



# BOREHOLE COMPENSATED SONIC LOG

|         |                           |
|---------|---------------------------|
| Company | MURFIN DRILLING CO., INC. |
| Well    | SOUICIE KRISS UNIT #1-14  |
| Field   | JIMMY NORTHEAST           |
| County  | THOMAS                    |
|         | State KANSAS              |

County THOMAS State KANSAS

Location: API #: 15-193-21052-00-00

2275' FSL &amp; 2860' FEL

SEC 14 TWP 10S RGE 34W

|                        |               |           |      |
|------------------------|---------------|-----------|------|
| Permanent Datum        | GROUND LEVEL  | Elevation | 3209 |
| Log Measured From      | KELLY BUSHING |           |      |
| Drilling Measured From | KELLY BUSHING |           |      |

|      | Elevation |
|------|-----------|
| K.B. | 3217'     |
| D.F. | N/A       |
| G.L. | 3209'     |

|      |           |
|------|-----------|
| Date | 8/28/2019 |
|------|-----------|

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| Type Log | BHCS |
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|---------------|
| Depth   4895' |
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|                          |      |
|--------------------------|------|
| Top   second Interval    | 300' |
| Bottom   Loggea Interval | 4034 |

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| Type Fluid In Hole | CHEMICAL |
|--------------------|----------|
| Oil                | 7000     |

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|---------|-----|
| Density | 9.3 |
|---------|-----|

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|-------------------|-----|
| Max. Rec. Temp. F | 125 |
|-------------------|-----|

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|-----------------------|------|----|
| Equipment == location | P-24 | HA |
|-----------------------|------|----|

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|              |              |
|--------------|--------------|
| Witnessed By | IAN WABLE    |
| Witnessed By | ROBERT HENRI |

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| Borehole Record |          |            |         |
|-----------------|----------|------------|---------|
| Well No.        | Location | Depth (ft) | Remarks |
| 1               | ...      | ...        | ...     |
| 2               | ...      | ...        | ...     |
| 3               | ...      | ...        | ...     |
| 4               | ...      | ...        | ...     |
| 5               | ...      | ...        | ...     |
| 6               | ...      | ...        | ...     |
| 7               | ...      | ...        | ...     |
| 8               | ...      | ...        | ...     |
| 9               | ...      | ...        | ...     |
| 10              | ...      | ...        | ...     |
| 11              | ...      | ...        | ...     |
| 12              | ...      | ...        | ...     |
| 13              | ...      | ...        | ...     |
| 14              | ...      | ...        | ...     |
| 15              | ...      | ...        | ...     |
| 16              | ...      | ...        | ...     |
| 17              | ...      | ...        | ...     |
| 18              | ...      | ...        | ...     |
| 19              | ...      | ...        | ...     |
| 20              | ...      | ...        | ...     |
| 21              | ...      | ...        | ...     |
| 22              | ...      | ...        | ...     |
| 23              | ...      | ...        | ...     |
| 24              | ...      | ...        | ...     |
| 25              | ...      | ...        | ...     |
| 26              | ...      | ...        | ...     |
| 27              | ...      | ...        | ...     |
| 28              | ...      | ...        | ...     |
| 29              | ...      | ...        | ...     |
| 30              | ...      | ...        | ...     |
| 31              | ...      | ...        | ...     |
| 32              | ...      | ...        | ...     |
| 33              | ...      | ...        | ...     |
| 34              | ...      | ...        | ...     |
| 35              | ...      | ...        | ...     |
| 36              | ...      | ...        | ...     |
| 37              | ...      | ...        | ...     |
| 38              | ...      | ...        | ...     |
| 39              | ...      | ...        | ...     |
| 40              | ...      | ...        | ...     |
| 41              | ...      | ...        | ...     |
| 42              | ...      | ...        | ...     |
| 43              | ...      | ...        | ...     |
| 44              | ...      | ...        | ...     |
| 45              | ...      | ...        | ...     |
| 46              | ...      | ...        | ...     |
| 47              | ...      | ...        | ...     |
| 48              | ...      | ...        | ...     |
| 49              | ...      | ...        | ...     |
| 50              | ...      | ...        | ...     |
| 51              | ...      | ...        | ...     |
| 52              | ...      | ...        | ...     |
| 53              | ...      | ...        | ...     |
| 54              | ...      | ...        | ...     |
| 55              | ...      | ...        | ...     |
| 56              | ...      | ...        | ...     |
| 57              | ...      | ...        | ...     |
| 58              | ...      | ...        | ...     |
| 59              | ...      | ...        | ...     |
| 60              | ...      | ...        | ...     |
| 61              | ...      | ...        | ...     |
| 62              | ...      | ...        | ...     |
| 63              | ...      | ...        | ...     |
| 64              | ...      | ...        | ...     |
| 65              | ...      | ...        | ...     |
| 66              | ...      | ...        | ...     |
| 67              | ...      | ...        | ...     |
| 68              | ...      | ...        | ...     |
| 69              | ...      | ...        | ...     |
| 70              | ...      | ...        | ...     |
| 71              | ...      | ...        | ...     |
| 72              | ...      | ...        | ...     |
| 73              | ...      | ...        | ...     |
| 74              | ...      | ...        | ...     |
| 75              | ...      | ...        | ...     |
| 76              | ...      | ...        | ...     |
| 77              | ...      | ...        | ...     |
| 78              | ...      | ...        | ...     |
| 79              | ...      | ...        | ...     |
| 80              | ...      | ...        | ...     |
| 81              | ...      | ...        | ...     |
| 82              | ...      | ...        | ...     |
| 83              | ...      | ...        | ...     |
| 84              | ...      | ...        | ...     |
| 85              | ...      | ...        | ...     |
| 86              | ...      | ...        | ...     |
| 87              | ...      | ...        | ...     |
| 88              | ...      | ...        | ...     |
| 89              | ...      | ...        | ...     |
| 90              | ...      | ...        | ...     |
| 91              | ...      | ...        | ...     |
| 92              | ...      | ...        | ...     |
| 93              | ...      | ...        | ...     |
| 94              | ...      | ...        | ...     |
| 95              | ...      | ...        | ...     |
| 96              | ...      | ...        | ...     |
| 97              | ...      | ...        | ...     |
| 98              | ...      | ...        | ...     |
| 99              | ...      | ...        | ...     |
| 100             | ...      | ...        | ...     |

|            |  |
|------------|--|
| Casing Rec |  |
|------------|--|

|     |        |    |      |
|-----|--------|----|------|
| ONE | 12.25" | 0' | 307' |
|-----|--------|----|------|

|    |     |    |
|----|-----|----|
| 5" | 23# | 0' |
|----|-----|----|

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

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

COLBY, KS.

HWY 25 SOUTH TO COUNTY RD D, WEST 2 MILE,  
1/2 NORTH, WEST INTO

Log Measured From: KELLY BUSHING 8' Ft. Above Permanent Datum

THANK YOU FOR USING PIONEER ENERGY SERVICES  
www.pioneerenergy.com 785-625-3858

## Your Pioneer Energy Services Crew

Engineer: IAN MABB  
Operator:  
Operator:  
Operator:

This Log Record Was Witnessed By

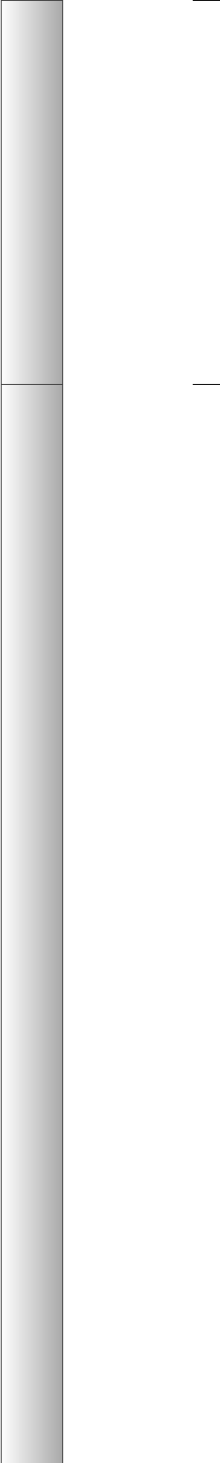
Primary Witness: ROBERT HENDRIX  
Secondary Witness:  
Secondary Witness:  
Secondary Witness:

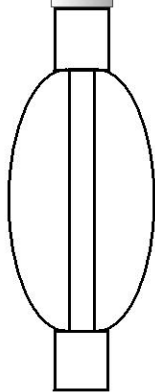
# Log Variables

DatabaseC:\ProgramData\Warrior\Data\murfin\_soucie\_kriss\_unit\_1\_14.db  
Dataset field/well/SON/pass1/\_vars\_

## Top - Bottom

|                             |                       |                        |                       |                        |                    |                       |                           |
|-----------------------------|-----------------------|------------------------|-----------------------|------------------------|--------------------|-----------------------|---------------------------|
| A<br>1                      | BOREID<br>in<br>7.875 | BOTTEMP<br>degF<br>125 | CASEOD<br>in<br>5.5   | CASETHCK<br>in<br>0    | COMPACT<br>1       | FLUIDDEN<br>g/cc<br>1 | M<br>2                    |
| MATRXDEN<br>g/cc<br>2.71    | NPORSEL<br>Limestone  | PERFS<br>0             | SNDERR<br>mmho/m<br>8 | SNDERRM<br>mmho/m<br>4 | SPSHIFT<br>mV<br>0 | SRFTEMP<br>degF<br>0  | SVFLUID<br>usec/ft<br>189 |
| SVMATRIX<br>usec/ft<br>47.6 | SZCOR<br>Off          | TDEPTH<br>ft<br>4895   |                       |                        |                    |                       |                           |

| Sensor           | Offset (ft)    | Schematic                                                                           | Description                                                              | Length (ft) | O.D. (in) | Weight (lb) |
|------------------|----------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-------------|-----------|-------------|
| MCAL<br>MI<br>MN |                |   | ML-Armadillo (ARM001)<br>Pengo Mandrel & Armadillo ML Electronics (2014) | 5.50        | 3.50      | 100.00      |
|                  | 22.50          |                                                                                     |                                                                          |             |           |             |
|                  | 22.50          |                                                                                     |                                                                          |             |           |             |
|                  | 22.50          |                                                                                     |                                                                          |             |           |             |
| WVF4<br>WVF1     | 13.50<br>13.50 |  | SLT-PENGO (0001)                                                         | 16.00       | 3.50      | 300.00      |
| WVF3<br>WVF2     | 11.50<br>11.50 |                                                                                     |                                                                          |             |           |             |



