

Gamma Ray
Cement Bond
Variable Density
CCL

Company PDC Energy
Well Vega 2N
Field Wattenberg
County Weld
State Colorado

Company PDC Energy
Well Vega 2N
Field Wattenberg
County Weld
State Colorado

Location: API #: 05-123-48464
Other Services: None

Permanent Datum SEC 6 TWP 3N RGE 65W
Log Measured From GL Elevation 4967'
Drilling Measured From KB 28 FT
K.B. 4995'
D.F. 4994'
G.L. 4967'

Date 6-Oct-2022

Run Number One

Depth Driller 15839 FT

Depth Logger 6500 FT

Bottom Logged Interval 6495 FT

Top Log Interval Surface

Open Hole Size 8.5

Type Fluid H2O

Density / Viscosity 8.33

Max. Recorded Temp. 236°F

Estimated Cement Top See Log

Time Well Ready ROA

Time Logger on Bottom 11:46

Equipment Number 303

Location Colorado

Recorded By J.Morrison

Witnessed By C.Eberle

| Borehole Record | | | | Tubing Record | | | |
|-------------------|-----|-------|----|---------------|--------|---------|----------|
| Run Number | Bit | From | To | Size | Weight | From | To |
| Casing Record | | | | | | | |
| Surface String | | 9 5/8 | | Wgt/ft | | Top | Bottom |
| Prot. String | | | | 36 | | Surface | 1705 FT |
| Production String | | 5.5" | | 20 | | Surface | 15829 FT |
| Liner | | | | | | | |

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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, 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 set out in our current Price Schedule.

Comments

Log Ran With 0 PSI
Correlated to Reliance RCBL Dated 09-SEP-2021
Marker Joint from 1928 FT
Adjusted -10 FT to Correlate

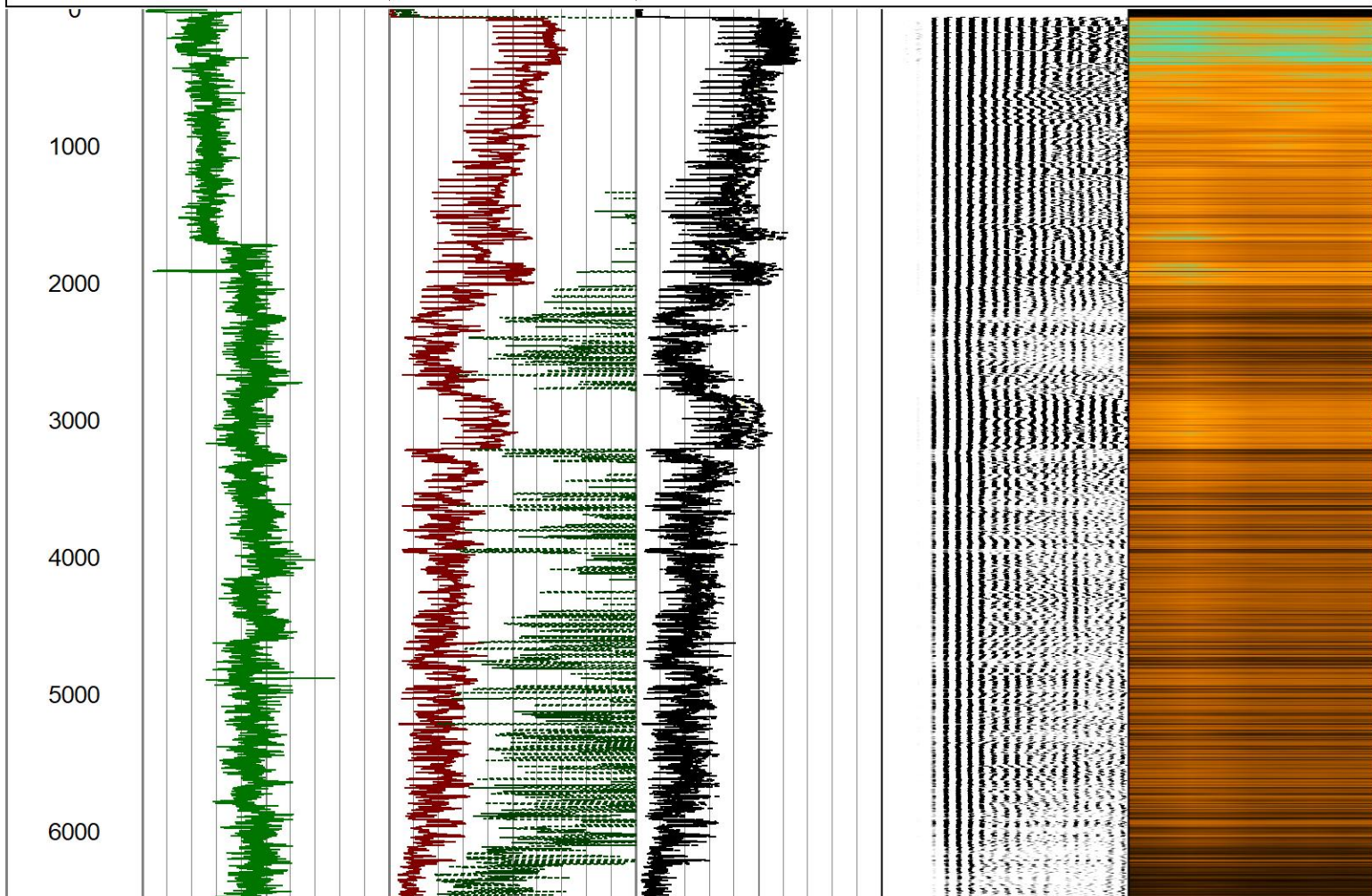
Tools were Clean and Free of Debris



Main Pass

Database File pdc_vega_2n_rcbl.db
 Dataset Pathname Main.1
 Presentation Format rbl1in18
 Dataset Creation Thu Oct 06 13:02:35 2022
 Charted by Depth in Feet scaled 1:15000

| | | | | | | | | | | |
|---|---------------------|-----|--------------|--------|--------|--------|---------------------|-----|------------|------|
| 0 | GR (GAPI) | 200 | 3' Amplitude | 0 | AMPAVG | 150 | 5' Variable Density | 1 | Sector Map | 8 |
| 0 | | | (mV) | 100 | 0 | AMPMAX | 150 | 200 | (usec) | 1200 |
| 3 | Amplified Amplitude | | 0 | AMPMIN | 150 | | | | | |
| 0 | | | (mV) | 20 | | | | | | |



| | | | | | | | | | | |
|---|---------------------|-----|--------------|--------|--------|--------|---------------------|-----|------------|------|
| 0 | GR (GAPI) | 200 | 3' Amplitude | 0 | AMPAVG | 150 | 5' Variable Density | 1 | Sector Map | 8 |
| 0 | | | (mV) | 100 | 0 | AMPMAX | 150 | 200 | (usec) | 1200 |
| 3 | Amplified Amplitude | | 0 | AMPMIN | 150 | | | | | |
| 0 | | | (mV) | 20 | | | | | | |



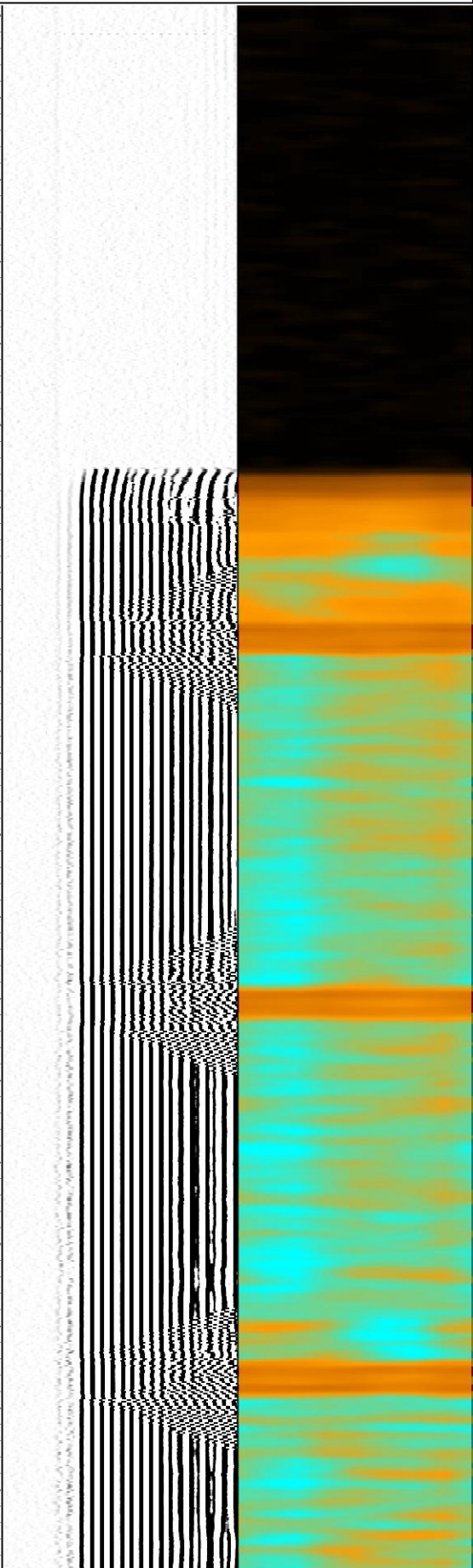
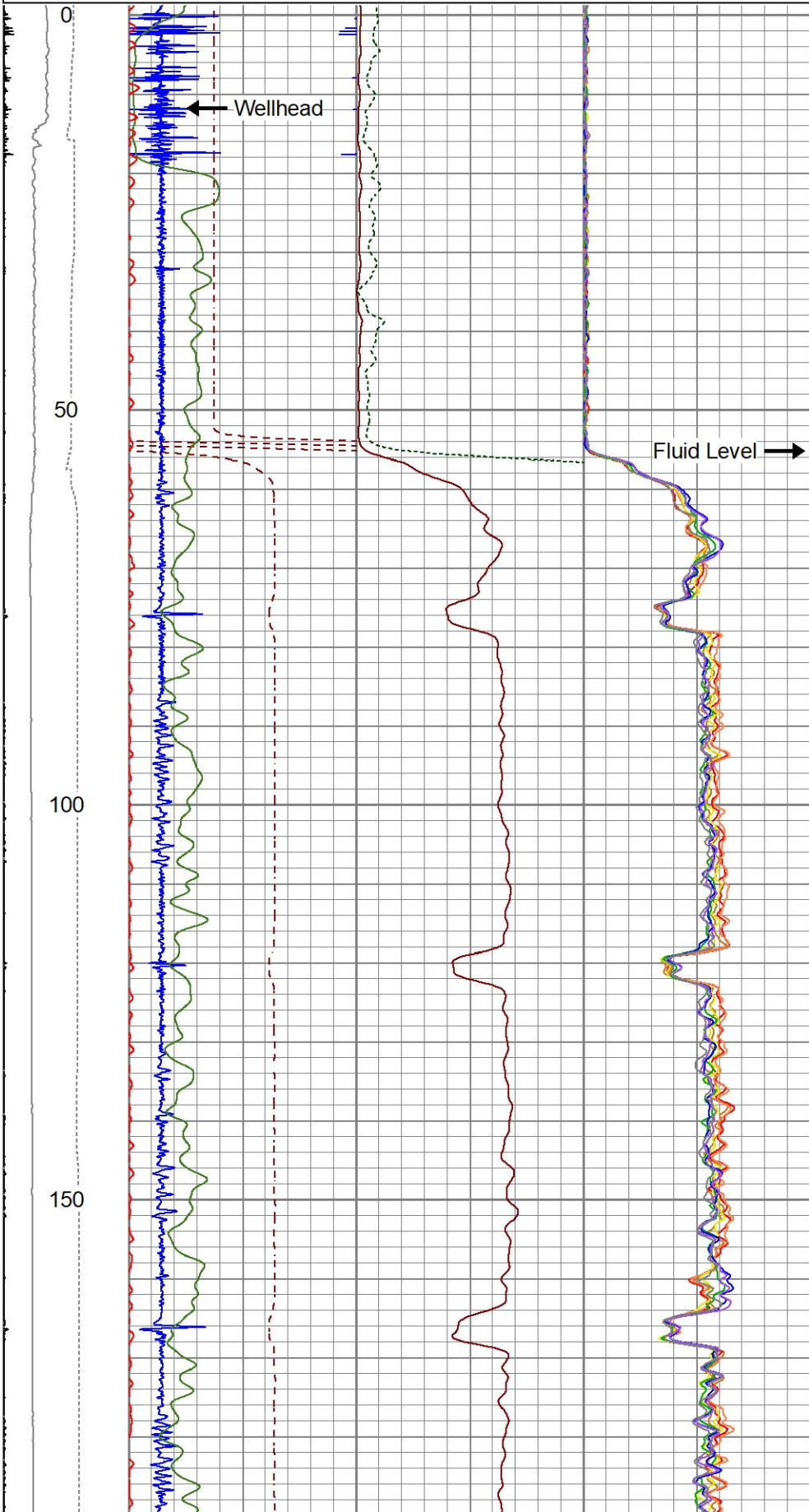
Main Pass

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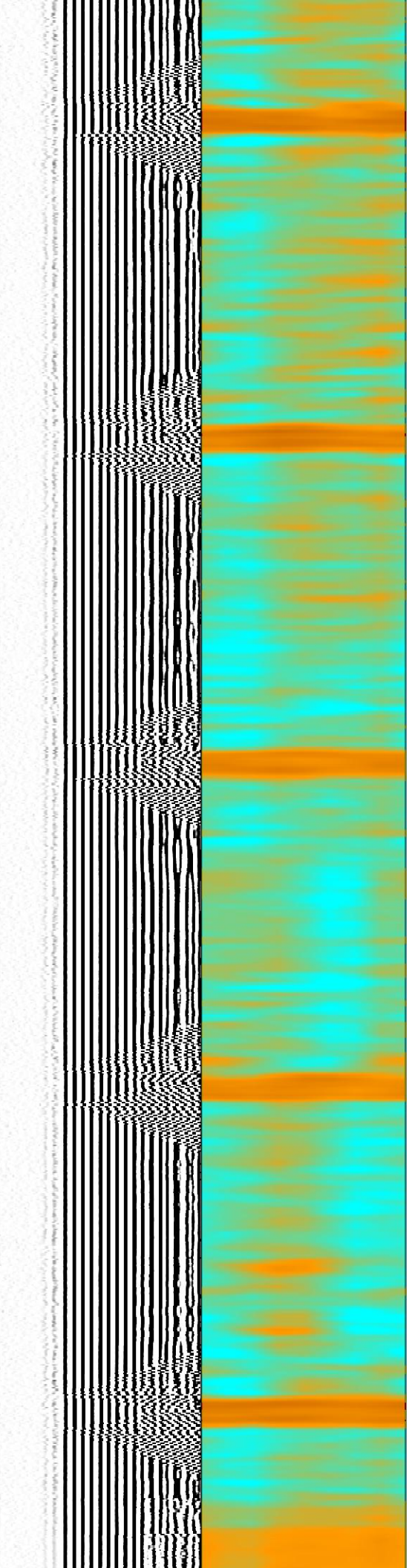
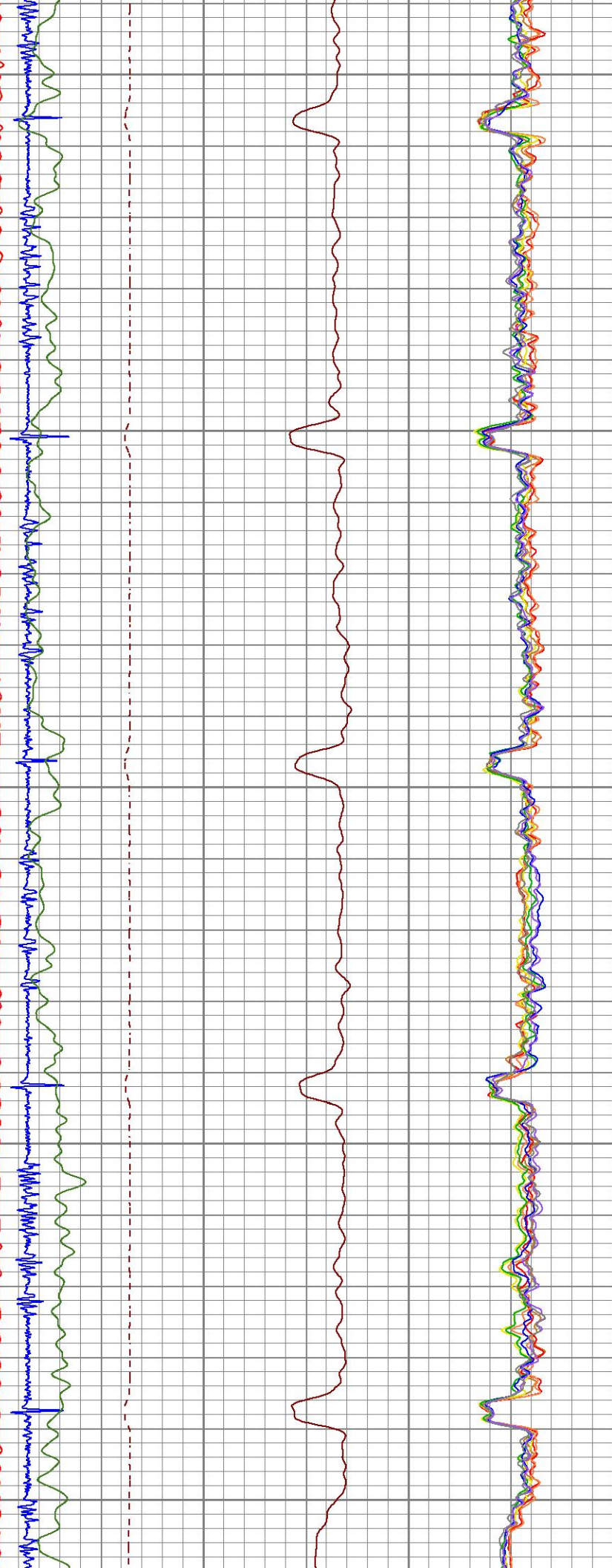
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|------|----------------|--------------|-----|-------|-------|---------------------|----|------------|------|
| LTEN | 3' Travel Time | 3' Amplitude | 0 | AMPS1 | 150 | 5' Variable Density | 1 | Sector Map | 8 |
| 0 | (lb 1000) | (usec) | 200 | 0 | AMPS2 | 150 | 10 | (usec) | 1200 |

| | | | | | | |
|----------|-----------------------|---|---------------------|----|-------|-----|
| LSPD | Casing Collar Locator | 3 | Amplified Amplitude | 0 | AMPS3 | 150 |
| (ft/min) | GAMMA RAY | 0 | (mV) | 20 | AMPS4 | 150 |
| 500 -500 | (GAPI) | 0 | | | AMPS5 | 150 |
| 0 CCL100 | DTMP (degF) | 0 | | | AMPS6 | 150 |
| | | | | | AMPS7 | 150 |
| | | | | | AMPS8 | 150 |

