



**CEMENT BOND LOG
WITH GAMMA RAY**

Comp. ANADARKO PETROLEUM CORP.
Well RIVERBEND 14-19
Field WATTENBERG
Co. WELD
State COLORADO

Company **ANADARKO PETROLEUM CORP.**
Well **RIVERBEND 14-19**
Field **WATTENBERG**
County **WELD** State **COLORADO**

Location: API #: 05-123-33942 Other Services
Permanent Datum GL Elevation 4929'
Log Measured From GL Above Perm. Datum
Drilling Measured From KB
SHL: 957' FSL & 1031' FWL SW SW
BHL: 705' FSL & 1974' FWL SE SW
SEC 19 TWP 1N RGE 66W
K.B. 4944'
D.F. 4943'
G.L. 4929'

Date of Service	07/06/2018			
Run Number	ONE			
Depth Driller or P8TD	8291'			
Depth Logger	4400'			
Bottom Log Interval	4400'			
Top Log Interval	SURFACE			
Open Hole Size	7.875"			
Type Fluid	WATER			
Fluid Level	SURFACE			
Fluid Density	N/A			
Max. Recorded Temperature	NOT RECORDED			
Max. Wellhead Pressure	ZERO			
Wellhead Connection	PACK OFF			
Estimated Cement Top	1000'			
Unit Number	P-57			
Wireline Size	9/32			
Location	FORT MORGAN CO			
Recorded By	P LOPEZ			
Witnessed By	MR. JOSE CASTILLO			
Tubing Record	Size	WVft	Top	Bottom
Surface Casing	8.63"	24.00	SURFACE	1017'
Production Casing	4.50"	11.60	SURFACE	8282'
Liner Record				

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All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, LLC will not 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.

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.
DEPTH REFERENCE TO J-W WIRELINE CEMENT BOND LOG DATED OCT-11-2011

THANK YOU FOR USING PIONEER ENERGY SERVICES!

Your Pioneer Energy Services Crew		Tool Data - Services	Serial Number
Engineer: P LOPEZ		RBL-D	070151
Operator: M GARCIA		GR/CCL	110246
Operator: E ESTRADA			
Operator:			

Log Variables

DatabaseC:\ProgramData\Warrior\Data\anadarko_riverbend_14-19_0512333942_20180706_s
Dataset field/well/run1/pass11.1/_vars_

Top - Bottom

BOREID in 7.875	BOTTEMP degF 150	CASEOD in 4.5	CASETHCK in 0	CASEWGHT lb/ft 11.6	MAXAMPL mV 0	MINAMPL mV 1
MINATTN db/ft 0.08	PERFS 0	PPT usec 0	SRFTEMP degF 0	TDEPTH ft 0		


Variable Description

BOREID : Borehole I.D.
BOTTEMP : Bottom Hole Temperature
CASEOD : Casing O.D.
CASETHCK : Casing Thickness
CASEWGHT : Casing Weight
MAXAMPL : Maximum Amplitude

MINAMPL : Minimum Amplitude
MINATTN : Minimum Attenuation
PERFS : Perforation Flag
PPT : Predicted Pipe Time
SRFTEMP : Surface Temperature
TDEPTH : Total Depth

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			Cable Head-Titan_144 1 7/16" Titan Cable Head	1.03	1.44	2.00
			Centralizer-275 Probe 2 3/4" Probe Adjustable Spring Centralizer	2.88	2.75	15.00
			PROBE-RBT-DIGITAL-RBL-D (070151) Probe 2 3/4" Radii Bond-Digital	8.75	2.75	100.00
WVFS8	14.82					
WVFS7	14.82					
WVFS6	14.82					
WVFS5	14.82					
WVFS4	14.82					
WVFS3	14.82					
WVFS2	14.82					
WVFS1	14.82					
WVFCAL	14.82					
WVF3FT	14.82					
WVF5FT	13.82					
			Centralizer-275 Probe 2 3/4" Probe Adjustable Spring Centralizer	2.88	2.75	15.00

CCL	6.85		PROBE-GR/CCL-ANALOG-GR/CCL-A (1104.54 2 3/4" Gamma with CCL-Analog	2.75	60.00
GR	4.11		Centralizer-275 Probe 2 3/4" Probe Adjustable Spring Centralizer	2.88	15.00
			Bullnose-PROBE Probe Go Pin Pressure Cap	0.33	1.00
Dataset: anadarko_riverbend 14-19_0512333942_20180706_scbl.db: field/well/run1/pass11.1 Total length: 23.29 ft Total weight: 208.00 lb O.D.: 2.75 in					



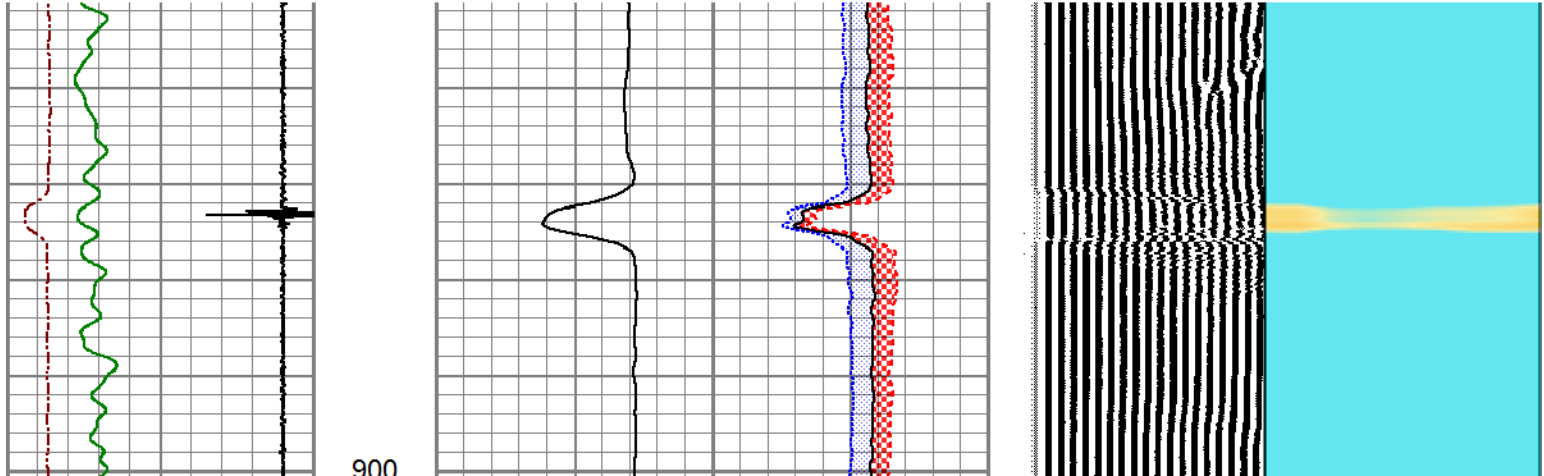
PIONEER
Pioneer Energy Services

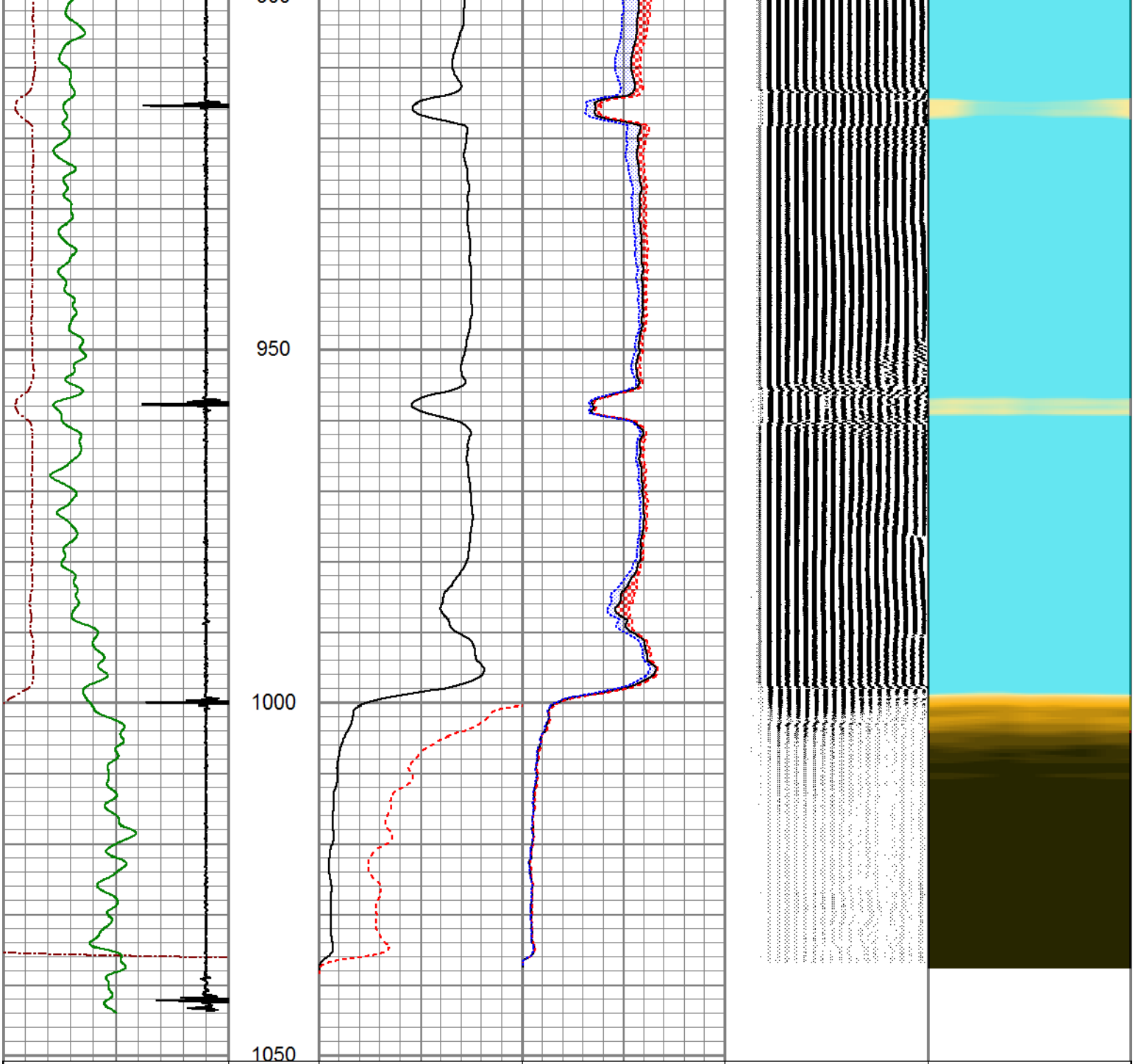
FREE PIPE SECTION

ZERO PSI APPLIED AT SURFACE

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Dataset Pathname	pass13.1
Presentation Format	pinr_scbl
Dataset Creation	Fri Jul 06 16:47:29 2018
Charted by	Depth in Feet scaled 1:240

3Ft Travel Time	3' Amplitude	Sector Amplitude Average	VDL	1	Sector Map	8
259 (usec) 159	0 (mV) 100	0 150	(usec) 1200			
-9 Collar Locator 1	3' Amplified Amplitude X 5	Sector Amplitude Maximum				
Gamma Ray	0 (mV) 20	0 150				
0 (GAPI) 150		Sector Amplitude Minimum				
		0 150				