CENT-PENGO (3-PENGO)

5.50

3.00

70.00

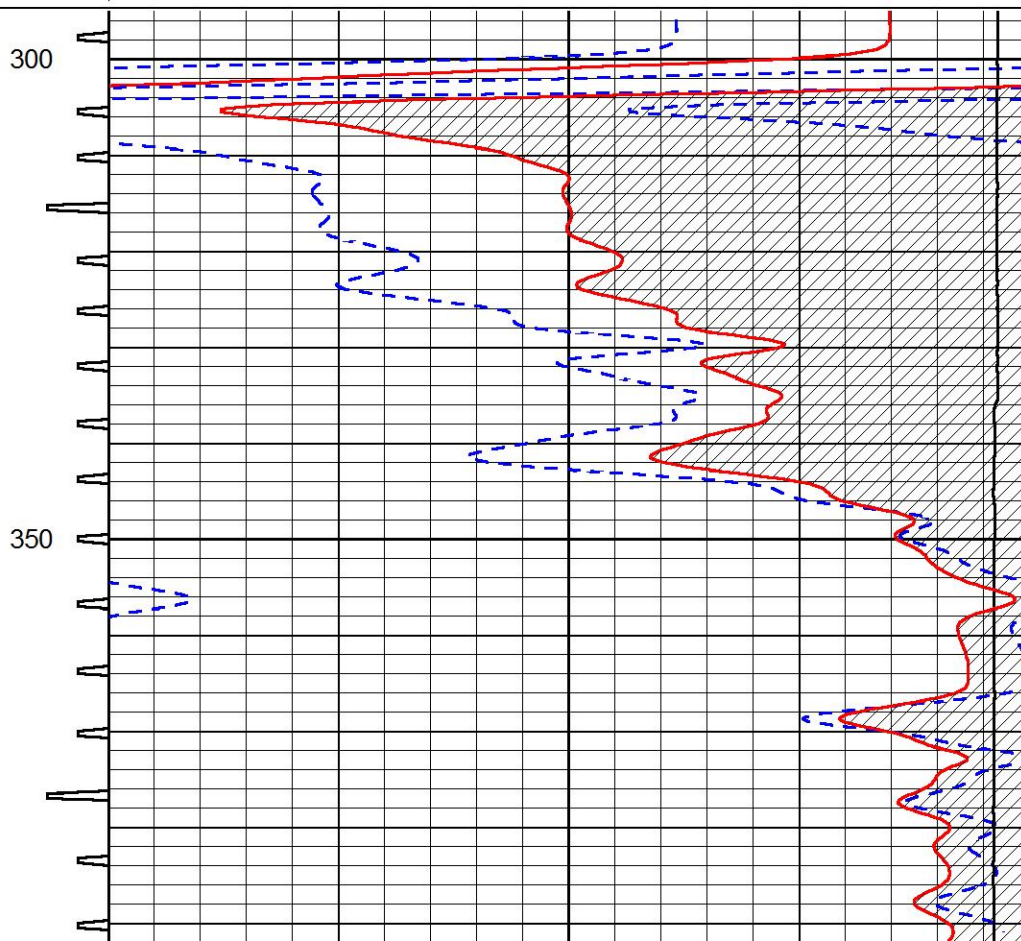
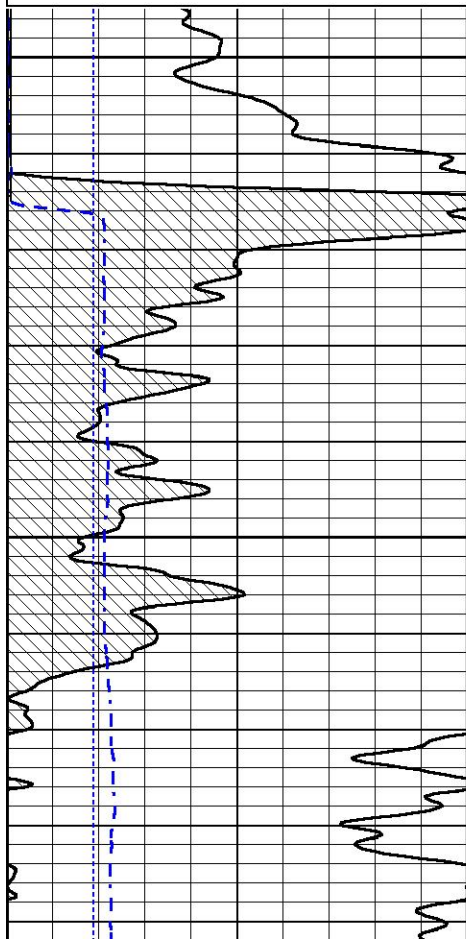
Dataset: murfin\_soucie\_kriss\_unit\_1\_14.db: field/well/SON/pass1  
Total length: 27.00 ft  
Total weight: 470.00 lb  
O.D.: 3.50 in

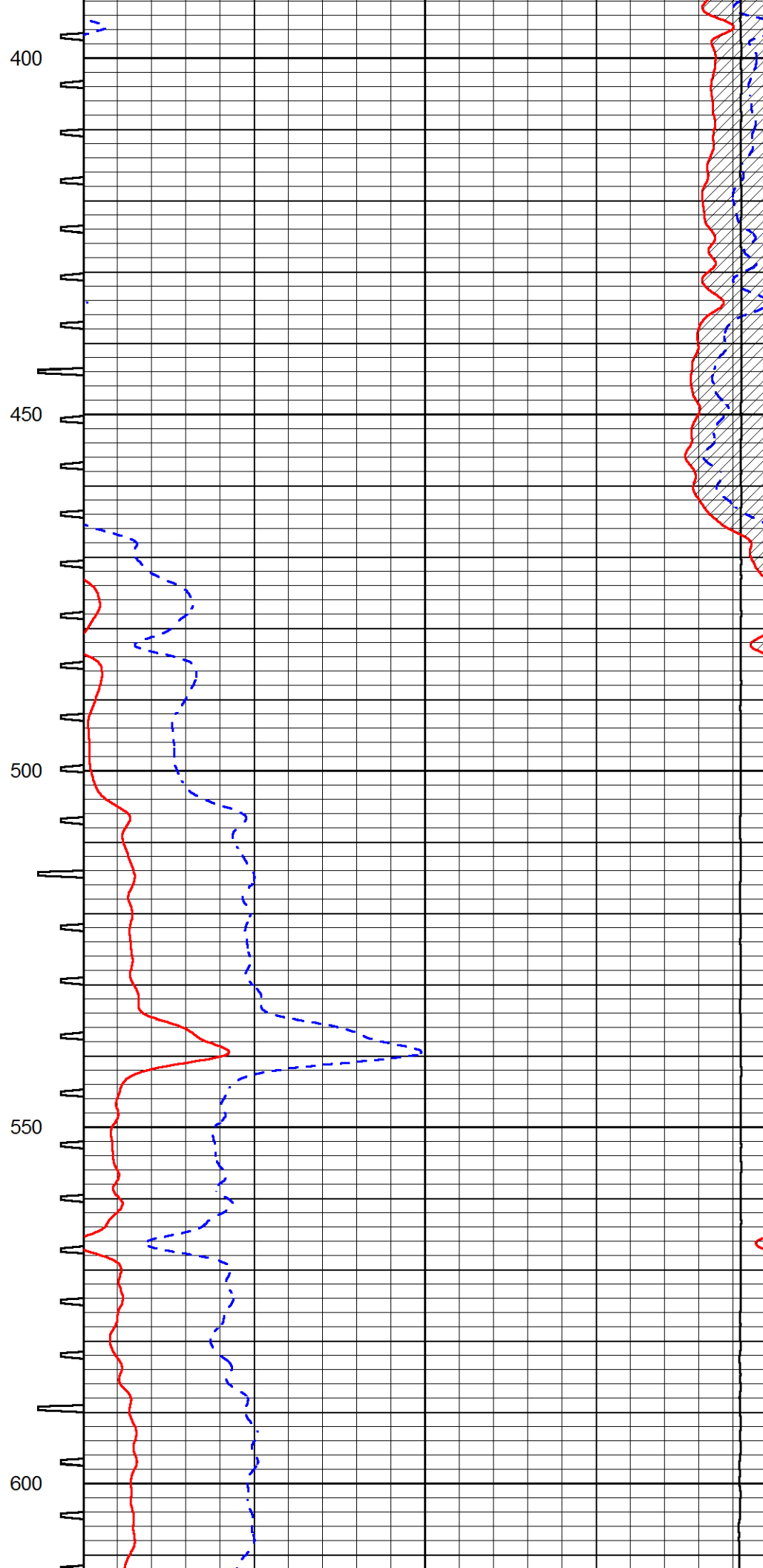
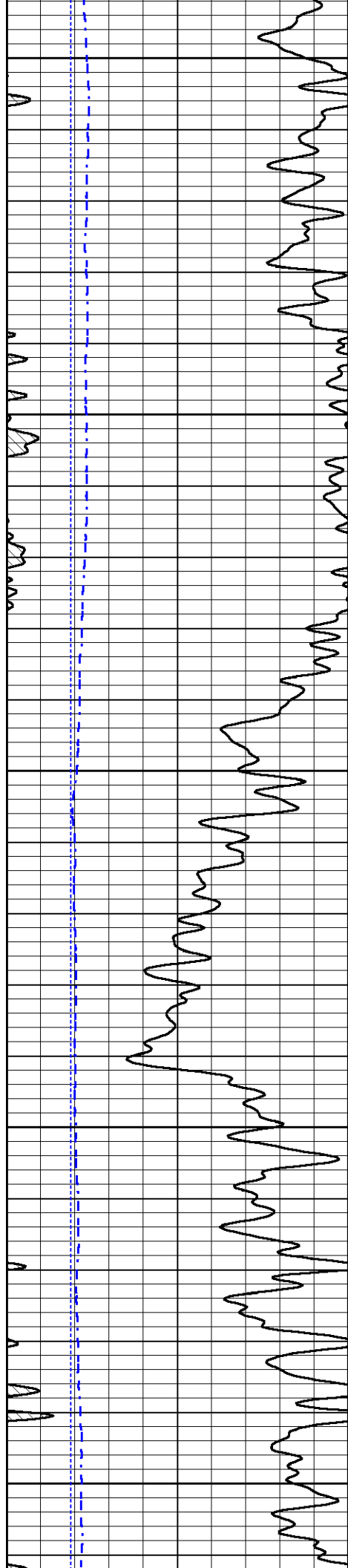