409.6 (V) 409.4



200
250
300
350
400

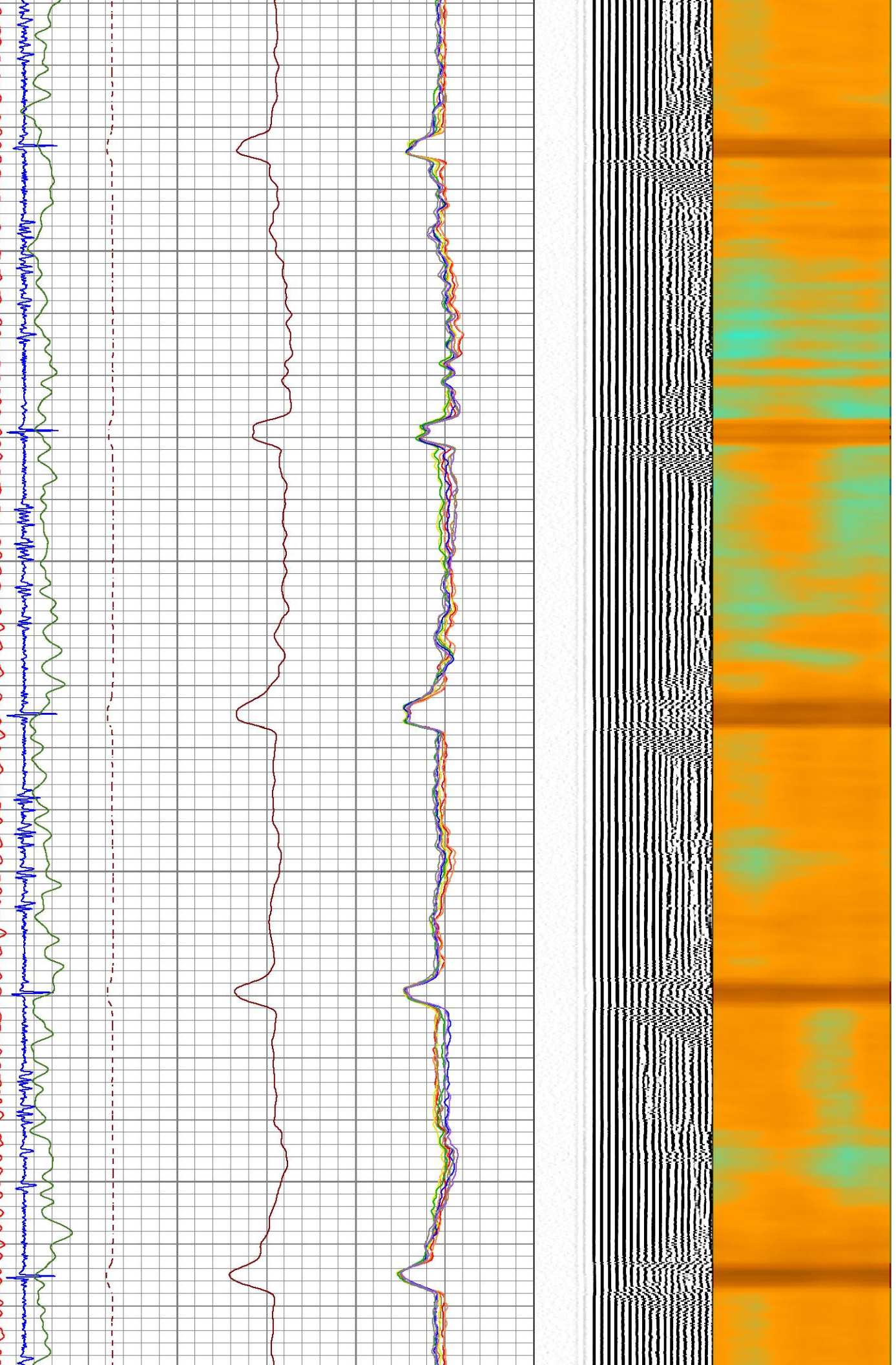


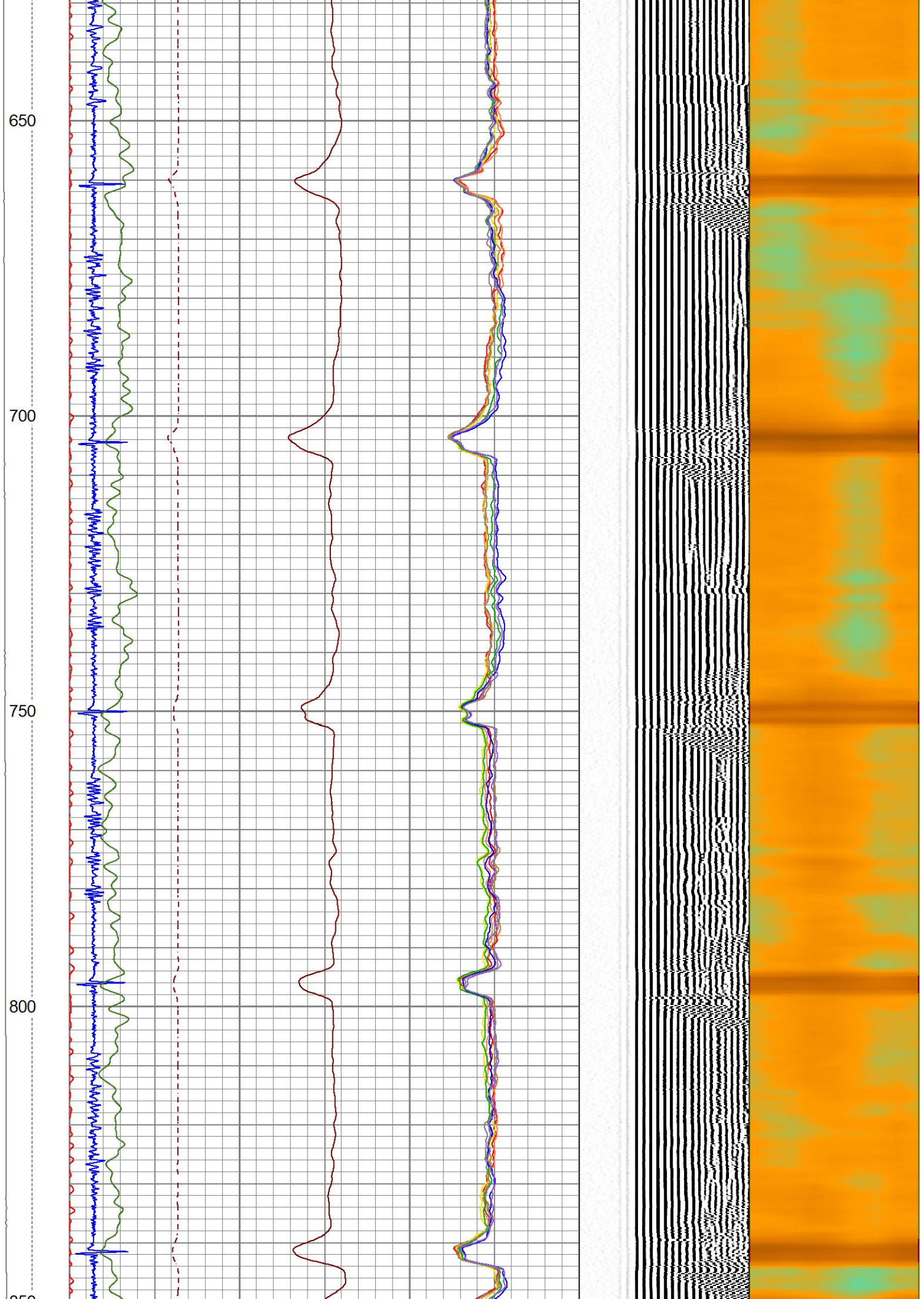
450

500

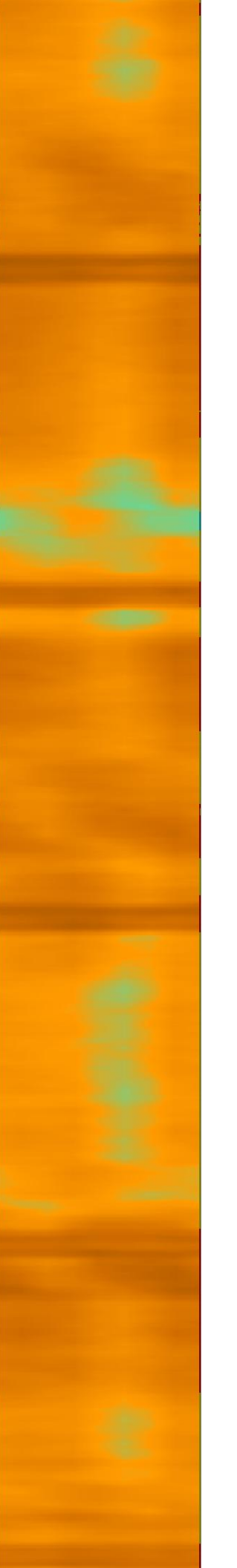
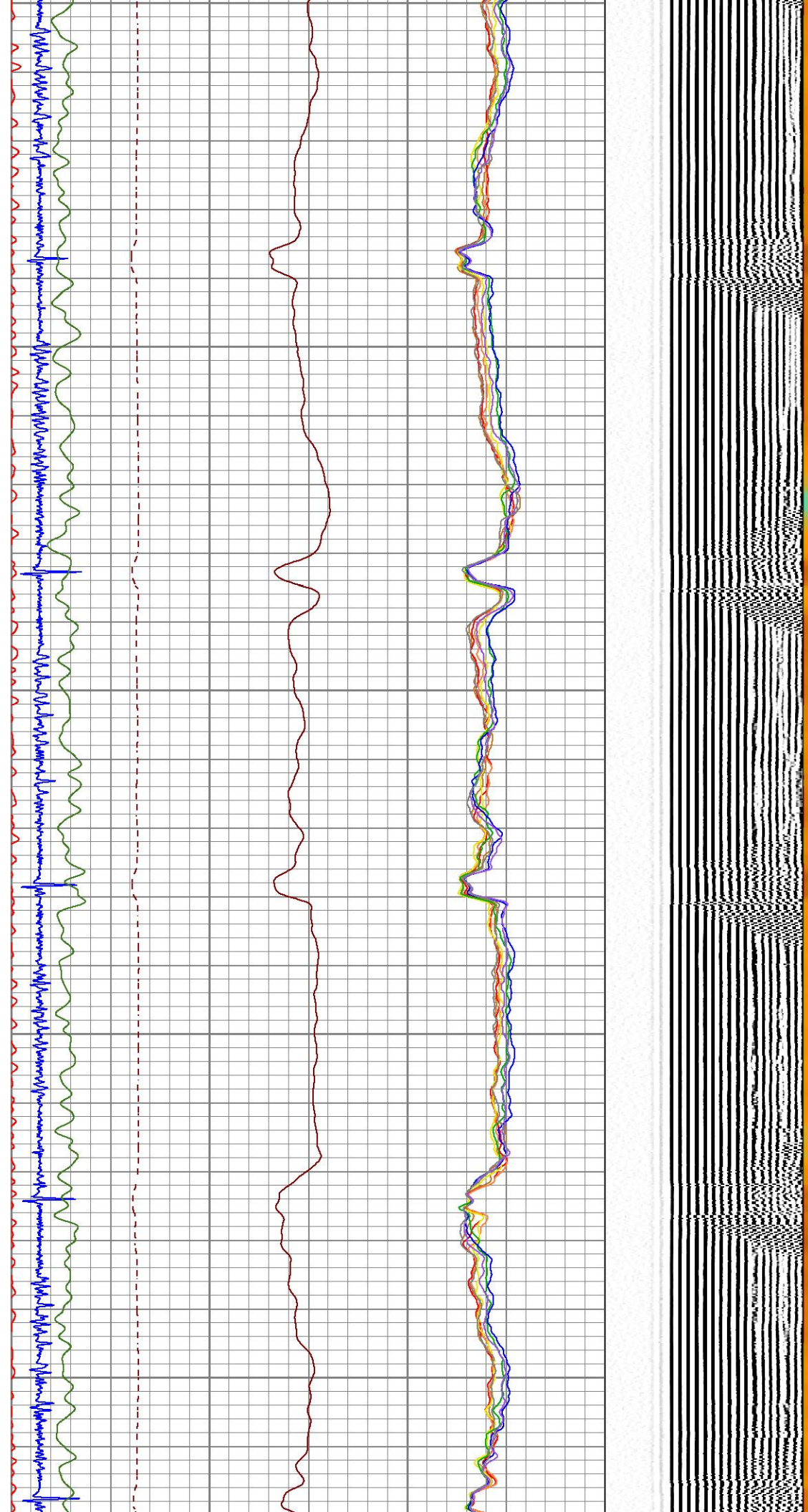
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600





850
900
950
1000
1050

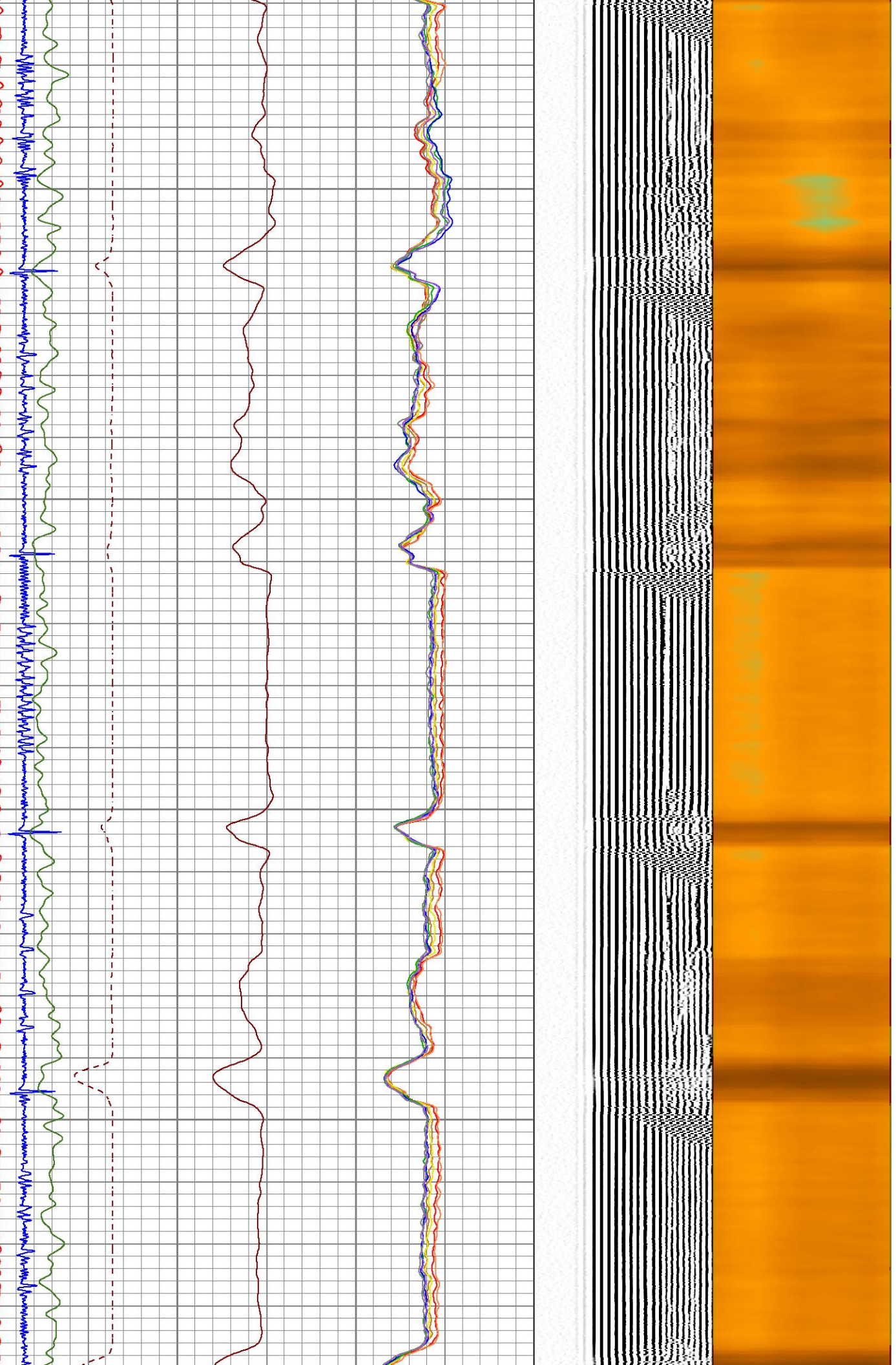


1100

1150

1200

1250



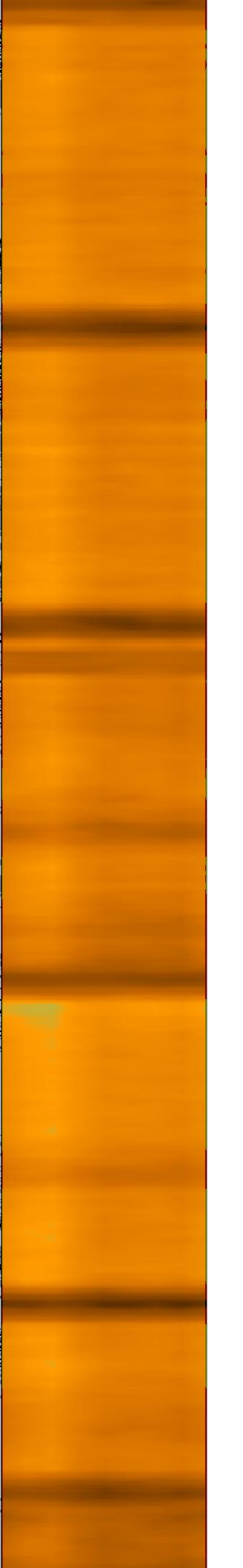
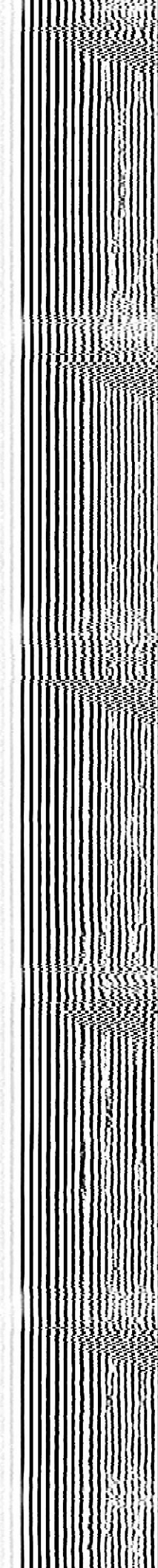
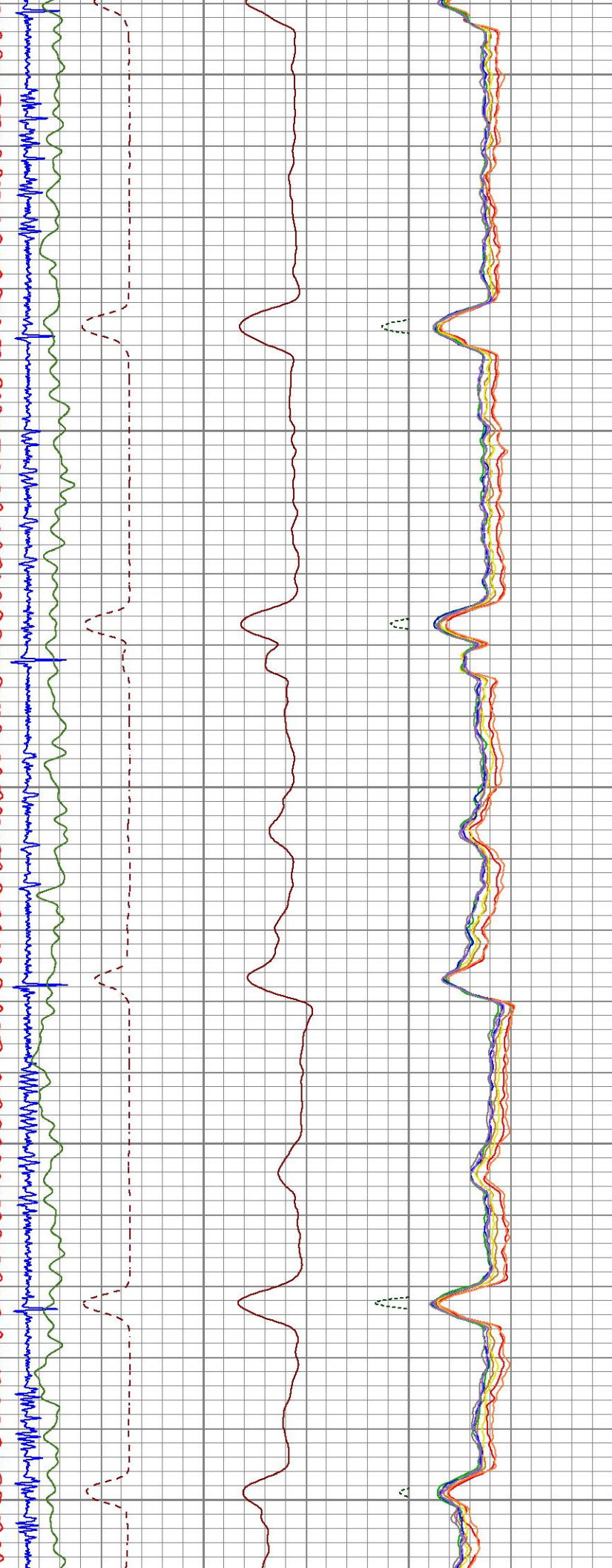
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1350

