

CONFIDENTIAL



NZONE GUIDANCE

Nzone Guidance
140 Falon Lane
Liberty Hill, TX
78642

CORLEY N-09HU

Scale 1":100' - MD

11/2/2018 9:36 AM

Oper. Company: TUG HILL OPERATING

Well: CORLEY N-09HU

Field: UTICA

Rig: PRECISION DRILLING 110

Well ID: 47-051-01983-00-00

Job Number: THO-18-1123

State: WEST VIRGINIA

County: MARSHALL

Country: USA

Location: PROCTOR

Start Date: 10/11/2018 08:37:16

End Date: 11/02/2018 04:00:22

Latitude: 39.75291217

Longitude: -80.76316070

Elev GL: 1254

Elev DF: 1282



Elev KB: 28

Operator 1: Melody Rulon

Operator 2: Tristen Fantin

Tool Run Data	Run #1	Run #2	Run #3	Run #4	Run #5
Tool S/N	4802	4808			
Bit Size	8.75	8.75			
Cal Factor	4.068	4.068			
Survey Offset	55.00	56.00			
Gamma Offset	39.00	41.00			
Resistivity Offset	0.00	0.00			
Start Depth	10375.00	16749.00			
StartDate	10/10/2018	10/26/2018			
StartTime	01:40	05:30			
EndDepth	16749.00	20287.00			
EndDate	10/26/2018	11/2/2018			
EndTime	02:45	03:56			
Mud Type	OBM	OBM			
Mud Weight	13.3	14.3			
Funnel Viscosity	68	48			
Plastic Viscosity	32	25			
Yield Point	10	7			
Gel Strength	6/19/25	8/16/18			
Solids Content	6.98	13.19			
Chlorides	208194	308996			
Temperature	95	145			

Hole Data			Casing Data		
Size	From	To	Size	From	To
26	0.00	1034.00	20	0.00	1004.00
17 1/2	1034.00	2870.00	13 3/8	0.00	2830.00
12 1/4	2870.00	10325.00	9 5/8	0.00	10292.00
8 3/4	10325.00	20287.00	5	0.00	20287.00

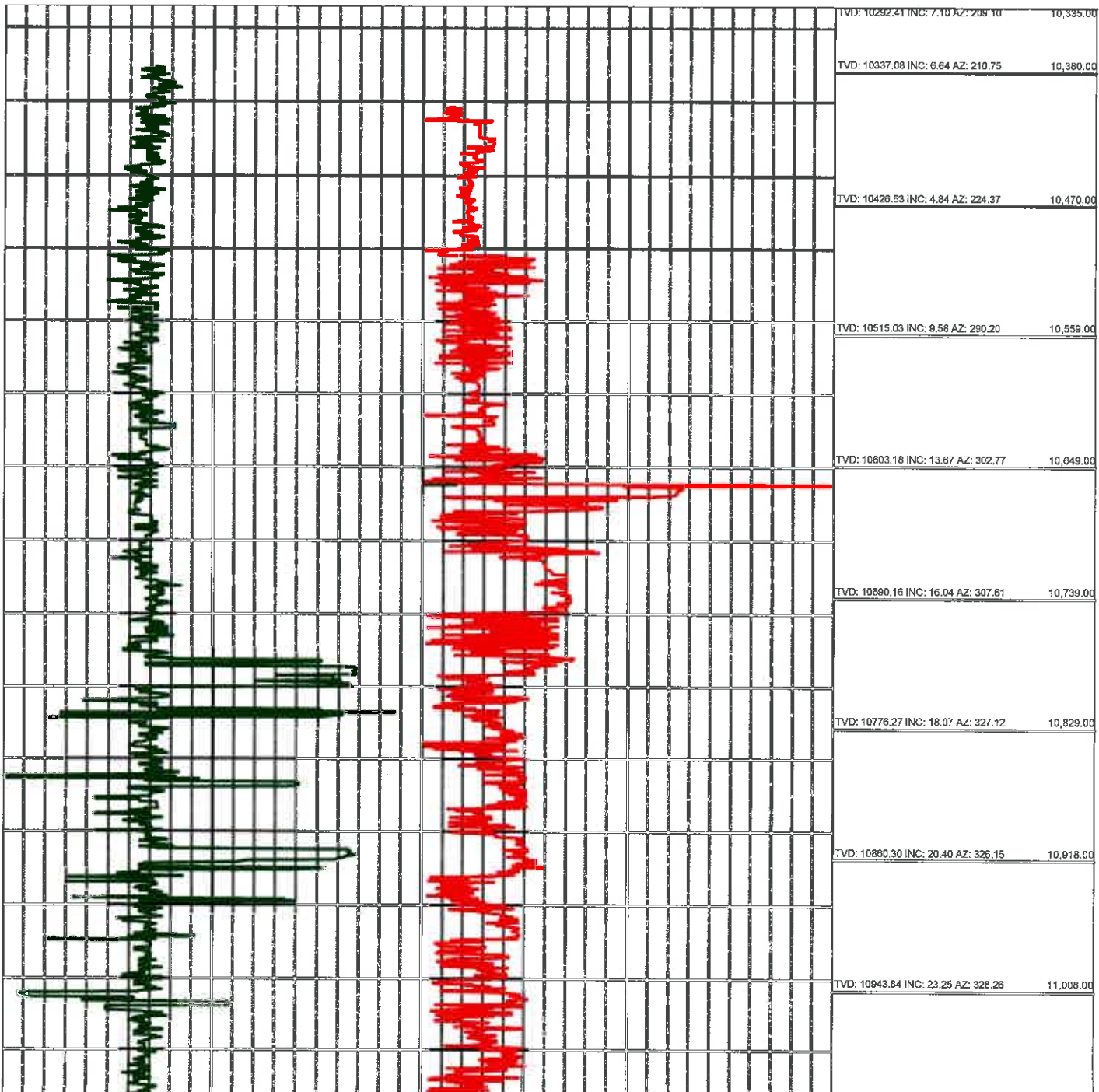
BHA Data			
Picture	Type	Length	Description
	Bit	0.75	Ulterra 40862
	Motor	30.8	Nzone NZG7004



