

Company: ENCANA OIL & GAS (USA) INC.

Well: FEDERAL SMITH 19-15 (PA30)

Field: PARACHUTE

County: GARFIELD State: COLORADO

CEMENT BOND LOG
CBL – VDL
GAMMA RAY – CCL

County: GARFIELD

Field: PARACHUTE

Location: SHL: 512' FNL & 429' FEL

Well: FEDERAL SMITH 19-15 (PA30)

Company: ENCANA OIL & GAS (USA) INC.

| LOCATION | |
|--------------------------------|------------------------|
| SHL: 512' FNL & 429' FEL | Elev.: K.B. 5828.00 ft |
| BHL: SWSE 526' FSL & 1981' FEL | G.L. 5806.00 ft |
| | D.F. 5827.00 ft |
| Permanent Datum: _____ | GROUND LEVEL _____ |
| Log Measured From: _____ | KELLY BUSHING _____ |
| Drilling Measured From: _____ | KELLY BUSHING _____ |
| API Serial No. _____ | Section 30 |
| 05-045-20782-0000 | Township 7S |
| | Range 95W |

| | Run 1 | Run 2 | Run 3 |
|--------------------------|---------|-------|-------|
| Oil Density | | | |
| Water Salinity | | | |
| Gas Gravity | | | |
| Bo | | | |
| Bw | | | |
| 1/Bq | | | |
| Bubble Point Pressure | | | |
| Bubble Point Temperature | | | |
| Solution GOR | | | |
| Maximum Deviation | | | |
| CEMENTING DATA | | | |
| Primary/Squeeze | Primary | | |
| Casing String No | | | |
| Lead Cement Type | | | |
| Volume | | | |
| Density | | | |
| Water Loss | | | |
| Additives | | | |
| Tail Cement Type | | | |
| Volume | | | |
| Density | | | |
| Water Loss | | | |
| Additives | | | |
| Expected Cement Top | | | |

| | | | |
|-------------------------------|-----------------|----------------|--|
| Logging Date | 22-Nov-2011 | | |
| Run Number | ONE | | |
| Depth Driller | 6970 ft | | |
| Schlumberger Depth | 6879 ft | | |
| Bottom Log Interval | 6870.6 ft | | |
| Top Log Interval | 200 ft | | |
| Casing Fluid Type | WATER | | |
| Salinity | | | |
| Density | 8.4 lbm/gal | | |
| Fluid Level | 22 ft | | |
| BIT/CASING/TUBING STRING | | | |
| Bit Size | 8.750 in | | |
| From | 22 ft | | |
| To | 6970 ft | | |
| Casing/Tubing Size | 4.500 in | | |
| Weight | 11.6 lbm/ft | | |
| Grade | S-80 | | |
| From | 22 ft | | |
| To | 6941 ft | | |
| Maximum Recorded Temperatures | 196 degF | | |
| Logger On Bottom | 22-Nov-2011 | 2:03 | |
| Unit Number | 391 | GRAND JUNCTION | |
| Recorded By | SHOWKAT HOSSAIN | | |
| Witnessed By | UNATTENDED | | |

| | | | |
|-------------------------------|--|--|--|
| Logging Date | | | |
| Run Number | | | |
| Depth Driller | | | |
| Schlumberger Depth | | | |
| Bottom Log Interval | | | |
| Top Log Interval | | | |
| Casing Fluid Type | | | |
| Salinity | | | |
| Density | | | |
| Fluid Level | | | |
| BIT/CASING/TUBING STRING | | | |
| Bit Size | | | |
| From | | | |
| To | | | |
| Casing/Tubing Size | | | |
| Weight | | | |
| Grade | | | |
| From | | | |
| To | | | |
| Maximum Recorded Temperatures | | | |
| Logger On Bottom | | | |
| Unit Number | | | |
| Recorded By | | | |
| Witnessed By | | | |

DEPTH SUMMARY LISTING

Date Created: 22-NOV-2011 3:26:27

Depth System Equipment

| Depth Measuring Device | | Tension Device | | Logging Cable | |
|---------------------------|-------------|-------------------------------|-------------|--------------------|----------|
| Type: | IDW-JA | Type: | CMTD-C | Type: | 1-25ZT |
| Serial Number: | 6322 | Serial Number: | 5006 | Serial Number: | 391 |
| Calibration Date: | 07-APR-2011 | Calibration Date: | 04-OCT-2011 | Length: | 14200 FT |
| Calibrator Serial Number: | 33 | Calibrator Serial Number: | 174878 | | |
| Calibration Cable Type: | 1-25P | Number of Calibration Points: | 10 | Conveyance Method: | Wireline |
| Wheel Correction 1: | -6 | Calibration RMS: | 4 | Rig Type: | LAND |
| Wheel Correction 2: | -5 | Calibration Peak Error: | 8 | | |

Depth Control Parameters

| | |
|-----------------------------|-----------------------|
| Log Sequence: | First Log In the Well |
| Rig Up Length At Surface: | 198.00 FT |
| Rig Up Length At Bottom: | 197.00 FT |
| Rig Up Length Correction: | 1.00 FT |
| Stretch Correction: | 3.00 FT |
| Tool Zero Check At Surface: | 0.90 FT |

Depth Control Remarks

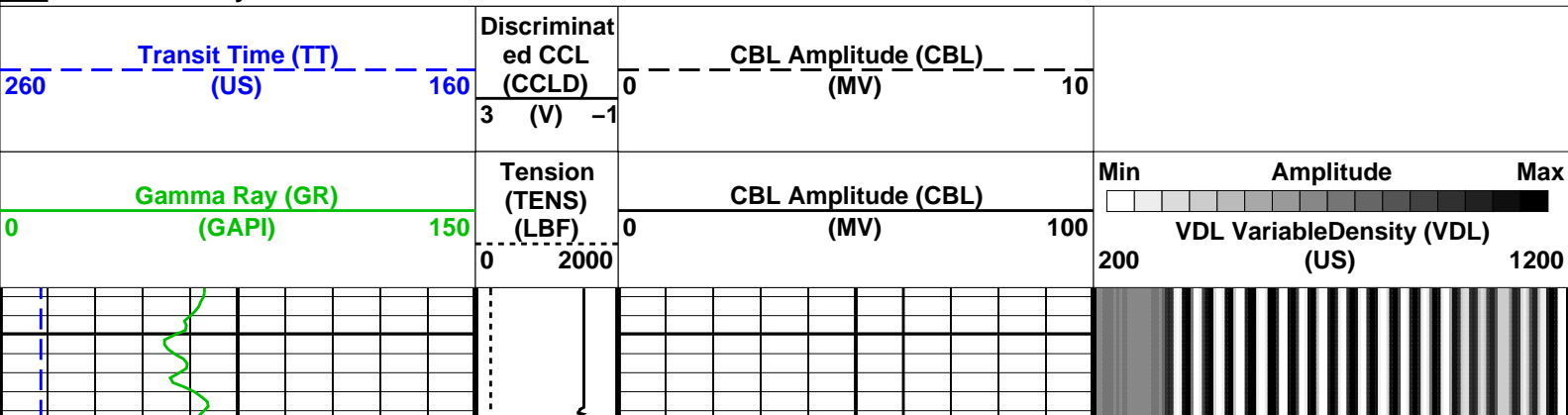
1. ALL SCHLUMBERGER DEPTH CONTROL PROCEDURES FOLLOWED.
2. IDW USED AS PRIMARY DEPTH CONTROL.
3. Z-CHART AND DRUM COUNTER USED AS SECONDARY DEPTH CONTROL.
- 4.
- 5.
- 6.

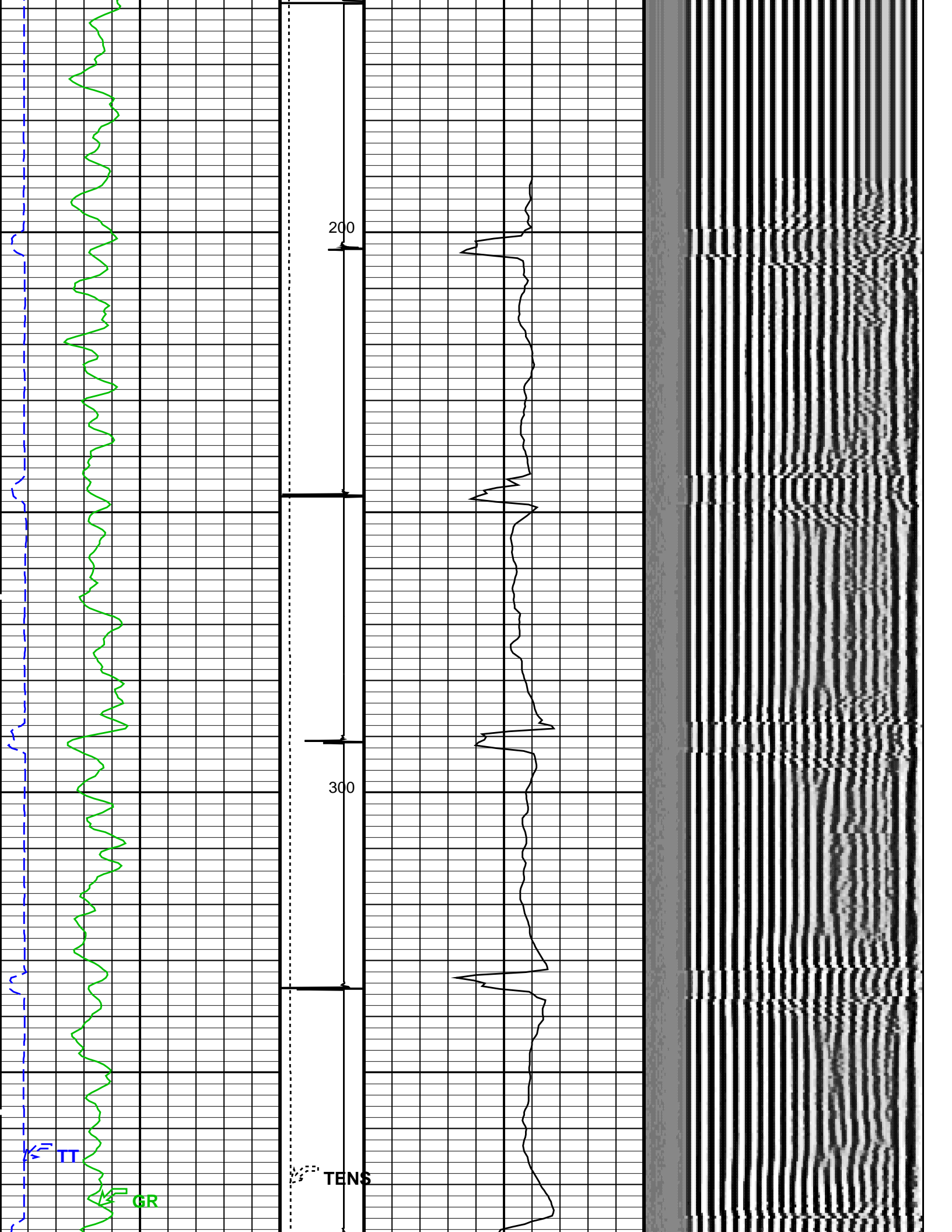
DISCLAIMER

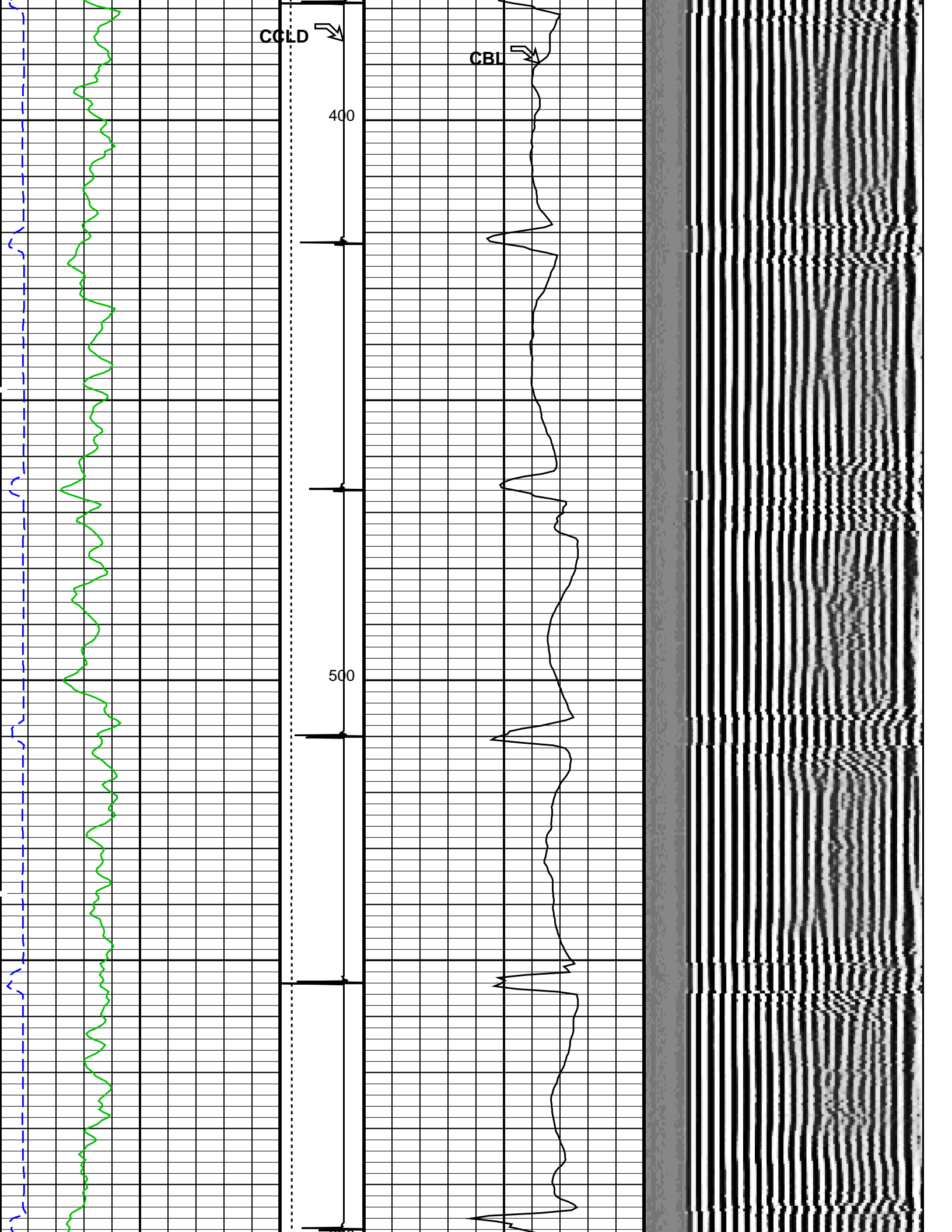
THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF 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.

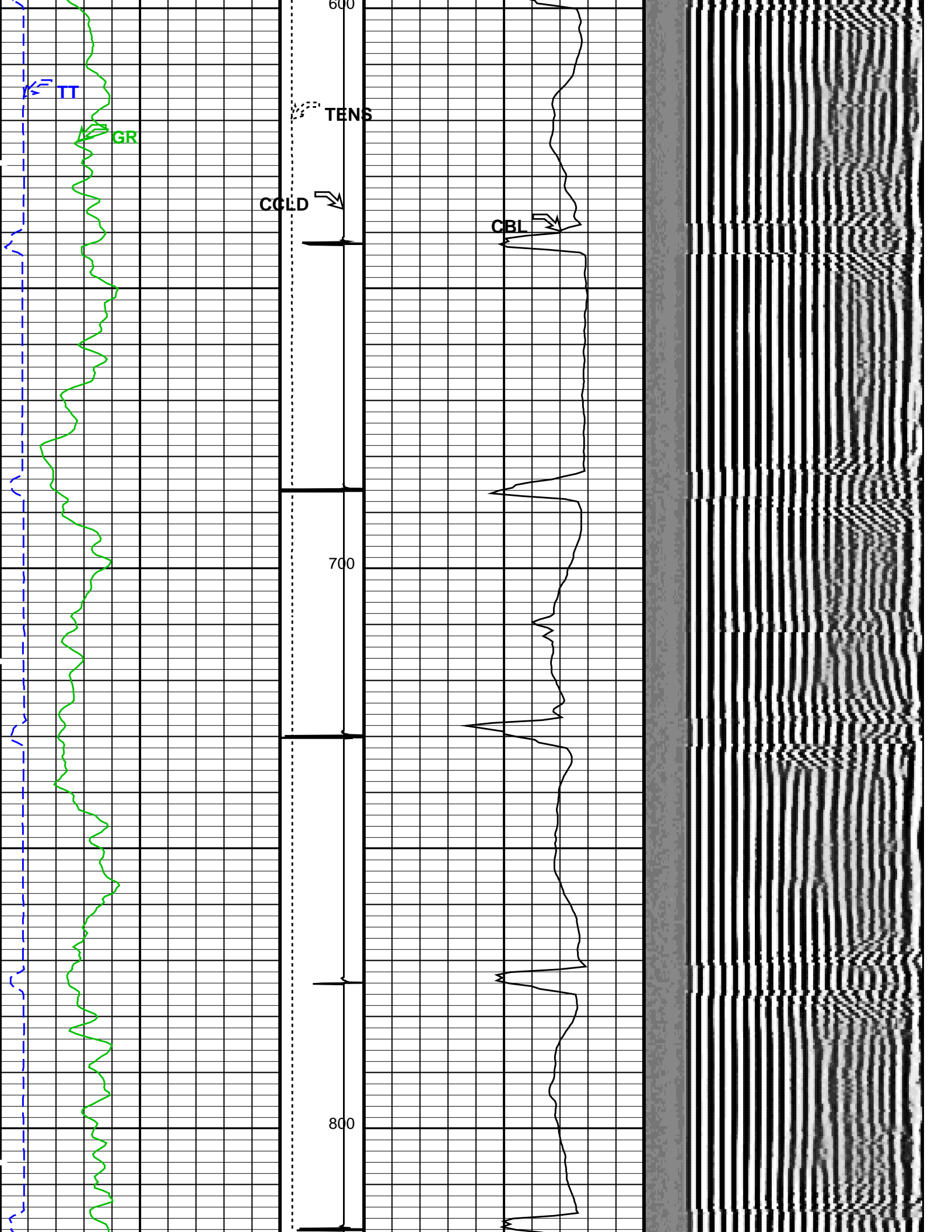
| | |
|---|---|
| OTHER SERVICES1 OS1: RST – SIGMA OS2: OS3: OS4: OS5: | OTHER SERVICES2 OS1: OS2: OS3: OS4: OS5: |
| REMARKS: RUN NUMBER 1 | REMARKS: RUN NUMBER 2 |
| THIS IS FIRST RUN IN WELL. | |
| TOOL RAN AS PER TOOL SKETCH. | |
| | |
| | |
| TD TAGGED AT: 6879 FT | |
| MAXIMUM RECORDED PRESSURE AT TD: 2753.9 PSIA | |
| MAXIMUM RECORDED TEMPERATURE AT TD: 195.9 DEGE | |

