

Company: Extraction Oil & Gas LLC

Well: Troutd 6

Field: Wattenberg

County: Weld State: Colorado

Cement Bond Log

Variable Density Log

| | | | | |
|-------------------------|--------------------------------|---|--|------------------|
| County: | Weld | | | |
| Field: | Wattenberg | | | |
| Location: | SHL: SESE 537' FSL & 1091' FEL | | | |
| Well: | Troutd 6 | | | |
| Company: | Extraction Oil & Gas LLC | | | |
| Location: | | SHL: SESE 537' FSL & 1091' FEL Section 32, Township 2N, Range 67W Lat: 40.089067, Long: -104.909216 | Elev.: K.B. 5099.00 ft G.L. 5079.00 ft D.F. 5098.00 ft | |
| Permanent Datum: | | Ground Level | Elev.: 5079.00 f | |
| Log Measured From: | | Kelly Bushing | 20.00 ft | above Perm.Datum |
| Drilling Measured From: | | Kelly Bushing | | |
| API Serial No. | | Section: 32 | Township: 2N | Range: 67W |
| 05-123-41436-00 | | | | |
| Logging Date | 17-Sep-2015 | | | |

| | | | |
|---------------------------|--------------|-----------------|--|
| Run Number | Run 1 | | |
| Depth Driller | 17650.00 ft | | |
| Schlumberger Depth | 17650.00 ft | | |
| Bottom Log Interval | 7500.00 ft | | |
| Top Log Interval | 50.00 ft | | |
| Casing Fluid Type | Diesel | | |
| Salinity | | | |
| Density | 10 lbm/gal | | |
| Fluid Level | 8.00 ft | | |
| BIT/CASING/TUBING STRING | | | |
| Bit Size | 7.88 in | | |
| From | 0.00 ft | | |
| To | 17650.00 ft | | |
| Casing/Tubing Size | 5.5 in | | |
| Weight | 20 lbm/ft | | |
| Grade | P110 | | |
| From | 0.00 ft | | |
| To | 17650.00 ft | | |
| Max Recorded Temperatures | 220 degF | | |
| Logger on Bottom | 18-Sep-2015 | 00:32:00 | |
| Unit Number | 9108 | Fort Morgan, CO | |
| Recorded By | Max Pace | | |
| Witnessed By | Larry Seigel | | |

Disclaimer

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

Contents

- 1. Header
- 2. Disclaimer
- 3. Contents
- 4. Well Sketch
- 5. Borehole Size/Casing/Tubing Record
- 6. Borehole Fluids
- 7. Remarks and Equipment Summary
- 8. Depth Summary
- 9. Run 1
 - 9.1 Integration Summary
 - 9.2 Software Version
 - 9.3 Composite Summary
 - 9.4 Log (SCMT_VDL_Image)
 - 9.5 Parameter Listing
- 10. Run 1
 - 10.1 Integration Summary
 - 10.2 Software Version

10.3 Composite Summary

10.4 Log (Sonic CBL with VDL)

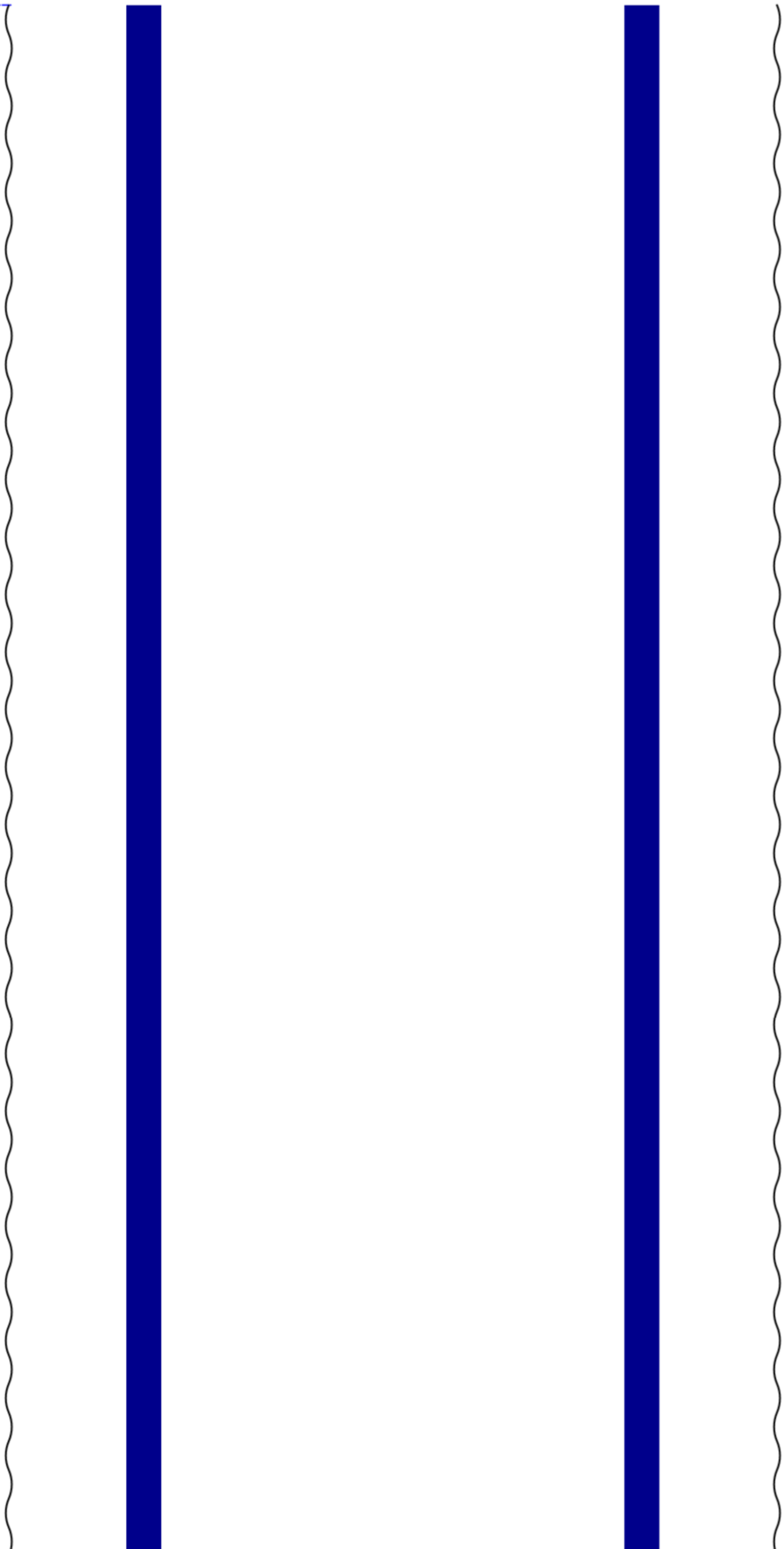
10.5 Parameter Listing

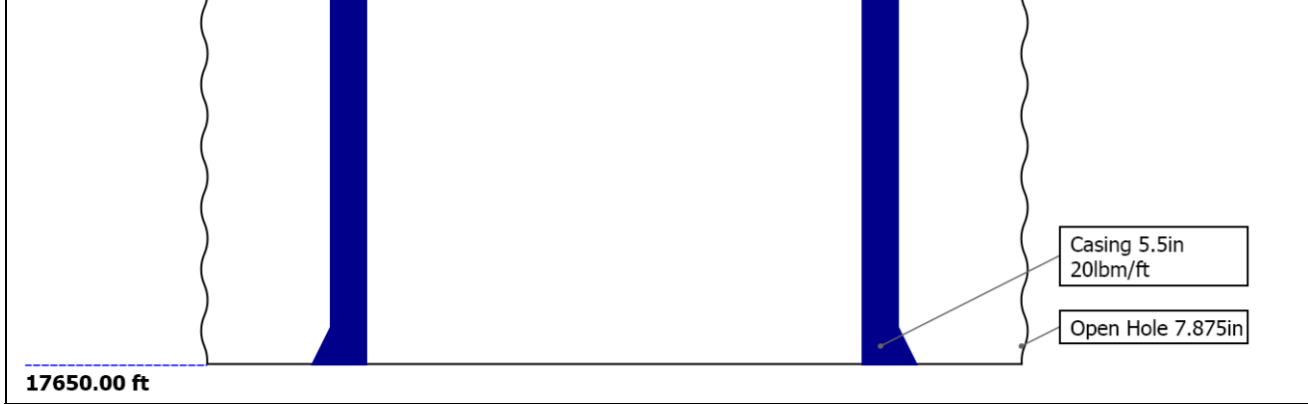
11. Calibration Report

12. Tail

Well Sketch

Driller Depth
0.00 ft





Borehole Size/Casing/Tubing Record

| | | | | | | |
|-----------------------|-------|--|--|--|--|--|
| Bit | | | | | | |
| Bit Size (in) | 7.875 | | | | | |
| Top Driller (ft) | 0 | | | | | |
| Top Logger (ft) | 0 | | | | | |
| Bottom Driller (ft) | 17650 | | | | | |
| Bottom Logger (ft) | 17650 | | | | | |
| Casing | | | | | | |
| Size (in) | 5.5 | | | | | |
| Weight (lbm/ft) | 20 | | | | | |
| Inner Diameter (in) | 4.778 | | | | | |
| Grade | P110 | | | | | |
| Top Driller (ft) | 0 | | | | | |
| Top Logger (ft) | 0 | | | | | |
| Bottom Driller (ft) | 17650 | | | | | |
| Bottom Logger (ft) | 17650 | | | | | |

Borehole Fluids

| | | | | | | |
|------------------------------------|-------------|--|--|--|--|--|
| Parameter(unit) | Run 1 | | | | | |
| Fluid Type | Oil | | | | | |
| Fluid Name | Diesel | | | | | |
| Max Recorded Temperatures (degF) | 220 | | | | | |
| Source of Sample | Active Tank | | | | | |
| Salinity (ppm) | 0 | | | | | |
| Density (lbm/gal) | 10 | | | | | |
| Funnel Viscosity (s) | | | | | | |
| Fluid Loss (cm3) | | | | | | |
| PH | | | | | | |
| Date/Time Circulation Stopped | NaN | | | | | |
| Date Logger on Bottom | 18-Sep-2015 | | | | | |
| Time Logger on Bottom | 00:32:00 | | | | | |
| Source RMF | | | | | | |
| RMC | Pressed | | | | | |
| RM @ Meas Temp (ohm.m@degF) | N/A | | | | | |
| RME @ Meas Temp | N/A | | | | | |

| | | | | | | |
|-----------------------------------|-----|--|--|--|--|--|
| RMC @ Meas Temp (ohm.m@degF) | N/A | | | | | |
| RMC @ Meas Temp (ohm.m@degF) | N/A | | | | | |
| RM @ BHT (ohm.m@degF) | N/A | | | | | |
| RMF @ BHT (ohm.m@degF) | N/A | | | | | |
| RMC @ BHT (ohm.m@degF) | N/A | | | | | |
| Electricity Stability (V) | | | | | | |
| Oil/Water | | | | | | |
| Total Solid (%) | | | | | | |
| High Gravity Solids (%) | | | | | | |

Remarks and Equipment Summary

| Run 1: Toolstring | | | | Run 1: Remarks | |
|-------------------|--------|-----------|--------|--|--|
| Equip name | Length | MP name | Offset | This is the first run in hole | |
| LEH-QT | 38.83 | | | All Schlumberger depth control procedures followed | |
| LEH-QT | | | | IDW used as primary depth reference | |
| AH-63 | 35.91 | | | Z Chart used as secondary depth reference | |
| AH-79 | 35.6 | | | Tool string run as per tool sketch | |
| HBMS-B:2 | 34.76 | | | | |
| 949 | | | | | |
| HUDH-A | | | | | |
| PSC-A | | | | | |
| HSTC-A | | | | | |
| HBMC-A:37 | | | | | |
| 116 | | | | | |
| HTPS-A:29 | | | | | |
| 49 | | | | | |
| | | GR | 29.77 | | |
| | | CCL | 27.37 | | |
| | | PSTC | 25.98 | | |
| | | HSTC To | 0.00 | | |
| | | ol String | | | |
| | | Bottom | | | |
| | | CQG Pre | 24.56 | | |
| | | ssure | | | |
| | | Tempera | 24.56 | | |
| | | ture | | | |
| SCMT-CB: | 23.64 | | | | |
| 8212 | | | | | |
| SECH-CA:8 | | | | | |
| 291 | | | | | |
| SCMC-CA: | | | | | |
| 8293 | | | | | |
| CMIR-AG | | | | | |
| SCMS-CB:8 | | | | | |
| 212 | | | | | |
| SCMX-CA:8 | | | | | |
| 175 | | | | | |
| AH-278 | | | | | |
| TTG-C | | | | | |
| | | DT | 14.55 | | |
| | | CBL5 | 13.05 | | |
| | | DTSC | 13.05 | | |
| | | CBL3 | 12.05 | | |
| | | MAP | 11.55 | | |
| | | AUX | 10.55 | | |
| | | SCMT | 6.23 | | |



| | | | | | | | | | |
|---------------|--|--|--|--|--|--|--|--|--|
| Depth Summary | | | | | | | | | |
|---------------|--|--|--|--|--|--|--|--|--|

| | | | | | | | | | |
|-------|--|--|--|--|--|--|--|--|--|
| Run 1 | | | | | | | | | |
|-------|--|--|--|--|--|--|--|--|--|

| | | | | | | | | | |
|------------------------|--|--|--|--|--|--|--|--|--|
| Depth Measuring Device | | | | | | | | | |
|------------------------|--|--|--|--|--|--|--|--|--|

| | | | | | | | | | |
|--------------------------|-------|--|--|--|--|--|--|--|--|
| Type | IDW-B | | | | | | | | |
| Serial Number | | | | | | | | | |
| Calibration Date | | | | | | | | | |
| Calibrator Serial Number | | | | | | | | | |
| Calibration Cable Type | | | | | | | | | |
| Wheel Correction 1 | 0 | | | | | | | | |
| Wheel Correction 2 | 0 | | | | | | | | |

| | | | | | | | | | |
|----------------|--|--|--|--|--|--|--|--|--|
| Tension Device | | | | | | | | | |
|----------------|--|--|--|--|--|--|--|--|--|

| | | | | | | | | | |
|------------------------------|----------|--|--|--|--|--|--|--|--|
| Type | CMTD-B/A | | | | | | | | |
| Serial Number | | | | | | | | | |
| Calibration Date | | | | | | | | | |
| Calibrator Serial Number | | | | | | | | | |
| Number of Calibration Points | 0 | | | | | | | | |

| | | | | | | | | | |
|---------------|--|--|--|--|--|--|--|--|--|
| Logging Cable | | | | | | | | | |
|---------------|--|--|--|--|--|--|--|--|--|

| | | | | | | | | | |
|-----------------|-------------|--|--|--|--|--|--|--|--|
| Type | 7-46A-XS | | | | | | | | |
| Serial Number | | | | | | | | | |
| Length | 16500.00 ft | | | | | | | | |
| Conveyance Type | Wireline | | | | | | | | |
| Rig Type | | | | | | | | | |

| | | | | | | | | | |
|--------------------------------|--|--|--|--|-----------------------|--|--|--|--|
| Run 1:Depth Control Parameters | | | | | Depth Control Remarks | | | | |
|--------------------------------|--|--|--|--|-----------------------|--|--|--|--|

| | | | | | | | | | |
|----------------------------|-----------------------|--|--|--|--|--|--|--|--|
| Log Sequence | First Log In the Well | | | | | | | | |
| Rig Up Length At Surface | | | | | | | | | |
| Rig Up Length At Bottom | | | | | | | | | |
| Rig Up Length Correction | | | | | | | | | |
| Stretch Correction | | | | | | | | | |
| Tool Zero Check At Surface | | | | | | | | | |

| | | | | | | | | | |
|-------|--|--|--|--|--|--|--|--|--|
| Run 1 | | | | | | | | | |
|-------|--|--|--|--|--|--|--|--|--|

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|--|--|--|--|--|--|--|--|--|--|

| | | | | | | | | | |
|------------------|--|--|--|--|--|--|--|--|--|
| Software Version | | | | | | | | | |
|------------------|--|--|--|--|--|--|--|--|--|

| | | | | | | | | | |
|--------------------|--|--|--|--|--|----------------|--|--|--|
| Acquisition System | | | | | | Version | | | |
| Maxwell 2014 SP3 | | | | | | 5.3.45427.3100 | | | |

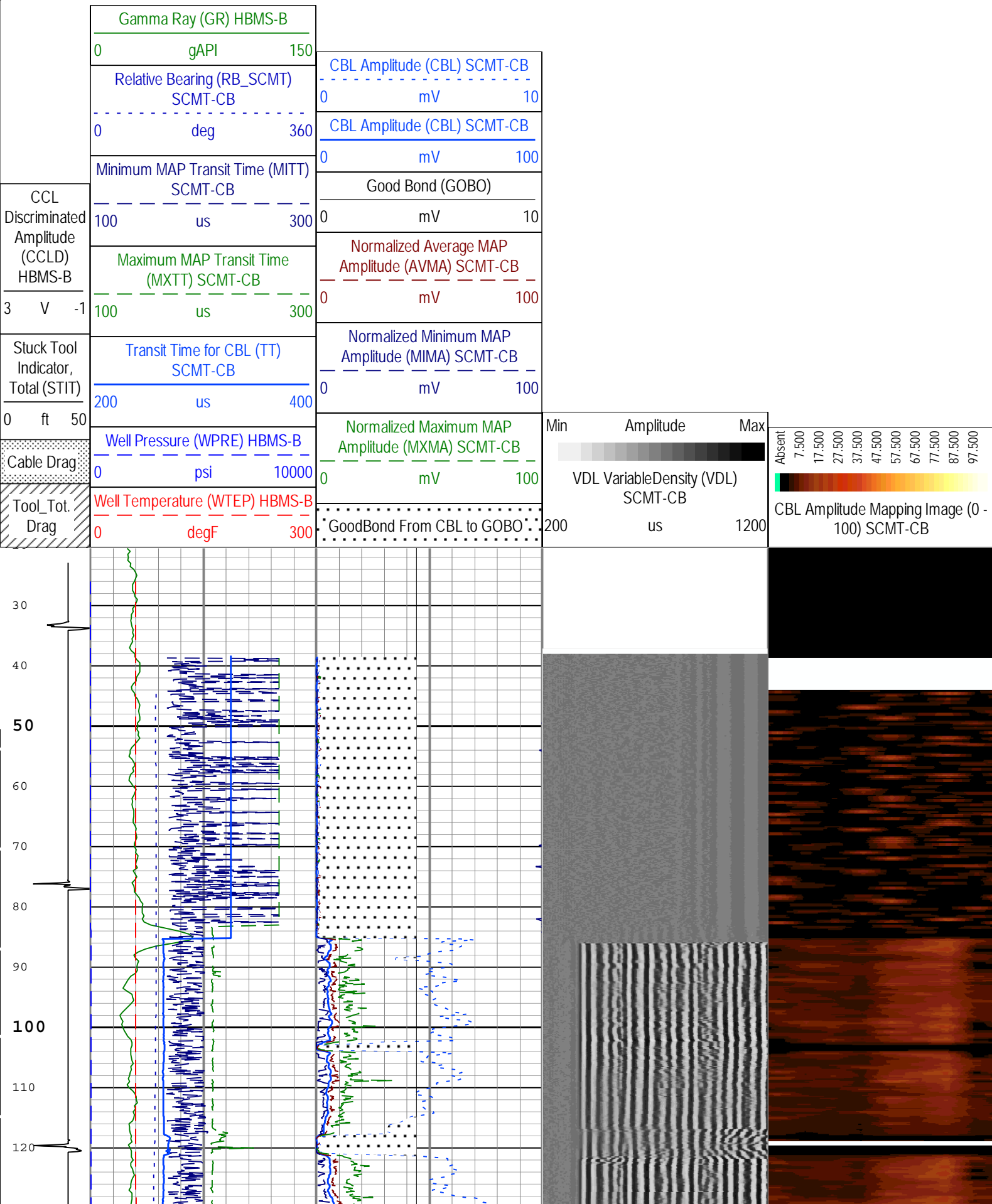
| | | | | | | | | | |
|--------------|--|--|--|--|--|--|--|--|--|
| Pass Summary | | | | | | | | | |
|--------------|--|--|--|--|--|--|--|--|--|

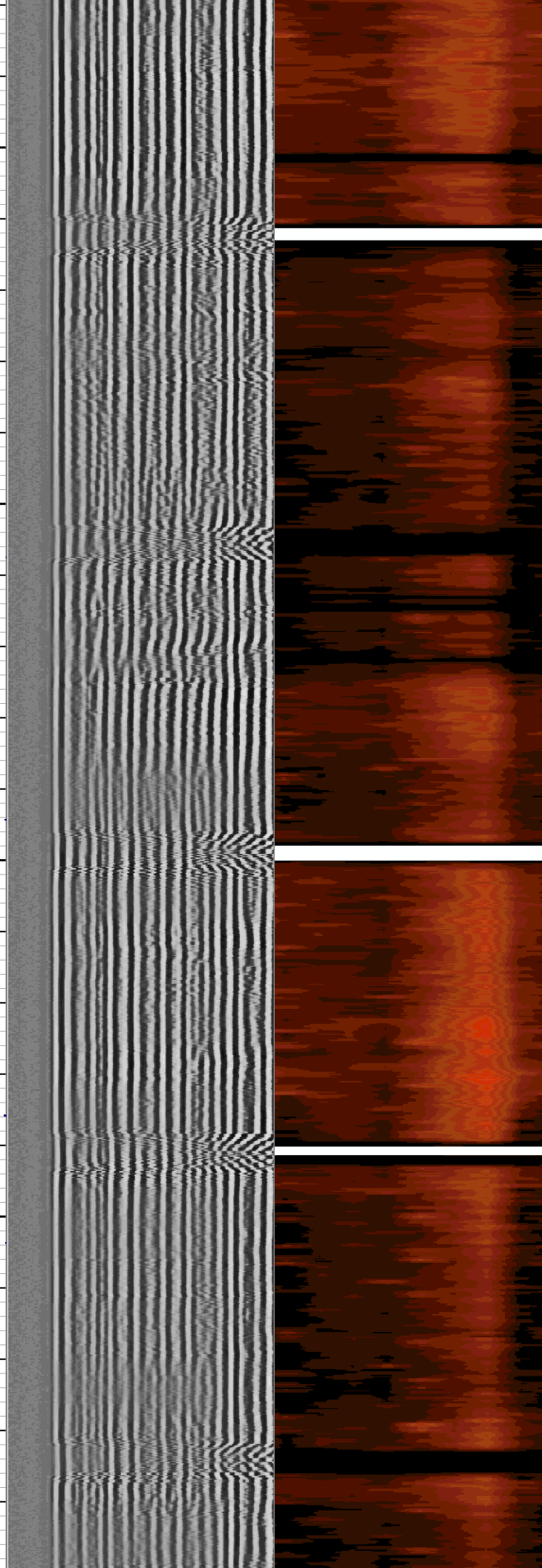
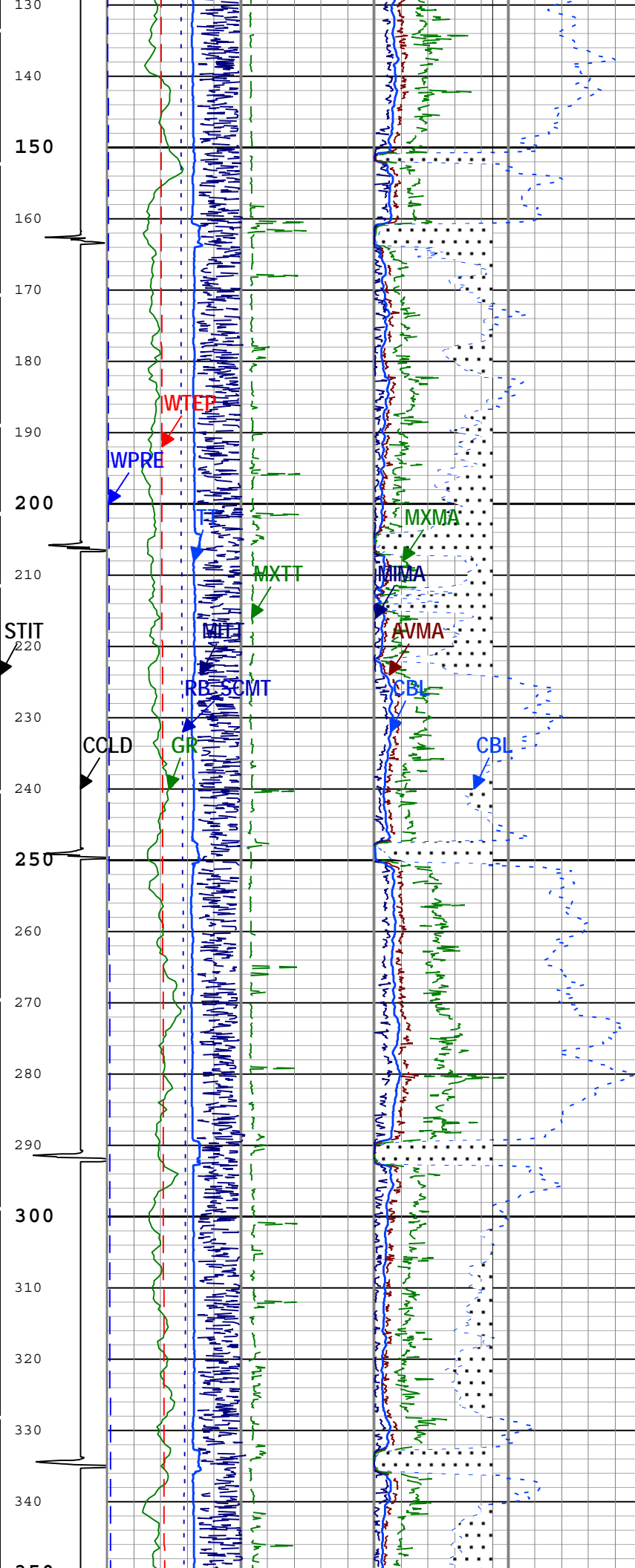
| Run Name | Pass Objective | Direction | Top | Bottom | Start | Stop | DSC Mode | Depth Shift | Include Parallel Data |
|----------|----------------|-----------|----------|------------|-------------------------|------------------------|----------|-------------|-----------------------|
| Run 1 | Main[3]:Up | Up | 50.19 ft | 7502.91 ft | 18-Sep-2015 12:52:37 AM | 18-Sep-2015 5:20:54 AM | ON | 1.58 ft | Yes |

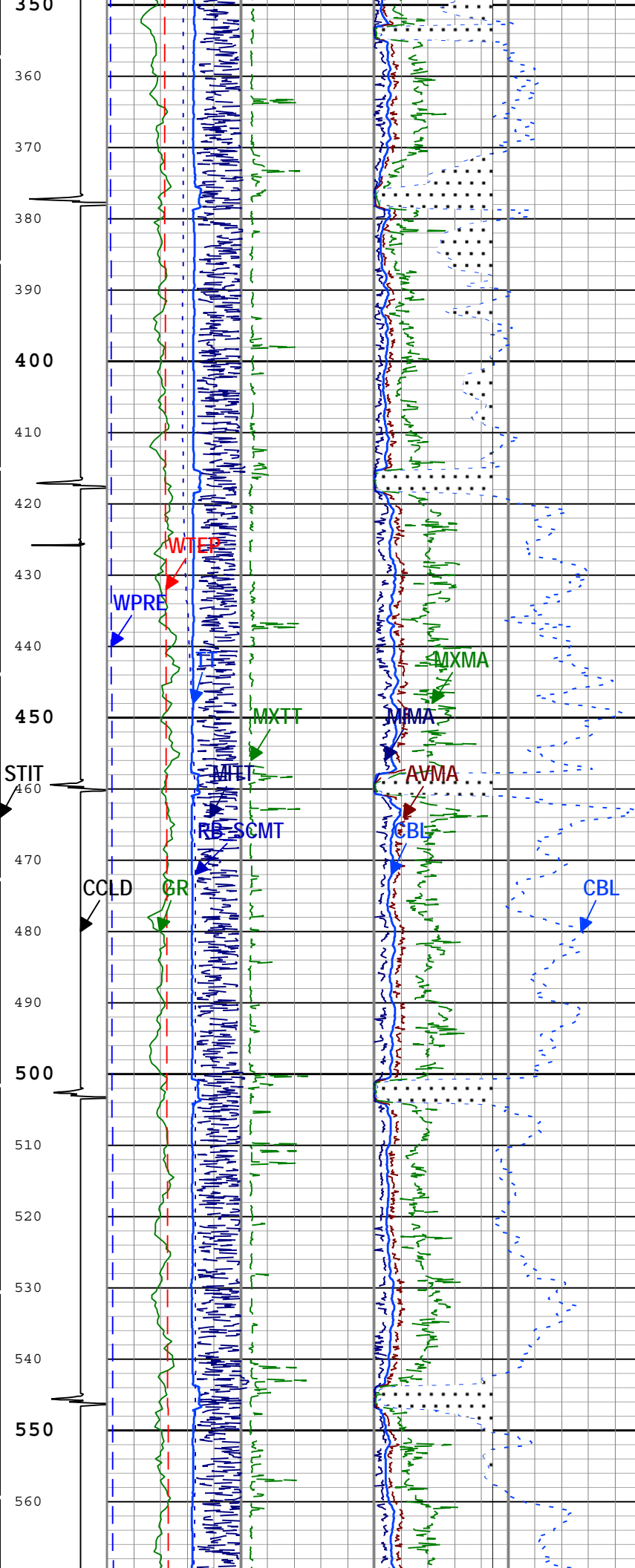
All depths are referenced to toolstring zero

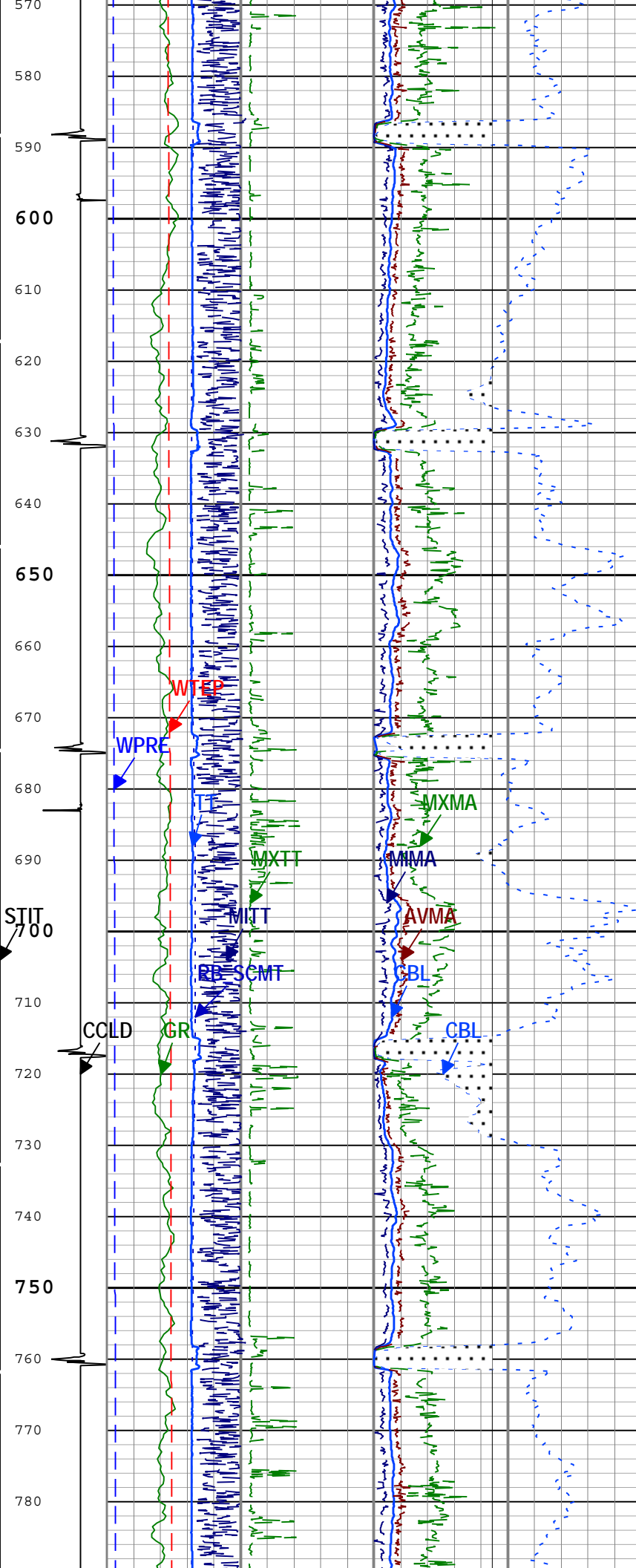
Description: SCMT VDL Image Format: Log (SCMT_VDL_Image) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 18-Sep-2015 14:03:49

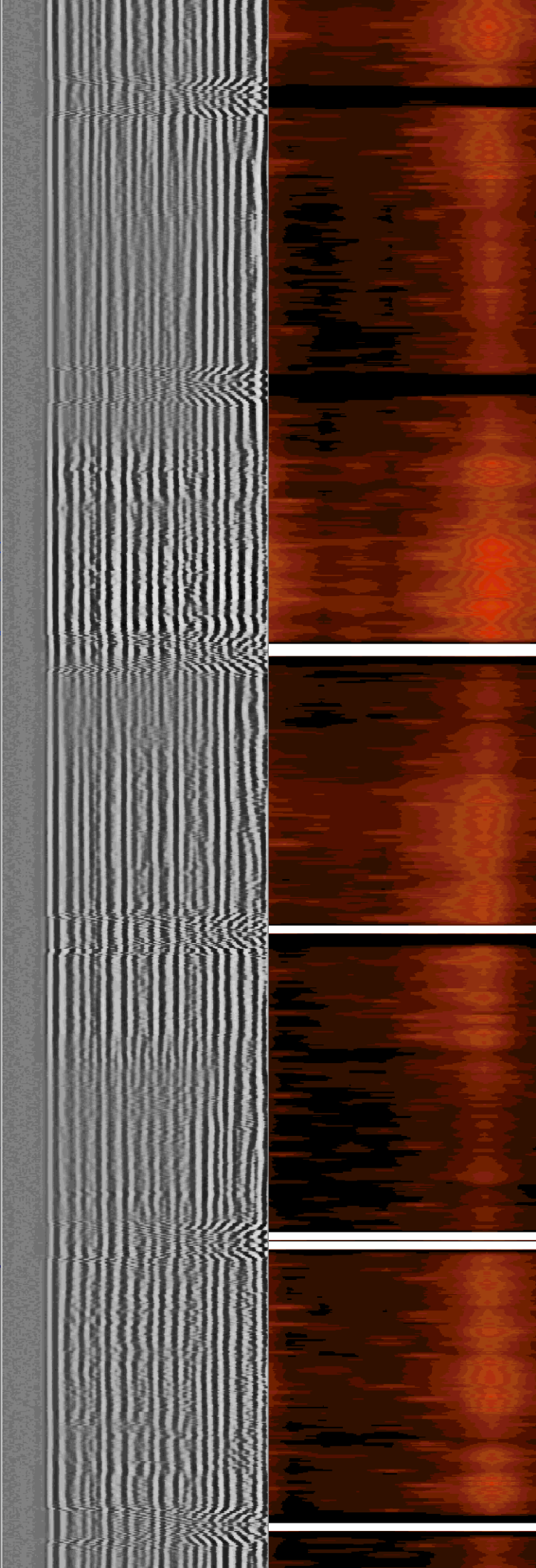
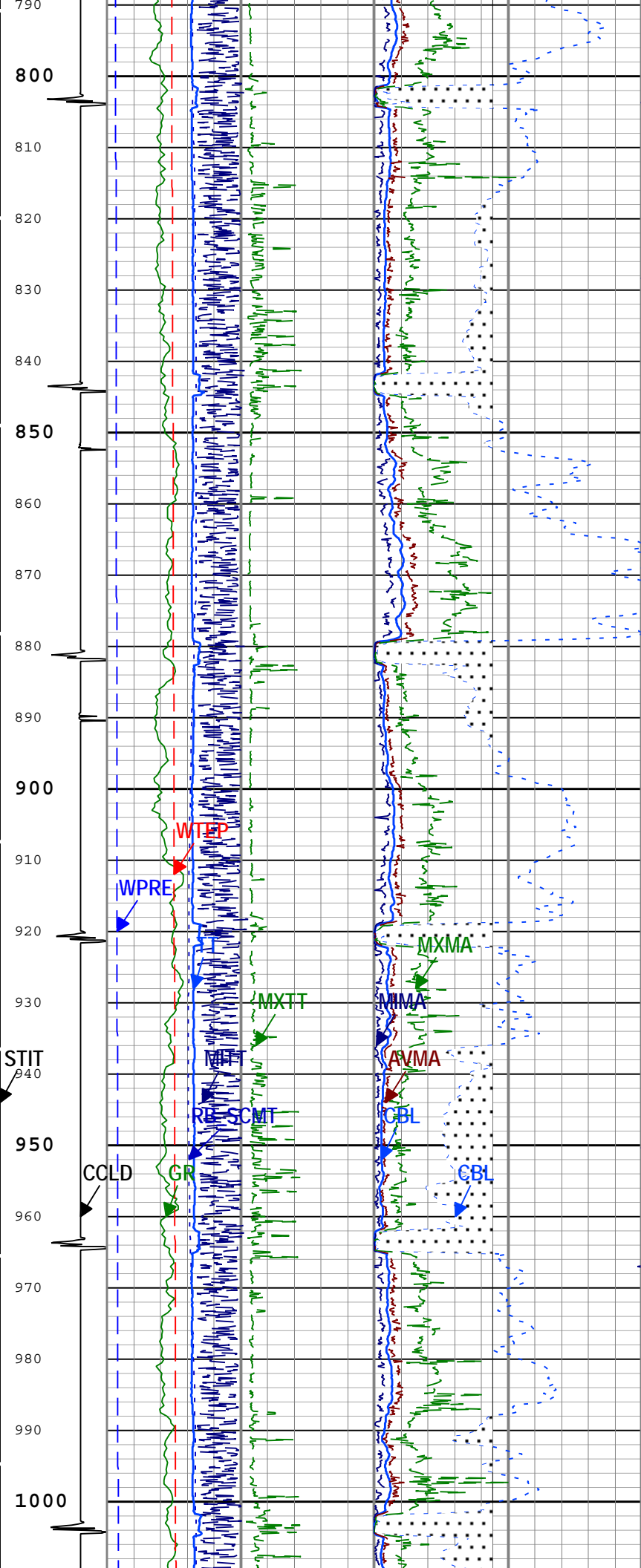
TIME_1900 - Time Marked every 60.00 (s)