Sub2	29.31	Collar 650-30-4504
Sub2	29.29	Collar 675-30-2055
Sub2	29.2	Collar 650-30-3329

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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 interpretation, and we shall not except in the case of gross or willful negligence on our part, be liable or responsible for any loss, cost damages or expenses incurred or sustained by anyone resulting from an interpretation made by any of our officers, agents, or employees.



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TVD: 11101.76 INC: 33.23 AZ: 332.39 11,187.00

TVD: 11191.88 INC: 40.88 AZ: 330.46 11,300.00

TVD: 11239.99 INC: 43.60 AZ: 329.49 11,365.00

TVD: 11304.33 INC: 43.87 AZ: 335.73 11,454.00

TVD: 11362.21 INC: 55.91 AZ: 335.99 11,544.00

TVD: 11401.35 INC: 71.74 AZ: 333.36 11,633.00

TVD: 11418.19 INC: 86.64 AZ: 329.23 11,723.00

TVD: 11419.05 INC: 91.16 AZ: 329.14 11,768.00

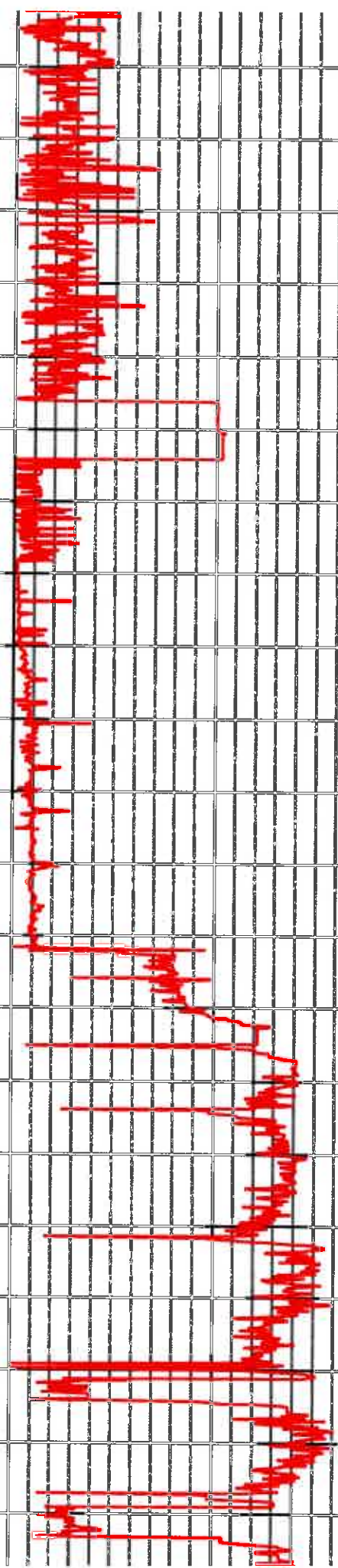
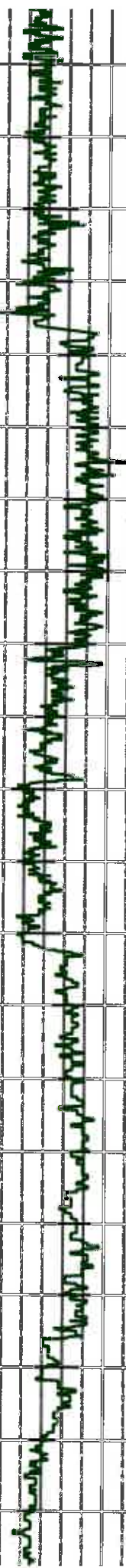
TVD: 11418.12 INC: 91.21 AZ: 330.46 11,813.00

TVD: 11416.48 INC: 90.93 AZ: 327.73 11,902.00

TVD: 11414.89 INC: 91.12 AZ: 324.22 11,992.00

TVD: 11412.67 INC: 91.74 AZ: 323.51 12,081.00

TVD: 11409.81 INC: 91.91 AZ: 325.54 12,171.00



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TVD: 11407.08 INC: 91.56 AZ: 327.82 12,261.00

TVD: 11403.73 INC: 92.75 AZ: 329.67 12,350.00

TVD: 11399.63 INC: 92.48 AZ: 328.05 12,440.00

TVD: 11396.83 INC: 91.38 AZ: 332.57 12,529.00

TVD: 11384.74 INC: 91.03 AZ: 332.57 12,619.00

TVD: 11393.02 INC: 91.16 AZ: 332.22 12,709.00

TVD: 11390.97 INC: 91.47 AZ: 332.48 12,798.00

TVD: 11388.56 INC: 91.60 AZ: 331.42 12,888.00

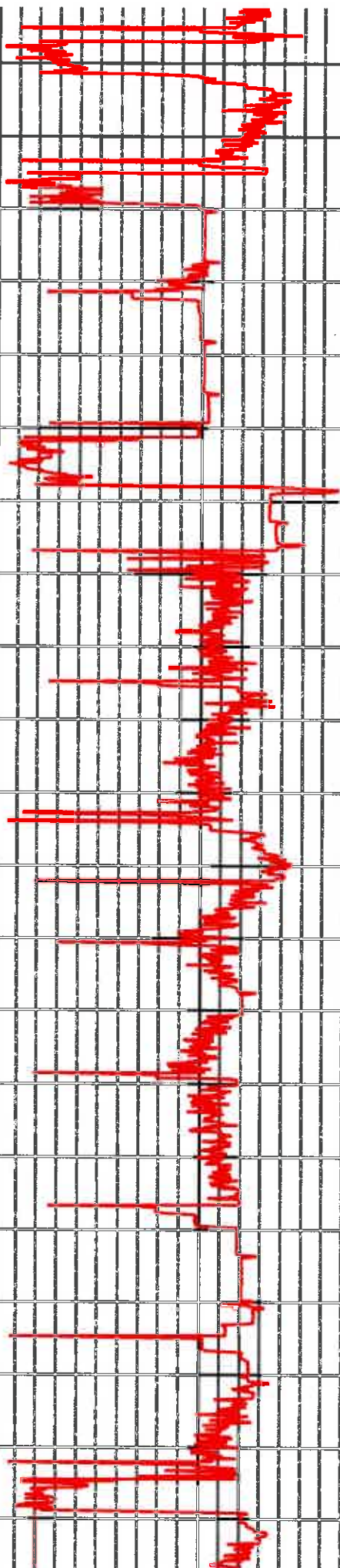
TVD: 11385.97 INC: 91.74 AZ: 331.07 12,977.00

