



MIDWEST WIRELINE

# MICRORESISTIVITY LOG

Company Val Energy, Inc.  
 Well Gail Sawyer #1-30  
 Field Wilson  
 County Cowley State Kansas

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 Well Gail Sawyer #1-30  
 Field Wilson  
 County Cowley  
 State Kansas

Location: API #: 15-035-24743-00-00  
 330 FSL & 2255 FEL  
 SEC 30 TWP 32S RGE 6E  
 Other Services  
 CNL/CDL  
 DIL

|                        |               |
|------------------------|---------------|
| Date                   | 10/5/2021     |
| Run Number             | One           |
| Depth Driller          | 3303          |
| Depth Logger           | 3302          |
| Bottom Logged Interval | 3301          |
| Top Log Interval       | 1600          |
| Casing Driller         | 8.625 @ 301   |
| Casing Logger          | 312           |
| Bit Size               | 7.875         |
| Type Fluid in Hole     | Chemical      |
| Salinity, ppm CL       | 900           |
| Density / Viscosity    | 8.6 62        |
| pH / Fluid Loss        | 11.0 8.0      |
| Source of Sample       | FLOWLINE      |
| Rm @ Meas. Temp        | 1.10 @ 74     |
| Rmt @ Meas. Temp       | .83 @ 74      |
| Rmc @ Meas. Temp       | 1.49 @ 74     |
| Source of Rmf / Rmc    | CHARTS        |
| Rm @ BHT               | .75 @ 109     |
| Operating Rig Time     | 2 Hours       |
| Max Rec. Temp. F       | 109           |
| Equipment Number       | P-24          |
| Location               | HAYS          |
| Recorded By            | J. Henrickson |
| Witnessed By           | Joe Baker     |

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All interpretations are opinions based on inferences from electrical or other measurements and Midwest Wireline LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Midwest Wireline LLC will not be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees.

### Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

Winfield Kansas  
 East to 201, 1 South, 1 West, West Into at Gate

Log Measured From: Kelly Bushing 8 Ft. Above Permanent Datum

THANK YOU FOR USING MIDWEST WIRELINE LLC  
 785-625-3858

### Your Midwest Wireline Crew

Engineer: J. Henrickson  
 Operator:  
 Operator:  
 Operator:

### This Log Record Was Witnessed By

Primary Witness: Joe Baker  
 Secondary Witness:  
 Secondary Witness:  
 Secondary Witness:

# Log Variables

DatabaseC:\ProgramData\Warrior\Data\val\_gail\_sawyer\_1\_30.db  
Dataset field/well/stackml/pass4.1/\_vars\_

## Top - Bottom

|           |              |                  |                   |                |                  |       |                  |
|-----------|--------------|------------------|-------------------|----------------|------------------|-------|------------------|
| A         | BOREID<br>in | BOTTEMP<br>degF  | CASEOD<br>in      | CASETHCK<br>in | FLUIDDEN<br>g/cc | M     | MATRXDEN<br>g/cc |
| 1         | 7.875        | 109              | 5.5               | 0              | 1                | 2     | 2.71             |
| NPORSEL   | PERFS        | SNDERR<br>mmho/m | SNDERRM<br>mmho/m | SPSHIFT<br>mV  | SRFTEMP<br>degF  | SZCOR | TDEPTH<br>ft     |
| Limestone | 0            | 0                | 0                 | 0              | 81               | Off   | 3302             |

## Variable Description

A : Cement Factor (a)  
BOREID : Borehole I.D.  
BOTTEMP : Bottom Hole Temperature  
CASEOD : Casing O.D.  
CASETHCK : Casing Thickness  
FLUIDDEN : Fluid Density  
M : Cement Exp (m)  
MATRXDEN : Matrix Density

NPORSEL : Neutron Porosity Curve Select  
PERFS : Perforation Flag  
SNDERR : Deep Sonde Error Correction  
SNDERRM : Medium Sonde Error Correction  
SPSHIFT : S.P. Baseline Offset  
SRFTEMP : Surface Temperature  
SZCOR : CN Size Cor. ?  
TDEPTH : Total Depth

| Sensor            | Offset (ft) | Schematic | Description  | Length (ft) | O.D. (in) | Weight (lb) |
|-------------------|-------------|-----------|--|-------------|-----------|-------------|
| GR                | 40.58       |           | GR-M&W (233-M&W)   | 3.00        | 3.50      | 50.00       |
| CNLSC             | 37.48       |           | CNT-M&W (207-MW)   | 5.50        | 3.50      | 100.00      |
| CNSSC             | 36.73       |           |  |             |           |             |
| LSD               | 28.43       |           | CDL-M&W (934-226)  | 8.50        | 4.00      | 250.00      |
| DCAL              | 28.42       |           |  |             |           |             |
| SSD               | 27.93       |           |  |             |           |             |
| ML-PSIML (PSI-01) |             |           | ML-PSIML (PSI-01)<br>GO Micro log tools converted to Simplec electronics | 7.58        | 4.00      | 65.00       |
| MCAL              | 19.83       |           | MI   | 19.83       | 19.83     |             |
| MI                | 19.83       |           |  |             |           |             |
| MN                | 19.83       |           |  |             |           |             |
| RLL3F             | 15.80       | RLL3      | 15.80  |             |           |             |
| RLL3              | 15.80       |           |  |             |           |             |

CILD 8.00

CILM 4.70

SP 0.20

DIL-PSI HIGH TEMP (952-828)

18.50

3.50

220.00

Dataset: val\_gail\_sawyer\_1\_30.db: field/well/stackml/pass4.1  
 Total length: 43.08 ft  
 Total weight: 685.00 lb  
 O.D.: 4.00 in



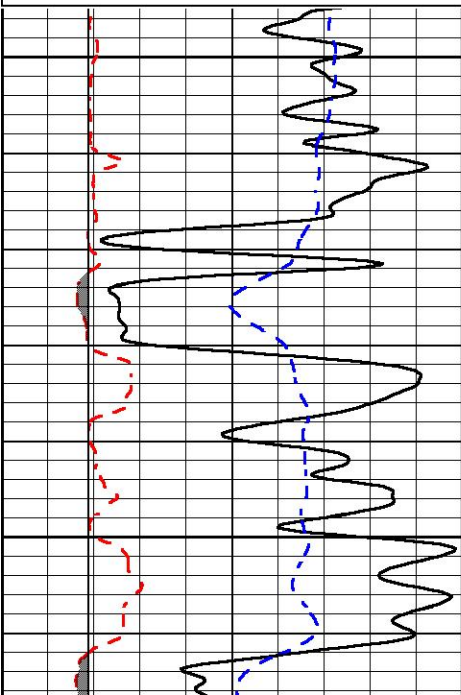
# DETAIL SECTION

## MAIN PASS

Database File val\_gail\_sawyer\_1\_30.db  
 Dataset Pathname stackml/pass4.1  
 Presentation Format \_micro  
 Dataset Creation Tue Oct 05 17:08:40 2021  
 Charted by Depth in Feet scaled 1:240