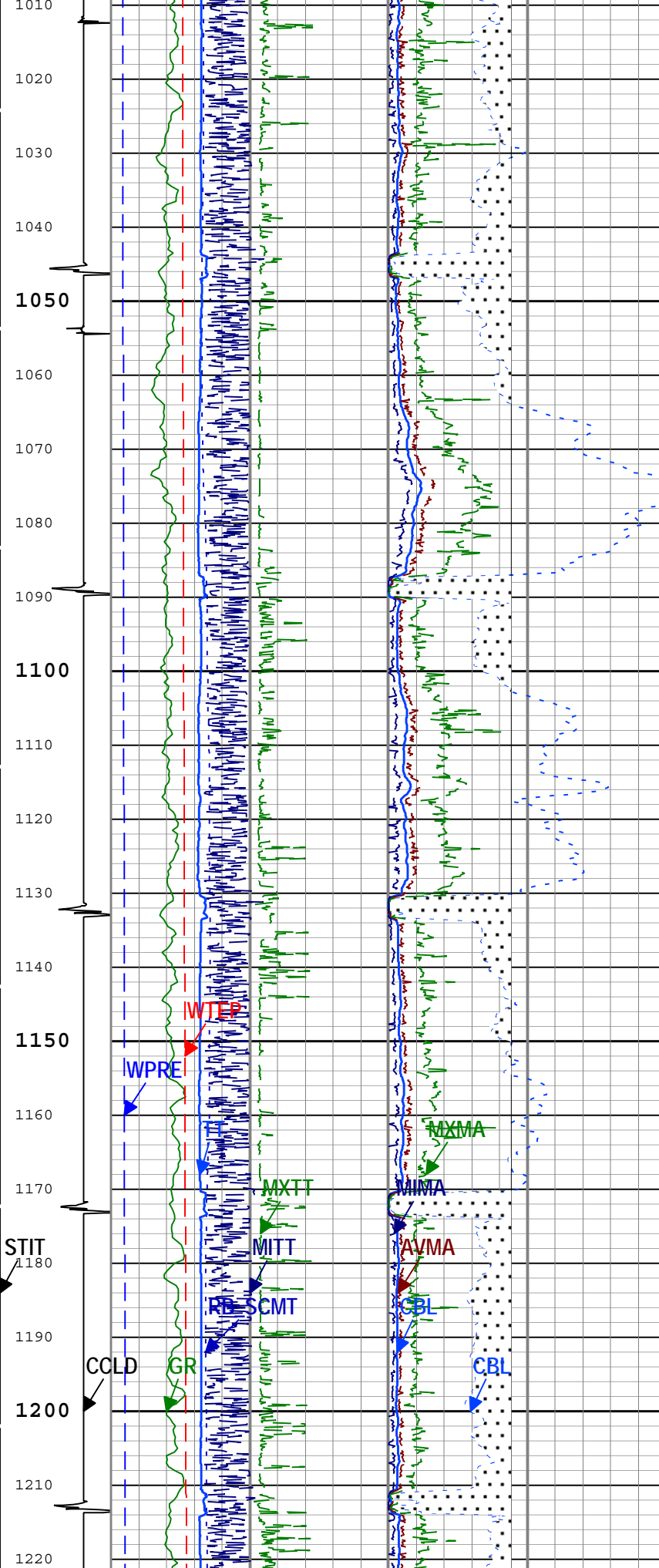


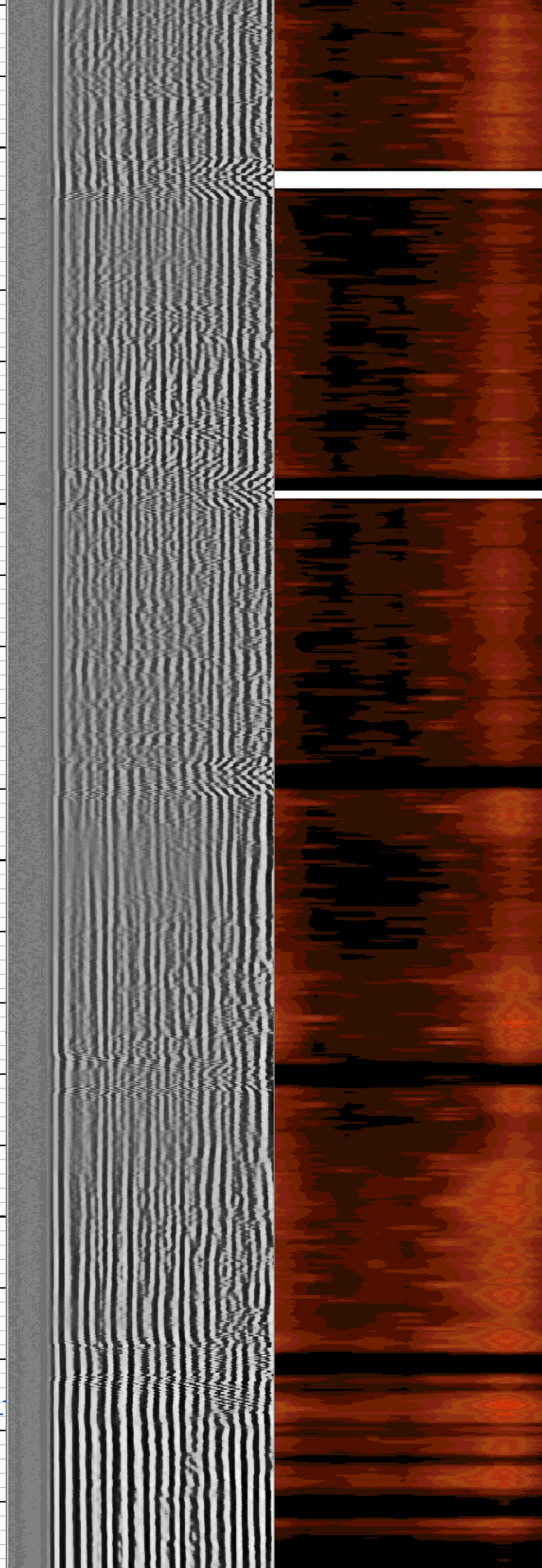
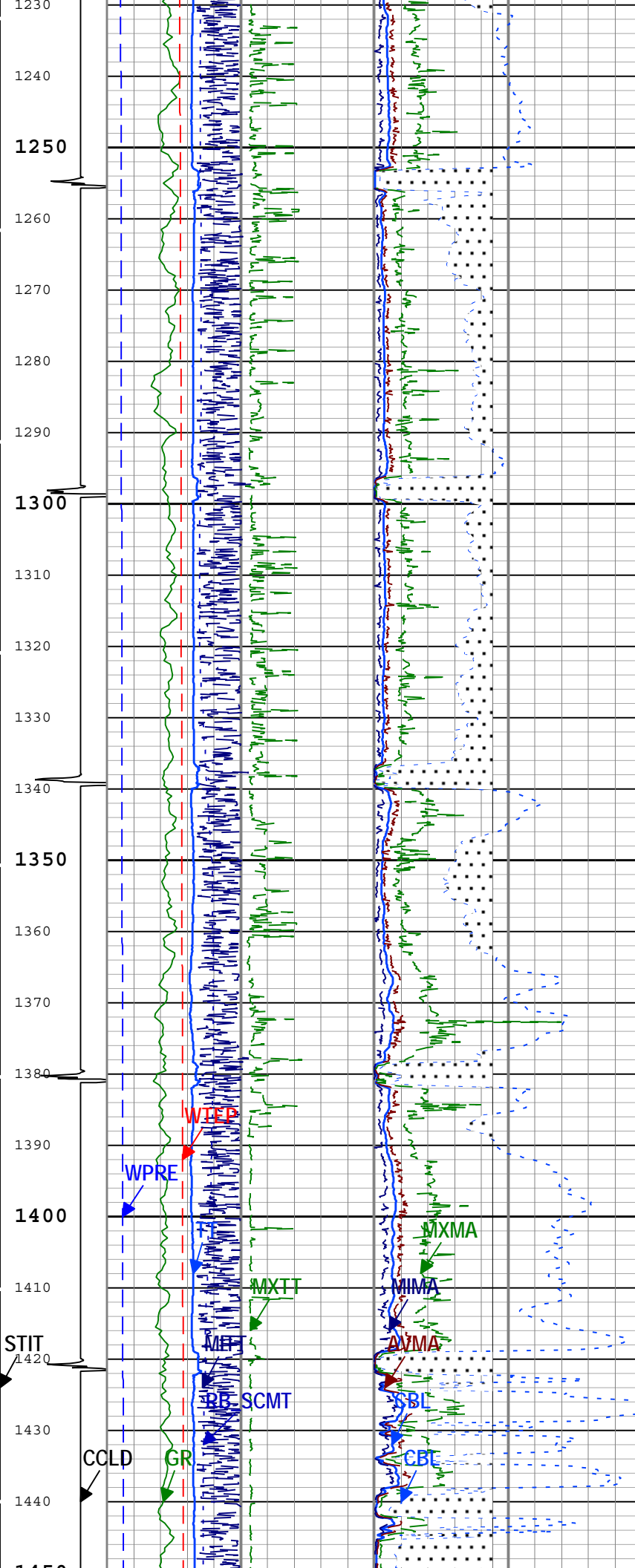


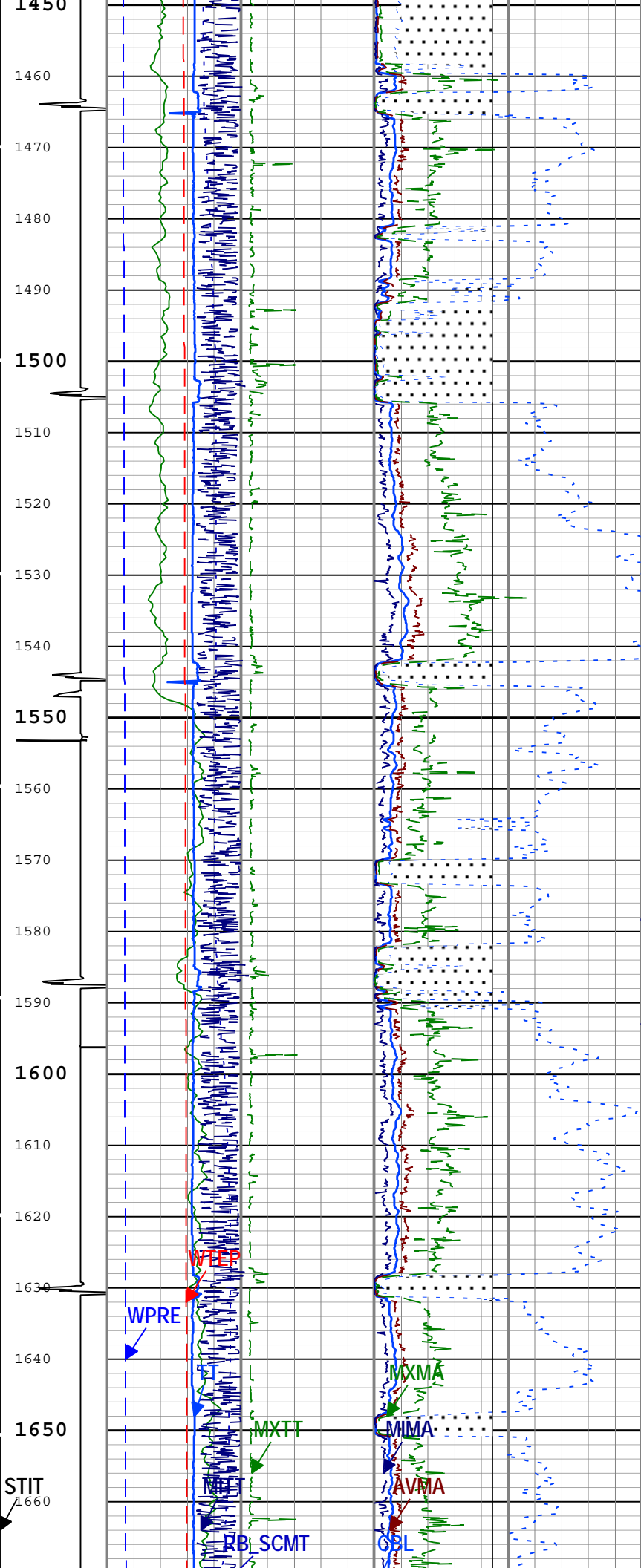


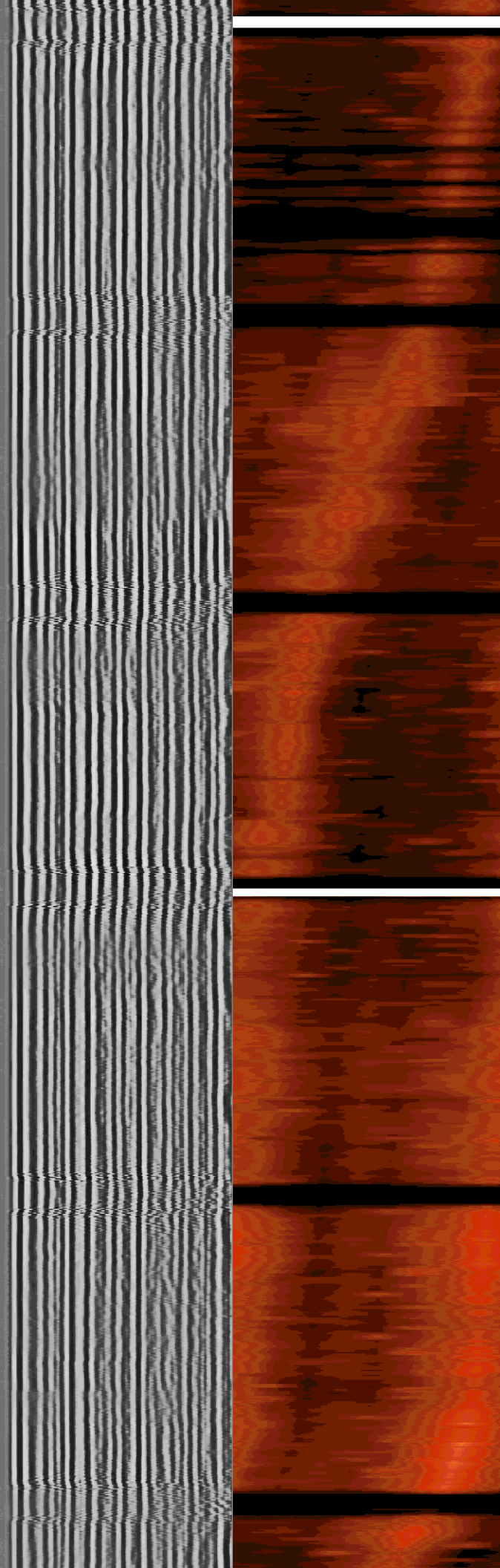
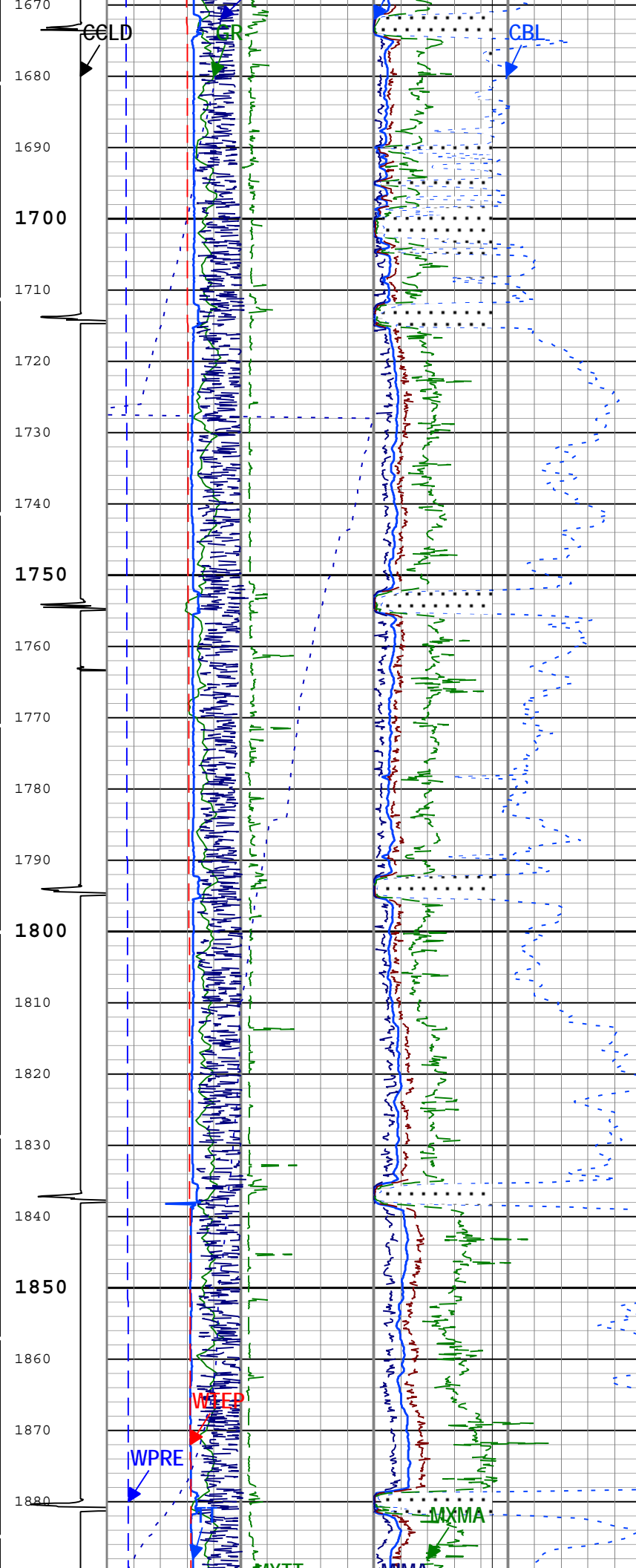


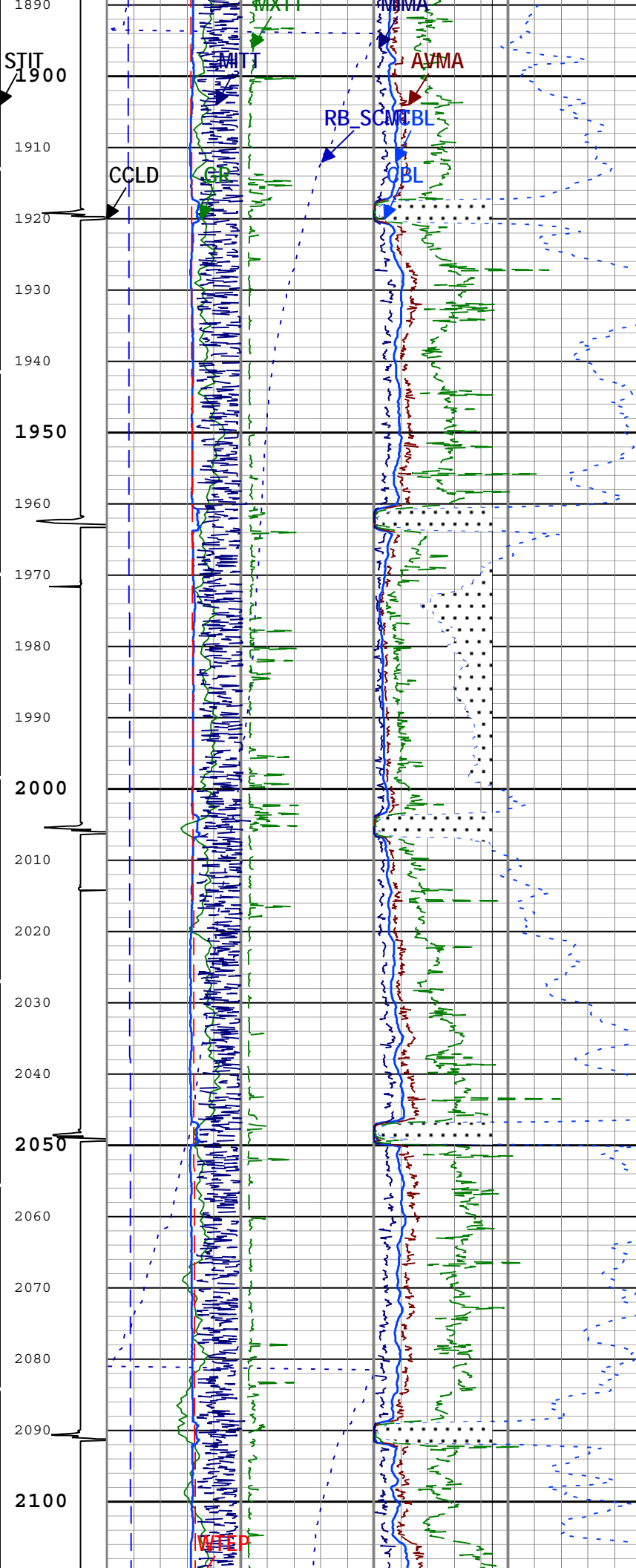


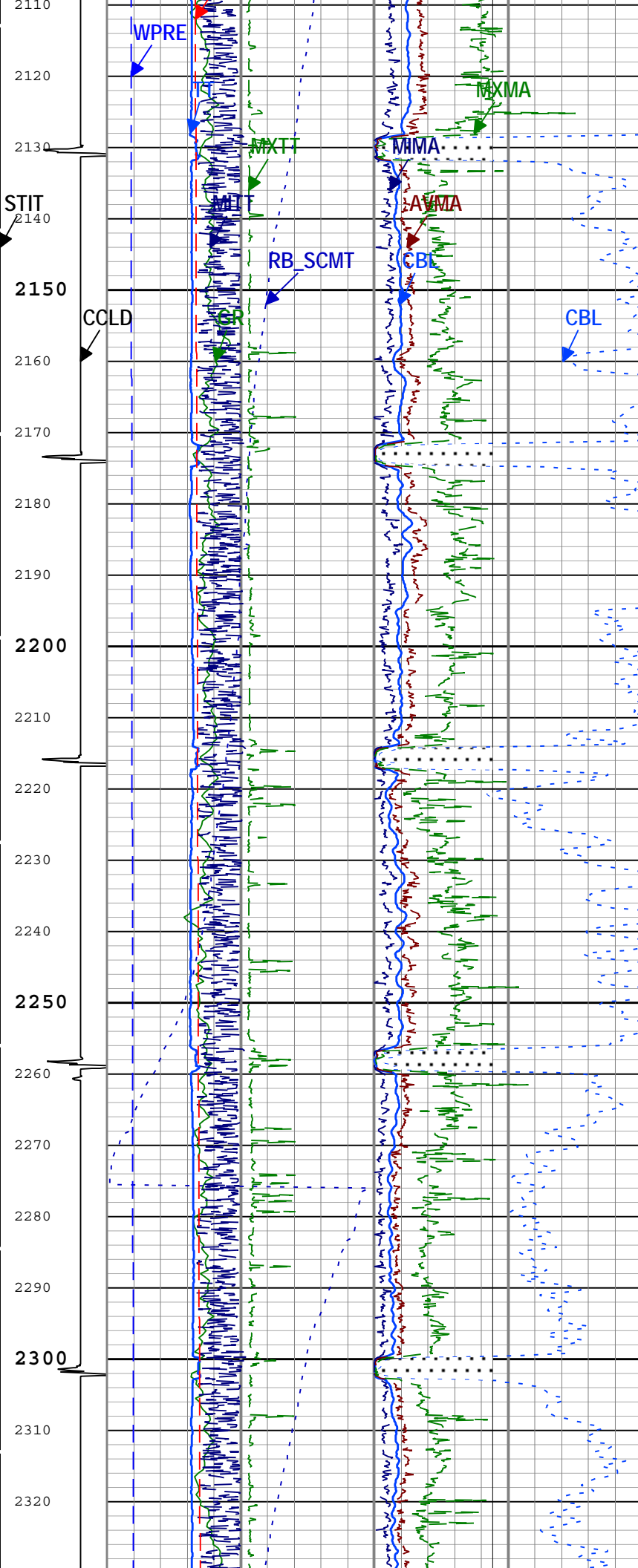


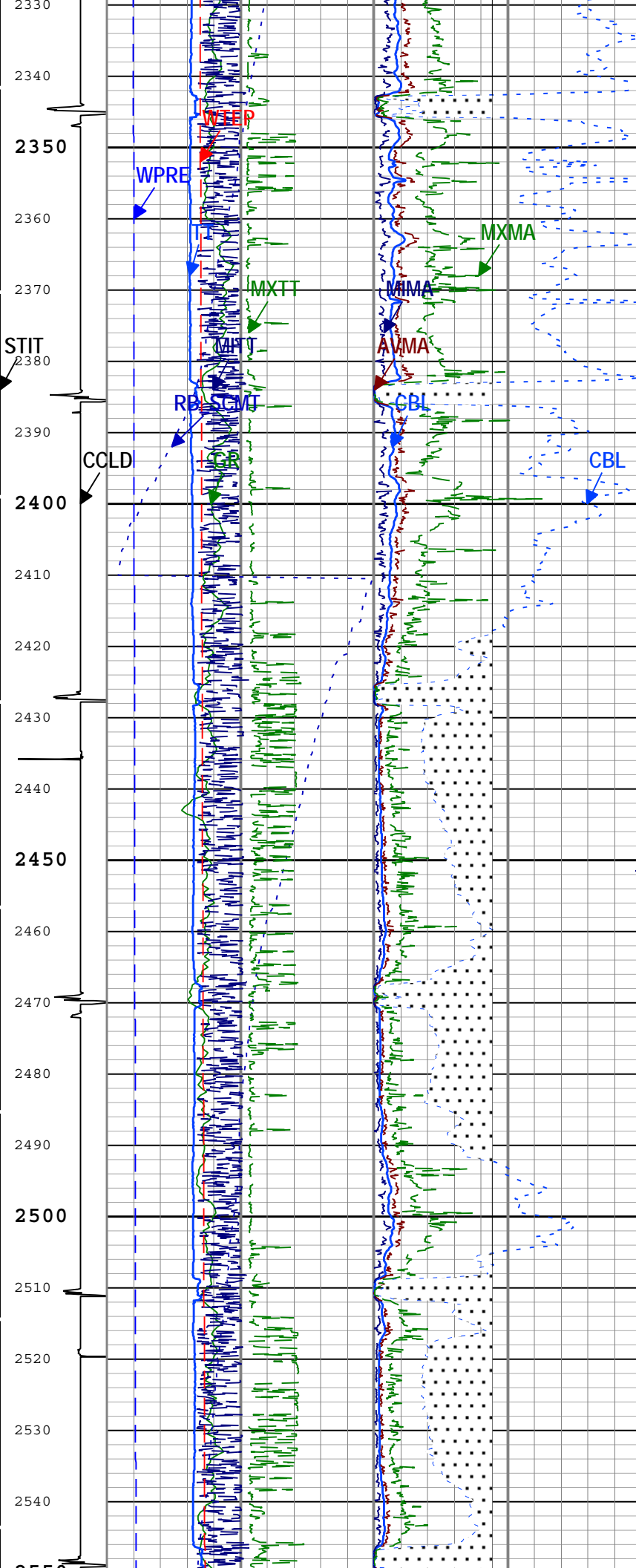


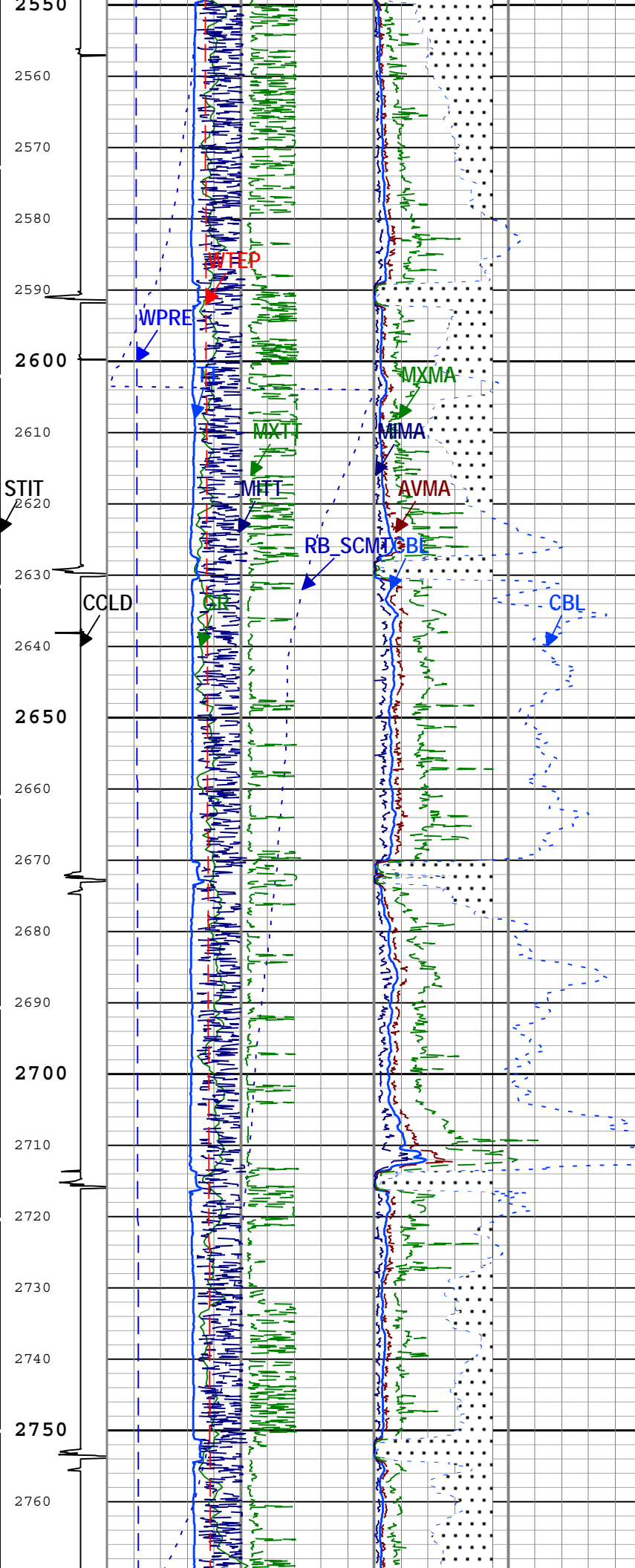


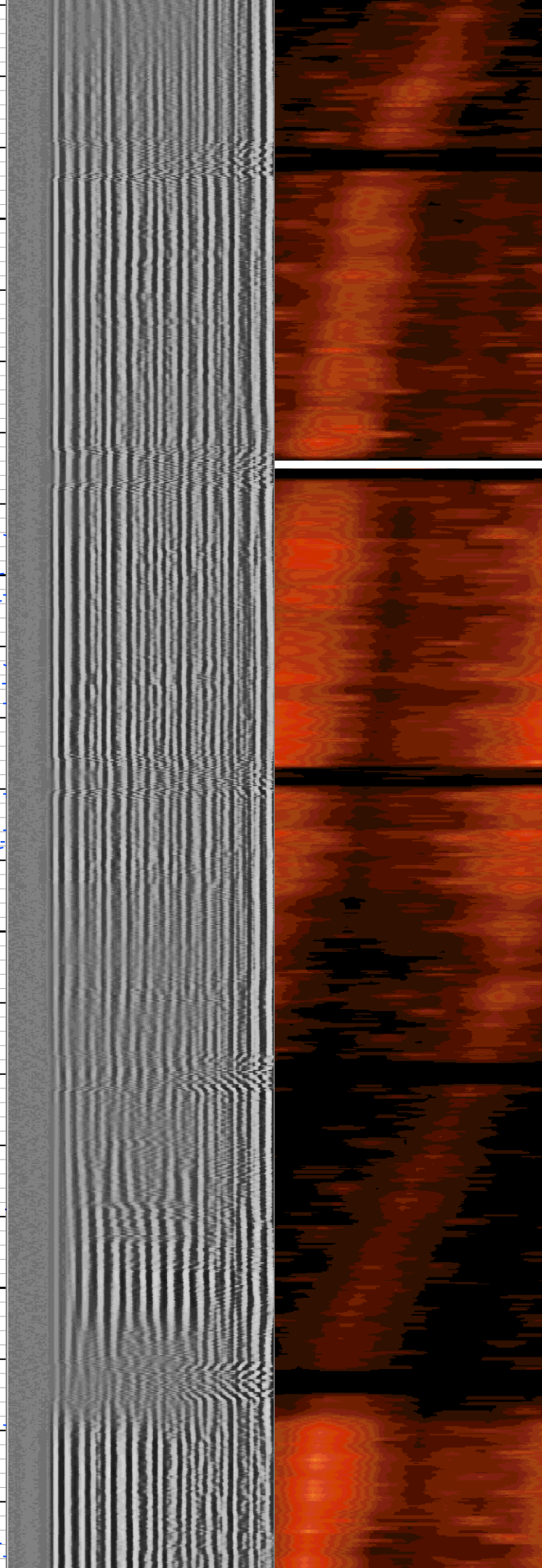
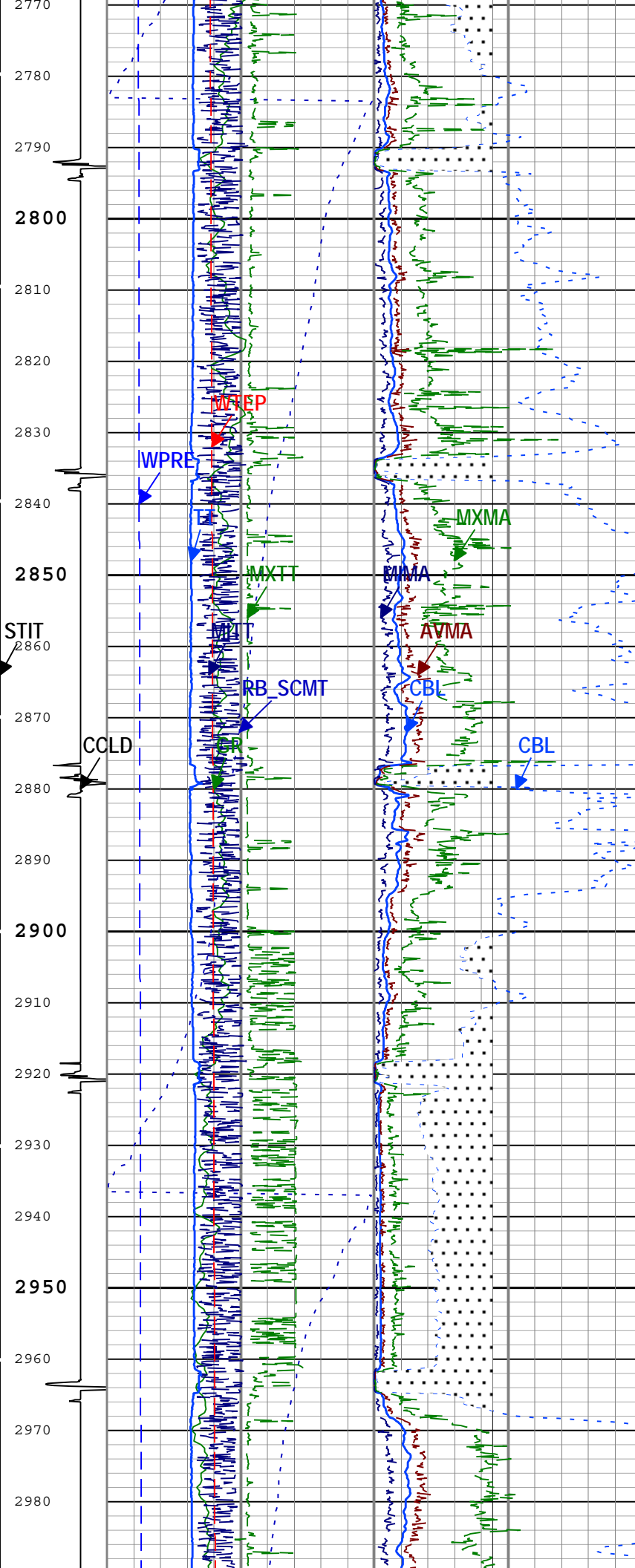


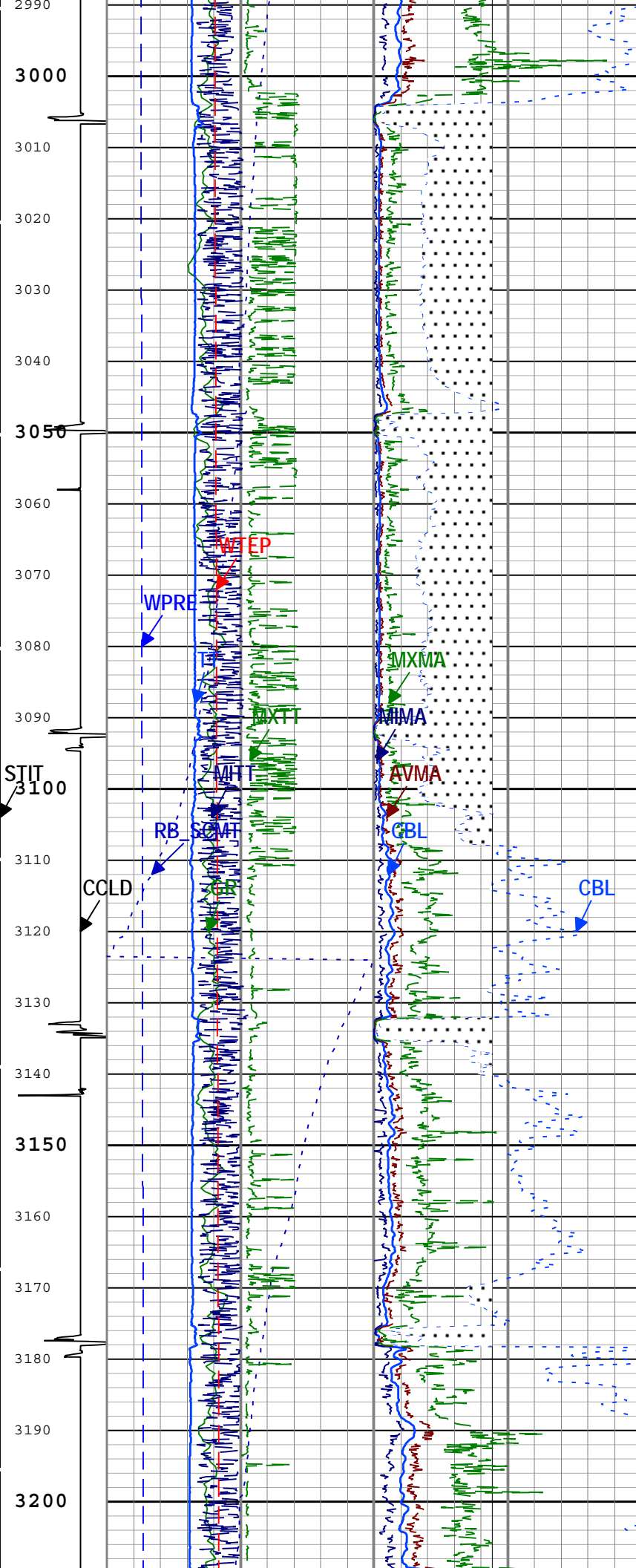


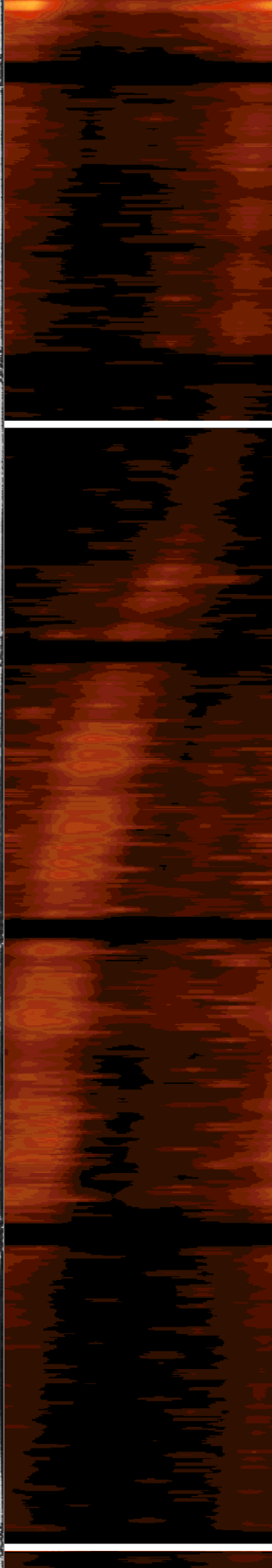
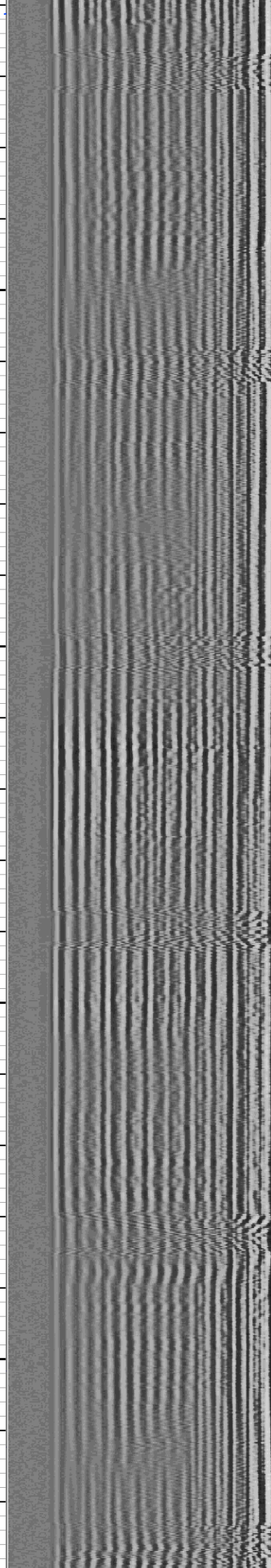
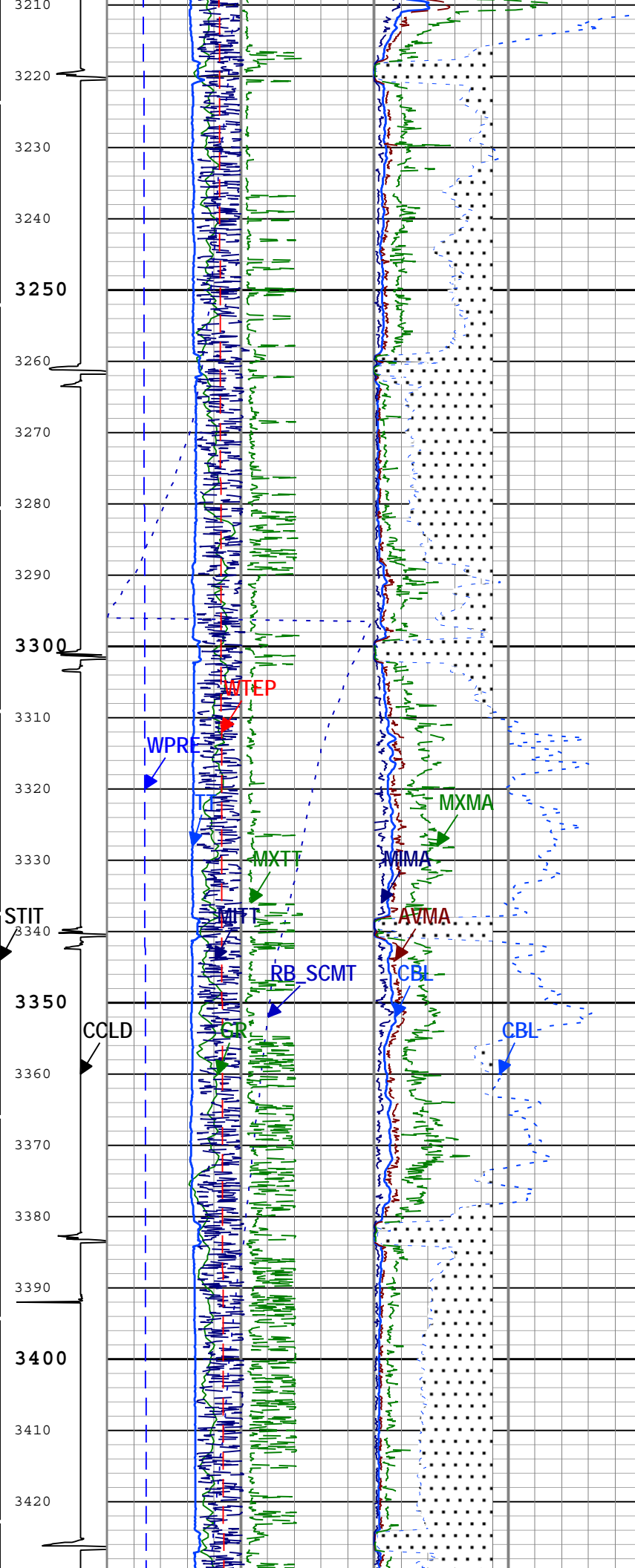