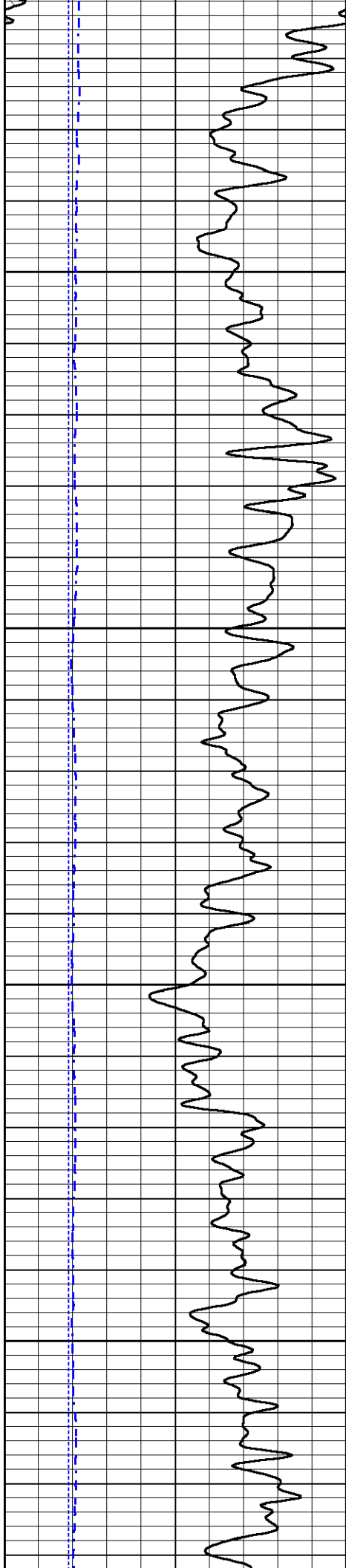
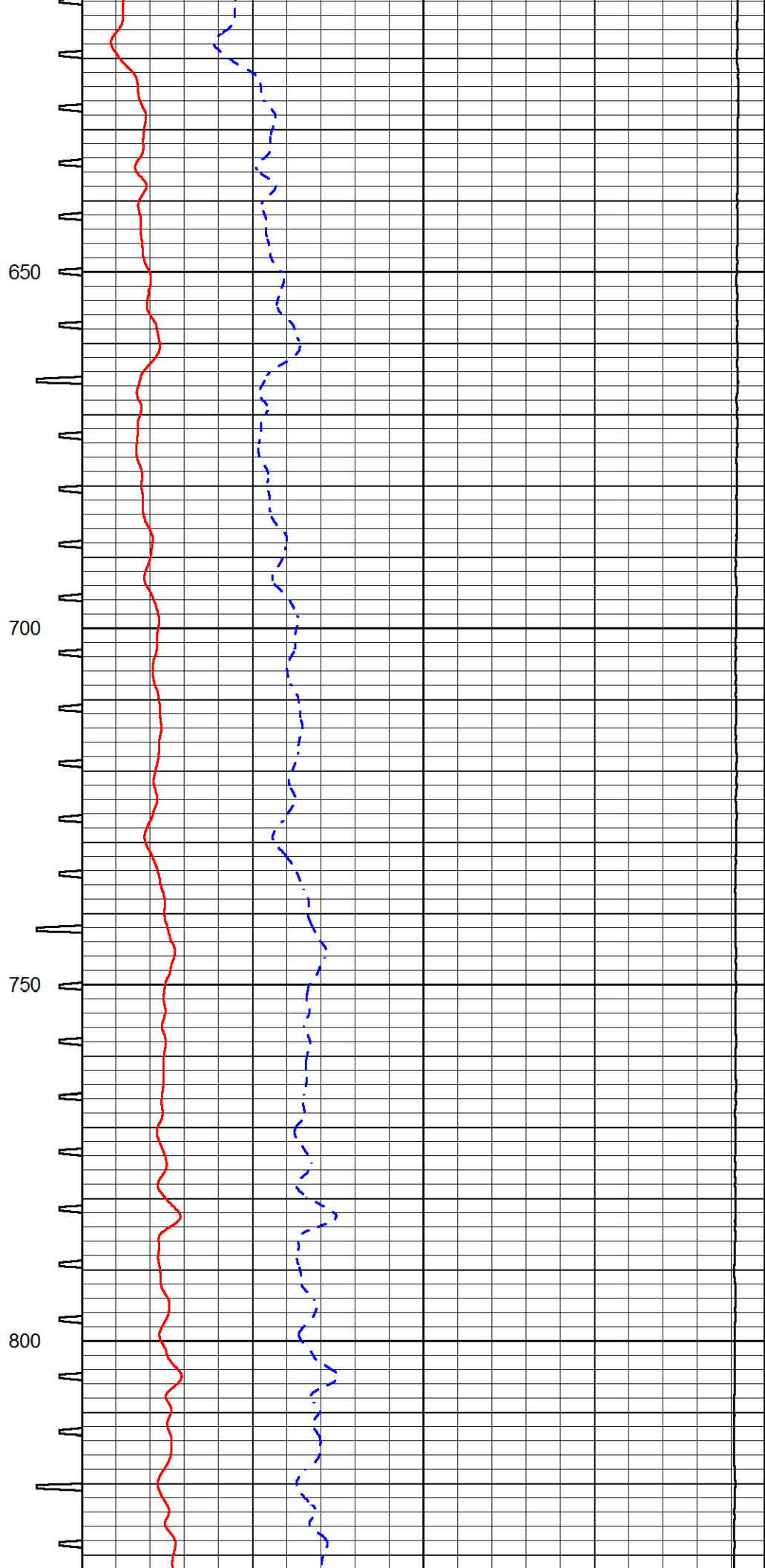
# MAIN PASS