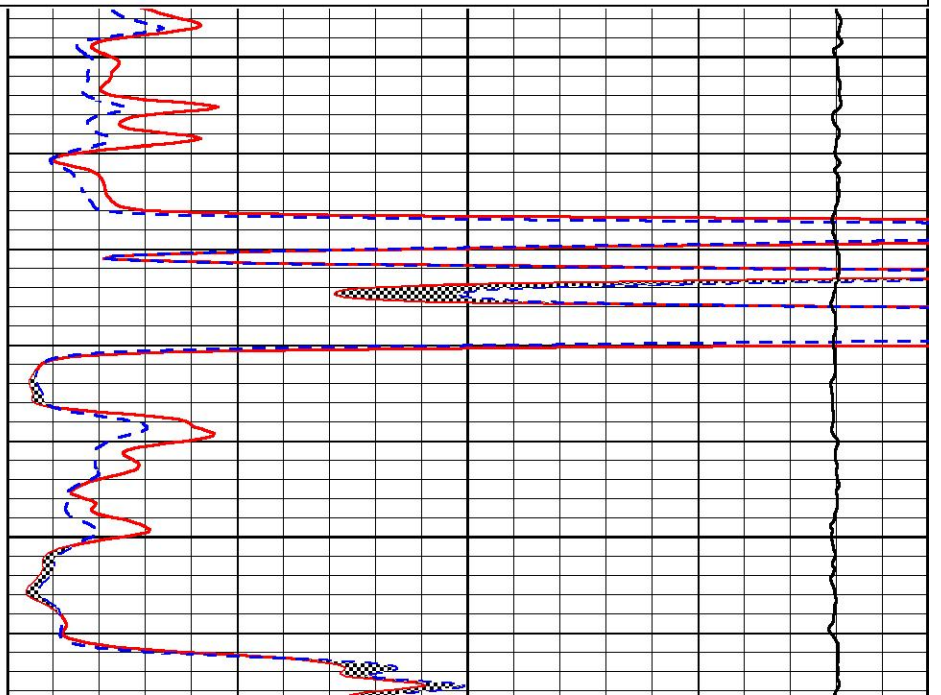
|      |                  |     |
|------|------------------|-----|
| 0    | GAMMA RAY (GAPI) | 150 |
| 6    | MCAL (in)        | 16  |
| 6    | Bit Size (in)    | 16  |
| -200 | sp (mV)          | 0   |

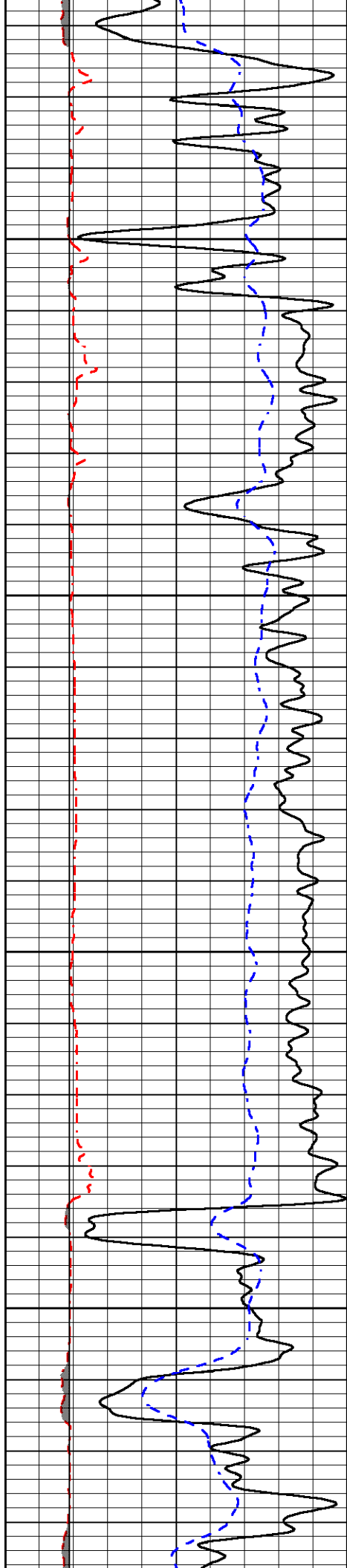
|       |                             |    |
|-------|-----------------------------|----|
| 0     | MICRO INVERSE 1 X 1 (Ohm-m) | 40 |
| 0     | MICRO NORMAL 2" (Ohm-m)     | 40 |
| 10000 | Line Weight (lb)            | 0  |