3Ft Travel Time		
259	(usec)	159

-9	Collar Locator	1
Gamma Ray		
0	(GAPI)	150

3' Amplitude		
0	(mV)	100

3' Amplified Amplitude X 5		
0	(mV)	20

Sector Amplitude Average	
0	150

Sector Amplitude Maximum	
0	150

Sector Amplitude Minimum	
0	150

VDL		
200	(usec)	1200

1	Sector Map	8
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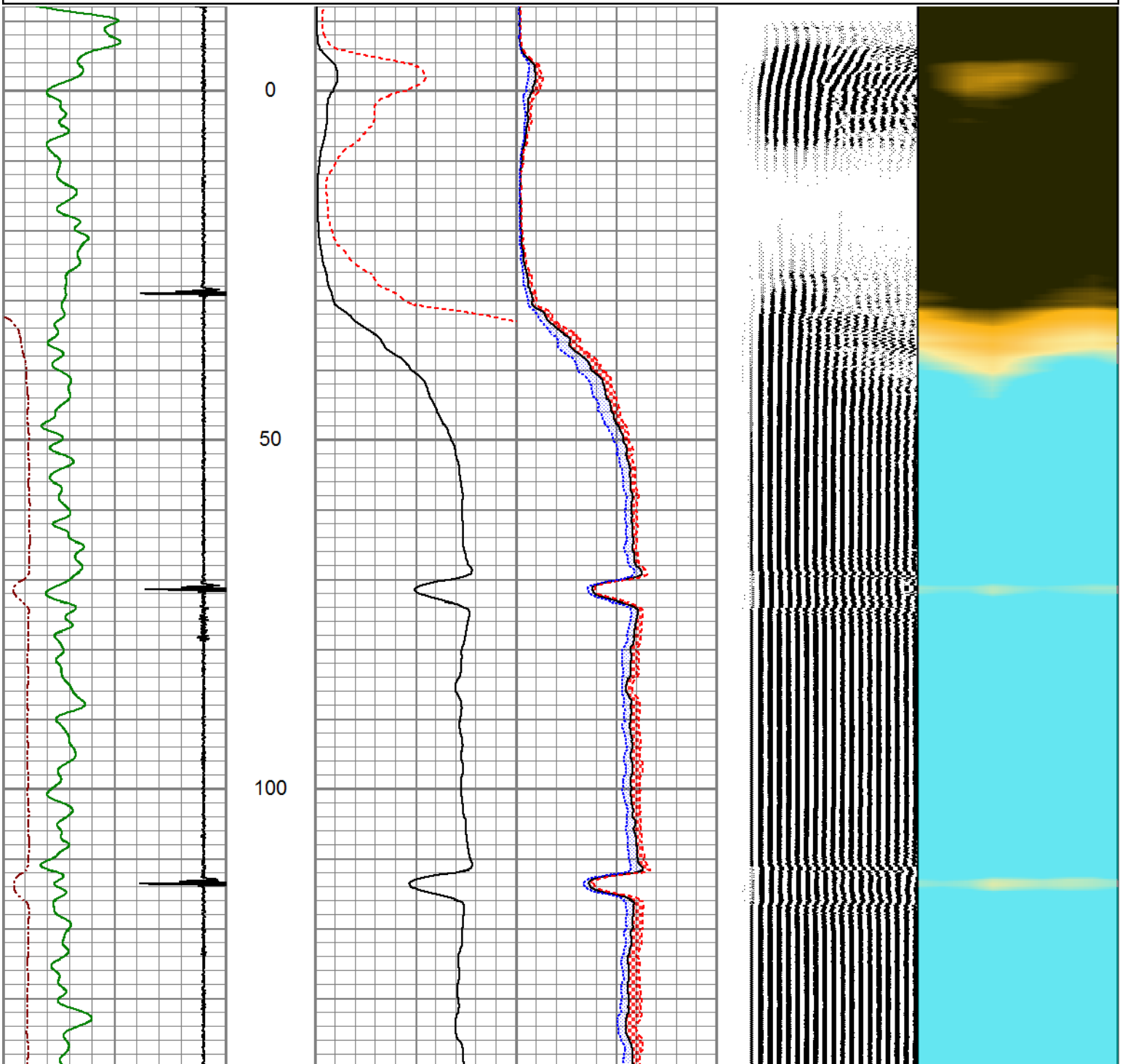


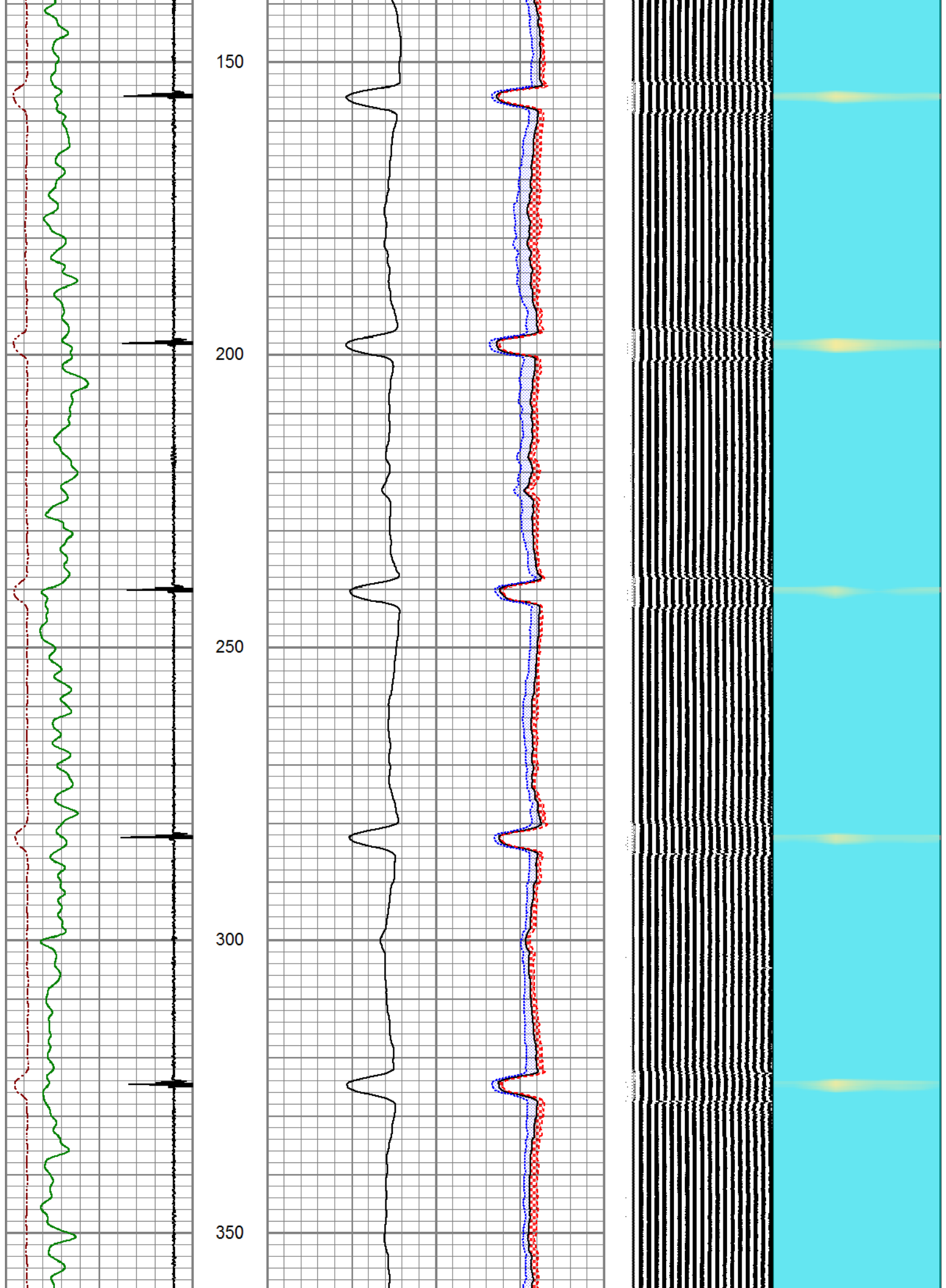
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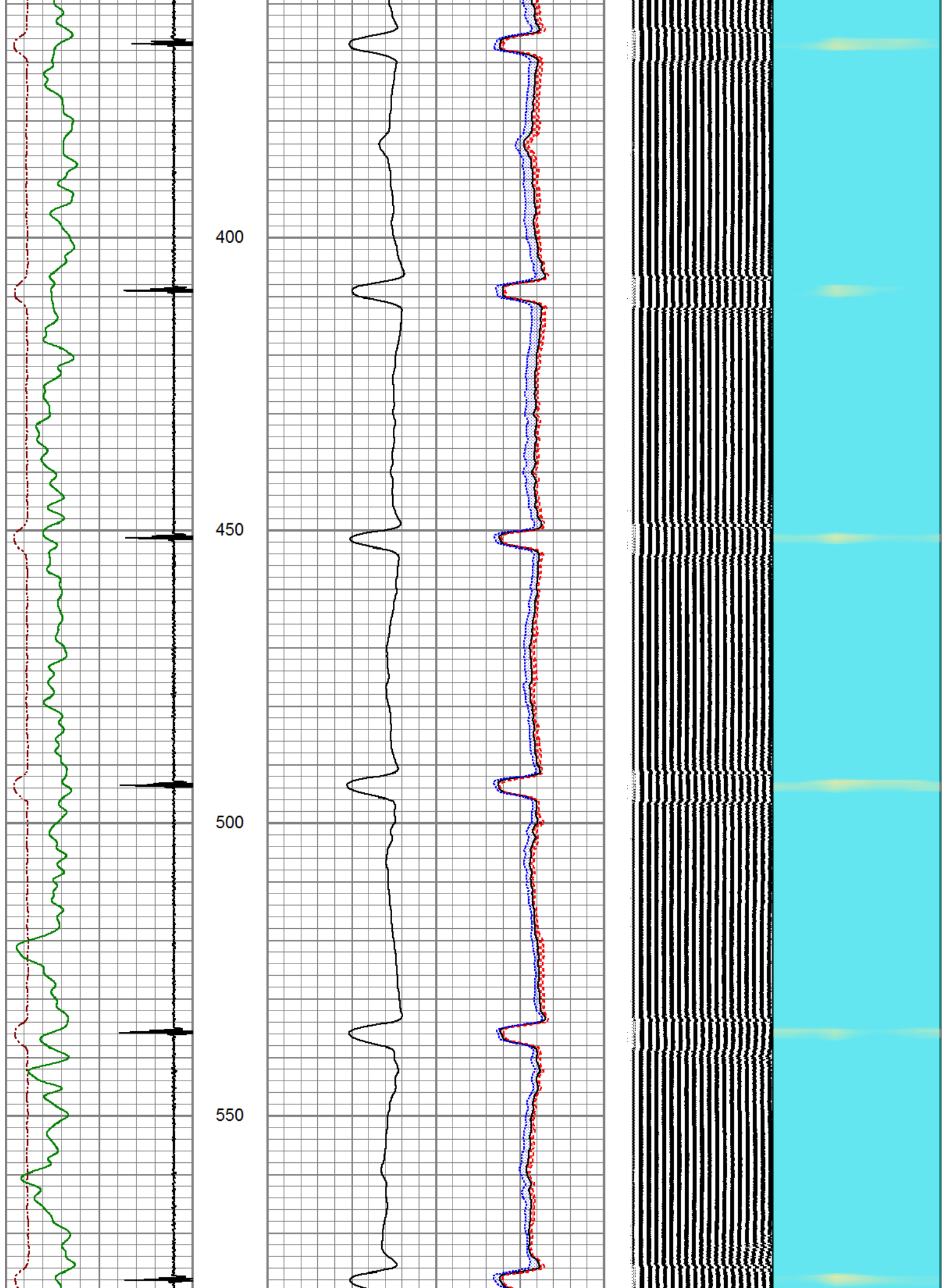
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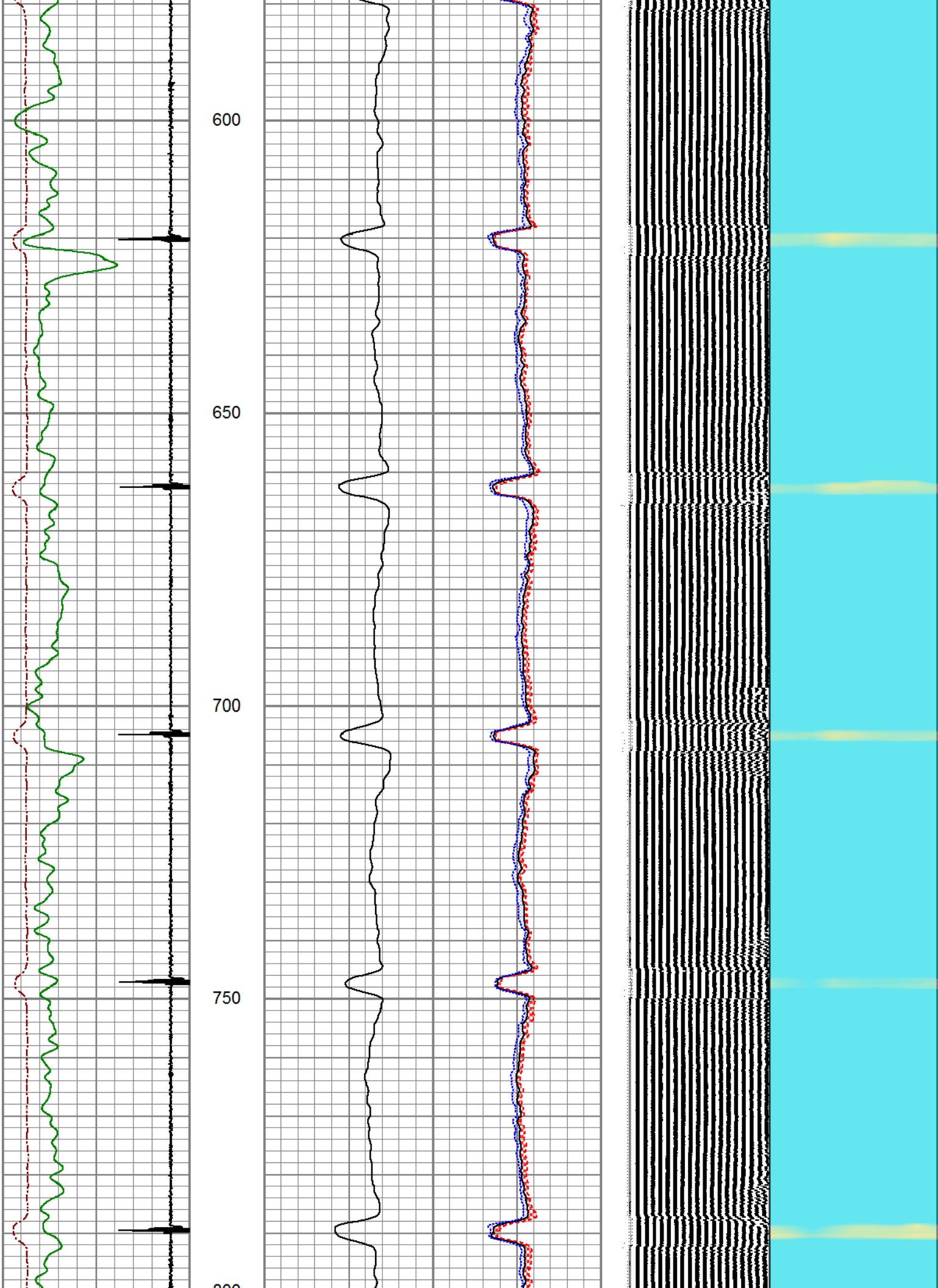
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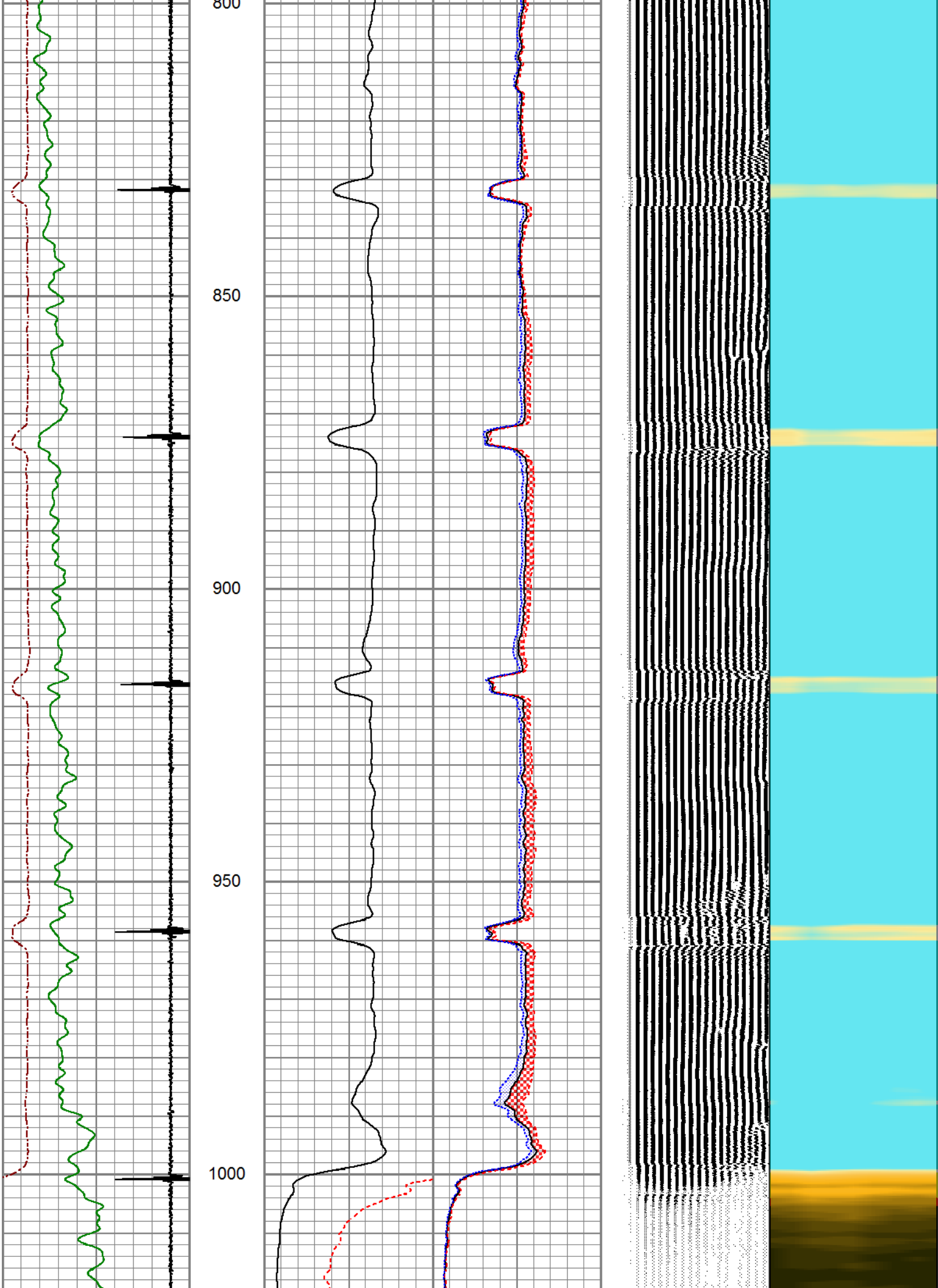
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259 (usec) 159		0 (mV) 100	Amplitude Average	200 (usec) 1200			
-9 Collar Locator 1		3' Amplified Amplitude X 5	0 150				
Gamma Ray		0 (mV) 20	Sector Amplitude Maximum				
0 (GAPI) 150			0 150				
			Sector Amplitude Minimum	0 150			