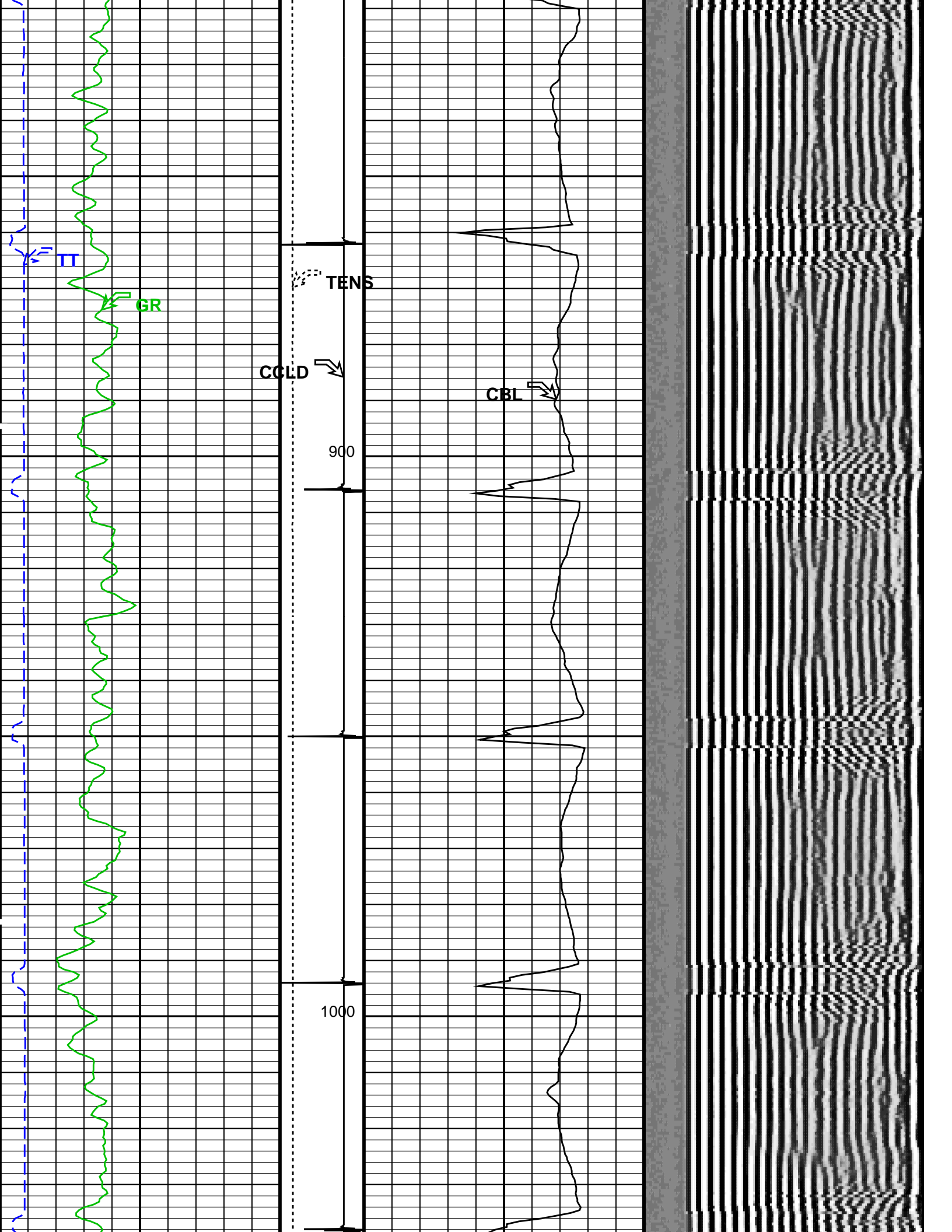
| | | | | | |
|--|--|--------------|--|-------|------|
| SHORT JOINT: 4600 FT - 4622 FT & 5632 FT - 5654 FT | | | | | |
| | | | | | |
| EXPECTED FREE PIPE AMPLITUDE: 80 mV | | | | | |
| CBL TRANSIT TIME CYCLE SKIPPING IN ZONES OF GOOD CEMENT DUE TO LOW SIGNAL AMPLITUDE. | | | | | |
| | | | | | |
| | | | | | |
| AFE: 11155191 | | | | | |
| | | | | | |
| THANK YOU FOR CHOOSING SCHLUMBERGER. | | | | | |
| CREW: 391-W. AZIZ & J. ROSA | | | | | |
| RUN 1 | | | RUN 2 | | |
| SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL: | | | SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL: | | |
| BOC2-00189 19C0-187 22 ft | | | | | |
| LOGGED INTERVAL | START | STOP | LOGGED INTERVAL | START | STOP |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| EQUIPMENT DESCRIPTION | | | | | |
| RUN 1 | | | RUN 2 | | |
| SURFACE EQUIPMENT | | | | | |
| WITM-A 3412 PSC_16MHZ 3412 | | | | | |
| DOWNHOLE EQUIPMENT | | | | | |
| | | | | | |
| MH-22 MH-22 391 | | 53.4 | | | |
| AH-38 | Detail MT TelStatus CTEM | 51.8 | | | |
| PSPT | | 51.5 | | | |
| PSC-A 3779 PSPT-A 3779 PSTC-A 1921 PBMS-A 3779 | GR | 47.8 | | | |
| 10k_Sapphire_Mano 3779 RTD Thermometer 3779 | | | | | |
| GR 34552 | Well_Temp | 44.7 | | | |
| CCL 3779 | Manometer | 44.6 | | | |
| PBMS 3779 | CCL | 44.0 | | | |
| | PBMS PSTC | 43.2 | | | |
| RST-C | | 43.2 | | | |
| RSCH-A 429 RSC-E 430 RSS-A 373 RSXH-A 425 RSX-E 413 | | | | | |
| | RSC-A Far RSC-A PNG RSC-A Nea RSX-A PNG | 34.1 33.6 | | | |