1600

1650



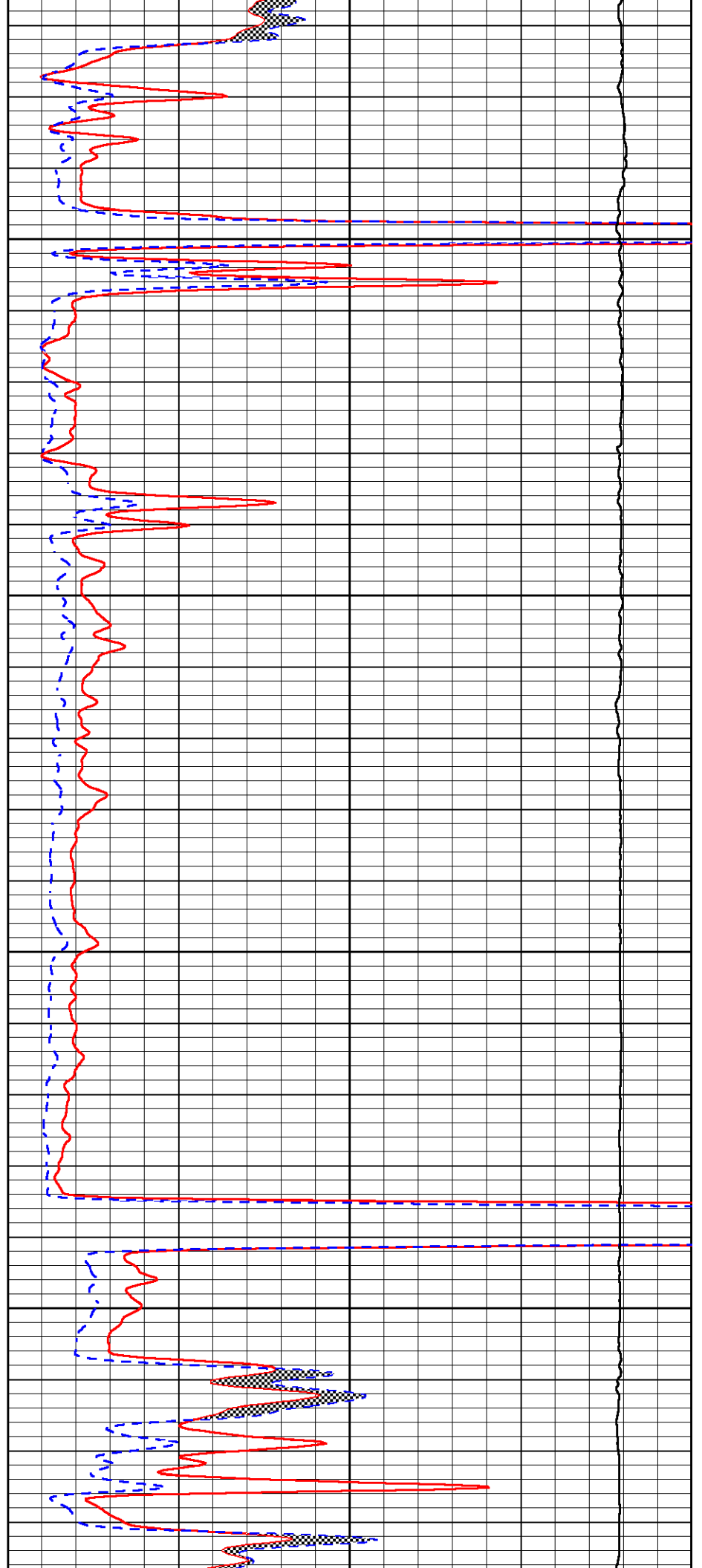


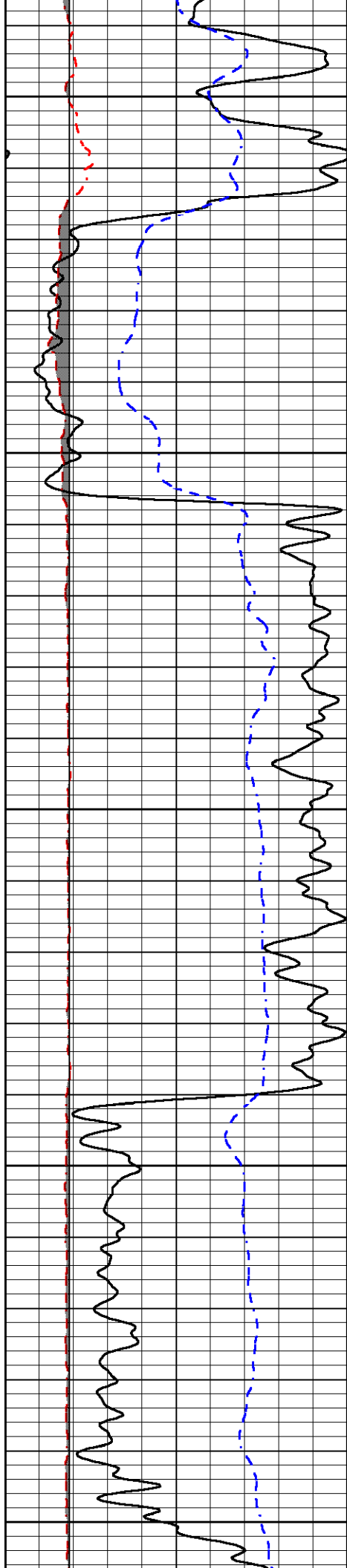
1700

1750

1800

1850





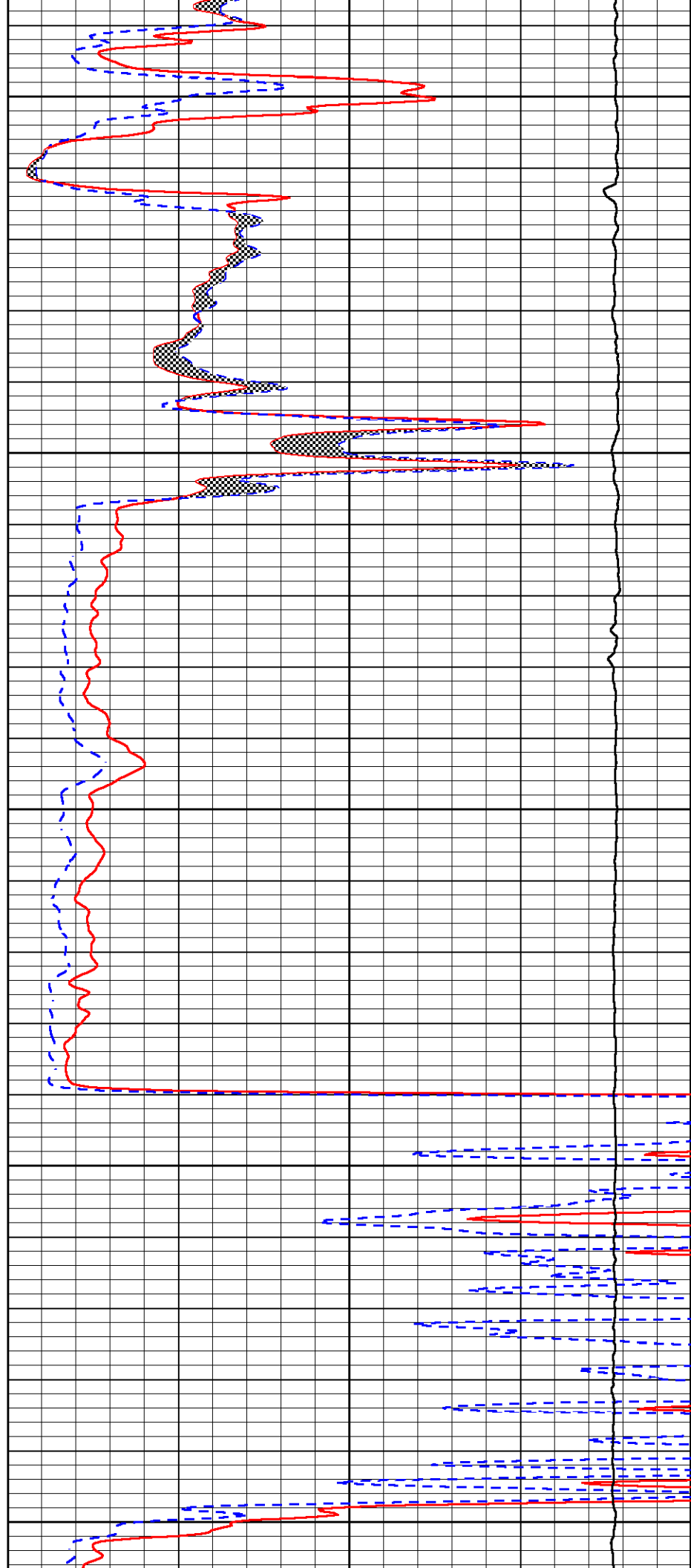
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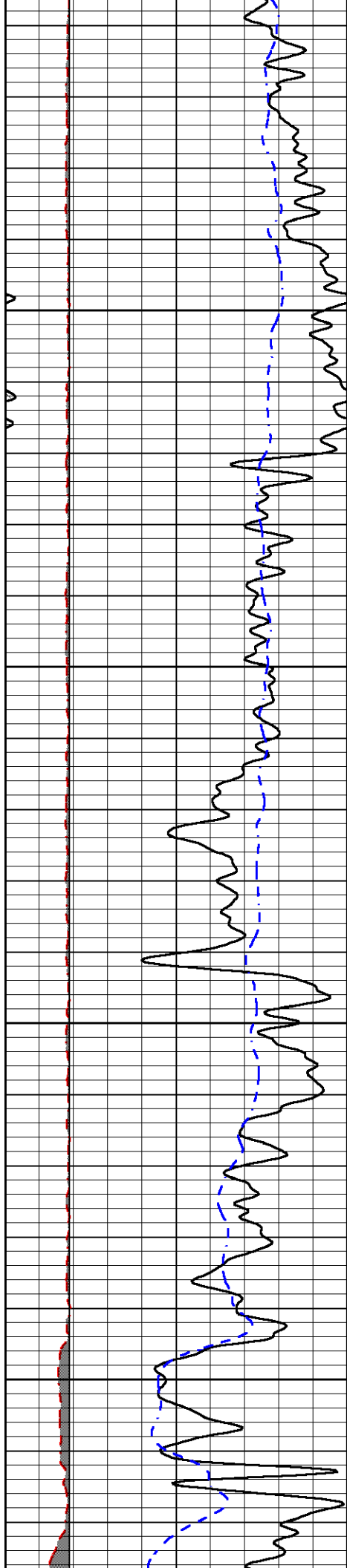
1950