1400

1450

1500

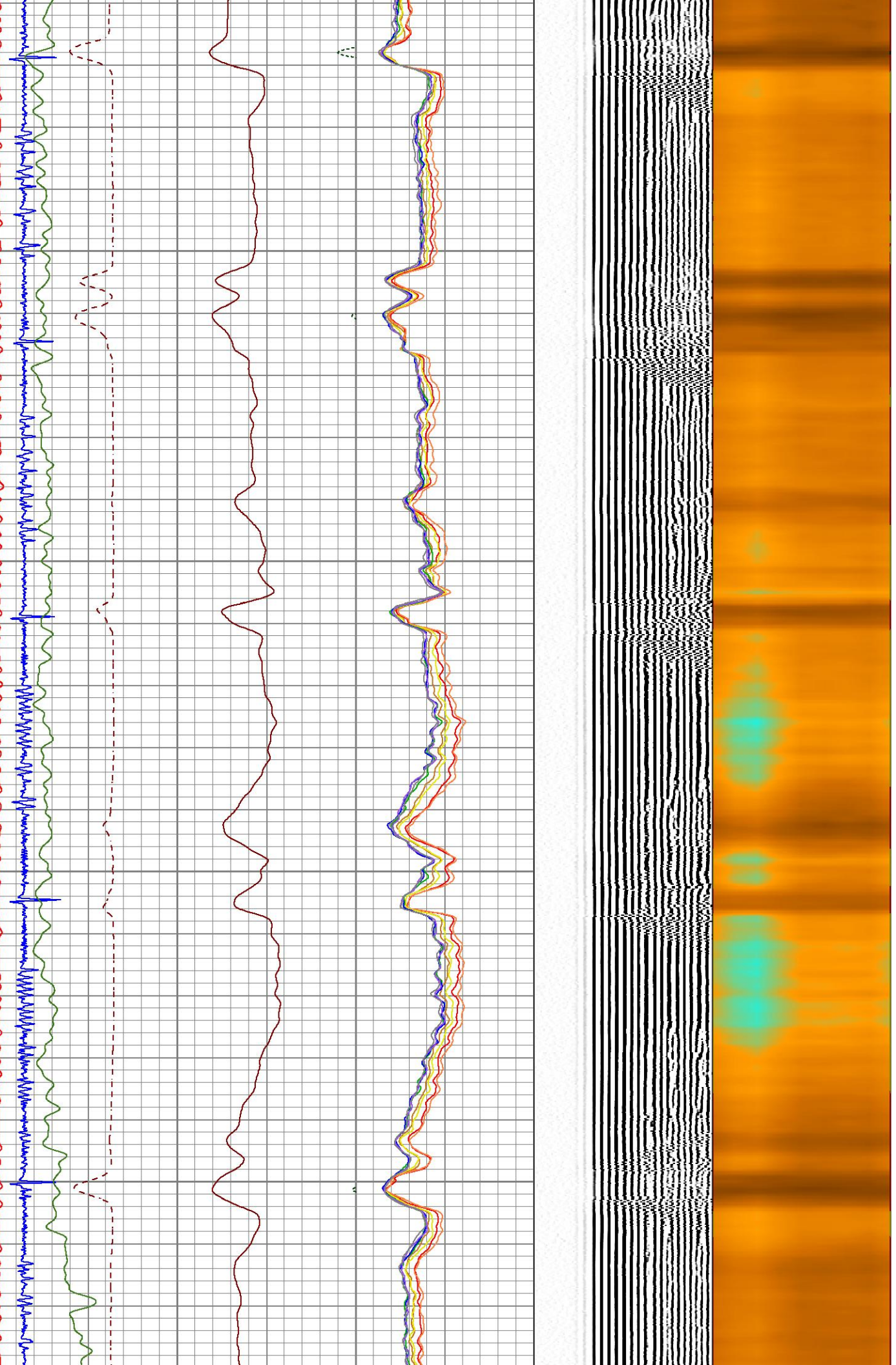


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1600

1650

1700



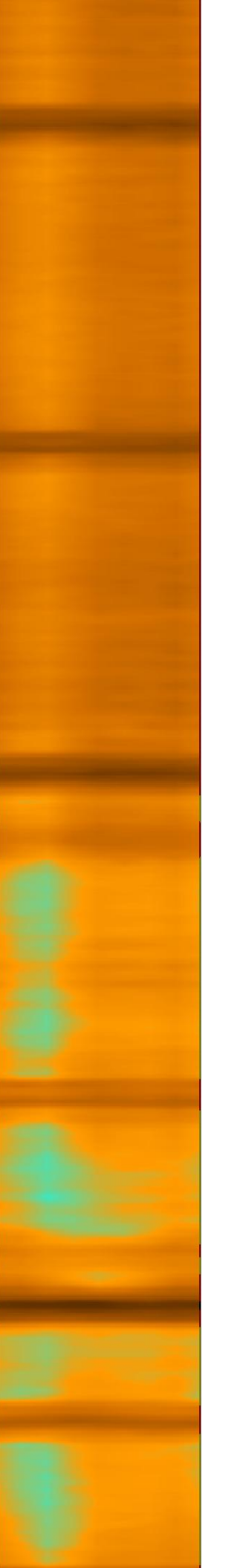
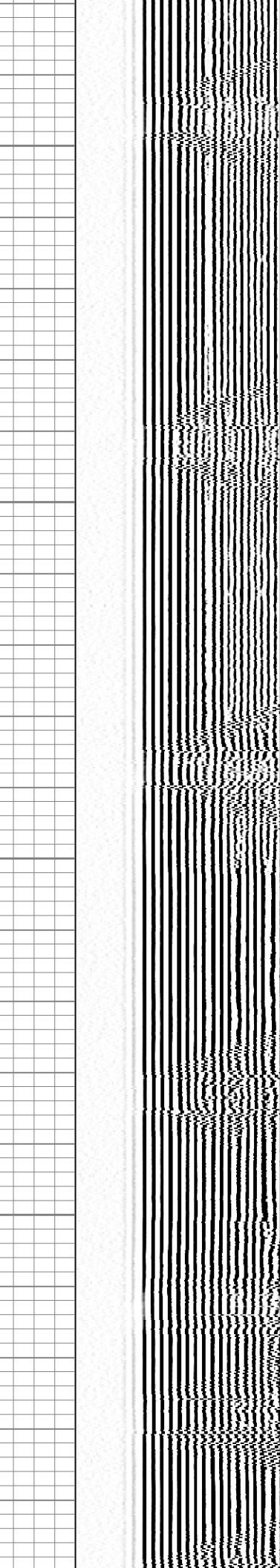
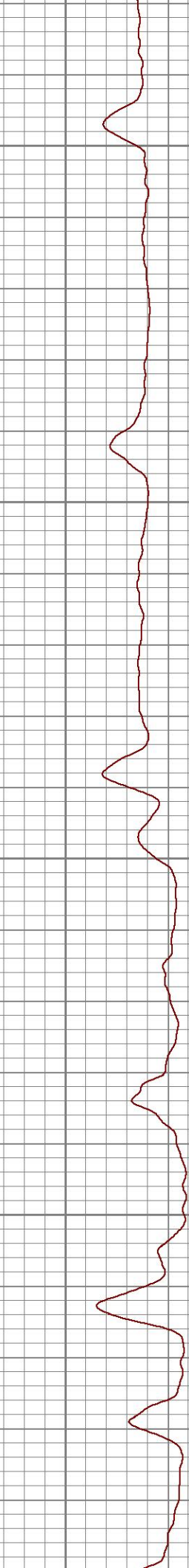
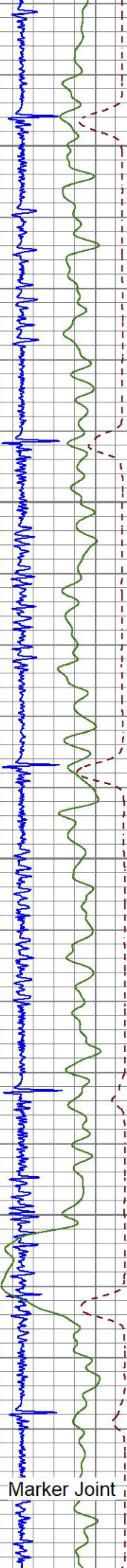
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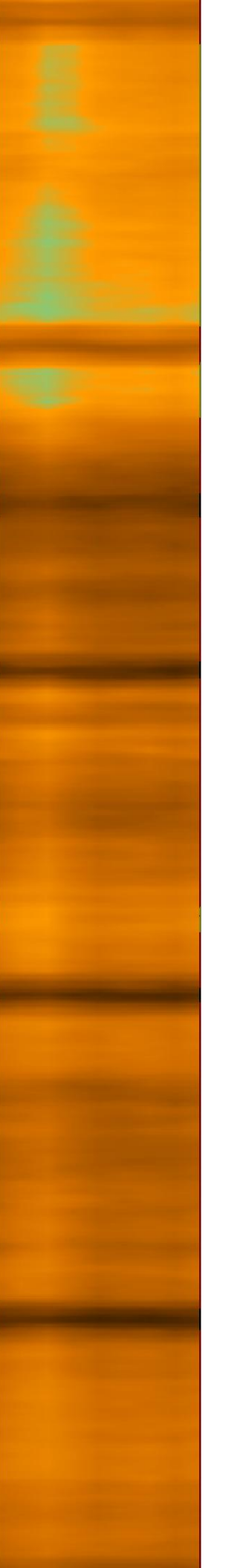
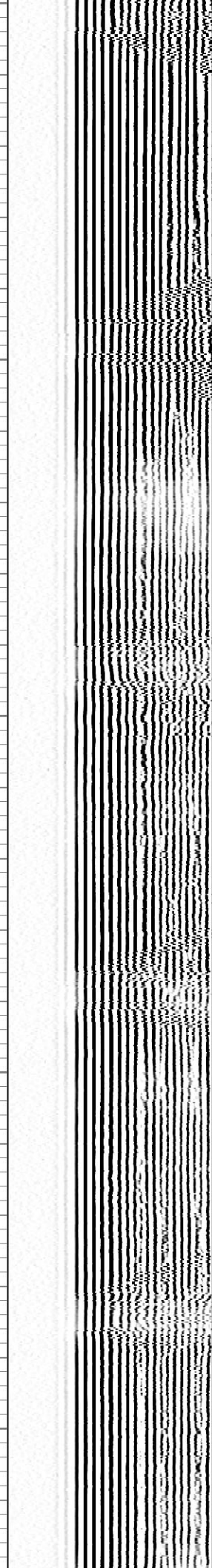
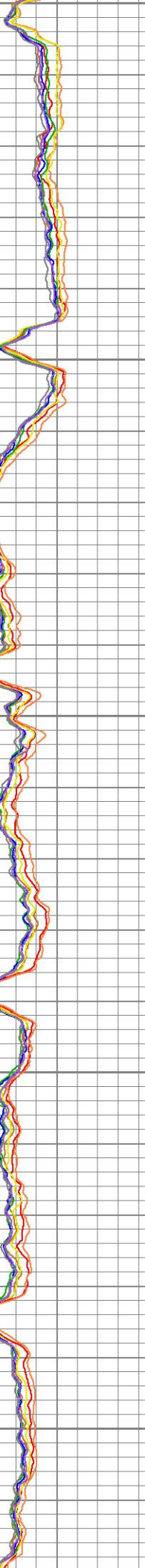
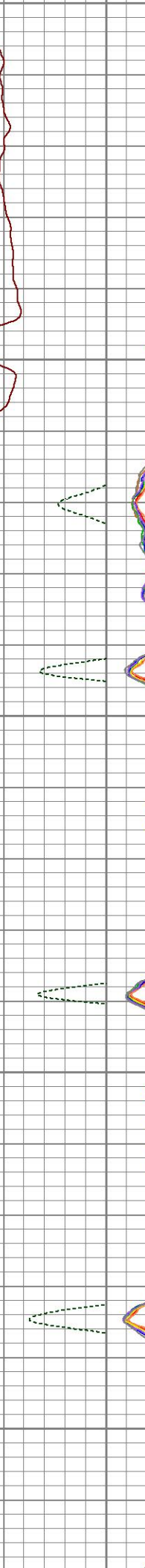
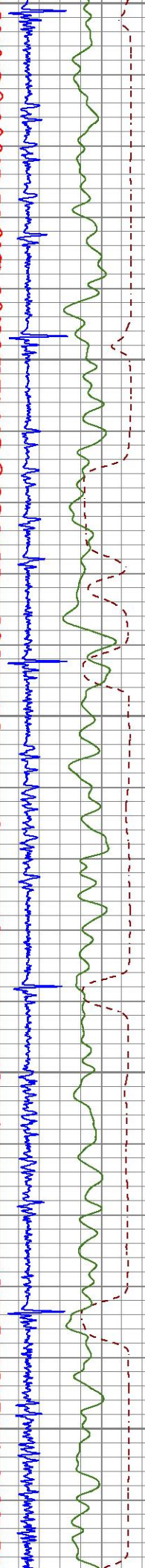
1900

1950



Marker Joint

1950
2000
2050
2100
2150

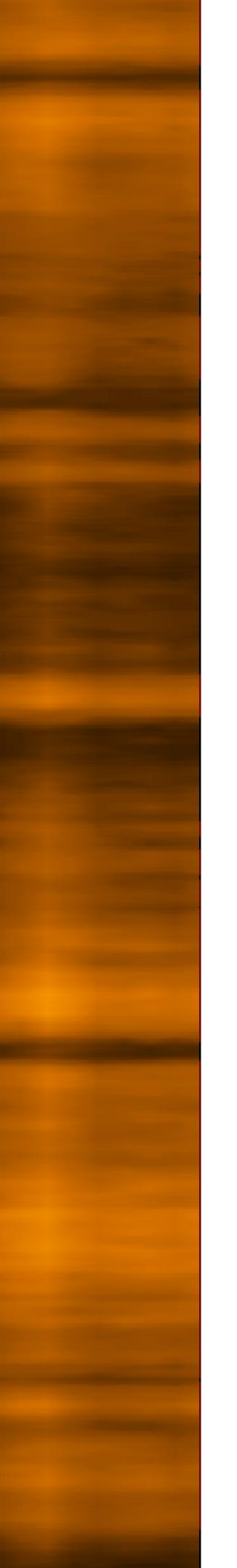
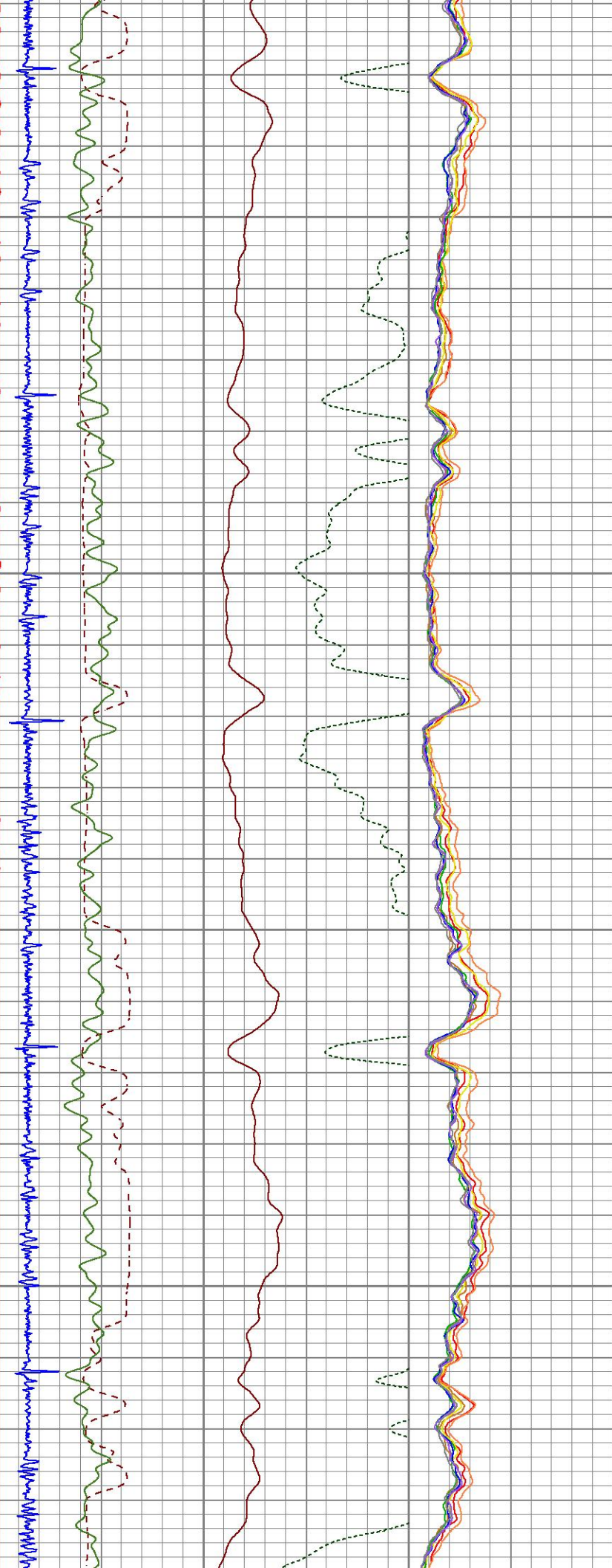