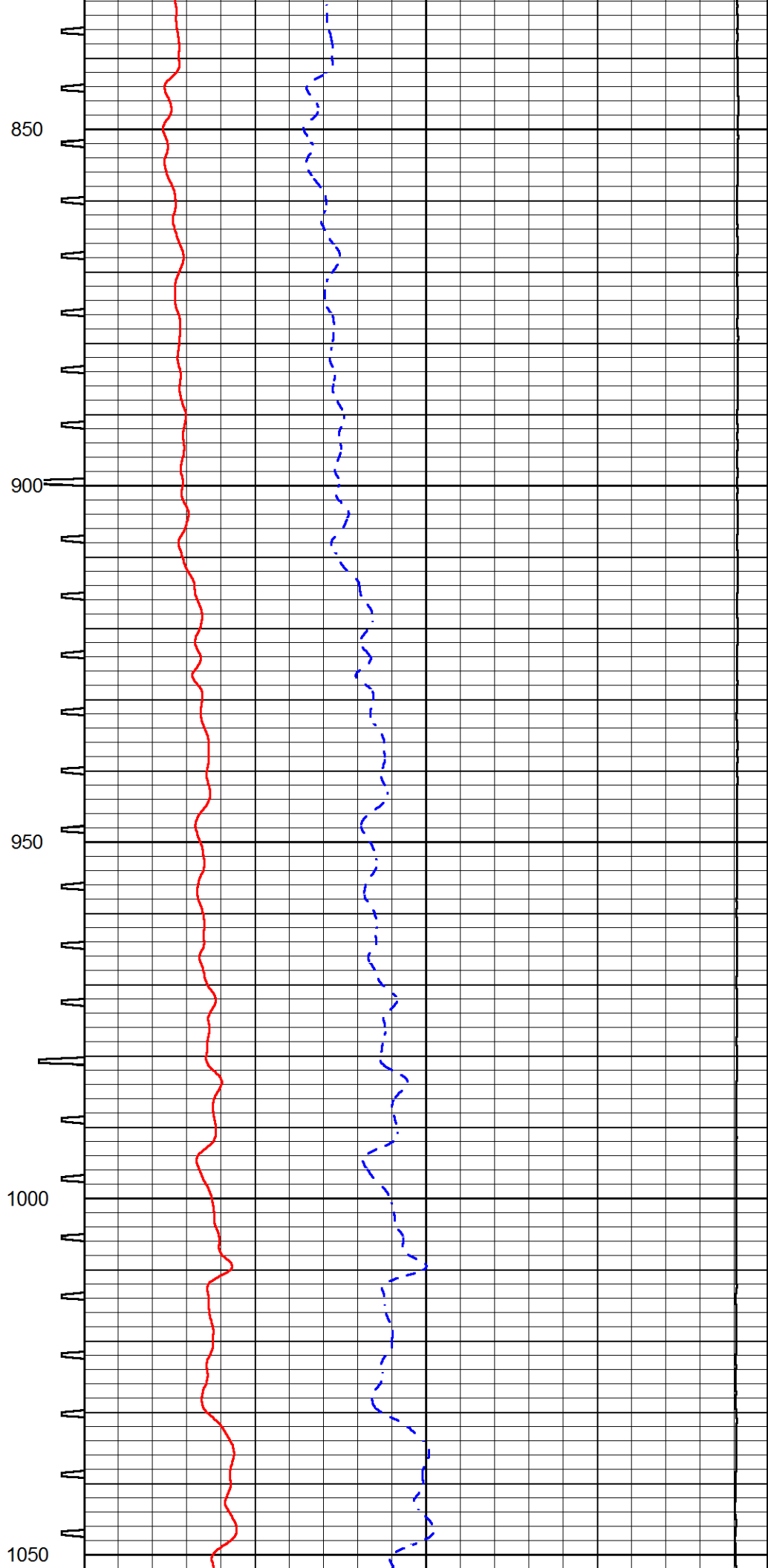
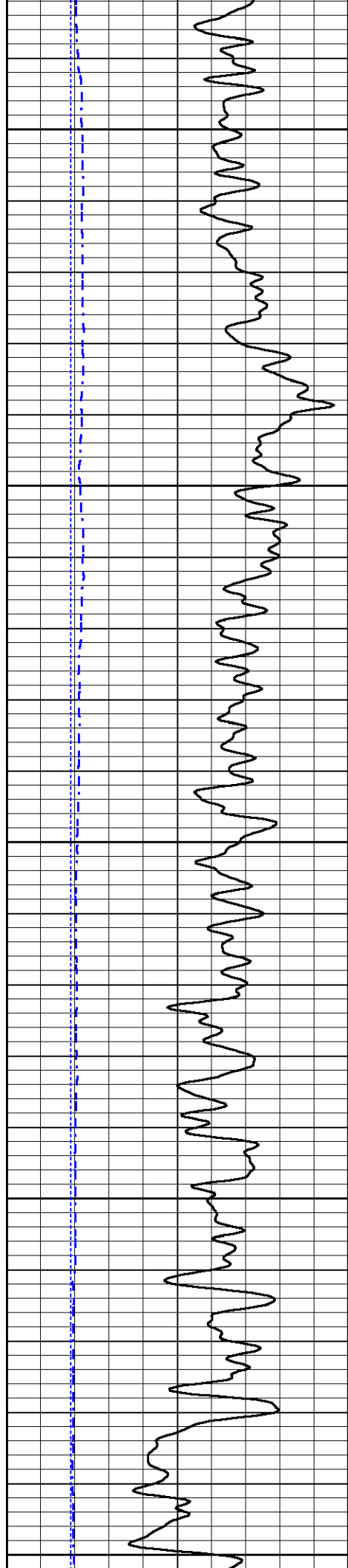
Database File murfin\_soucie\_kriss\_unit\_1\_14.db  
Dataset Pathname stackmel/pass3.1  
Presentation Format \_sonic  
Dataset Creation Wed Aug 28 14:57:32 2019  
Charted by Depth in Feet scaled 1:240

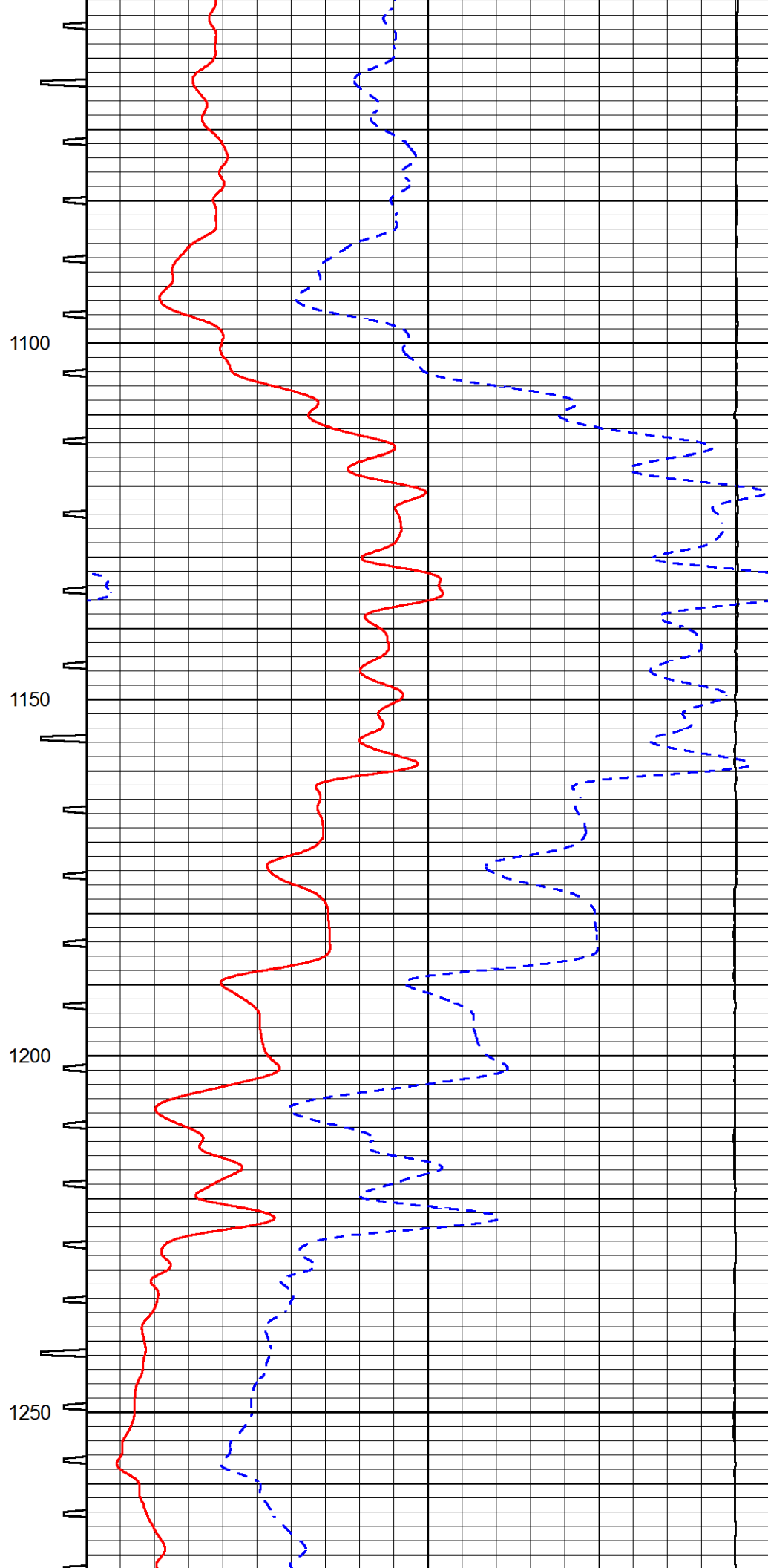
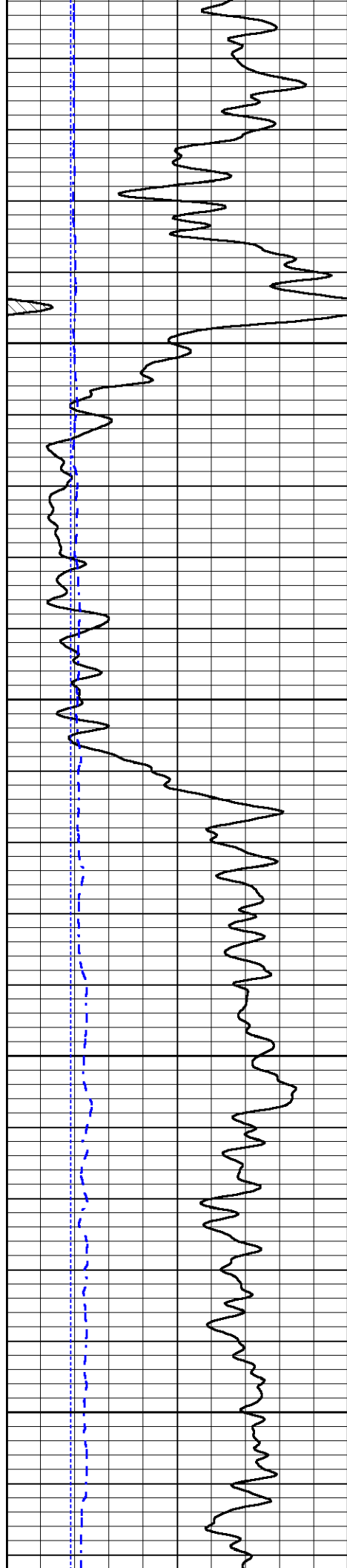
|     |                  |     |            |       |                                |     |
|-----|------------------|-----|------------|-------|--------------------------------|-----|
| 0   | Gamma Ray (GAPI) | 150 | Sonic Int  | 140   | Delta Time (usec/ft) (usec/ft) | 40  |
| 150 | GR (GAPI)        | 300 | 5 (msec) 0 | 30    | Sonic Porosity (pu)            | -10 |
| 6   | DCAL (in)        | 16  |            | 15000 | LTEN (lb) (lb)                 | 0   |