2000

2050

2100



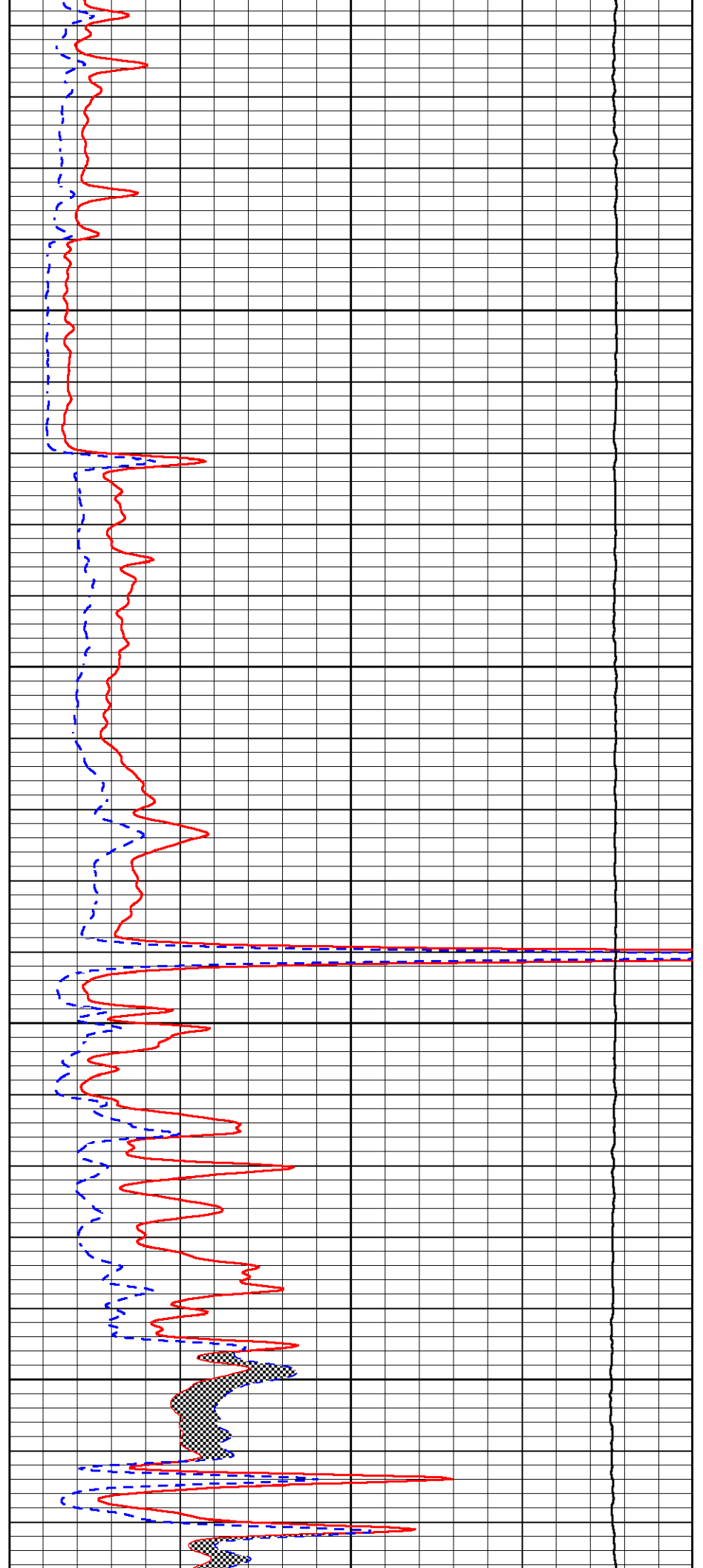


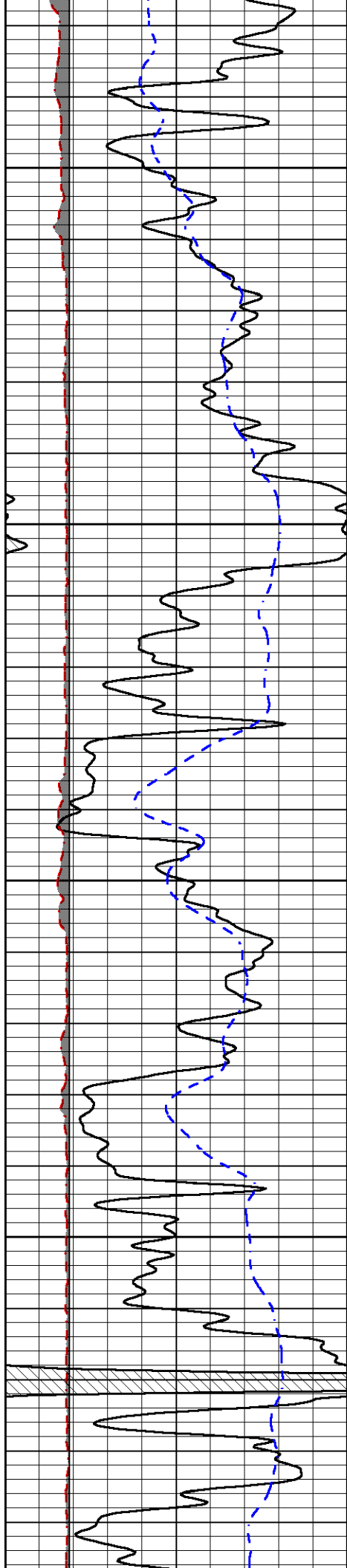
2150

2200

2250

2300



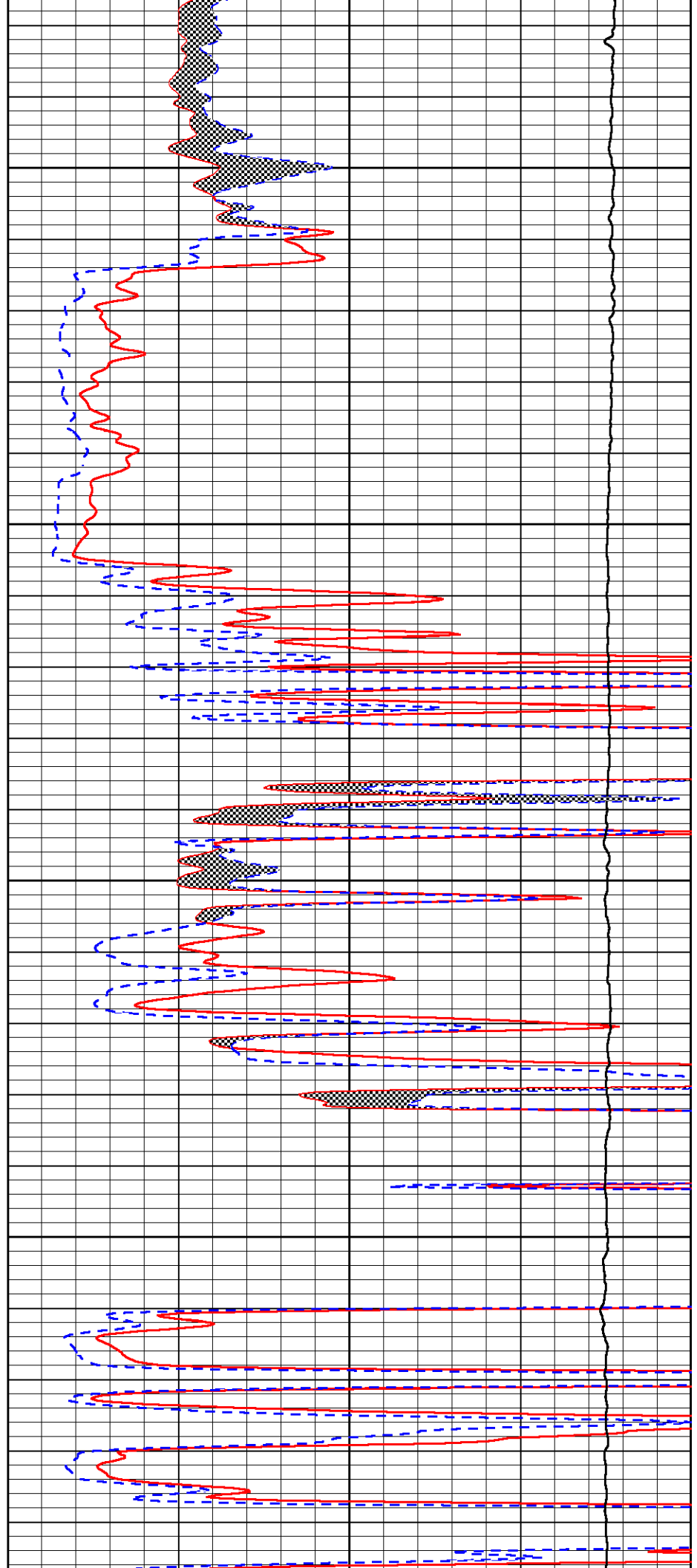


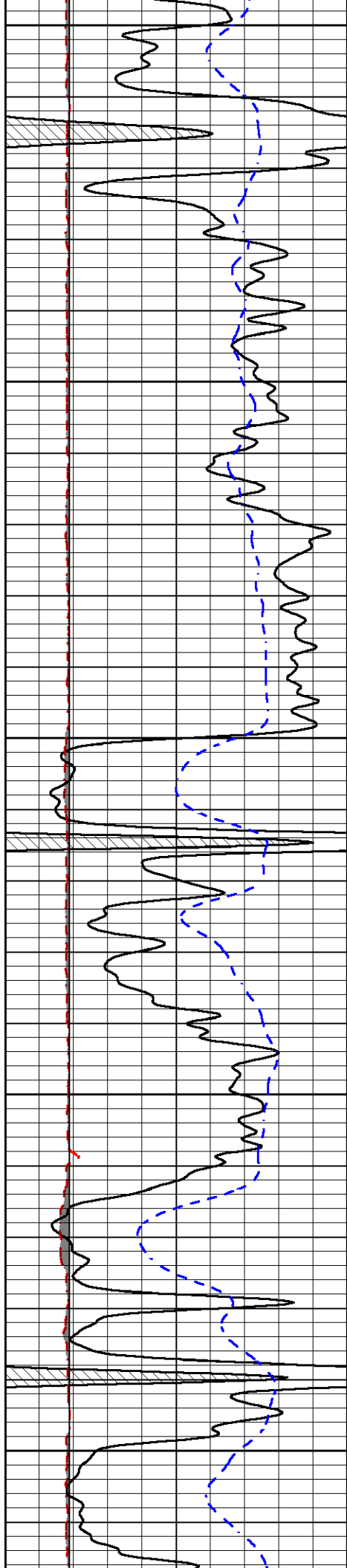
2350