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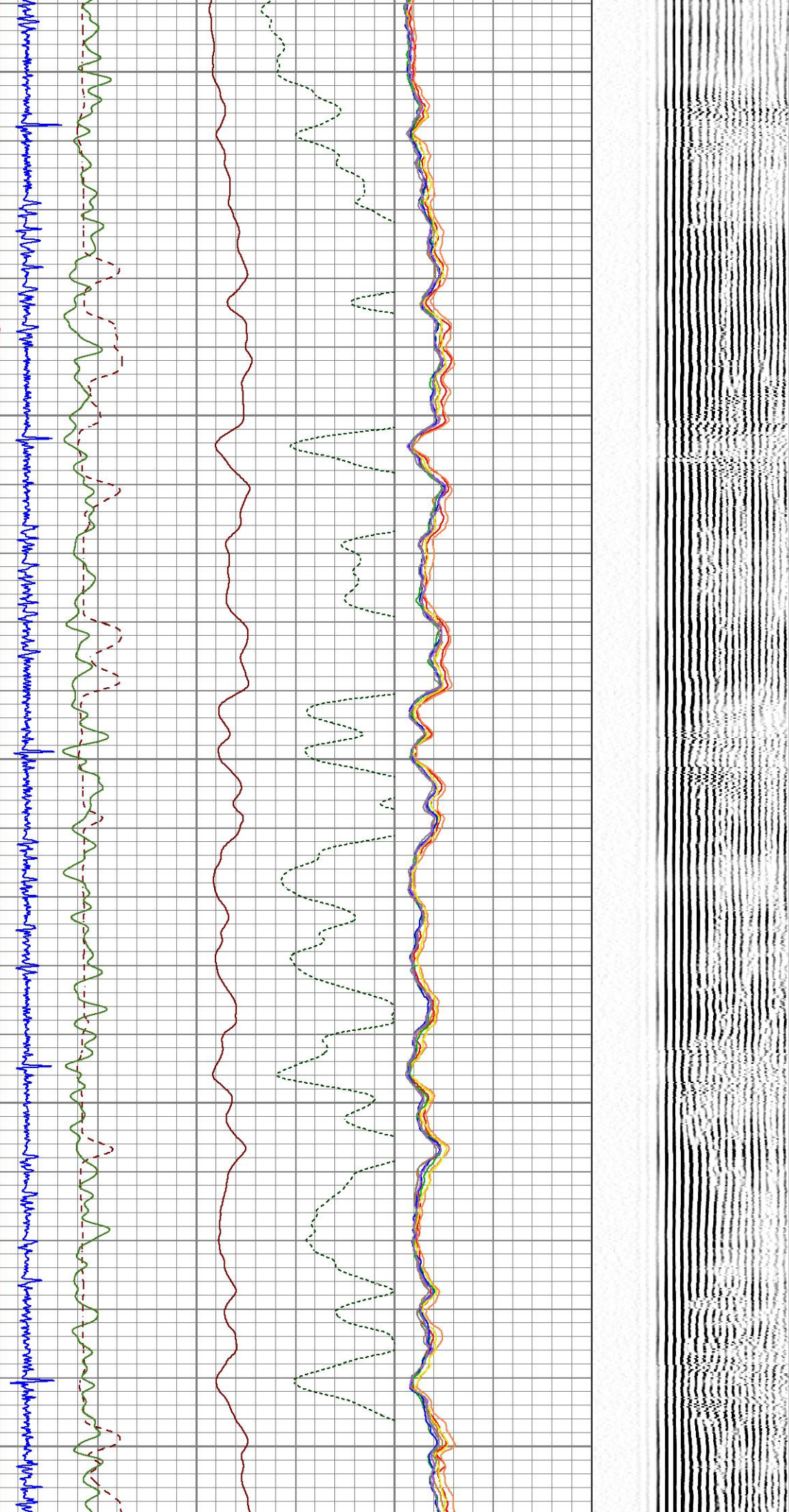
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2300

2350



2400
2450
2500
2550
2600

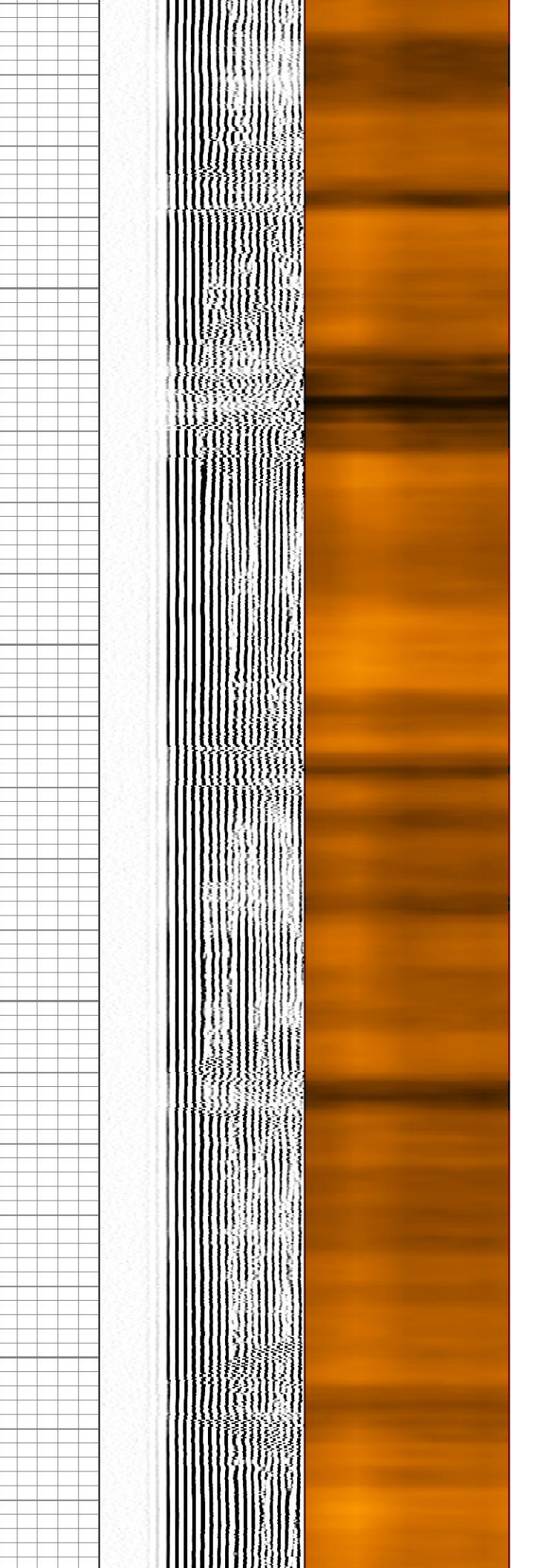
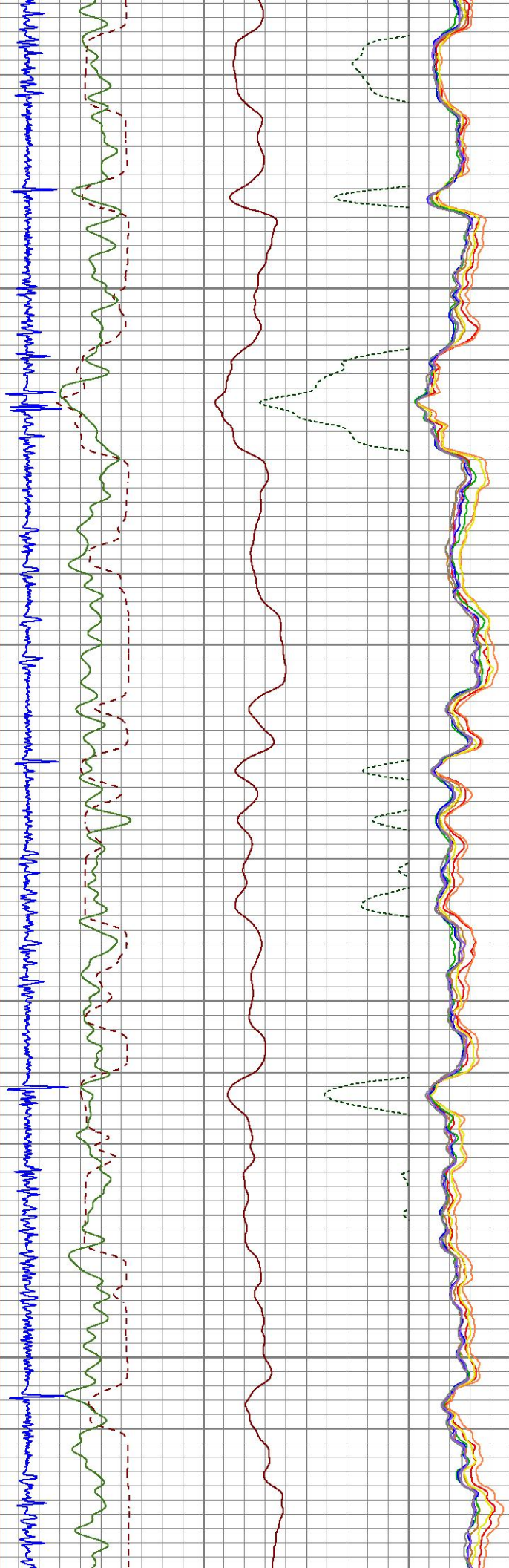


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2700

2750

2800



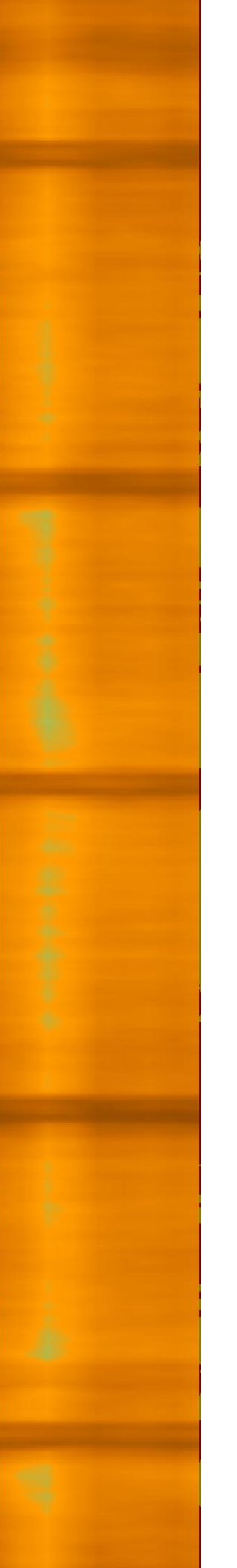
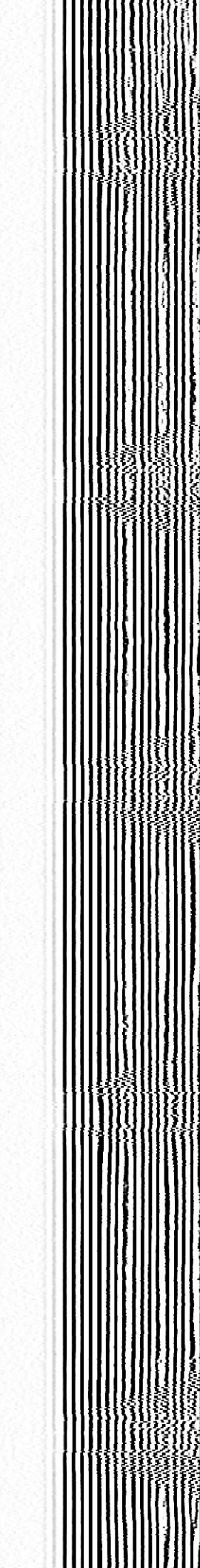
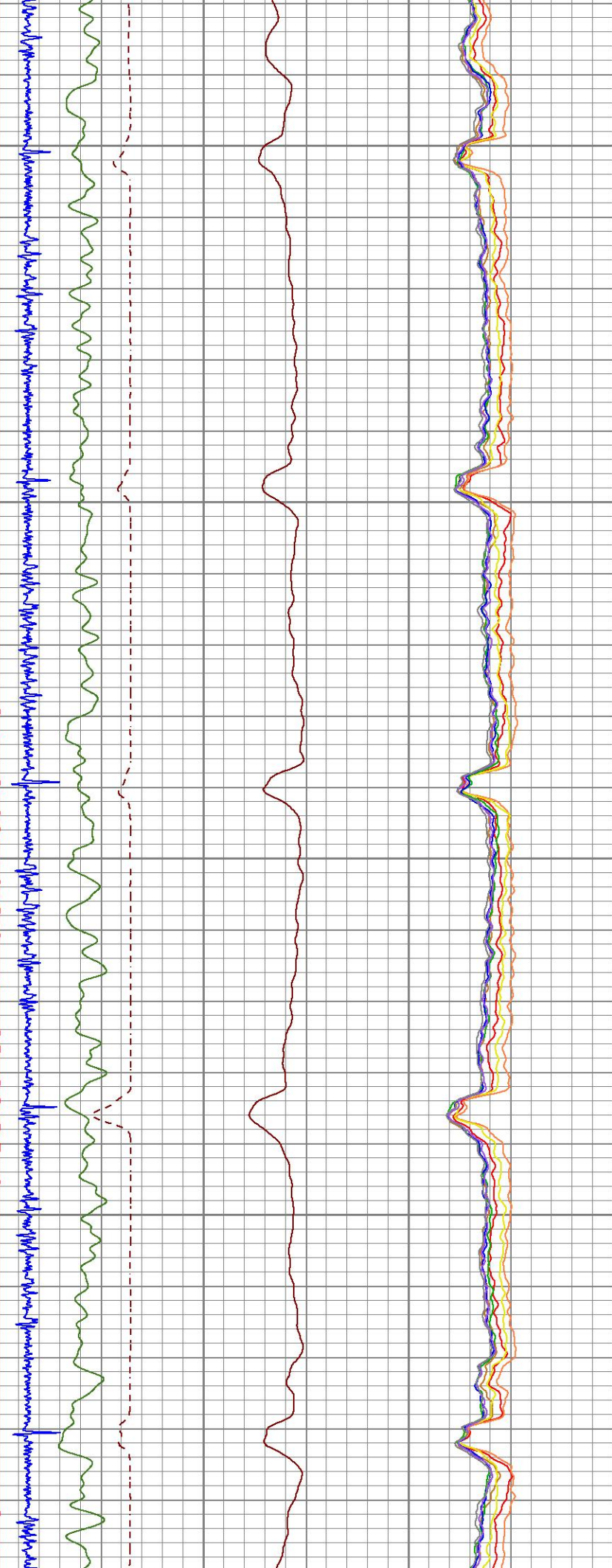
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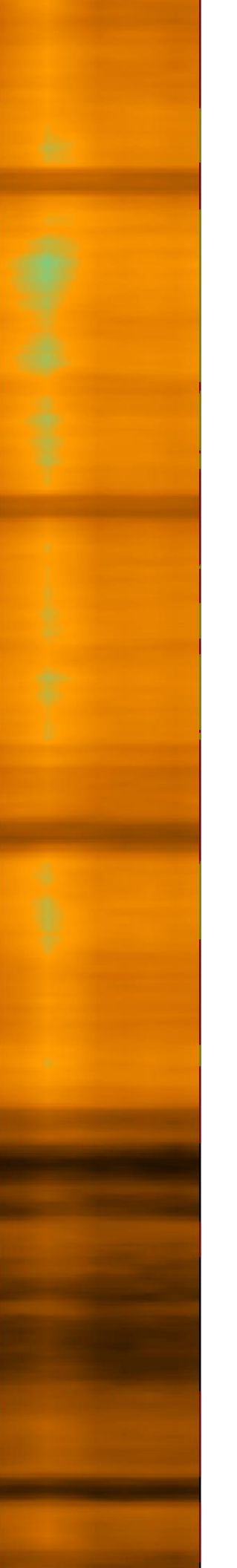
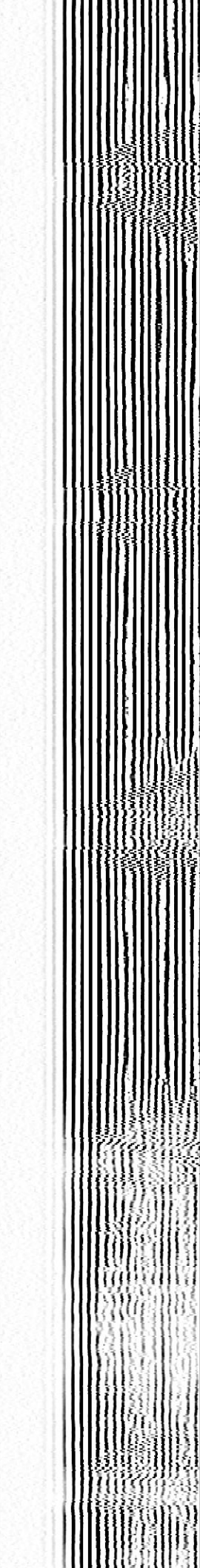
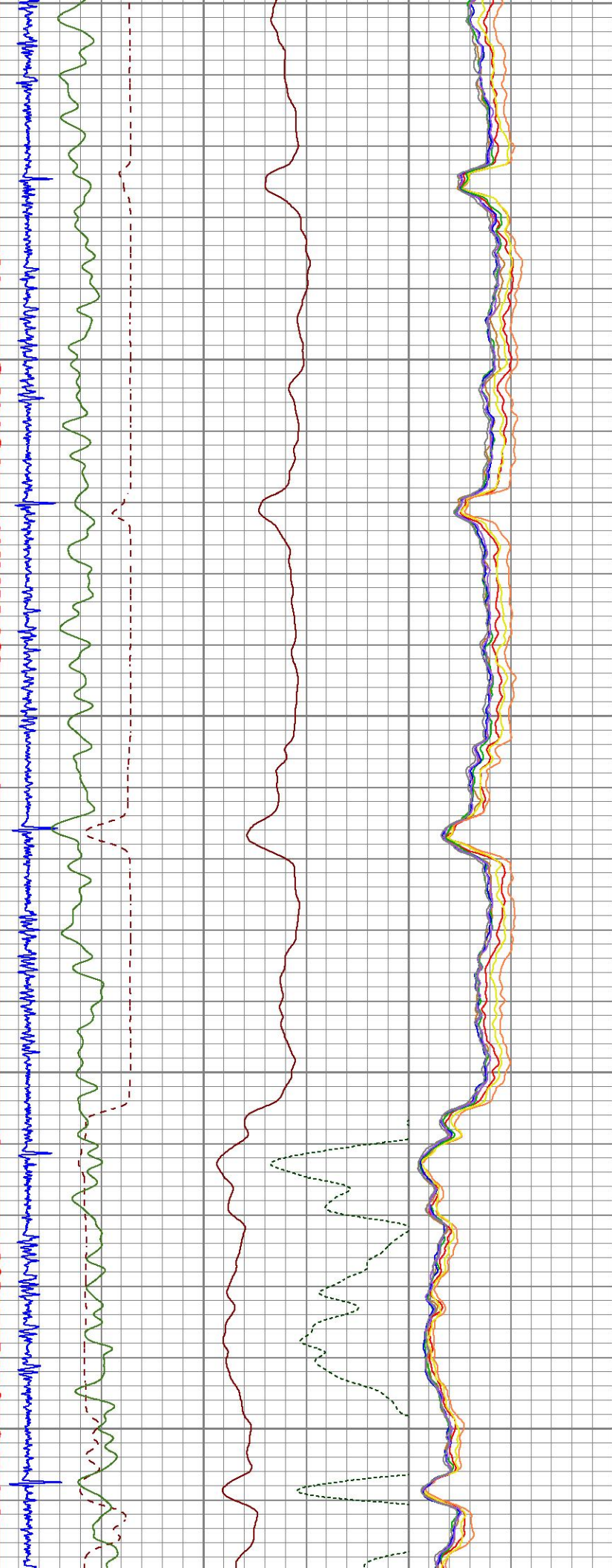
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3000