TVD: 11383.06 INC: 91.88 AZ: 331.07 13,067.00

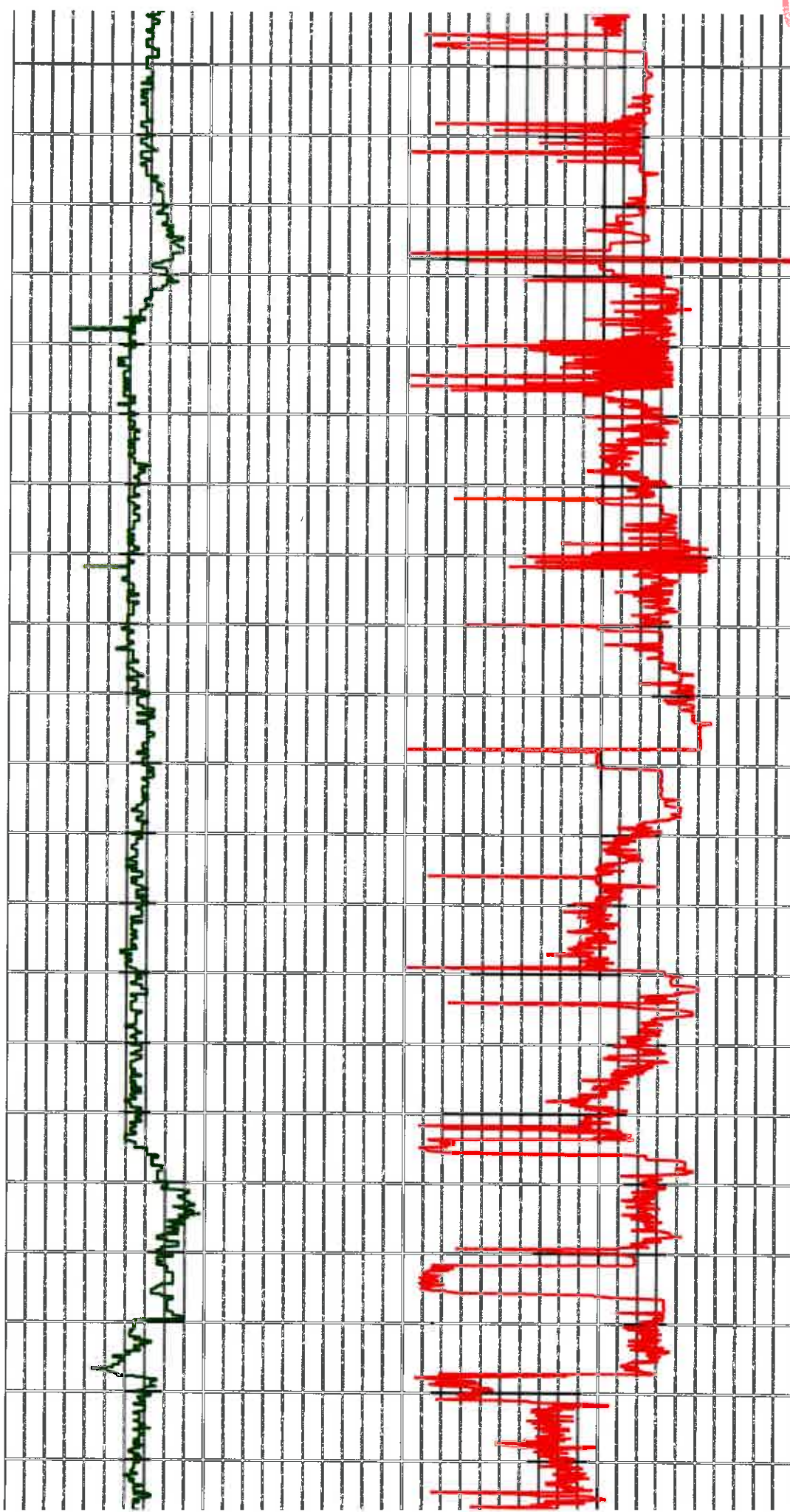
TVD: 11380.06 INC: 91.87 AZ: 331.07 13,156.00

TVD: 11378.22 INC: 90.51 AZ: 329.84 13,246.00

Vertical handwritten notes on the left side of the grid, including the word "Mudlog" and other illegible text.