2400

2450

2500





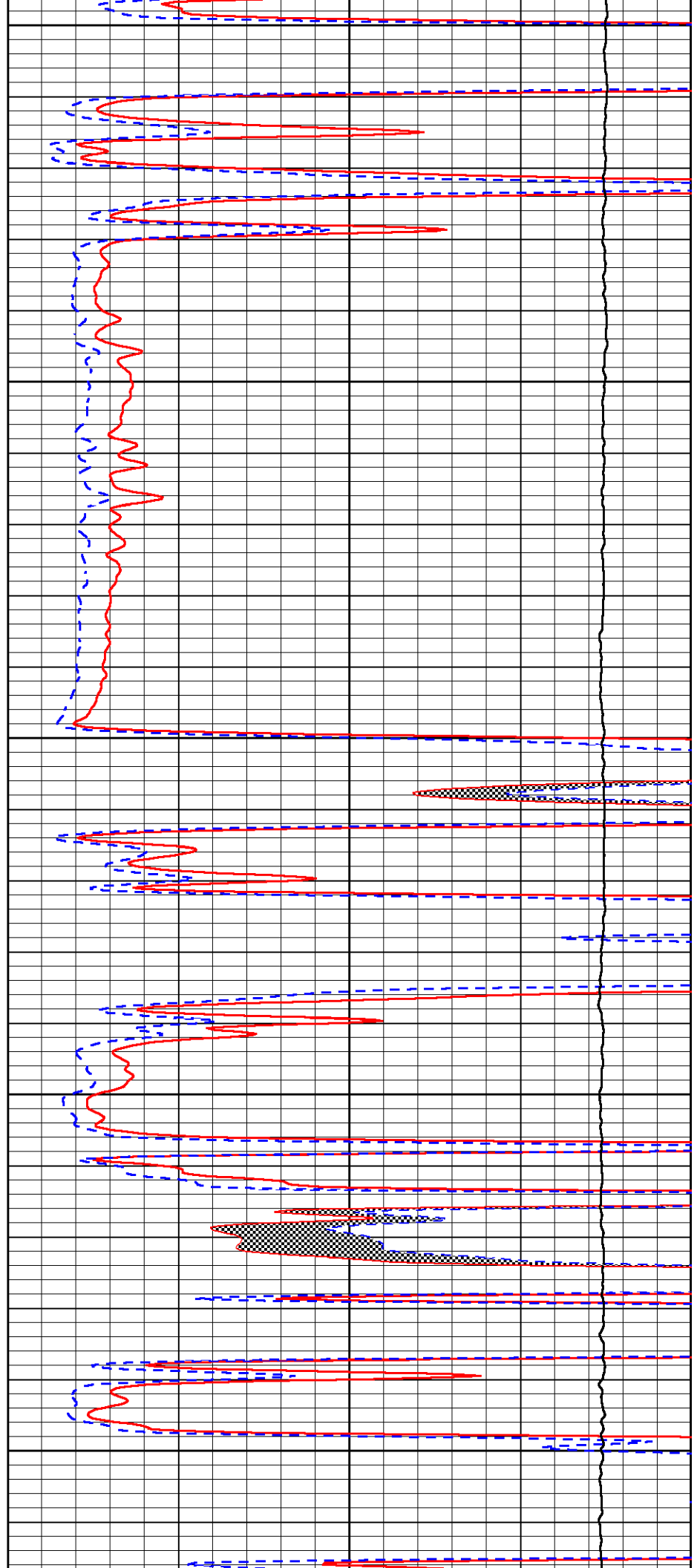
2550

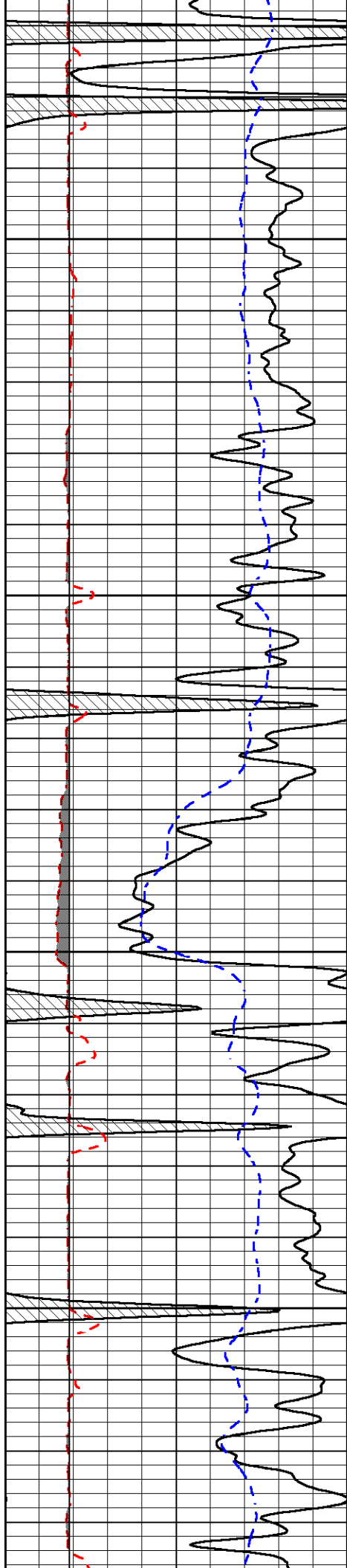
2600

2650

2700

2750



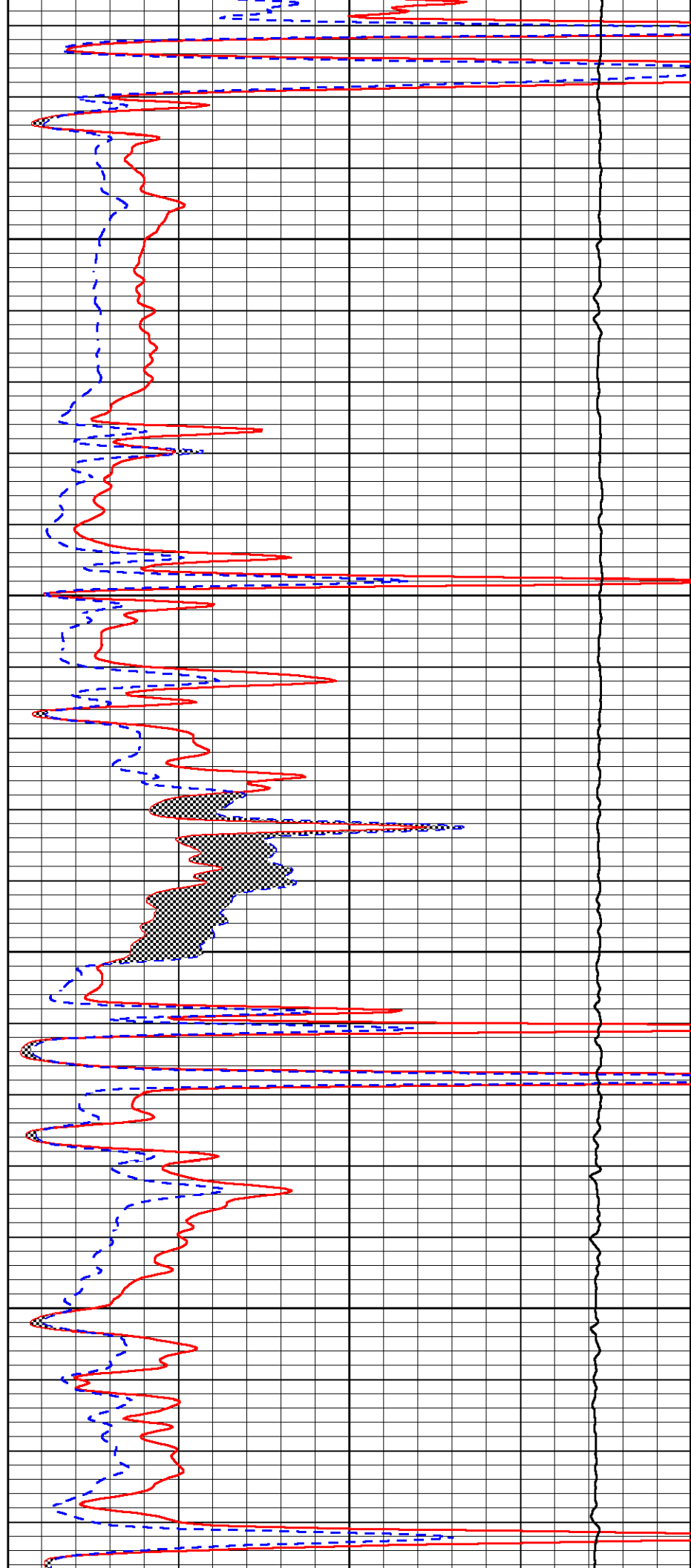


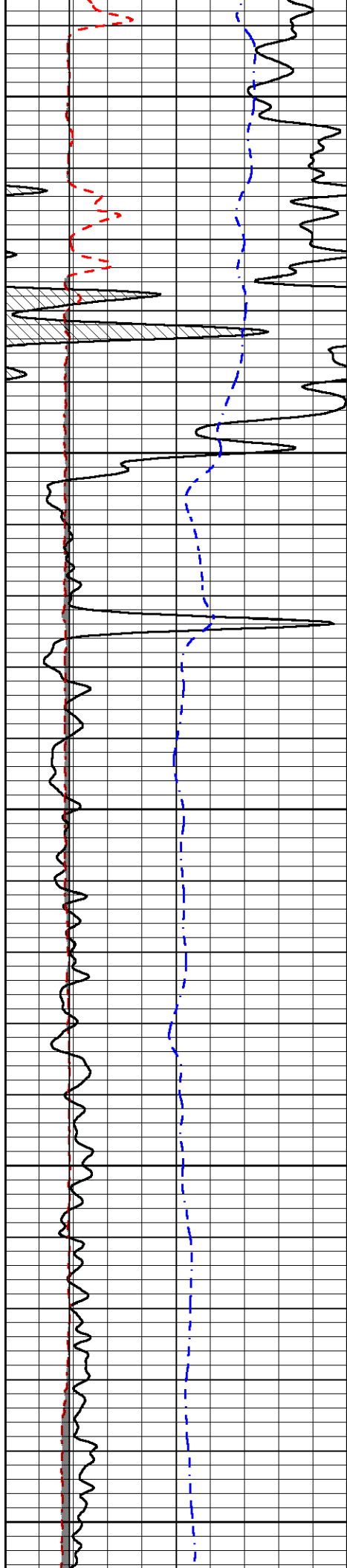