3050



3050
3100
3150
3200
3250

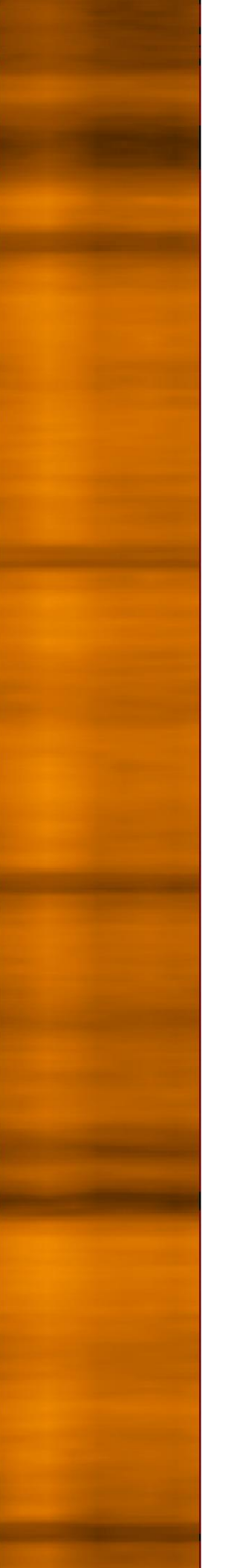
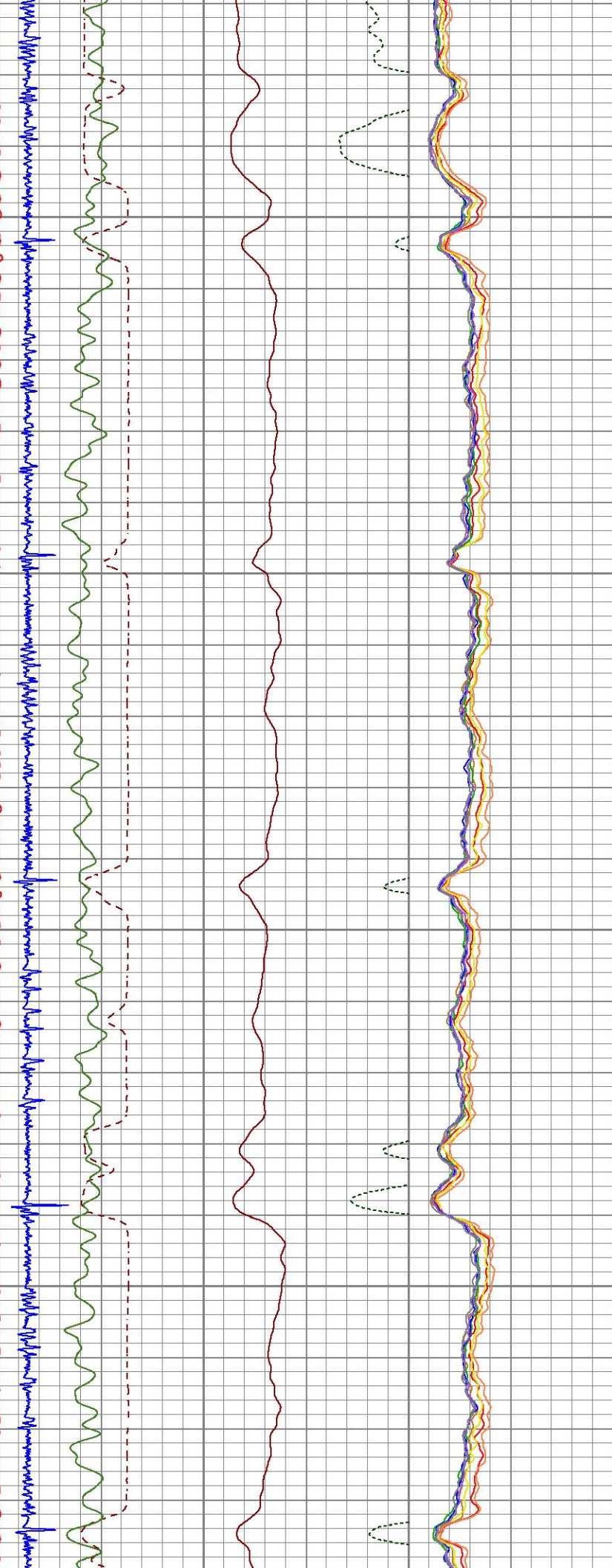


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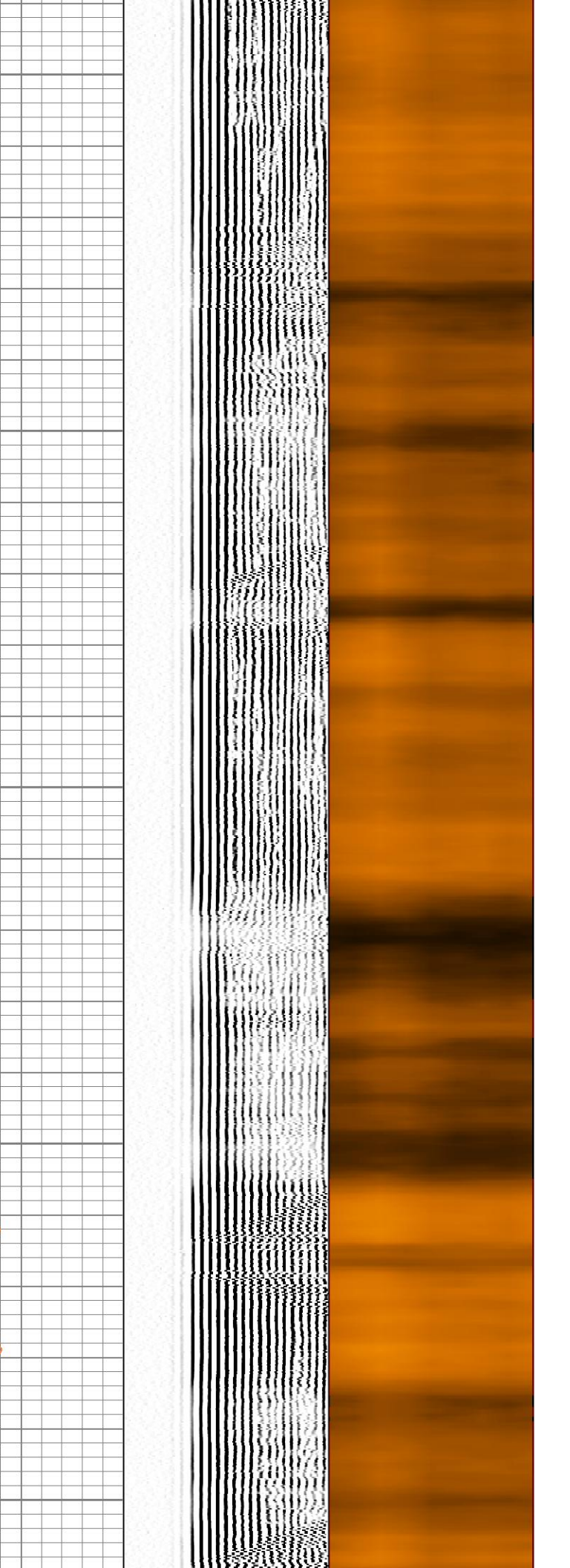
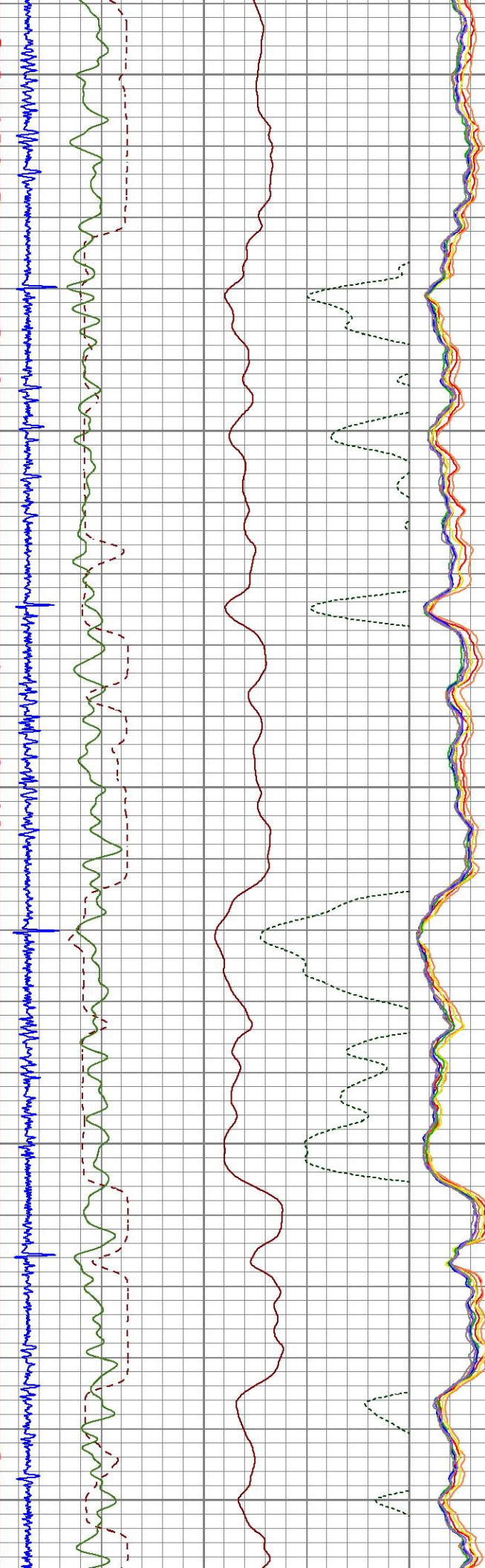
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3450



3500
3550
3600
3650
3700

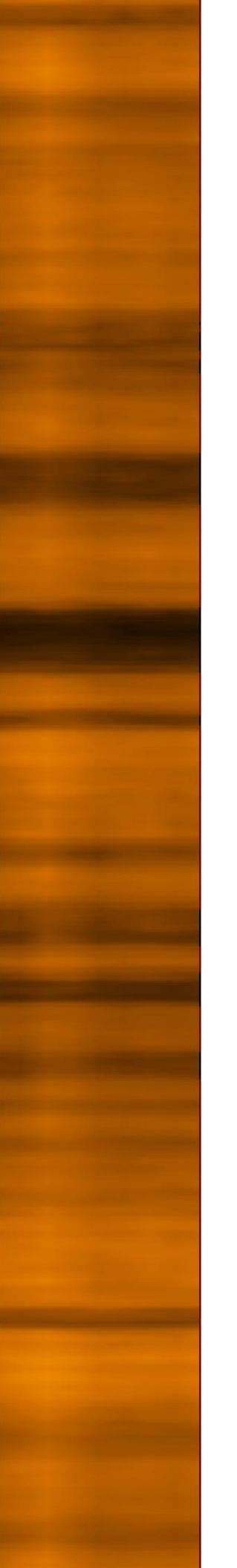
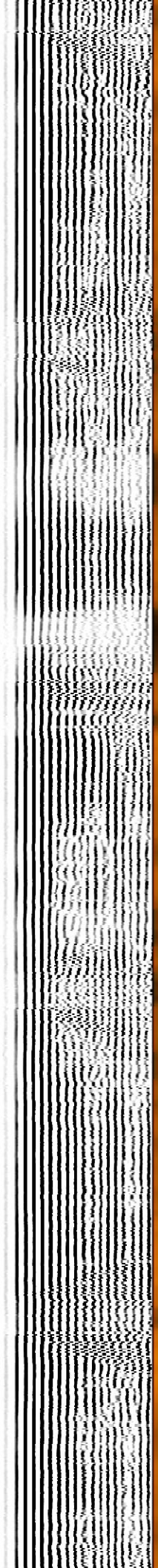
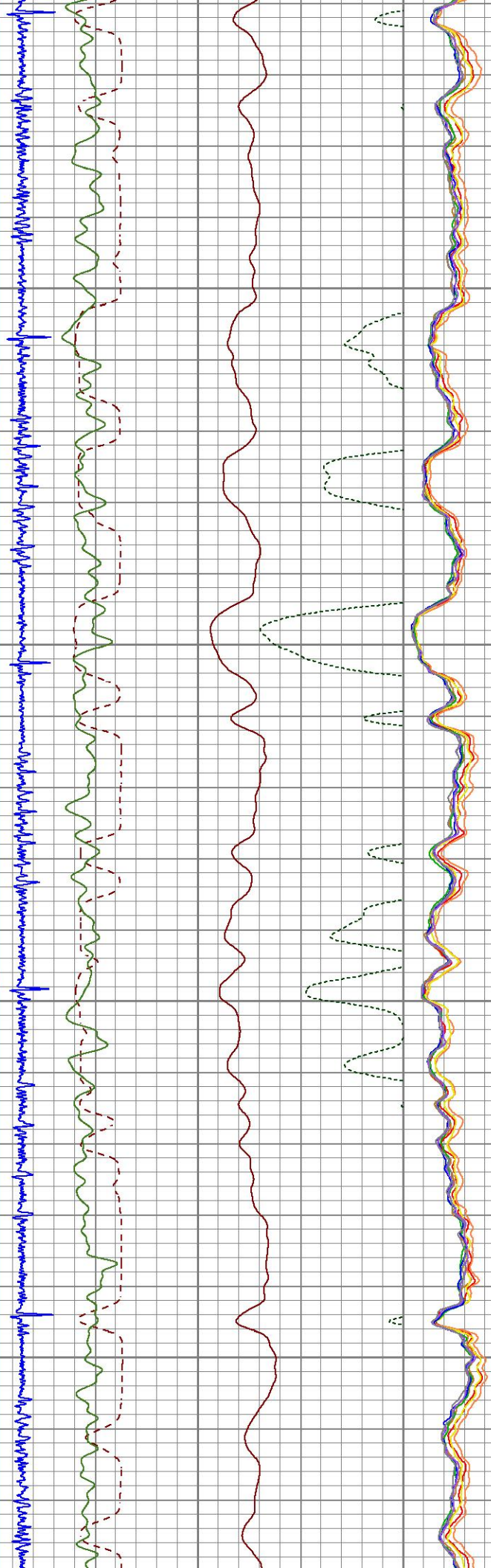


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3800

3850

3900



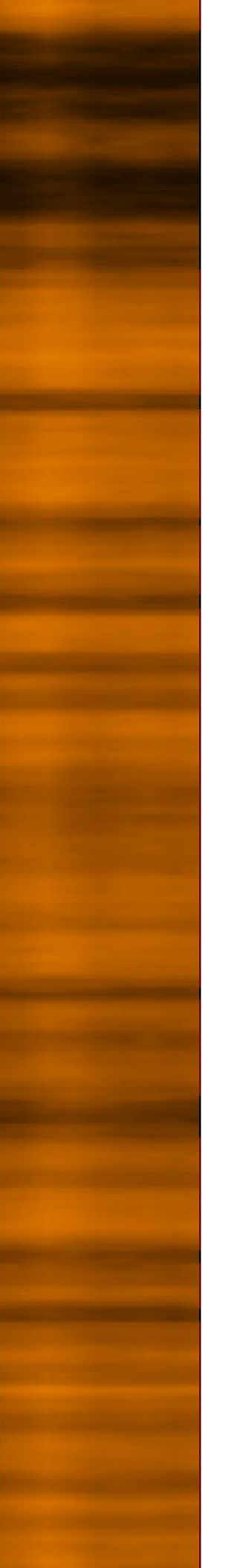
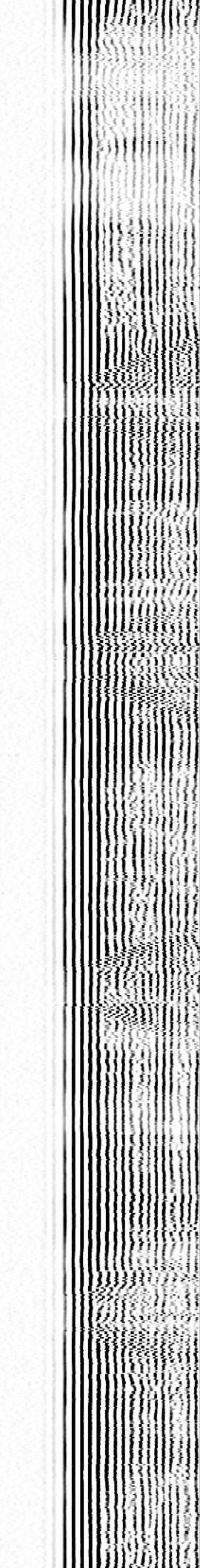
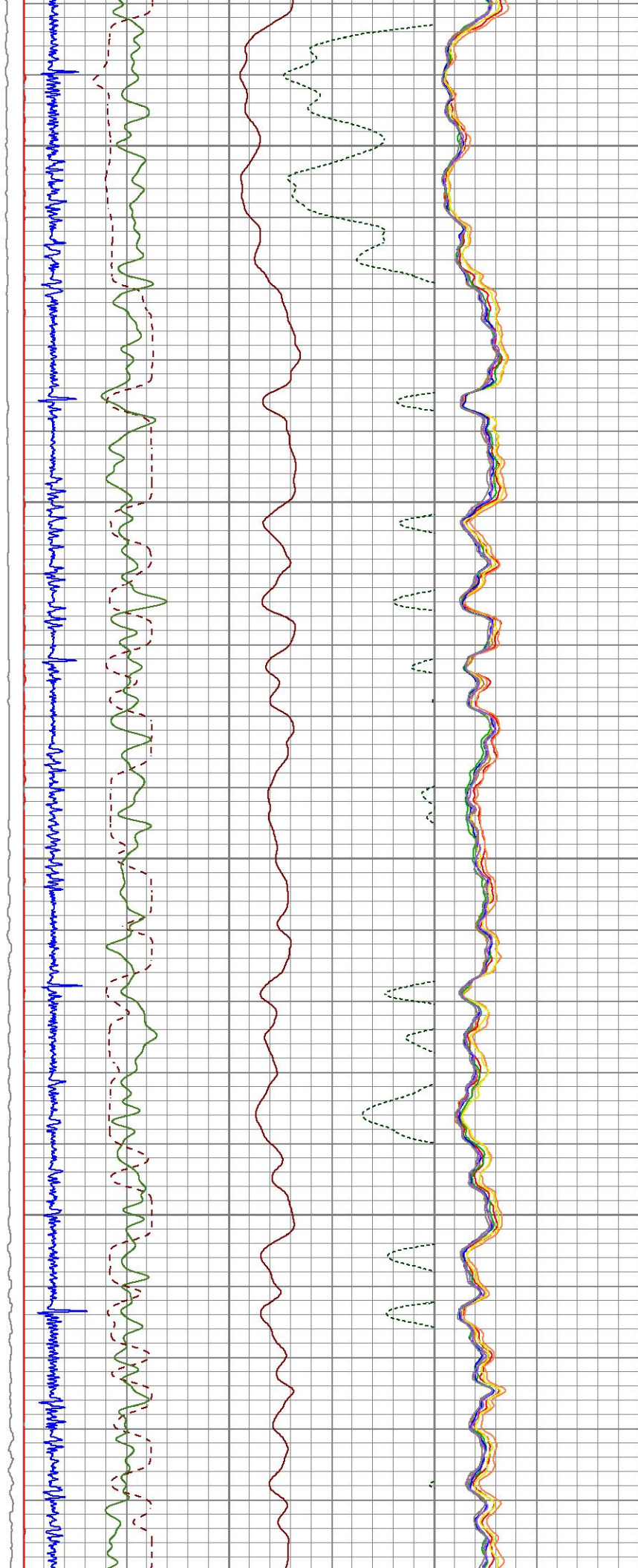
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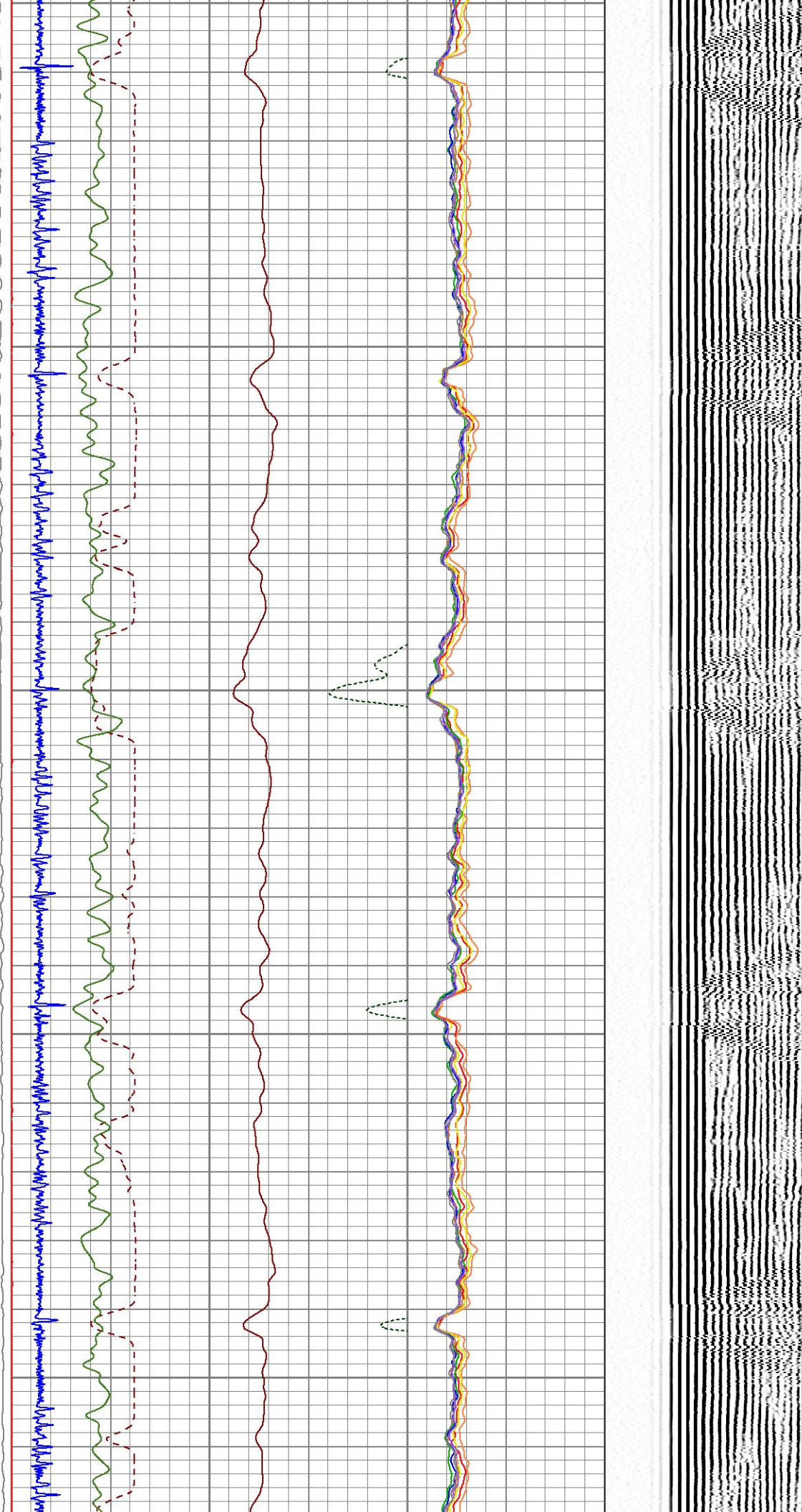
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4150