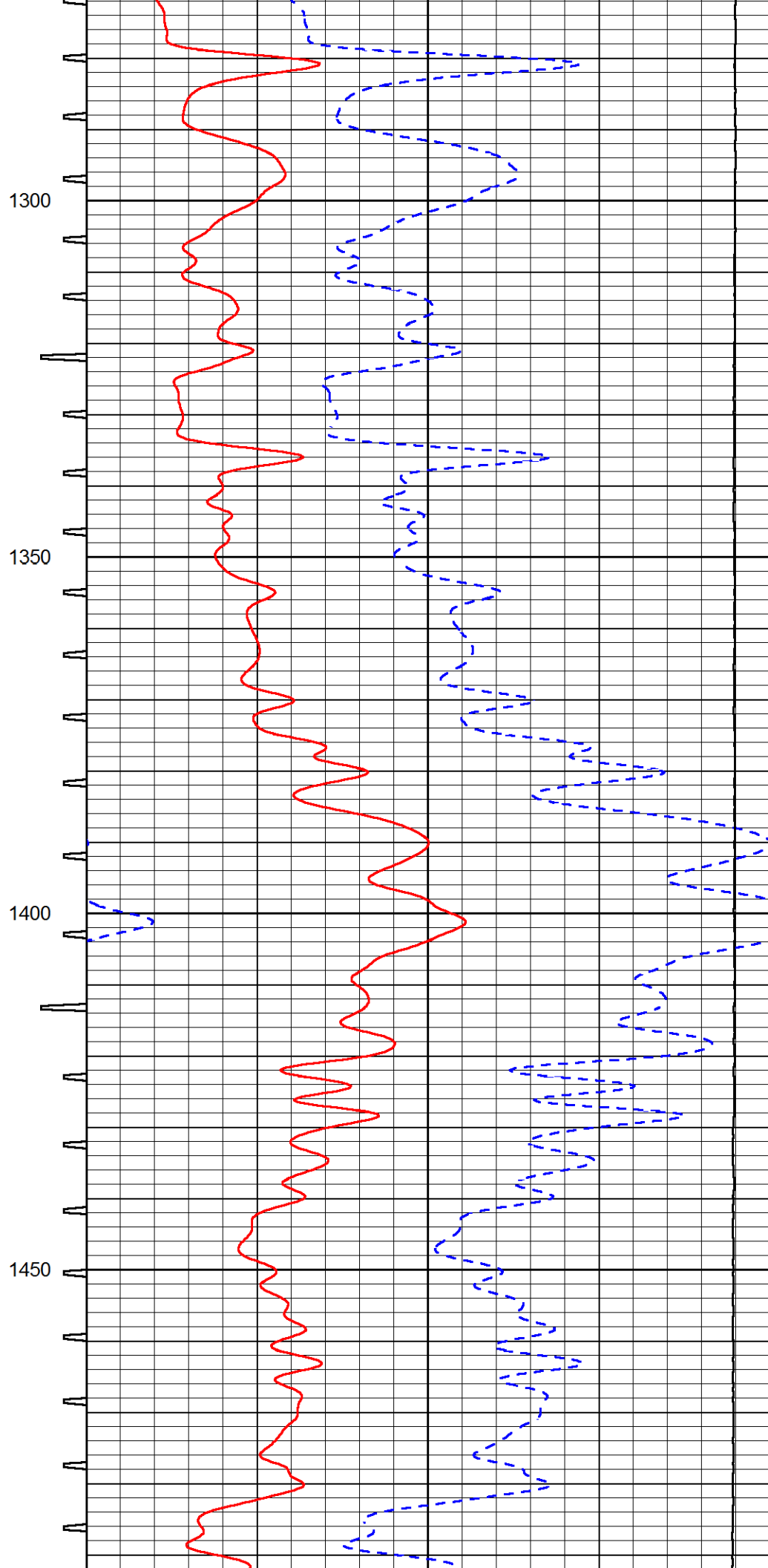
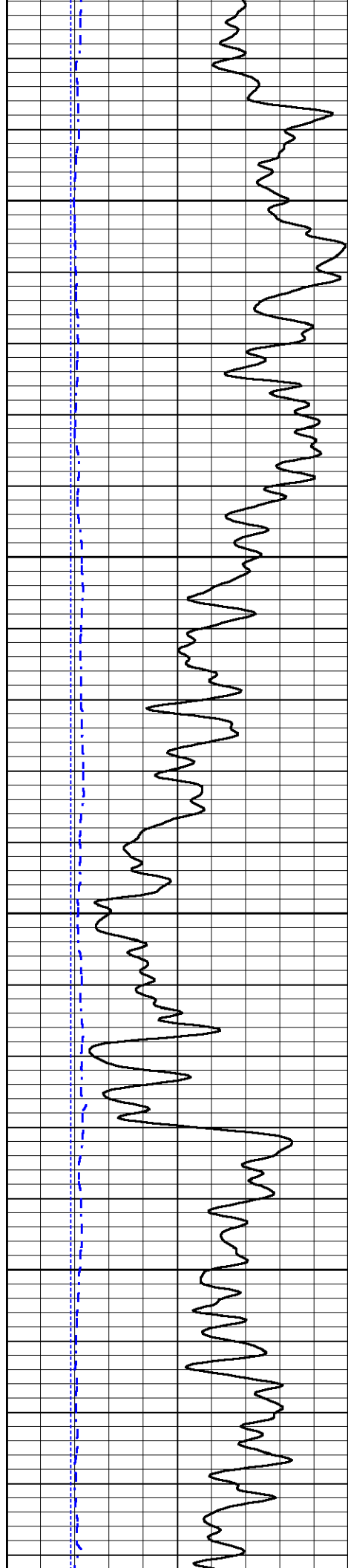


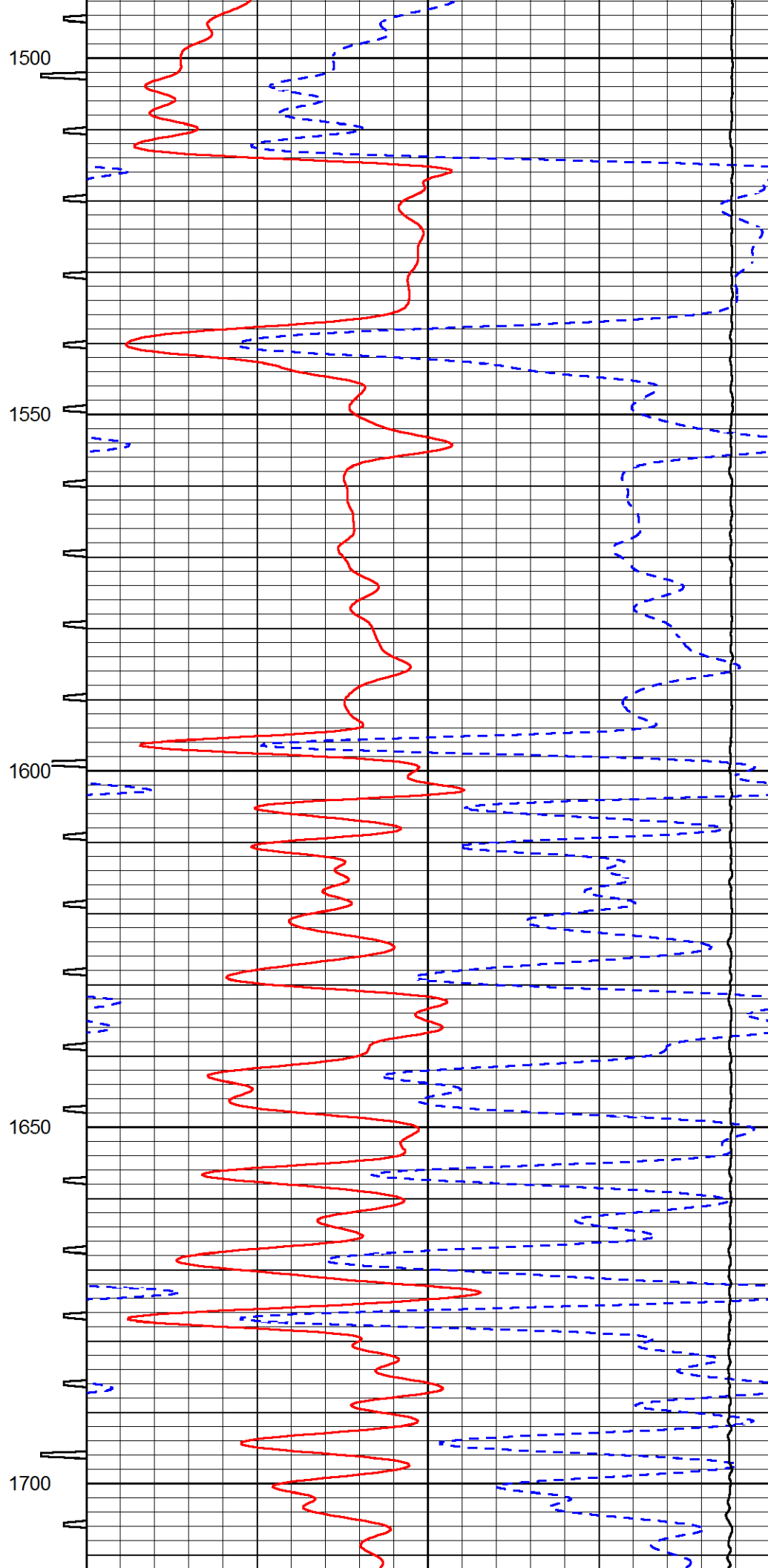
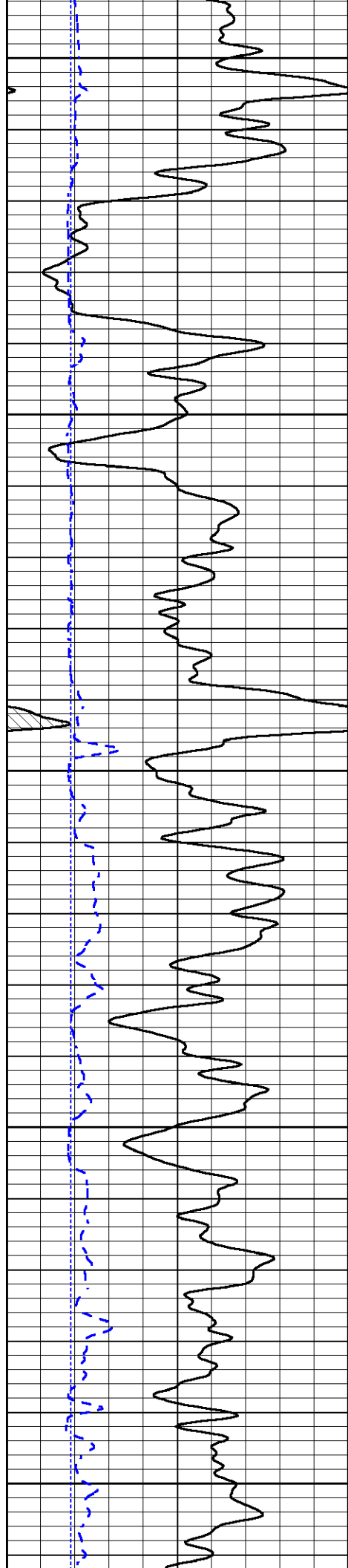