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2850

2900

2950





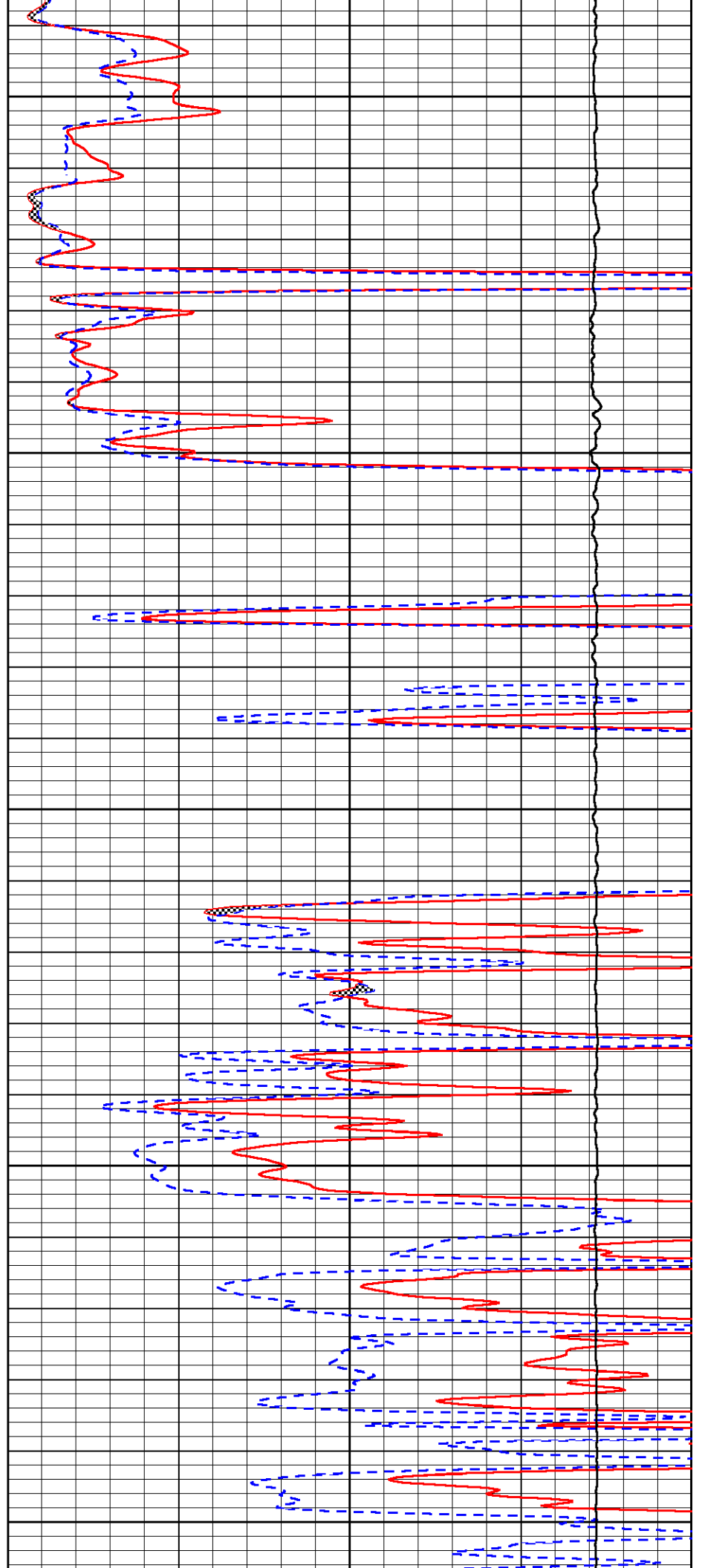
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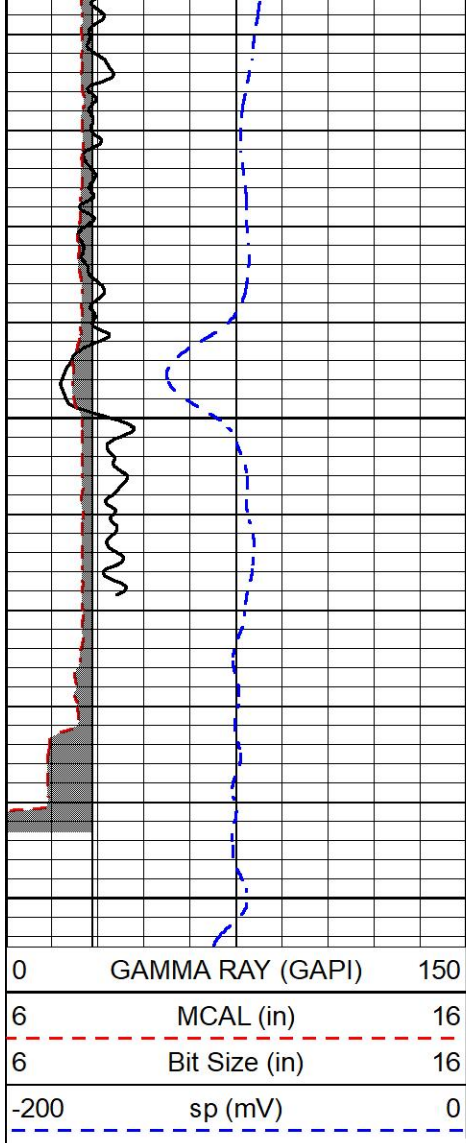
3050