4150
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4300
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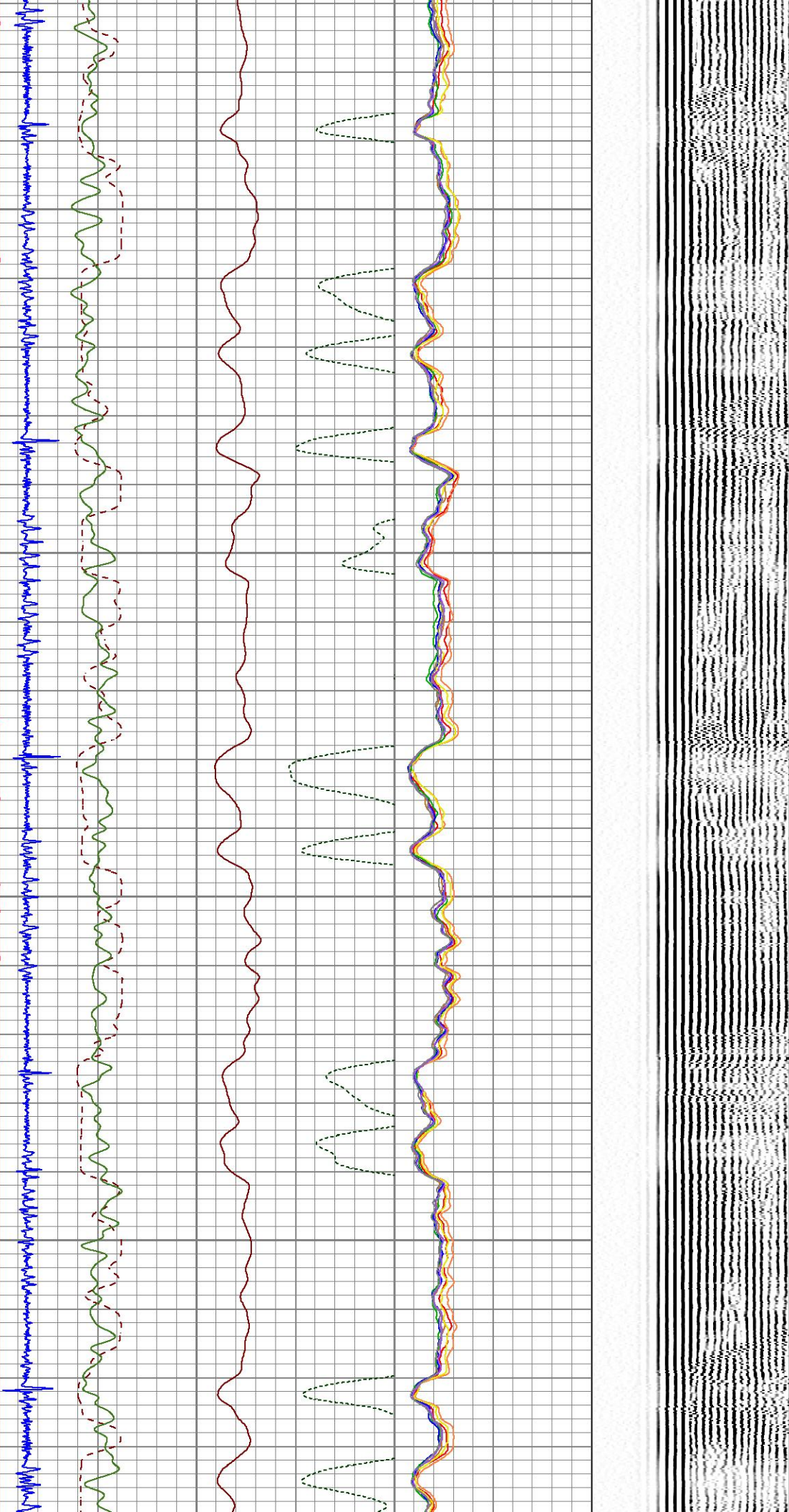


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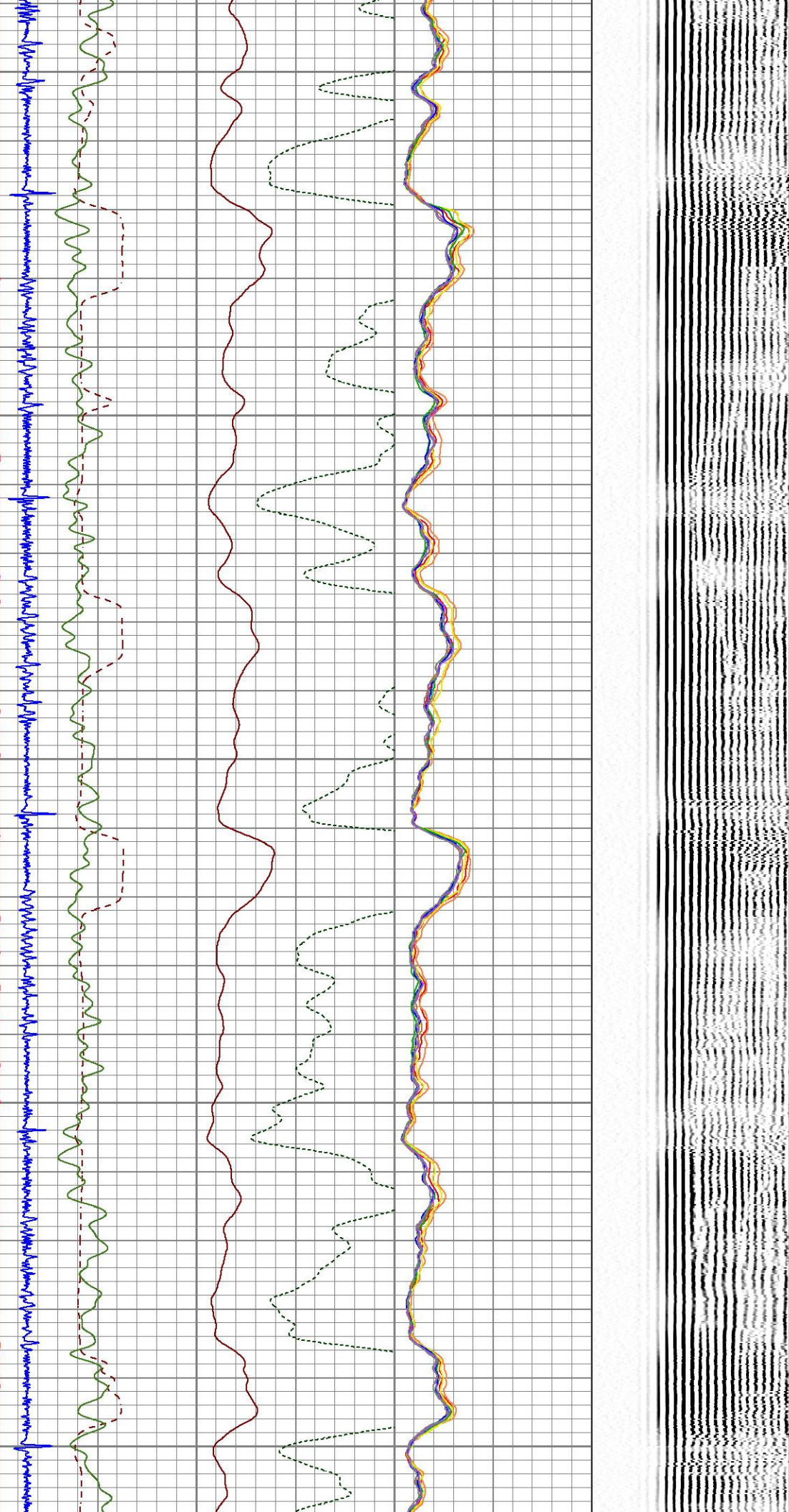
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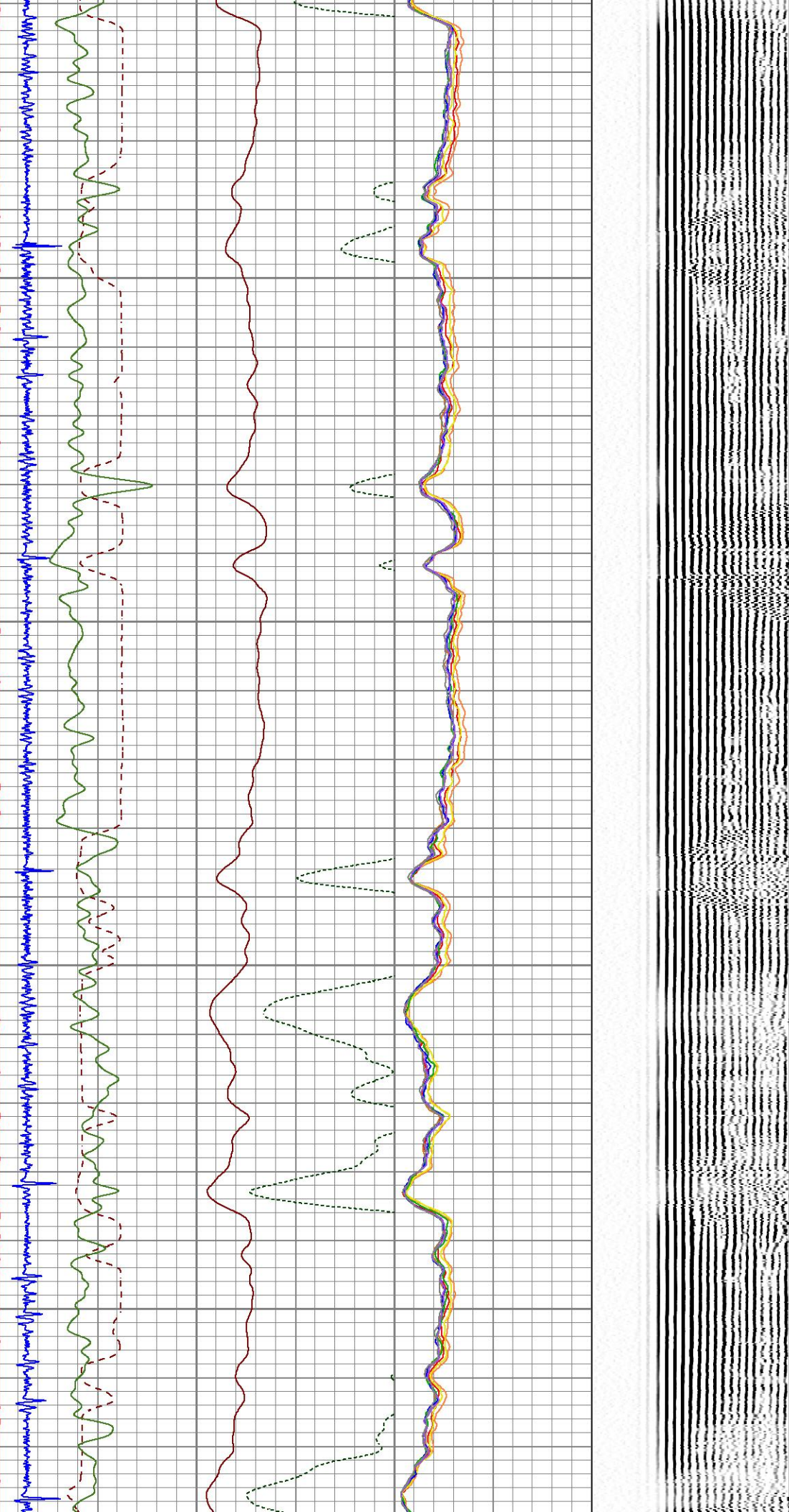