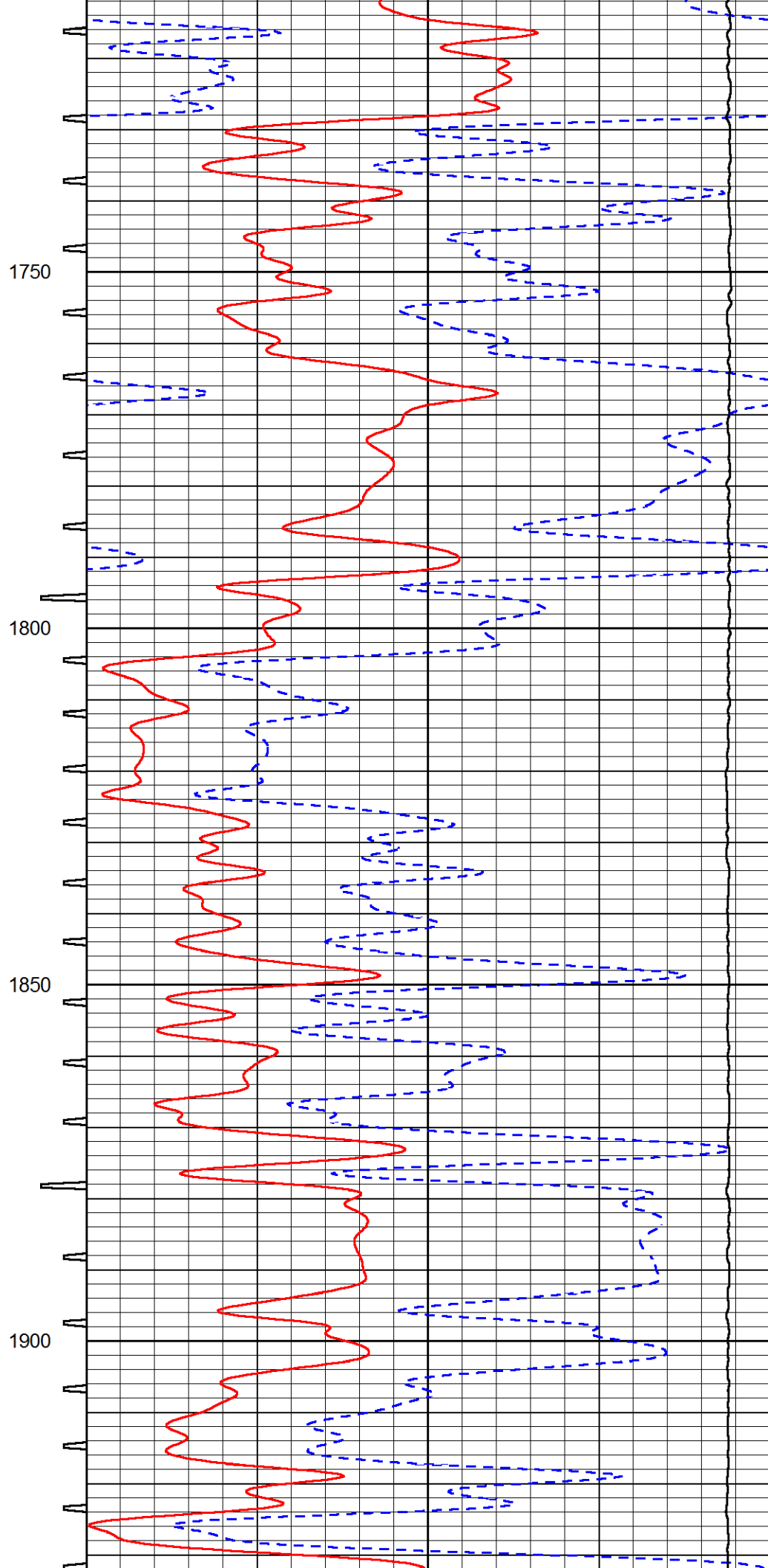
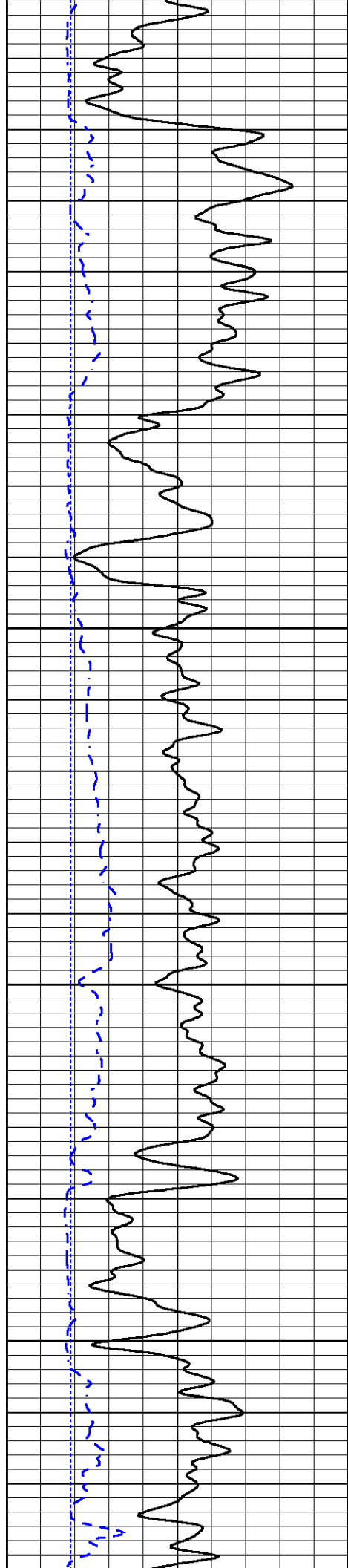


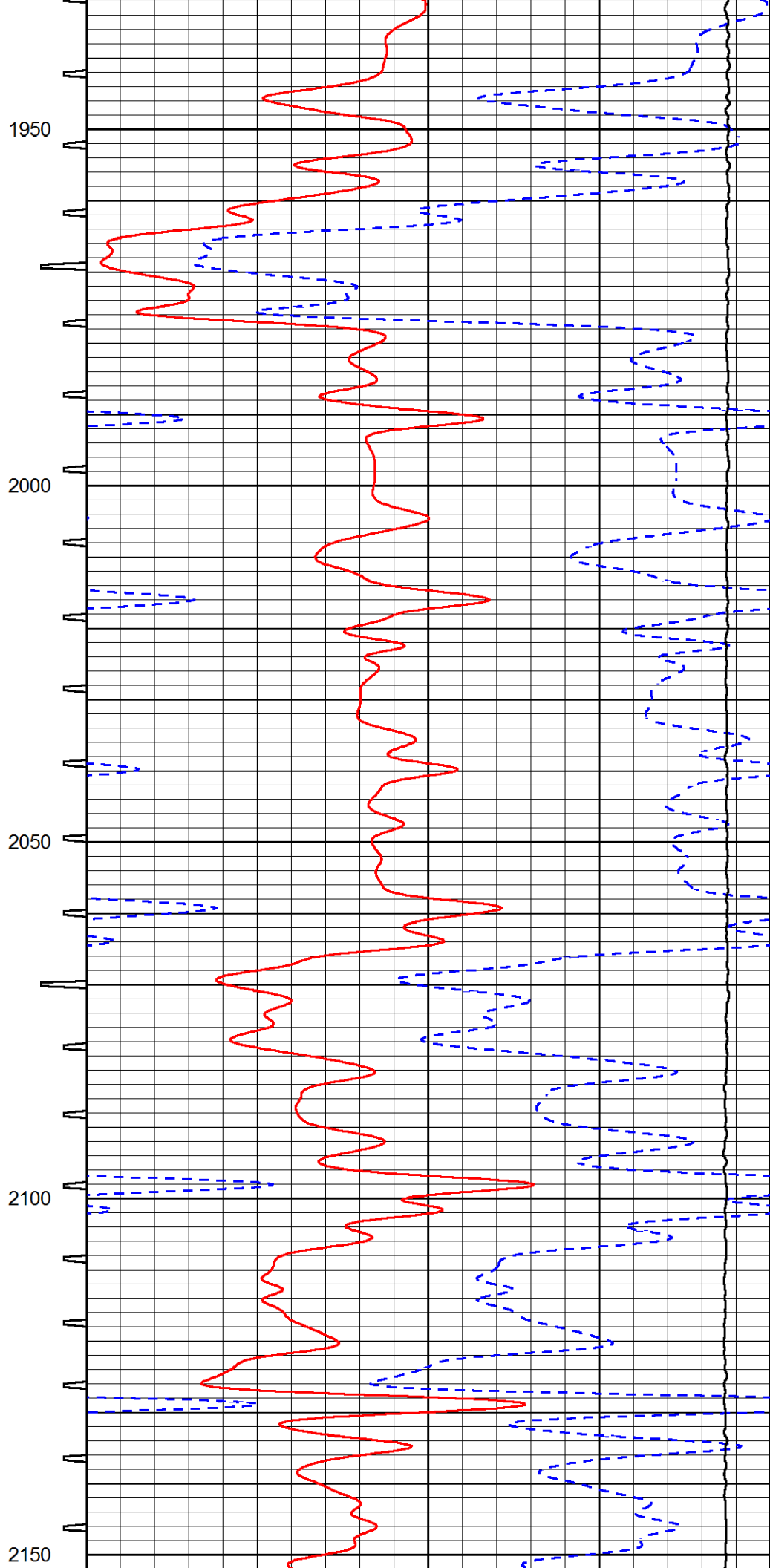
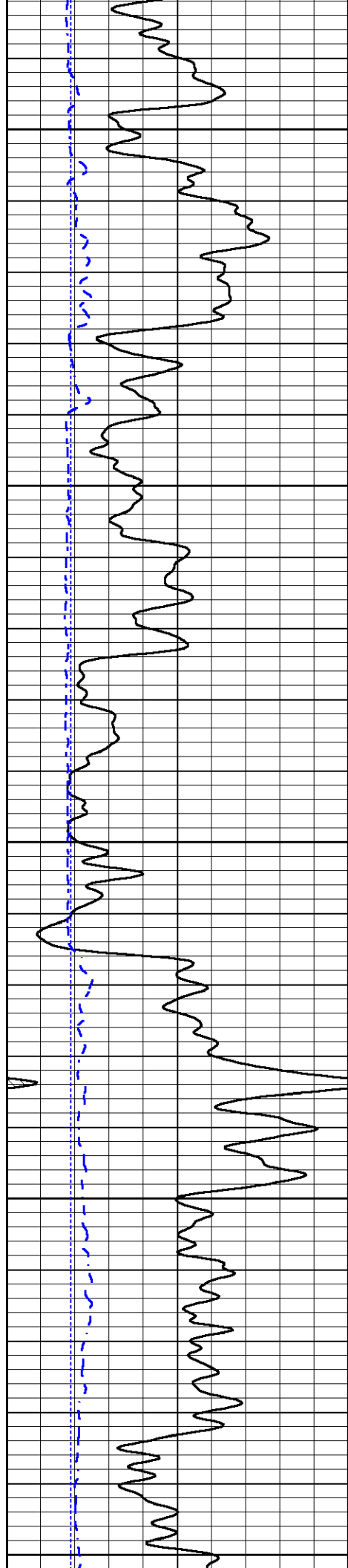