3100

3150

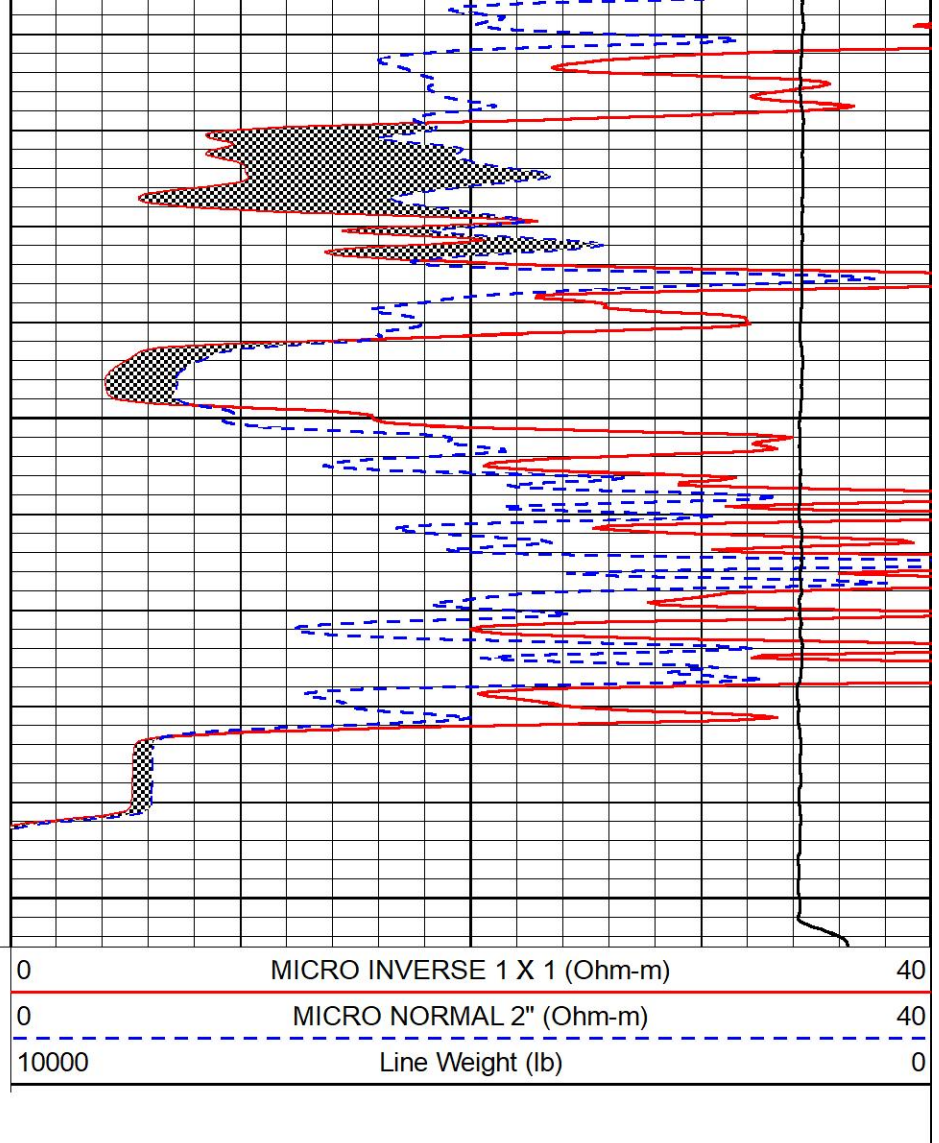
3200





3250

3300

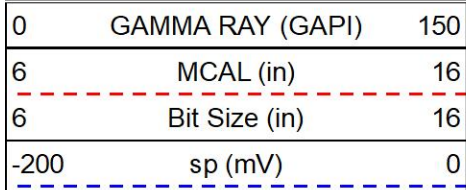


MIDWEST WIRELINE

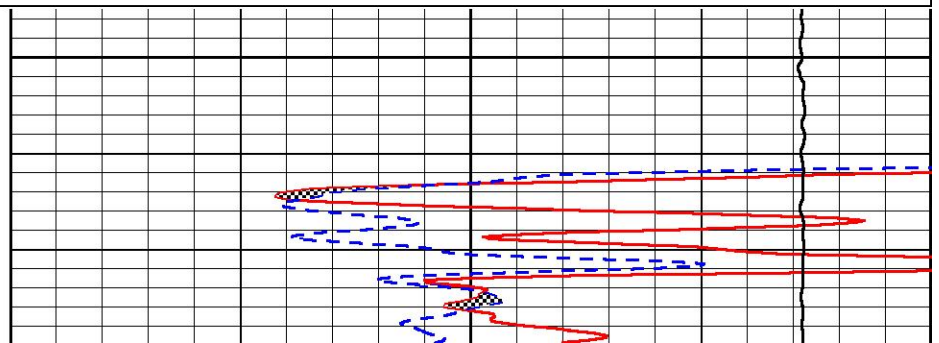
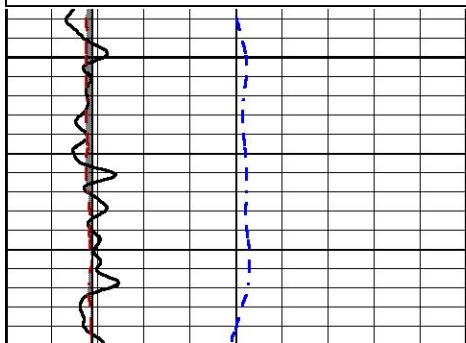
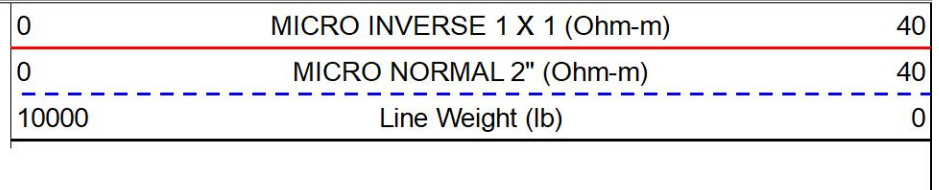
## REPEAT SECTION