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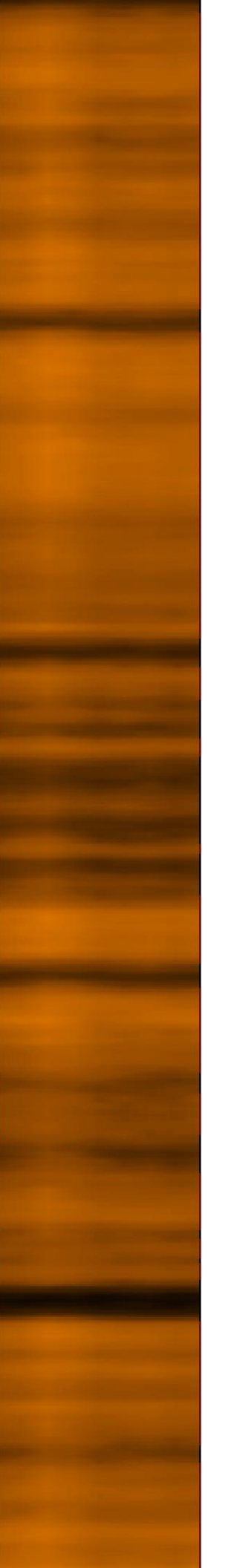
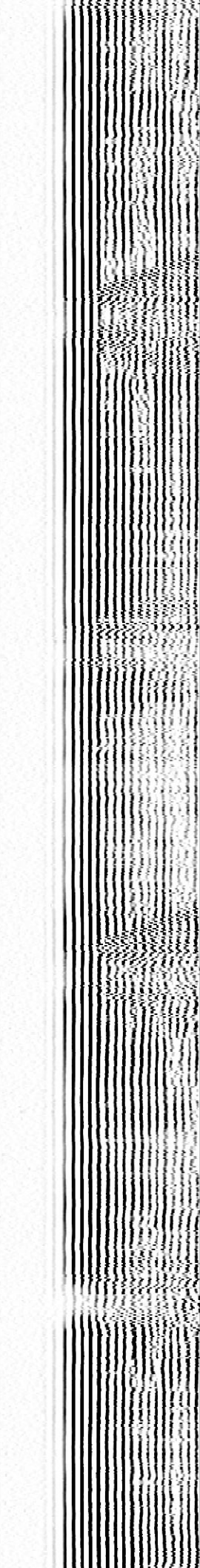
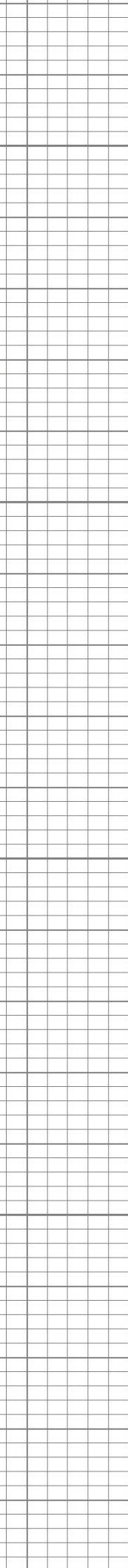
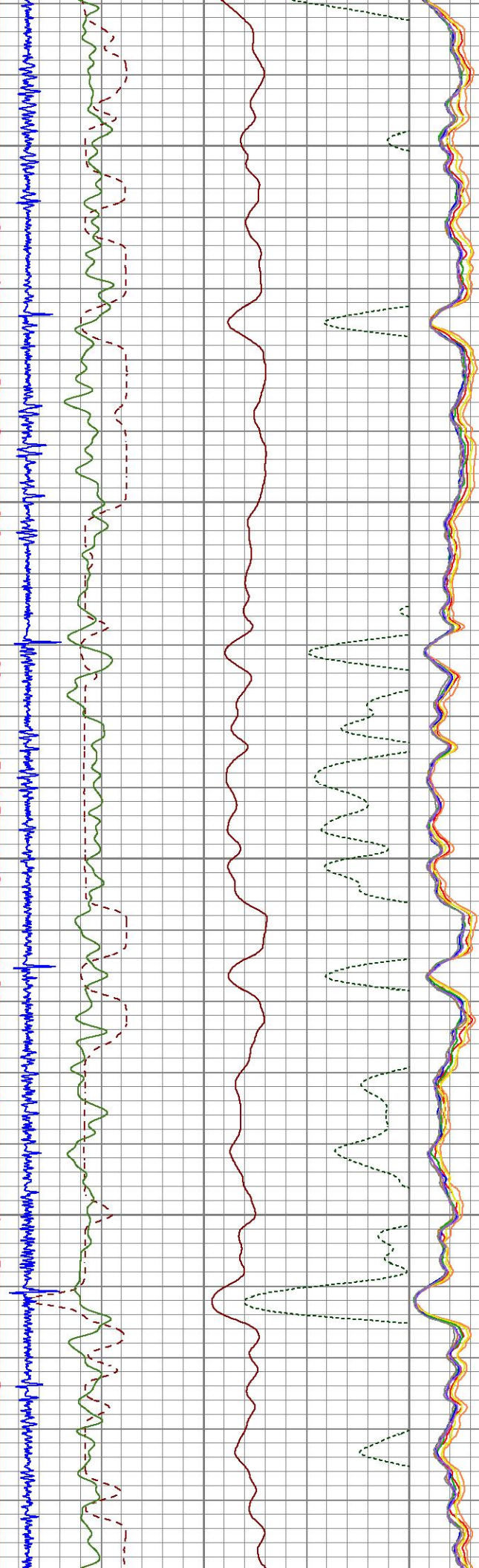
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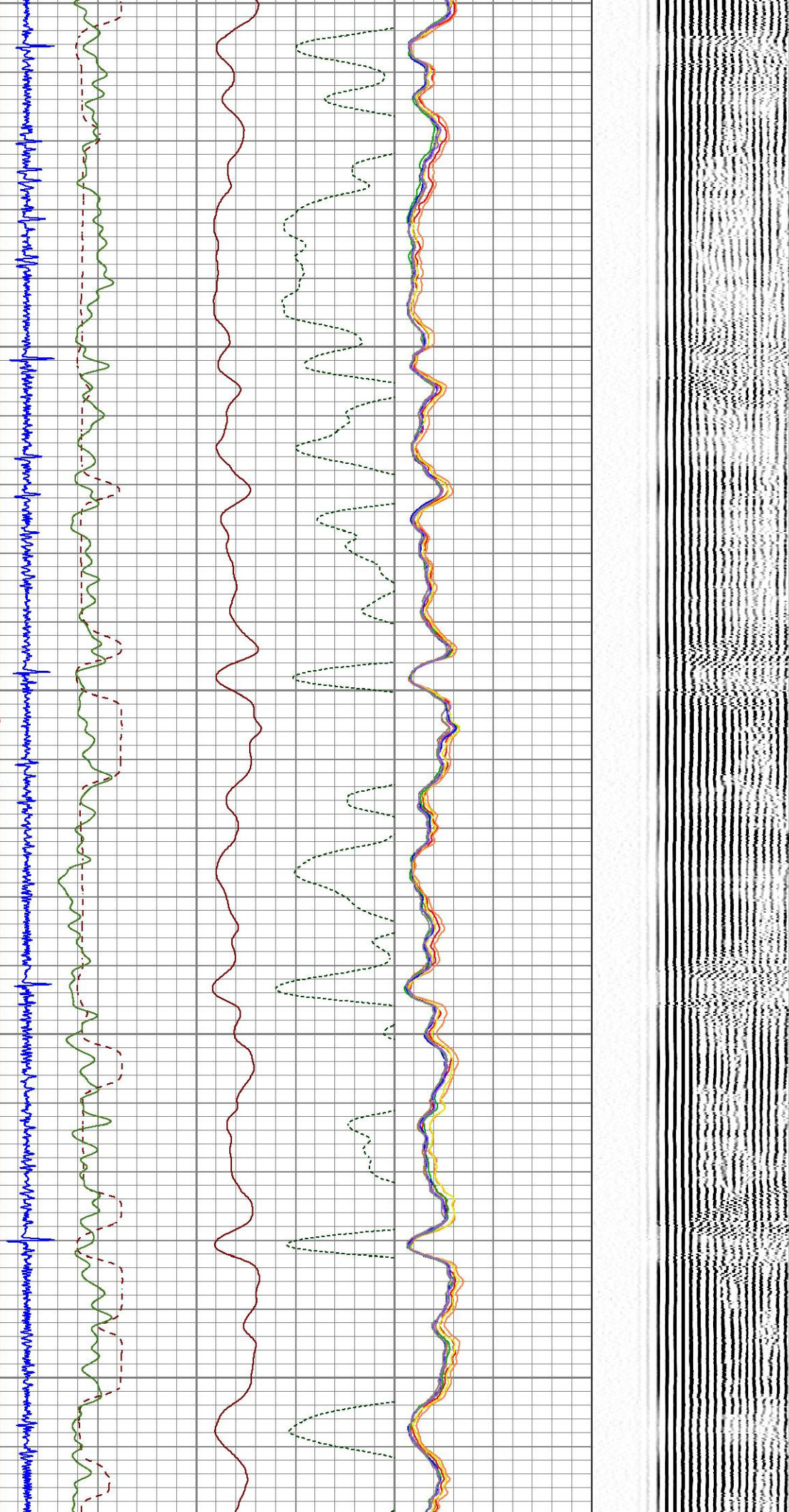
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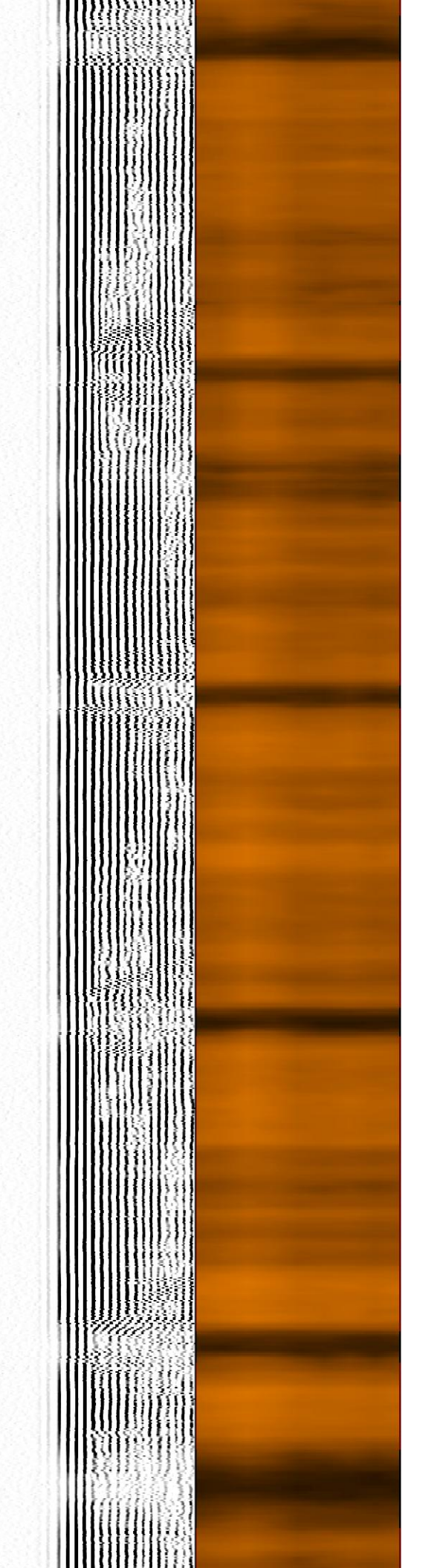
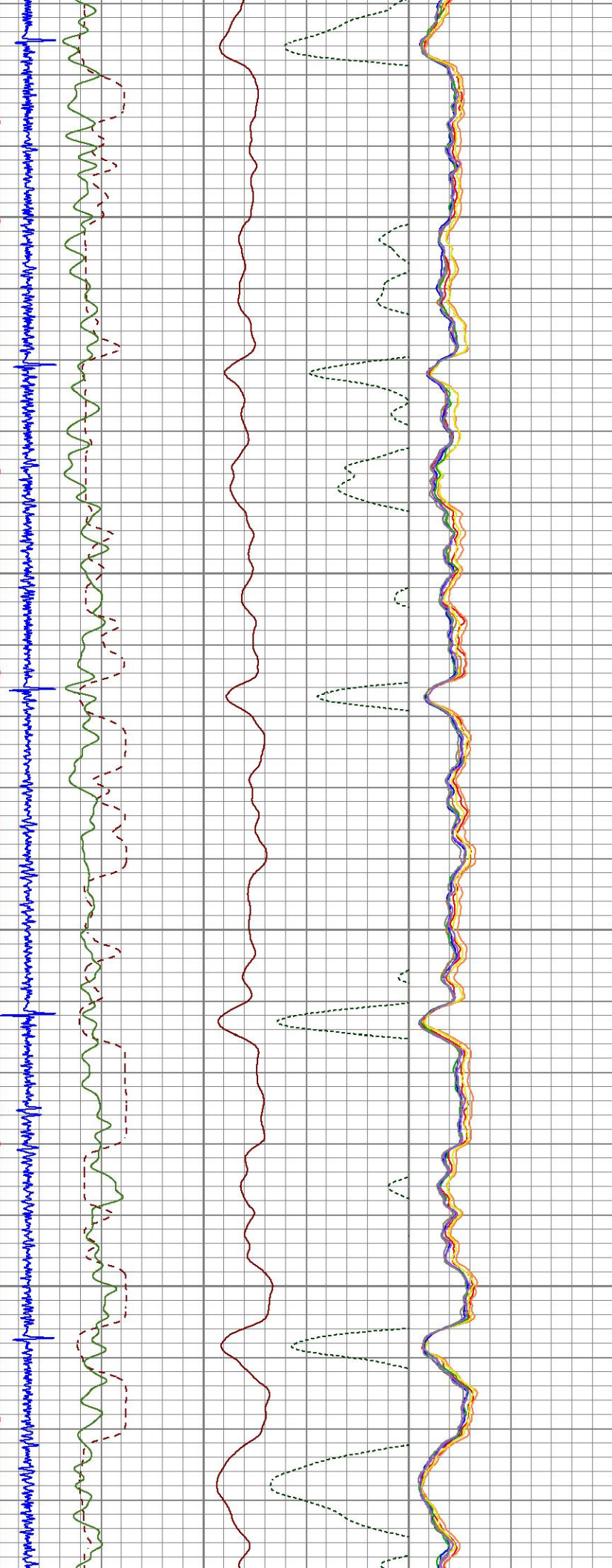


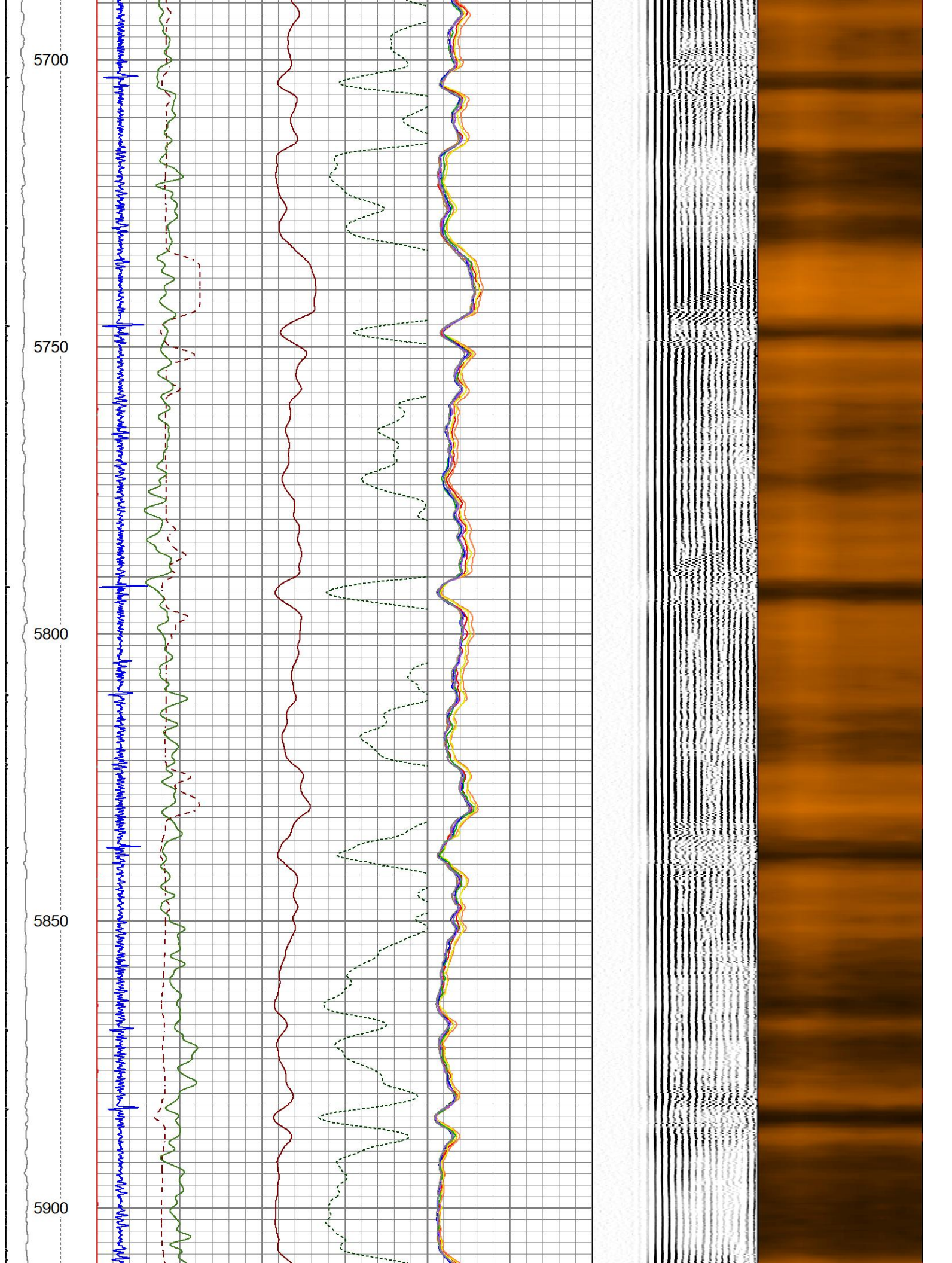
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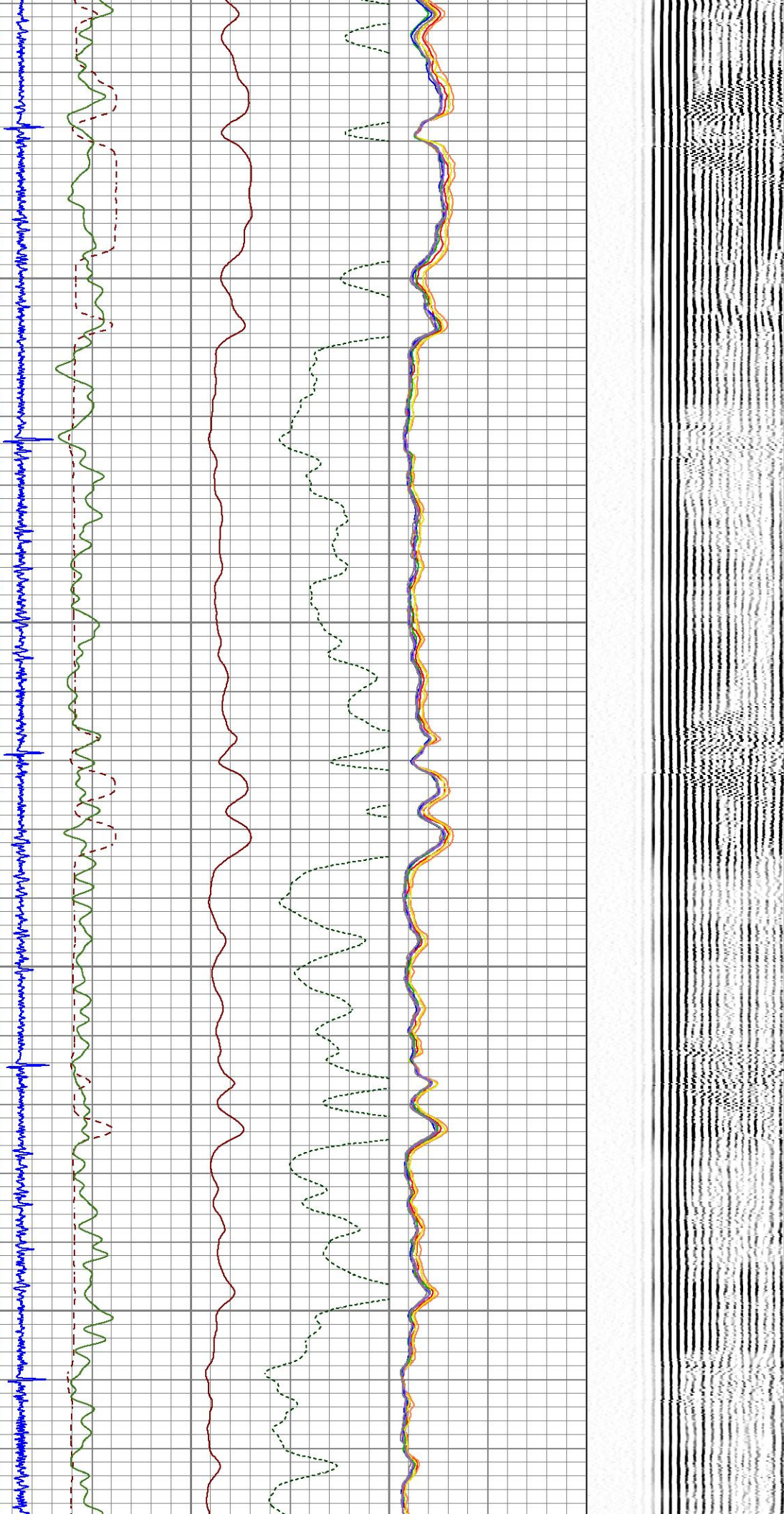