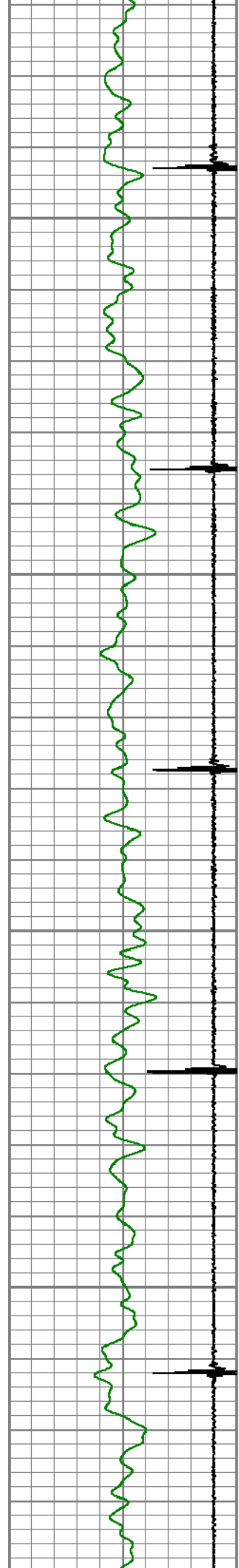










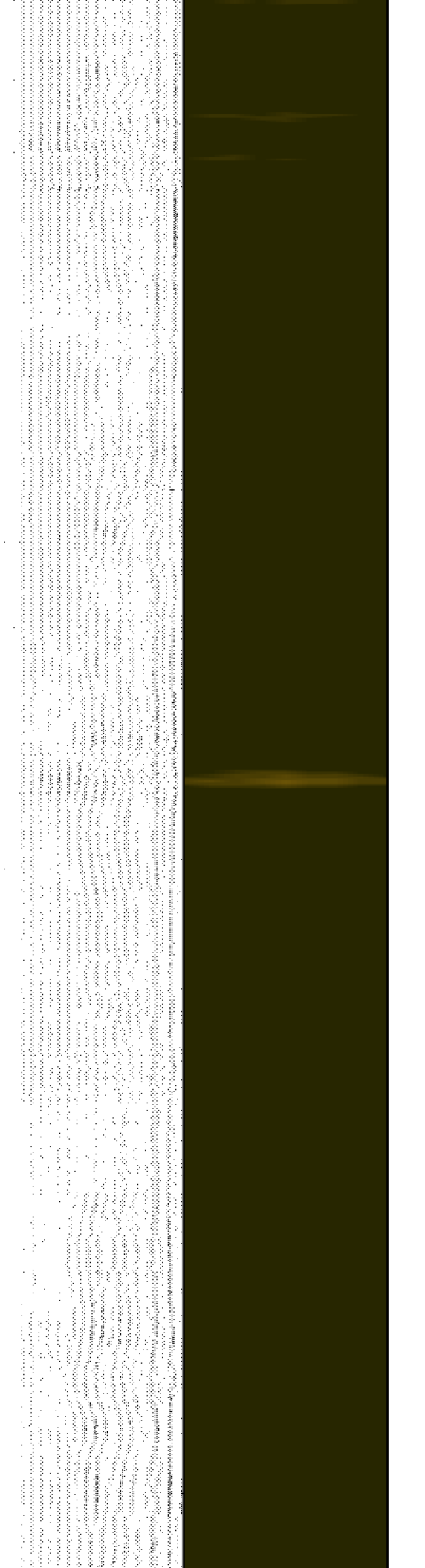
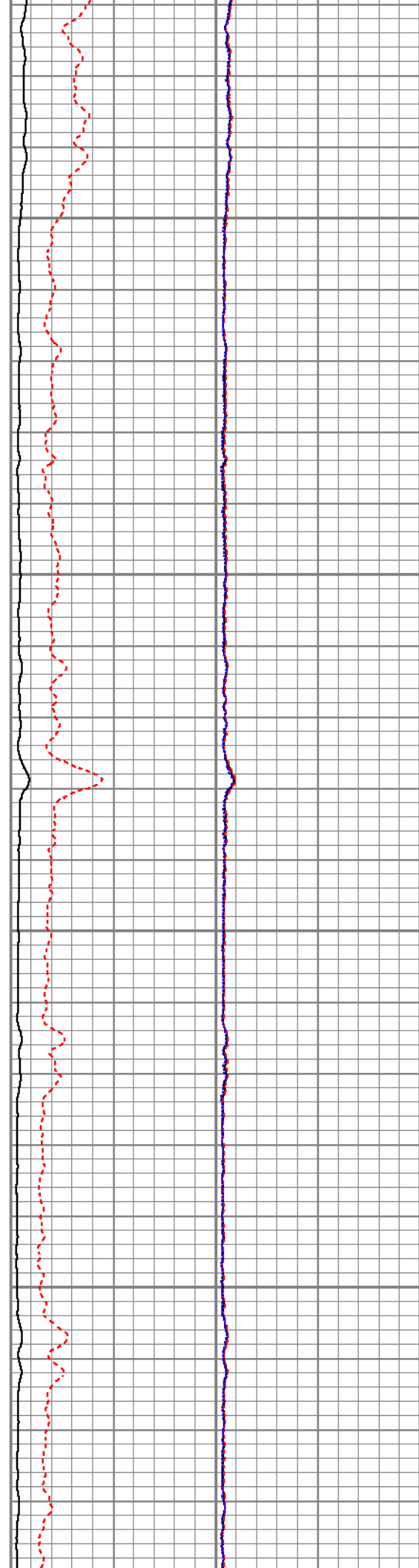


1050

1100

1150

1200



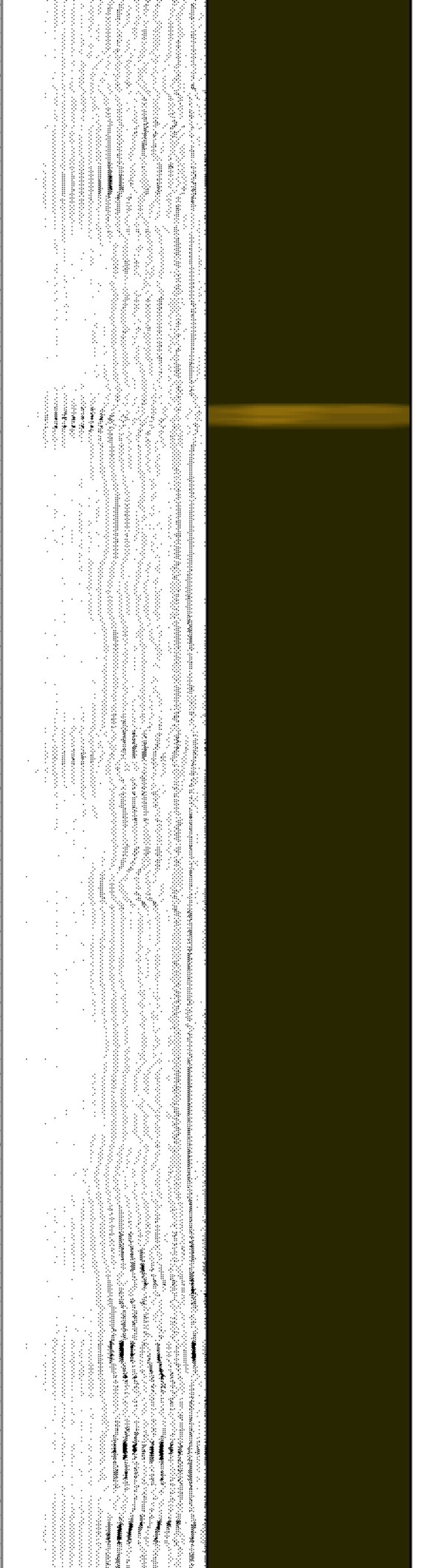
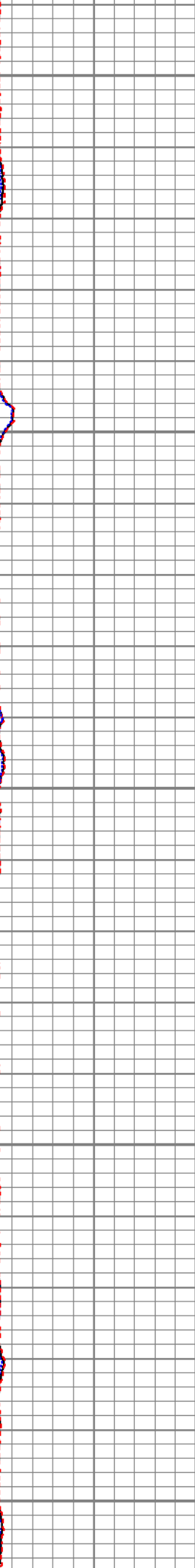
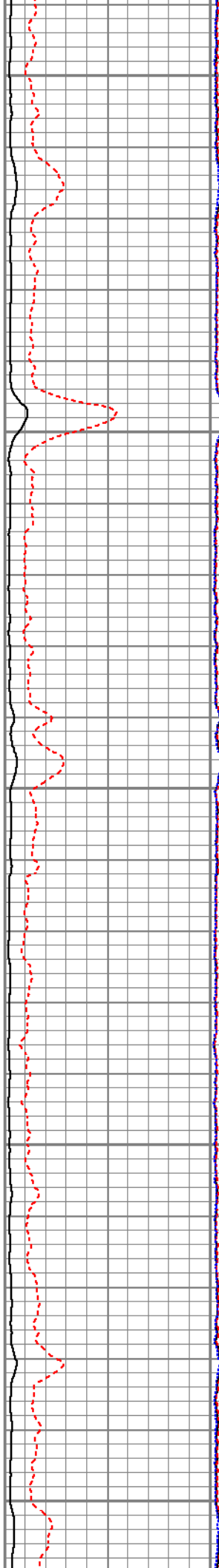
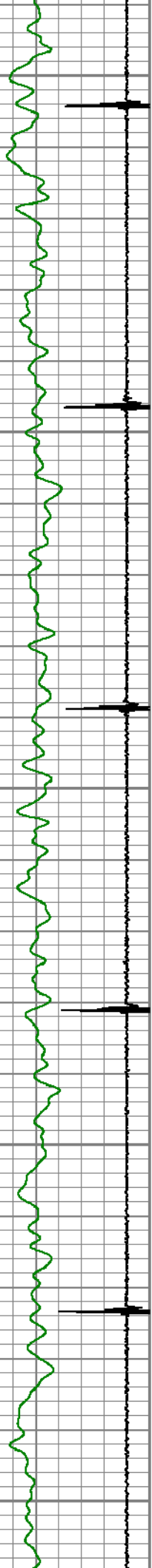
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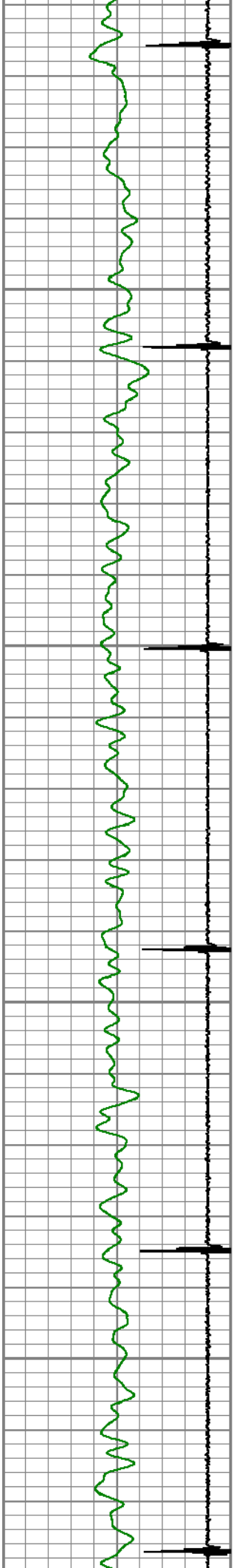
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1350

1400

1450



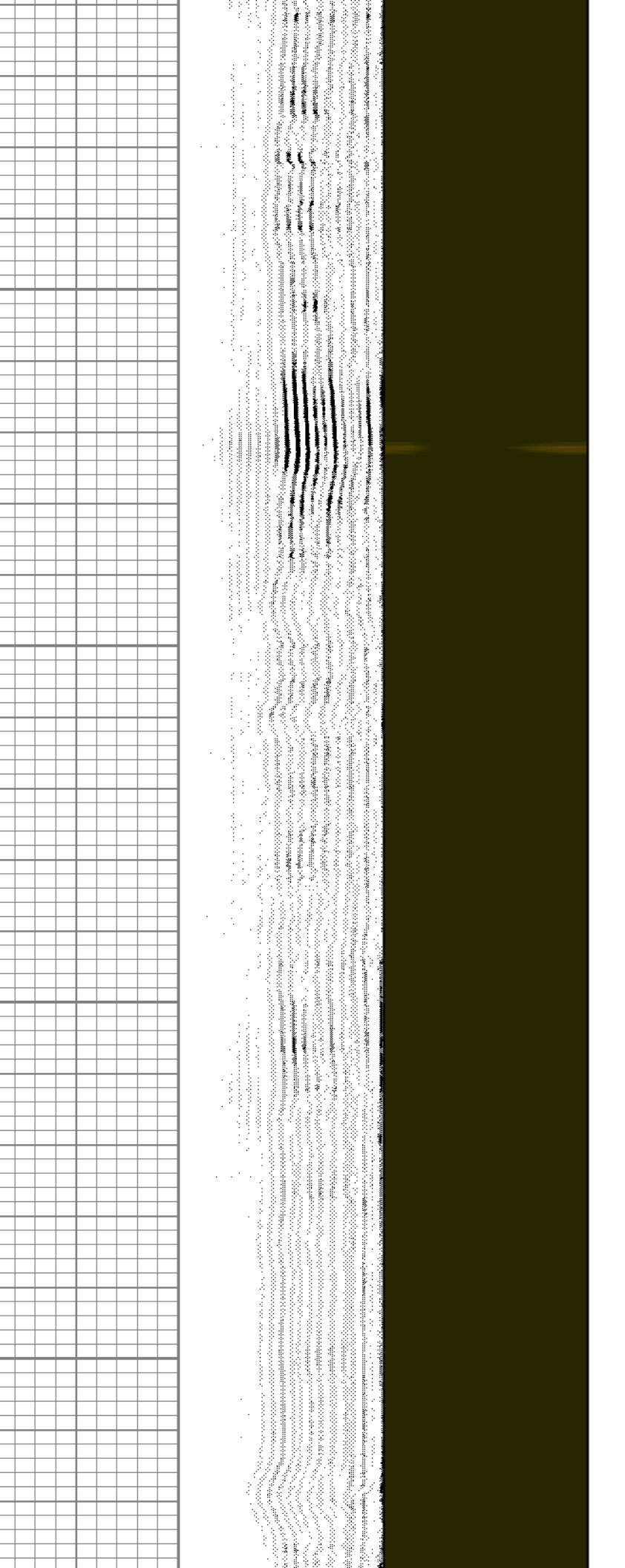
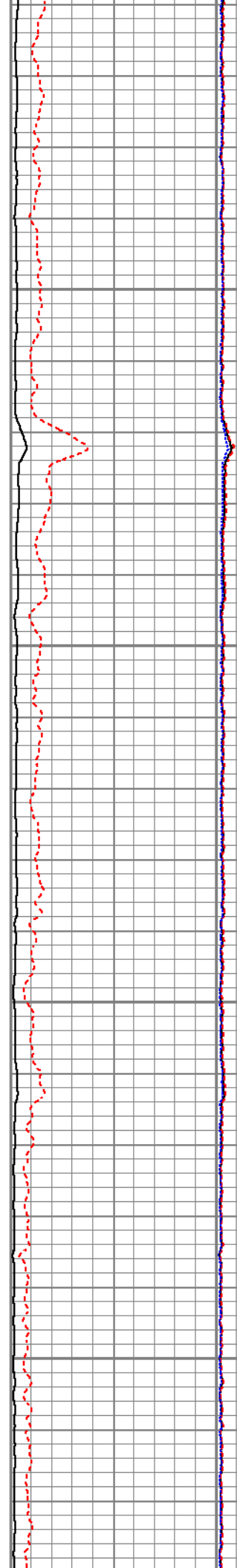