TVD: 11378.01 INC: 88.76 AZ: 330.19	13,336.00
TVD: 11378.69 INC: 89.36 AZ: 329.58	13,425.00
TVD: 11379.77 INC: 89.27 AZ: 329.58	13,515.00
TVD: 11380.79 INC: 89.41 AZ: 329.75	13,604.00
TVD: 11381.55 INC: 89.83 AZ: 329.40	13,694.00
TVD: 11382.03 INC: 89.76 AZ: 329.75	13,784.00
TVD: 11382.33 INC: 89.85 AZ: 329.23	13,873.00
TVD: 11382.63 INC: 89.76 AZ: 329.67	13,963.00
TVD: 11382.94 INC: 89.85 AZ: 329.87	14,052.00
TVD: 11383.29 INC: 89.71 AZ: 329.58	14,142.00
TVD: 11382.14 INC: 91.74 AZ: 329.75	14,232.00
TVD: 11379.27 INC: 91.96 AZ: 329.40	14,321.00



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TVD: 11373.64 INC: 90.81 AZ: 329.75 14,500.00

TVD: 11372.50 INC: 90.84 AZ: 330.02 14,590.00

TVD: 11371.39 INC: 90.77 AZ: 329.67 14,680.00

TVD: 11370.11 INC: 90.86 AZ: 330.81 14,770.00

TVD: 11368.67 INC: 90.99 AZ: 330.81 14,859.00

TVD: 11367.26 INC: 90.81 AZ: 330.19 14,949.00

TVD: 11366.12 INC: 90.64 AZ: 329.84 15,039.00

TVD: 11365.10 INC: 90.68 AZ: 329.67 15,128.00

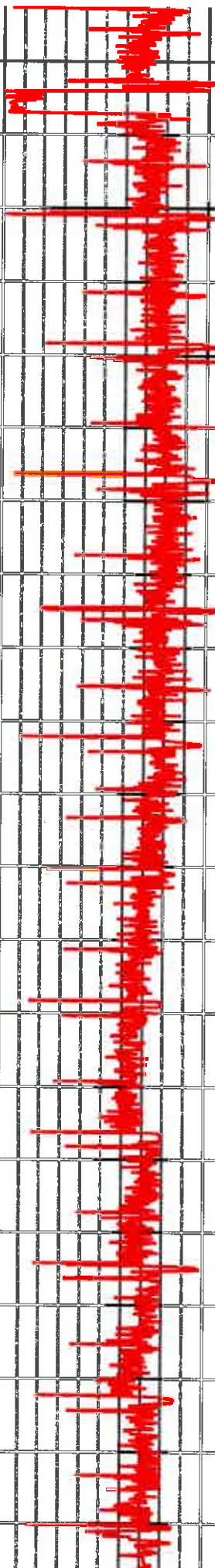
TVD: 11364.13 INC: 90.55 AZ: 329.93 15,218.00

TVD: 11363.34 INC: 90.46 AZ: 329.84 15,307.00

TVD: 11362.55 INC: 90.55 AZ: 329.67 15,397.00

TVD: 11361.55 INC: 90.55 AZ: 329.76 15,487.00

Vertical text on the left side of the grid, possibly a well name or identifier.



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TVD: 11360.54 INC: 90.55 AZ: 328.32 15,577.00

