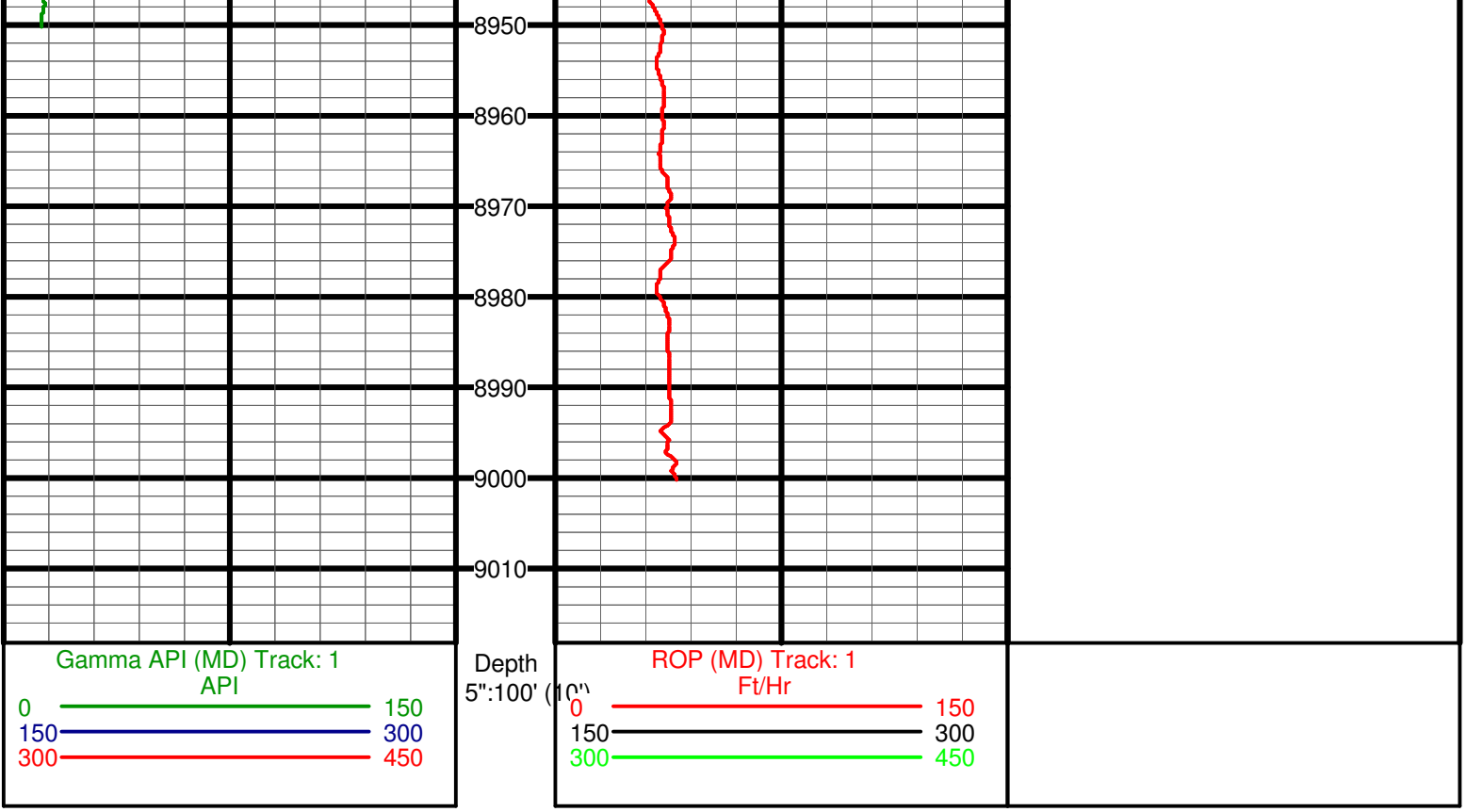
#177 MD:8741.0 TVD:4577.7 I:91.3 A:358.3 VS:4511.4
#178 MD:8773.0 TVD:4577.0 I:91.0 A:358.2 VS:4543.4
#179 MD:8804.0 TVD:4576.6 I:90.8 A:358.1 VS:4574.4
#180 MD:8836.0 TVD:4576.1 I:90.9 A:357.9 VS:4606.4
#181 MD:8867.0 TVD:4575.5 I:91.3 A:357.9 VS:4637.3
#182 MD:8899.0 TVD:4574.9 I:90.9 A:357.8 VS:4669.3
#183 MD:8938.0 TVD:4574.4 I:90.4 A:357.3 VS:4708.3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9010
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API
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150
150
300
300
450
Depth
5":100' (10")
ROP (MD) Track: 1
Ft/Hr
0
150
150
300
300
450