1500

1550

1600

1650



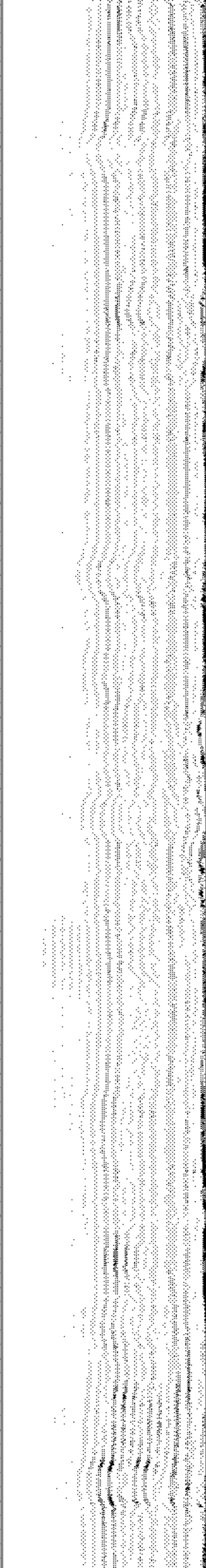
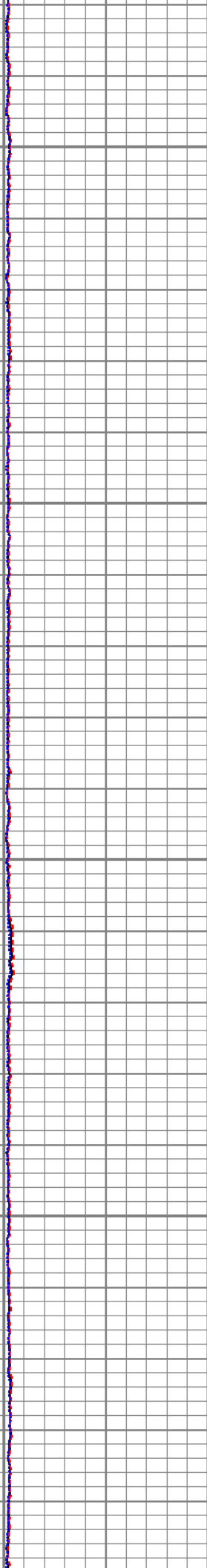
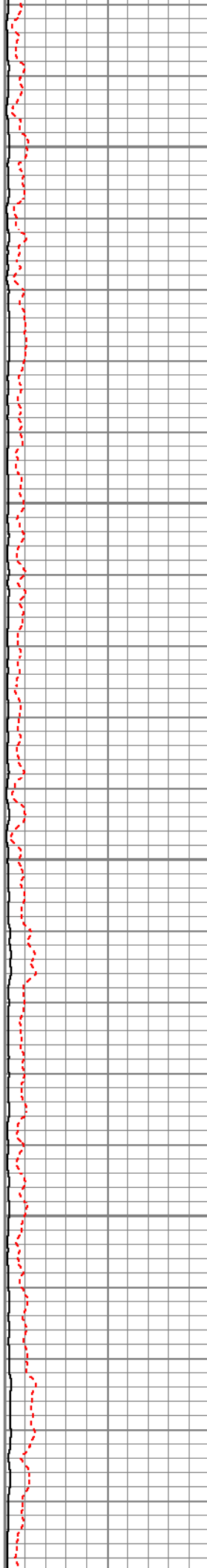
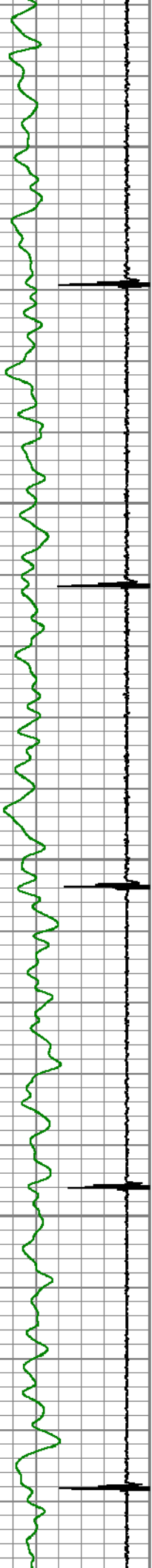
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1750

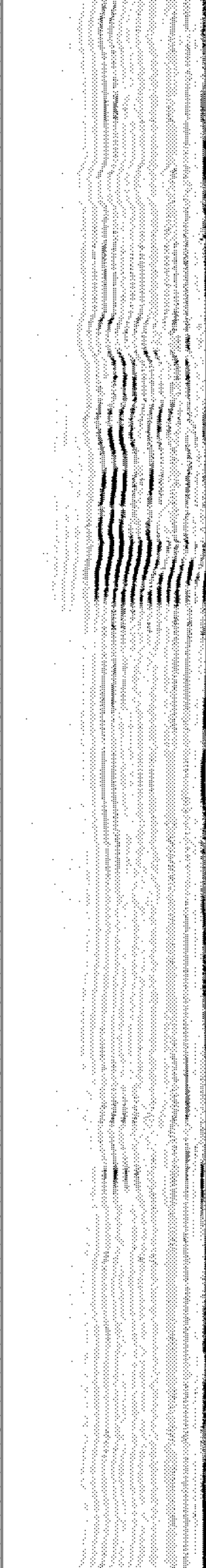
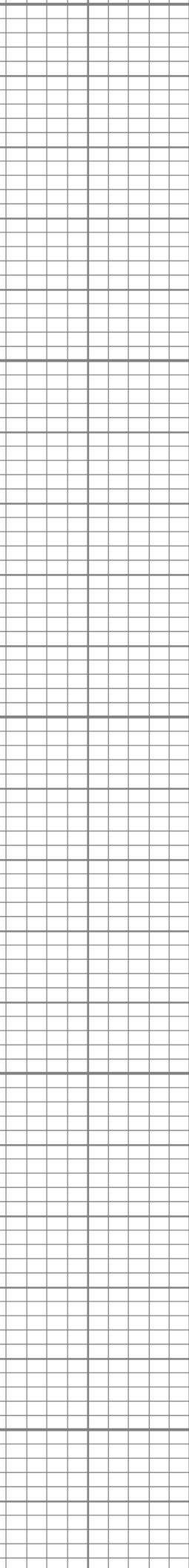
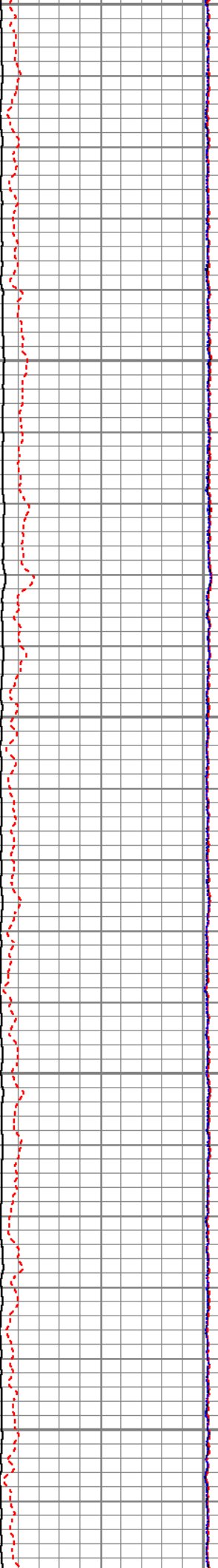
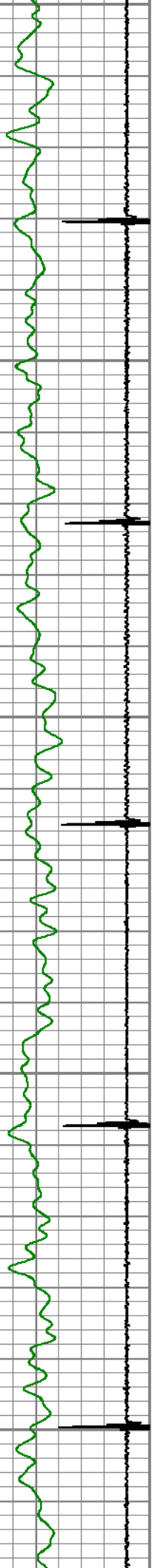
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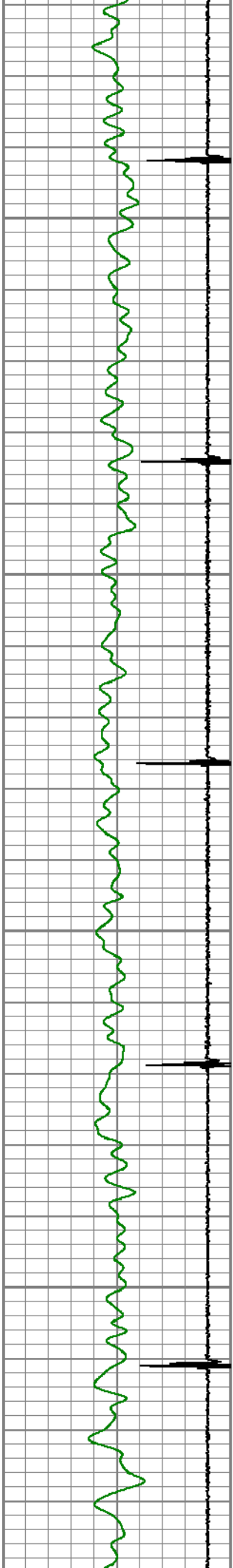
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1900



1900
1950
2000
2050
2100



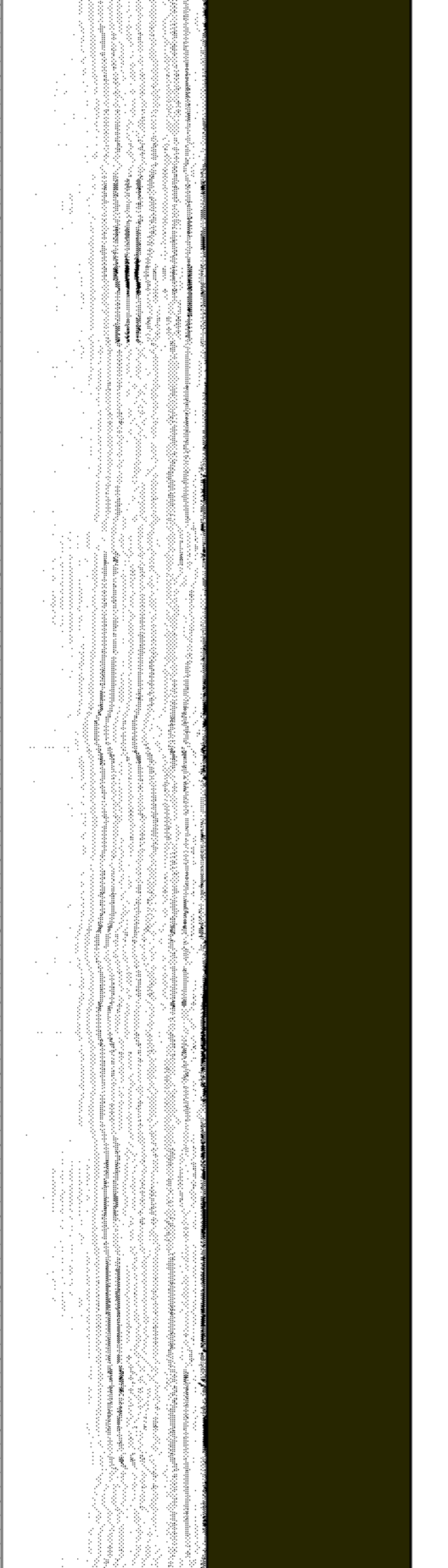
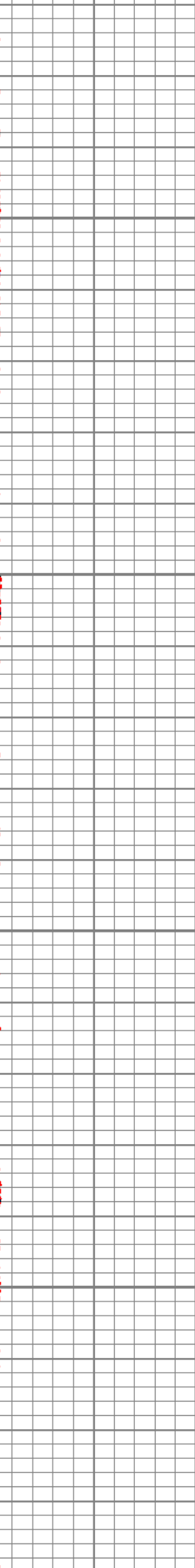
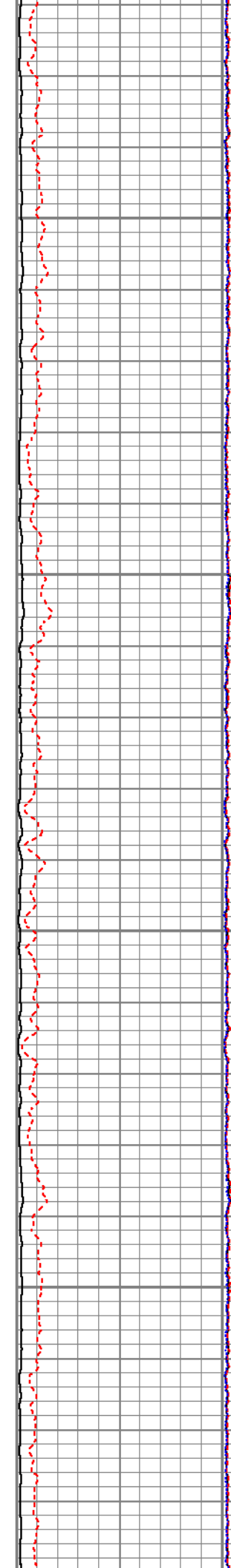