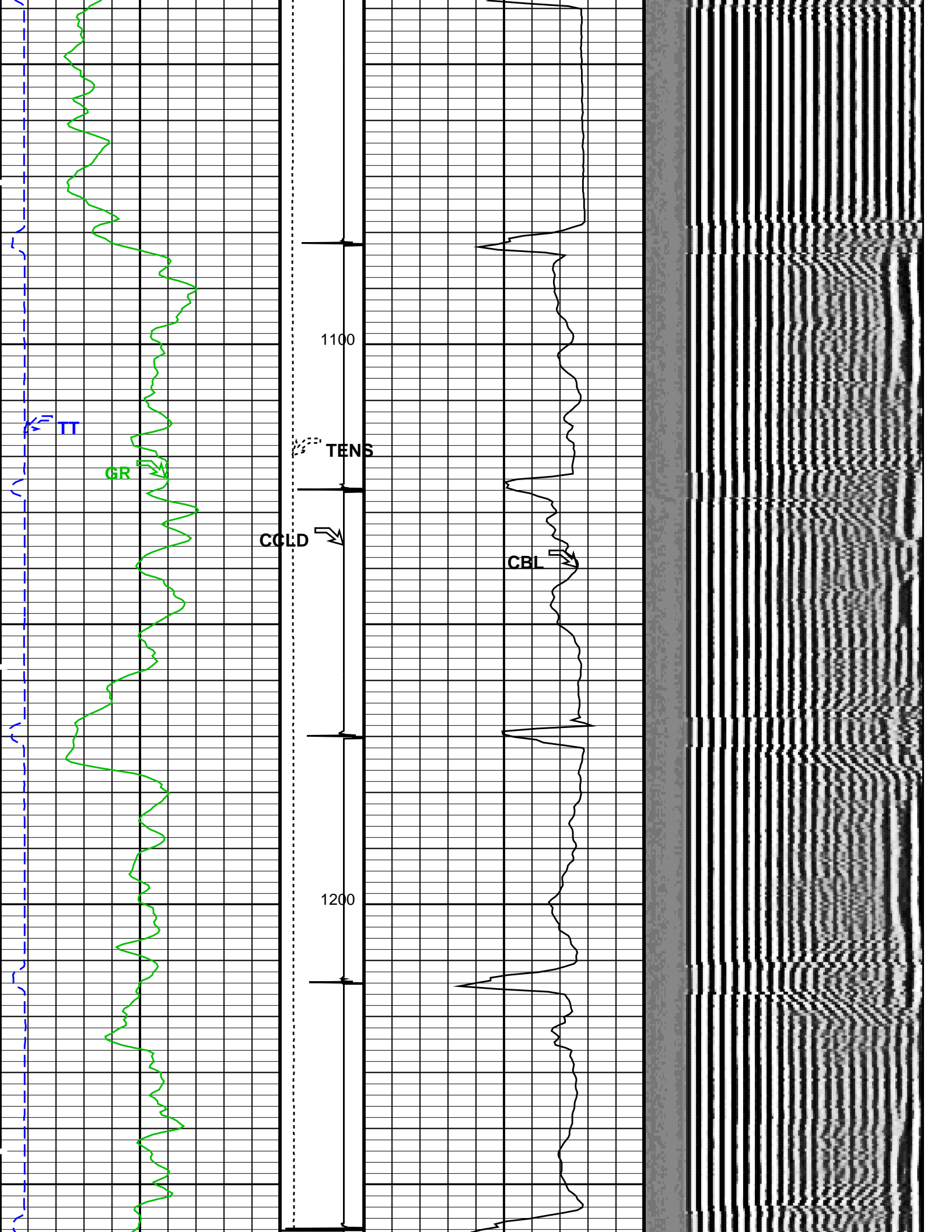


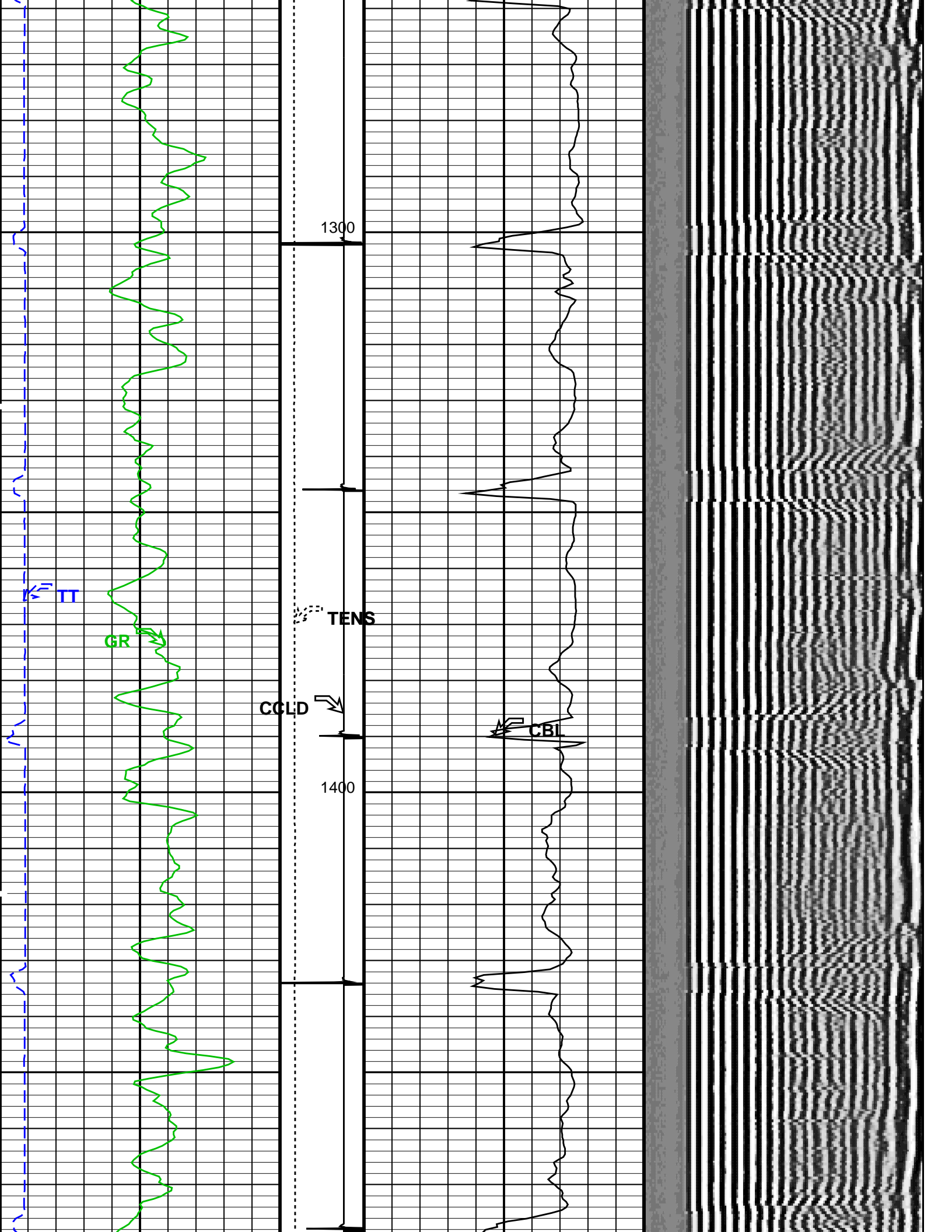


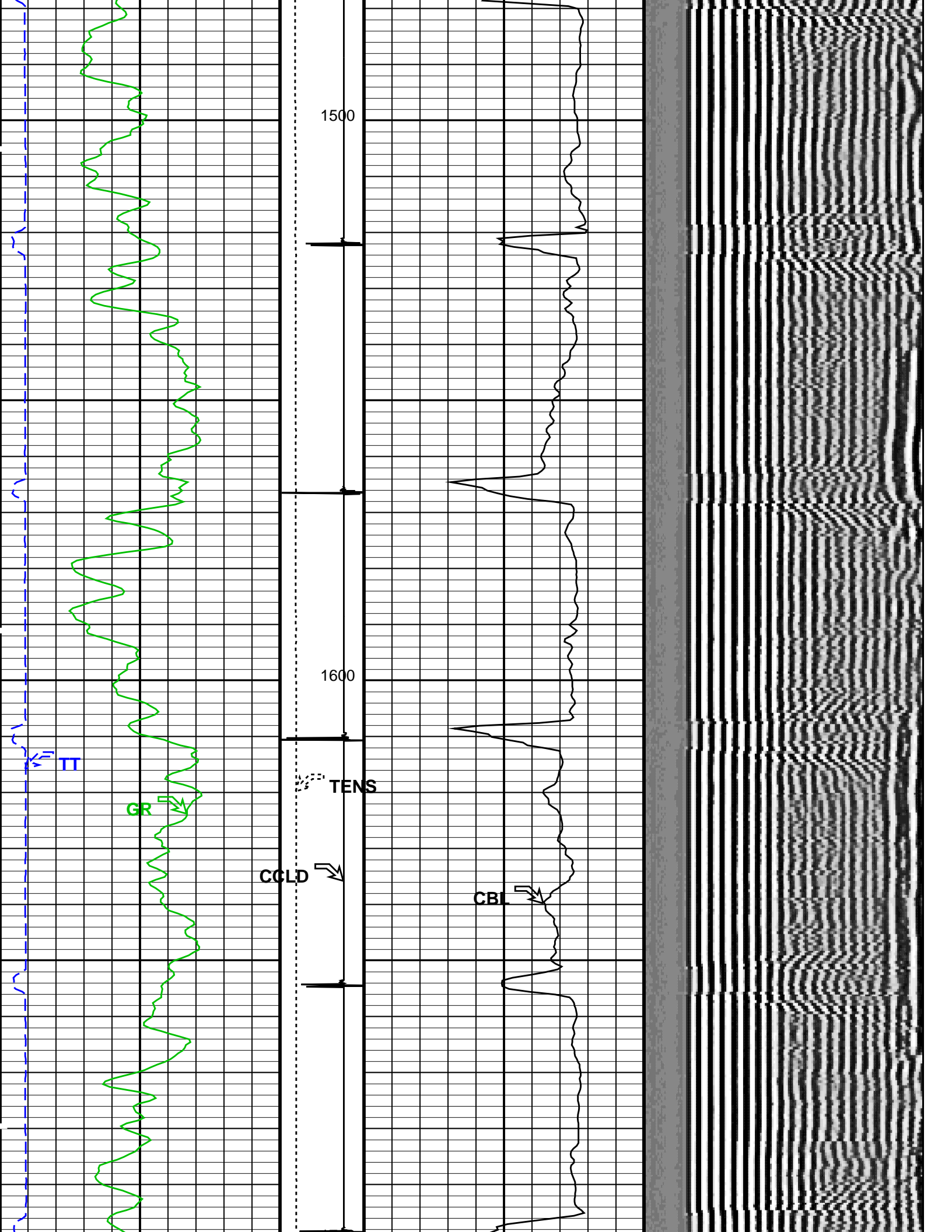


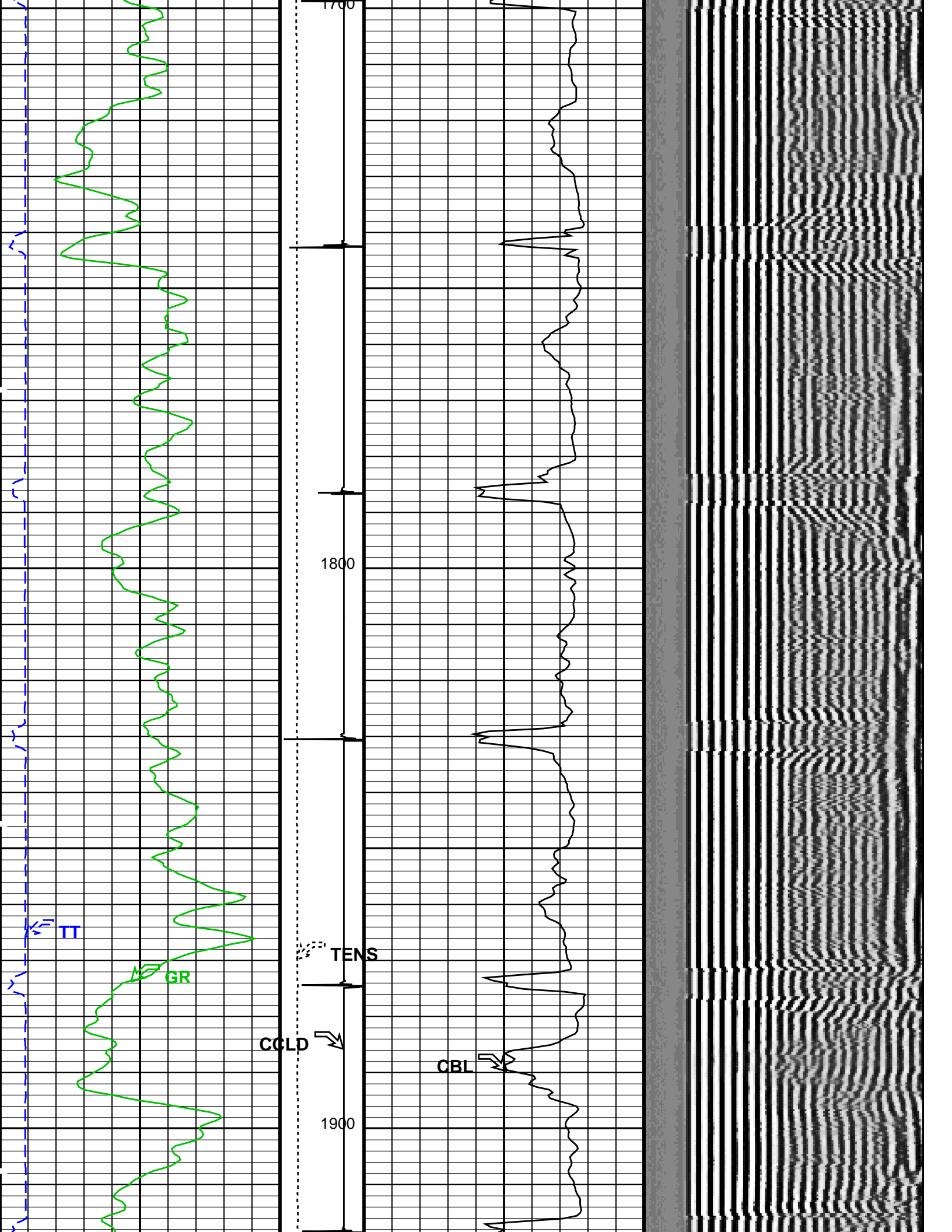


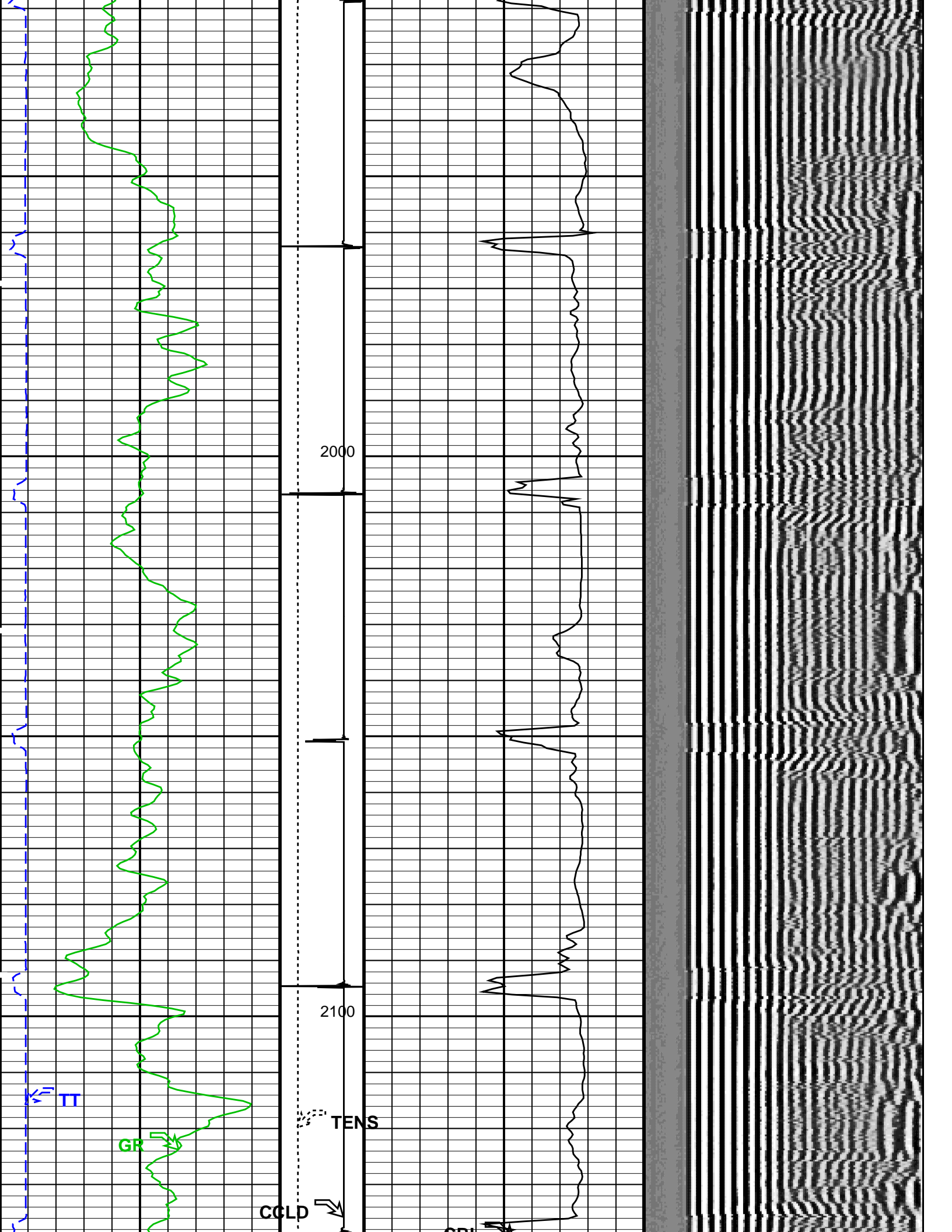


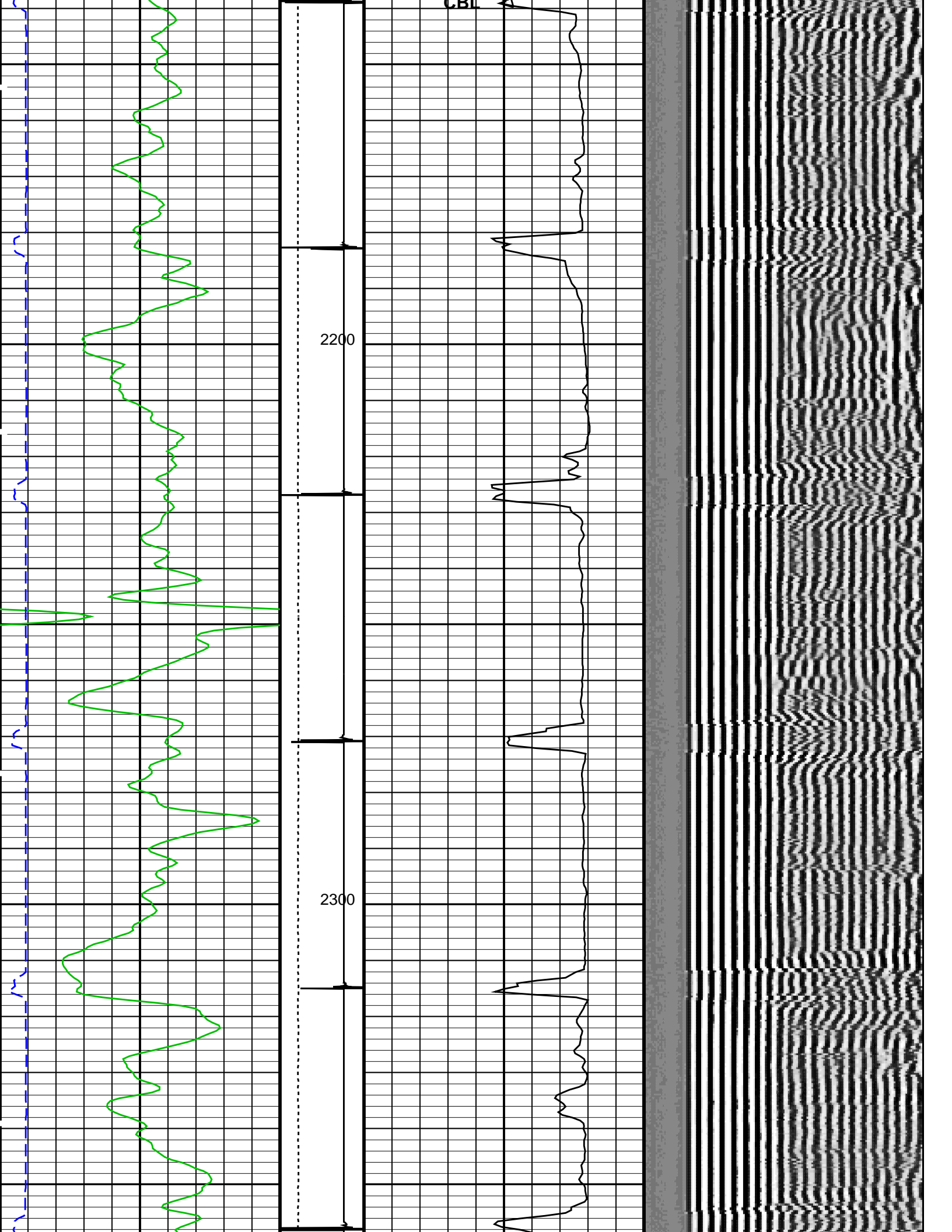


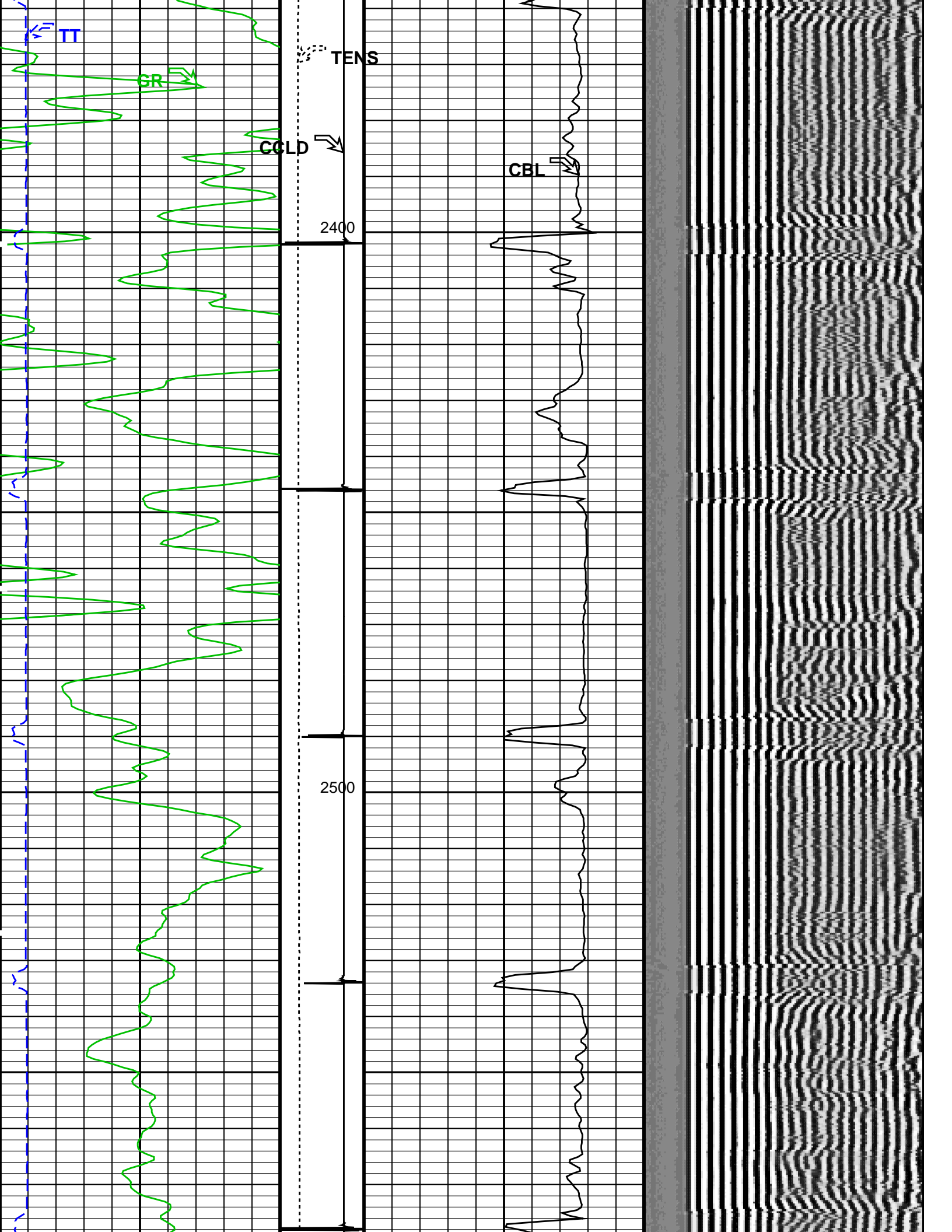