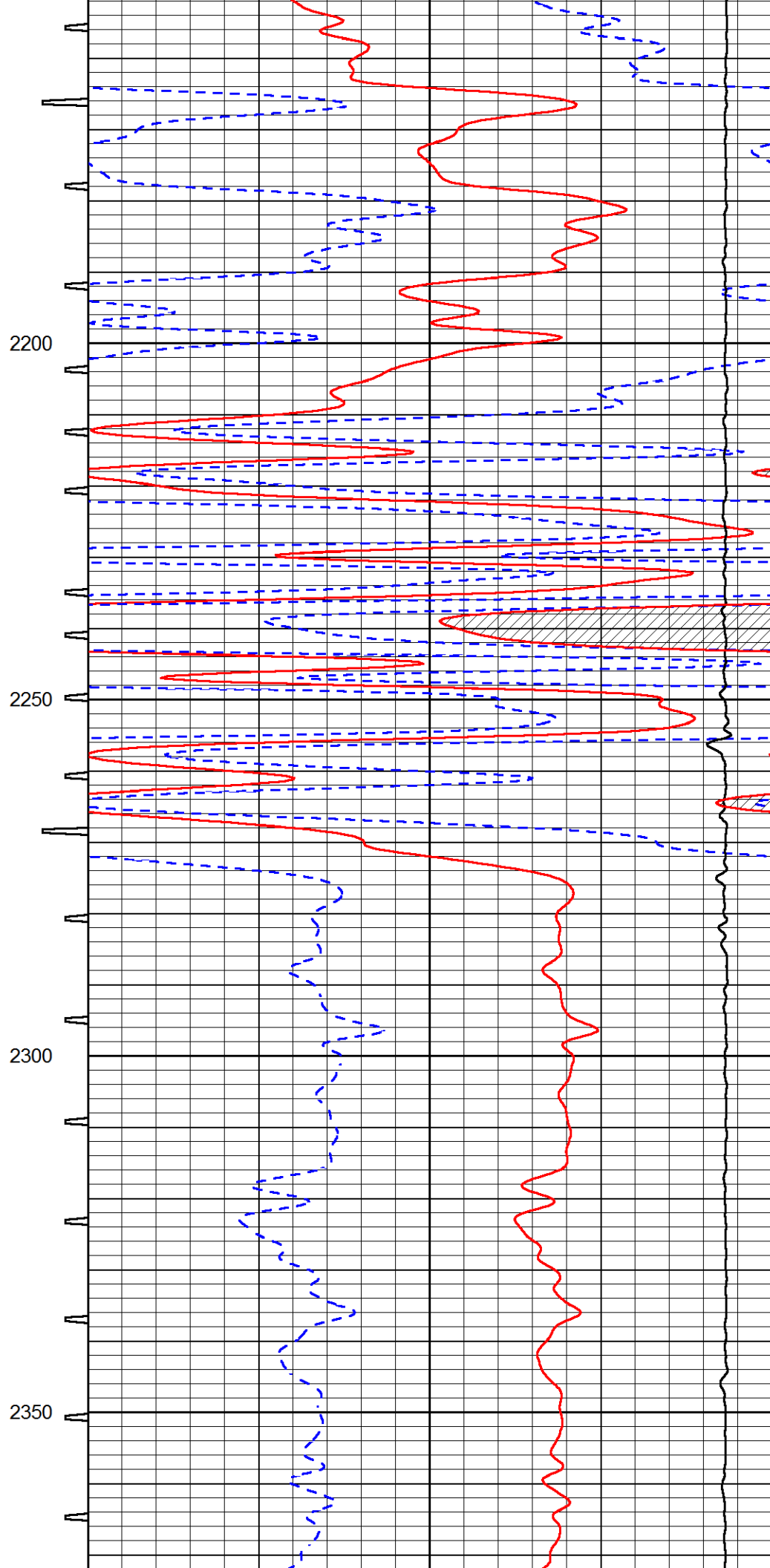
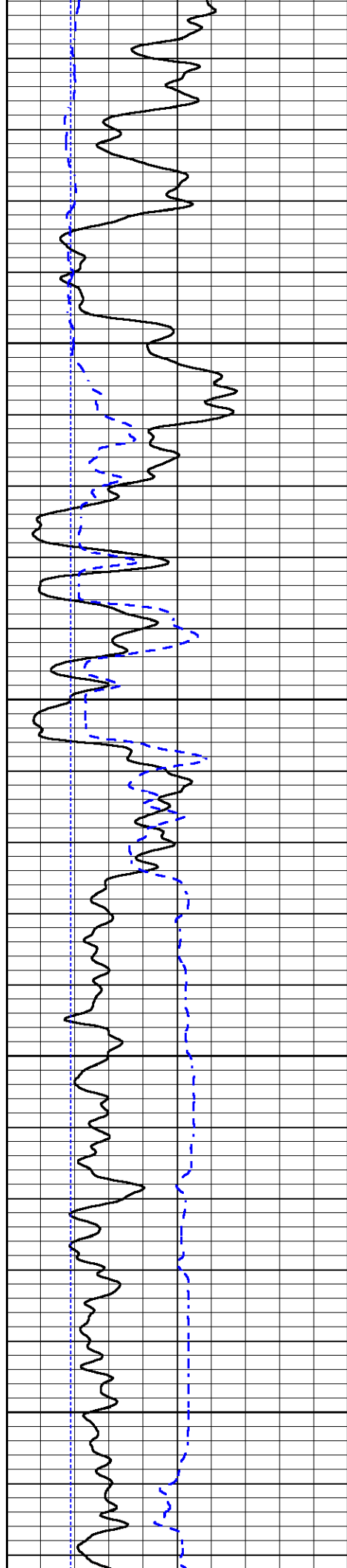