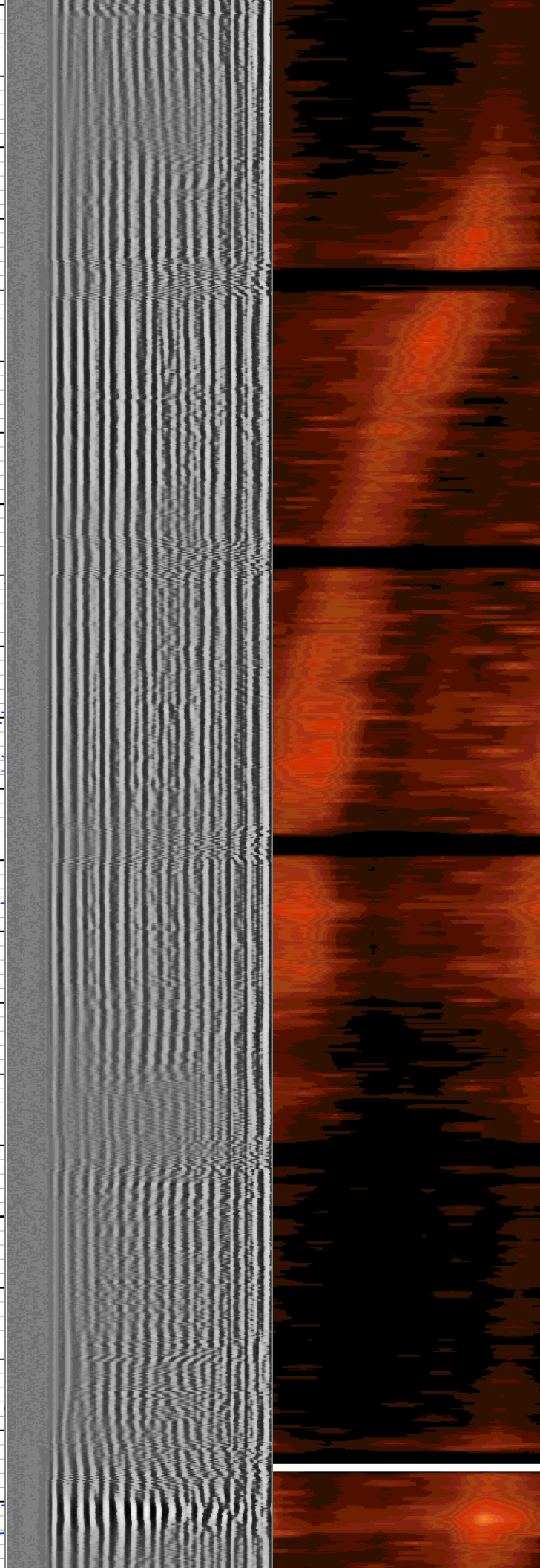
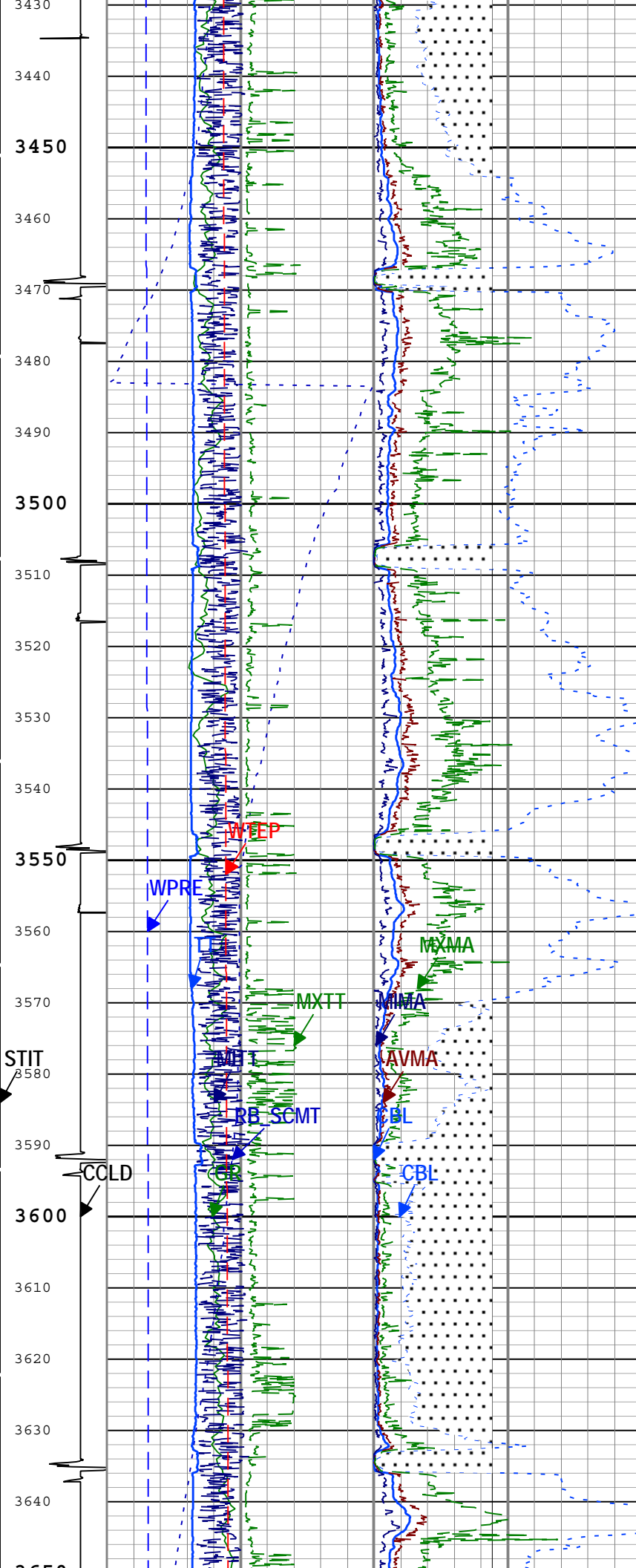


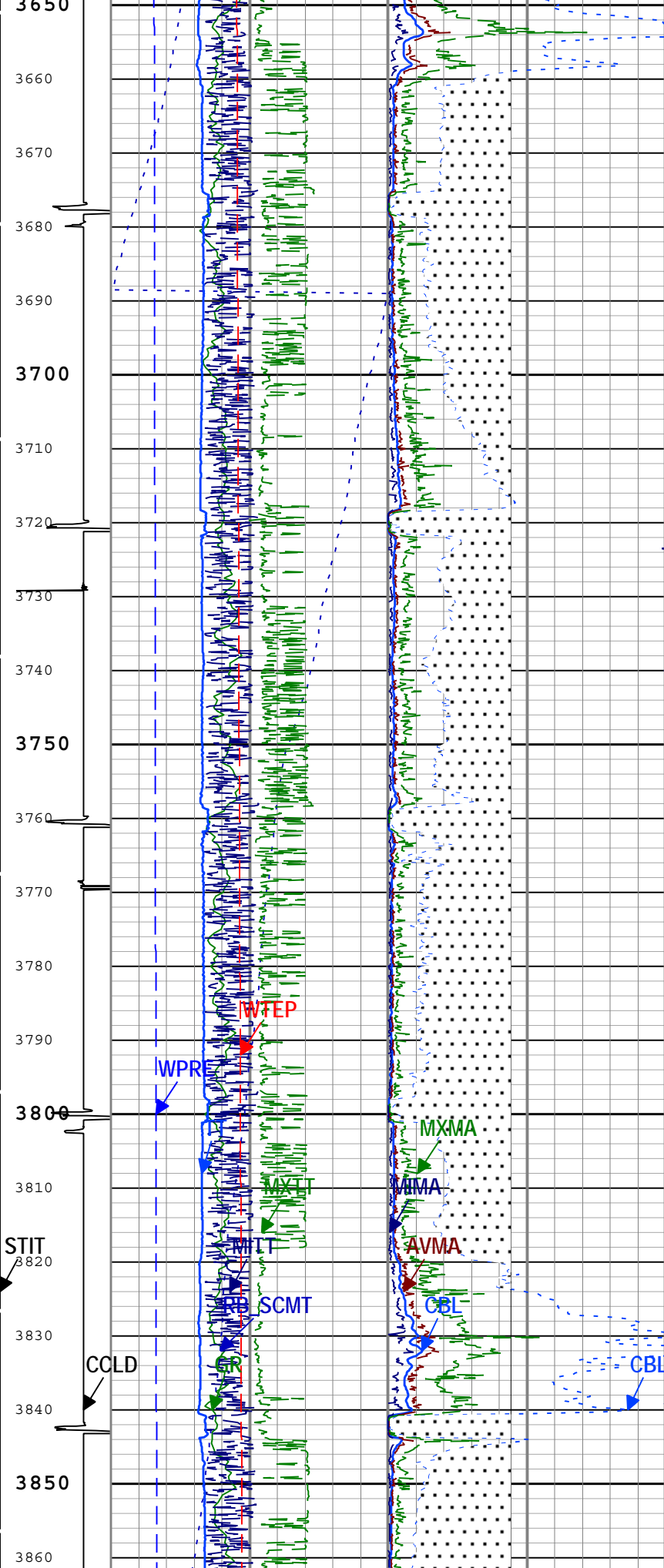


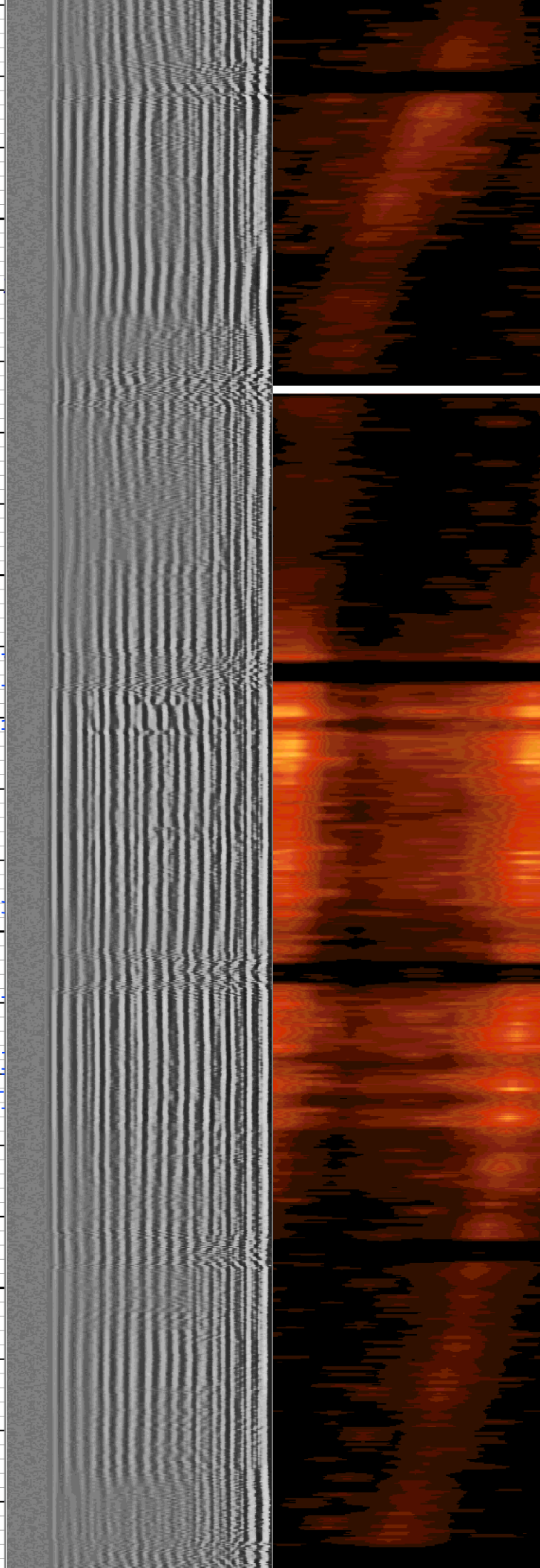
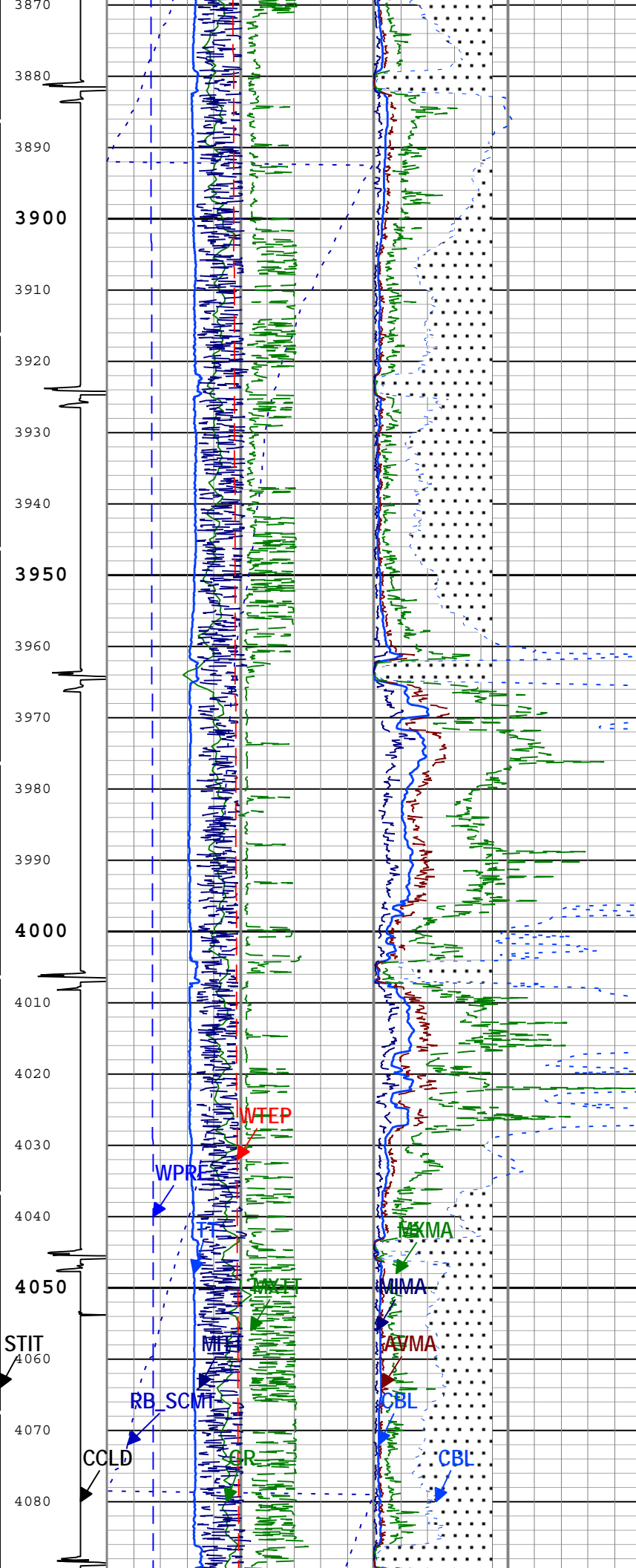


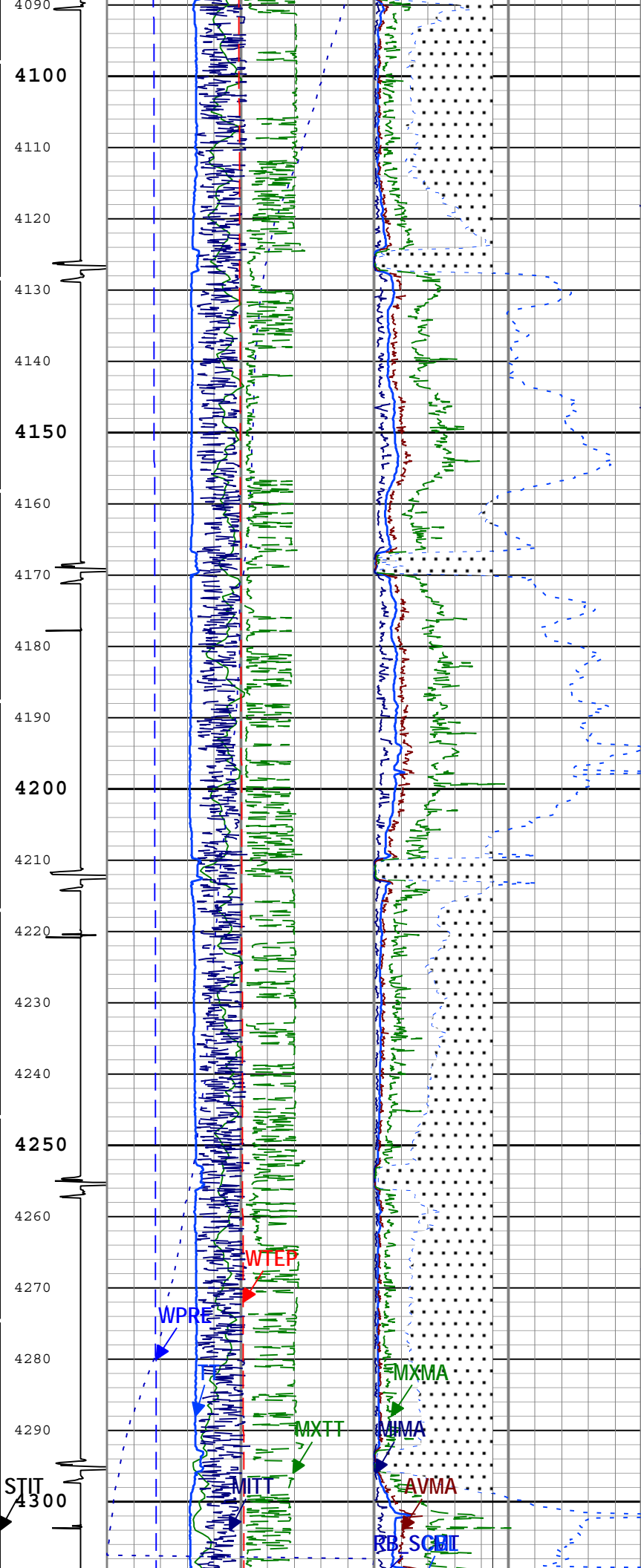


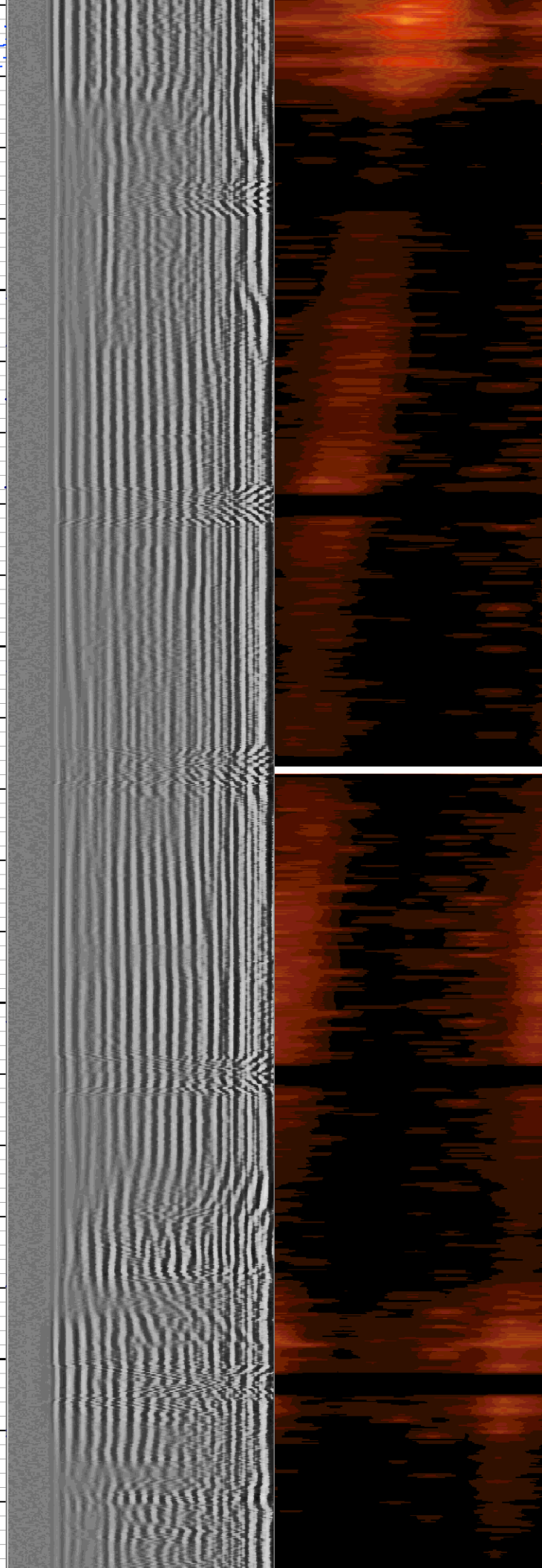
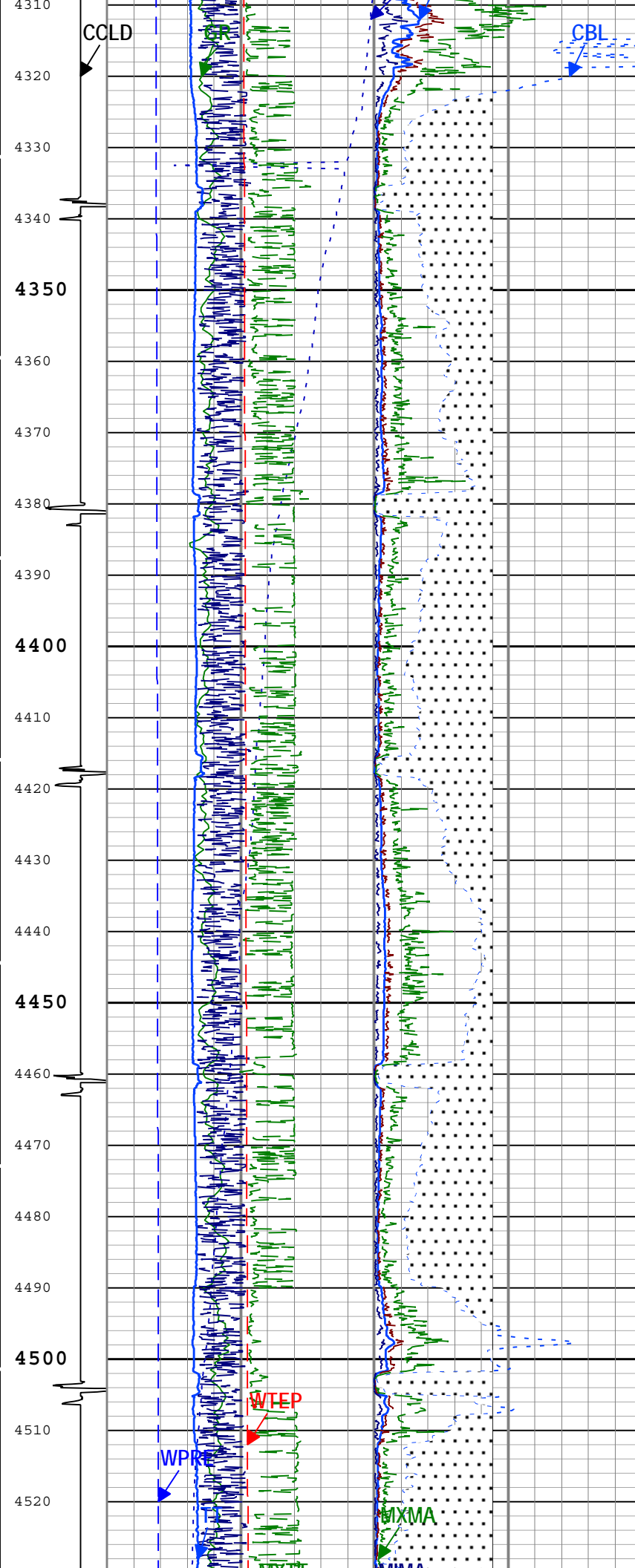


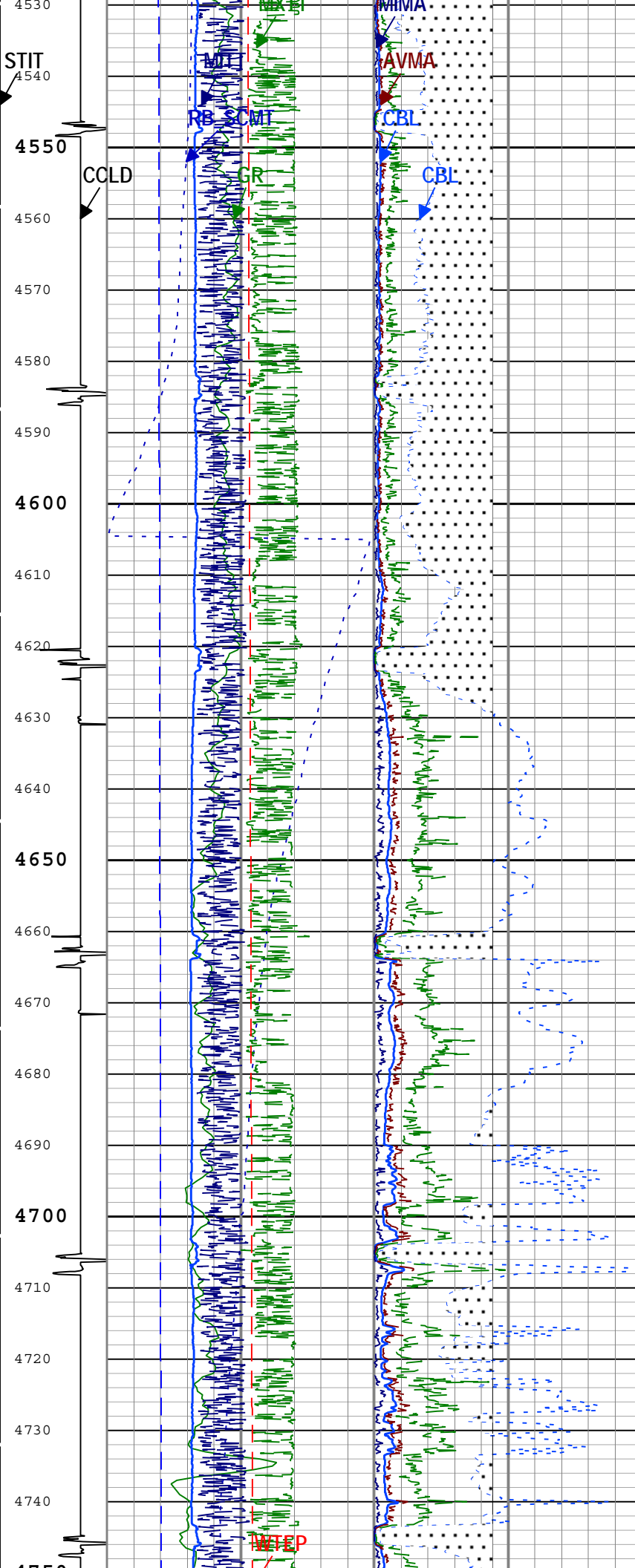


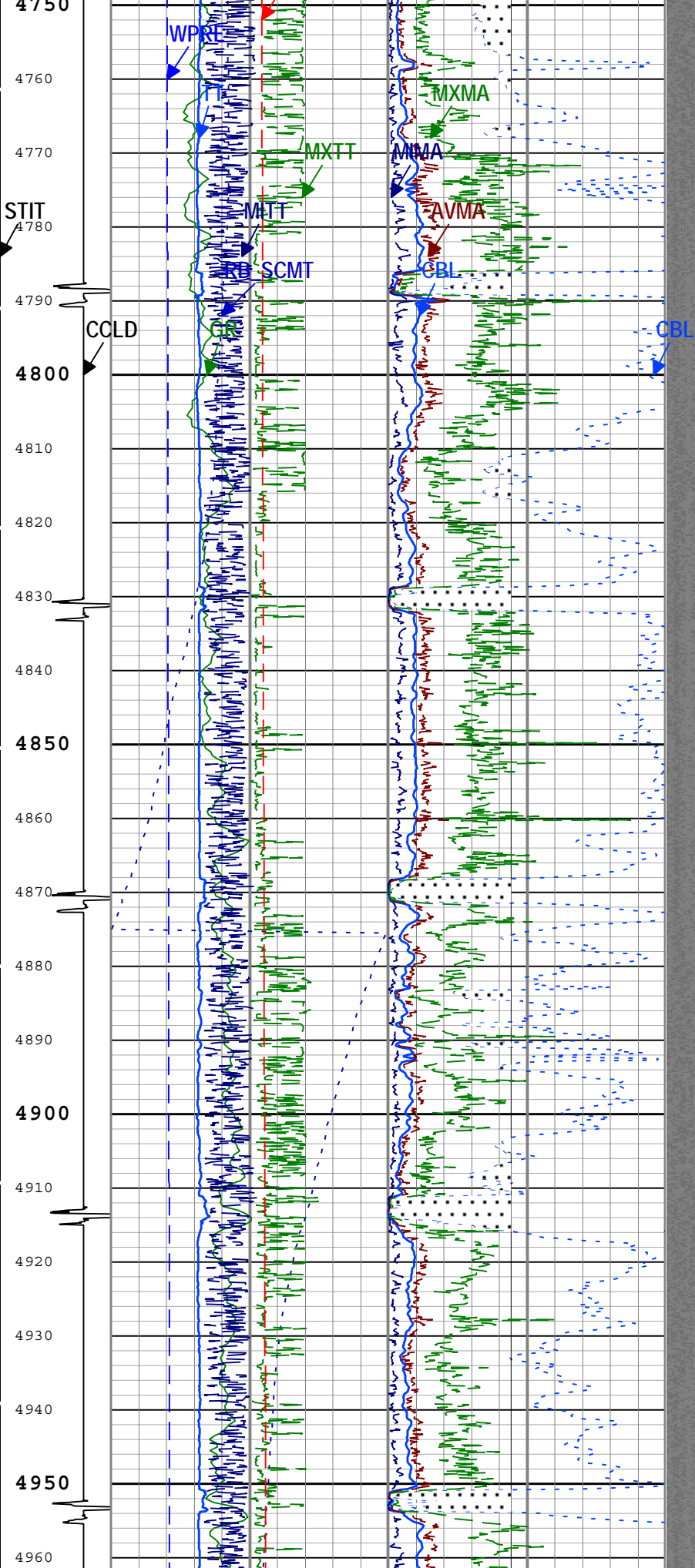


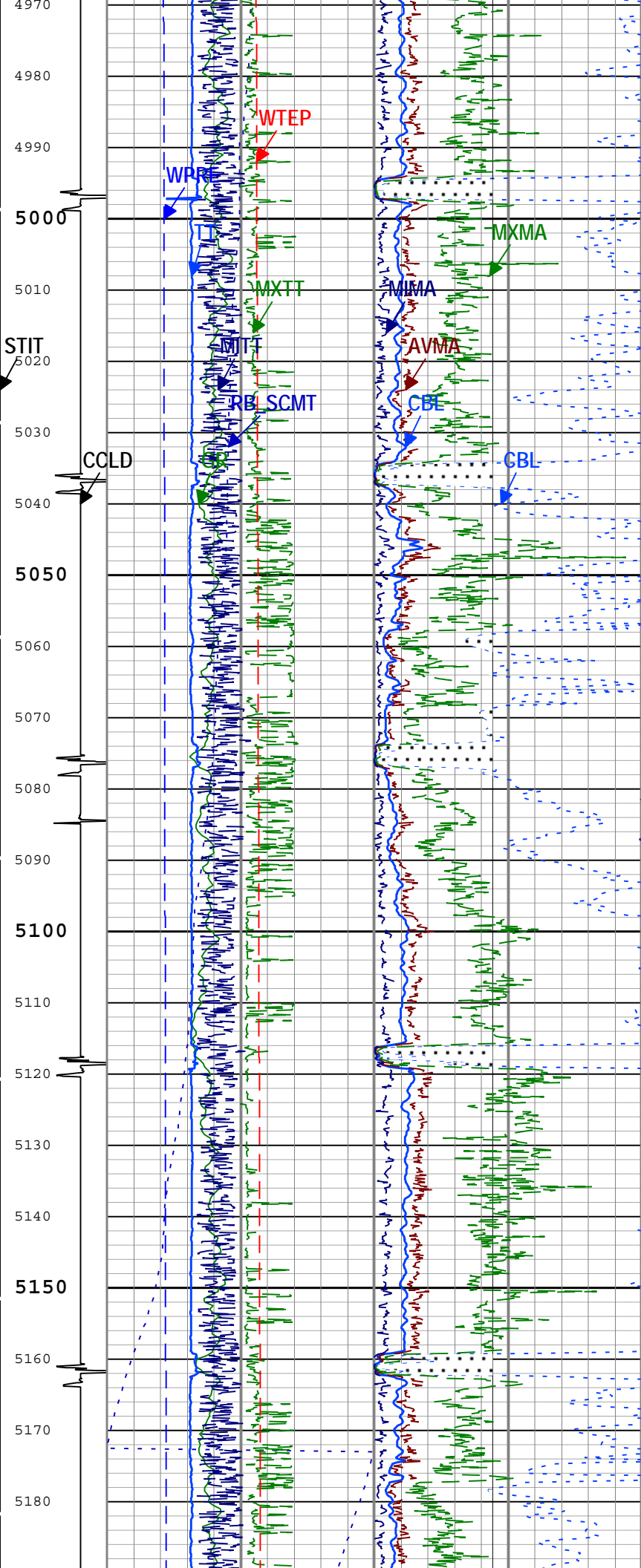


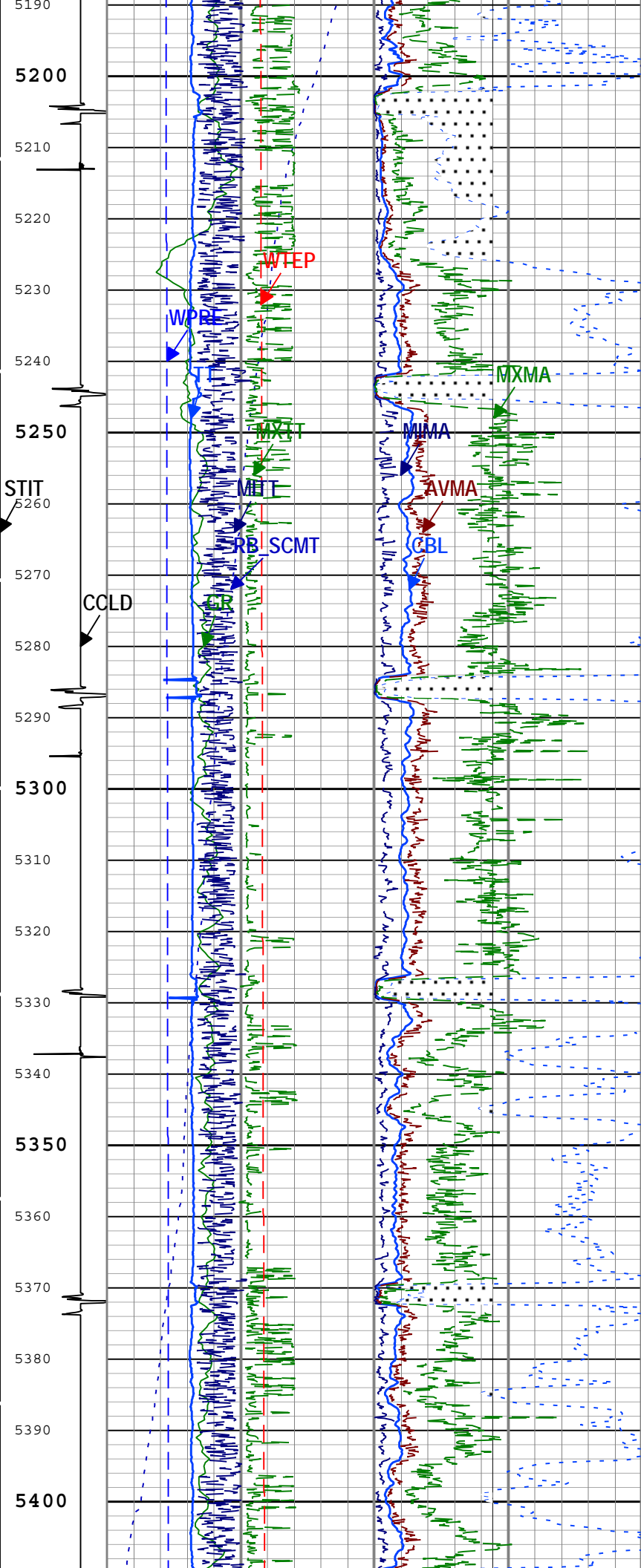


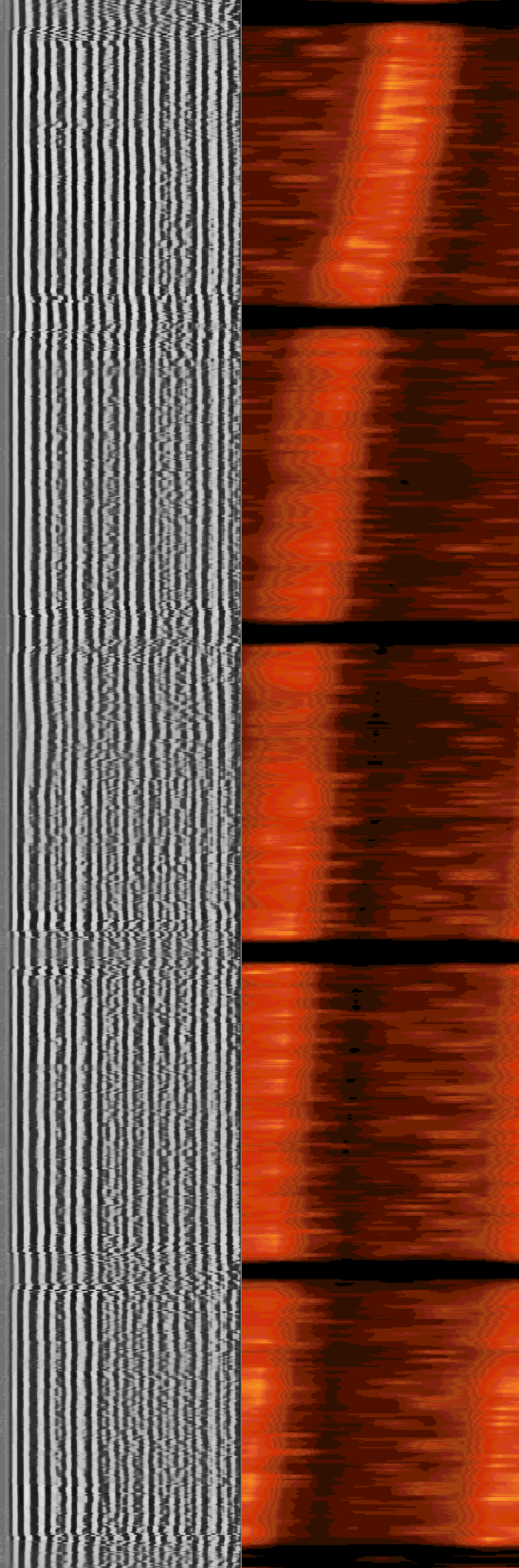
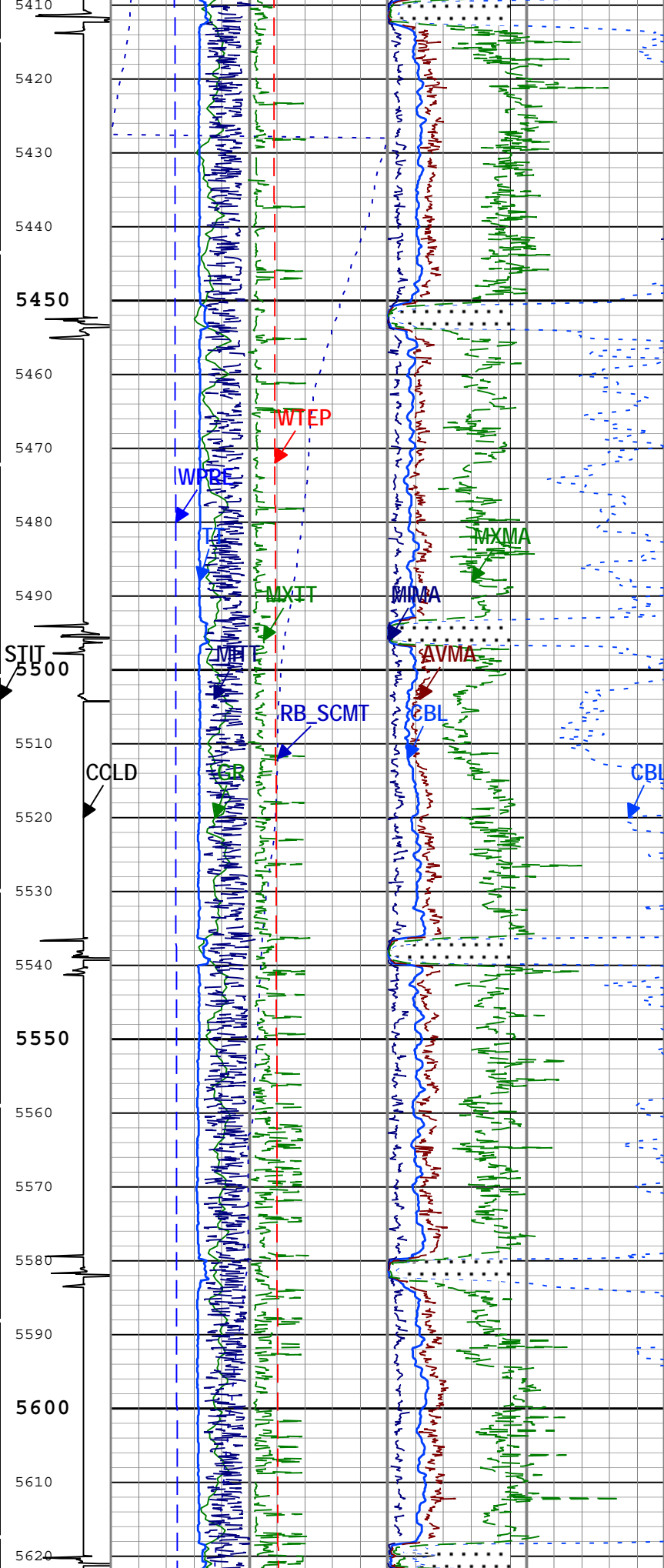