TVD: 11359.55 INC: 90.73 AZ: 328.88 15,669.00

TVD: 11358.57 INC: 90.51 AZ: 329.67 15,756.00

TVD: 11357.75 INC: 90.55 AZ: 329.84 15,845.00

TVD: 11356.82 INC: 90.64 AZ: 329.32 15,935.00

TVD: 11355.85 INC: 90.59 AZ: 329.40 16,025.00

TVD: 11354.59 INC: 91.03 AZ: 329.58 16,114.00

TVD: 11352.73 INC: 91.34 AZ: 330.19 16,204.00

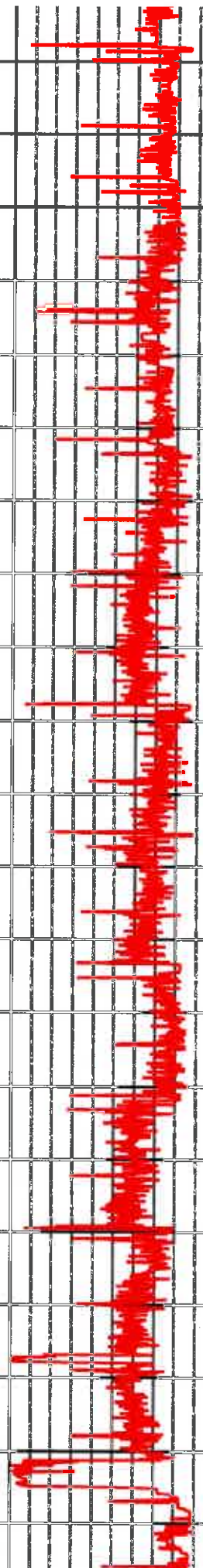
TVD: 11350.34 INC: 91.74 AZ: 330.19 16,293.00

TVD: 11347.57 INC: 91.78 AZ: 330.19 16,383.00

TVD: 11344.46 INC: 92.18 AZ: 330.19 16,473.00

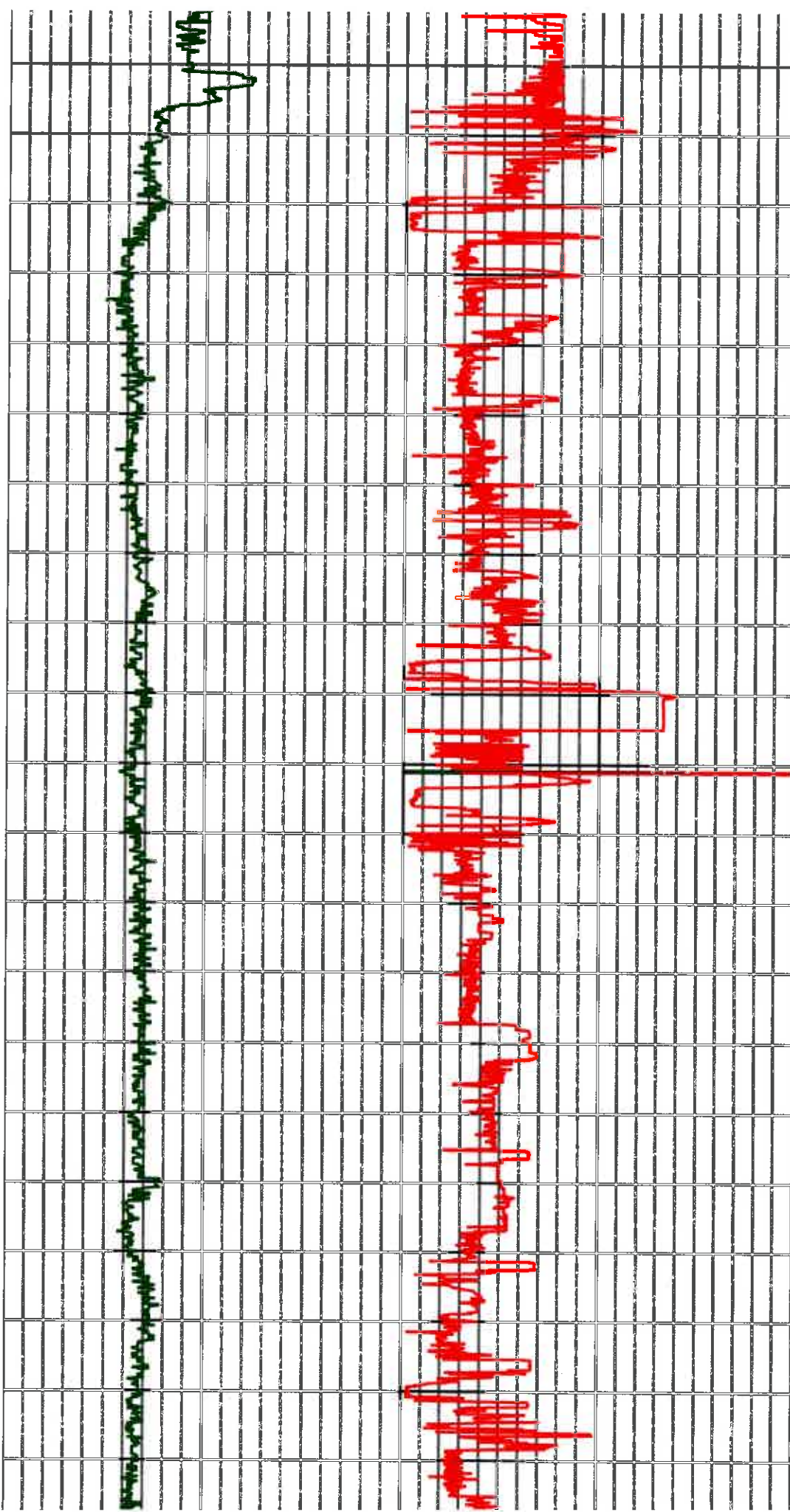
TVD: 11342.00 INC: 90.89 AZ: 329.67 16,562.00