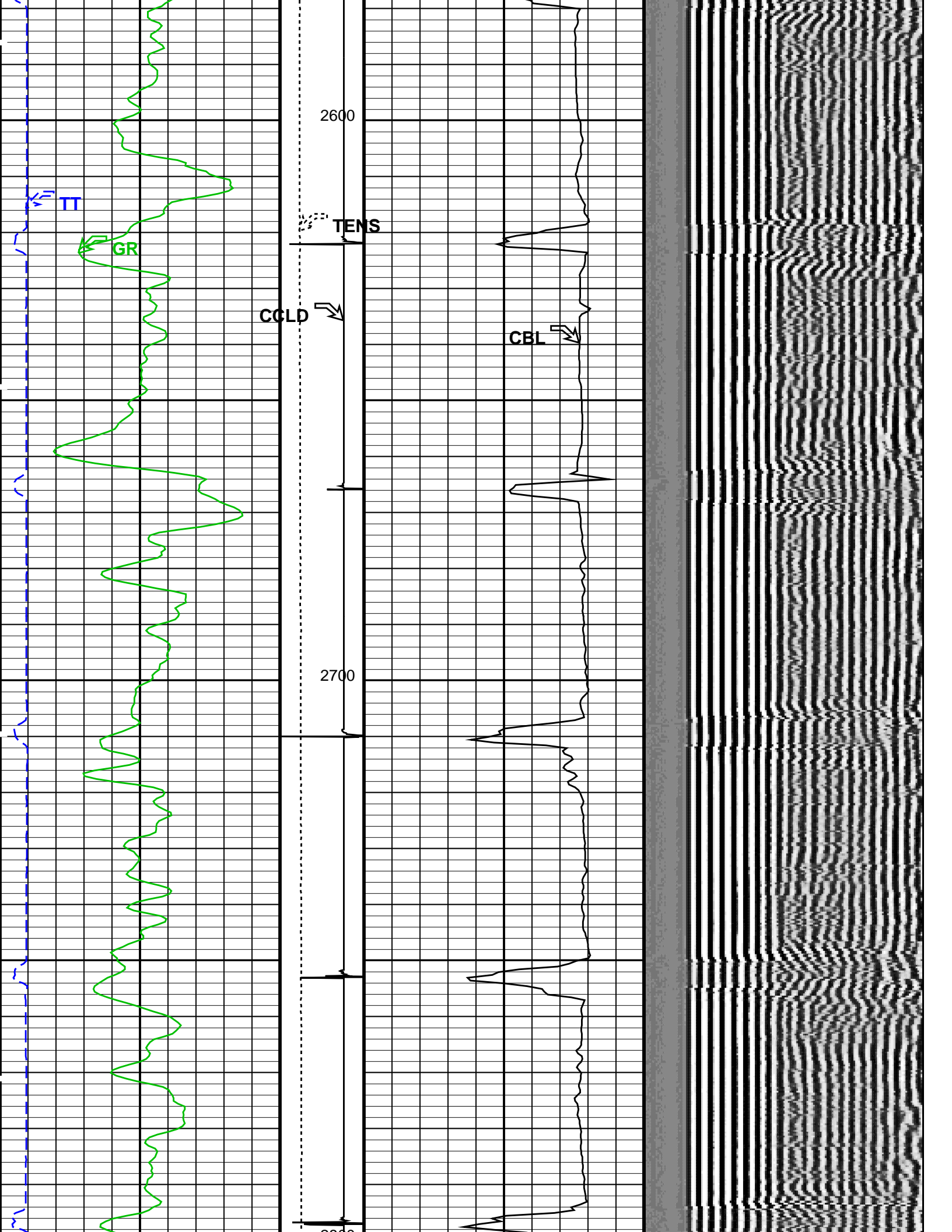


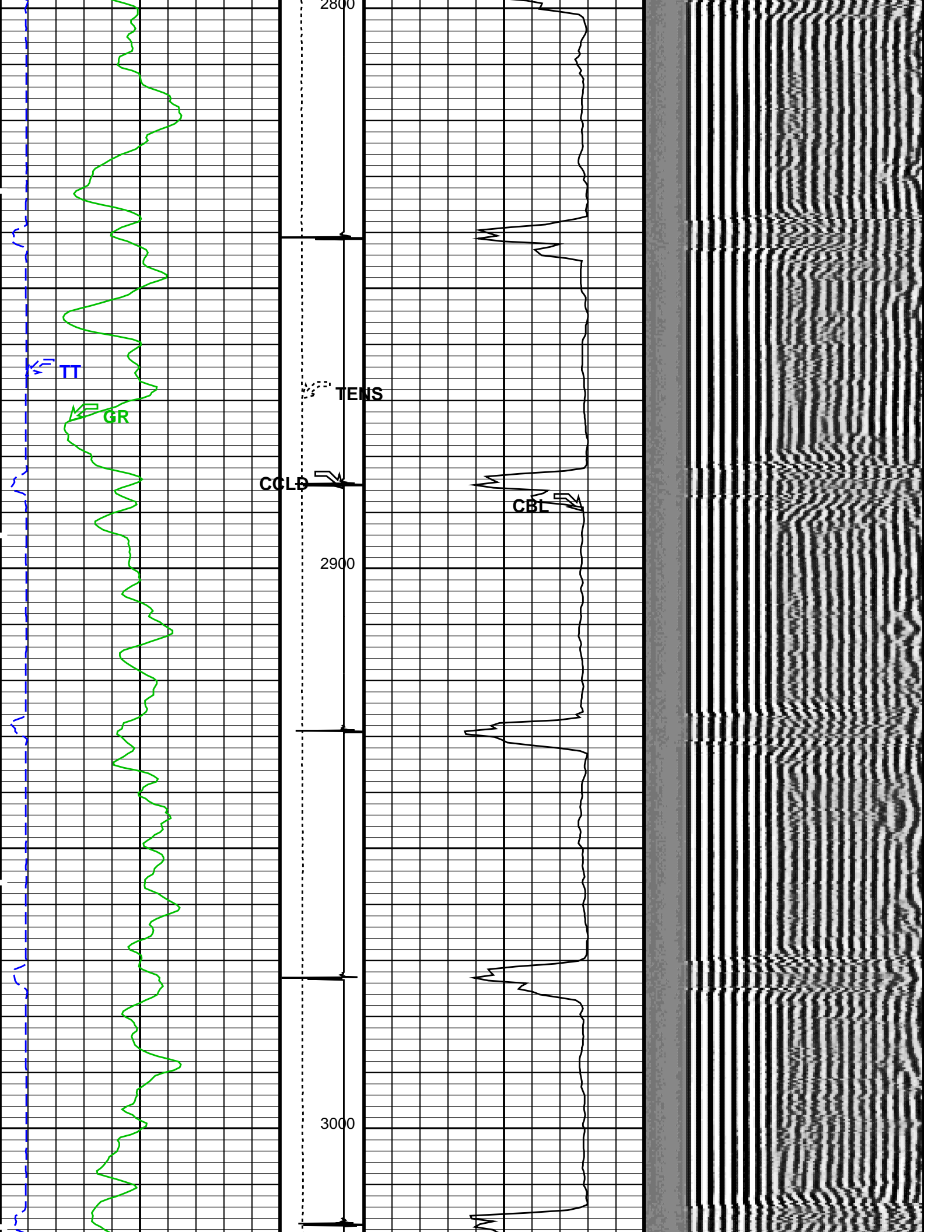


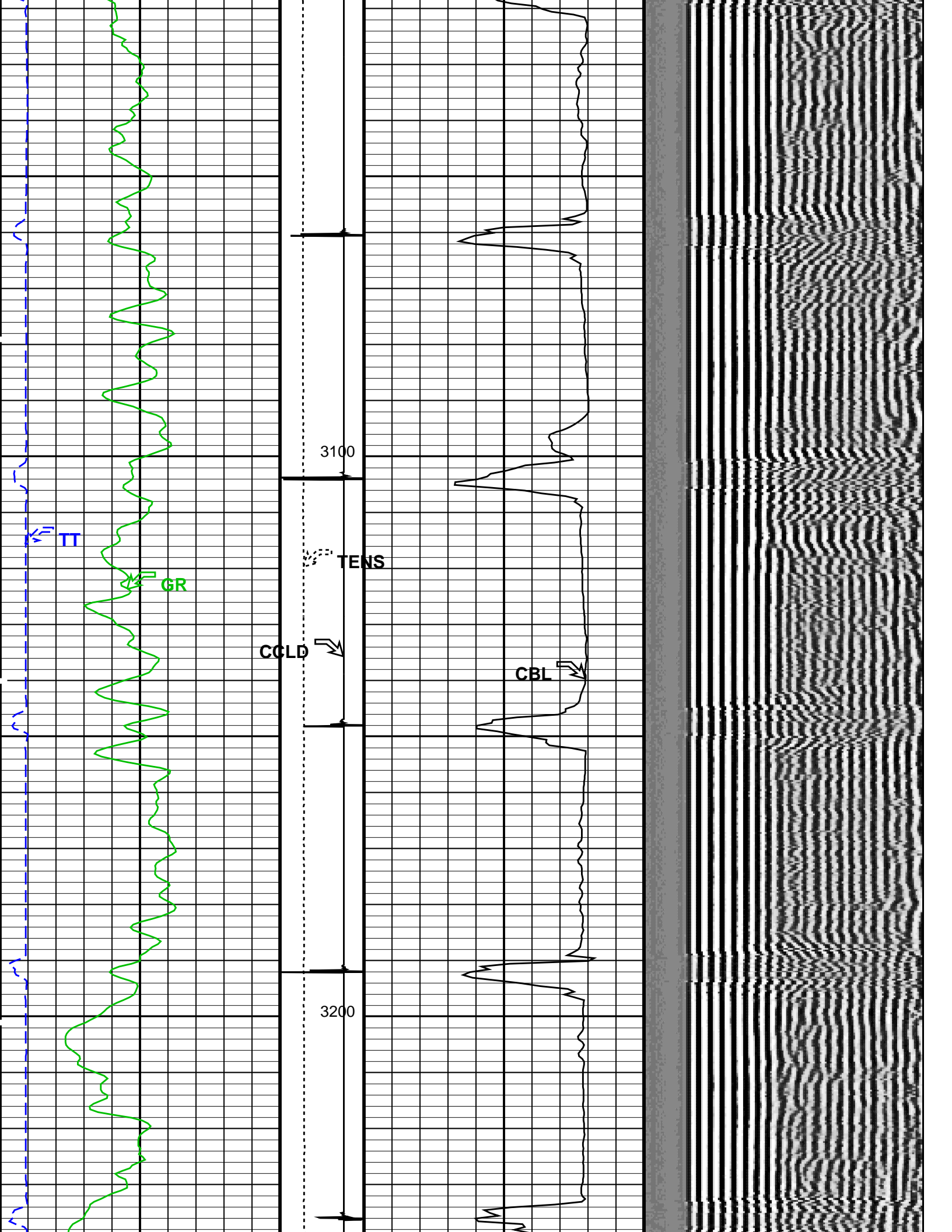


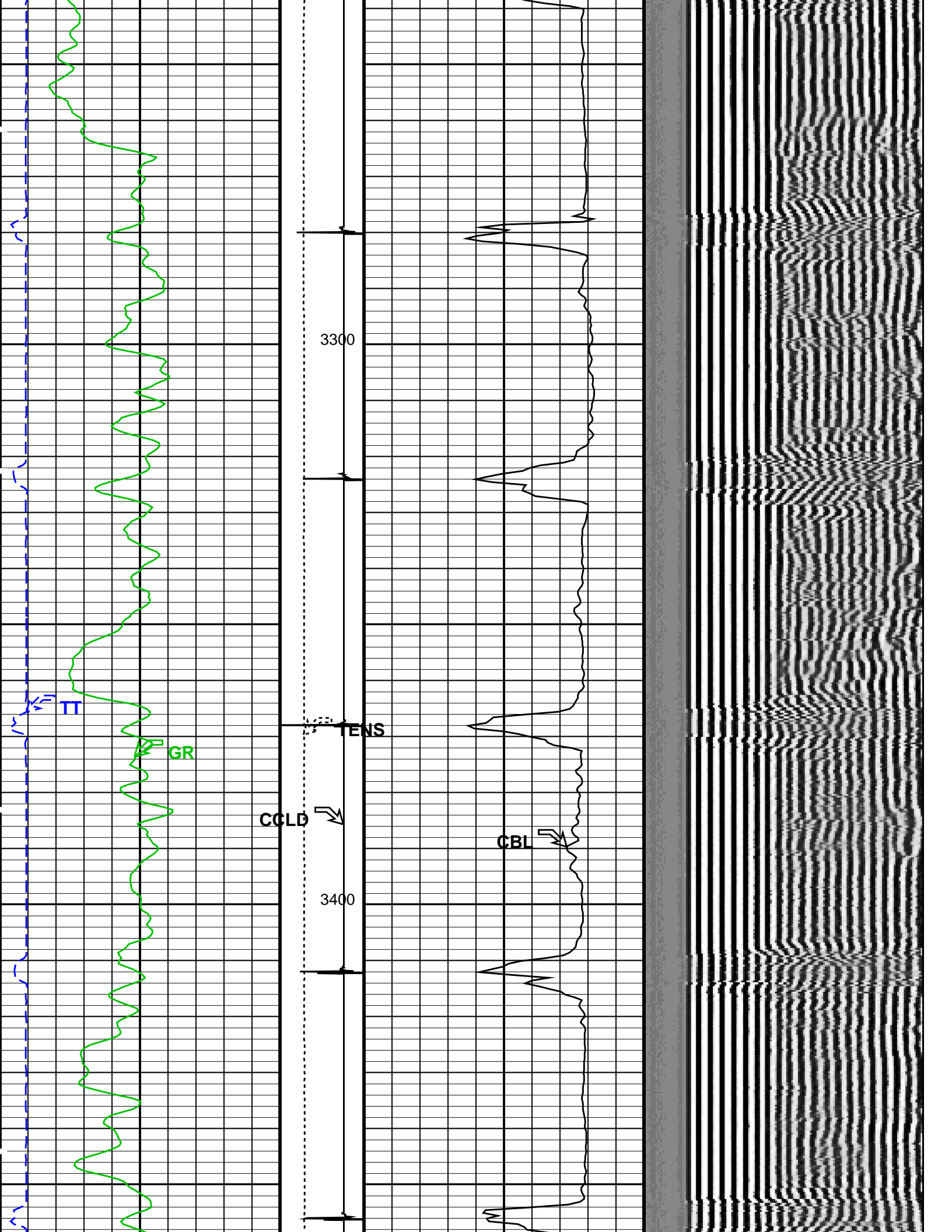


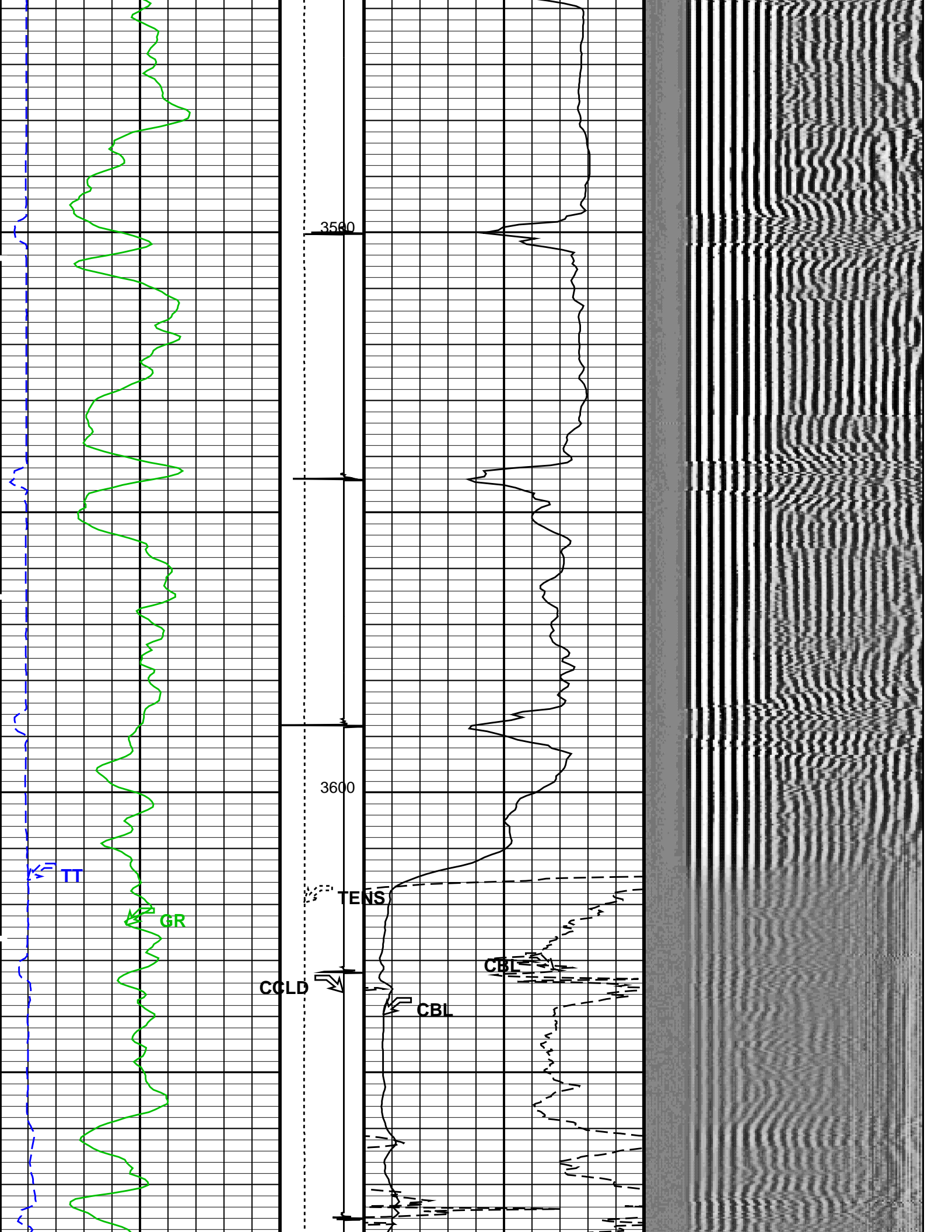


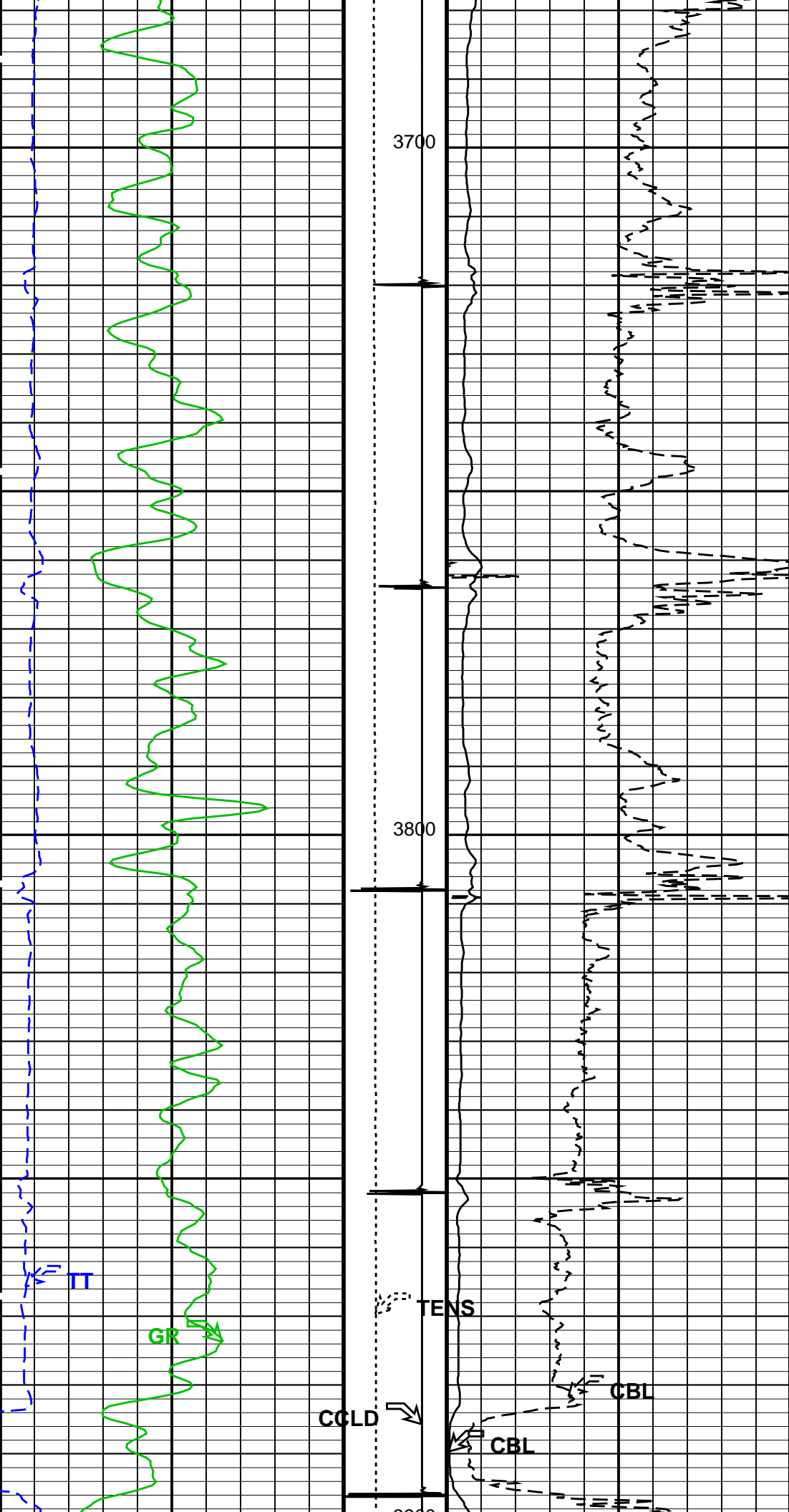