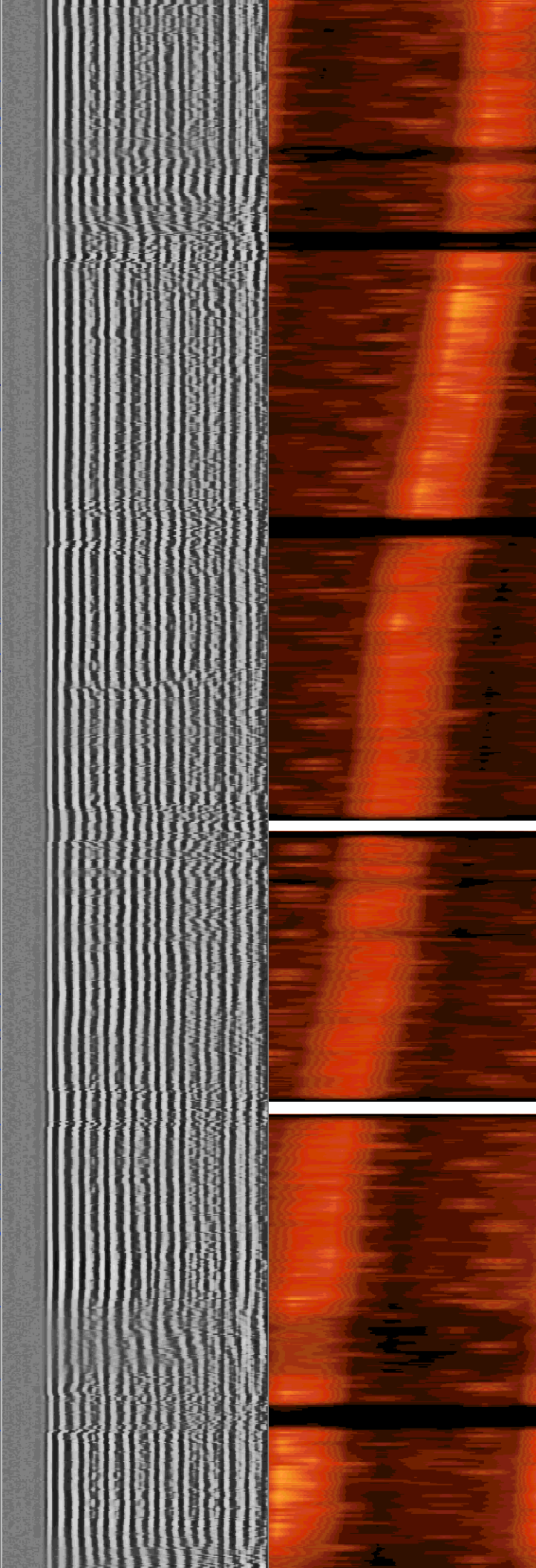
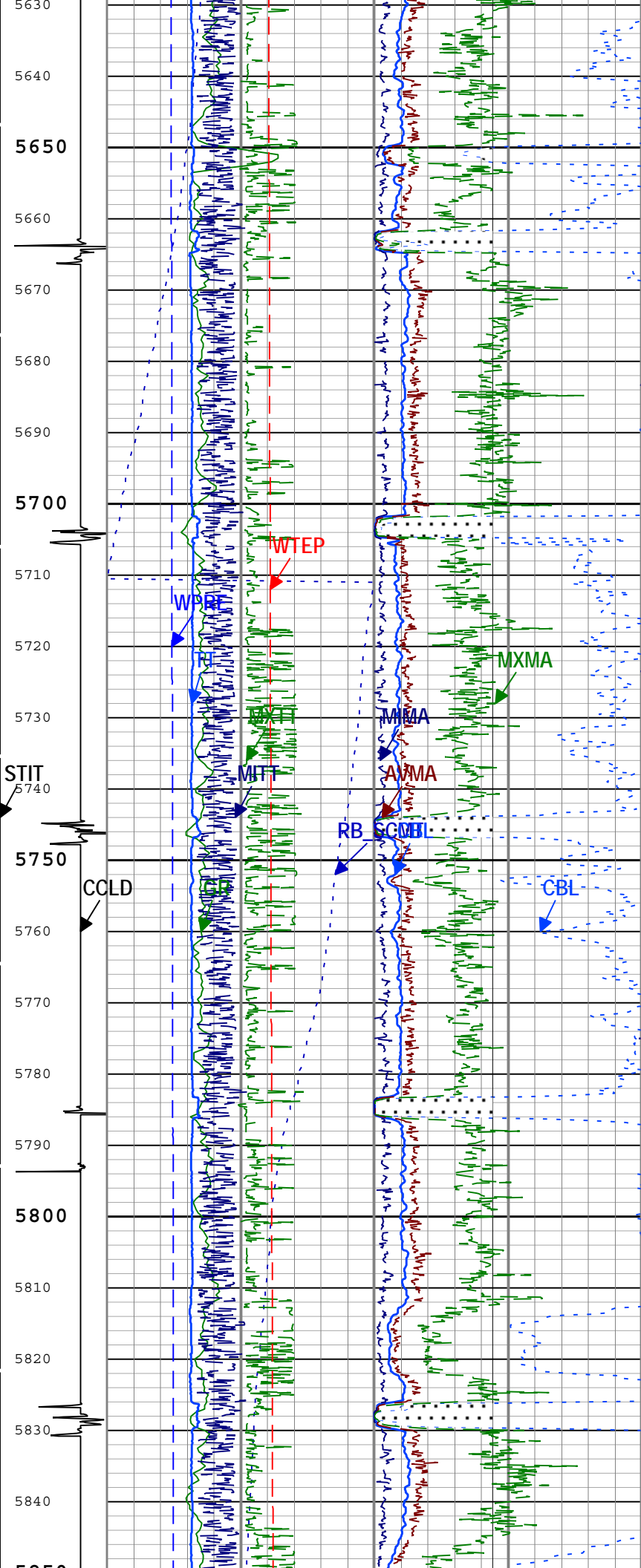


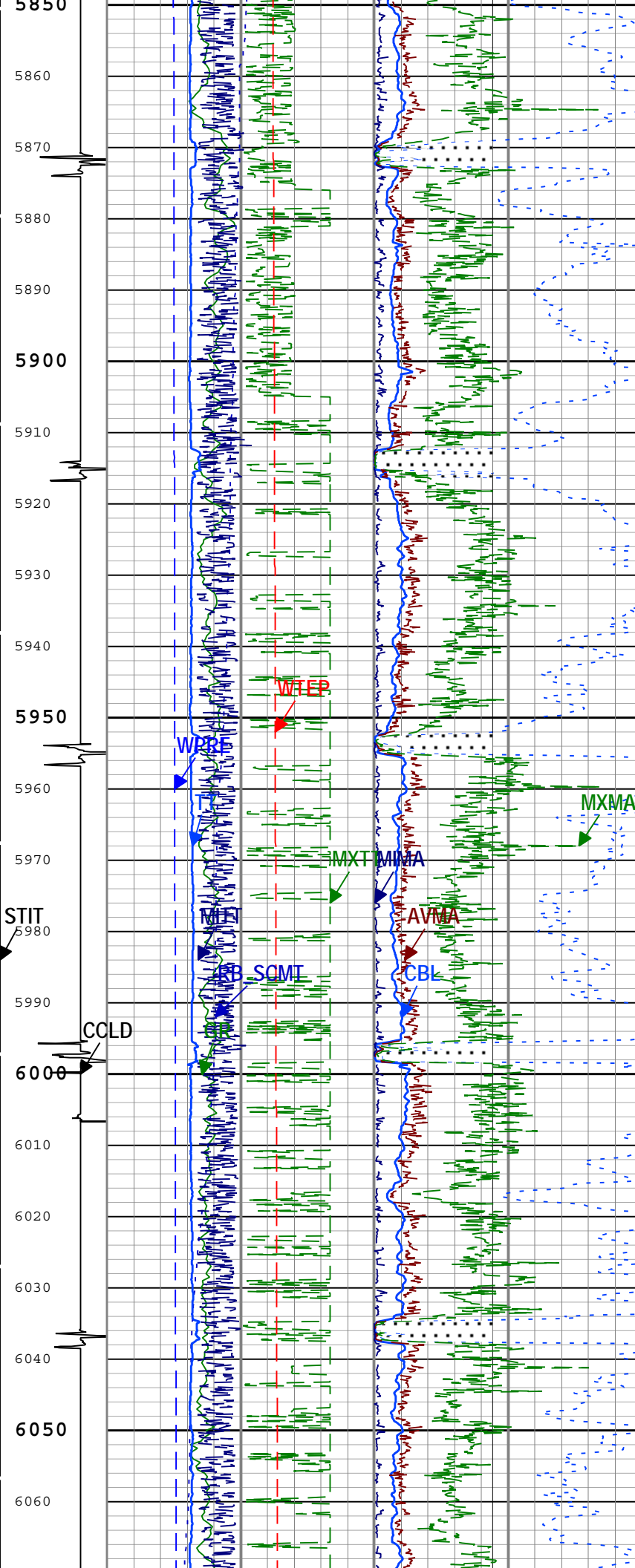


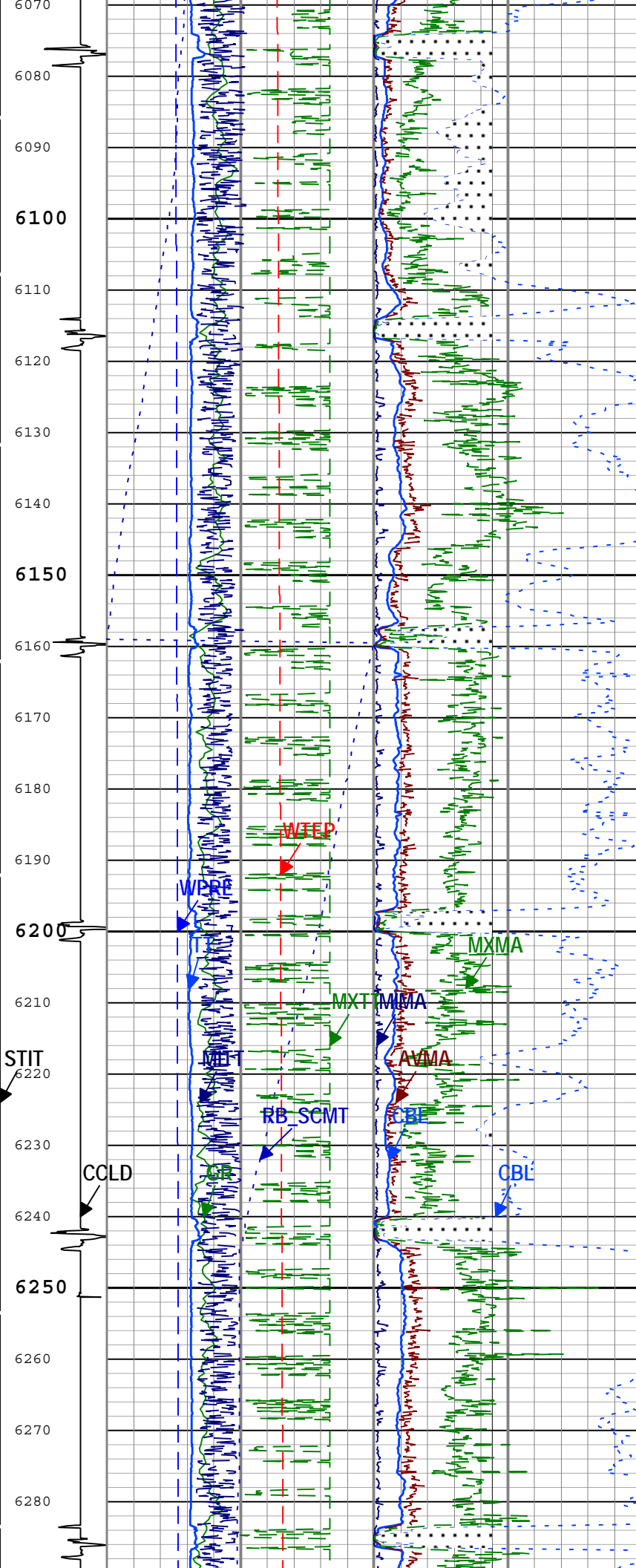


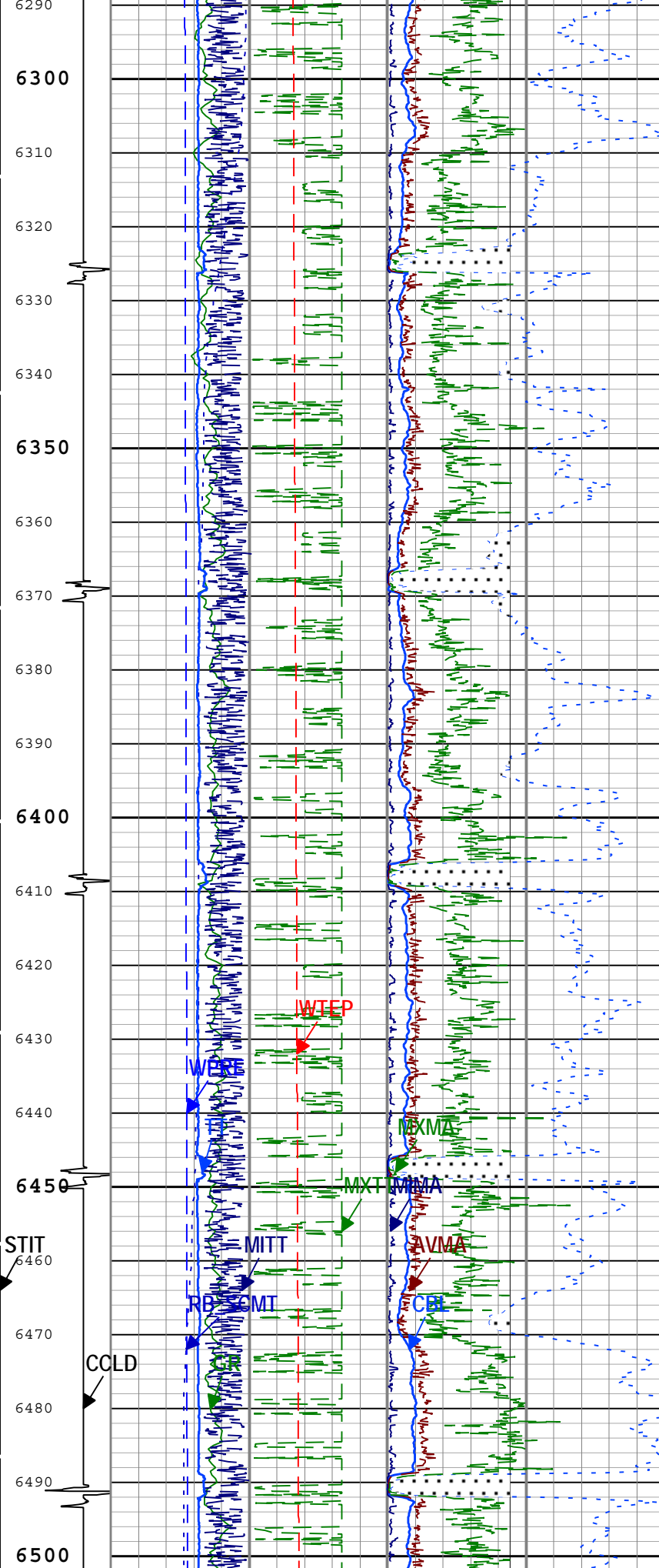


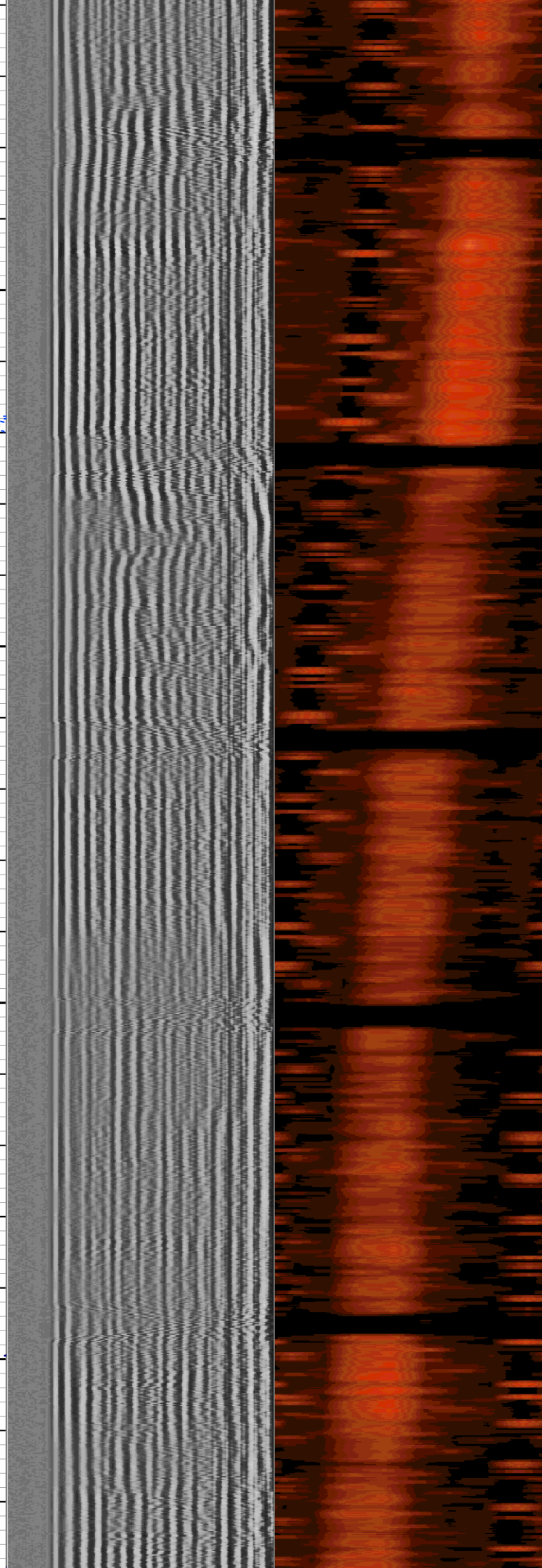
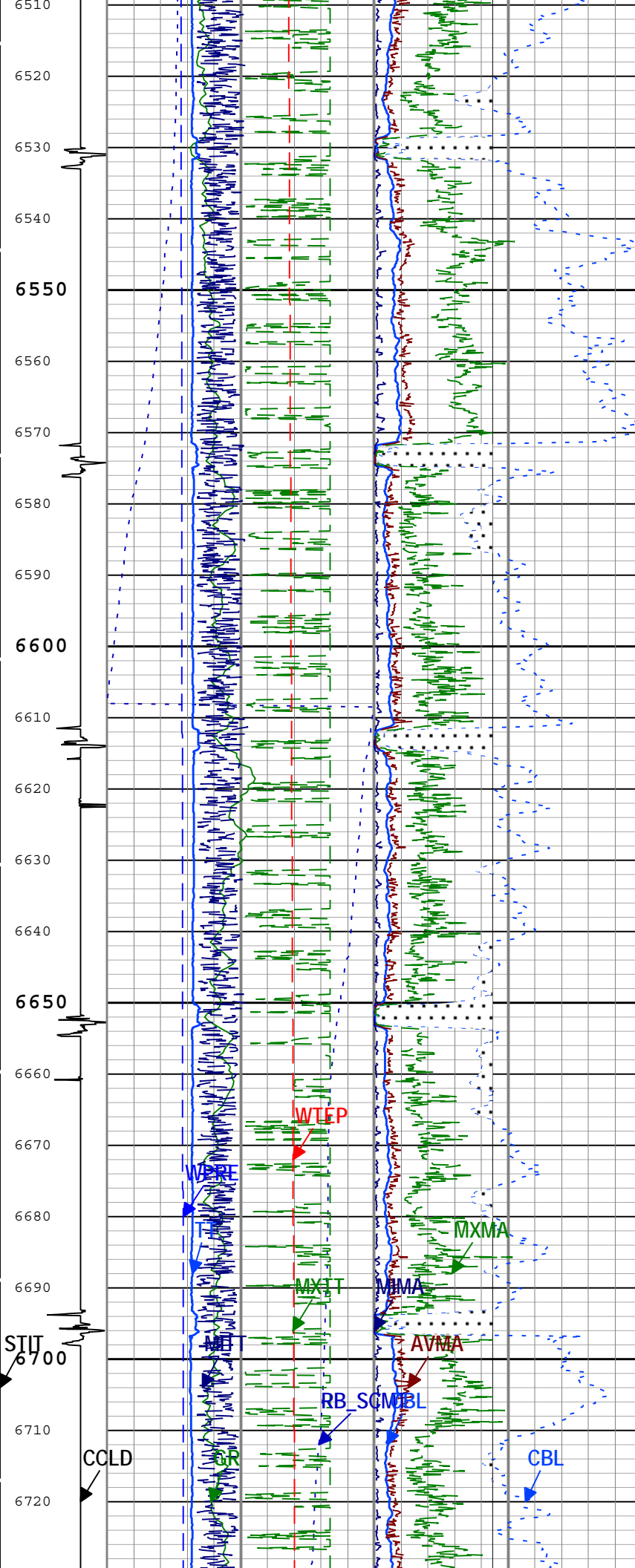


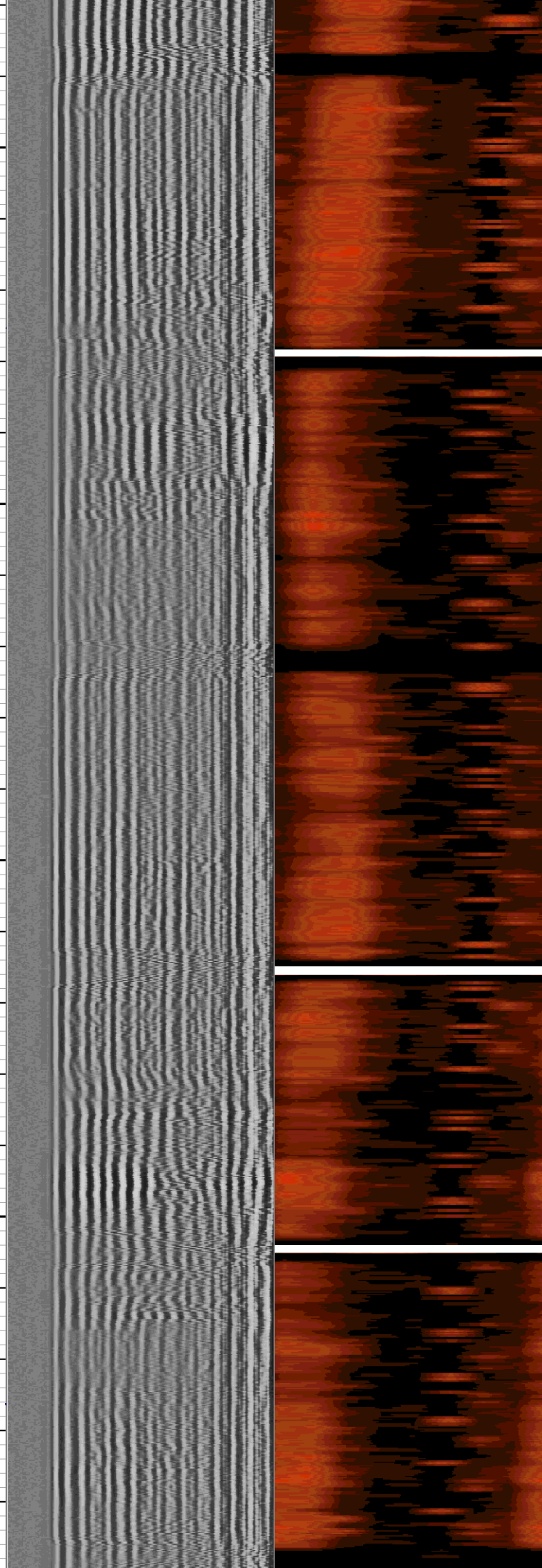
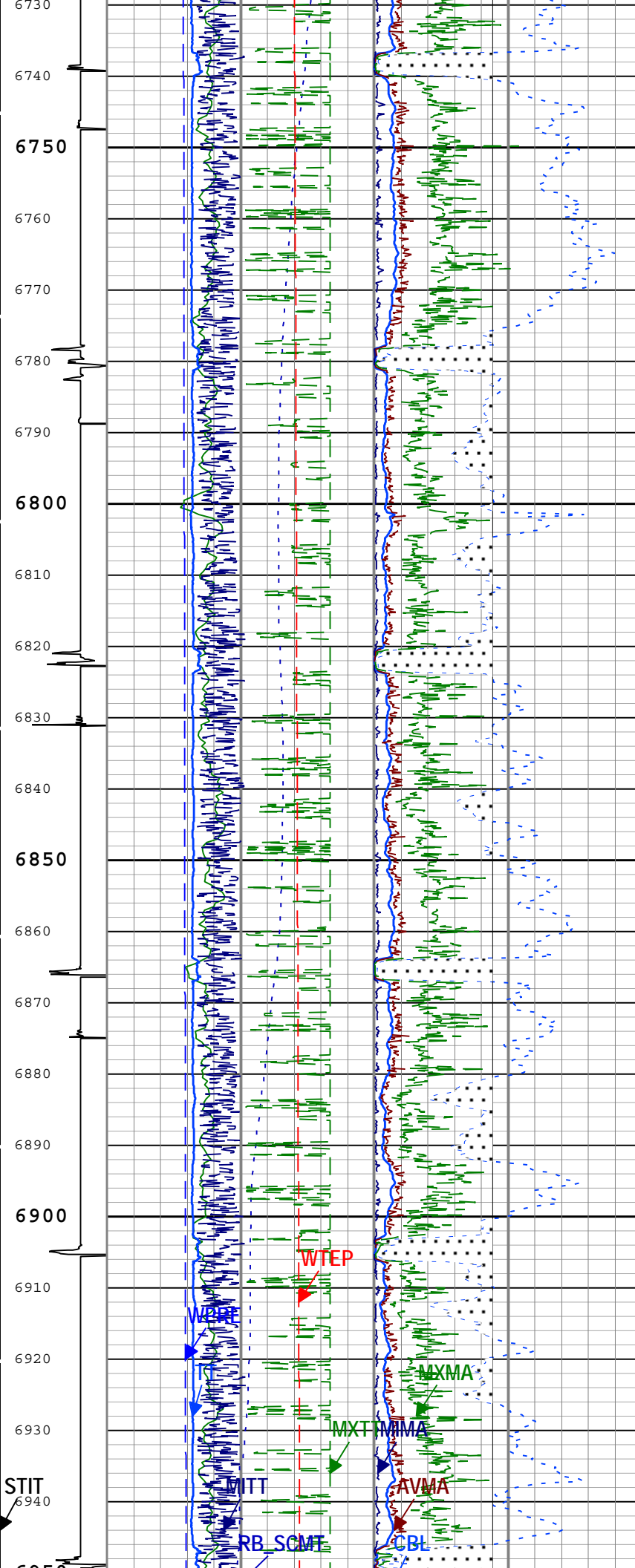


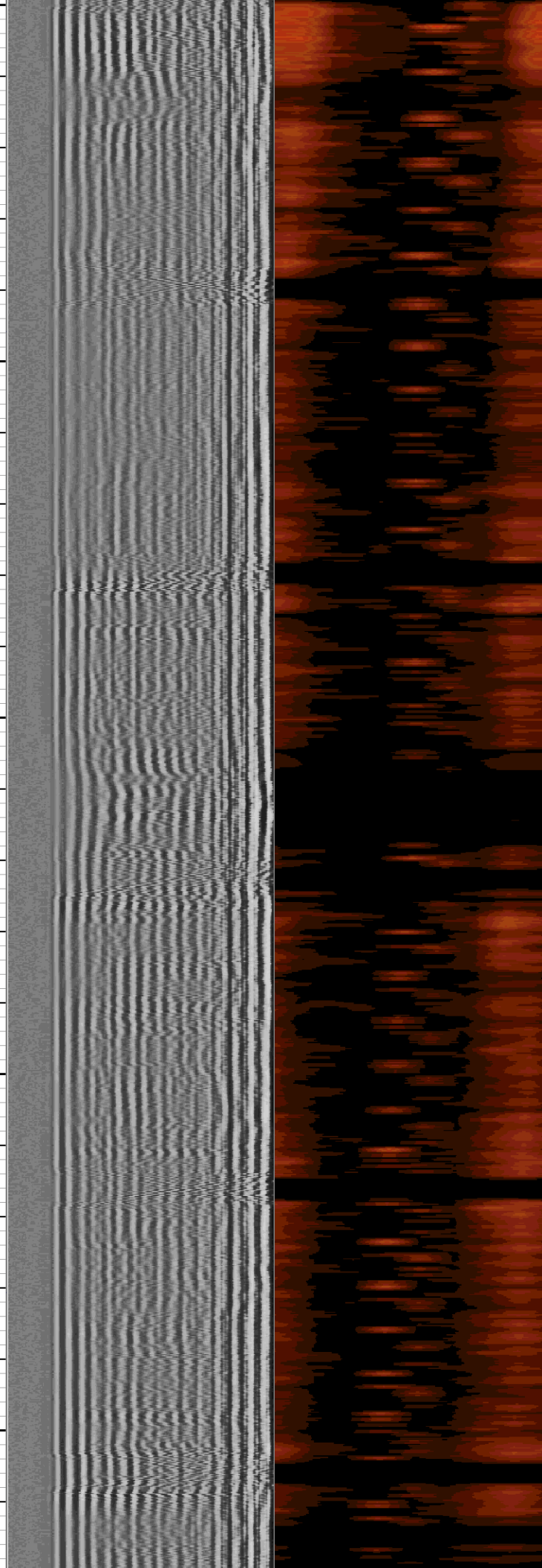
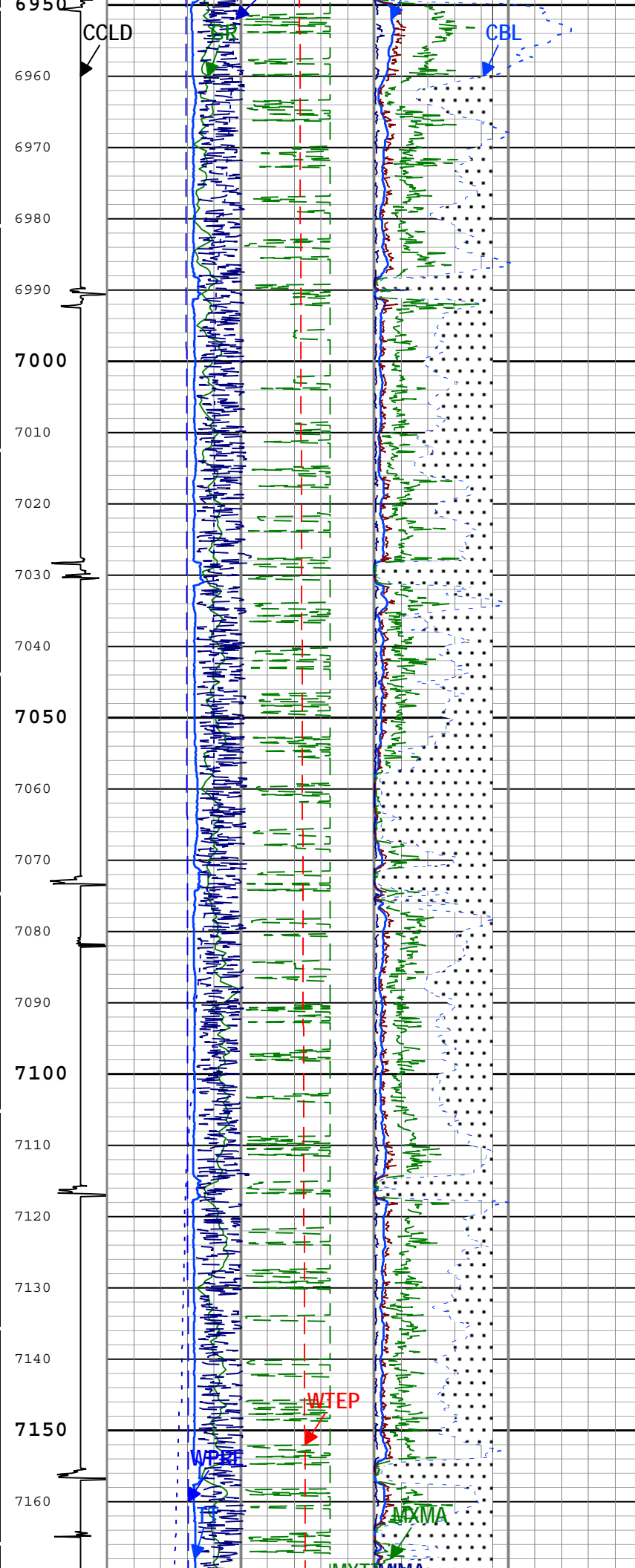