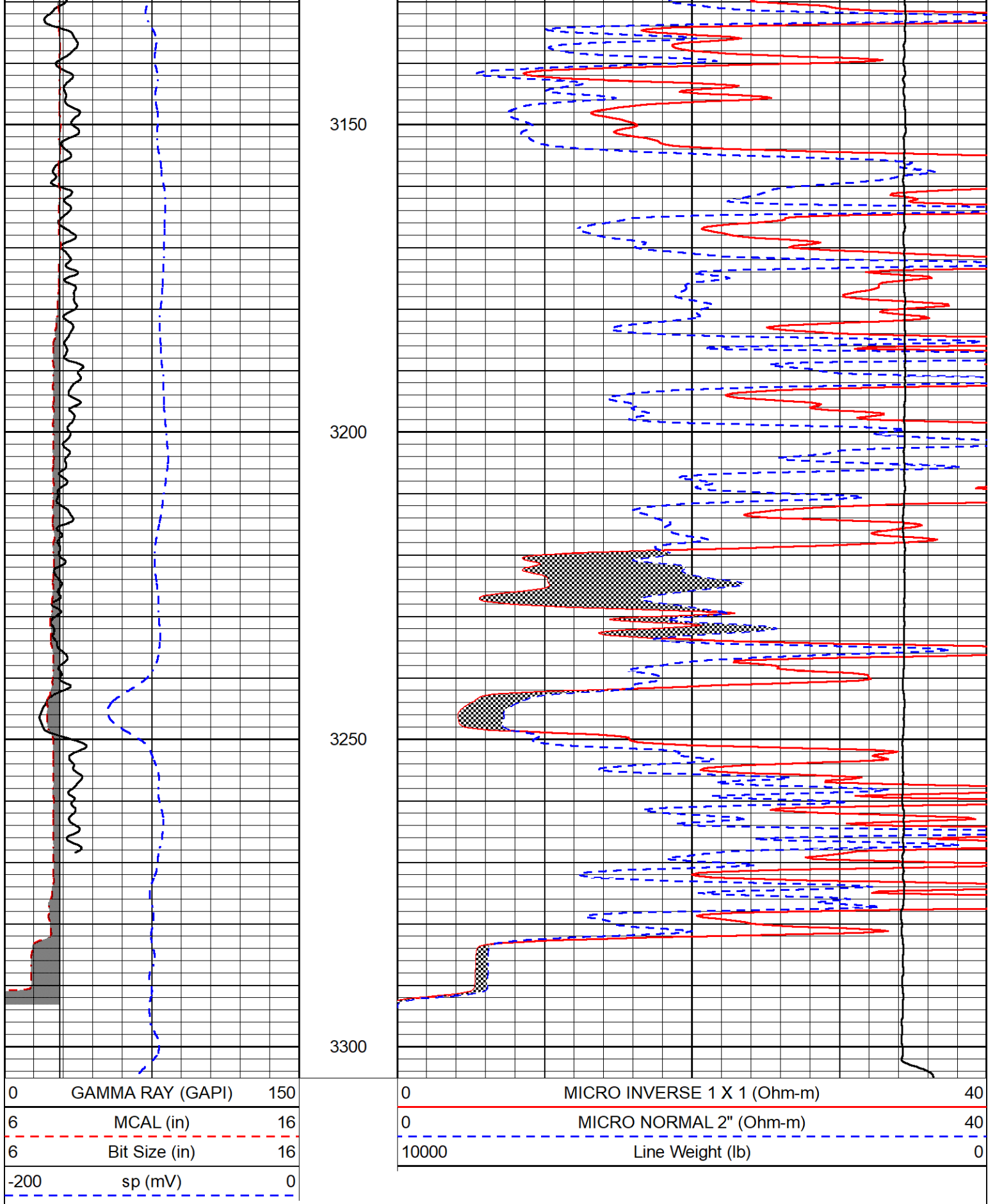
### REPEAT PASS

Database File val\_gail\_sawyer\_1\_30.db  
 Dataset Pathname stackml/pass2.1  
 Presentation Format \_micro  
 Dataset Creation Tue Oct 05 17:03:56 2021  
 Charted by Depth in Feet scaled 1:240



3100





### Calibration Report

Database File val\_gail\_sawyer\_1\_30.db  
 Dataset Pathname stackml/pass4.1  
 Dataset Creation Tue Oct 05 17:08:40 2021

Dual Induction Calibration Report

Serial-Model: 952-828-PSI HIGH TEMP  
 Surface Cal Performed:

| Loop:  | Readings |          | References |         |        | Results |         |
|--------|----------|----------|------------|---------|--------|---------|---------|
|        | Air      | Loop     | Air        | Loop    |        | m       | b       |
| Deep   | 167.000  | 835.000  | 0.000      | 255.000 | mmho/m | 0.455   | -34.000 |
| Medium | 0.000    | 1348.000 | 142.000    | 255.000 | mmho/m | 0.300   | -28.000 |

Microlog Calibration Report

Serial-Model: PSI-01-PSIML  
 Performed: Thu Aug 19 02:54:30 2021

|         | Readings |        | References |         |       | Results   |           |
|---------|----------|--------|------------|---------|-------|-----------|-----------|
|         | Zero     | Cal    | Zero       | Cal     |       | m         | b         |
| Normal  | 0.0000   | 1.0000 | 0.0000     | 1.0000  | Ohm-m | 7000.0000 | 0.0000    |
| Inverse | 0.0000   | 1.0000 | 0.0000     | 1.0000  | Ohm-m | 8000.0000 | -0.5000   |
| Caliper | 1.0052   | 1.0858 | 5.0000     | 16.5000 | in    | 142.7190  | -139.2000 |

Compensated Density Calibration Report

Serial-Model: 934-226-M&W  
 Source / Verifier: 16955B / 2ci  
 Master Calibration Performed: Thu Aug 19 02:54:40 2021  
 Before Survey Verification Performed:  
 After Survey Verification Performed:

Master Calibration

|                     | Density |      | Far Detector                | Near Detector |     |
|---------------------|---------|------|-----------------------------|---------------|-----|
| Magnesium           | 1.755   | g/cc | 3841.37                     | 2748.76       | cps |
| Aluminum            | 2.680   | g/cc | 717.56                      | 1761.87       | cps |
| Spine Angle = 75.15 |         |      | Density/Spine Ratio = 0.533 |               |     |
|                     | Size    |      | Reading                     |               |     |
| Small Ring          | 8.00    | in   | 1.16                        |               |     |
| Large Ring          | 13.00   | in   | 1.02                        |               |     |

Before Survey Verification

| Target | Measured |
|--------|----------|
| g/cc   | g/cc     |
| g/cc   | g/cc     |
| g/cc   | g/cc     |

After Survey Verification

| Target | Measured |
|--------|----------|
| g/cc   | g/cc     |
| g/cc   | g/cc     |
| g/cc   | g/cc     |

Compensated Neutron Calibration Report

Serial Number: 207-MW  
 Tool Model: M&W

| CALIBRATION |  |          |     |         |     |               |
|-------------|--|----------|-----|---------|-----|---------------|
| Detector    |  | Readings |     | Target  |     | Normalization |
| Short Space |  | 6240.00  | cps | 1000.00 | cps | 1.6025        |
| Long Space  |  | 460.00   | cps | 1000.00 | cps | 1.9500        |

| PRE-SURVEY VERIFICATION |             |          |     |          |        |
|-------------------------|-------------|----------|-----|----------|--------|
| Detector                |             | Readings |     | Measured | Target |
| 1)                      | Short Space |          | cps |          |        |
|                         | Long Space  |          | cps | pu       | pu     |
| 2)                      | Short Space |          | cps |          |        |
|                         | Long Space  |          | cps | pu       |        |
| 3)                      | Short Space |          | cps |          |        |
|                         | Long Space  |          | cps | pu       |        |

| POST-SURVEY VERIFICATION |             |          |     |          |        |
|--------------------------|-------------|----------|-----|----------|--------|
| Detector                 |             | Readings |     | Measured | Target |
| 1)                       | Short Space |          | cps |          |        |
|                          | Long Space  |          | cps | pu       | pu     |
| 2)                       | Short Space |          | cps |          |        |
|                          | Long Space  |          | cps | pu       | pu     |
| 3)                       | Short Space |          | cps |          |        |
|                          | Long Space  |          | cps | pu       | pu     |

Gamma Ray Calibration Report

|                     |                         |          |
|---------------------|-------------------------|----------|
| Serial Number:      | 233-M&W                 |          |
| Tool Model:         | M&W                     |          |
| Performed:          | Wed Mar 3 05:25:33 2021 |          |
| Calibrator Value:   | 1.0                     | GAPI     |
| Background Reading: | 0.0                     | cps      |
| Calibrator Reading: | 1.0                     | cps      |
| Sensitivity:        | 0.5500                  | GAPI/cps |