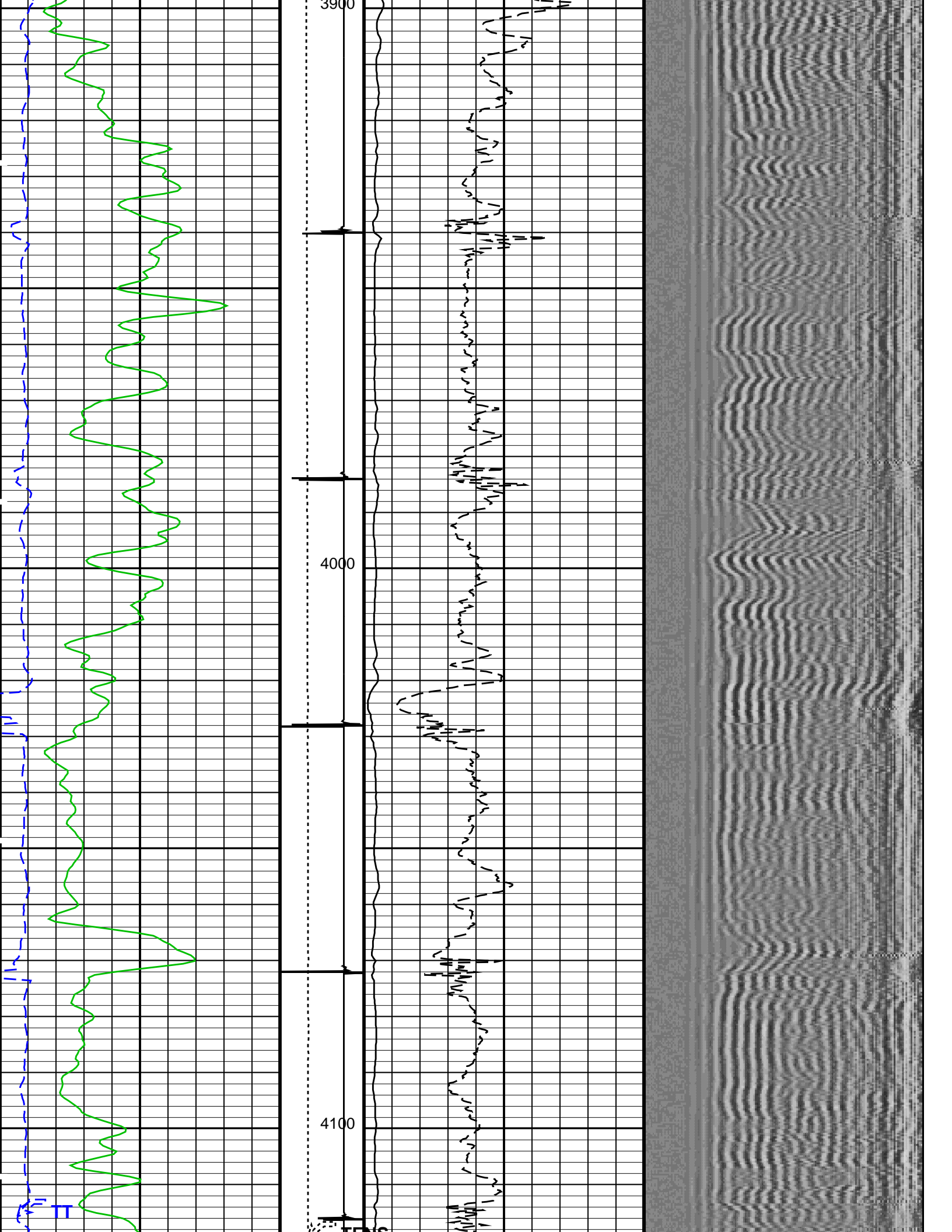


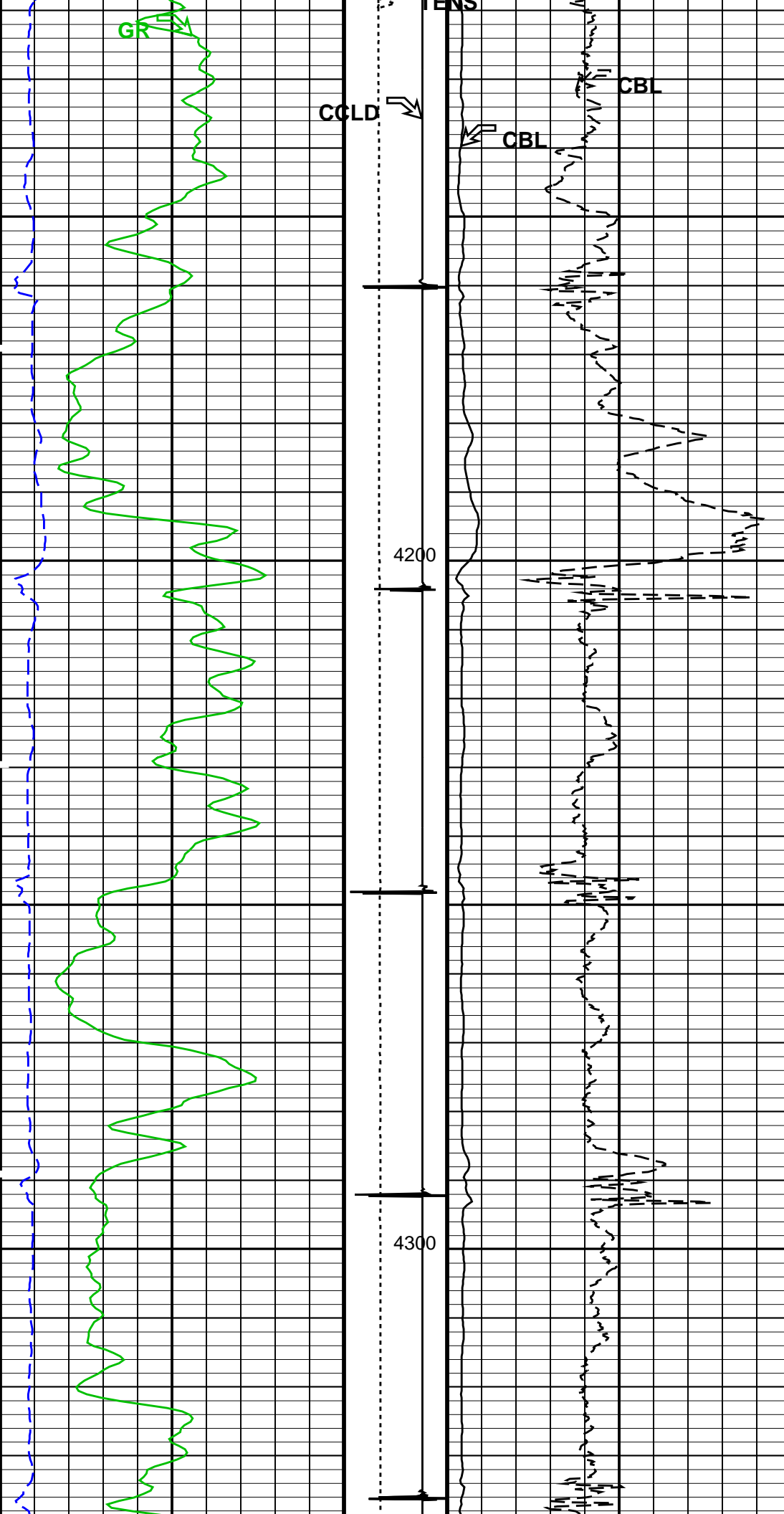


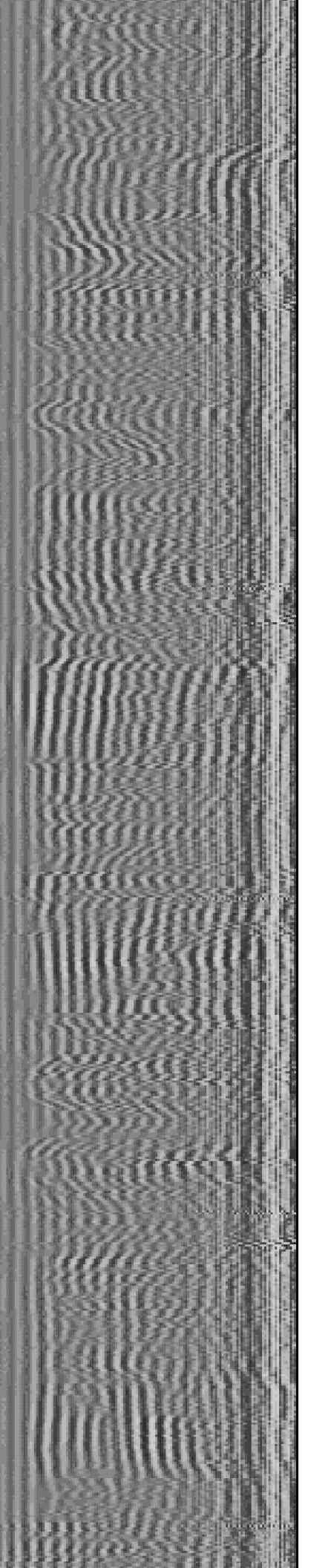
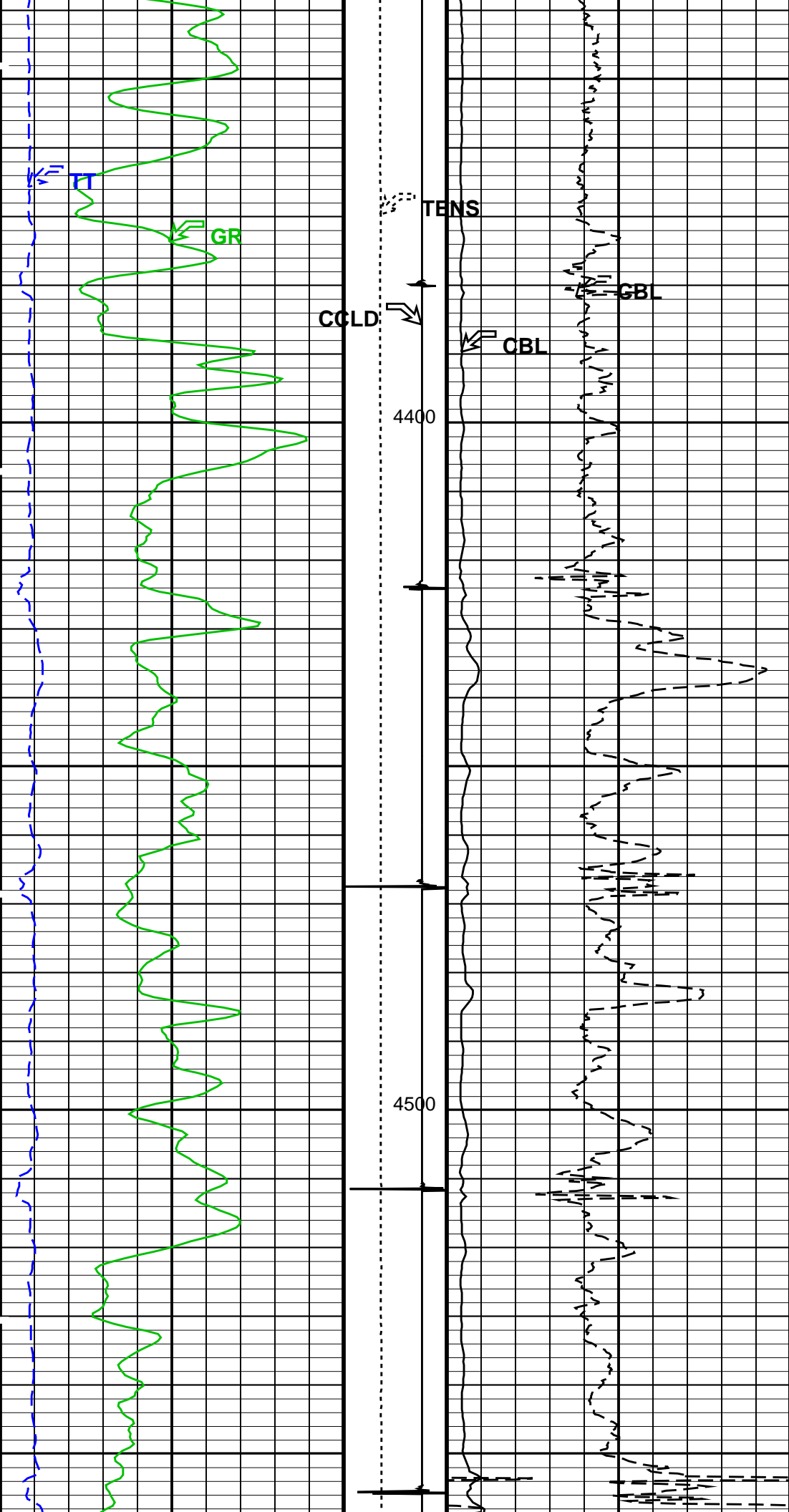


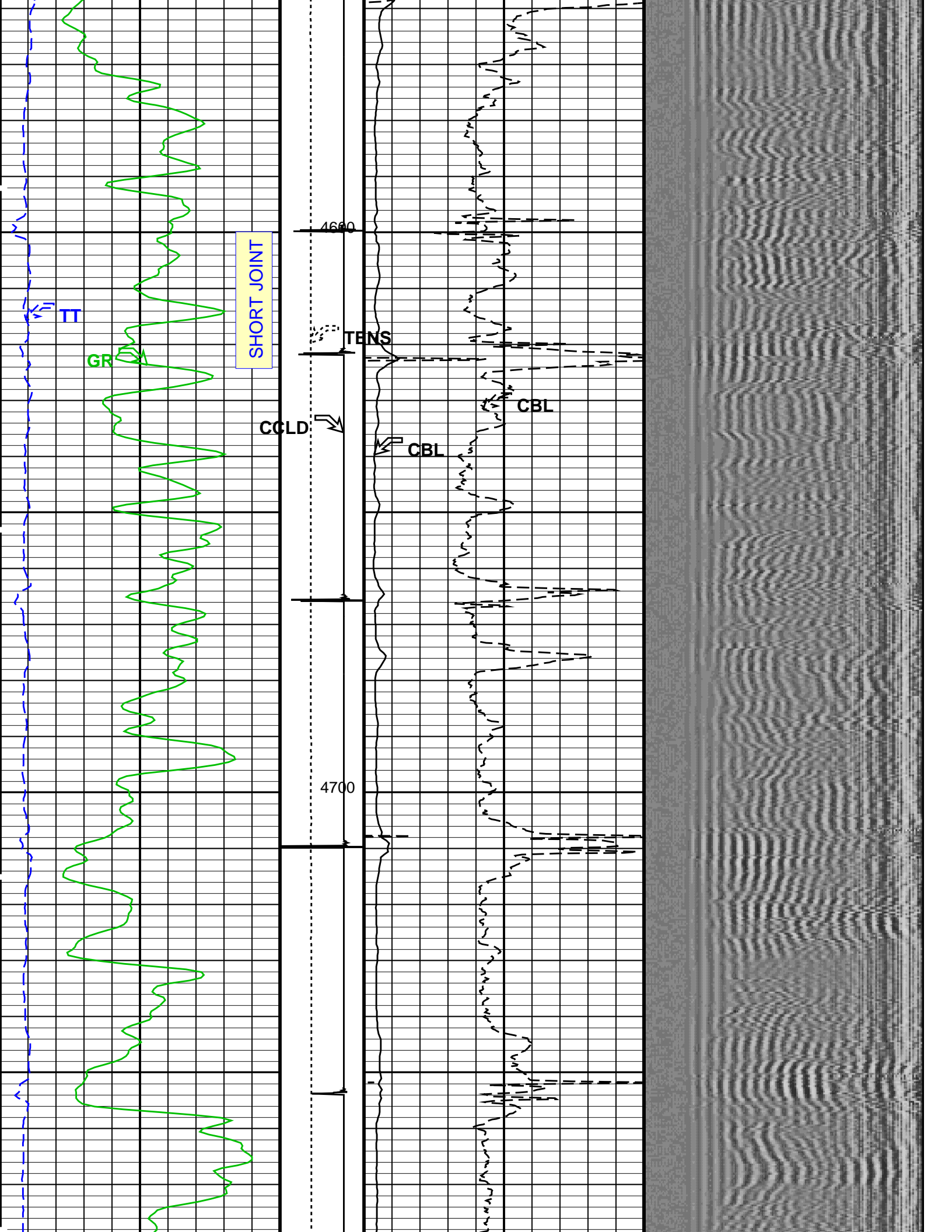


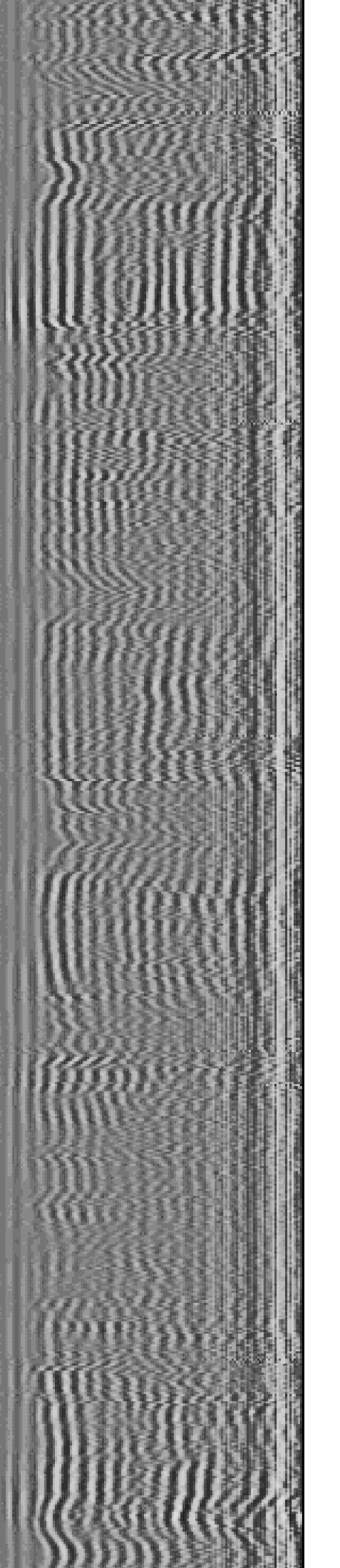
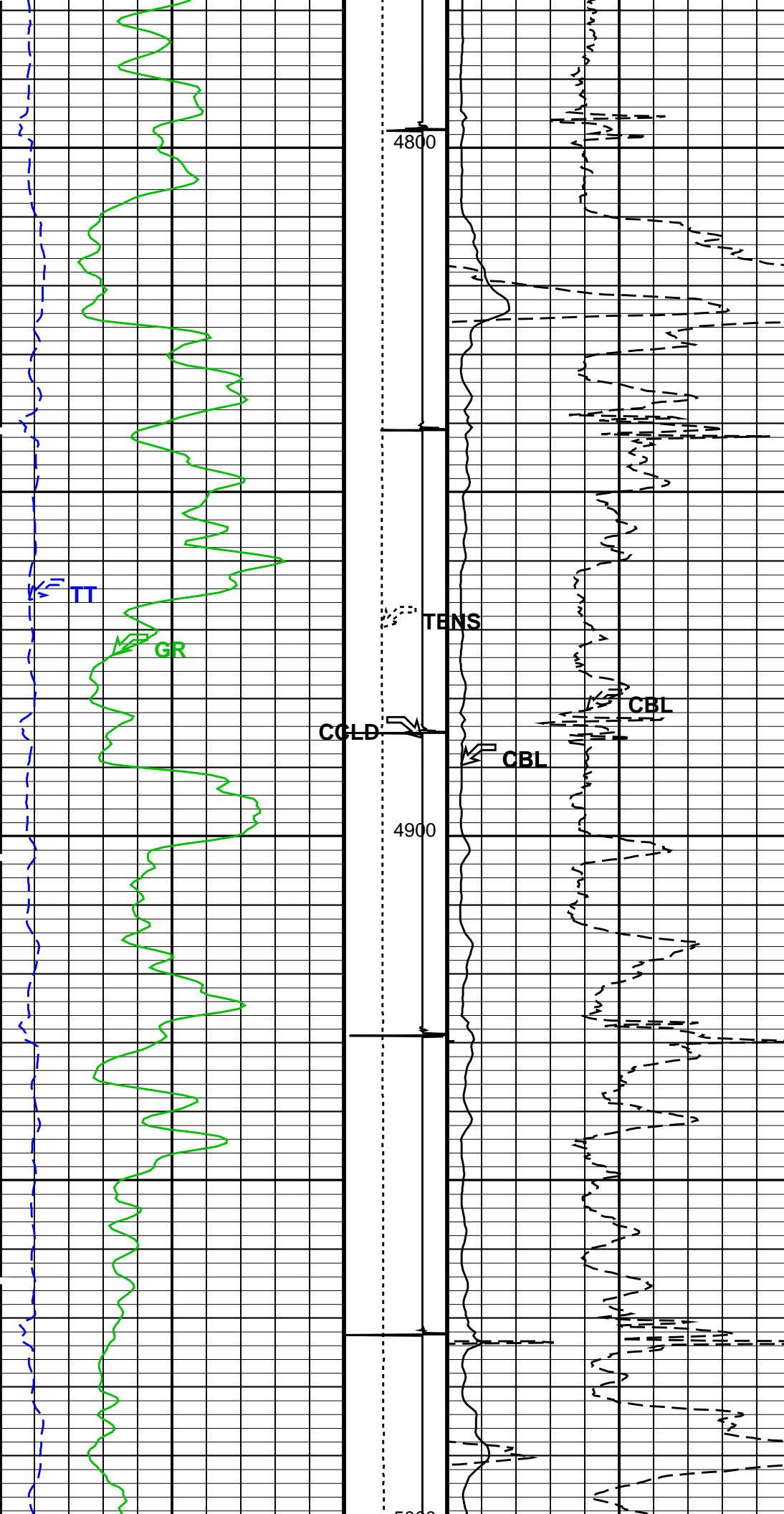