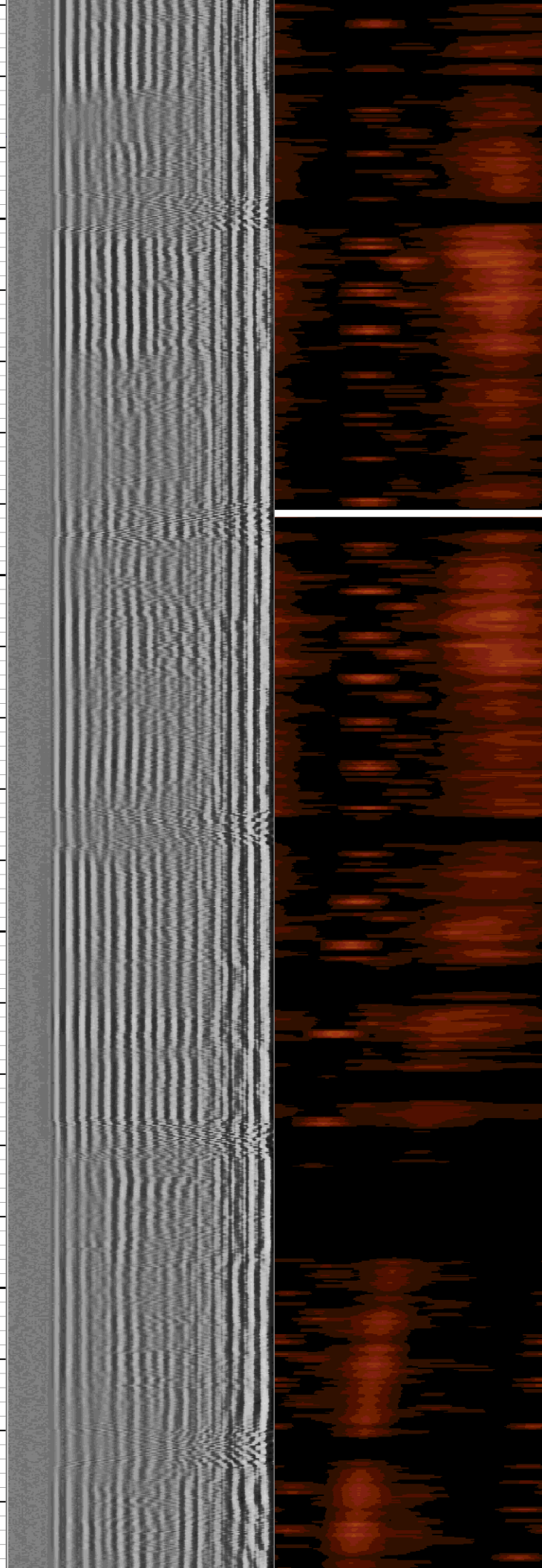
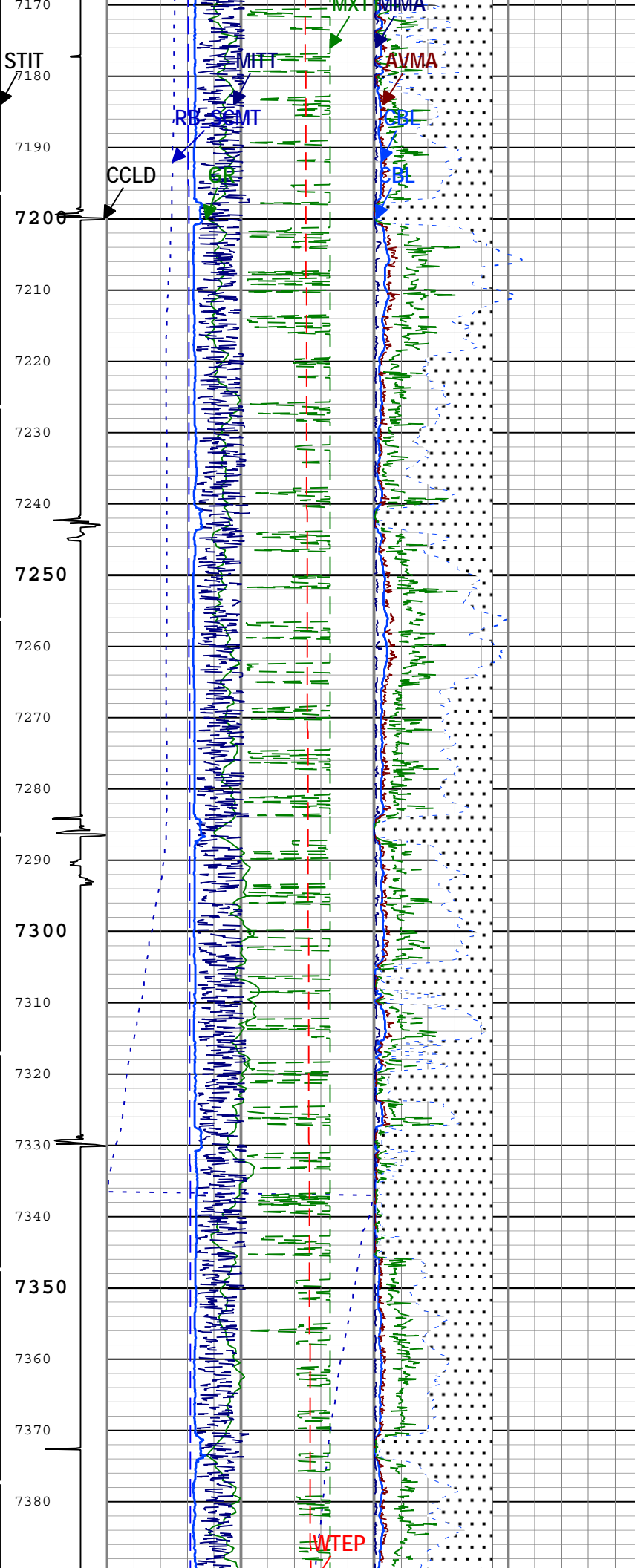


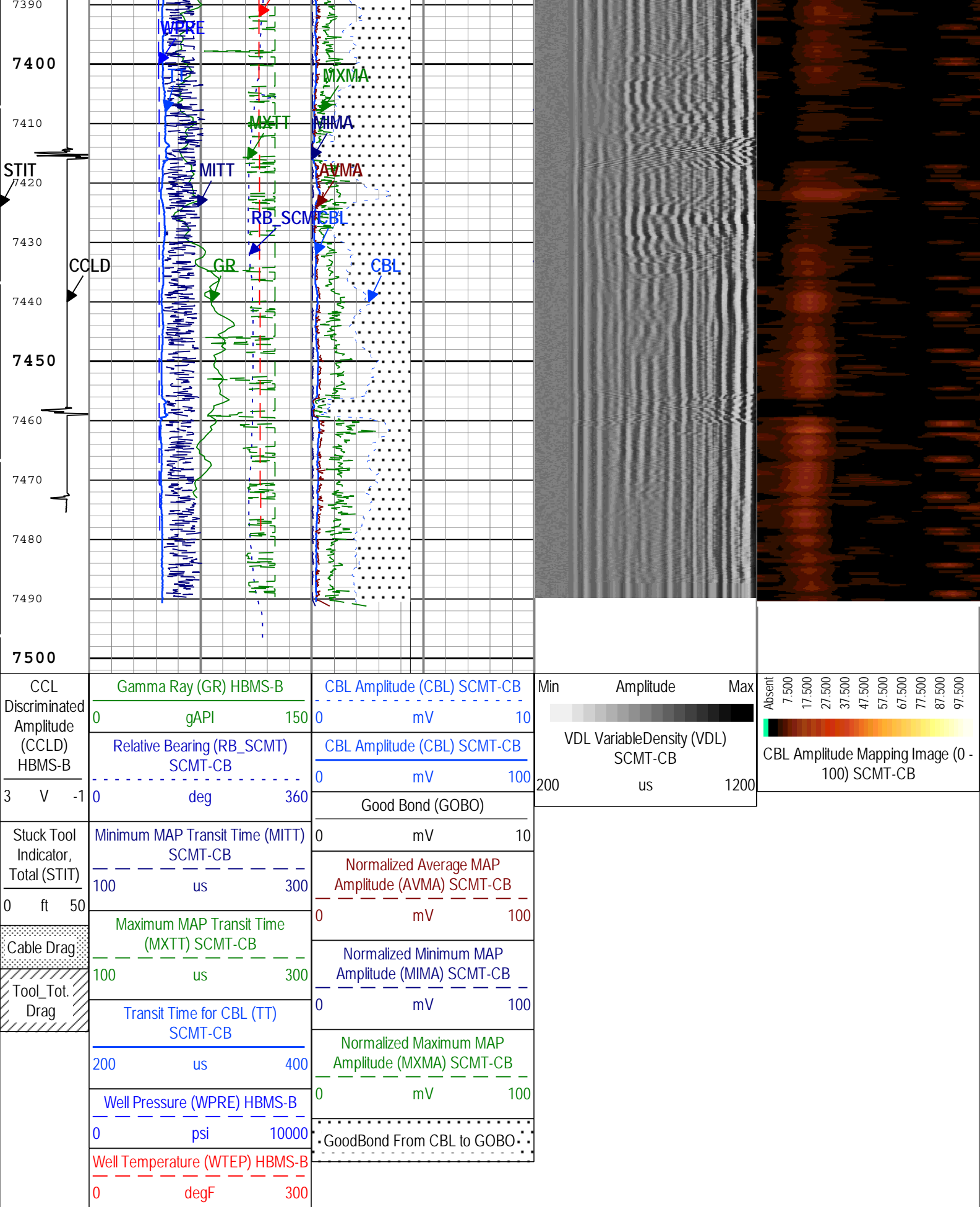












TIME_1900 - Time Marked every 60.00 (s)

Description: SCMT VDL Image Format: Log (SCMT_VDL_Image) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 18-Sep-2015 14:03:49

Channel Processing Parameters

Channel, Processing, Parameters

Run 1: Parameters

| Parameter | Description | Tool | Value | Unit |
|-----------|--|-----------|-------------|--------------|
| BHT | Bottom Hole Temperature | Borehole | 220 | degF |
| CB3G | SCMT CBL 3 ft Peak Detection T0_Delay and Noise Gate | SCMT-CB | 224 | us |
| CBLG | CBL Gate Width | SCMT-CB | 40 | us |
| CBRA | CBL LQC Reference Amplitude in Free Pipe | SCMT-CB | 72 | mV |
| THNO | Nominal Casing Thickness - Zoned along logger depths | WLSESSION | 0.361 | in |
| DFD | Drilling Fluid Density | Borehole | 10 | lbm/gal |
| DFT | Drilling Fluid Type | Borehole | Oil | |
| DTMD | Borehole Fluid Slowness | Borehole | 190 | us/ft |
| EDF | Elevation of Derrick Floor Above Permanent Datum | WLSESSION | 19 | ft |
| EPD | Elevation of Permanent Datum (PDAT) above Mean Sea Level | WLSESSION | 5079 | ft |
| GGRD | Geothermal Gradient | Borehole | 1 | 0.01 degF/ft |
| GTSE | Generalized Temperature Selection, from Measured or Computed Temperature | Borehole | GTEM_LINEST | |
| MAPG | SCMT MAP Peak Detection T0_Delay and Noise Gate | SCMT-CB | 167 | us |
| MMSA | MAP Minimum Sonic Amplitude | SCMT-CB | 10.96 | mV |
| MSA | Minimum Sonic Amplitude | SCMT-CB | 2.21 | mV |
| PDAT | Permanent Datum | WLSESSION | GL | |
| RUN_SNUM | Run Sequence Number | WSDRUN | 2 | |
| SHT | Surface Hole Temperature | Borehole | 68 | degF |

Tool Control Parameters

Run 1: Parameters

| Parameter | Description | Tool | Value | Unit |
|---------------|----------------------------------|-----------|-------|------|
| CMTM | SCMT Operating Mode | SCMT-CB | Log | |
| MAX_LOG_SPEED | Toolstring Maximum Logging Speed | WLSESSION | 1800 | ft/h |

Run 1

Software Version

| Acquisition System | Version |
|--------------------|----------------|
| Maxwell 2014 SP3 | 5.3.45427.3100 |

Pass Summary

| Run Name | Pass Objective | Direction | Top | Bottom | Start | Stop | DSC Mode | Depth Shift | Include Parallel Data |
|----------|----------------|-----------|----------|------------|-------------------------|------------------------|----------|-------------|-----------------------|
| Run 1 | Main[3]:Up | Up | 50.19 ft | 7502.91 ft | 18-Sep-2015 12:52:37 AM | 18-Sep-2015 5:20:54 AM | ON | 1.58 ft | Yes |

All depths are referenced to toolstring zero

Log

Company:Extraction Oil & Gas LLC Well:Troudt 6

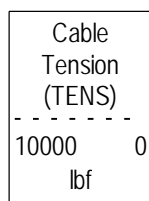
Run 1: Main[3]:Up:S002

| | | | | | |
|---------------------------------|------------------------------------|------------------------------|----------------|----------------------------|----------|
| Description: Sonic CBL with VDL | Format: Log (Sonic CBL with VDL) | Index Scale: 5 in per 100 ft | Index Unit: ft | Index Type: Measured Depth | Creation |
|---------------------------------|------------------------------------|------------------------------|----------------|----------------------------|----------|

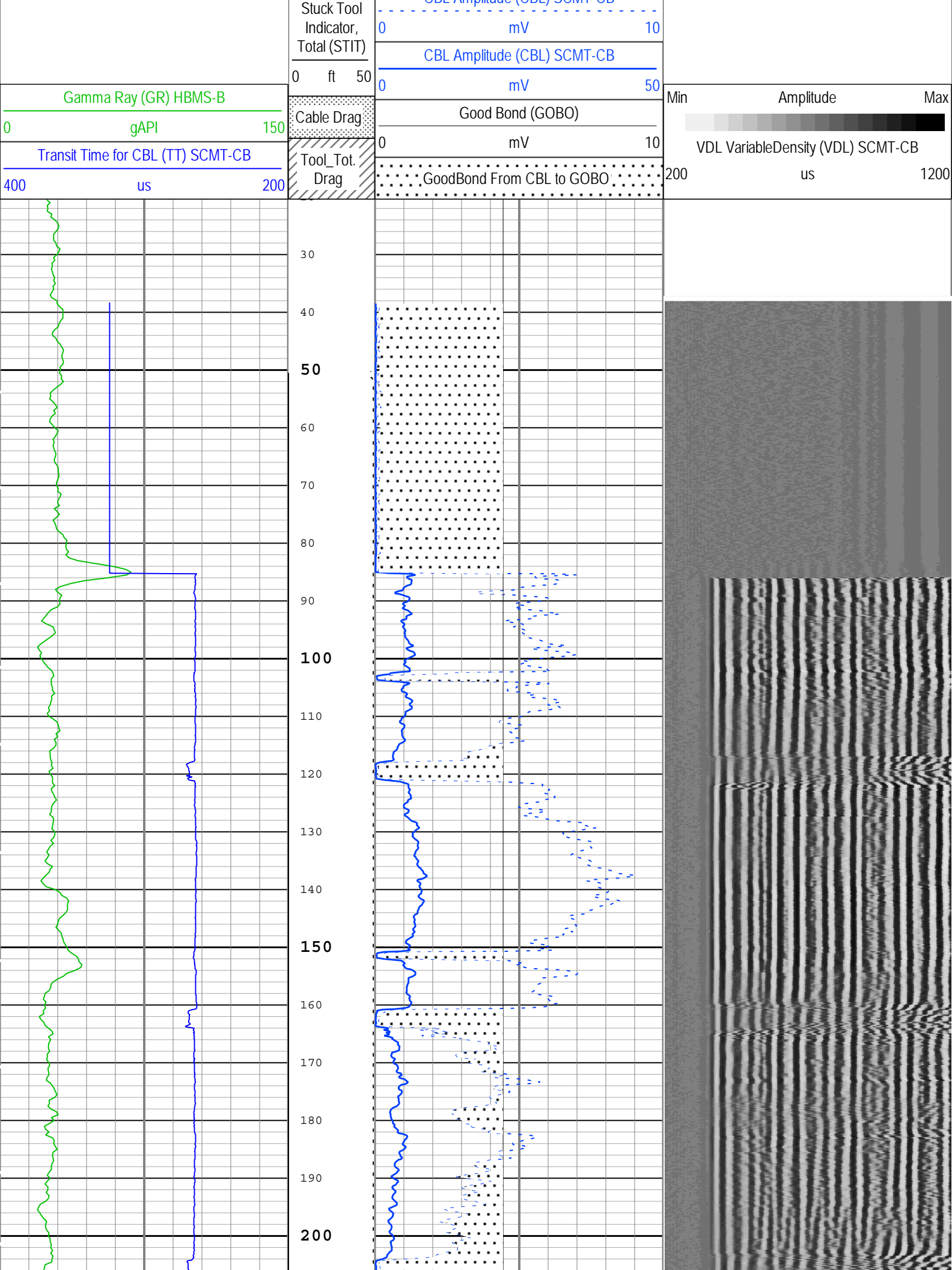
Date: 18-Sep-2015 14:03:56

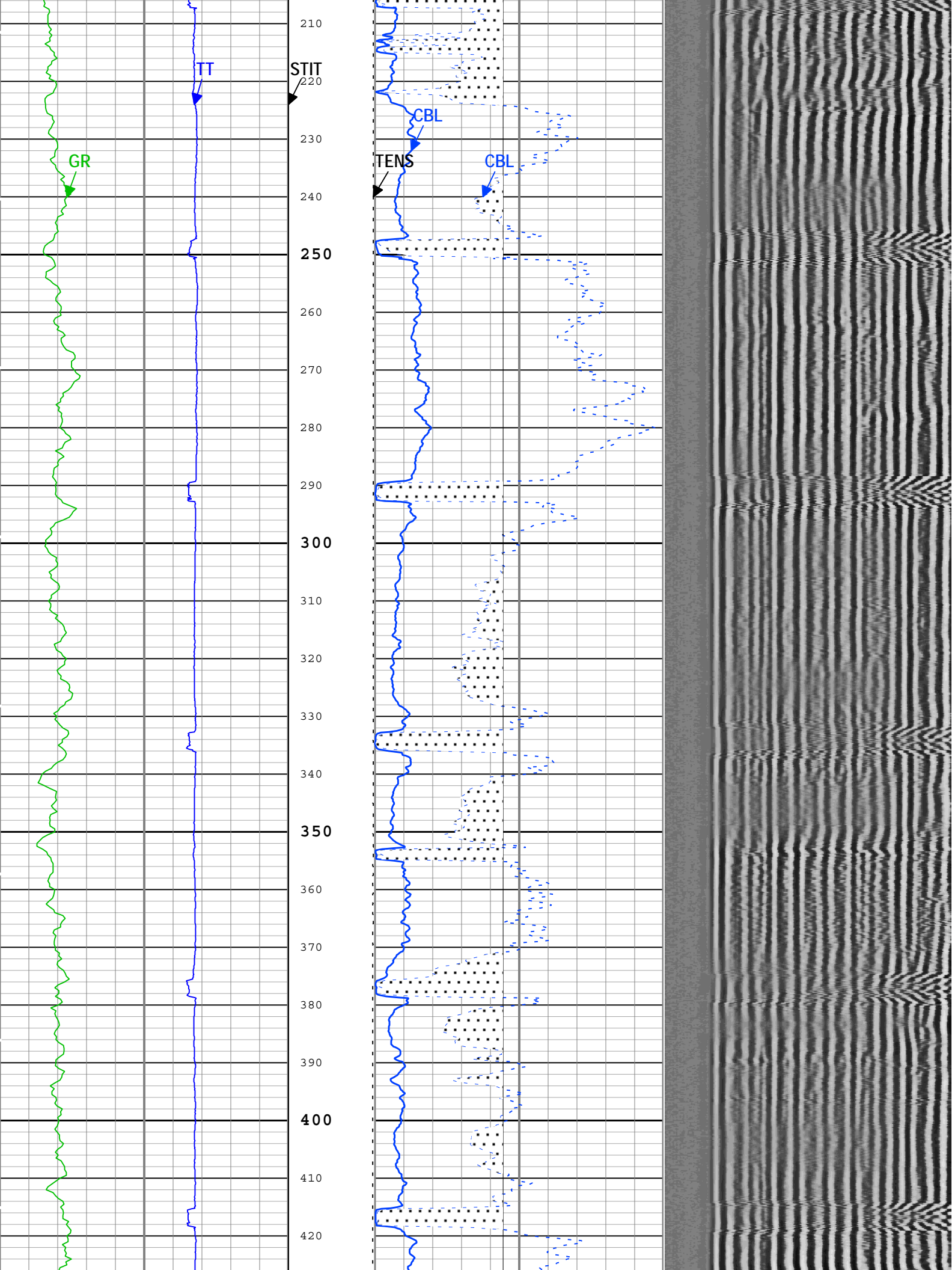
■ BIEP - Bond Index Event Pips SCMT-CB

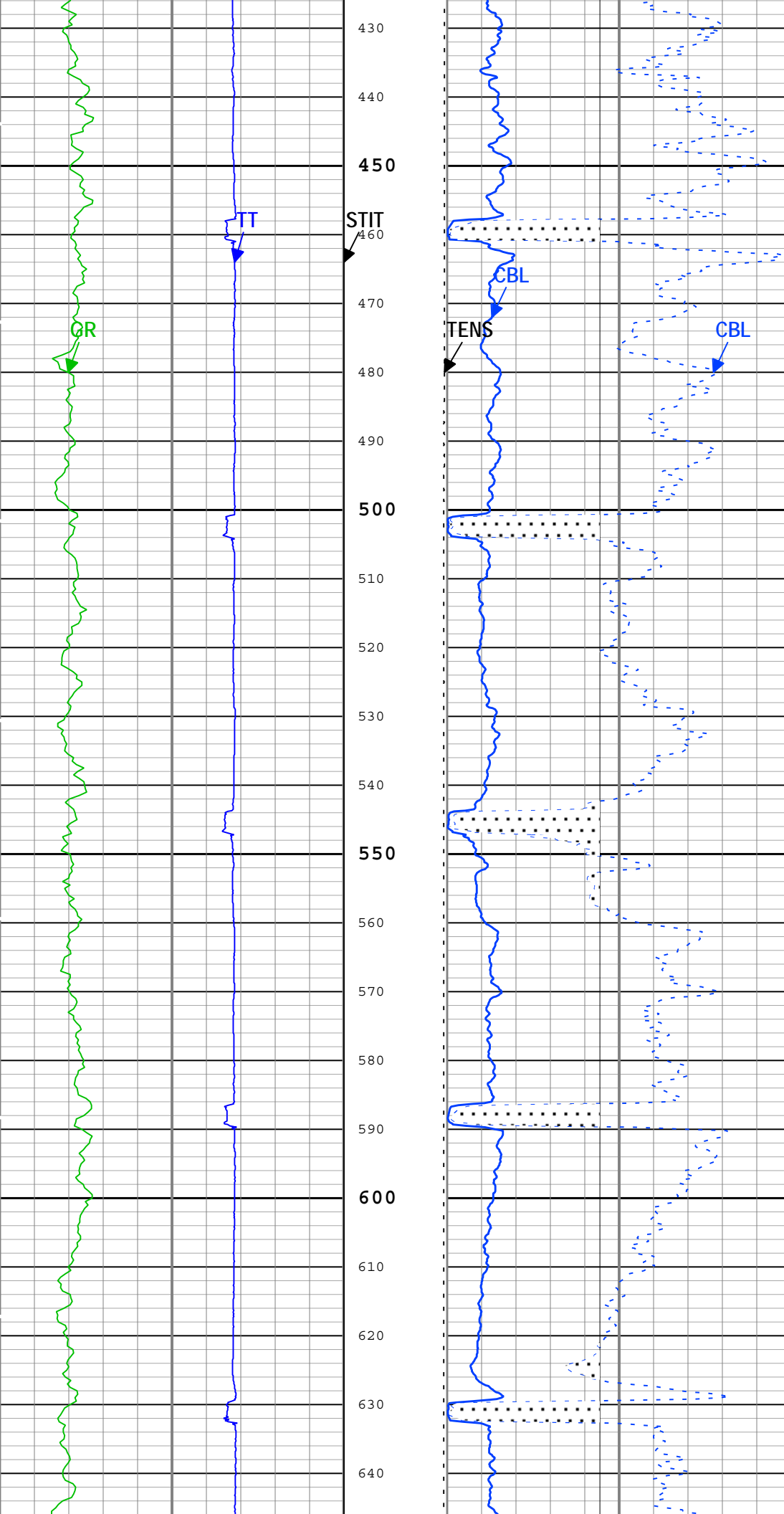
TIME_1900 - Time Marked every 60.00 (s)