2150

2200

2250

2300



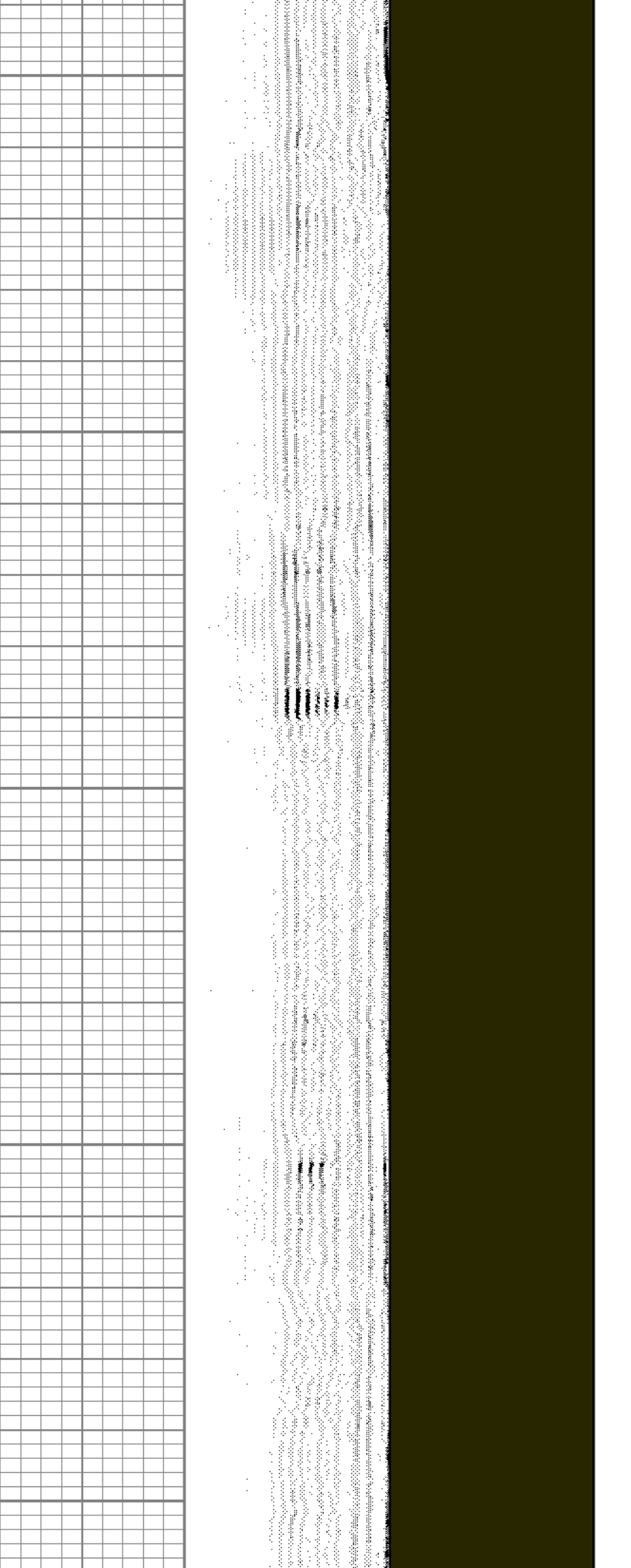
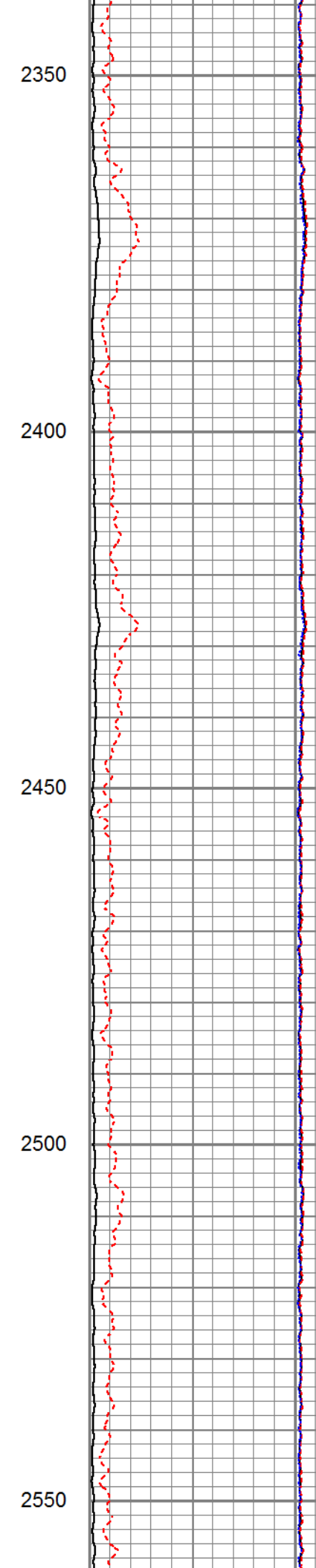
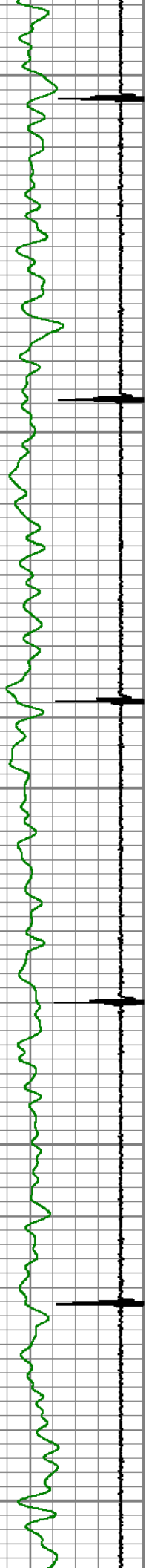
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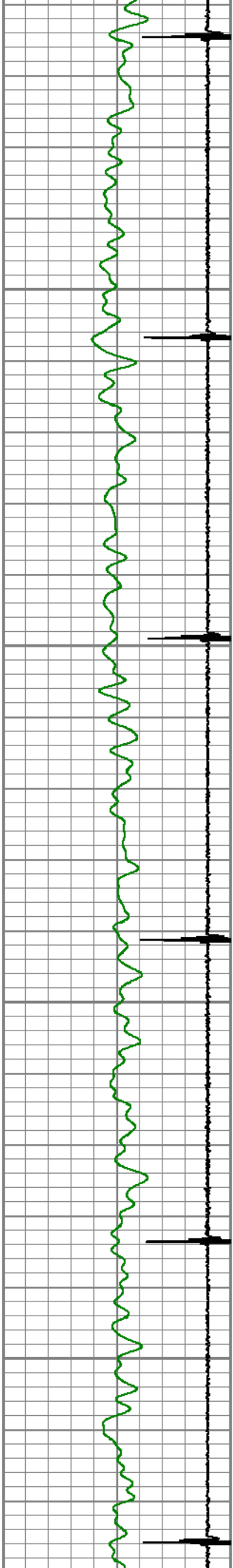
2400

2450

2500

2550



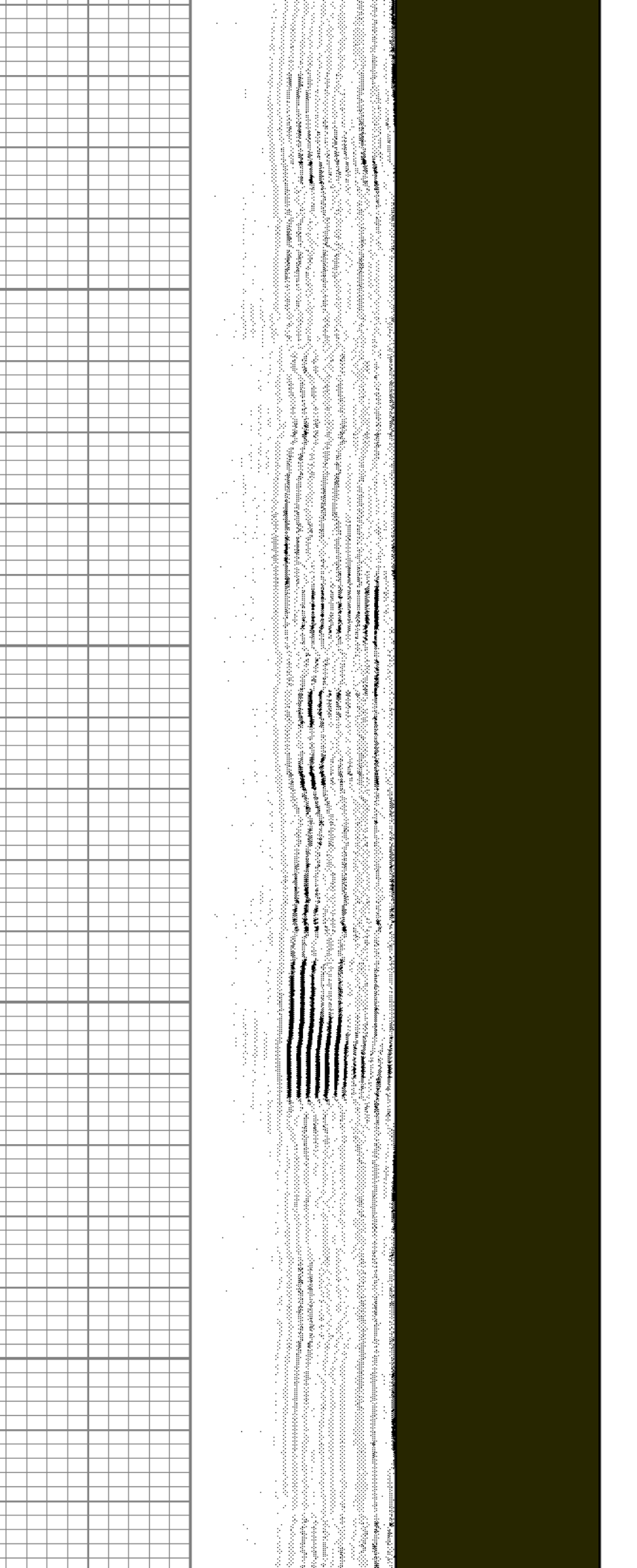
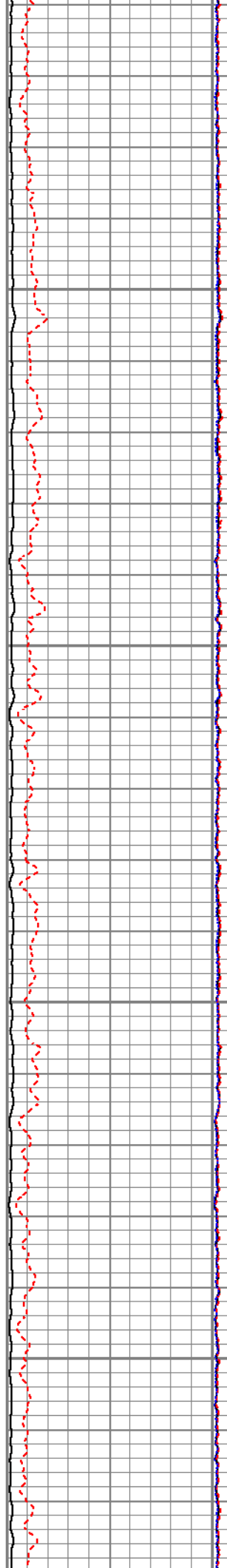