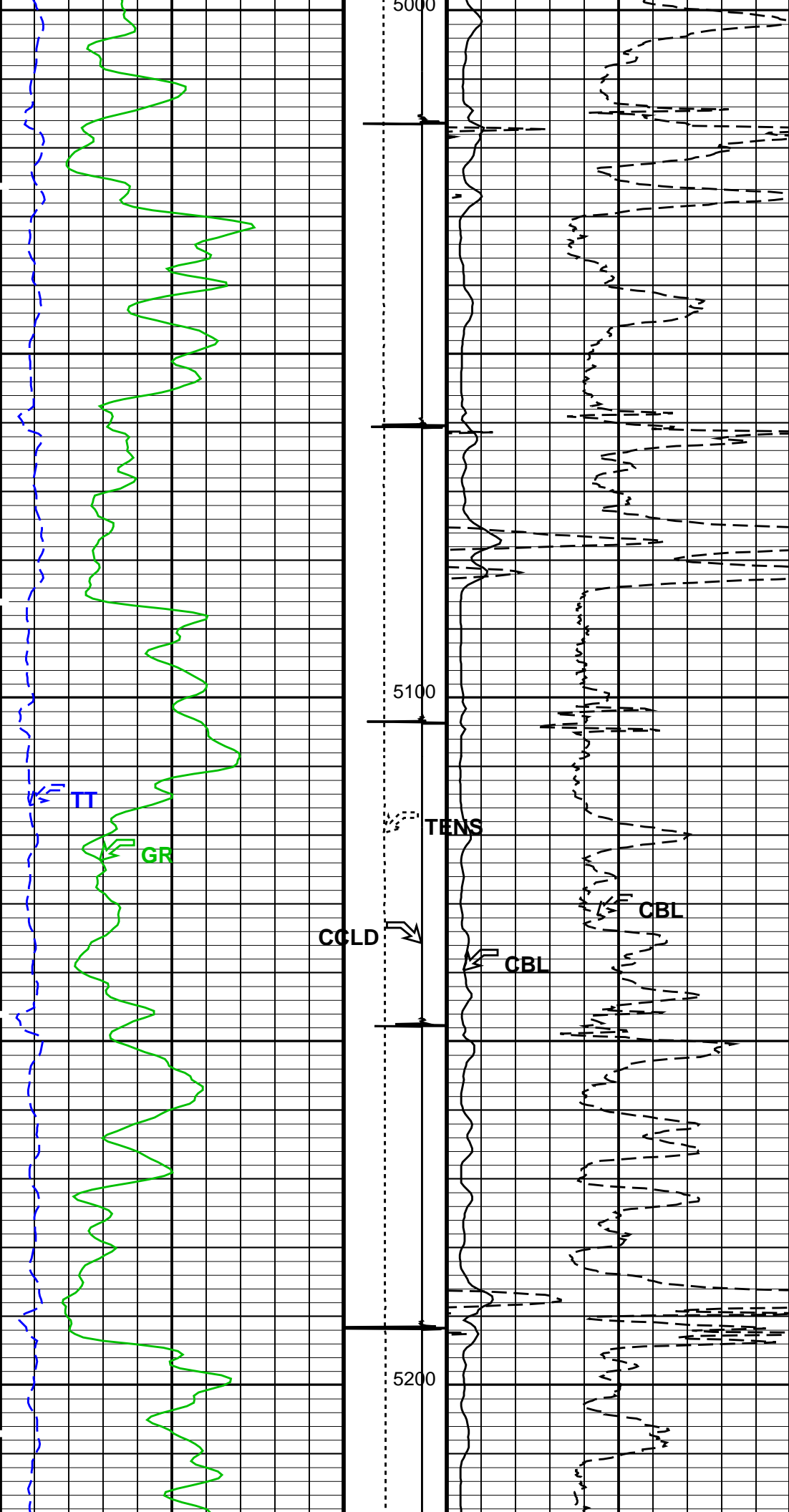


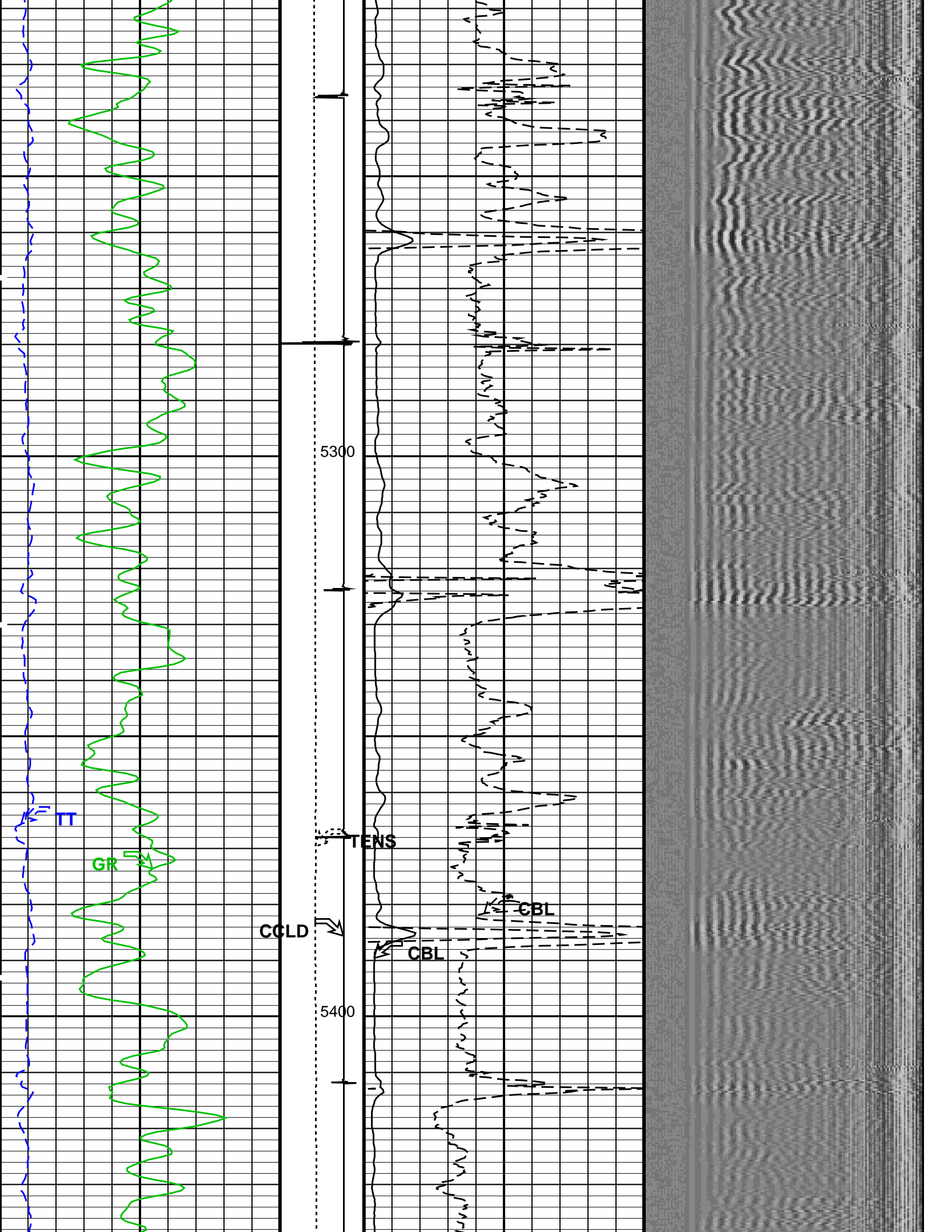


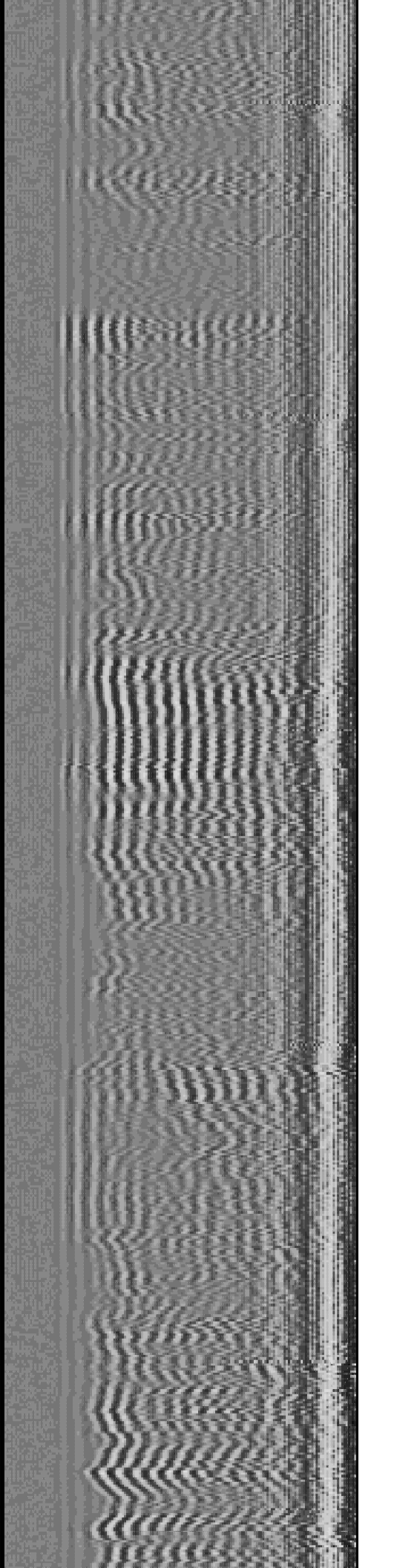
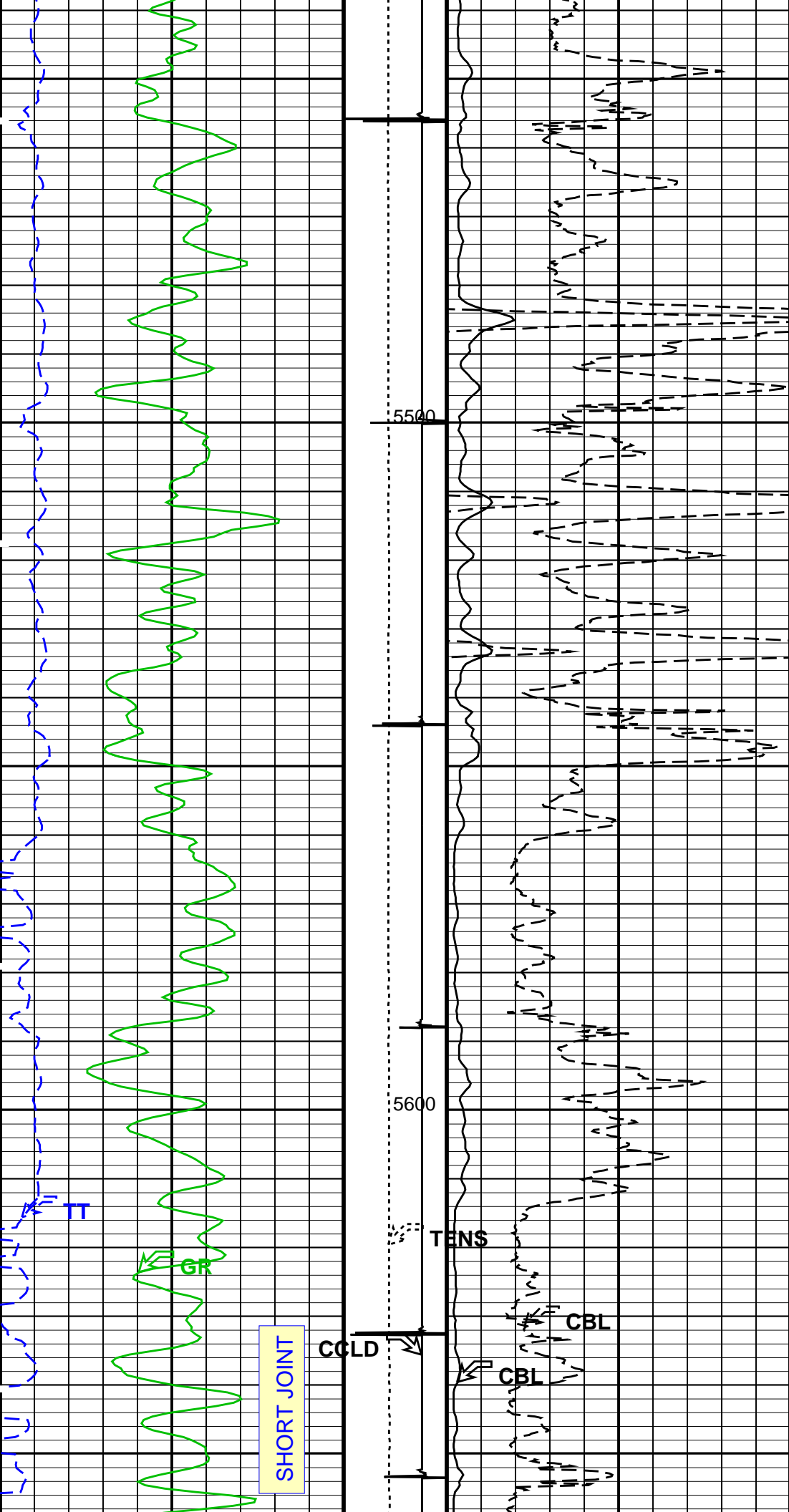


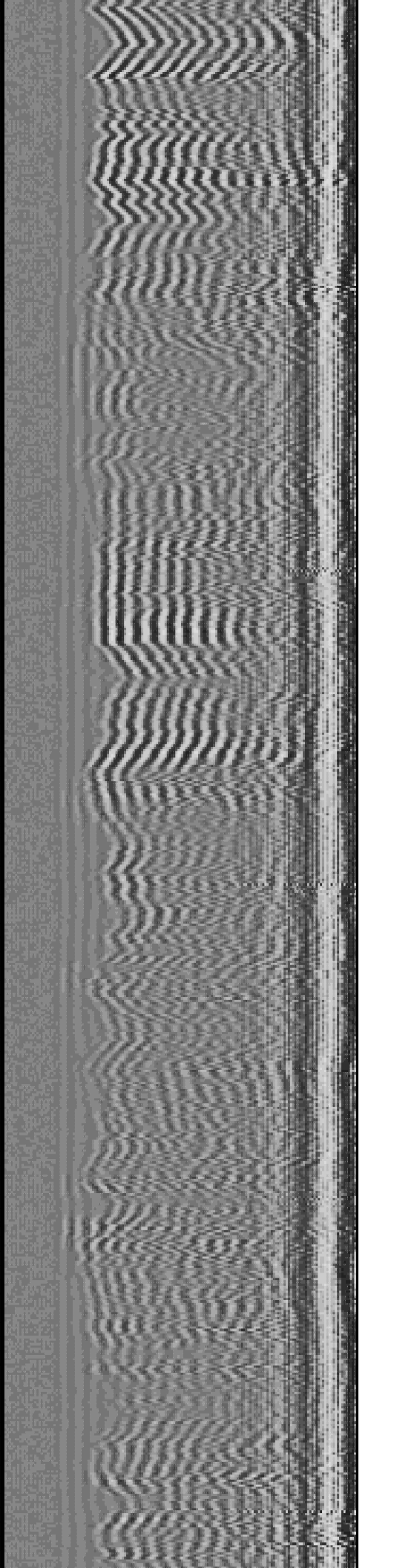
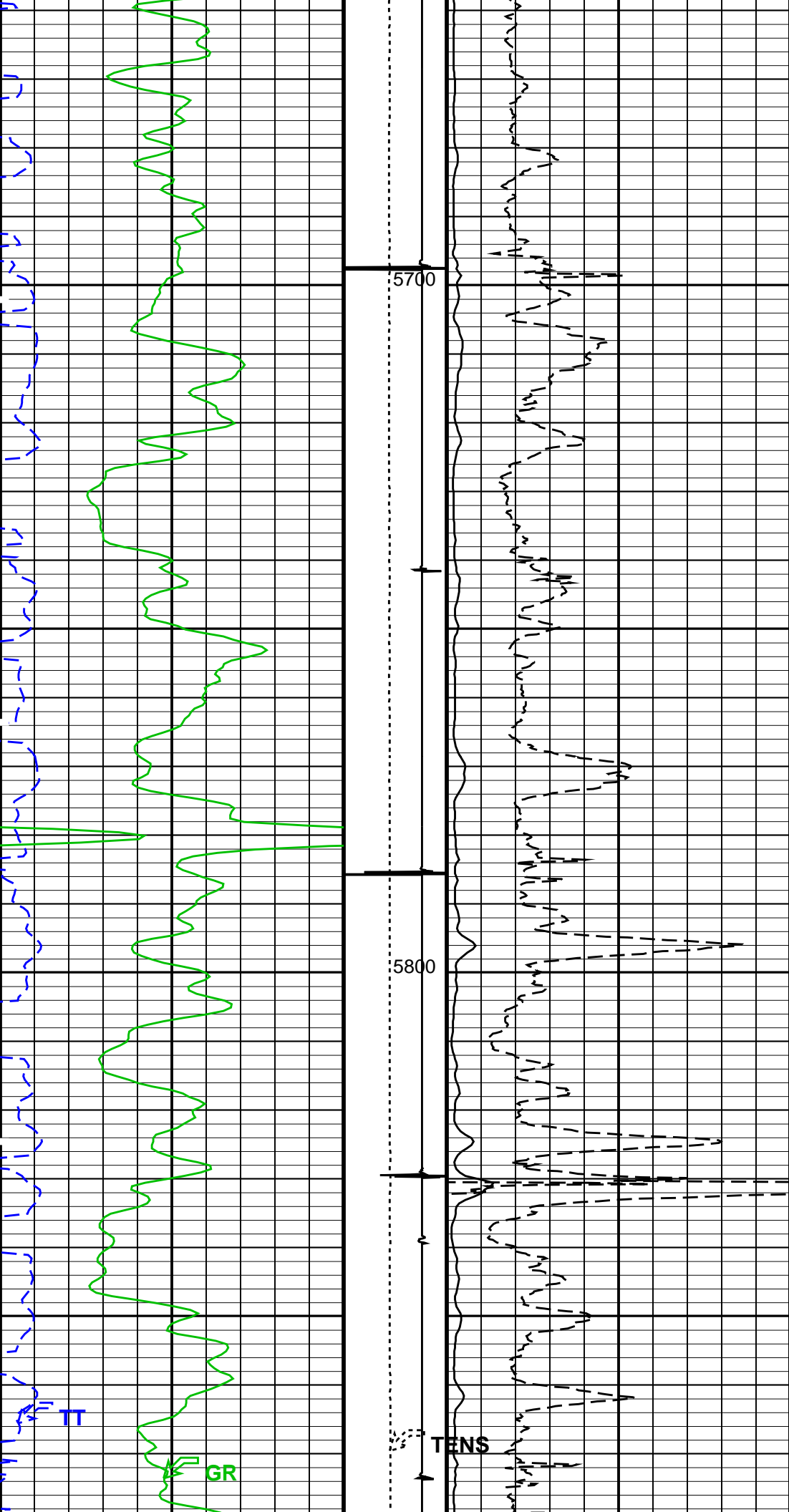


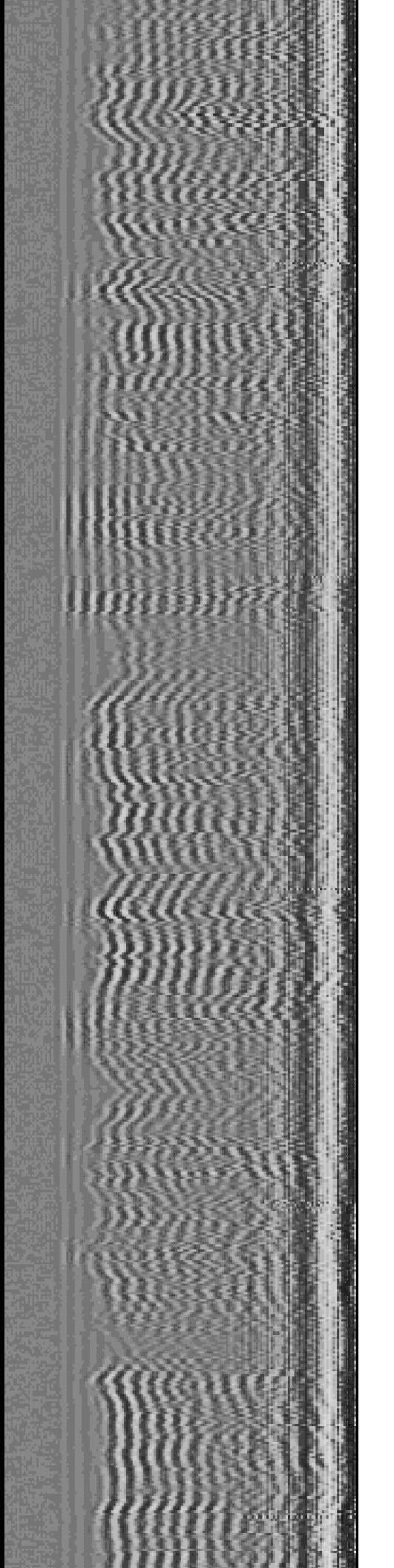
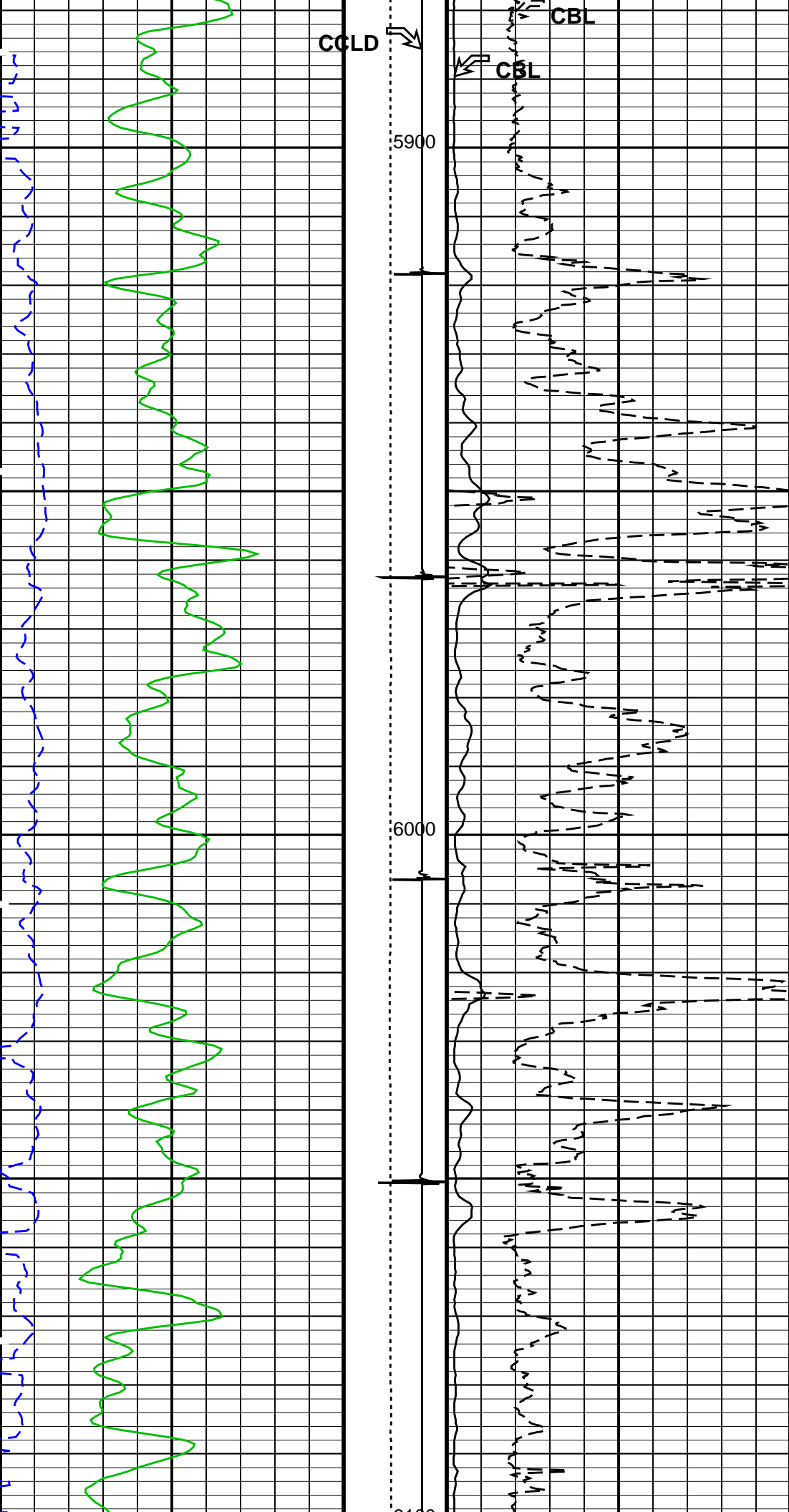