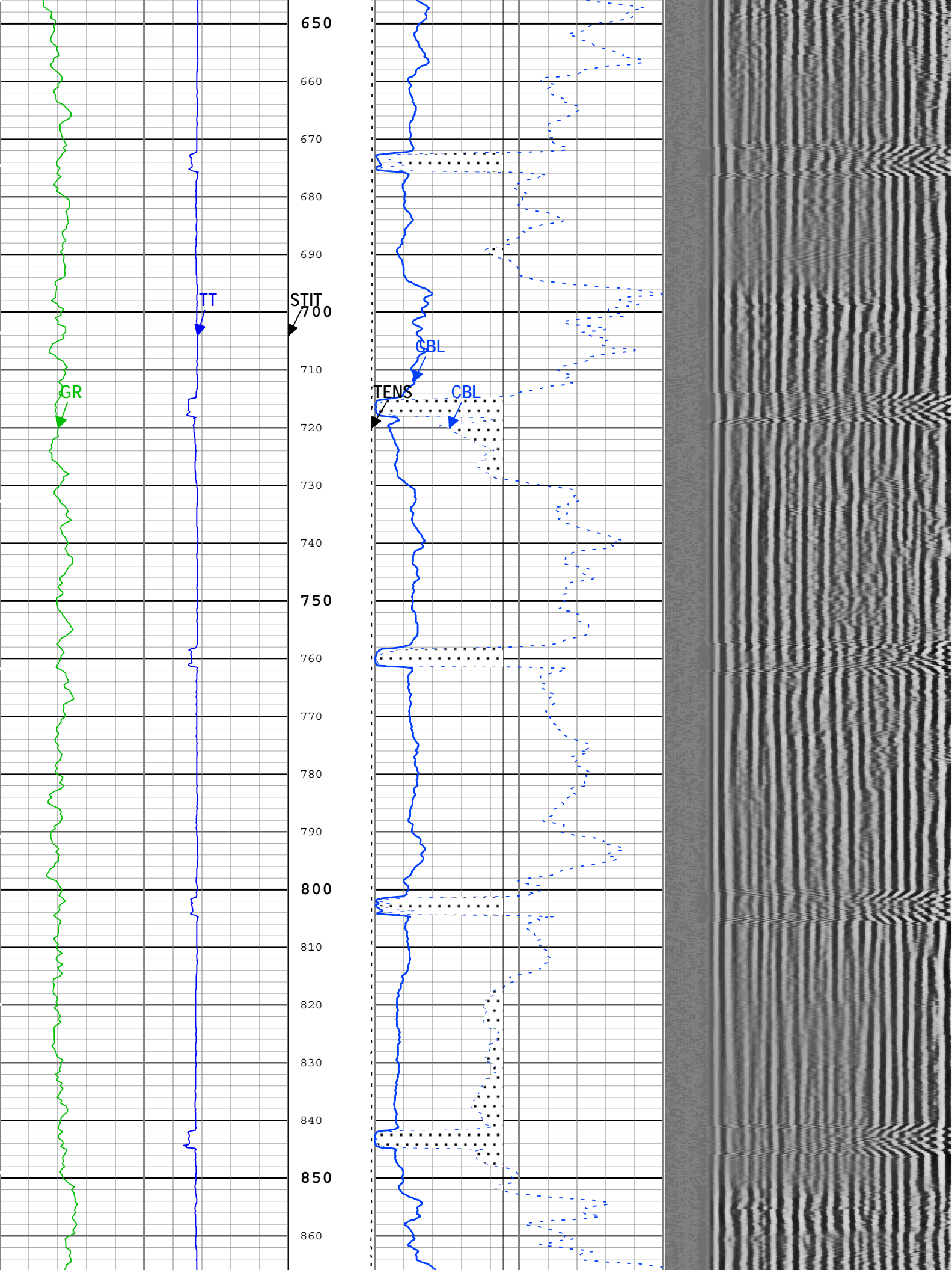


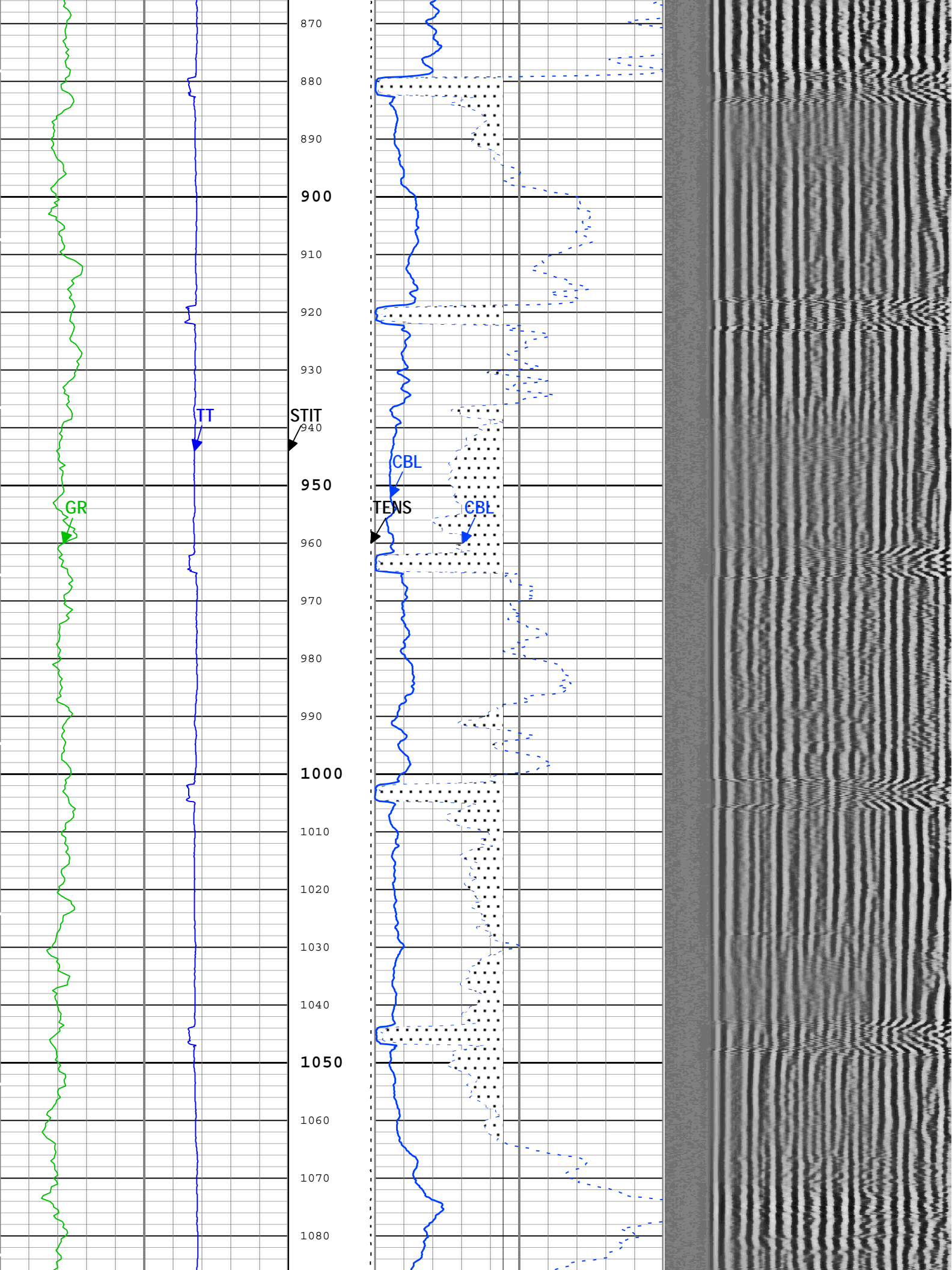
CBI Amplitude (CBI) SCMT-CB

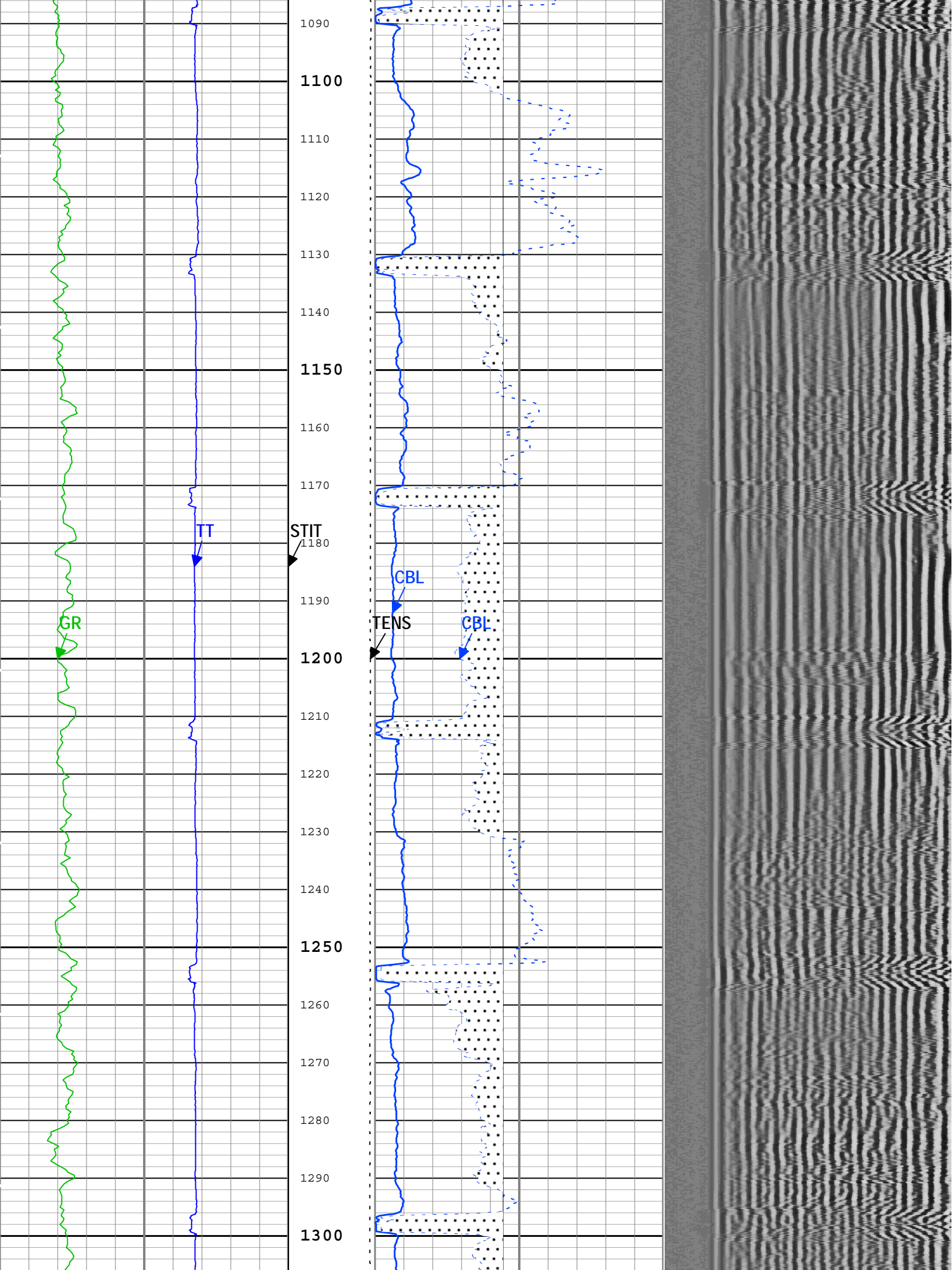


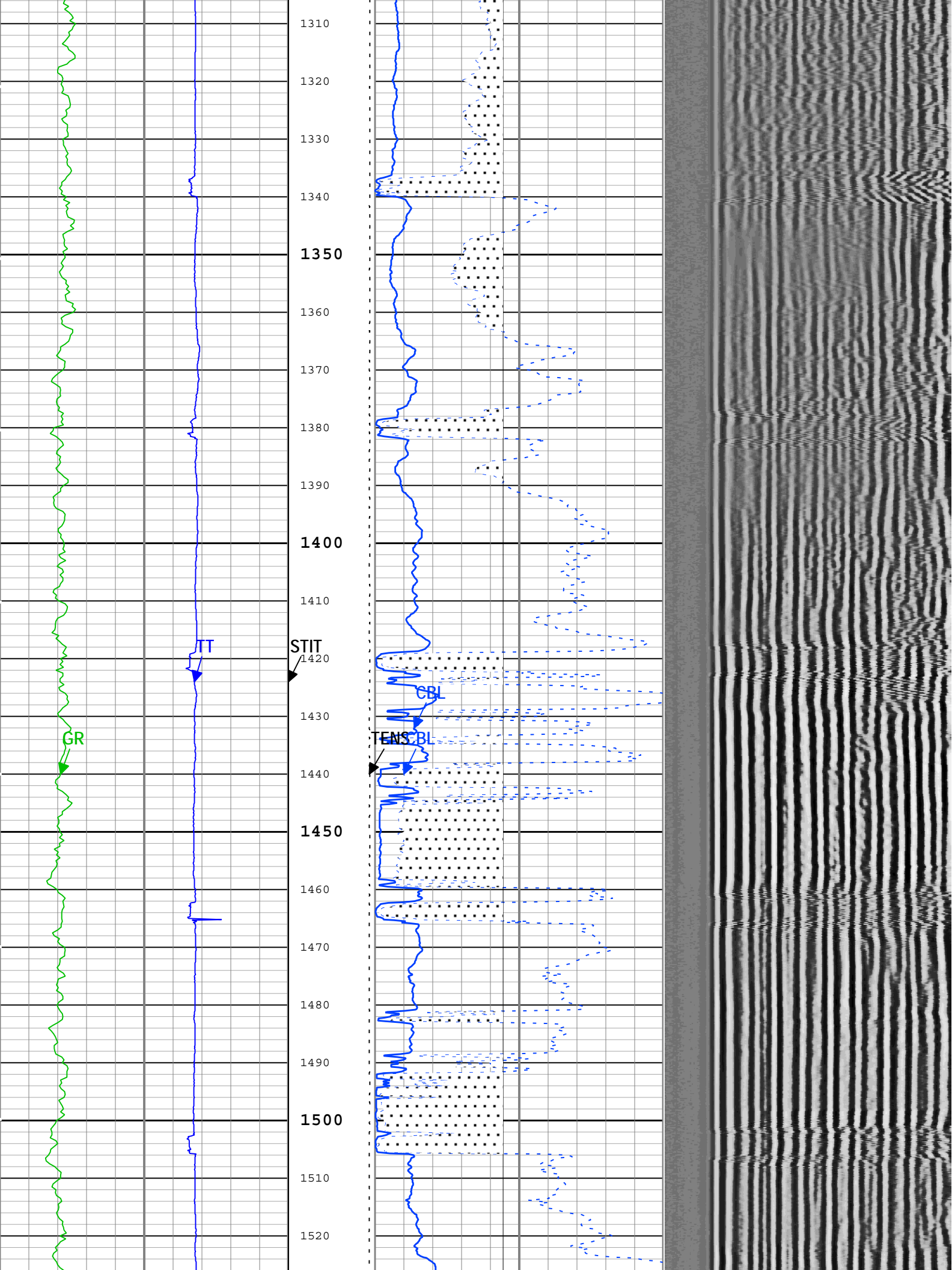


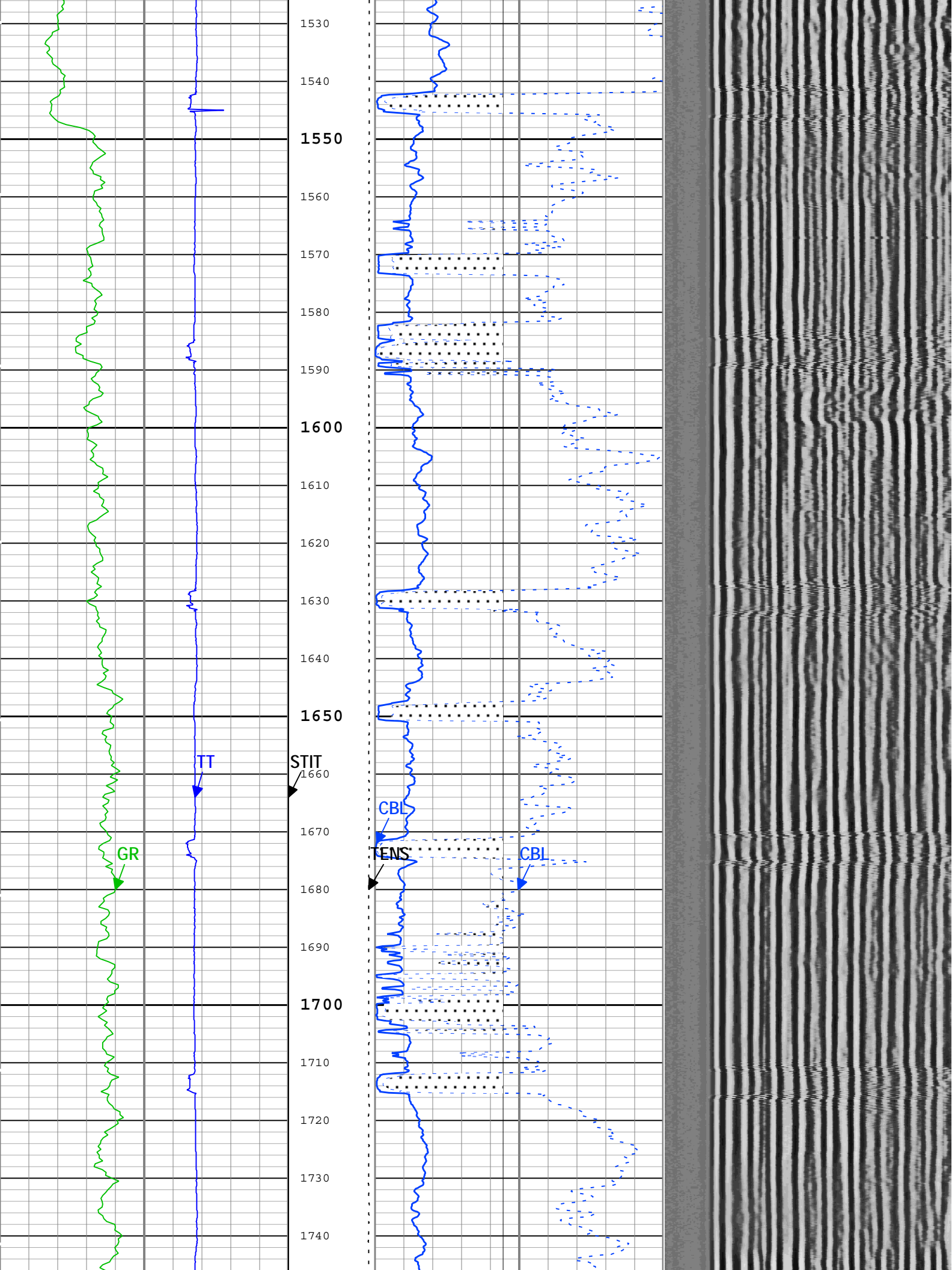


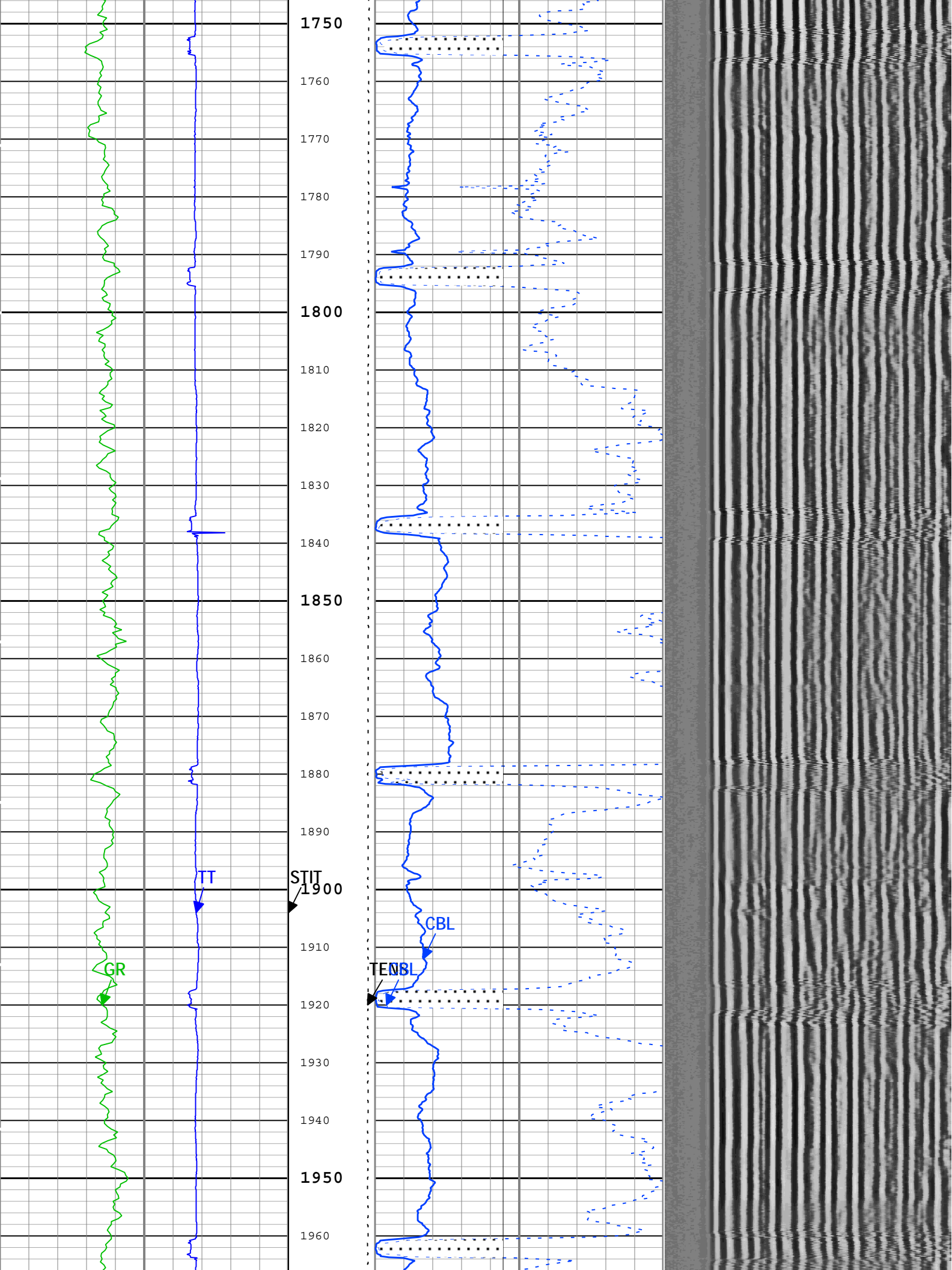


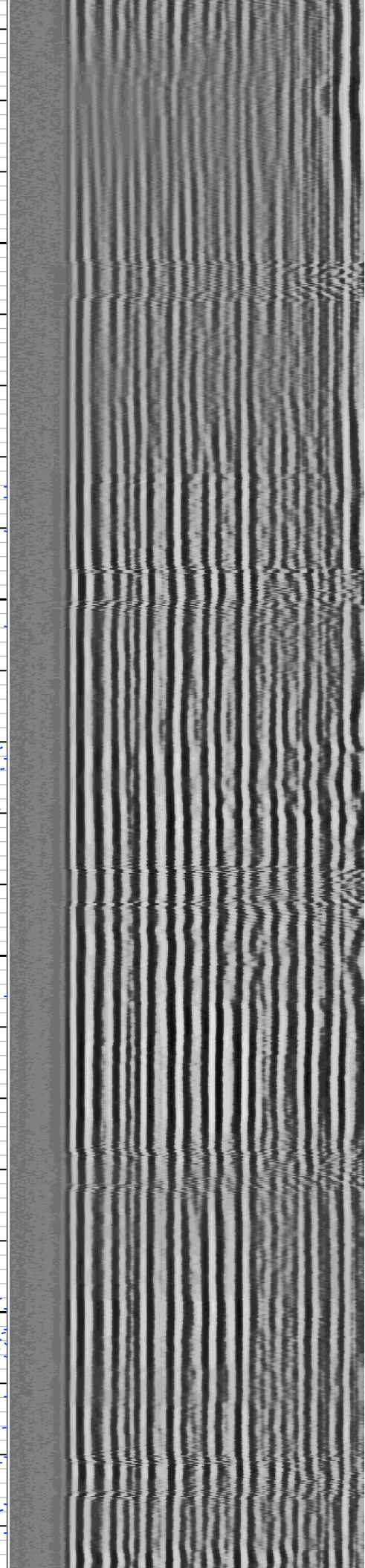
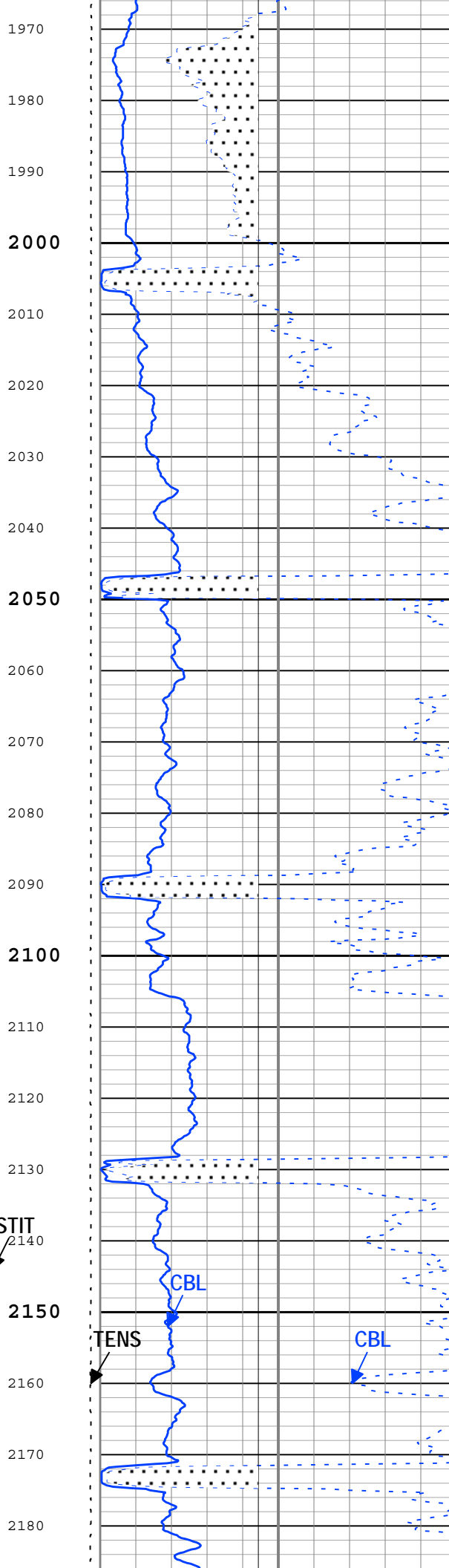
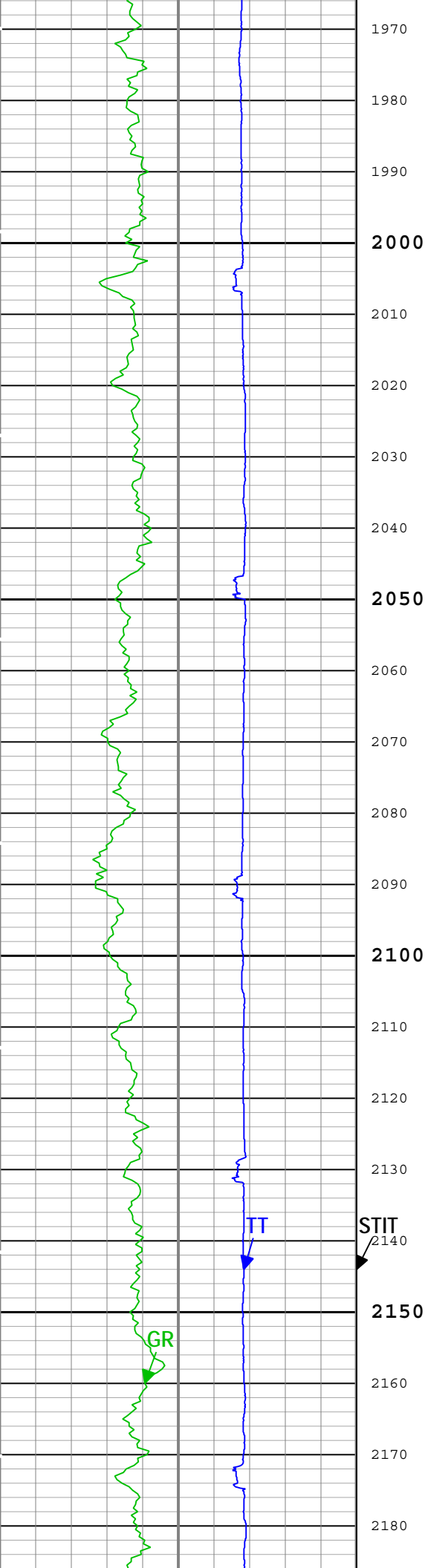


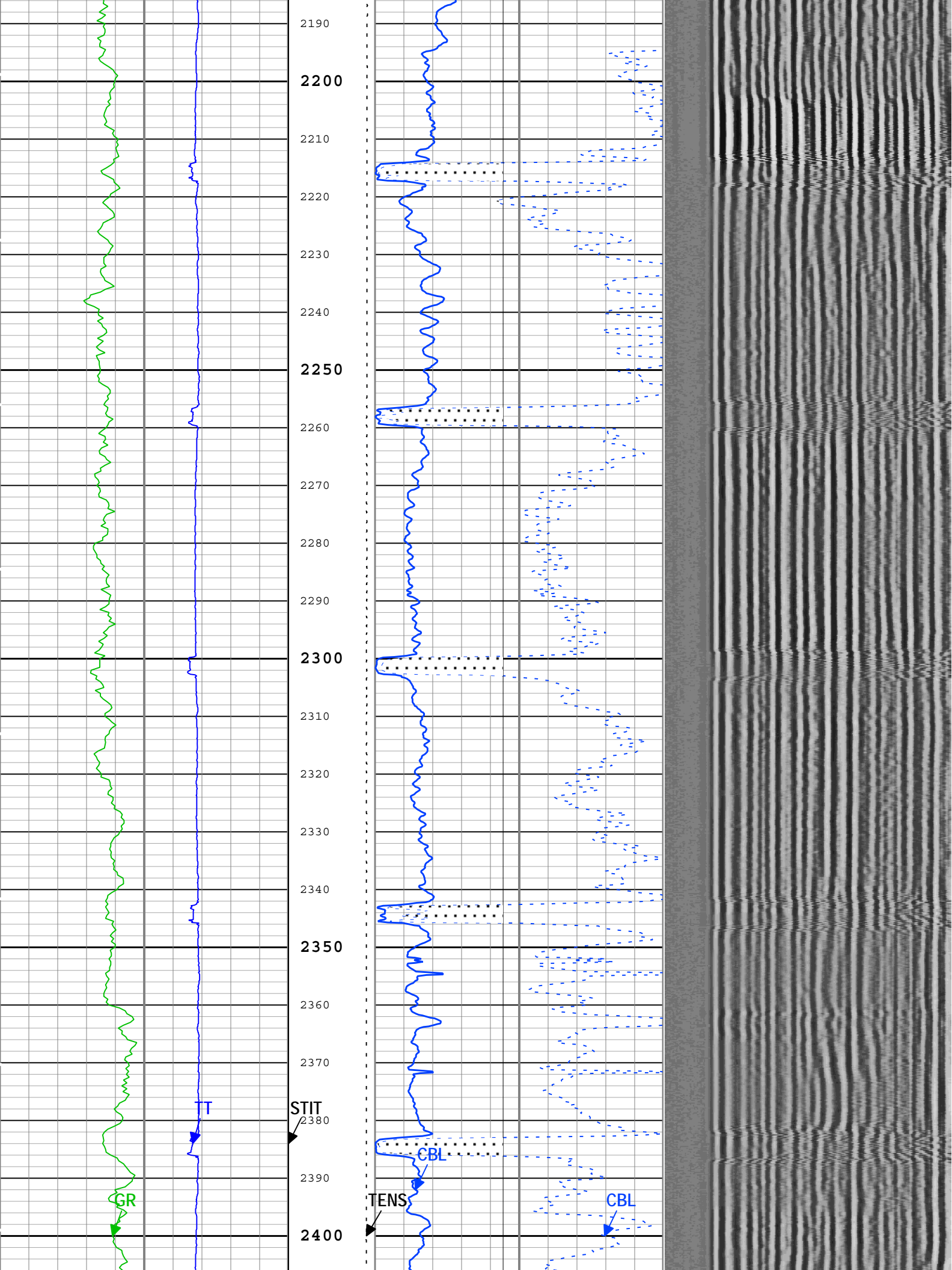


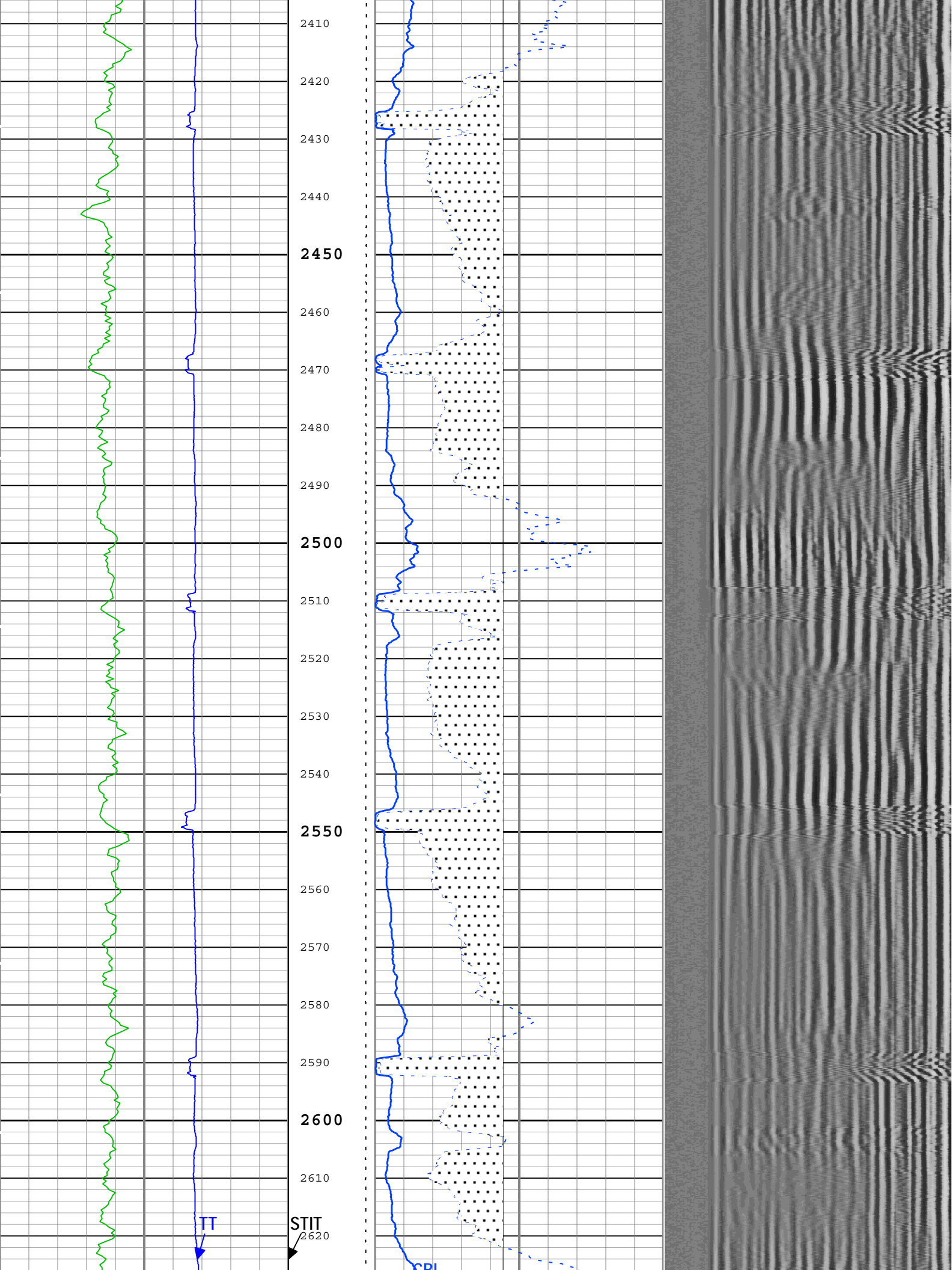


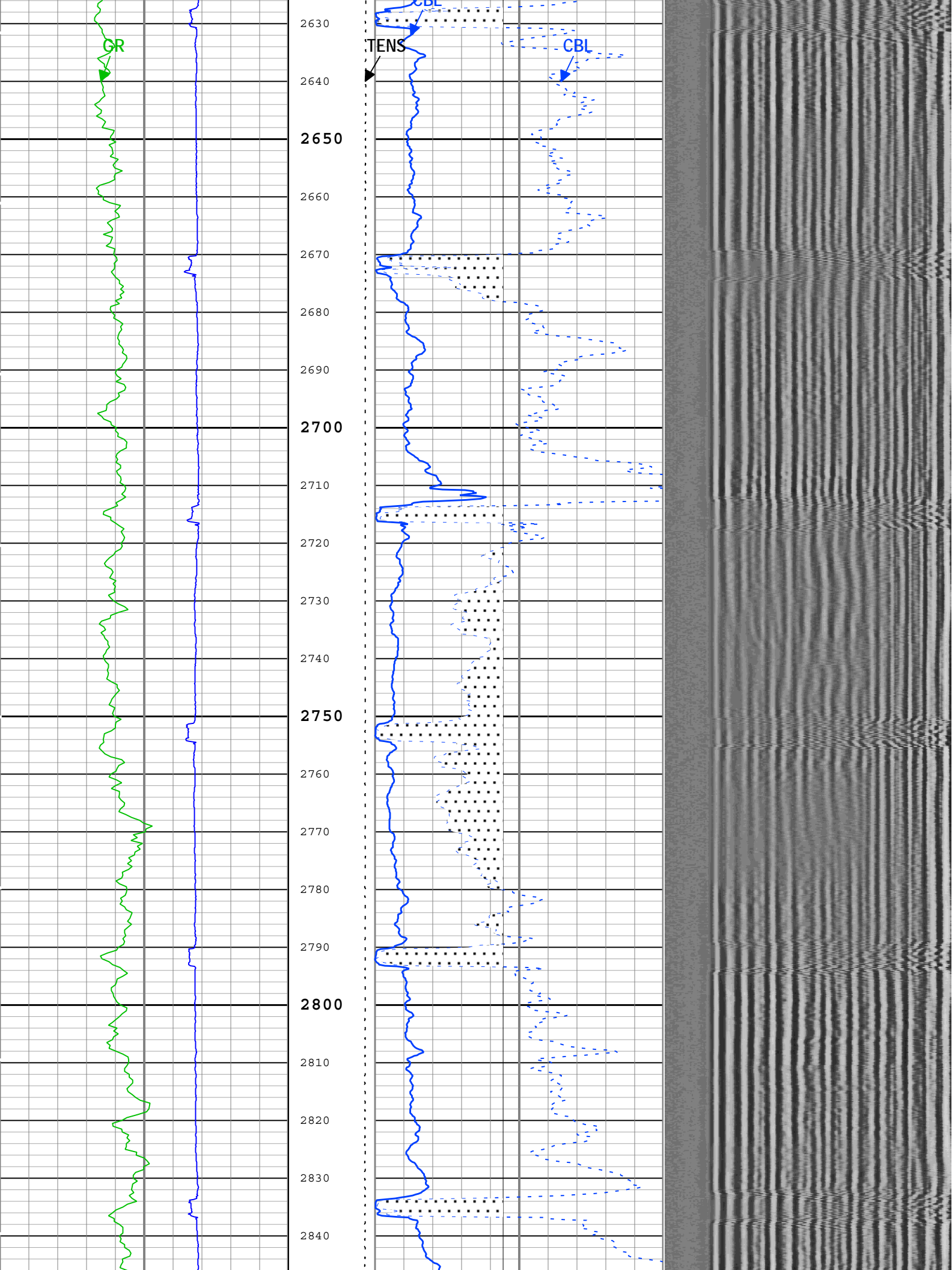


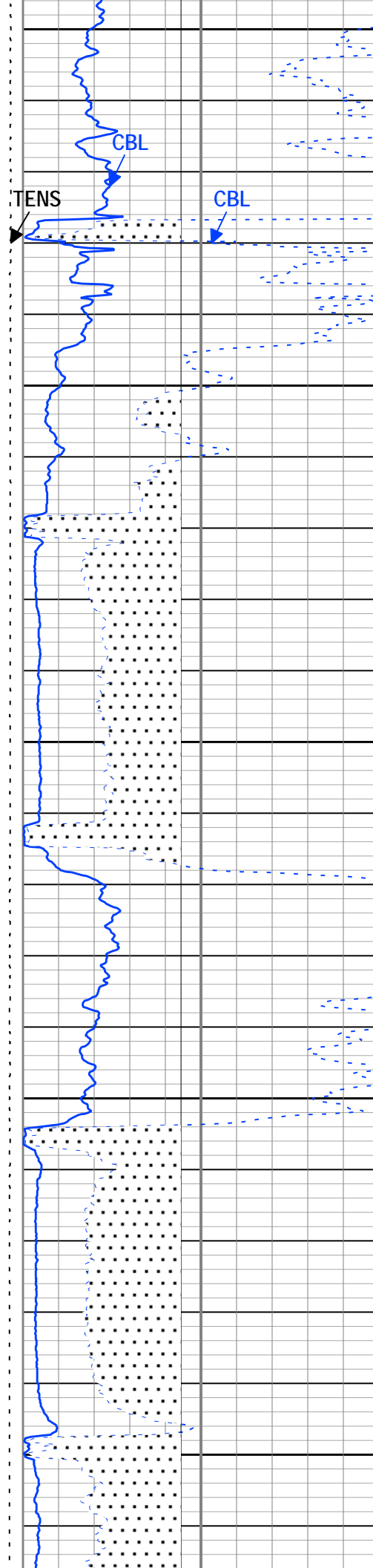
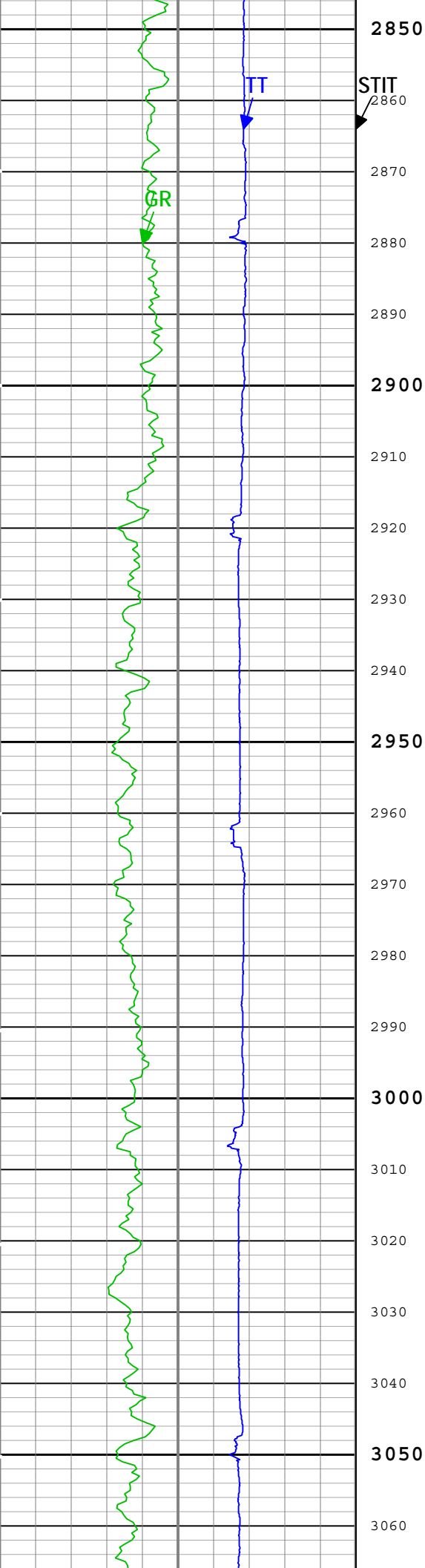