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2700

2750



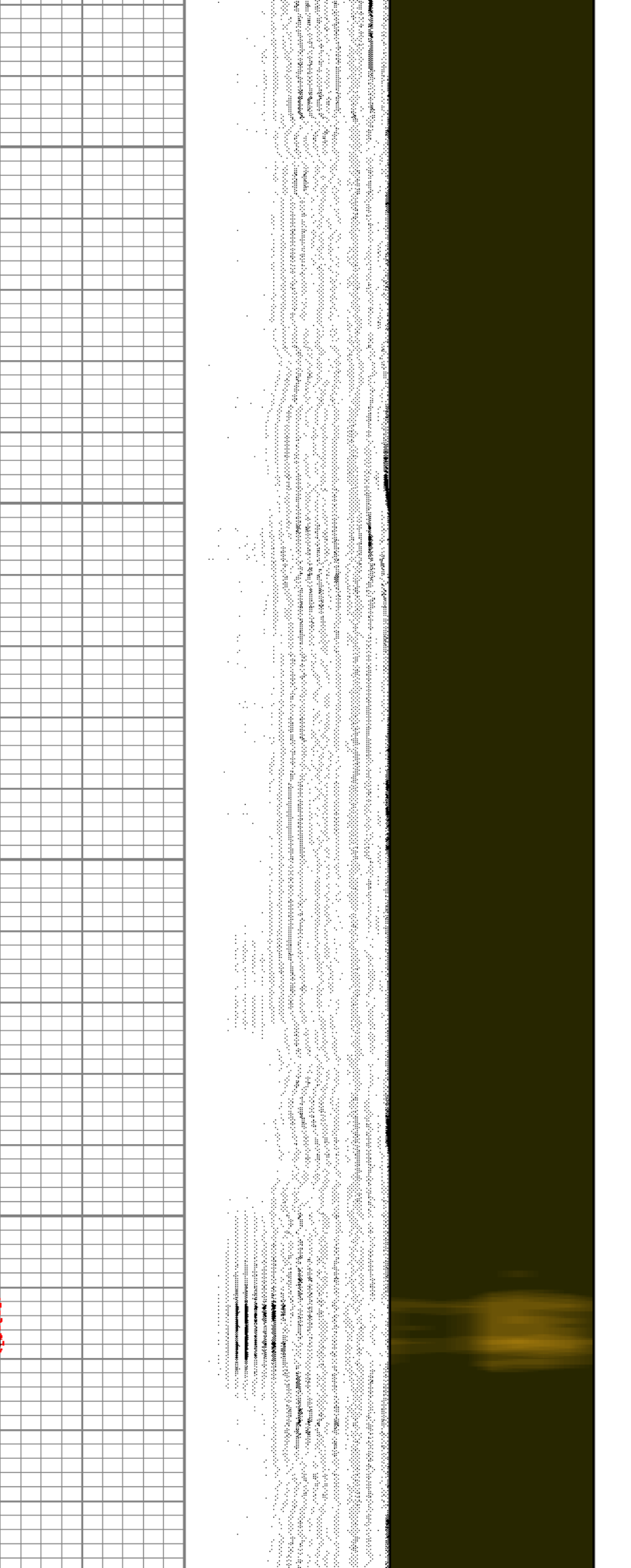
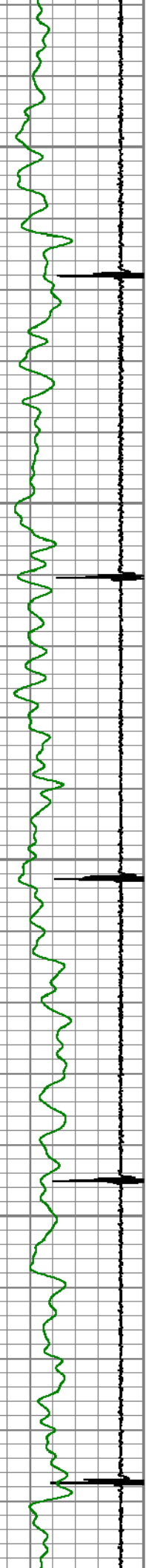
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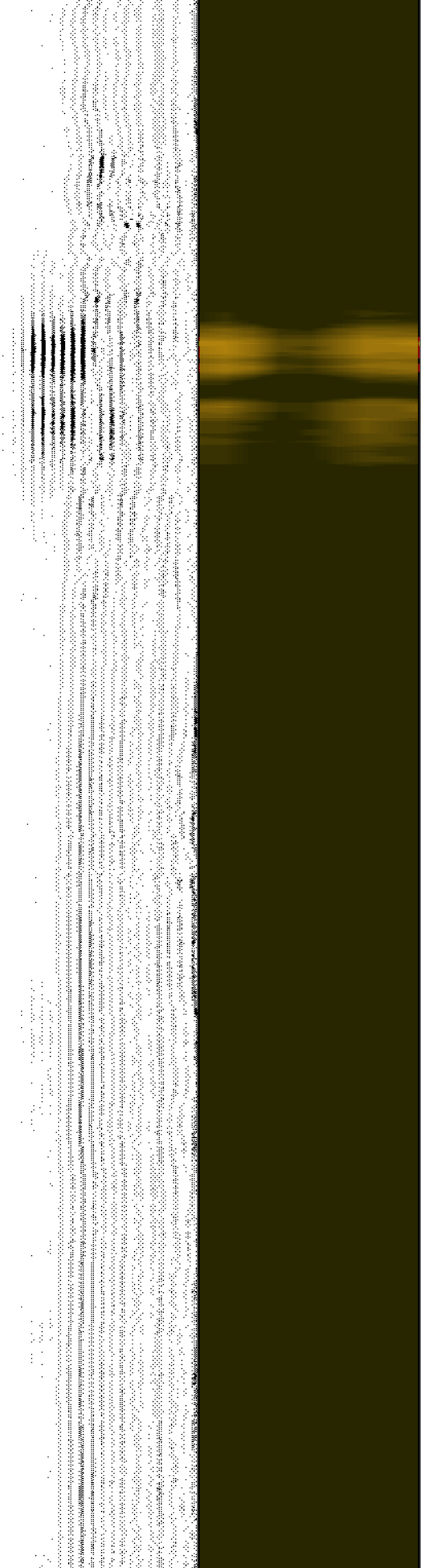
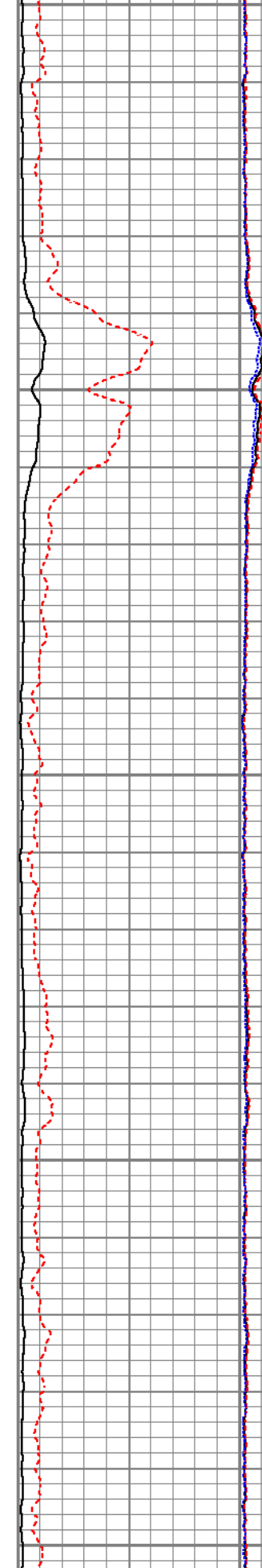
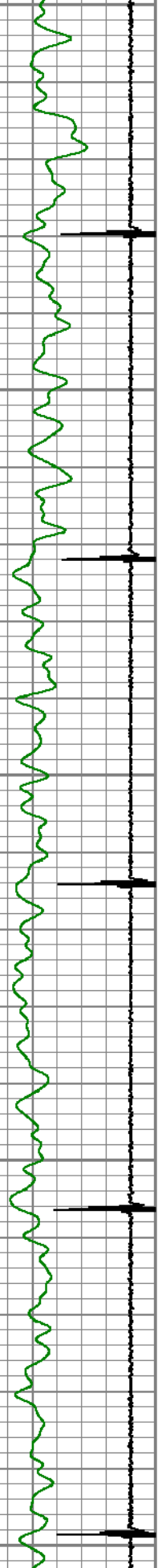
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2950

3000



3000
3050
3100
3150
3200

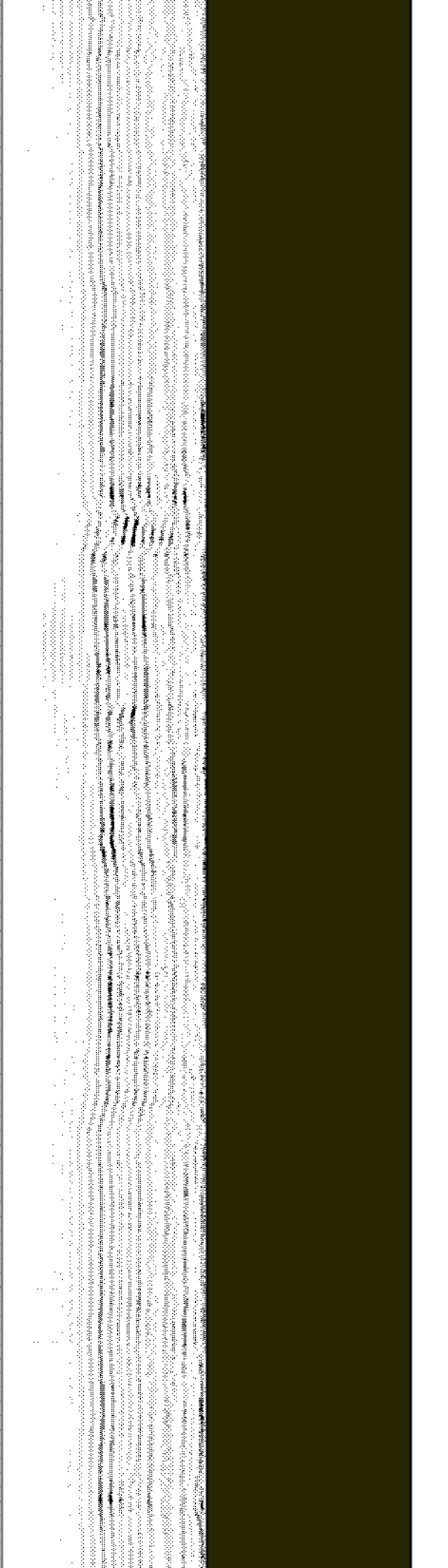
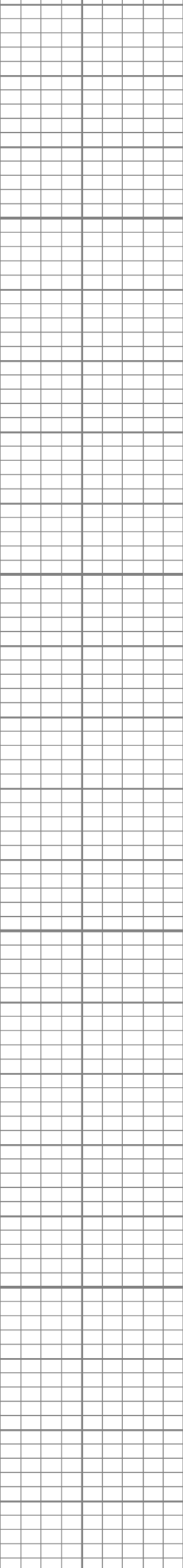
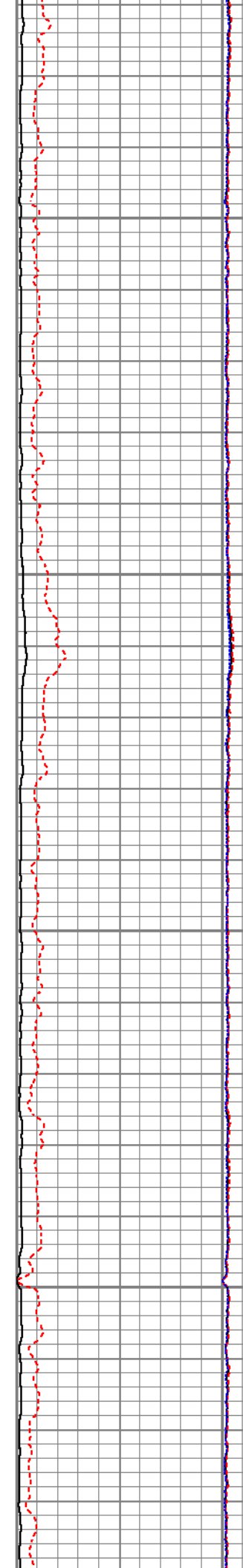
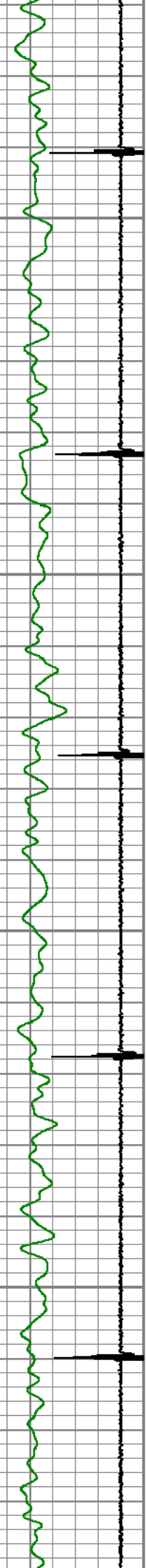