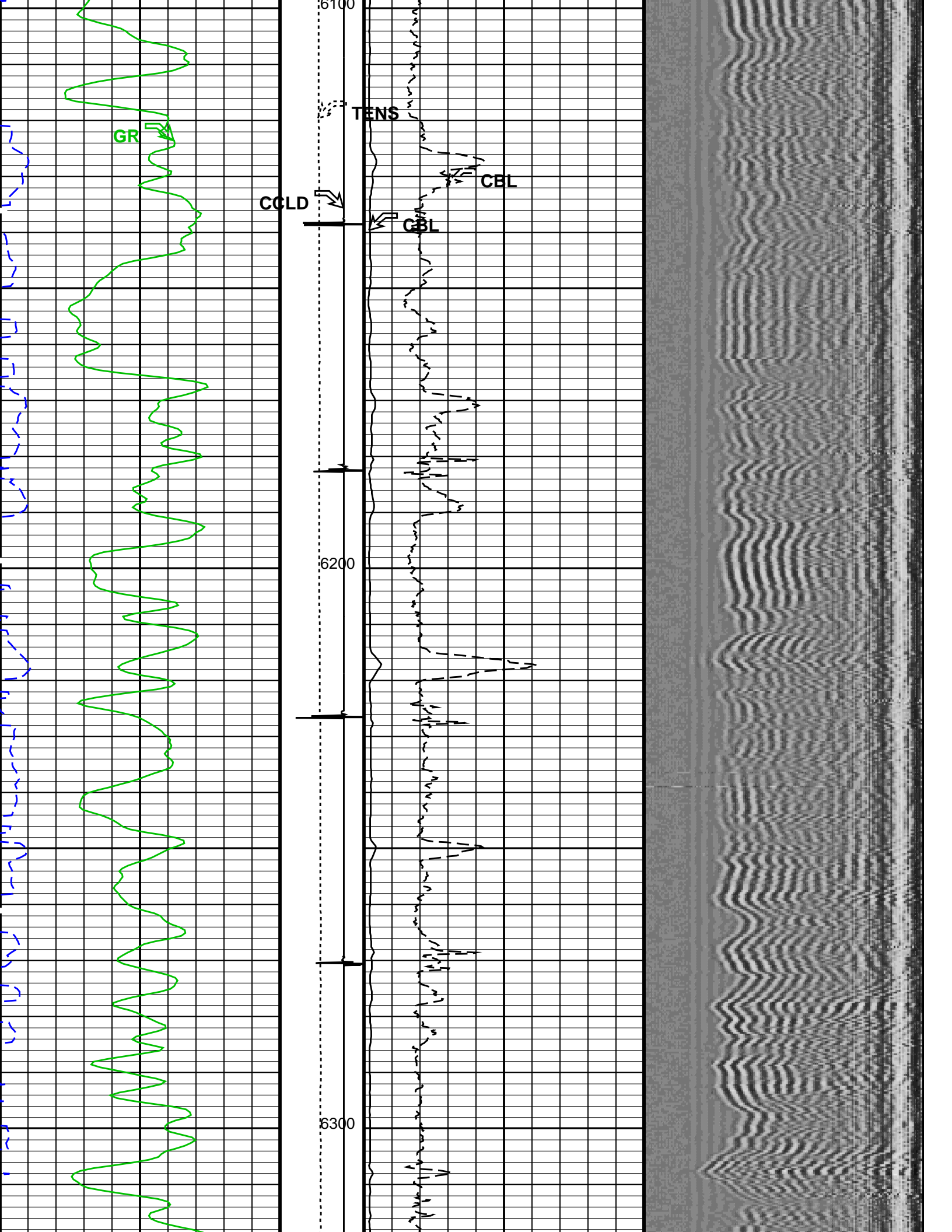


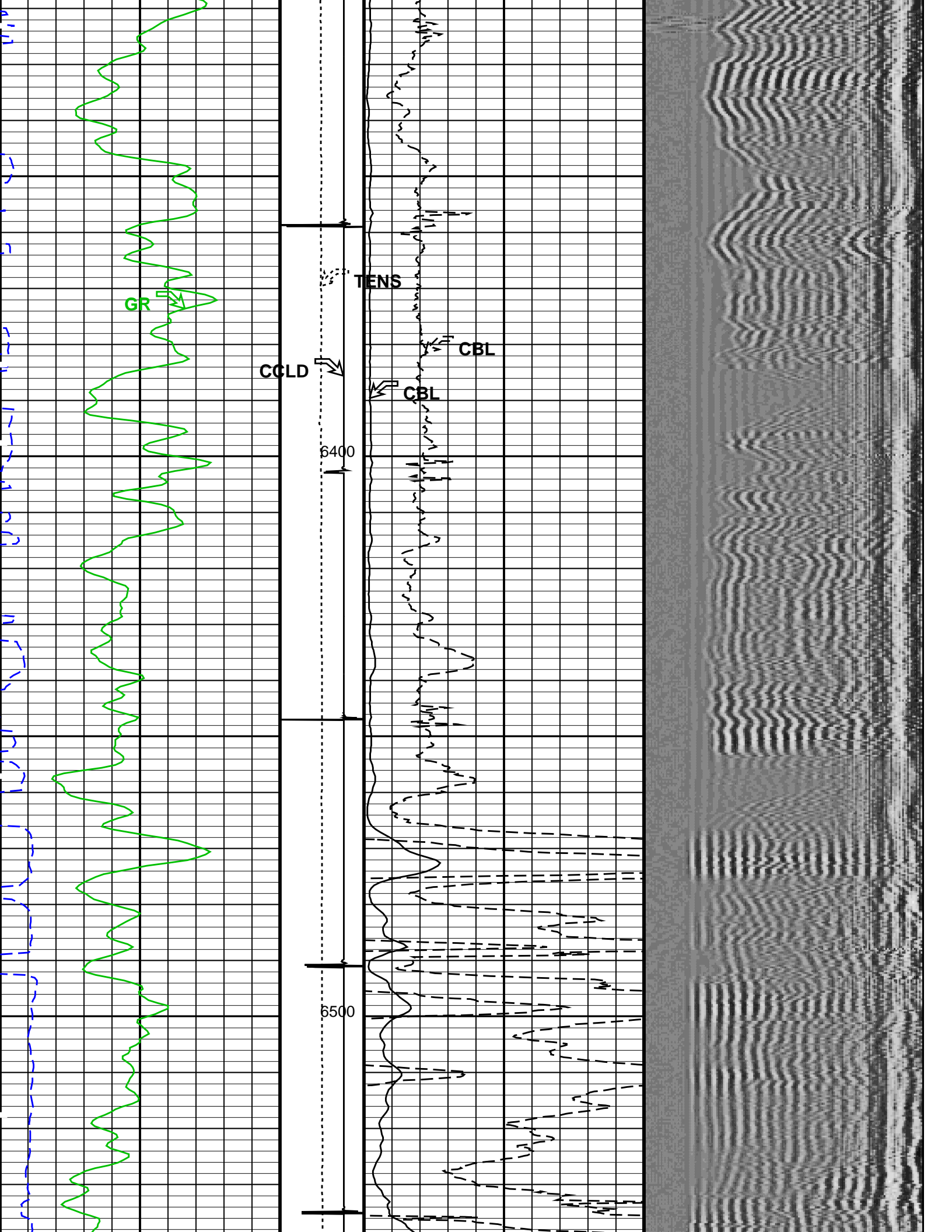


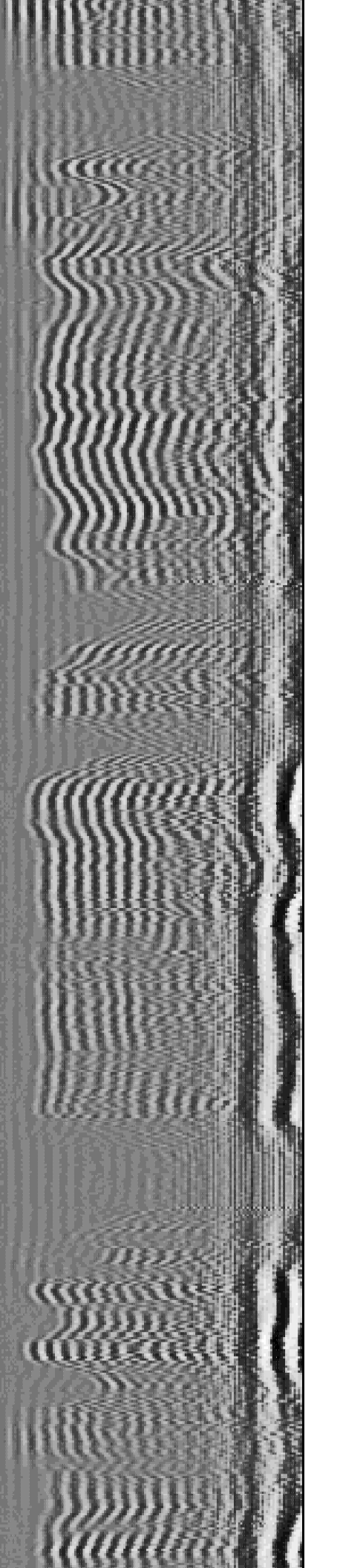
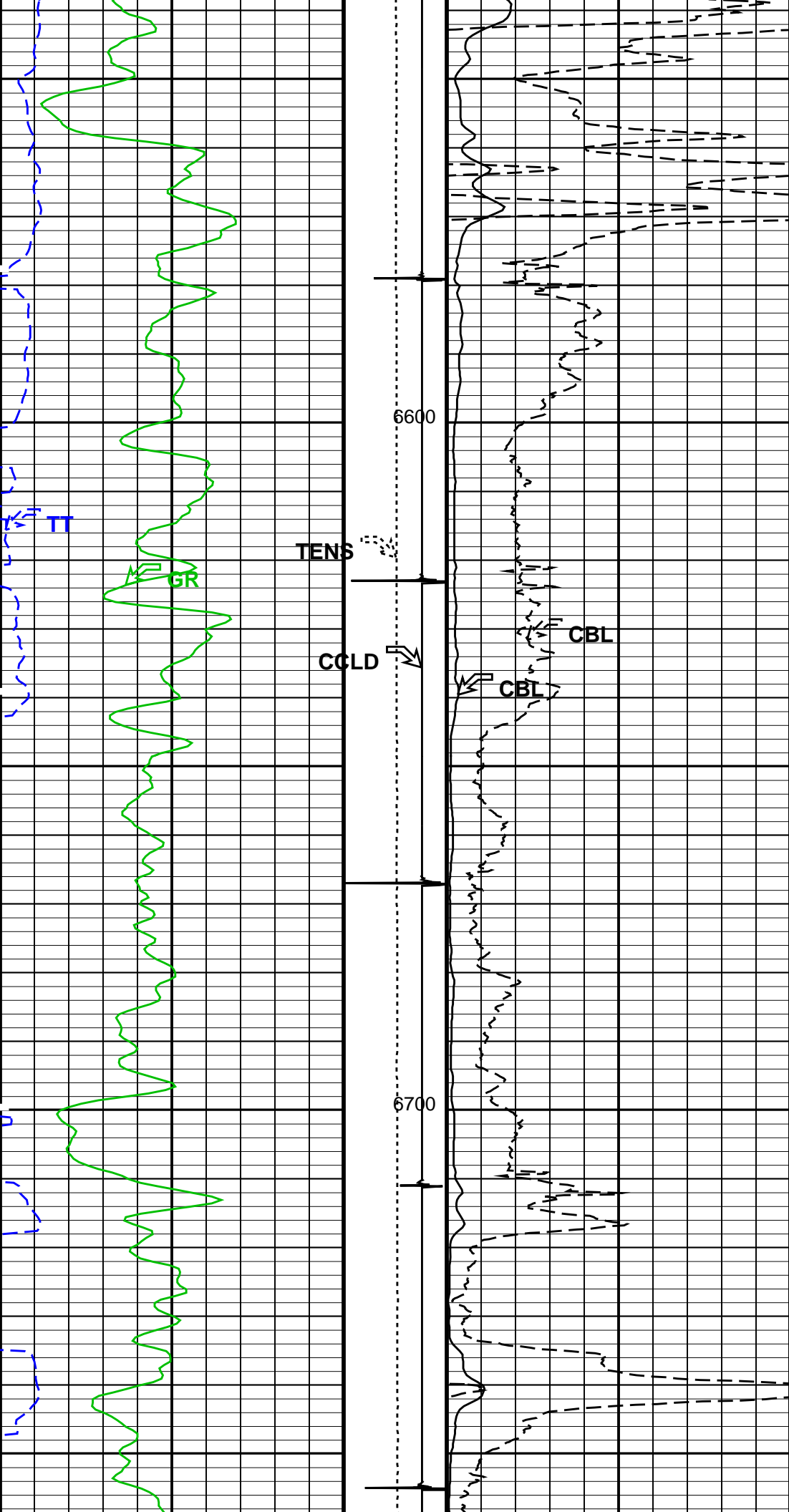


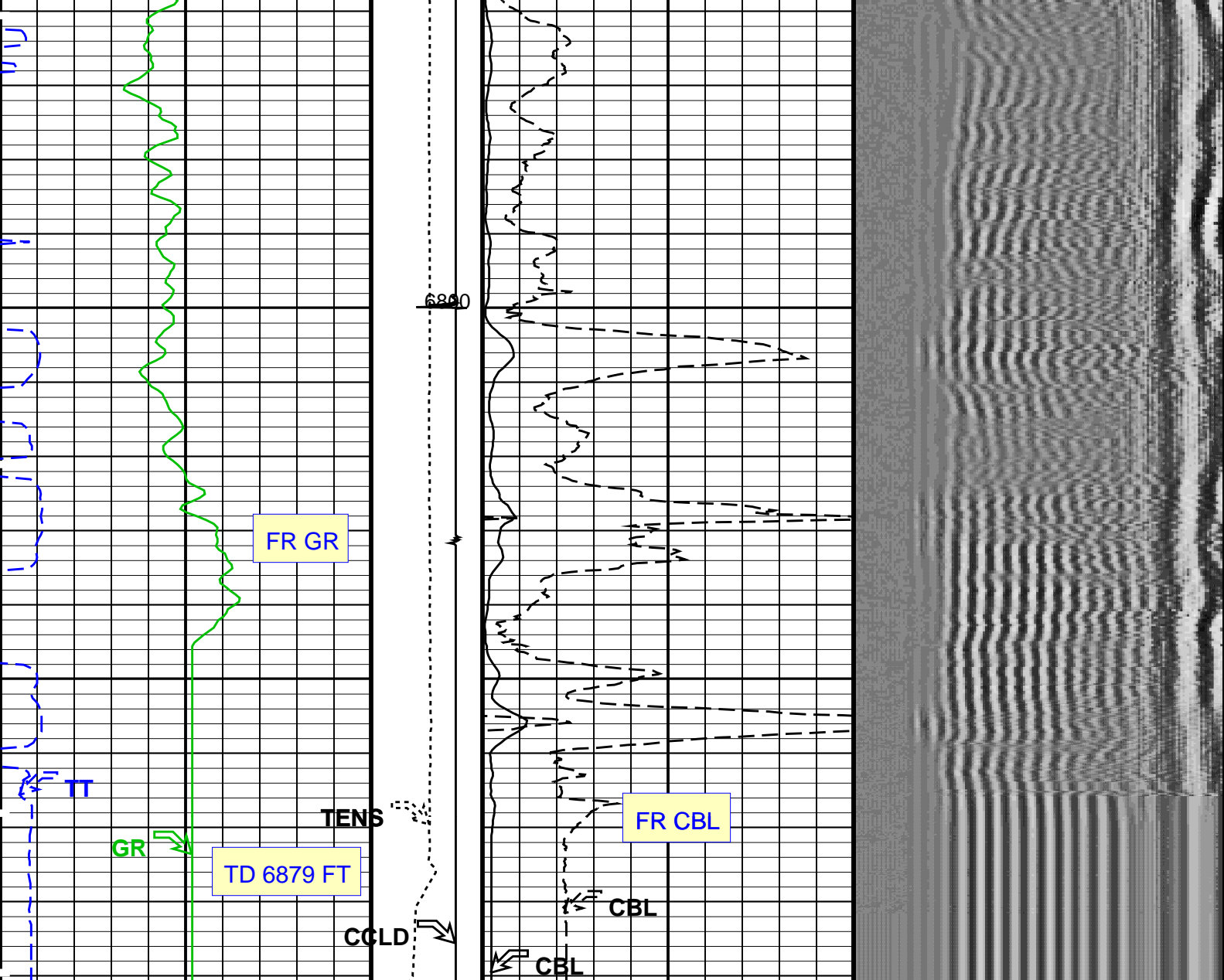












| | | | | | | | |
|---------------------------|--|---|-----------------------------|--|-----------------------------------|-----------|-----|
| Gamma Ray (GR) (GAPI) | | Tension (TENS) (LBF) | CBL Amplitude (CBL) (MV) | | Min | Amplitude | Max |
| 0 150 | | 0 2000 | 0 100 | | | | |
| 260 160 | | Discriminat ed CCL (CCLD) (V) -1 | 0 10 | | 200 1200 | | |
| Transit Time (TT) (US) | | | CBL Amplitude (CBL) (MV) | | VDL VariableDensity (VDL) (US) | | |

PIP SUMMARY

Time Mark Every 60 S

Format: CBL_VDL Vertical Scale: 5" per 100'

Graphics File Created: 22-Nov-2011 02:03

OP System Version: 19C0-187

| | | | |
|-----------------|--------------------------------------|-------|--------------------------|
| SCMT-CB PSPT | SRPC-5095-H2-2011-OP19_b 19C0-187 | RST-C | SRPC-5095-H2-2011-OP19_b |
|-----------------|--------------------------------------|-------|--------------------------|

<<<SCMT Cement Evaluation Information Summary>>>

| | | | |
|------------------------|--------------|-------------------------|---------------------------|
| Sonde Serial Number | SCMS-CB 8303 | | |
| Current Casing Size | 4.50000 IN | | |
| Casing Weight | 11.6000 LB/F | | |
| Expected CBL Amplitude | 80 MV | Minimum Sonic Amplitude | 0.579149 MV (100% Cement) |

| | | | |
|------------------------------------|-------------|---------------------------------|--------------------------|
| In Free Pipe Section | | MAP Minimum Sonic Amplitude | 1.55185 MV (80% Cement) |
| | | | 4.32284 MV (100% Cement) |
| | | | 8.10244 MV (80% Cement) |
| Master Calibration (Normalization) | | Before Calibration (Adjustment) | |
| Date of Master Calibration | 17-JAN-2011 | | |
| CBL Correction Factor | 0.0743637 | CBL Adjustment Factor (CBAF) | 1.0 |
| MAP 1 Correction Factor | 0.165722 | MAP Adjustment Factor (MPAF) | 1.0 |
| MAP 2 Correction Factor | 0.192039 | | |
| MAP 3 Correction Factor | 0.132977 | | |
| MAP 4 Correction Factor | 0.175062 | | |
| MAP 5 Correction Factor | 0.161562 | | |
| MAP 6 Correction Factor | 0.177685 | | |
| MAP 7 Correction Factor | 0.144065 | | |
| MAP 8 Correction Factor | 0.233552 | | |

| Parameters | | | |
|---|--|----------|------|
| DLIS Name | Description | Value | |
| SCMT-CB: Slim Cement Mapping Tool, 1-11/16 OD | | | |
| BILI | Bond Index Level for Zone Isolation | 0.8 | |
| CB3D | SCMT CBL 3 ft Peak Detection Mode | PEAK | |
| CB3G | SCMT CBL 3 ft Peak Detection T0_Delay and Noise Gate | 224.559 | US |
| CB3T | SCMT CBL 3 ft Fixed Threshold Level | 20 | MV |
| CB5D | SCMT CBL 5 ft Peak Detection Mode | PEAK | |
| CB5G | SCMT CBL 5 ft Peak Detection T0_Delay and Noise Gate | 338.559 | US |
| CB5T | SCMT CBL 5 ft Fixed Threshold Level | 20 | MV |
| CBLG | CBL Gate Width | 40 | US |
| CBRA | CBL LQC Reference Amplitude in Free Pipe | 80 | MV |
| CMCF | CBL Cement Type Compensation Factor | 1 | |
| CMTC | SCMT Slow Channel Multiplexer Mode | SCAN | |
| CMTM | SCMT Operating Mode | LOG | |
| CSCS | SCMT Slow Channel Index | VCC | |
| CTHI | Casing Thickness | 0.255617 | IN |
| DTF | Delta-T Fluid | 189 | US/F |
| FATT | Acoustic Attenuation due to Fluid | 0 | DB/F |
| FCF | CBL Fluid Compensation Factor | 0.924277 | |
| GOBO | Good Bond | 1.55185 | MV |
| MAPD | SCMT MAP Peak Detection Mode | PEAK | |
| MAPG | SCMT MAP Peak Detection T0_Delay and Noise Gate | 167.559 | US |
| MAPT | SCMT MAP Fixed Threshold Level | 30 | MV |
| MATT | Maximum Attenuation | 16.5449 | DB/F |
| MCCF | MAP Cement Type Compensation Factor | 1 | |
| MCI | Minimum Cemented Interval for Isolation | 1.25 | FT |
| MMSA | MAP Minimum Sonic Amplitude | 4.32284 | MV |
| MSA | Minimum Sonic Amplitude | 0.579149 | MV |
| PEDE | Peak Detection On/Off Switch in Playback | OFF | |
| VDLG | VDL Manual Gain | 5 | |
| ZCMT | Acoustic Impedance of Cement | 6.8 | MRAY |
| System and Miscellaneous | | | |
| CSIZ | Current Casing Size | 4.500 | IN |
| CWEI | Casing Weight | 11.60 | LB/F |
| DORL | Depth Offset for Repeat Analysis | 0.0 | FT |
| TD | Total Depth | -50000 | FT |

| Output DLIS Files | | | |
|-------------------|---------------------|-------|----------------------------|
| DEFAULT | SCMT_RST_PSP_051LUP | FN:50 | PRODUCER 22-Nov-2011 02:03 |