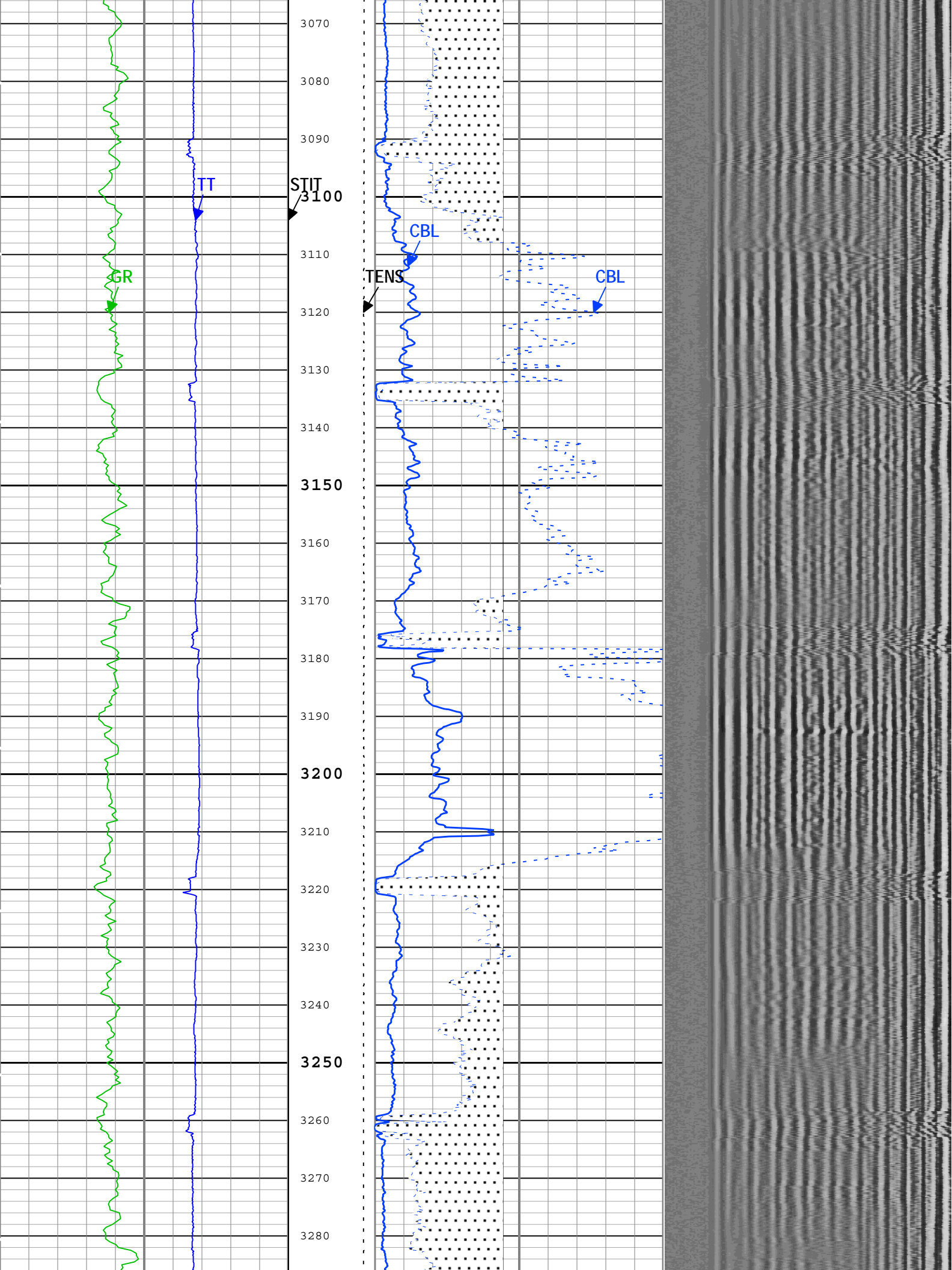


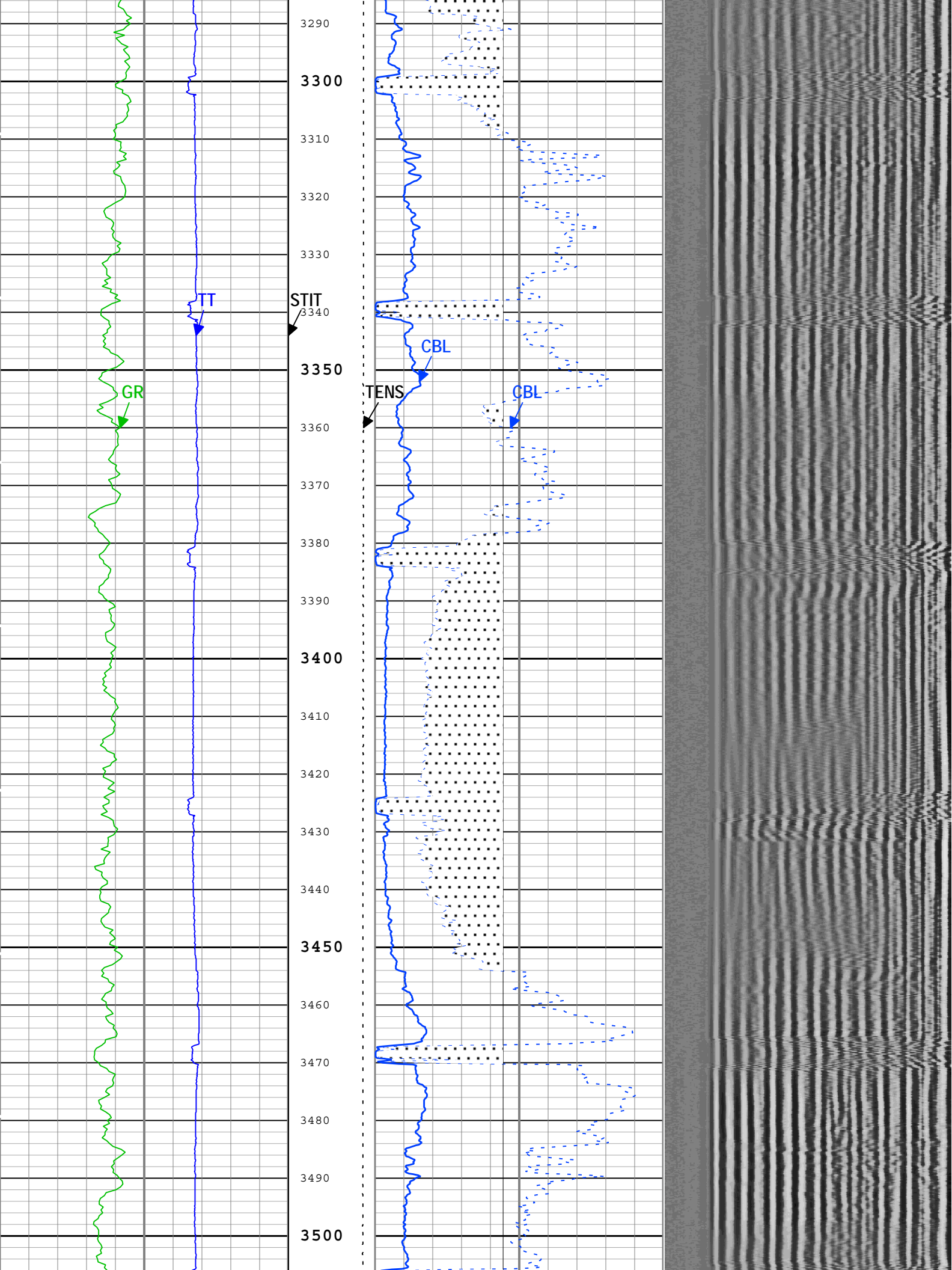


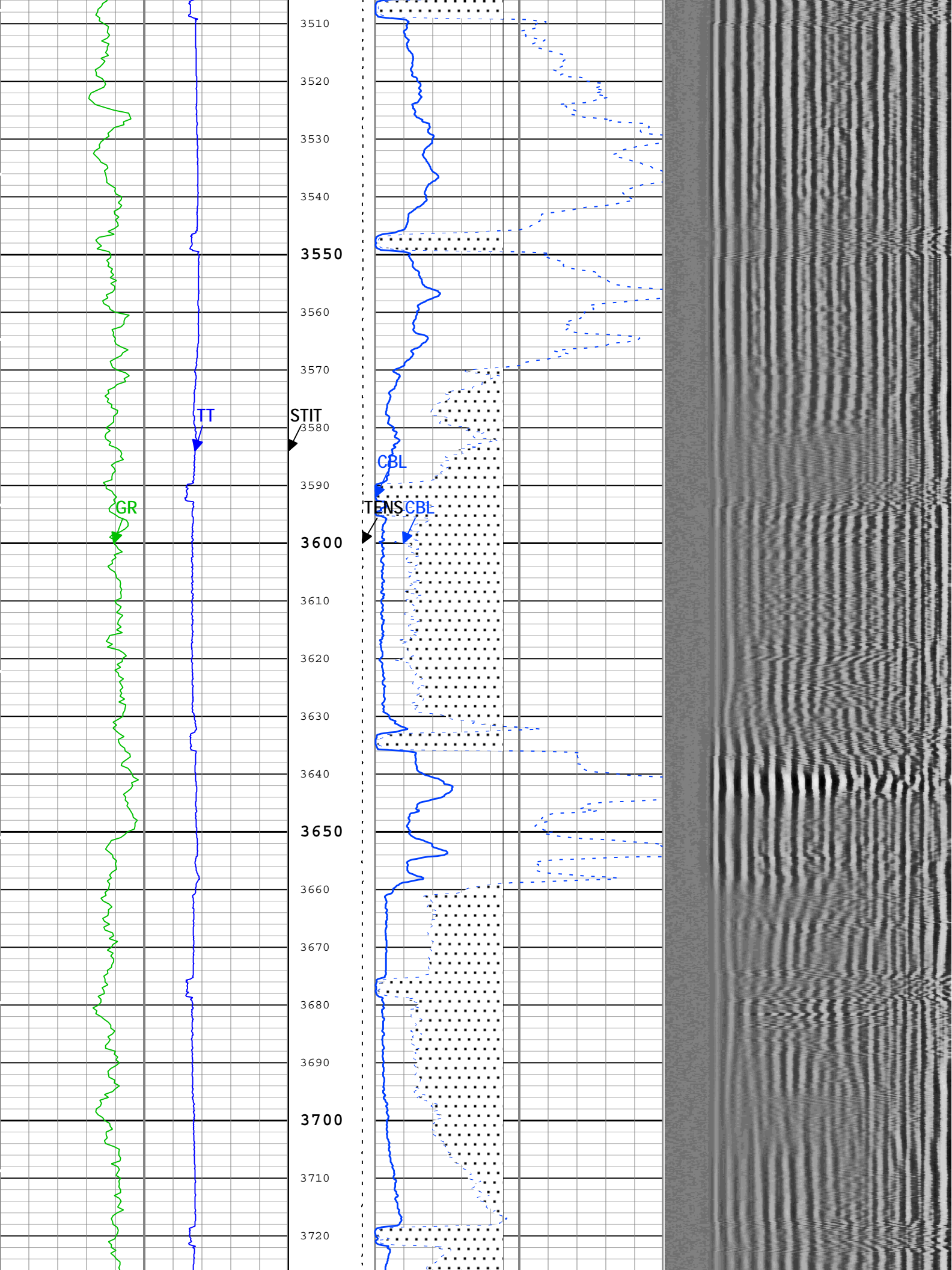


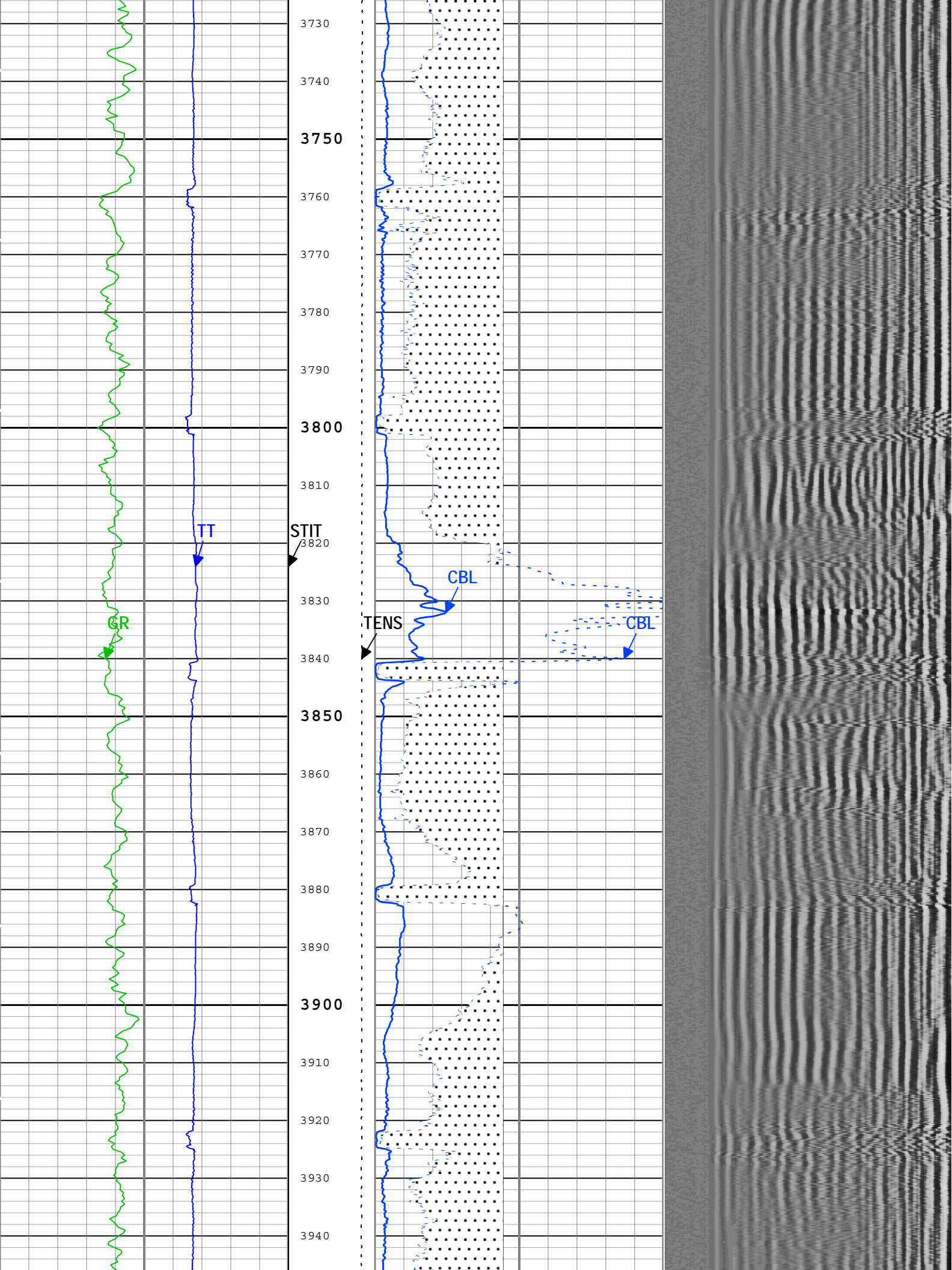


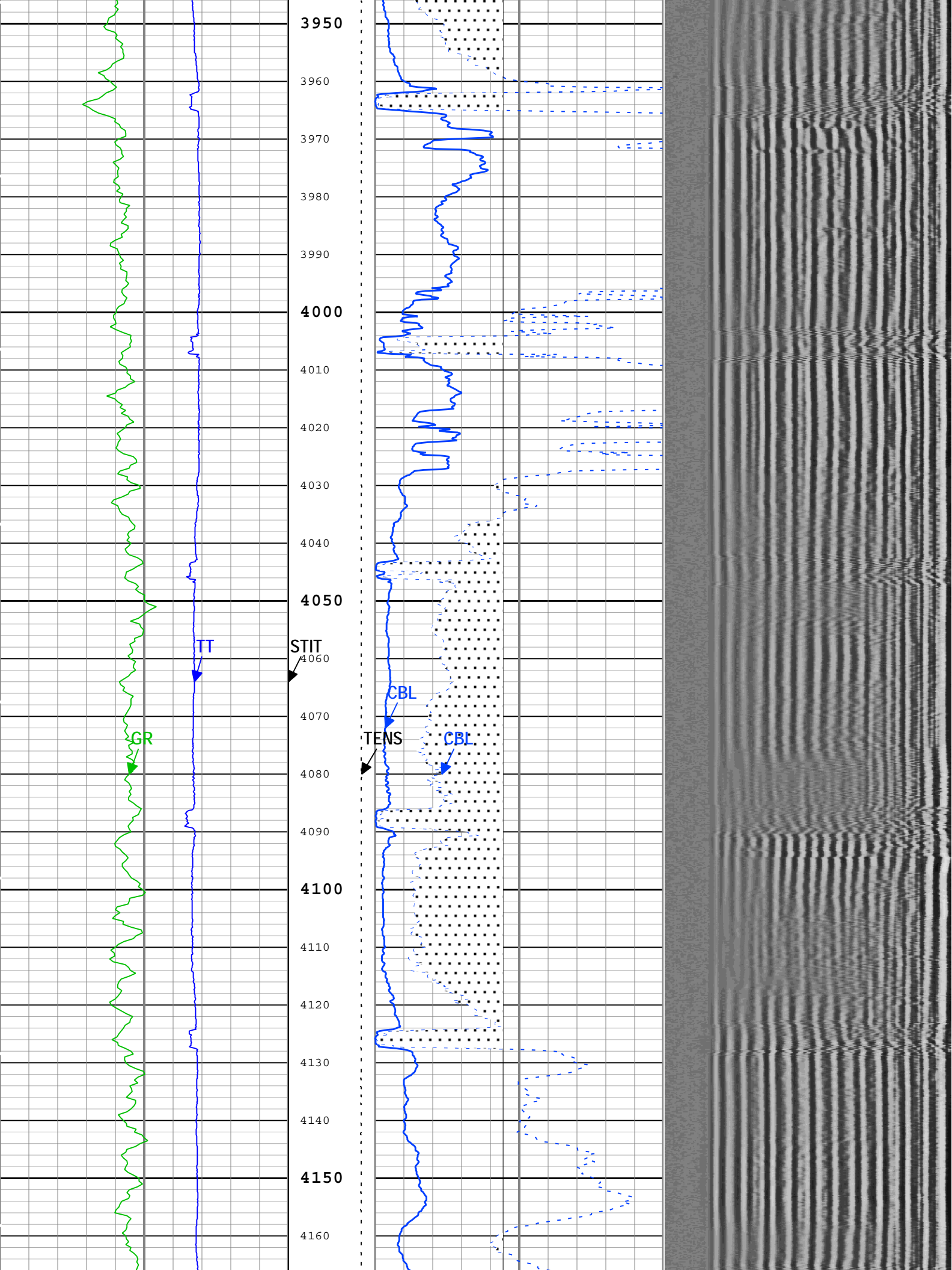


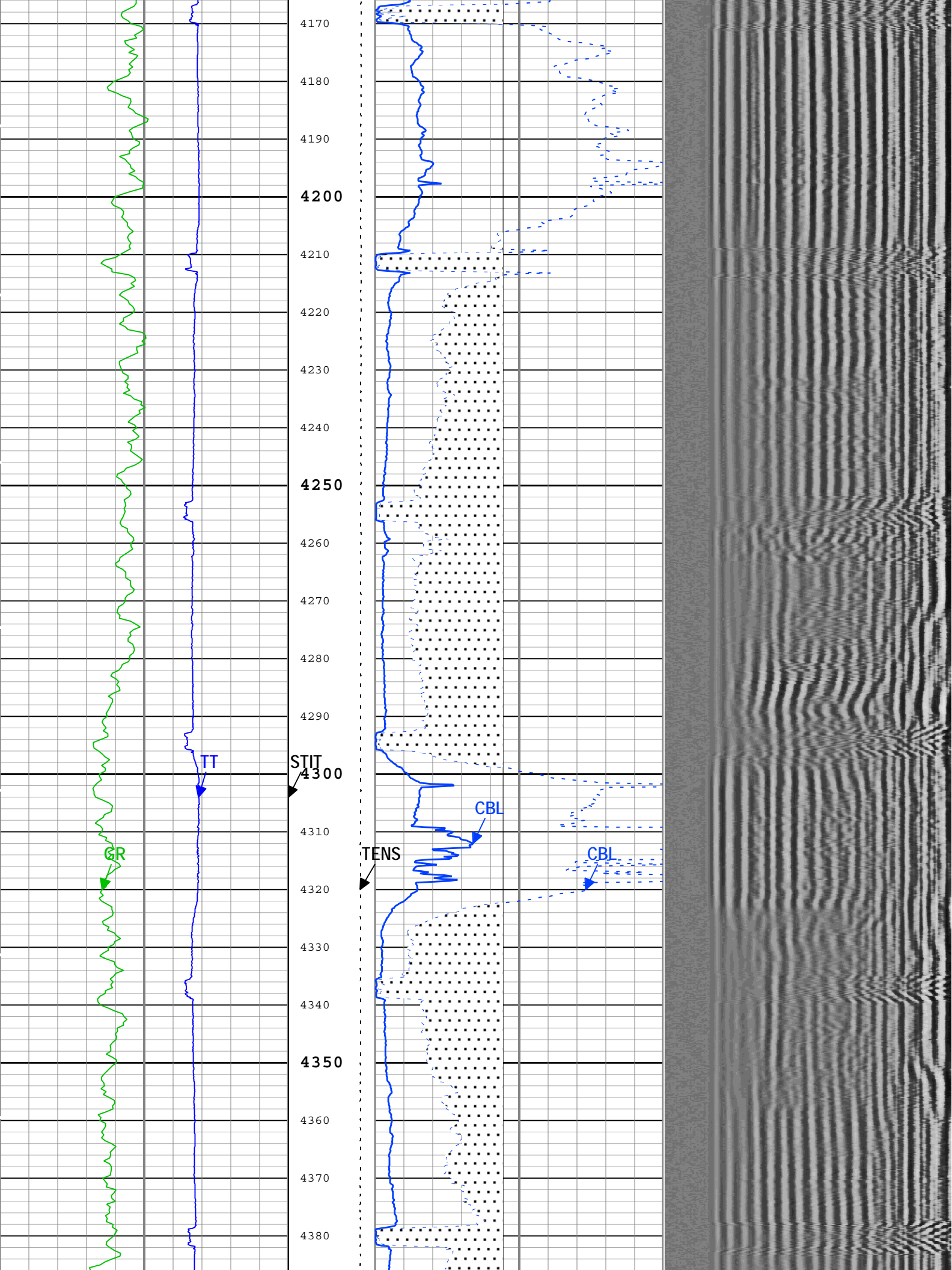


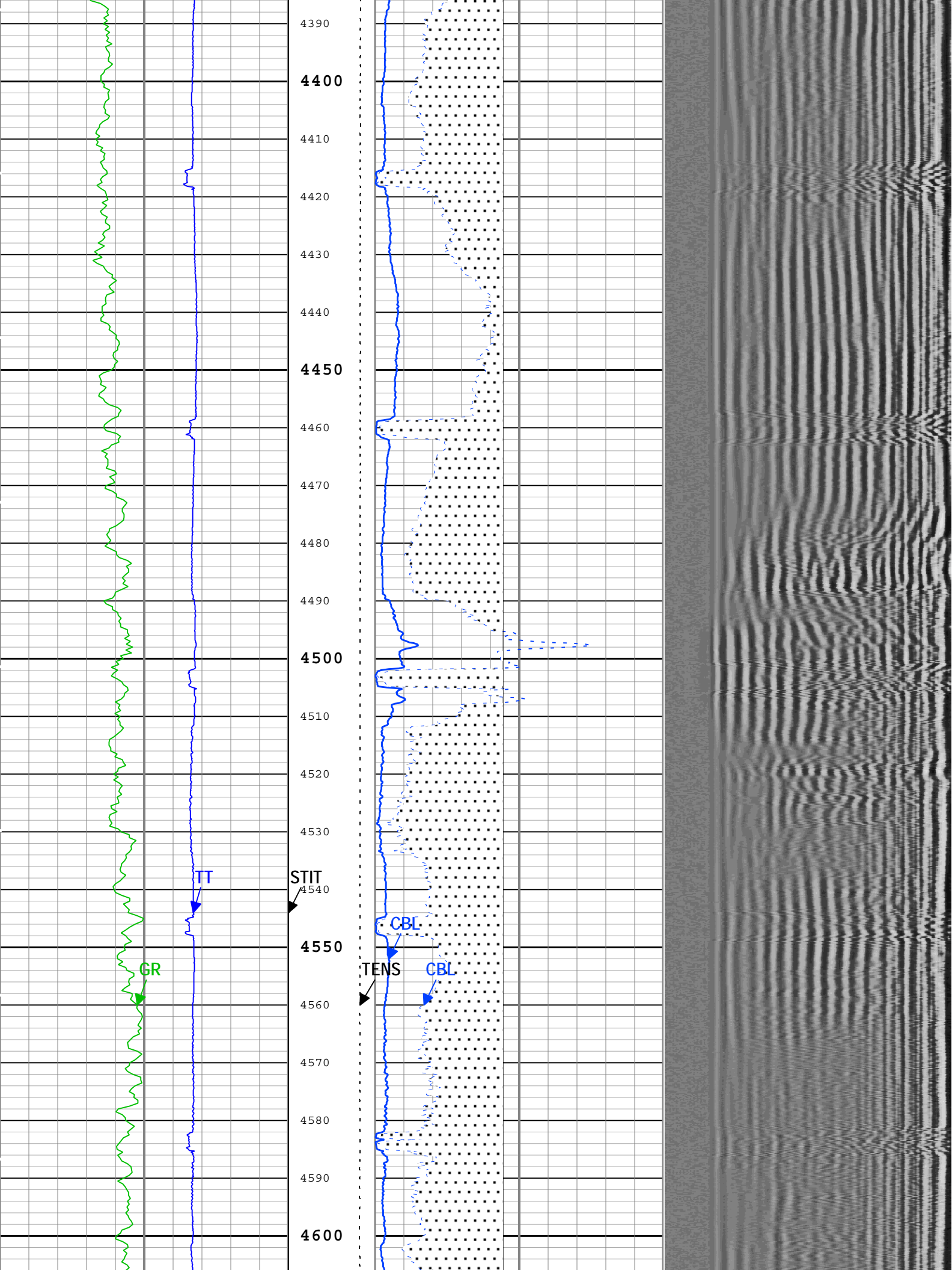


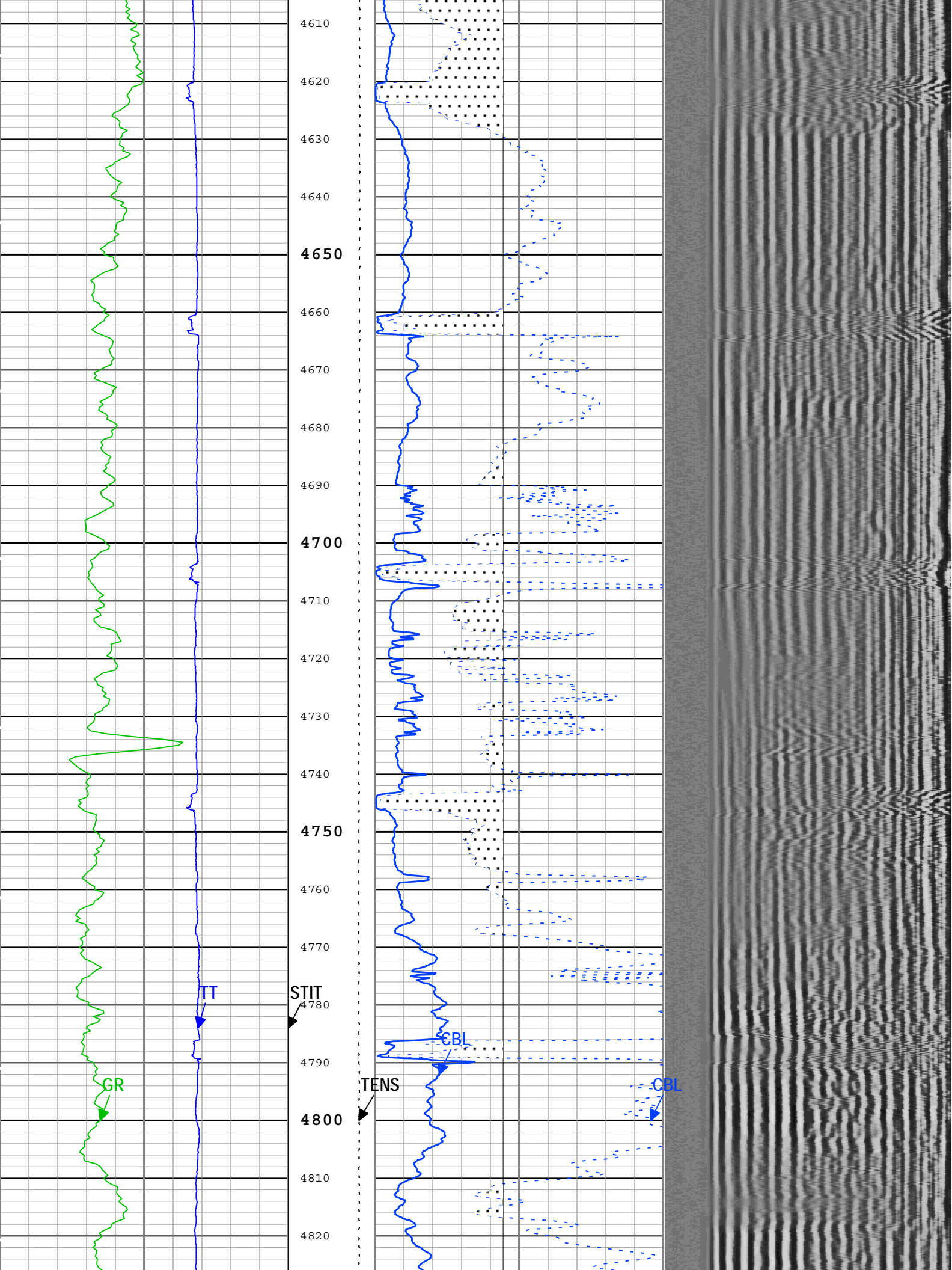


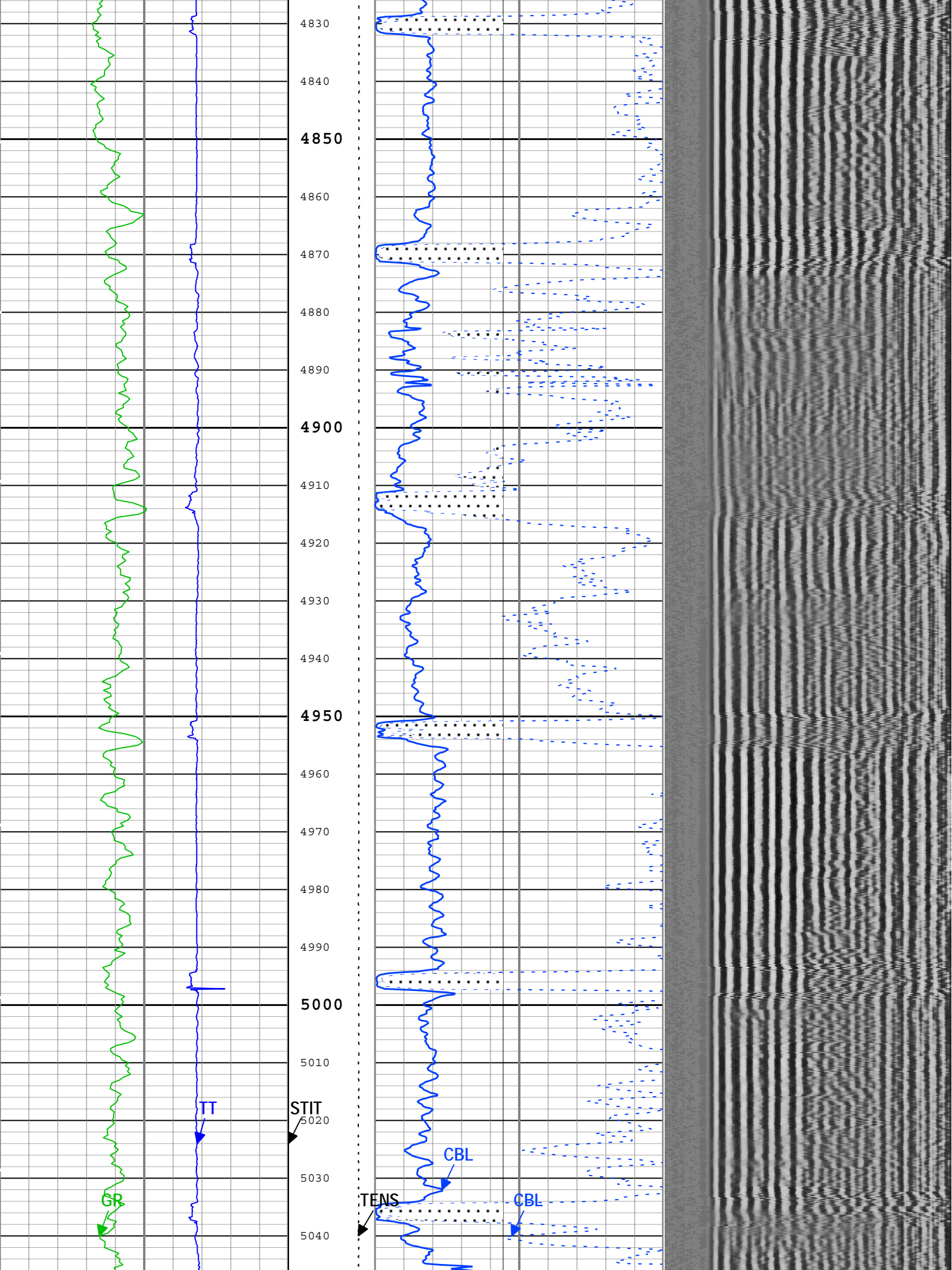


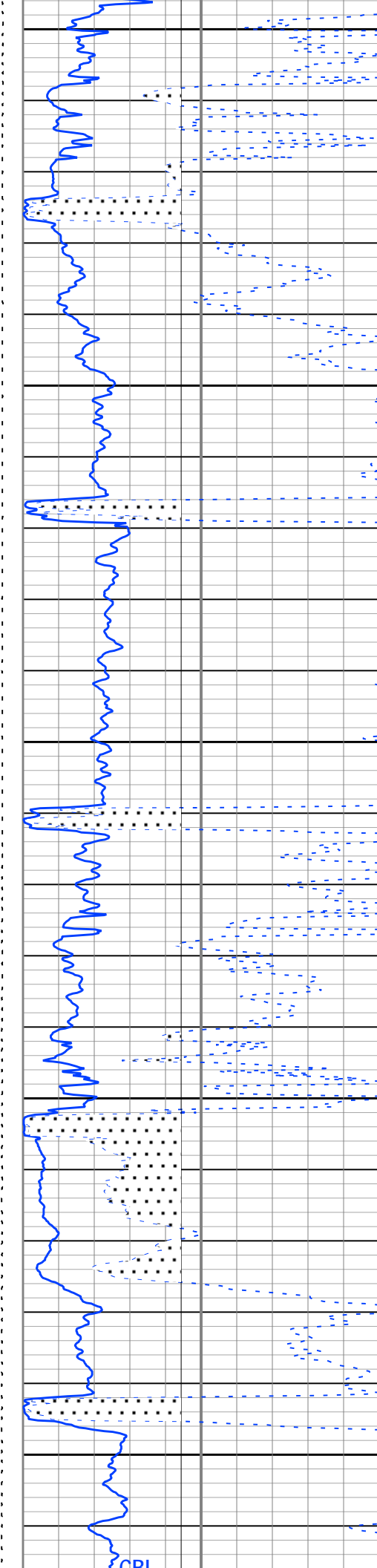
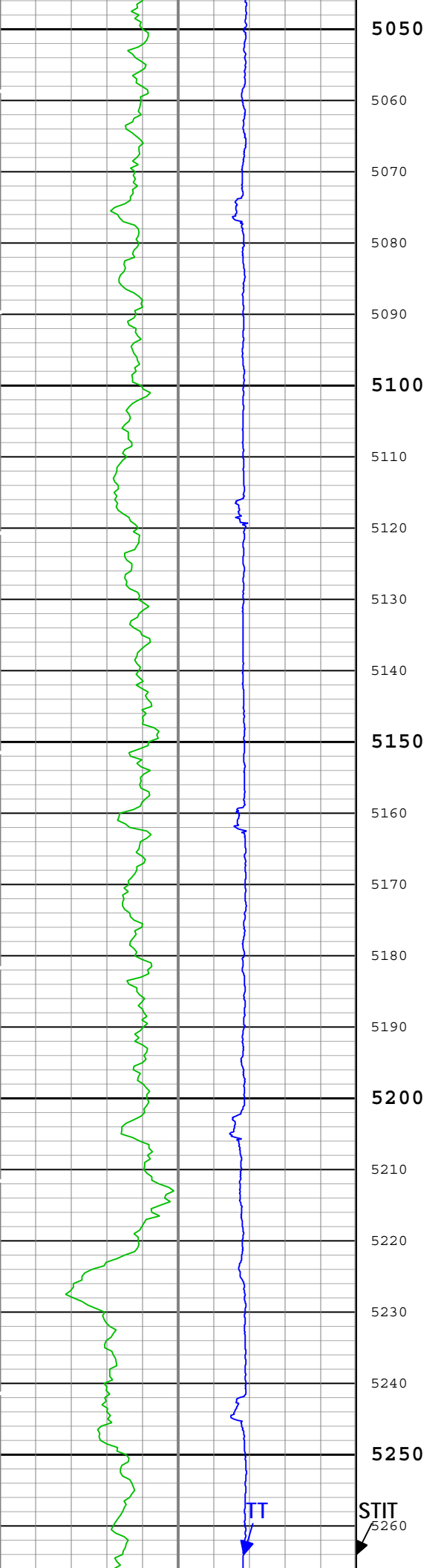