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3300

3350

3400



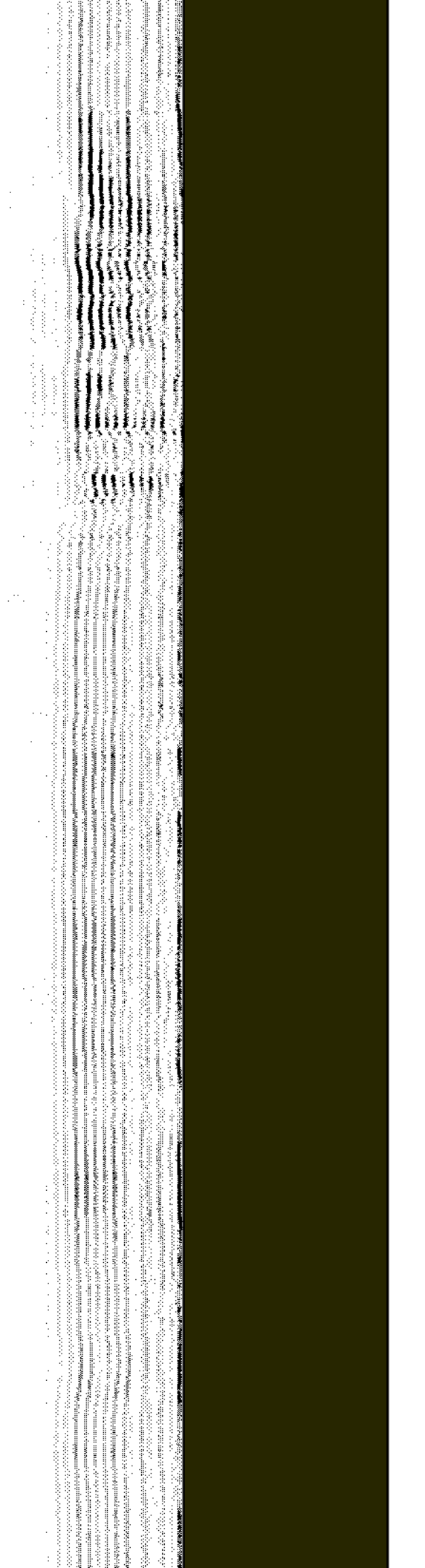
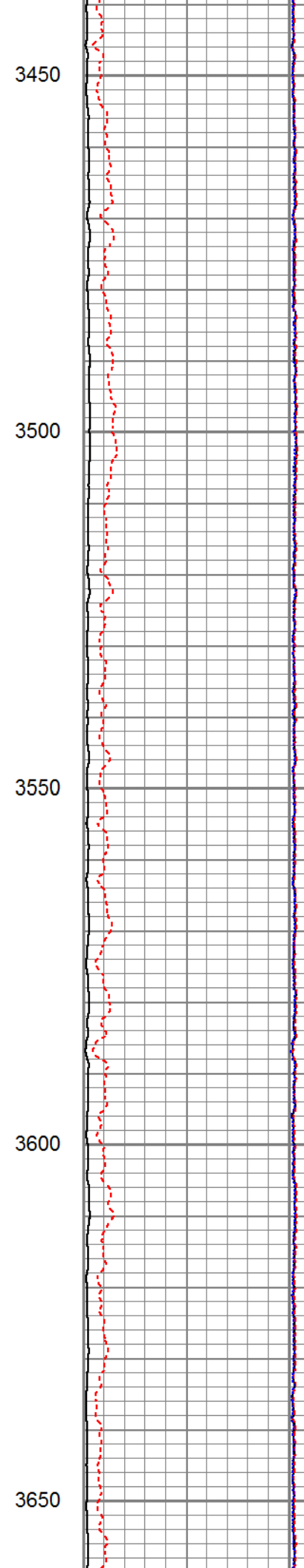
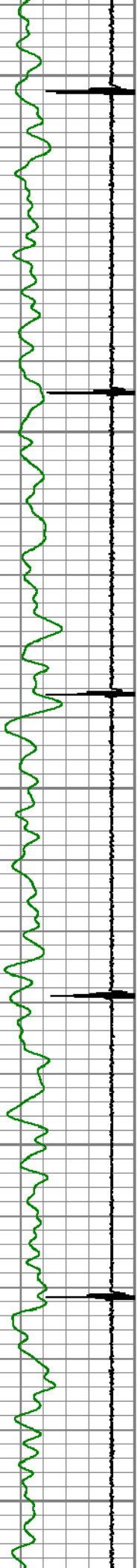
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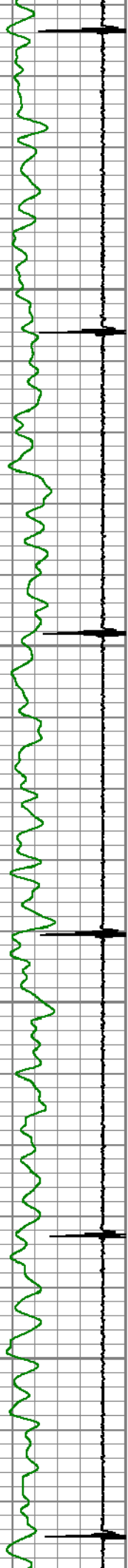
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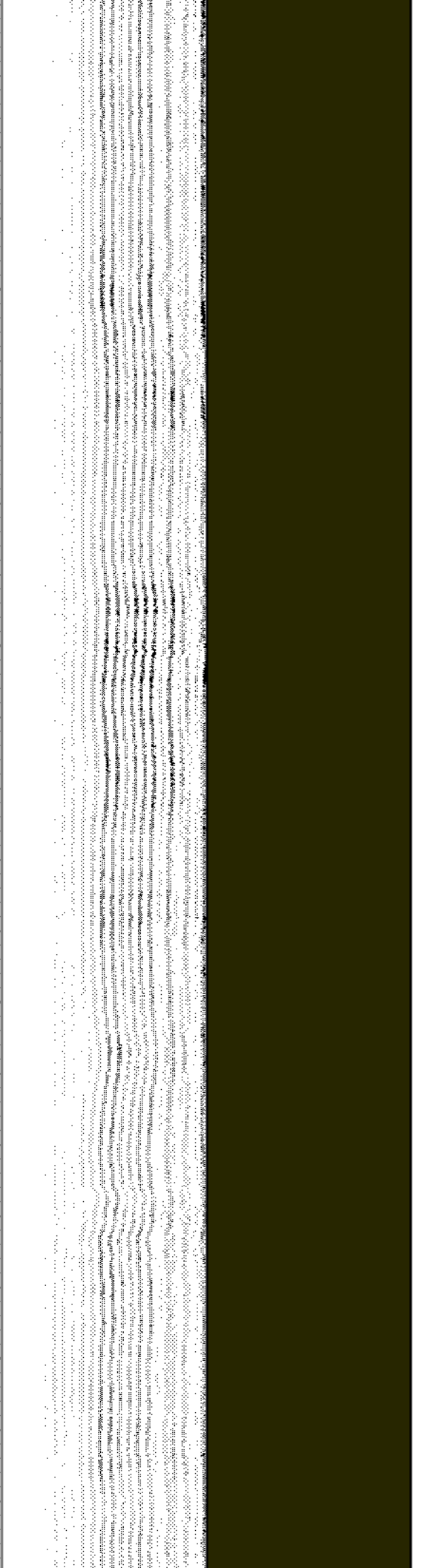
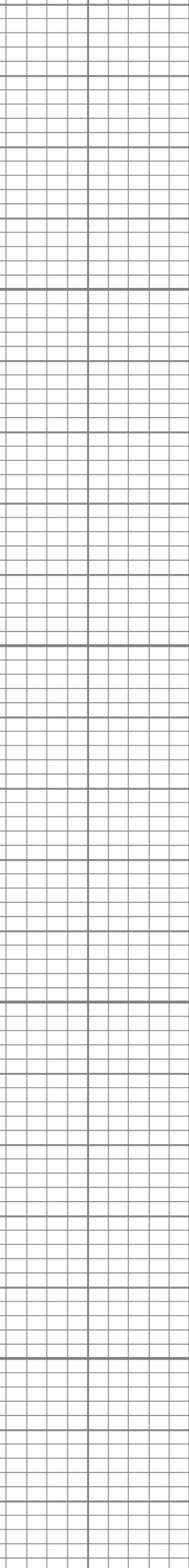
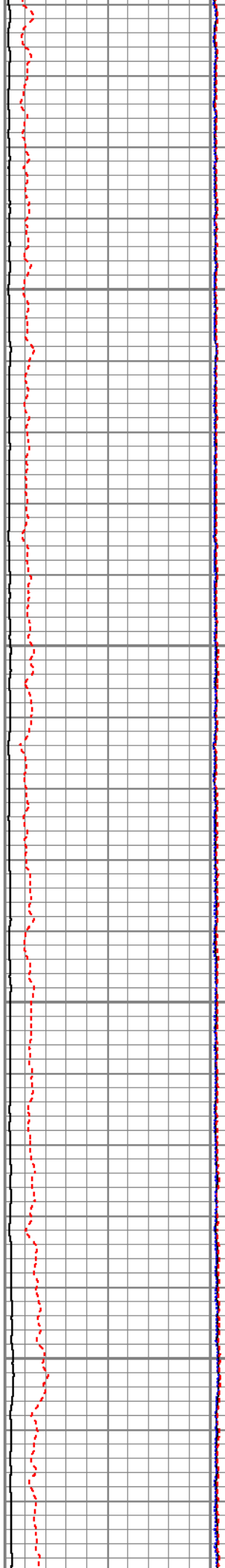


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3750

3800

3850



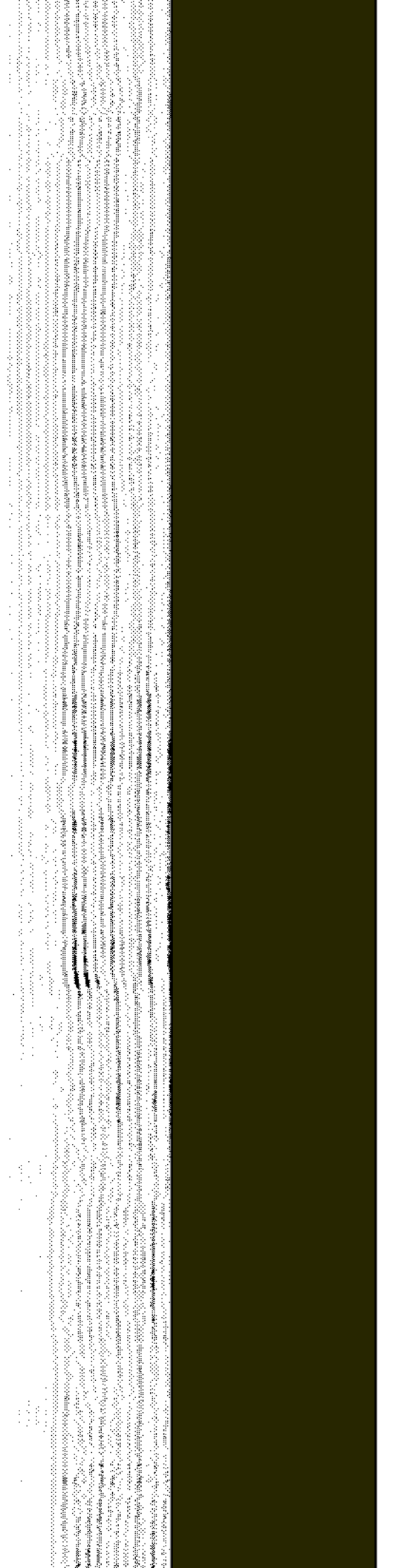
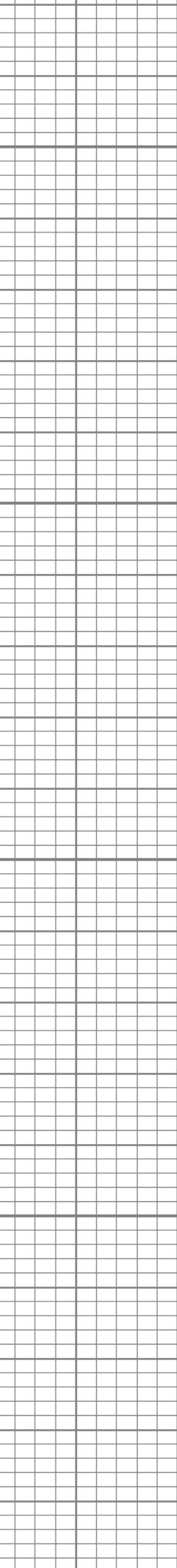
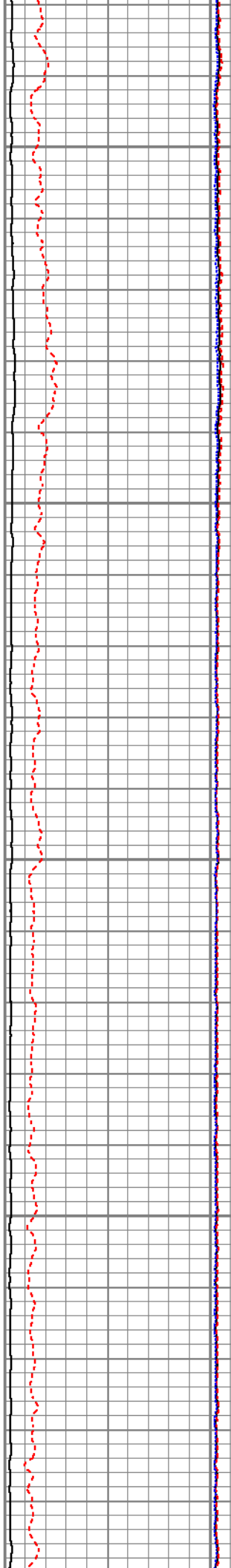
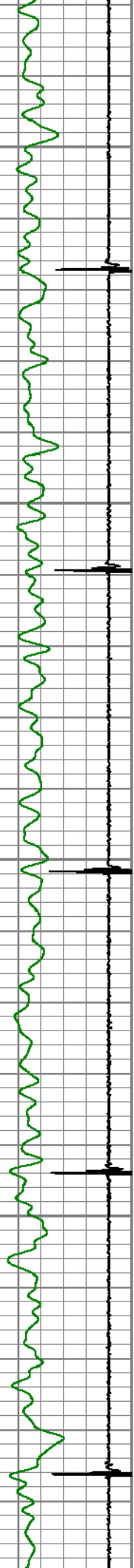
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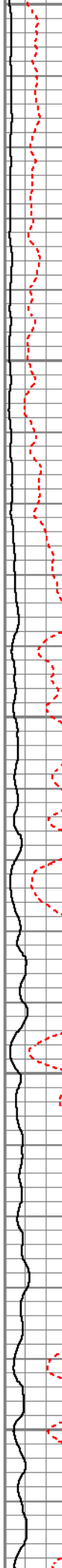
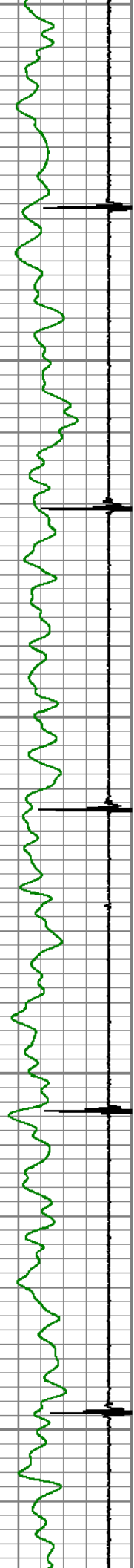
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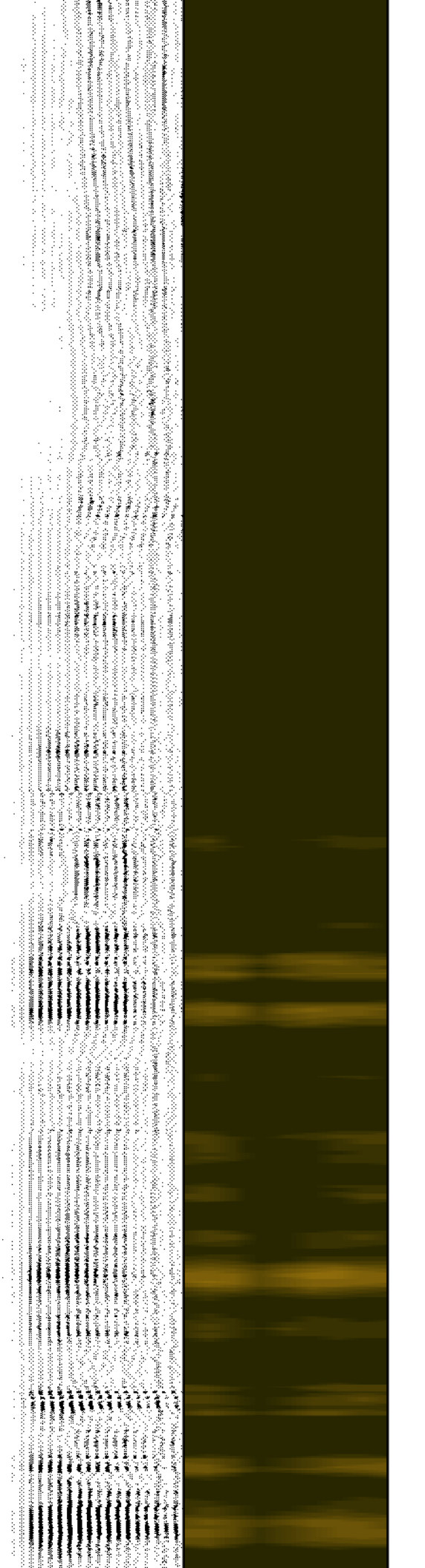
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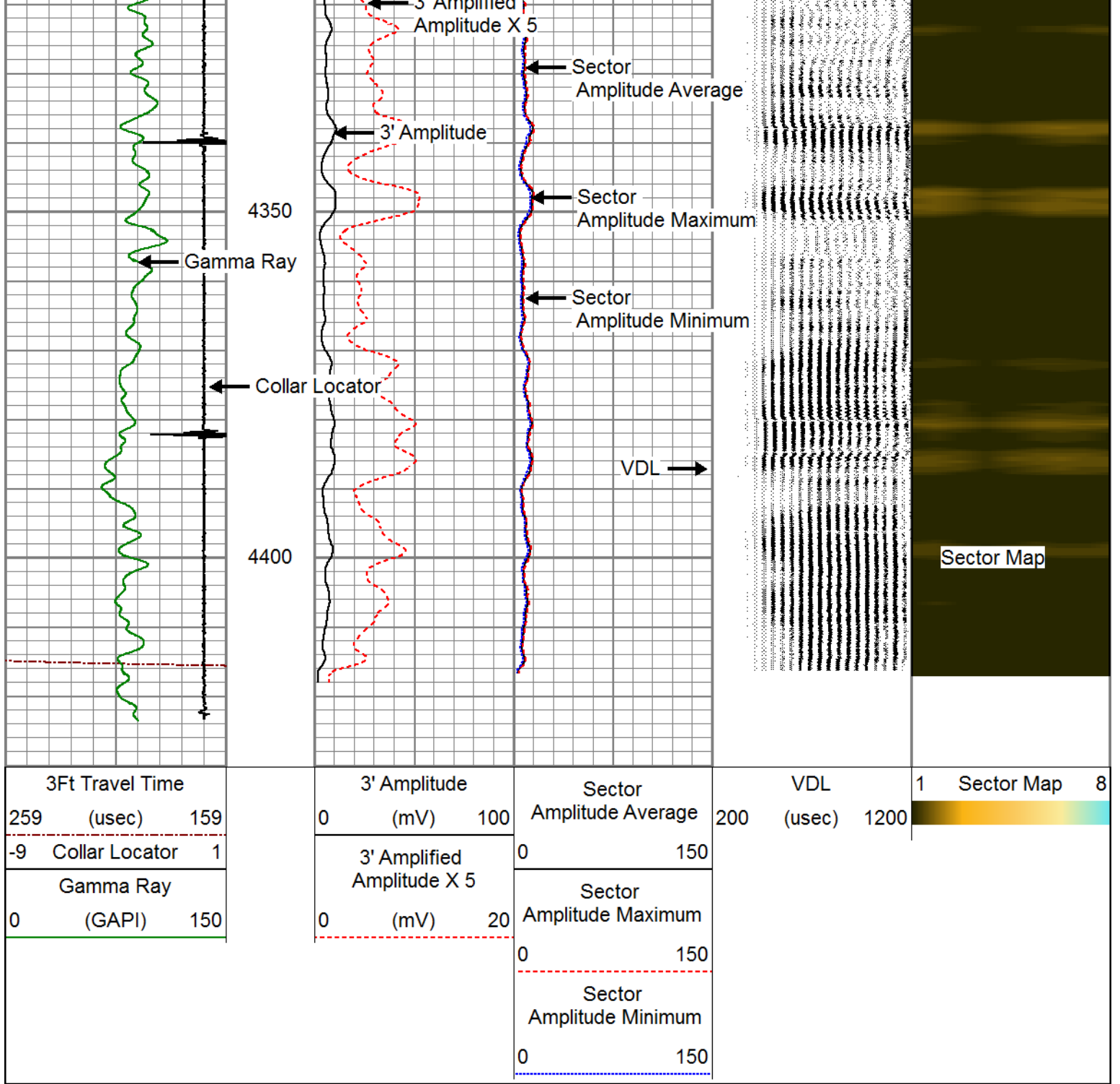
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21 Amplified