Schlumberger

REPEAT ANALYSIS

Input DLIS Files

DEFAULT SCMT_RST_PSP_050PUP FN:49 PRODUCER 22-Nov-2011 01:58 5815.0 FT 5445.5 FT

Output DLIS Files

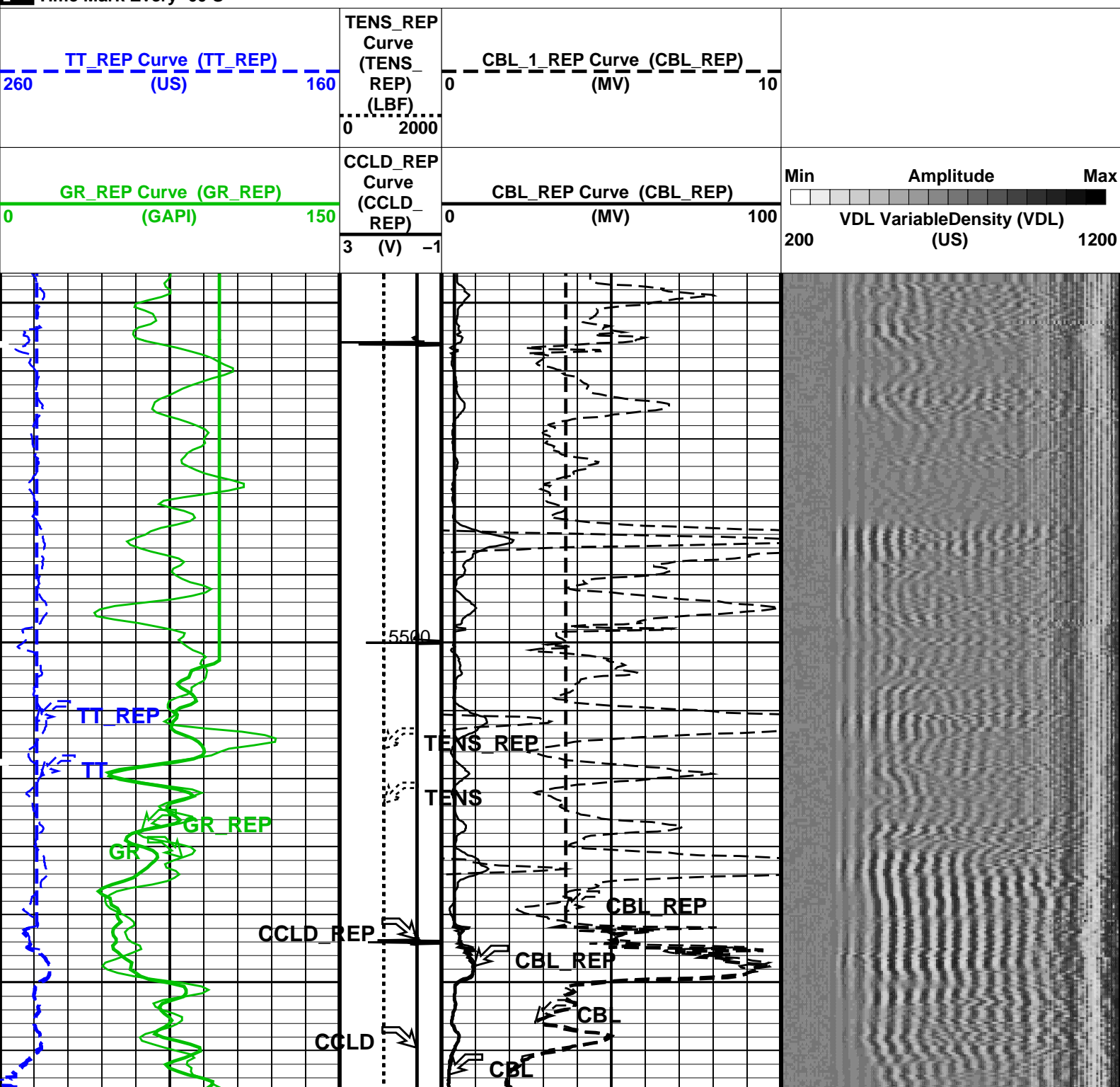
DEFAULT SCMT_RST_PSP_051LUP FN:50 PRODUCER 22-Nov-2011 02:03

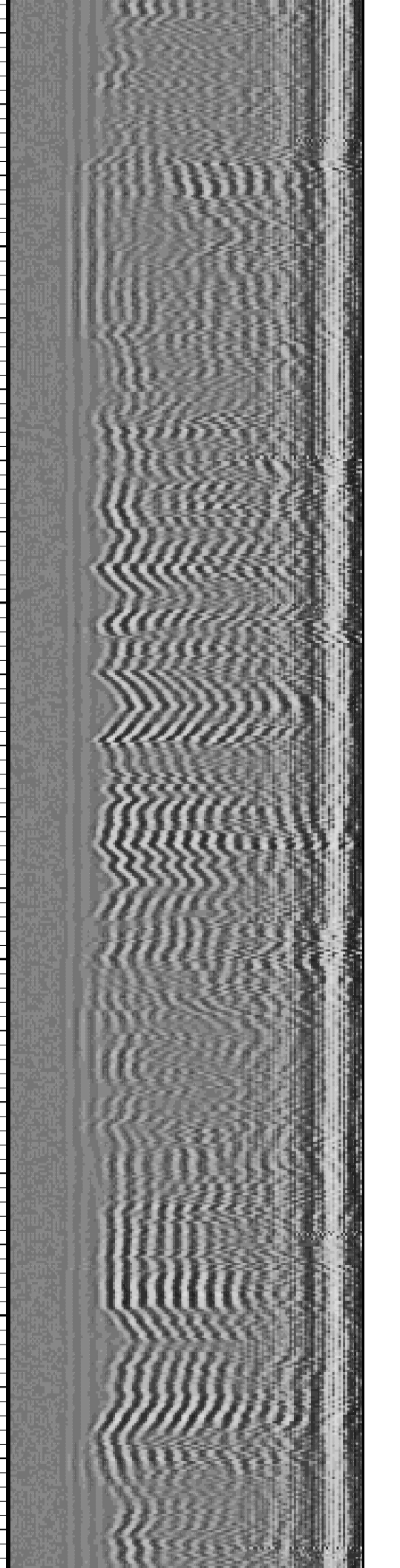
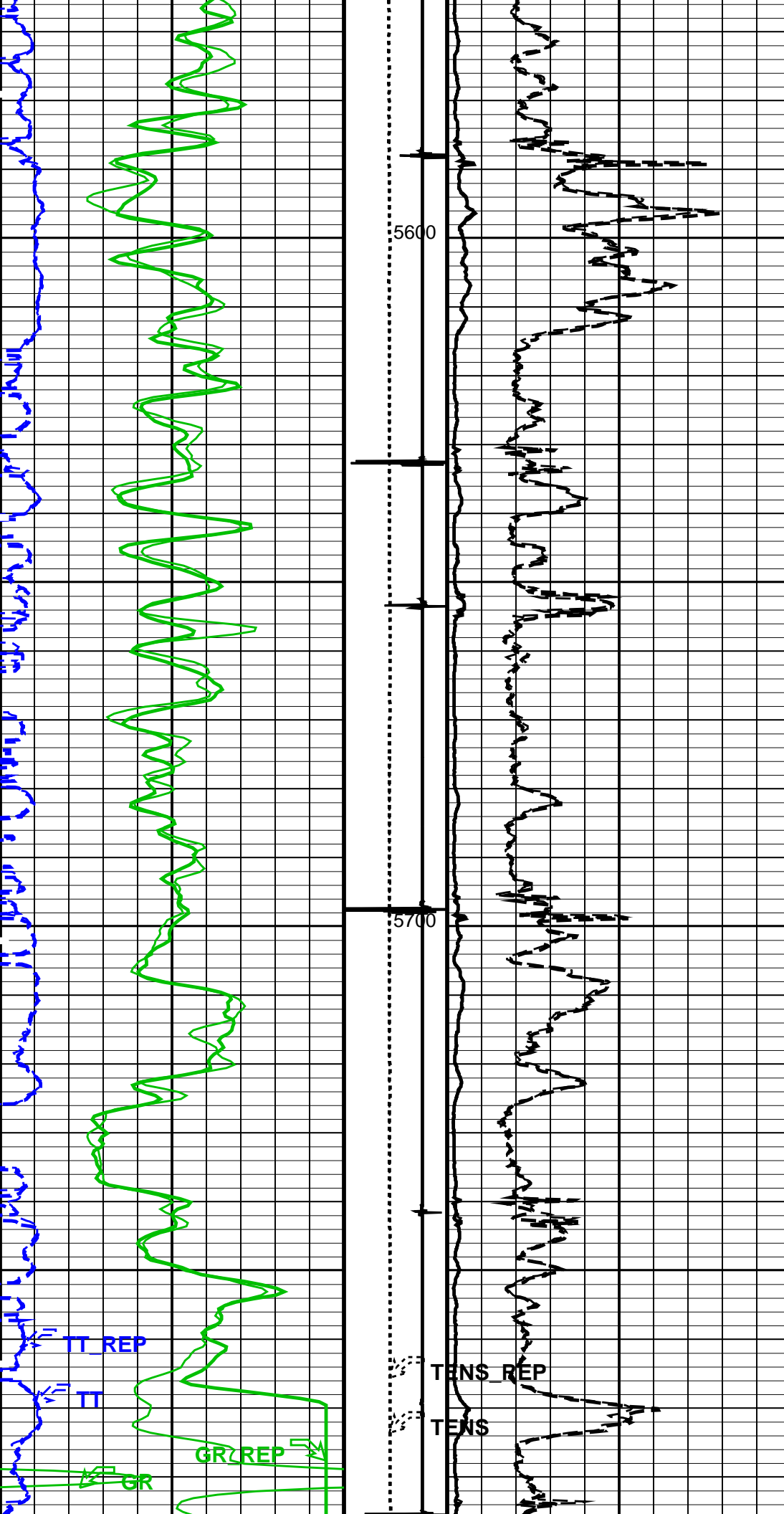
OP System Version: 19C0-187

SCMT-CB SRPC-5095-H2-2011-OP19_b RST-C SRPC-5095-H2-2011-OP19_b
PSPT 19C0-187

PIP SUMMARY

Time Mark Every 60 S





| | | | |
|--------------------------|---|----------|------|
| CB5T | SCMT CBL 5 ft Fixed Threshold Level | 20 | MV |
| CBLG | CBL Gate Width | 40 | US |
| CBRA | CBL LQC Reference Amplitude in Free Pipe | 80 | MV |
| CMCF | CBL Cement Type Compensation Factor | 1 | |
| CMT C | SCMT Slow Channel Multiplexer Mode | SCAN | |
| CMTM | SCMT Operating Mode | LOG | |
| CSCS | SCMT Slow Channel Index | VCC | |
| CTHI | Casing Thickness | 0.255617 | IN |
| DTF | Delta-T Fluid | 189 | US/F |
| FATT | Acoustic Attenuation due to Fluid | 0 | DB/F |
| FCF | CBL Fluid Compensation Factor | 0.924277 | |
| GOBO | Good Bond | 1.55185 | MV |
| MAPD | SCMT MAP Peak Detection Mode | PEAK | |
| MAPG | SCMT MAP Peak Detection T0_Delay and Noise Gate | 167.559 | US |
| MAPT | SCMT MAP Fixed Threshold Level | 30 | MV |
| MATT | Maximum Attenuation | 16.5449 | DB/F |
| MCCF | MAP Cement Type Compensation Factor | 1 | |
| MCI | Minimum Cemented Interval for Isolation | 1.25 | FT |
| MMSA | MAP Minimum Sonic Amplitude | 4.32284 | MV |
| MSA | Minimum Sonic Amplitude | 0.579149 | MV |
| PEDE | Peak Detection On/Off Switch in Playback | OFF | |
| VDLG | VDL Manual Gain | 5 | |
| ZCMT | Acoustic Impedance of Cement | 6.8 | MRAY |
| System and Miscellaneous | | | |
| CSIZ | Current Casing Size | 4.500 | IN |
| CWEI | Casing Weight | 11.60 | LB/F |
| DORL | Depth Offset for Repeat Analysis | 0.0 | FT |
| TD | Total Depth | -50000 | FT |

Input DLIS Files

| | | | | | | |
|---------|---------------------|-------|----------|-------------------|-----------|-----------|
| DEFAULT | SCMT_RST_PSP_050PUP | FN:49 | PRODUCER | 22-Nov-2011 01:58 | 5815.0 FT | 5445.5 FT |
|---------|---------------------|-------|----------|-------------------|-----------|-----------|

Output DLIS Files

| | | | | | | |
|---------|---------------------|-------|----------|-------------------|--|--|
| DEFAULT | SCMT_RST_PSP_051LUP | FN:50 | PRODUCER | 22-Nov-2011 02:03 | | |
|---------|---------------------|-------|----------|-------------------|--|--|

Schlumberger

COEFFICIENTS

MAXIS Field Log

| | | | |
|-----------|-----------------------------|-----------|-------------|
| Client: | ENCANA OIL & GAS (USA) INC. | Tool: | PSP |
| Field: | PARACHUTE | Sub Type: | PBMS |
| Well: | PAD PA30 | Sensor: | Clock Model |
| Run date: | 21-Nov-2011 | | |

PBMS Digitalization Clock

Sonde Serial NB

Sensor Serial NB 3779

Calib Date ddmmyy 090107

Matrix Size 16

Coeff CRC D285

Clock Coeff

Temp**0

Temp**1

Temp**2

Temp**0

-.210501098404E+03

-.537713340627E+01

-.752421519422E-01

Temp**3

Temp**4

Temp**5

Temp**0

+.630273975887E-03

+.266728381738E-05

0.0

Client: ENCANA OIL & GAS (USA) INC.

Field: PARACHUTE

Well: PAD PA30

Run date: 21-Nov-2011

Tool:

Sub Type:

Sensor:

PSP

PBMS

Sapphire

PBMS Sapphire 10kPsi Gauge

Sonde Serial NB

Sensor Serial NB

Calib Date ddmmyy

Matrix Size

Coeff CRC

COEFFICIENTS FOR SAPPHIRE PBMS-A.3779 S/N:

3779

090107

66

4C82

Pres Coeff

Tt**0

Tt**1

Tt**2

Tp**0

-.611876617639E+04

+.471061007964E+04

-.216447354932E+04

Tp**1

+.371836126905E+04

-.234756196935E+04

+.129149325686E+04

Tp**2

+.193143980957E+02

-.189348218853E+01

-.341812471126E+01

Tp**3

-.568815065386E+01

+.200079683569E+01

0.0

Tp**4

0.0

0.0

0.0

Tp**5

0.0

0.0

0.0

Tt**3

Tt**4

Tt**5

Tp**0

+.380249508124E+03

-.247683004908E+02

0.0

Tp**1

-.227135245080E+03

+.146352372057E+02

0.0

Tp**2

0.0

0.0

0.0

Tp**3

0.0

0.0

0.0

Tp**4

0.0

0.0

0.0

Tp**5

0.0

0.0

0.0

PBMS Sapphire 10kPsi Gauge

Sonde Serial NB :
Sensor Serial NB 3779
Calib Date ddmmyy 090107
Matrix Size 66
Coeff CRC C39E

Temp Coeff

| | Tp**0 | Tp**1 | Tp**2 |
|-------|--------------------|--------------------|--------------------|
| Tt**0 | -.278275571347E+03 | +.251216271916E+01 | -.820715649824E+00 |
| Tt**1 | +.598349067015E+02 | -.107326373545E+01 | +.652890183203E-01 |
| Tt**2 | +.109160002120E+02 | +.262812193556E+00 | -.450134240377E-02 |
| Tt**3 | -.673302171285E+00 | -.213772918779E-01 | 0.0 |
| Tt**4 | 0.0 | 0.0 | 0.0 |
| Tt**5 | 0.0 | 0.0 | 0.0 |

| | Tp**3 | Tp**4 | Tp**5 |
|-------|--------------------|--------------------|-------|
| Tt**0 | +.151507143209E+00 | -.592670012996E-02 | 0.0 |
| Tt**1 | +.127486538512E-01 | -.437897076104E-02 | 0.0 |
| Tt**2 | 0.0 | 0.0 | 0.0 |
| Tt**3 | 0.0 | 0.0 | 0.0 |
| Tt**4 | 0.0 | 0.0 | 0.0 |
| Tt**5 | 0.0 | 0.0 | 0.0 |

Client: ENCANA OIL & GAS (USA) INC.
Field: PARACHUTE
Well: PAD PA30
Run date: 21-Nov-2011

Tool: PSP
Sub Type: PBMS
Sensor: GR

PBMS Gamma Ray

Sonde Serial NB RESISTORS FOR GR SENSOR N.34552, TOOL PBMS-AA3779. SENSOR S/N:
Sensor Serial NB 34552
Calib Date ddmmyy 030606
Matrix Size 12
Coeff CRC 3AE5

GR HV Rt

| | Rt**0 | Rt**1 |
|-------|--------------------|--------------------|
| Rt**0 | +.200000000000e+04 | +.214000000000e+04 |

Client: ENCANA OIL & GAS (USA) INC.

Field: PARACHUTE

Well: PAD PA30

Run date: 21–Nov–2011

Tool: PSP

Sub Type: PBMS

Sensor: WellTemp RTD

PBMS RTD Well Thermometer

Sonde Serial NB

Sensor Serial NB

Calib Date ddmmyy

Matrix Size

Coeff CRC

COEFFICIENTS FOR RTD THERMOMETER PBMS–A.3779 S/N:

3779

090107

16

3846

| | | | |
|-------------|--------------------|--------------------|--------------------|
| WTemp Coeff | | | |
| | Tt**0 | Tt**1 | Tt**2 |
| Tt**0 | +.492135102627E+02 | –.278827553804E+03 | +.142867554561E+03 |
| | Tt**3 | Tt**4 | Tt**5 |
| Tt**0 | –.233378392336E+02 | +.145553494493E+01 | 0.0 |

Company: ENCANA OIL & GAS (USA) INC.

Well: FEDERAL SMITH 19–15 (PA30)

Field: PARACHUTE

County: GARFIELD

State: COLORADO

Schlumberger

CEMENT BOND LOG

CBL – VDL

GAMMA RAY – CCL