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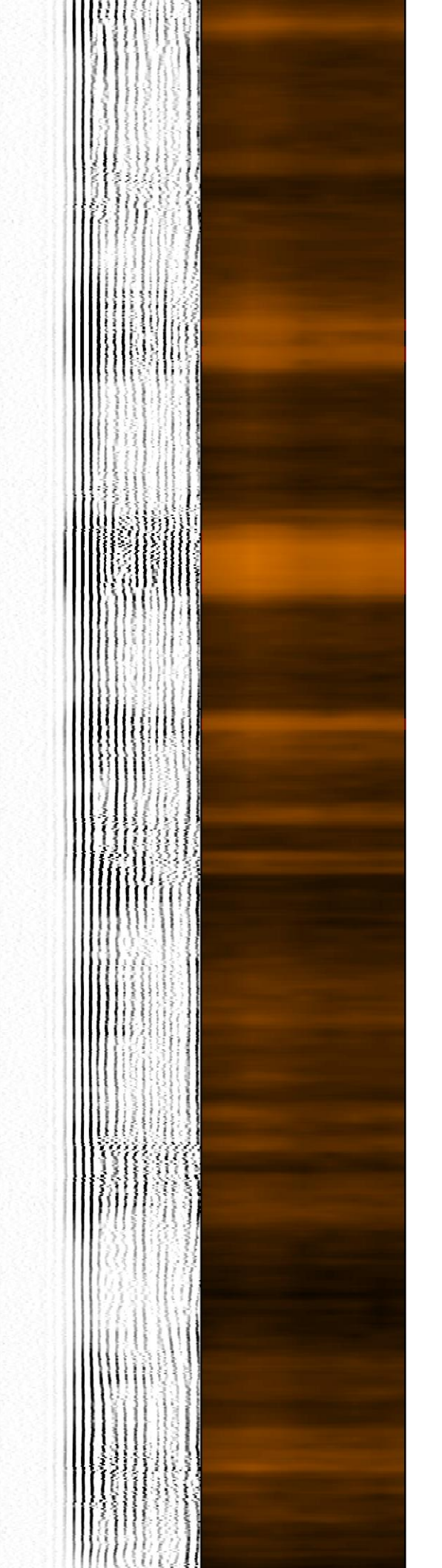
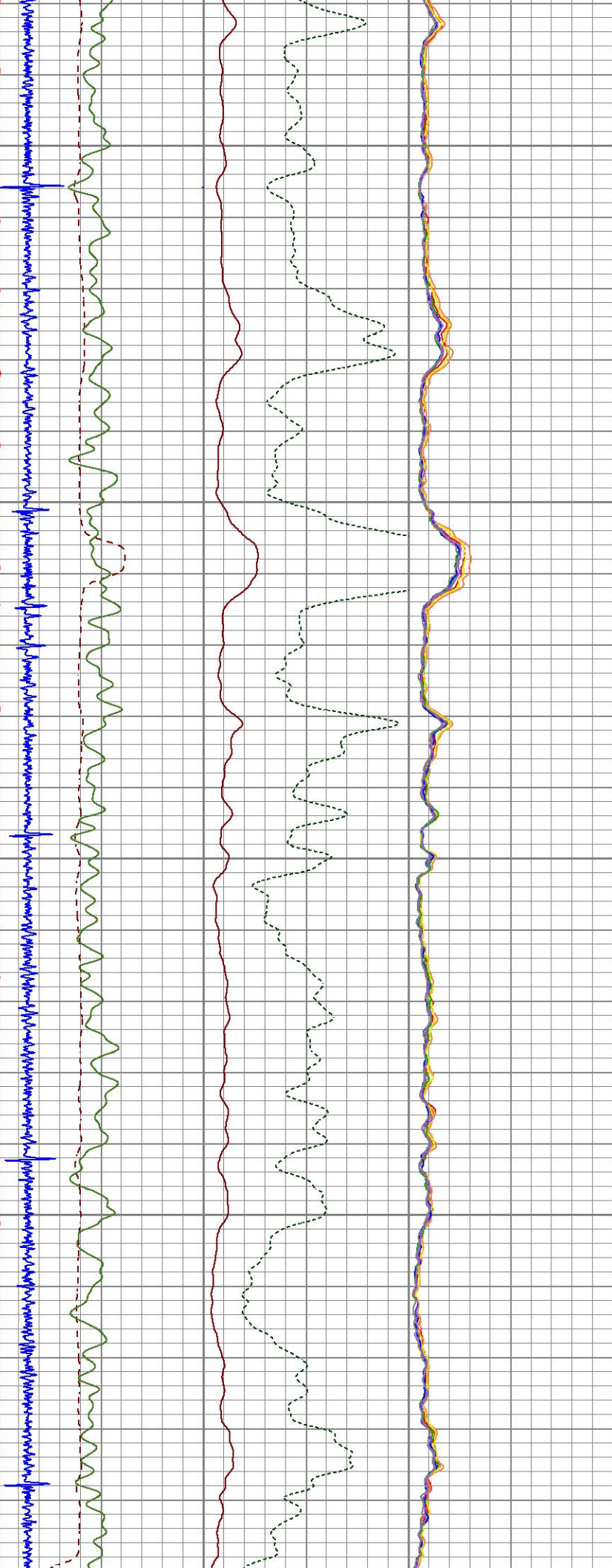
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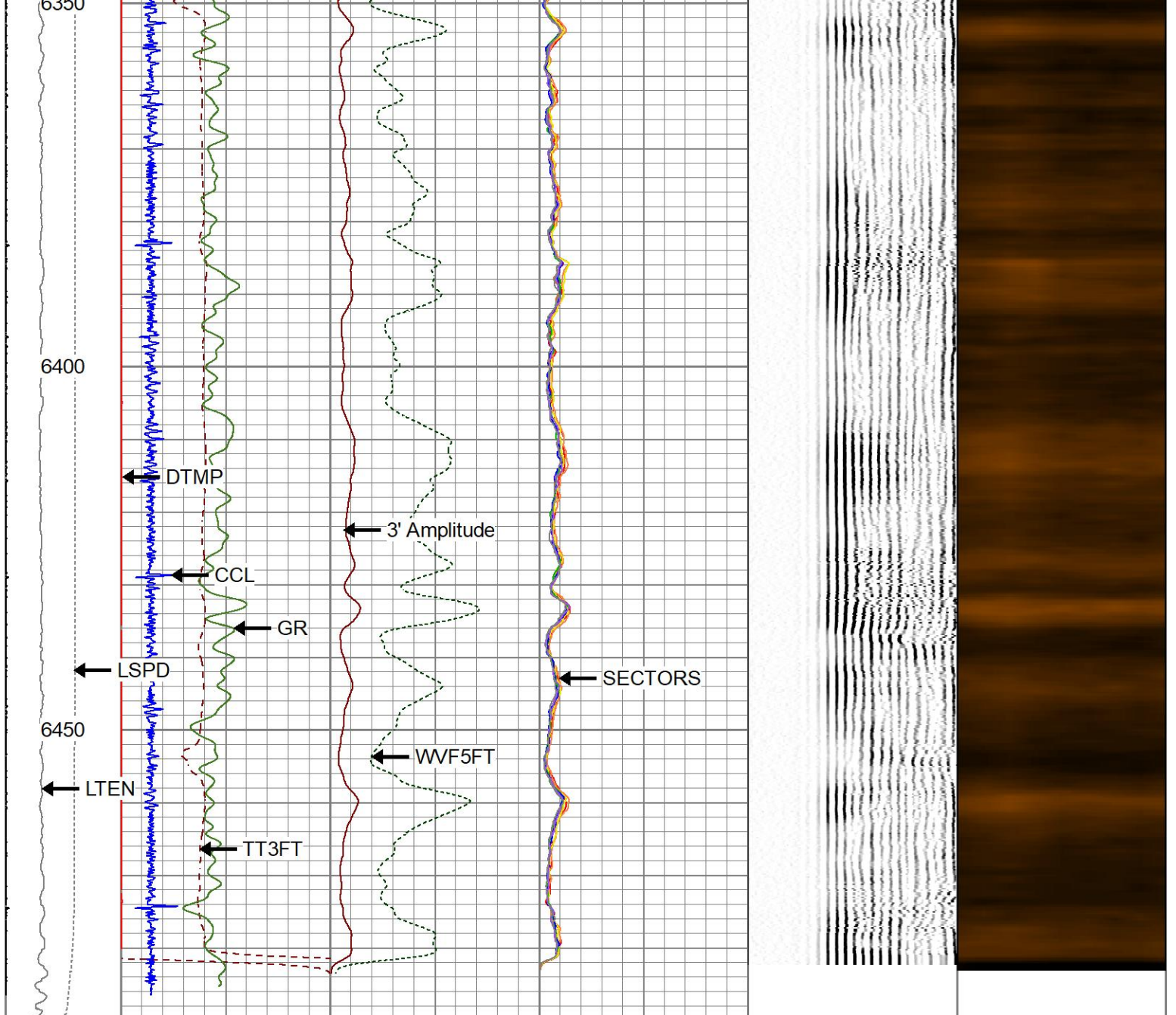
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6350





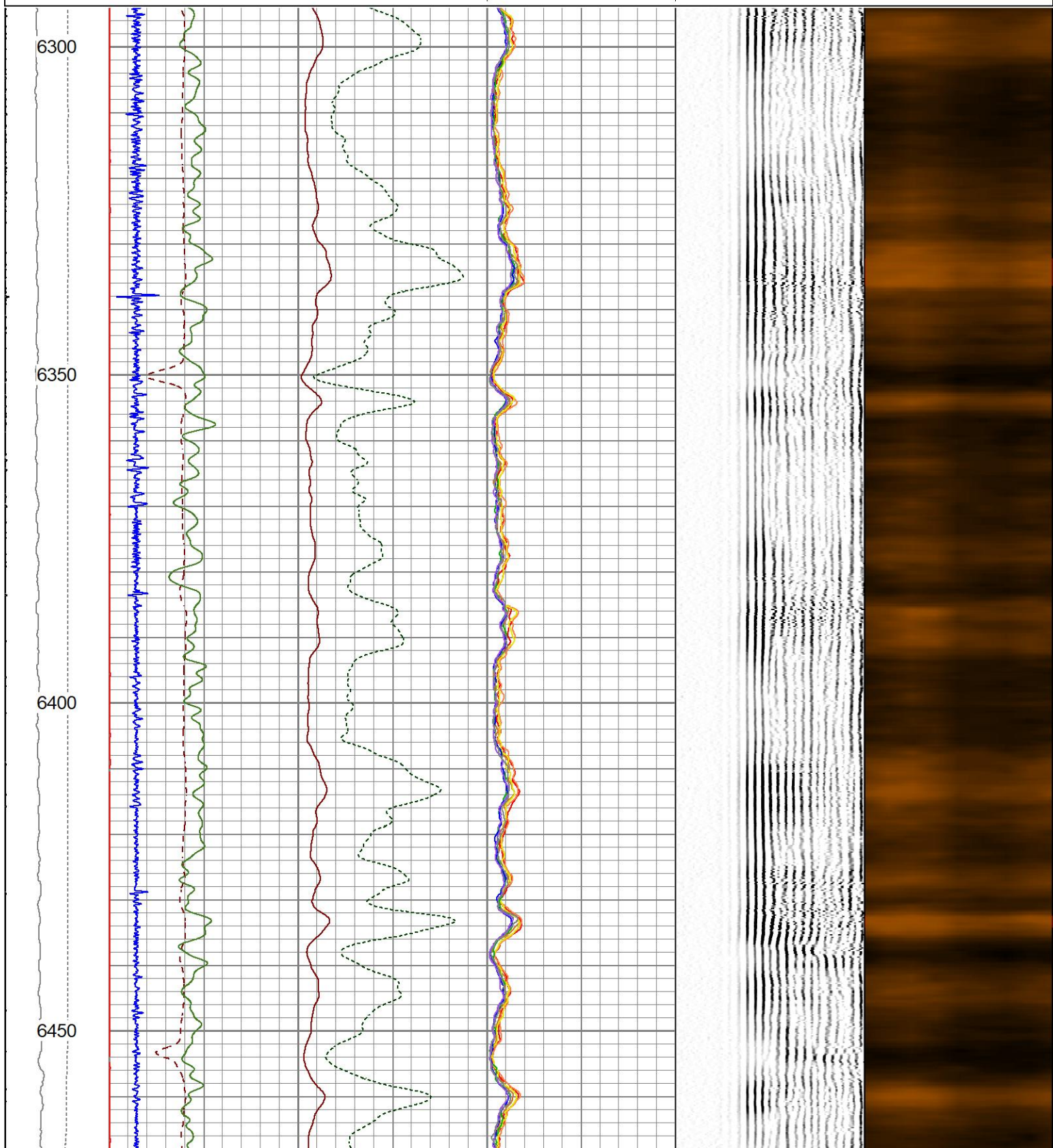
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|-------------|-----------------------|------------------------|---|-------|-----|---------------------|---|------------|----|
| LTEN | 3' Travel Time | 3' Amplitude | 0 | AMPS1 | 150 | 5' Variable Density | 1 | Sector Map | 8 |
| 0 (lb 1000) | 400 (usec) 200 | 0 (mV) 100 | 0 | AMPS2 | 150 | 10 (usec) 1200 | 0 | | 95 |
| LSPD | Casing Collar Locator | 3' Amplified Amplitude | 0 | AMPS3 | 150 | -409.6 (V) 409.4 | | | |
| (ft/min) | GAMMA RAY | 0 (mV) 20 | 0 | AMPS4 | 150 | | | | |
| 500 -500 | (GAPI) 200 | | 0 | AMPS5 | 150 | | | | |
| 0 CCL100 | DTMP (degF) 100 | | 0 | AMPS6 | 150 | | | | |
| | | | 0 | AMPS7 | 150 | | | | |
| | | | 0 | AMPS8 | 150 | | | | |

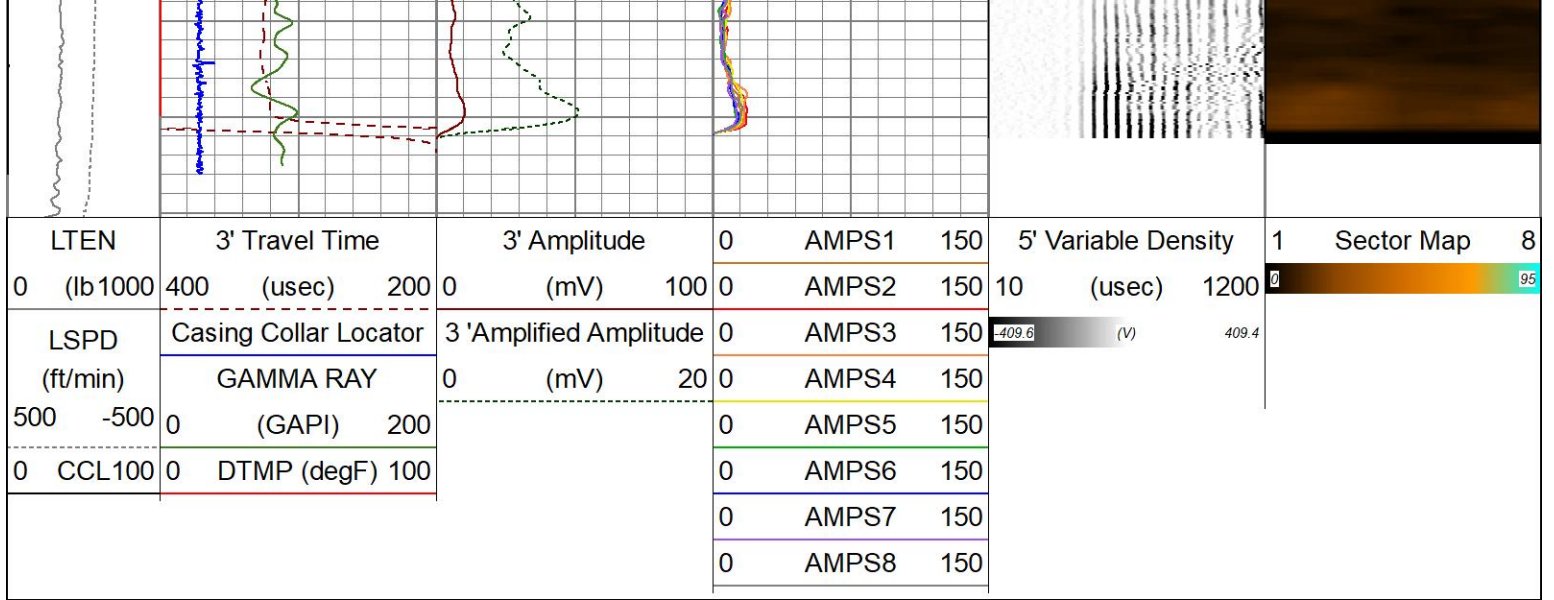


Repeat Pass

Database File pdc_vega_2n_rcbl.db
 Dataset Pathname Repeat2
 Presentation Format rbl_all_8_2020
 Dataset Creation Thu Oct 06 11:51:09 2022

| | | | | | | | | | | | | |
|-------------|-----------------------|-----------------|------------------------|----------|---|-------|-----|---------------------|-------------|-------|------------|----|
| LTEN | 3' Travel Time | | 3' Amplitude | | 0 | AMPS1 | 150 | 5' Variable Density | | 1 | Sector Map | 8 |
| 0 (lb 1000) | 400 | (usec) 200 | 0 | (mV) 100 | 0 | AMPS2 | 150 | 10 | (usec) 1200 | 0 | | 95 |
| LSPD | Casing Collar Locator | | 3' Amplified Amplitude | | 0 | AMPS3 | 150 | -409.6 | (V) | 409.4 | | |
| (ft/min) | GAMMA RAY | | (mV) 20 | | 0 | AMPS4 | 150 | | | | | |
| 500 -500 | 0 | (GAPI) 200 | | | 0 | AMPS5 | 150 | | | | | |
| 0 CCL100 | 0 | DTMP (degF) 100 | | | 0 | AMPS6 | 150 | | | | | |
| | | | | | 0 | AMPS7 | 150 | | | | | |
| | | | | | 0 | AMPS8 | 150 | | | | | |





| 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 | |
| | | | CENT-overbody | 2.00 | 4.50 | 3.00 | |
| TEMP | 11.57 | | | PROBE-RBT-DIGITAL-RBL-DCT (130614_DD2) Probe 2 3/4" Radii Bond with Temp-Corrosion Package | 9.21 | 2.75 | 105.00 |
| WVFS8 | 9.27 | | | | | | |
| WVFS7 | 9.27 | | | | | | |
| WVFS6 | 9.27 | | | | | | |
| WVFS5 | 9.27 | | | | | | |
| WVFS4 | 9.27 | | | | | | |
| WVFS3 | 9.27 | | | | | | |
| WVFS2 | 9.27 | | | | | | |
| WVFS1 | 9.27 | | | | | | |
| WVFCAL | 9.27 | | | | | | |
| WVF3FT | 9.27 | | | | | | |
| WVF5FT | 8.27 | | | | | | |
| DCCL | 4.21 | | | | | | |
| CCI | 4.21 | | | | | | |

| | | | | | | |
|----------|------|--|---|------|------|-------|
| CCL | 1.21 | | | | | |
| GCT_TEMP | 3.42 | | | | | |
| GR | 2.83 | | | | | |
| | | | PROBE-GR/CCL-DIGITAL-275 Probe GCT (2107026) Probe 2 3/4" Gamma Ray/Temp/CCL 6 Pin | 4.75 | 2.75 | 60.00 |
| | | | CENT-overbody | 2.00 | 4.50 | 3.00 |
| | | | Bullnose-PROBE Probe Go Pin Pressure Cap | 0.33 | 1.38 | 1.00 |

Dataset: pdc_vega_2n_rcbl.db: field/well/run1/Main.1
 Total length: 15.32 ft
 Total weight: 174.00 lb
 O.D.: 4.50 in

Calibration Report

Database File pdc_vega_2n_rcbl.db
 Dataset Pathname Main.1
 Dataset Creation Thu Oct 06 13:02:35 2022

Gamma Ray Calibration Report

Serial Number: 2107026
 Tool Model: 275 Probe GCT
 Performed: Thu Jun 23 12:16:30 2022

 Calibrator Value: 200.0 GAPI

 Background Reading: 43.9 cps
 Calibrator Reading: 269.1 cps

 Sensitivity: 0.8881 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: 130614_DD2
 Tool Model: RBL-DCT

 Calibration Casing Diameter: 5.500 in
 Calibration Depth: 14.208 ft

Master Calibration, performed (Derived):

| | Raw (v) | | Calibrated (mv) | | Results | |
|-----|---------|-------|-----------------|---------|---------|--------|
| | Zero | Cal | Zero | Cal | Gain | Offset |
| 3' | 0.000 | 0.639 | 0.500 | 71.921 | 111.830 | 0.500 |
| CAL | 0.030 | 0.670 | | | | |
| 5' | 0.000 | 0.522 | 0.500 | 71.921 | 136.948 | 0.500 |
| SUM | | | | | | |
| S1 | -0.007 | 0.668 | 0.000 | 100.000 | 148.153 | 0.988 |
| S2 | -0.001 | 0.689 | 0.000 | 100.000 | 145.056 | 0.075 |
| S3 | -0.000 | 0.691 | 0.000 | 100.000 | 144.537 | 0.056 |
| S4 | 0.000 | 0.734 | 0.000 | 100.000 | 136.333 | -0.001 |
| S5 | 0.000 | 0.718 | 0.000 | 100.000 | 139.310 | -0.001 |
| S6 | 0.000 | 0.672 | 0.000 | 100.000 | 148.829 | -0.001 |
| S7 | 0.000 | 0.649 | 0.000 | 100.000 | 154.107 | -0.001 |
| S8 | 0.000 | 0.681 | 0.000 | 100.000 | 146.753 | -0.001 |

Air Zero Calibration, performed Tue Sep 20 11:10:46 2022:

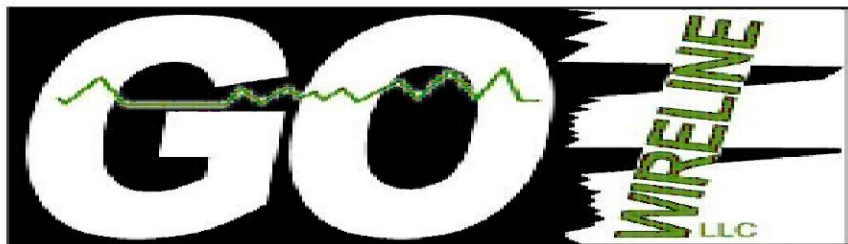
| | Raw (v) | Calibrated (v) | Results |
|-----|---------|----------------|---------|
| | Zero | Zero | Offset |
| 3' | 0.000 | 0.000 | 0.000 |
| 5' | 0.000 | 0.000 | 0.000 |
| SUM | | | |
| S1 | 0.000 | 0.000 | 0.000 |
| S2 | 0.000 | 0.000 | 0.000 |
| S3 | 0.000 | 0.000 | 0.000 |
| S4 | 0.000 | 0.000 | 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 |

Temperature Calibration Report

Serial Number: 130614_DD2
 Tool Model: RBL-DCT
 Performed: (Not Performed)

| | Reference | Reading |
|-----------------|-----------|-----------|
| Low Reference: | 0.00 degF | 0.00 degF |
| High Reference: | 1.00 degF | 1.00 degF |

Gain: 1.00
 Offset: 0.00
 Delta Spacing 1



Company PDC Energy
 Well Vega 2N
 Field Wattenberg
 County Weld
 State Colorado