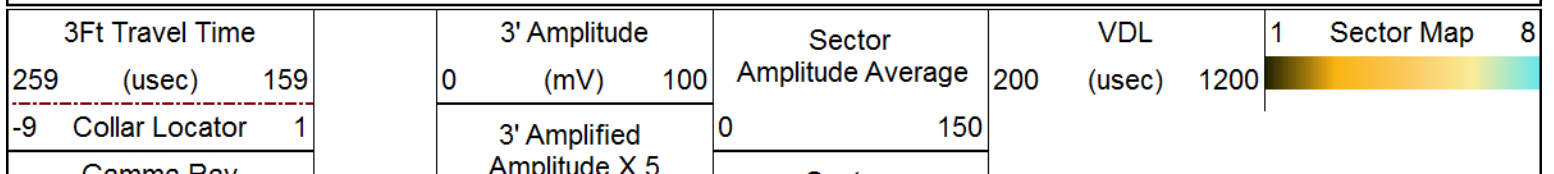




REPEAT SECTION

ZERO PSI APPLIED AT SURFACE

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 Presentation Format pinr_scbl
 Dataset Creation Fri Jul 06 15:31:24 2018
 Charted by Depth in Feet scaled 1:240

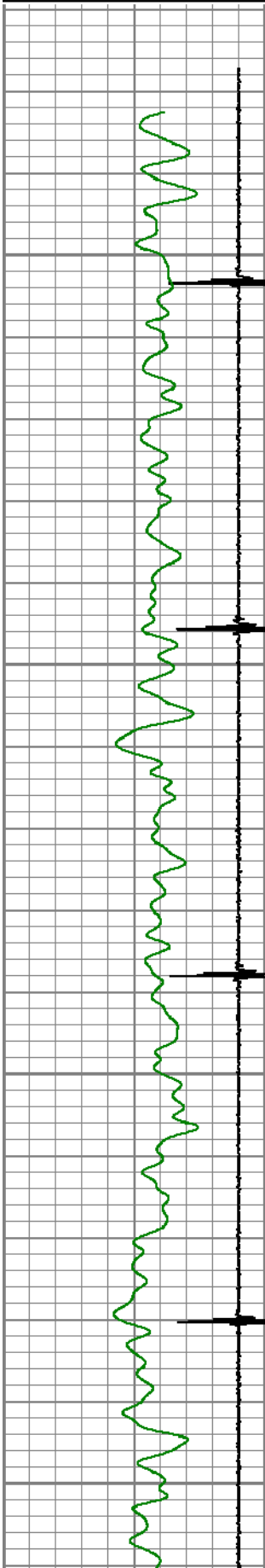


Gamma Ray
0 (GAPI) 150

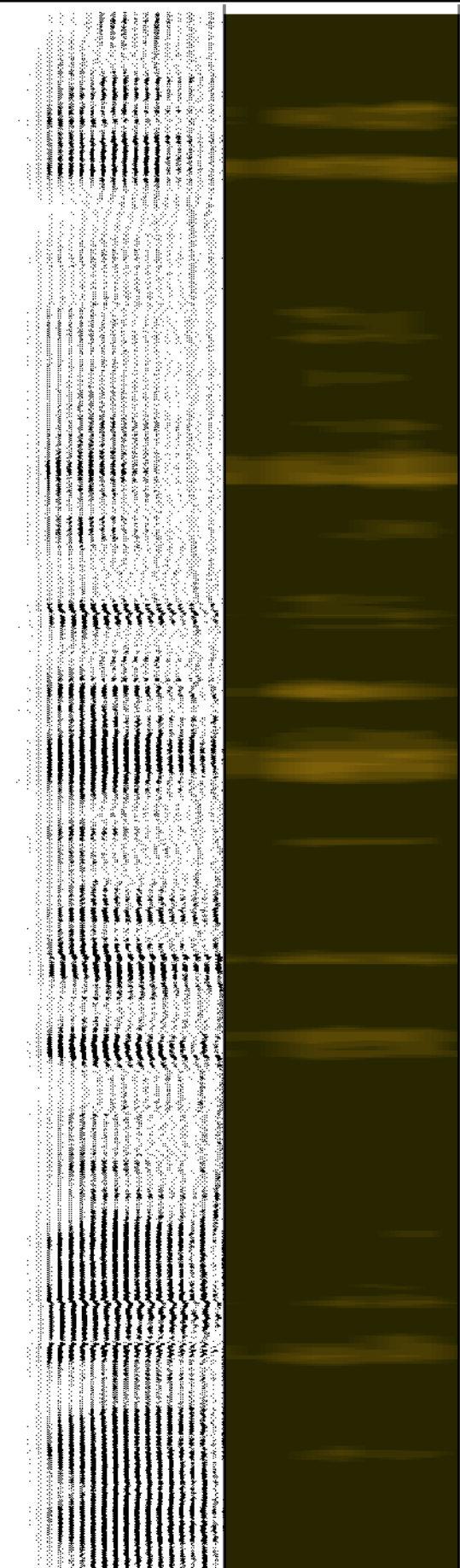
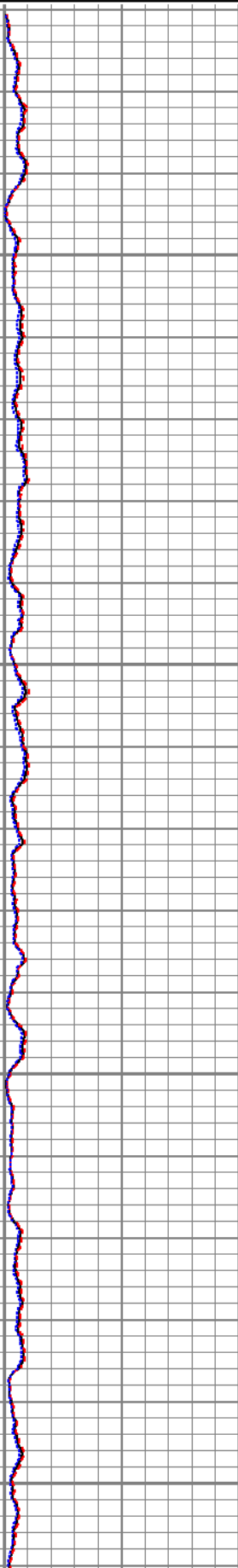
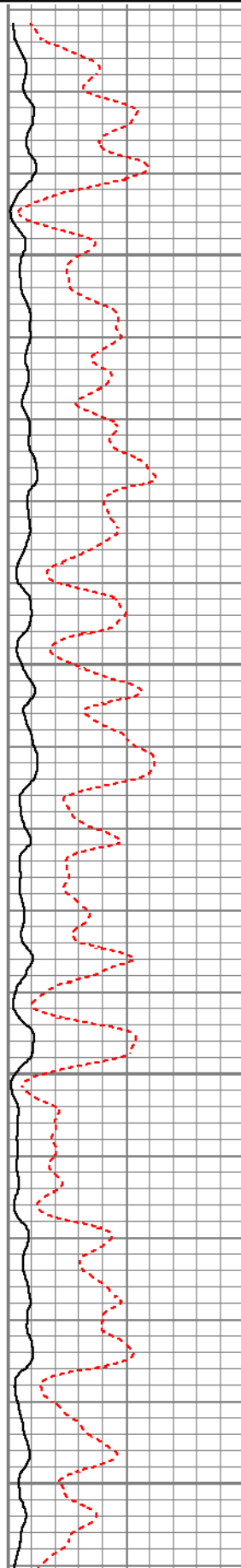
Amplitude (mV)
0 20

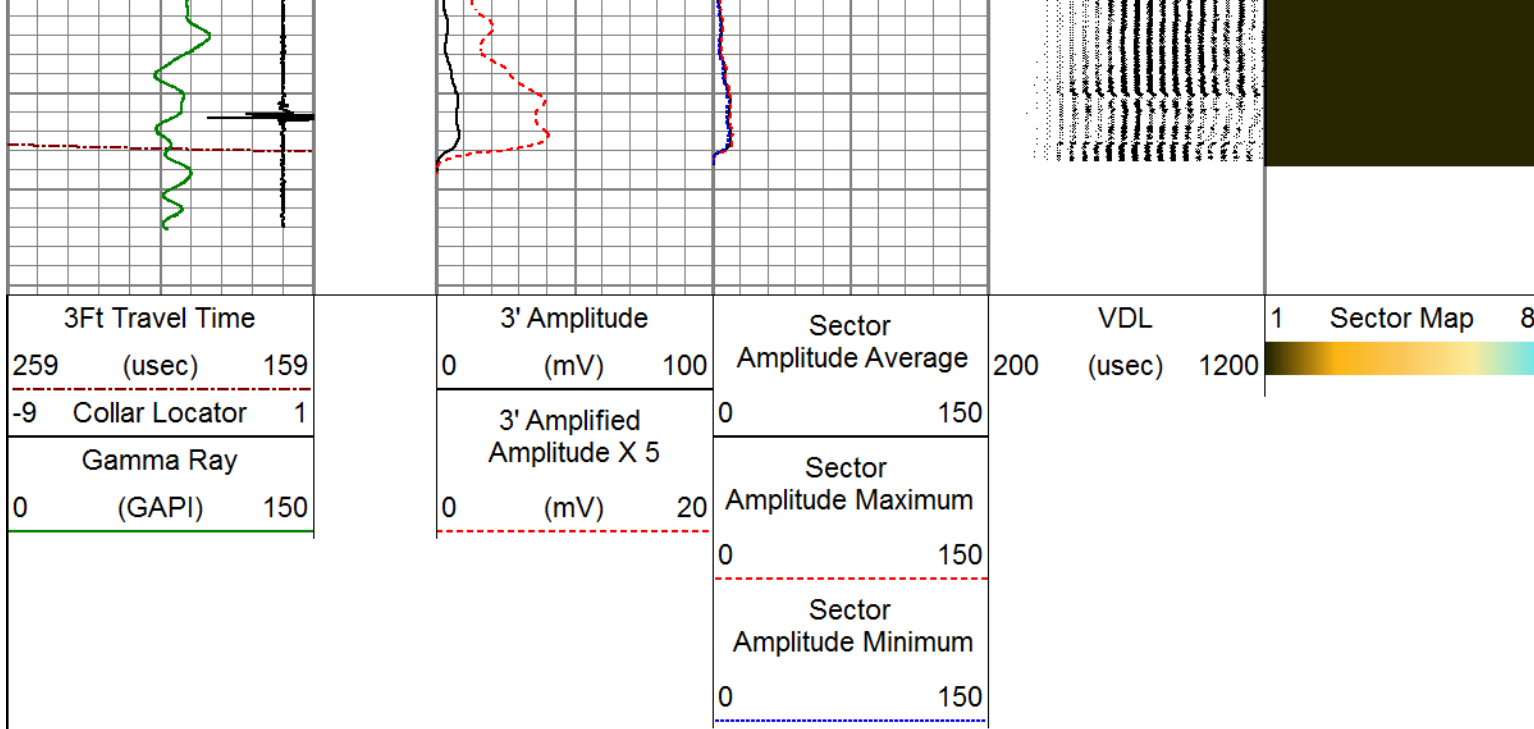
Sector
Amplitude Maximum
0 150

Sector
Amplitude Minimum
0 150



4250
4300
4350
4400





Calibration Report

Database File anadarko_riverbend 14-19_0512333942_20180706_scbl.db
 Dataset Pathname pass11.1
 Dataset Creation Fri Jul 06 16:44:51 2018

Gamma Ray Calibration Report

Serial Number: 110246
 Tool Model: GR/CCL-A
 Performed: Sat May 26 10:10:26 2018

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps

Sensitivity: 0.6400 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: 070151
 Tool Model: RBL-D

Calibration Casing Diameter: 4.500 in
 Calibration Depth: 950.633 ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.019	1.048	0.000	81.196	76.098	1.411
CAL	0.000	1.591				
5'	-0.014	0.932	0.000	81.196	85.852	1.178
SUM						
S1	-0.034	0.986	0.000	100.000	98.055	3.295
S2	-0.035	1.009	0.000	100.000	95.788	3.346
S3	-0.029	1.089	0.000	100.000	89.422	2.632
S4	-0.030	1.239	0.000	100.000	78.810	2.348

S5	-0.036	1.216	0.000	100.000	79.876	2.844
S6	-0.038	1.160	0.000	100.000	83.497	3.179
S7	-0.042	1.118	0.000	100.000	86.268	3.591
S8	-0.037	1.016	0.000	100.000	95.002	3.498

Air Zero Calibration, performed Fri Jul 06 12:26:29 2018:

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero		Offset	
3'	0.000		0.000		0.000	
5'	0.000		0.000		0.000	
SUM						
S1	0.000		0.000		0.000	
S2	0.000		0.000		0.000	
S3	0.000		0.000		0.000	
S4	0.000		0.000		0.000	
S5	0.000		0.000		0.000	
S6	0.000		0.000		0.000	
S7	0.000		0.000		0.000	
S8	0.000		0.000		0.000	



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Field WATTENBERG
County WELD
State COLORADO