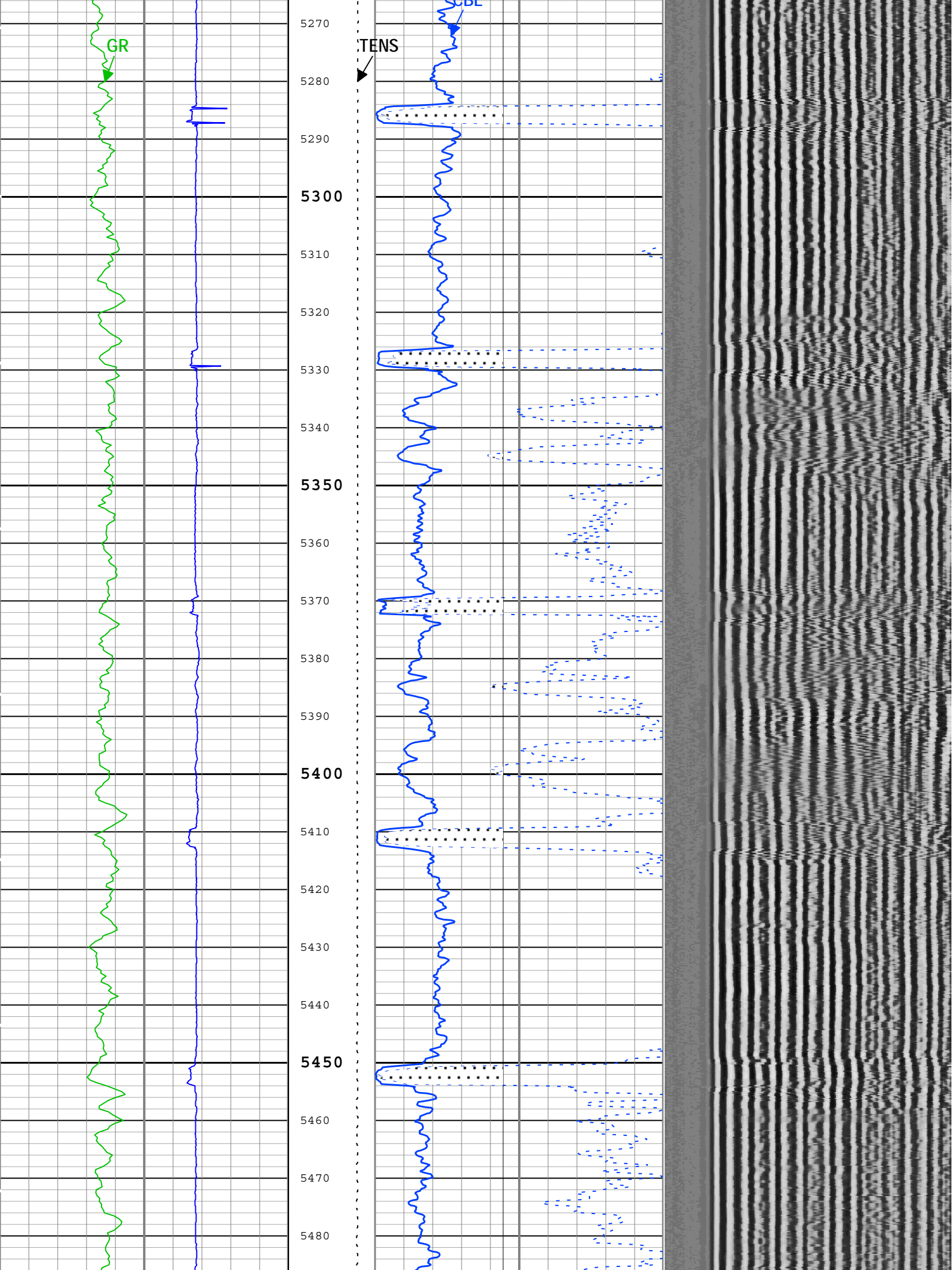


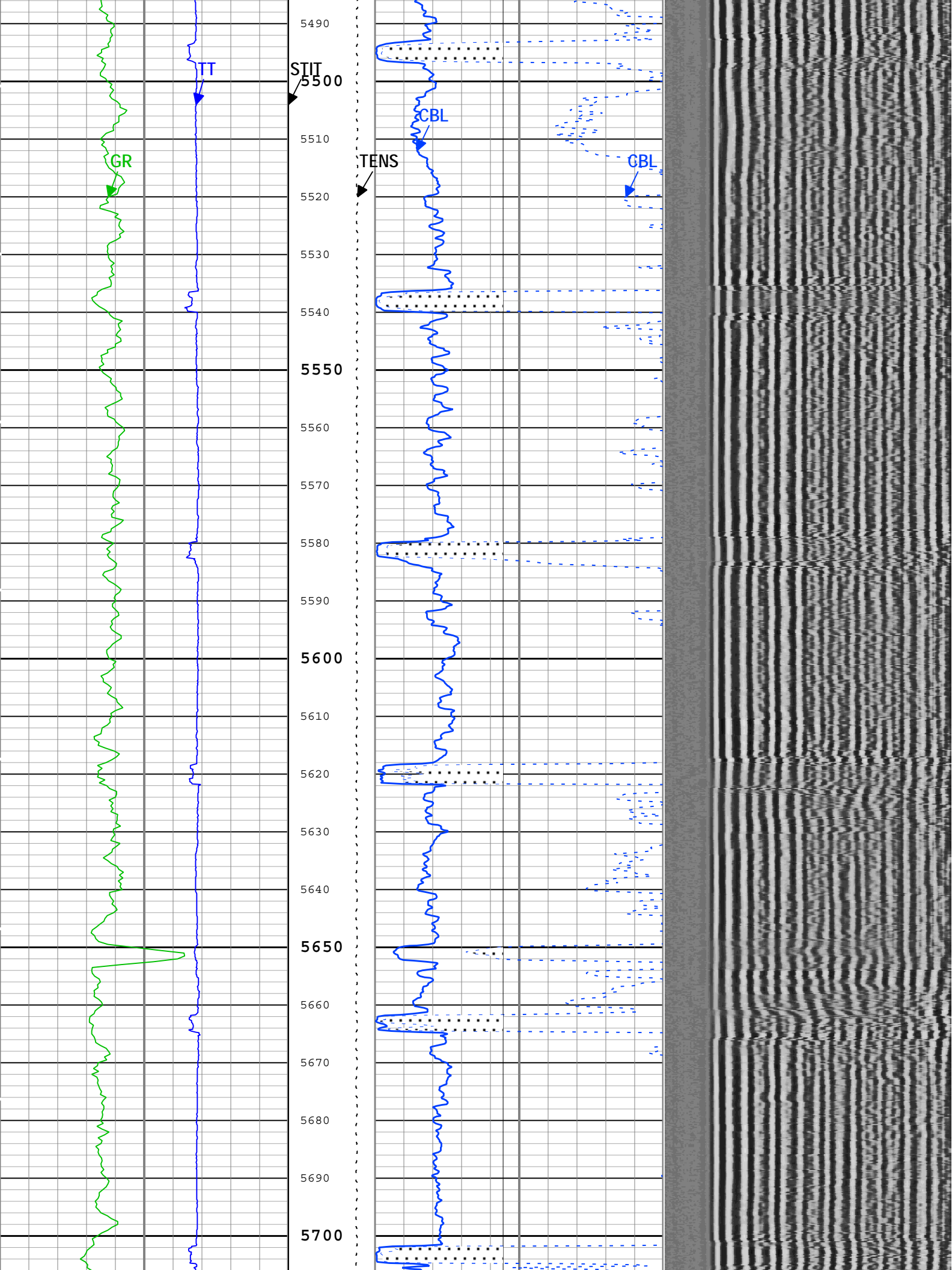


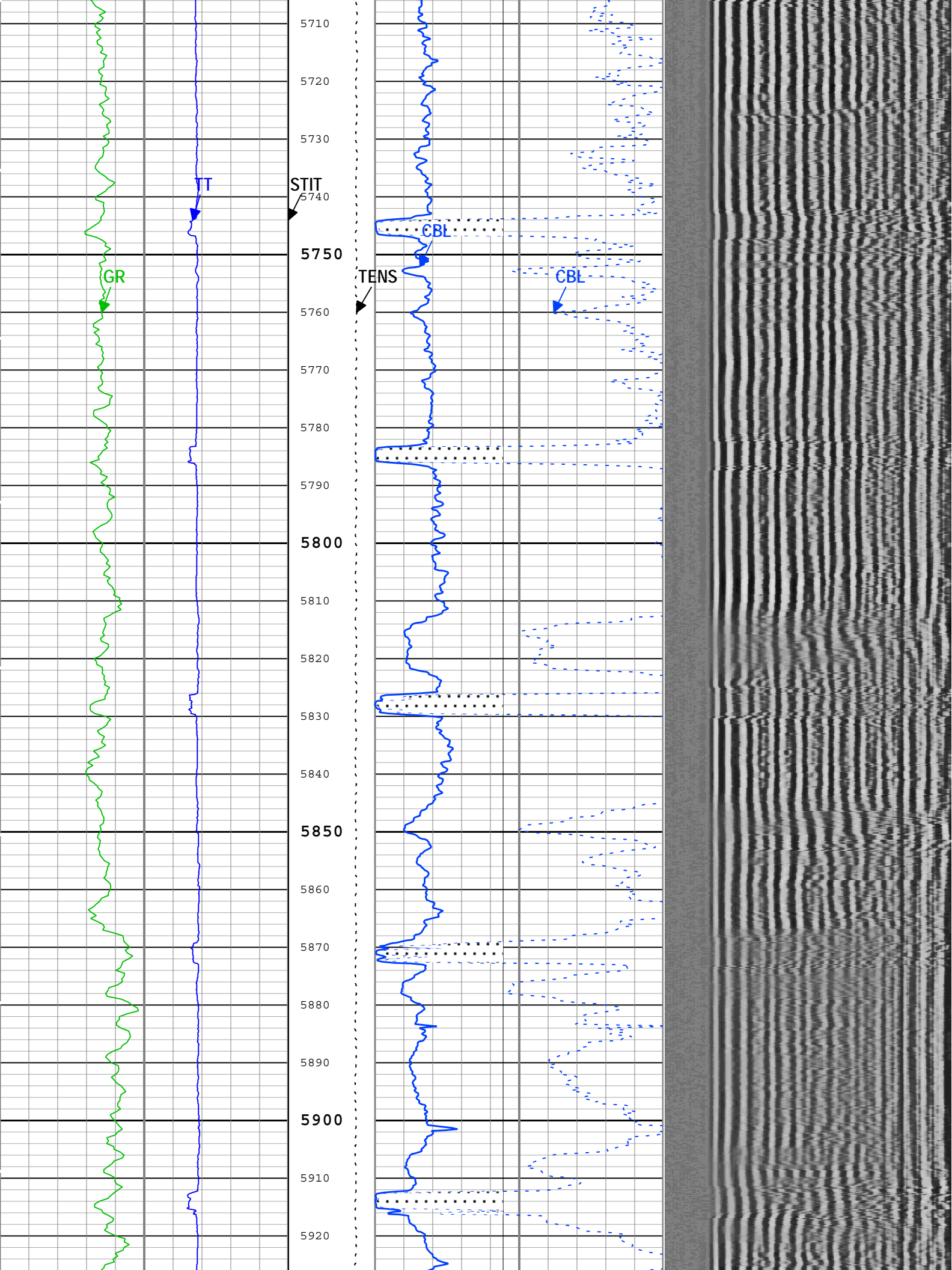


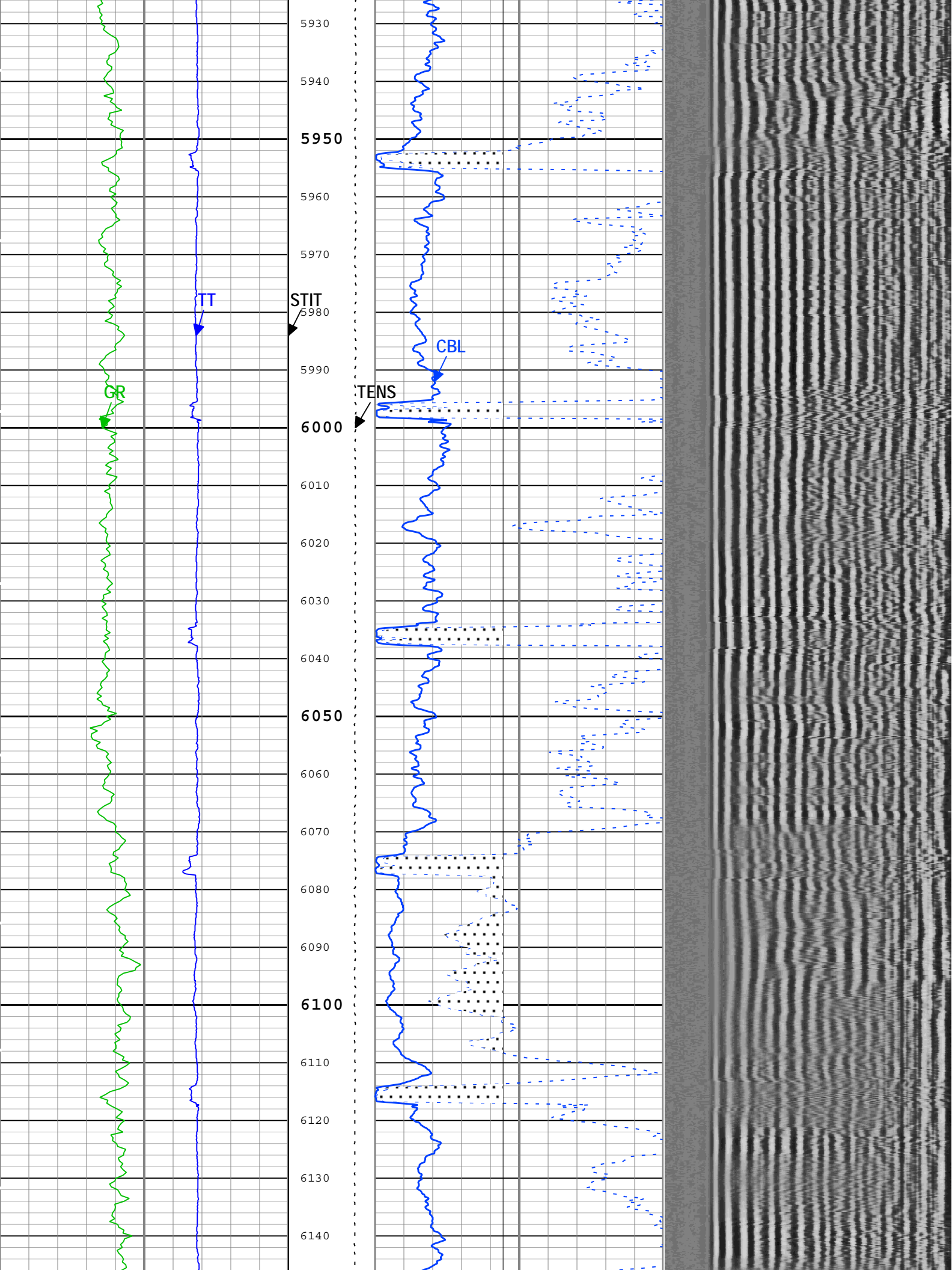


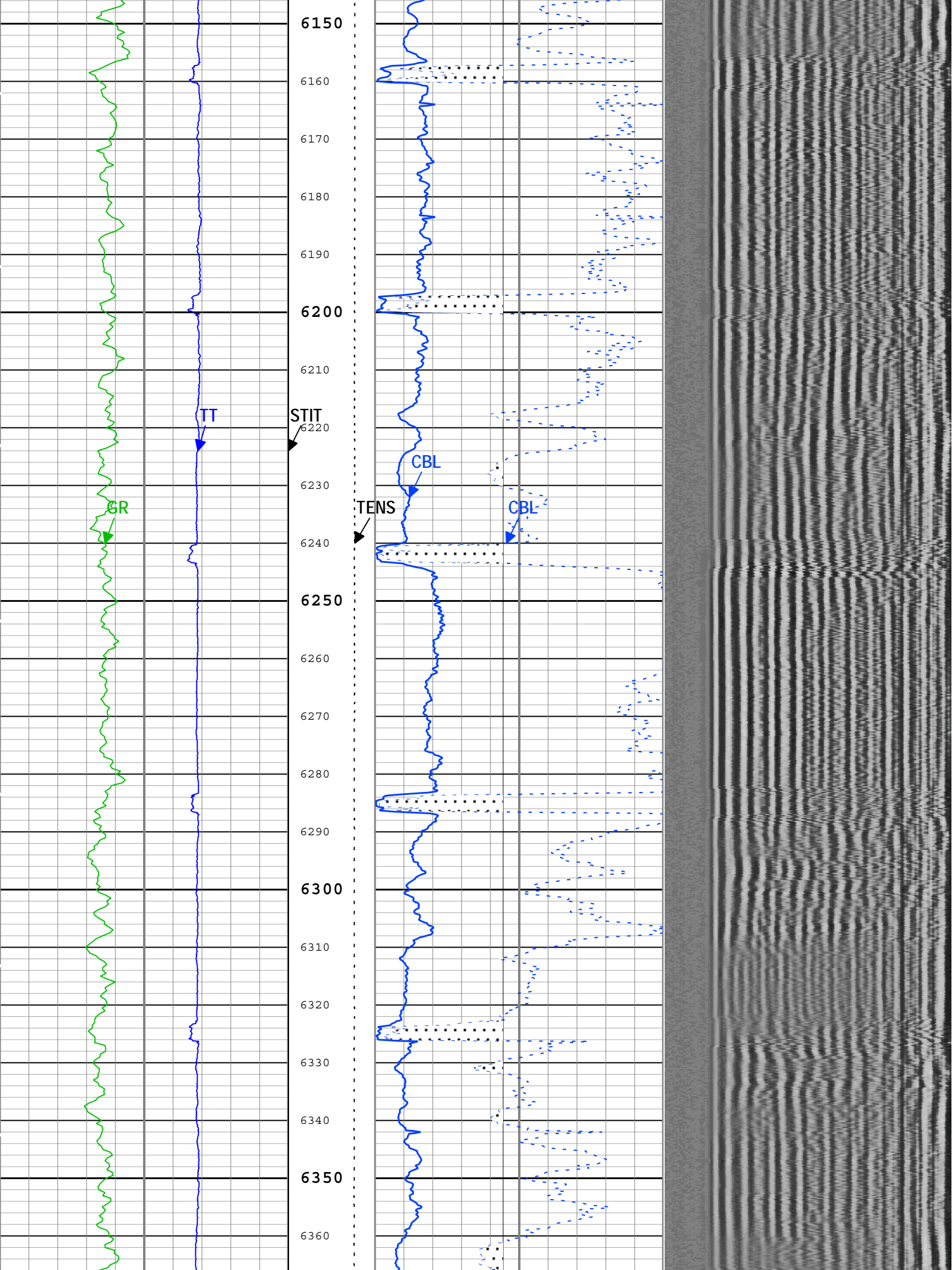


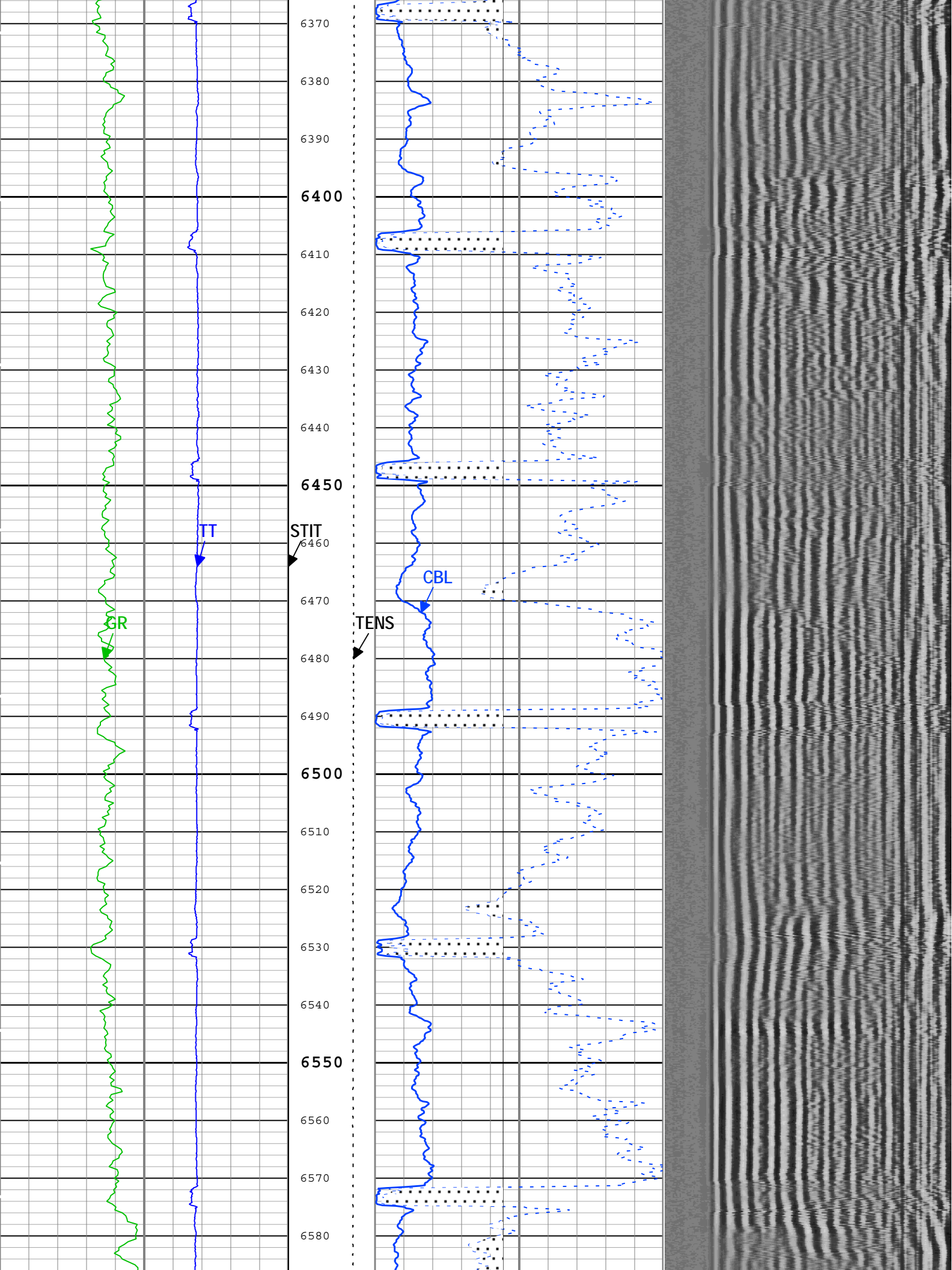


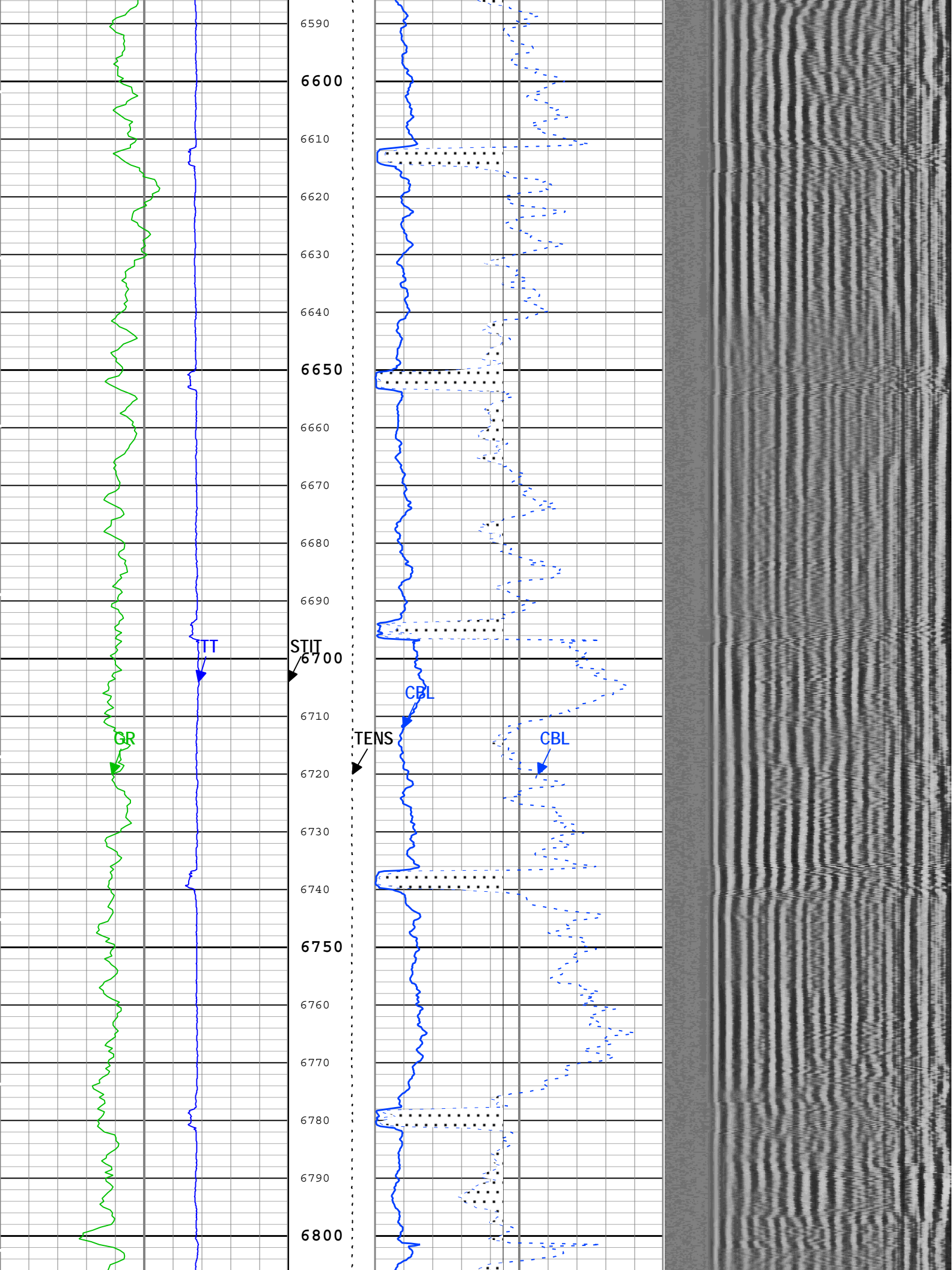


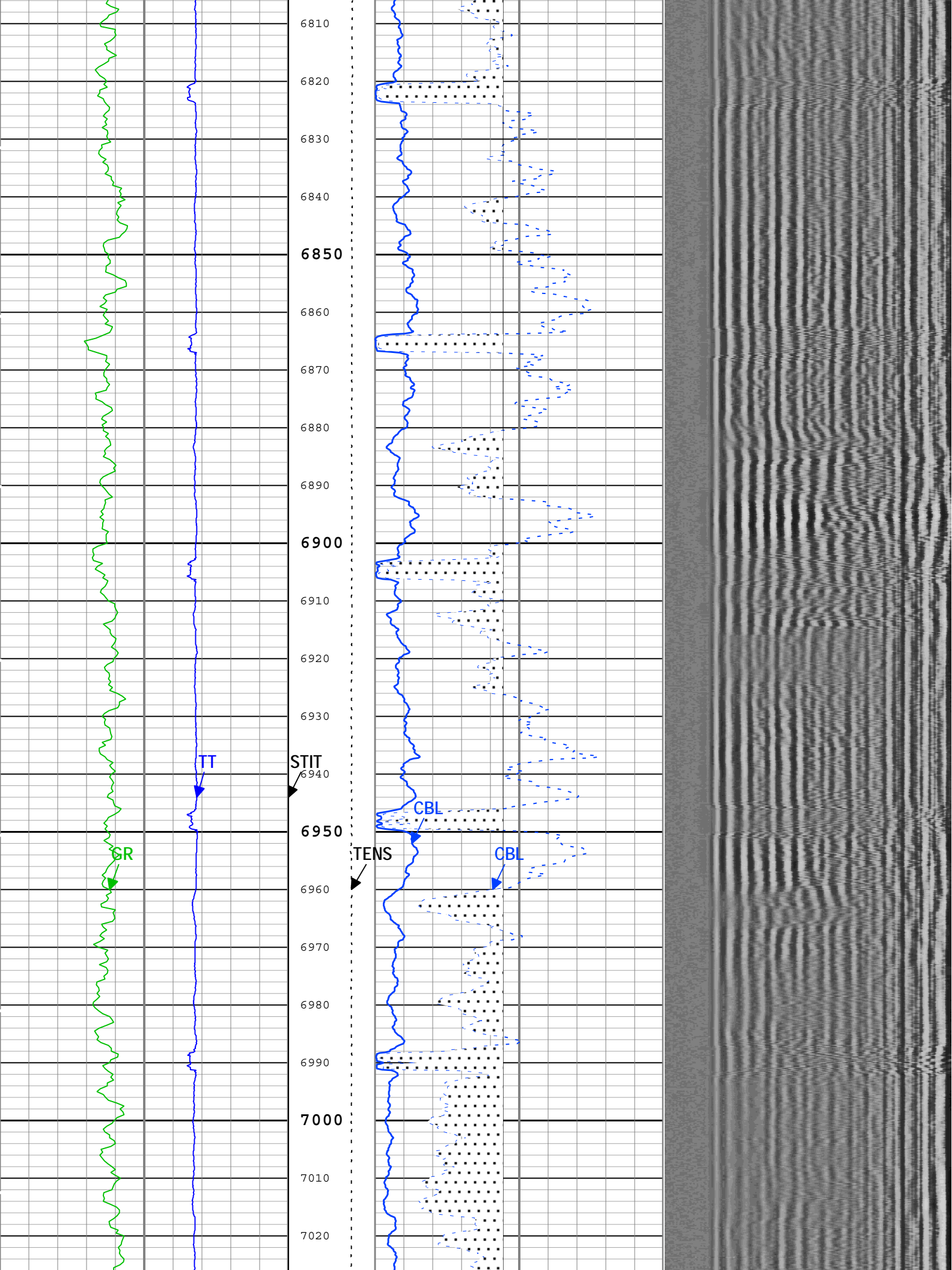


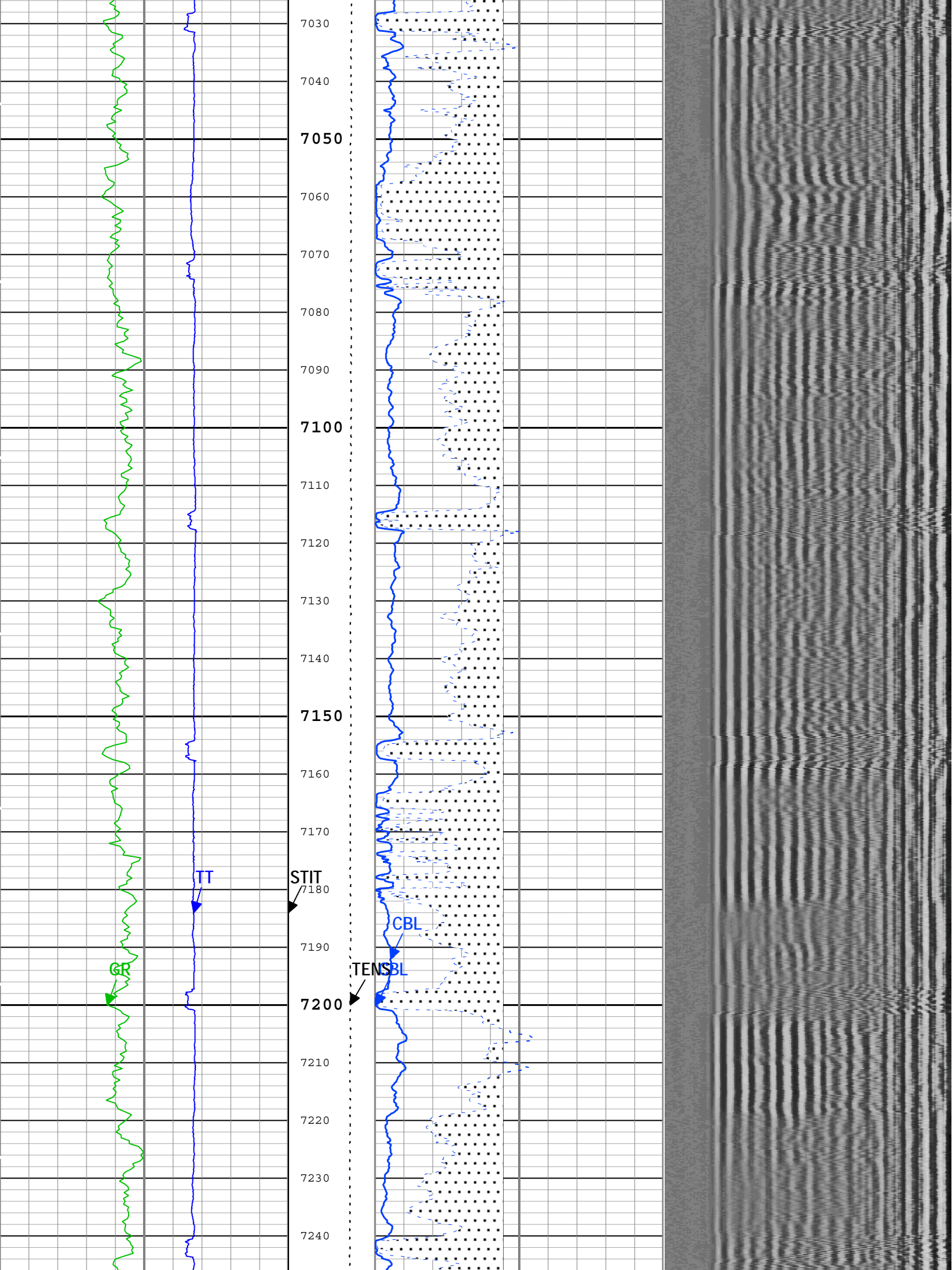


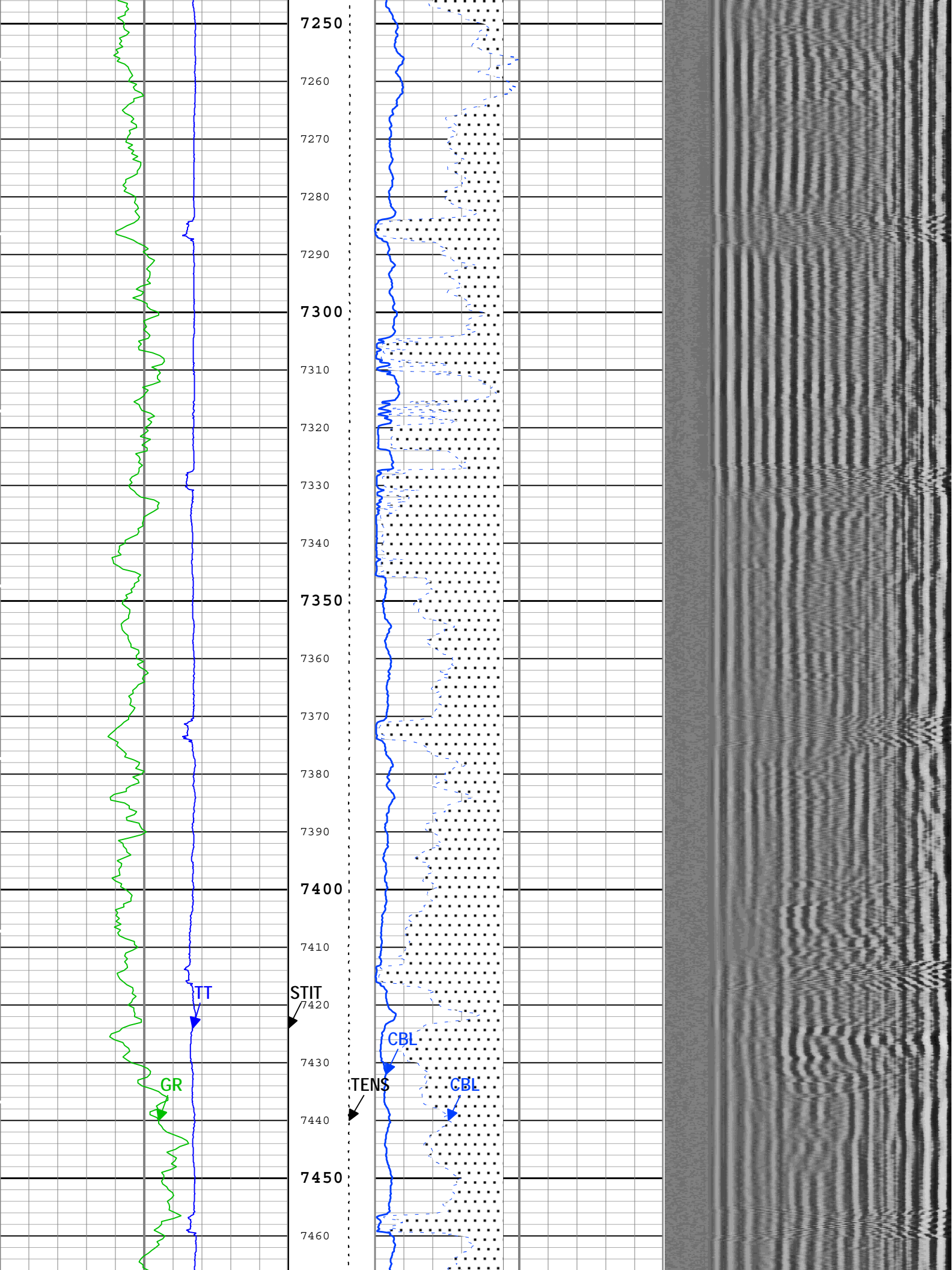


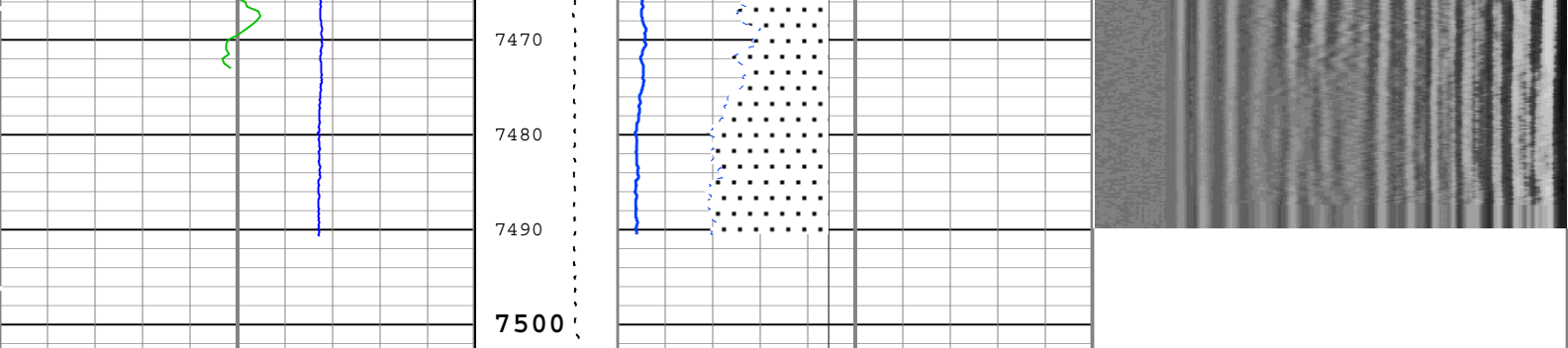












| | | | |
|---|---|---|---|
| <div>Gamma Ray (GR) HBMS-B</div> <div>0gAPI150</div> <div>Transit Time for CBL (TT) SCMT-CB</div> <div>400us200</div> | <div>Cable Tension (TENS)</div> <div>100000lbf</div> <div>Stuck Tool Indicator, Total (STIT)</div> <div>0ft50</div> <div>Cable Drag</div> <div>Tool_Tot. Drag</div> | <div>CBL Amplitude (CBL) SCMT-CB</div> <div>0mV10</div> | <div>MinAmplitudeMax</div> <div><div></div></div> <div>VDL VariableDensity (VDL) SCMT-CB</div> <div>200us1200</div> |
| | | <div>CBL Amplitude (CBL) SCMT-CB</div> <div>0mV50</div> | |
| | | <div>Good Bond (GOBO)</div> <div>0mV10</div> <div>GoodBond From CBL to GOBO</div> | |
| | TIME_1900 - Time Marked every 60.00 (s) | | |
| BIEP - Bond Index Event Pips SCMT-CB | | | |

Description: Sonic CBL with VDL Format: Log (Sonic CBL with VDL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 18-Sep-2015 14:03:56

| Channel Processing Parameters | | | | |
|-------------------------------|--|-----------|-------------|--------------|
| Run 1: Parameters | | | | |
| Parameter | Description | Tool | Value | Unit |
| BHT | Bottom Hole Temperature | Borehole | 220 | degF |
| CB3G | SCMT CBL 3 ft Peak Detection T0_Delay and Noise Gate | SCMT-CB | 224 | us |
| CBLG | CBL Gate Width | SCMT-CB | 40 | us |
| CBRA | CBL LQC Reference Amplitude in Free Pipe | SCMT-CB | 72 | mV |
| THNO | Nominal Casing Thickness - Zoned along logger depths | WLSESSION | 0.361 | in |
| DFD | Drilling Fluid Density | Borehole | 10 | lbm/gal |
| DFT | Drilling Fluid Type | Borehole | Oil | |
| DTMD | Borehole Fluid Slowness | Borehole | 190 | us/ft |
| EDF | Elevation of Derrick Floor Above Permanent Datum | WLSESSION | 19 | ft |
| EPD | Elevation of Permanent Datum (PDAT) above Mean Sea Level | WLSESSION | 5079 | ft |
| GGRD | Geothermal Gradient | Borehole | 1 | 0.01 degF/ft |
| GOBO_CURR | Good Bond in Arbitrary Cement | SCMT-CB | 4.44 | mV |
| GTSE | Generalized Temperature Selection, from Measured or Computed Temperature | Borehole | GTEM_LINEST | |
| MATT_CURR | Maximum Attenuation in Arbitrary Cement | SCMT-CB | 11.85 | dB/ft |
| MCI | Minimum Cemented Interval for Isolation | SCMT-CB | 4.75 | ft |
| MSA | Minimum Sonic Amplitude | SCMT-CB | 2.21 | mV |
| MSA_CURR | Minimum Sonic Amplitude in Arbitrary Cement | SCMT-CB | 2.21 | mV |
| PDAT | Permanent Datum | WLSESSION | GL | |
| RUN_SNUM | Run Sequence Number | WSDRUN | 2 | |
| SHT | Surface Hole Temperature | Borehole | 68 | degF |

Tool Control Parameters

Run 1: Parameters

| Parameter | Description | Tool | Value | Unit |
|---------------|----------------------------------|-----------|-------|------|
| CMTM | SCMT Operating Mode | SCMT-CB | Log | |
| MAX_LOG_SPEED | Toolstring Maximum Logging Speed | WLSESSION | 1800 | ft/h |

Calibration Report

SCMT-CB (Slim Cement Mapping Tool, 1-11/16 OD) Calibration - Run 1

Primary Equipment :

Slim Cement Mapping Sonde

SCMS-CB

8212

CBL and MAP Amplitude Normalization - Measurements

Master (File): 16:25:58 17-Sep-2015

| Measurement | Unit | Phase | Nominal | Low Limit | Actual | High Limit | |
|---|------|--------|---------|-----------|--------|------------|--|
| CBL 3 ft Temperature/Pressure Compensated Raw Amplitude (at 0 degree) - 0 | mV | Master | ---- | ---- | ---- | ---- | |
| MAP 1 Temperature/Pressure Compensated Raw Amplitude (at 0 degree) - 0 | mV | Master | ---- | ---- | ---- | ---- | |
| MAP 2 Temperature/Pressure Compensated Raw Amplitude (at 0 degree) - 0 | mV | Master | ---- | ---- | ---- | ---- | |
| MAP 3 Temperature/Pressure Compensated Raw Amplitude (at 0 degree) - 0 | mV | Master | ---- | ---- | ---- | ---- | |
| MAP 4 Temperature/Pressure Compensated Raw Amplitude (at 0 degree) - 0 | mV | Master | ---- | ---- | ---- | ---- | |
| MAP 5 Temperature/Pressure Compensated Raw Amplitude (at 0 degree) - 0 | mV | Master | ---- | ---- | ---- | ---- | |
| MAP 6 Temperature/Pressure Compensated Raw Amplitude (at 0 degree) - 0 | mV | Master | ---- | ---- | ---- | ---- | |
| MAP 7 Temperature/Pressure Compensated Raw Amplitude (at 0 degree) - 0 | mV | Master | ---- | ---- | ---- | ---- | |
| MAP 8 Temperature/Pressure Compensated Raw Amplitude (at 0 degree) - 0 | mV | Master | ---- | ---- | ---- | ---- | |
| CBL 3 ft Temperature/Pressure Compensated Raw Amplitude (at 90 degree) - 0 | mV | Master | ---- | ---- | ---- | ---- | |
| MAP 1 Temperature/Pressure Compensated Raw Amplitude (at 90 degree) - 0 | mV | Master | ---- | ---- | ---- | ---- | |
| MAP 2 Temperature/Pressure Compensated Raw Amplitude (at 90 degree) - 0 | mV | Master | ---- | ---- | ---- | ---- | |
| MAP 3 Temperature/Pressure Compensated Raw Amplitude (at 90 degree) - 0 | mV | Master | ---- | ---- | ---- | ---- | |
| MAP 4 Temperature/Pressure Compensated Raw Amplitude (at 90 degree) - 0 | mV | Master | ---- | ---- | ---- | ---- | |
| MAP 5 Temperature/Pressure Compensated Raw Amplitude (at 90 degree) - 0 | mV | Master | ---- | ---- | ---- | ---- | |
| MAP 6 Temperature/Pressure Compensated Raw Amplitude (at 90 degree) - 0 | mV | Master | ---- | ---- | ---- | ---- | |
| MAP 7 Temperature/Pressure Compensated Raw Amplitude (at 90 degree) - 0 | mV | Master | ---- | ---- | ---- | ---- | |
| MAP 8 Temperature/Pressure Compensated Raw Amplitude (at 90 degree) - 0 | mV | Master | ---- | ---- | ---- | ---- | |
| CBL 3 ft Temperature/Pressure Compensated Raw Amplitude (at 180 degree) - 0 | mV | Master | ---- | ---- | ---- | ---- | |
| MAP 1 Temperature/Pressure Compensated Raw Amplitude (at 180 degree) - 0 | mV | Master | ---- | ---- | ---- | ---- | |
| MAP 2 Temperature/Pressure Compensated Raw Amplitude (at 180 degree) - 0 | mV | Master | ---- | ---- | ---- | ---- | |
| MAP 3 Temperature/Pressure Compensated Raw Amplitude (at 180 degree) - 0 | mV | Master | ---- | ---- | ---- | ---- | |
| MAP 4 Temperature/Pressure Compensated Raw Amplitude (at 180 degree) - 0 | mV | Master | ---- | ---- | ---- | ---- | |
| MAP 5 Temperature/Pressure Compensated Raw Amplitude (at 180 degree) - 0 | mV | Master | ---- | ---- | ---- | ---- | |
| MAP 6 Temperature/Pressure Compensated Raw Amplitude (at 180 degree) - 0 | mV | Master | ---- | ---- | ---- | ---- | |
| MAP 7 Temperature/Pressure Compensated Raw Amplitude (at 180 degree) - 0 | mV | Master | ---- | ---- | ---- | ---- | |
| MAP 8 Temperature/Pressure Compensated Raw Amplitude (at 180 degree) - 0 | mV | Master | ---- | ---- | ---- | ---- | |
| CBL 3 ft Temperature/Pressure Compensated Raw Amplitude (at 180 degree) - 0 | mV | Master | ---- | ---- | ---- | ---- | |

| | | | | | | | |
|--|----|--------|-------|-------|-------|-------|--|
| Raw Amplitude (at 270 degree) - 0 | | | | | | | |
| MAP 1 Temperature/Pressure Compensated Raw Amplitude (at 270 degree) - 0 | mV | Master | ----- | ----- | ----- | ----- | |
| MAP 2 Temperature/Pressure Compensated Raw Amplitude (at 270 degree) - 0 | mV | Master | ----- | ----- | ----- | ----- | |
| MAP 3 Temperature/Pressure Compensated Raw Amplitude (at 270 degree) - 0 | mV | Master | ----- | ----- | ----- | ----- | |
| MAP 4 Temperature/Pressure Compensated Raw Amplitude (at 270 degree) - 0 | mV | Master | ----- | ----- | ----- | ----- | |
| MAP 5 Temperature/Pressure Compensated Raw Amplitude (at 270 degree) - 0 | mV | Master | ----- | ----- | ----- | ----- | |
| MAP 6 Temperature/Pressure Compensated Raw Amplitude (at 270 degree) - 0 | mV | Master | ----- | ----- | ----- | ----- | |
| MAP 7 Temperature/Pressure Compensated Raw Amplitude (at 270 degree) - 0 | mV | Master | ----- | ----- | ----- | ----- | |
| MAP 8 Temperature/Pressure Compensated Raw Amplitude (at 270 degree) - 0 | mV | Master | ----- | ----- | ----- | ----- | |

| CBL and MAP Amplitude Normalization - Coefficients | | | | | | | |
|--|------|----------------------|---------|-----------|--------|------------|--|
| Master (File): | | 16:25:58 17-Sep-2015 | | | | | |
| Measurement | Unit | Phase | Nominal | Low Limit | Actual | High Limit | |
| Normalization Temperature in SFT Tube | degF | Master | | | 71.96 | | |
| CBL Correction Factor | | Master | 0 | | 0.070 | | |
| MAP 1 Correction Factor | | Master | 0 | | 0.083 | | |
| MAP 2 Correction Factor | | Master | 0 | | 0.090 | | |
| MAP 3 Correction Factor | | Master | 0 | | 0.120 | | |
| MAP 4 Correction Factor | | Master | 0 | | 0.119 | | |
| MAP 5 Correction Factor | | Master | 0 | | 0.122 | | |
| MAP 6 Correction Factor | | Master | 0 | | 0.096 | | |
| MAP 7 Correction Factor | | Master | 0 | | 0.124 | | |
| MAP 8 Correction Factor | | Master | 0 | | 0.110 | | |

| HBMS-B (PSP HBMS-B Tool) Calibration - Run 1 | | | |
|--|--|--------|-------|
| Primary Equipment : | | | |
| HBMC | | HBMC-A | 37116 |
| HTPS | | HTPS-A | 2949 |
| Calibration Parameter : | | | |
| JIG-BKGD | | | |

| HBMS Gamma Ray Master Calibration | | |
|---------------------------------------|-----------------|-------|
| Master (EEPROM): 00:00:00 08-Aug-2012 | | |
| PBMS_GR_MODEL (Master) | GR Coefficients | |
| | Rt**0 | Rt**1 |
| Rt**0 | 2000 | 1900 |

| HBMS Well Temp Master Calibration | | | | | | |
|---------------------------------------|------------------|----------|-----------|----------|------------|-------|
| Master (EEPROM): 00:00:00 29-Jan-2013 | | | | | | |
| PBMS_RTD_THERM (Master) | RTD Coefficients | | | | | |
| | Tt**0 | Tt**1 | Tt**2 | Tt**3 | Tt**4 | Tt**5 |
| Tt**0 | -401.4008 | 175.2788 | -28.62328 | 5.254388 | -0.3210993 | 0 |

| HBMS CQG Master Calibration | | | | | | |
|---------------------------------------|---------------------------------|-------|-------|-------|-------|-------|
| Master (EEPROM): 00:00:00 29-Jan-2013 | | | | | | |
| PBMS_P_GAUGE_PRES (Master) | CQG Pressure Model Coefficients | | | | | |
| | Fh**0 | Fh**1 | Fh**2 | Fh**3 | Fh**4 | Fh**5 |

| | FD 0 | FD 1 | FD 2 | FD 3 | FD 4 | FD 5 |
|-------|--------------|---------------|---------------|---------------|---------------|---------------|
| Fc**0 | 7837.907 | 0.02591009 | -3.114926E-09 | -7.709929E-11 | -1.428568E-15 | -2.235068E-20 |
| Fc**1 | -1.06885 | -1.301368E-05 | -1.032797E-10 | 7.434226E-17 | 1.25876E-20 | 0 |
| Fc**2 | 1.014109E-06 | 4.977329E-11 | 9.425954E-16 | 0 | 0 | 0 |
| Fc**3 | 3.722379E-13 | 1.910296E-16 | 0 | 0 | 0 | 0 |
| Fc**4 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fc**5 | 0 | 0 | 0 | 0 | 0 | 0 |

PBMS_P_GAUGE_TEMP CQG Temperature Model Coefficients
(Master)

| | Fc**0 | Fc**1 | Fc**2 | Fc**3 | Fc**4 | Fc**5 |
|-------|---------------|---------------|--------------|---------------|--------------|---------------|
| Fb**0 | 118.988 | -0.0003791057 | 6.723651E-09 | 5.214251E-13 | 7.024549E-18 | -6.096675E-21 |
| Fb**1 | -0.005959229 | 1.700975E-08 | 1.554902E-13 | -3.925174E-18 | 4.698875E-22 | 0 |
| Fb**2 | -3.170823E-08 | 3.646141E-13 | 1.854586E-18 | 0 | 0 | 0 |
| Fb**3 | -2.844855E-13 | 6.667483E-18 | 0 | 0 | 0 | 0 |
| Fb**4 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fb**5 | 0 | 0 | 0 | 0 | 0 | 0 |

PBMS_CQG_FCLK_FREQ CQG Clock Frequency Model Coefficients
(Master)

| | (Fb'-Fc')**0 | (Fb'-Fc')**1 | (Fb'-Fc')**2 | (Fb'-Fc')**3 | (Fb'-Fc')**4 | (Fb'-Fc')**5 |
|--------------|--------------|--------------|--------------|---------------|---------------|--------------|
| (Fb'-Fc')**0 | 31073.14 | 0.003539503 | 5.140776E-07 | -6.727005E-11 | -4.424515E-16 | 4.645395E-21 |

PBMS_CQG_FCLK_TEMP CQG Clock Temperature Model Coefficients
(Master)

| | (Fb'-Fc')**0 | (Fb'-Fc')**1 | (Fb'-Fc')**2 | (Fb'-Fc')**3 | (Fb'-Fc')**4 | (Fb'-Fc')**5 |
|--------------|--------------|--------------|---------------|--------------|---------------|--------------|
| (Fb'-Fc')**0 | 115.1997 | -0.006080343 | -3.055364E-08 | 1.040968E-12 | -7.731804E-17 | 1.767909E-21 |

| | | |
|----------------------|--------------------------|--------------|
| Company: | Extraction Oil & Gas LLC | Schlumberger |
| Well: | Troudt 6 | |
| Field: | Wattenberg | |
| County: | Weld | |
| State: | Colorado | |
| Cement Bond Log | | |
| Variable Density Log | | |