Vertical text on the left side of the grid, possibly a column header or label, oriented vertically.



Handwritten signature or initials at the bottom left of the grid.

FIDE



TVD: 11341.24 INC: 89.98 AZ: 329.49	16,652.00
TVD: 11340.41 INC: 91.08 AZ: 329.84	16,742.00
TVD: 11340.51 INC: 88.79 AZ: 330.11	16,832.00
TVD: 11342.29 INC: 88.92 AZ: 330.02	16,921.00
TVD: 11343.81 INC: 89.14 AZ: 330.37	17,011.00
TVD: 11345.05 INC: 89.27 AZ: 331.07	17,100.00
TVD: 11344.71 INC: 91.16 AZ: 331.07	17,190.00
TVD: 11342.64 INC: 91.47 AZ: 330.63	17,280.00
TVD: 11340.29 INC: 91.56 AZ: 330.72	17,369.00
TVD: 11337.77 INC: 91.65 AZ: 331.07	17,459.00
TVD: 11335.01 INC: 91.91 AZ: 331.34	17,548.00
TVD: 11332.49 INC: 91.30 AZ: 330.55	17,638.00

TVD: 11330.78 INC: 90.90 AZ: 330.02 17,727.00

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TVD: 11329.22 INC: 91.08 AZ: 329.93 17,817.00

TVD: 11328.40 INC: 89.88 AZ: 330.37 17,806.00

TVD: 11328.19 INC: 90.29 AZ: 330.90 17,995.00

TVD: 11327.22 INC: 90.95 AZ: 330.55 18,085.00

TVD: 11325.84 INC: 90.81 AZ: 330.19 18,175.00

TVD: 11324.96 INC: 90.33 AZ: 330.63 18,264.00

TVD: 11324.37 INC: 90.42 AZ: 331.07 18,354.00

TVD: 11323.37 INC: 90.86 AZ: 330.81 18,443.00

TVD: 11322.02 INC: 90.86 AZ: 330.90 18,533.00

TVD: 11320.96 INC: 90.51 AZ: 330.37 18,622.00

TVD: 11320.05 INC: 90.64 AZ: 330.02 18,712.00

Vertical handwritten notes in green ink along the left margin of the grid.

Large vertical red scribbles and markings in the center of the grid.

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TVD: 11317.17 INC: 90.99 AZ: 329.32 18,891.00

TVD: 11316.01 INC: 90.51 AZ: 329.14 18,860.00

TVD: 11314.83 INC: 90.99 AZ: 328.52 19,070.00

TVD: 11313.76 INC: 90.37 AZ: 328.17 19,160.00

TVD: 11313.01 INC: 90.59 AZ: 328.17 19,249.00

TVD: 11311.98 INC: 90.73 AZ: 328.35 19,339.00

TVD: 11311.01 INC: 90.51 AZ: 328.70 19,428.00

TVD: 11309.66 INC: 91.21 AZ: 328.78 19,518.00

TVD: 11307.69 INC: 91.30 AZ: 329.32 19,608.00

TVD: 11305.98 INC: 90.90 AZ: 329.75 19,697.00

TVD: 11304.37 INC: 91.16 AZ: 329.75 19,787.00

TVD: 11302.42 INC: 91.34 AZ: 330.02 19,876.00