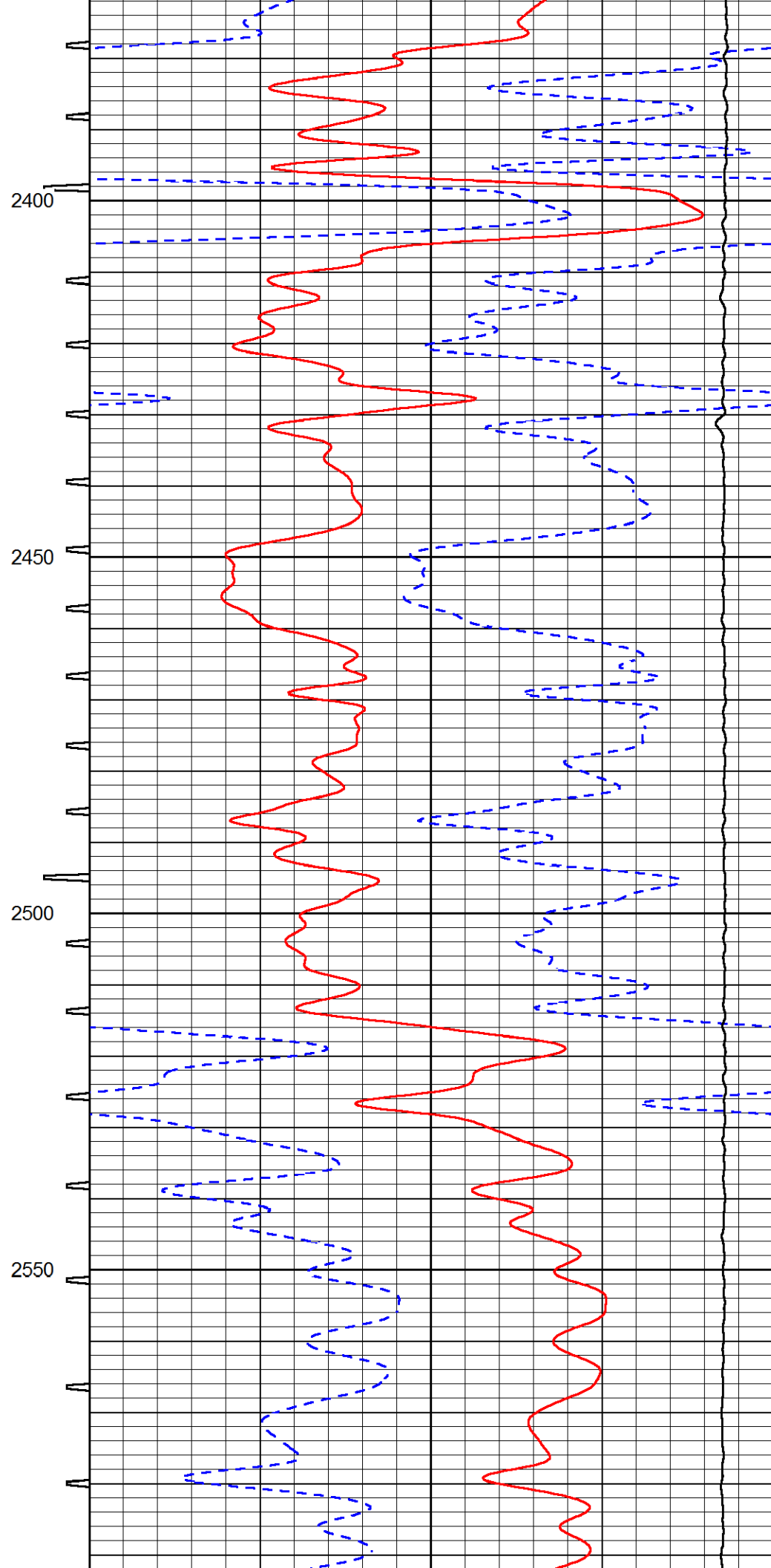
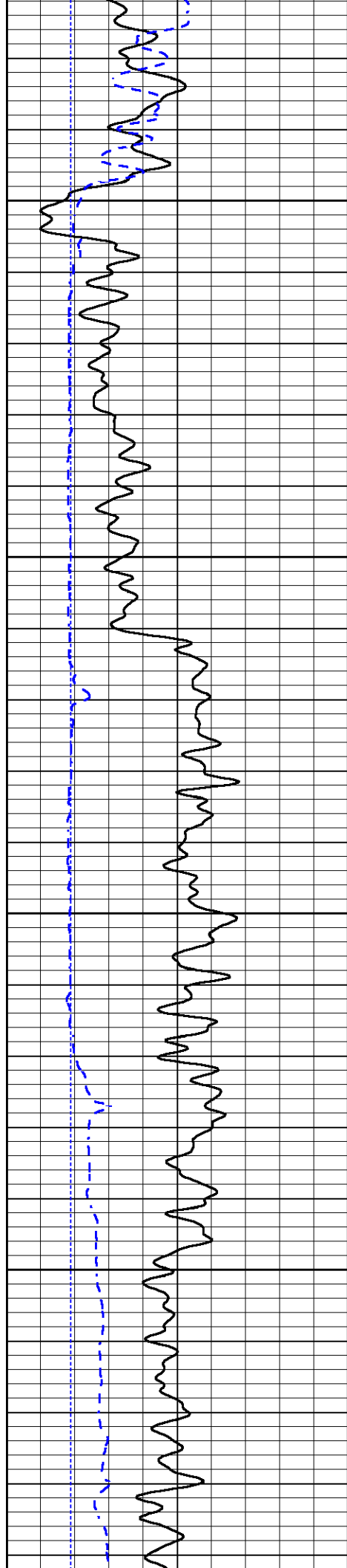


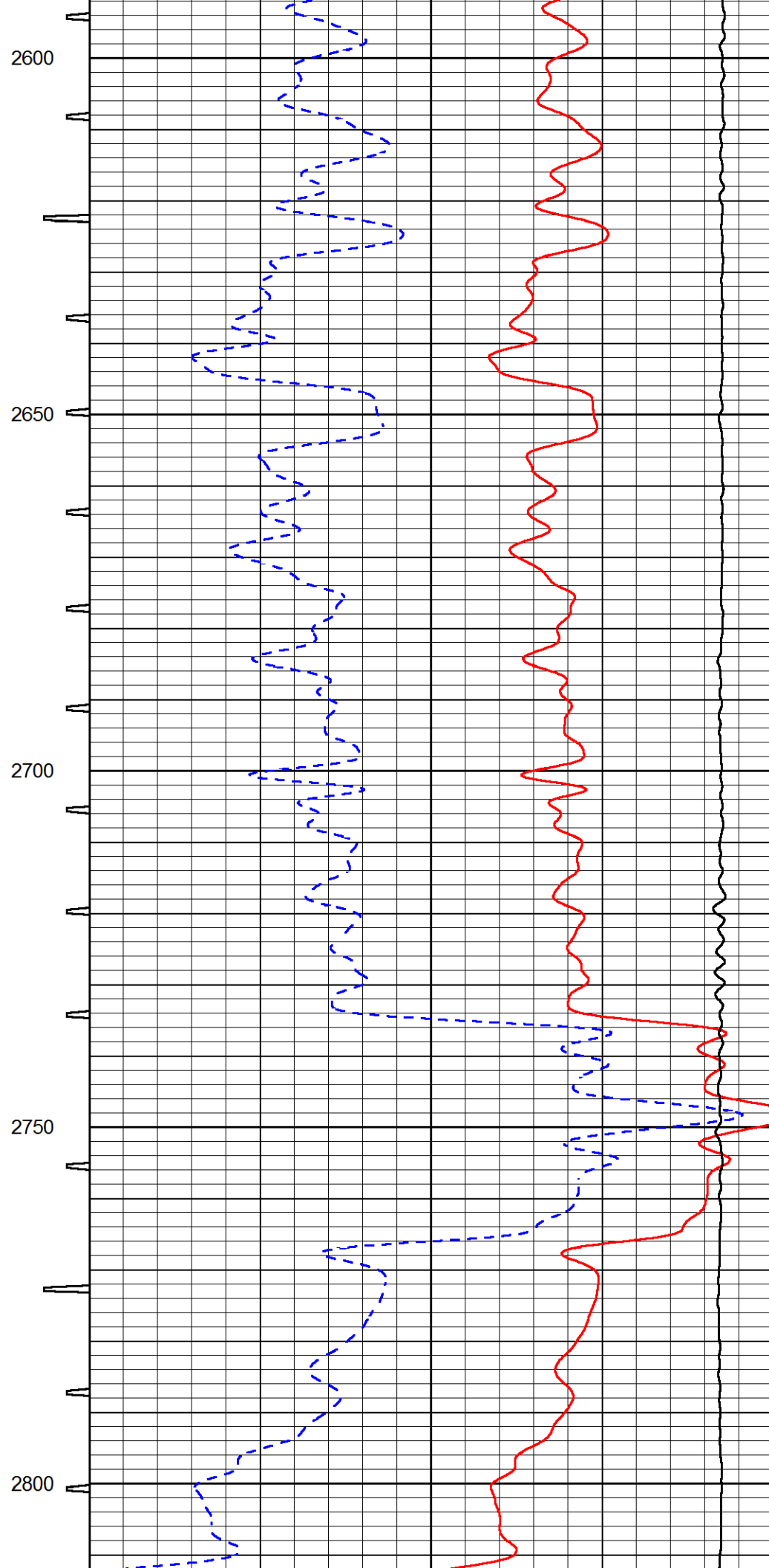
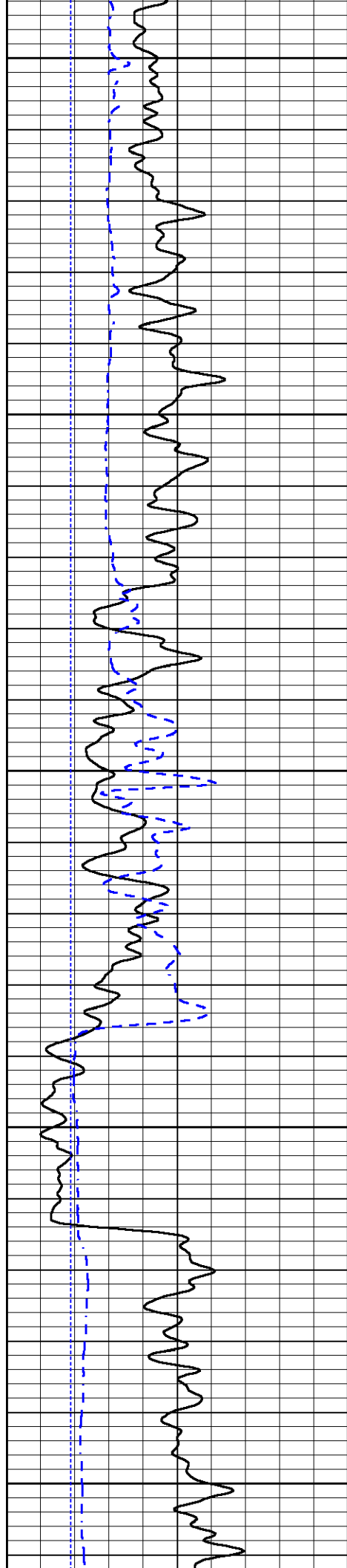


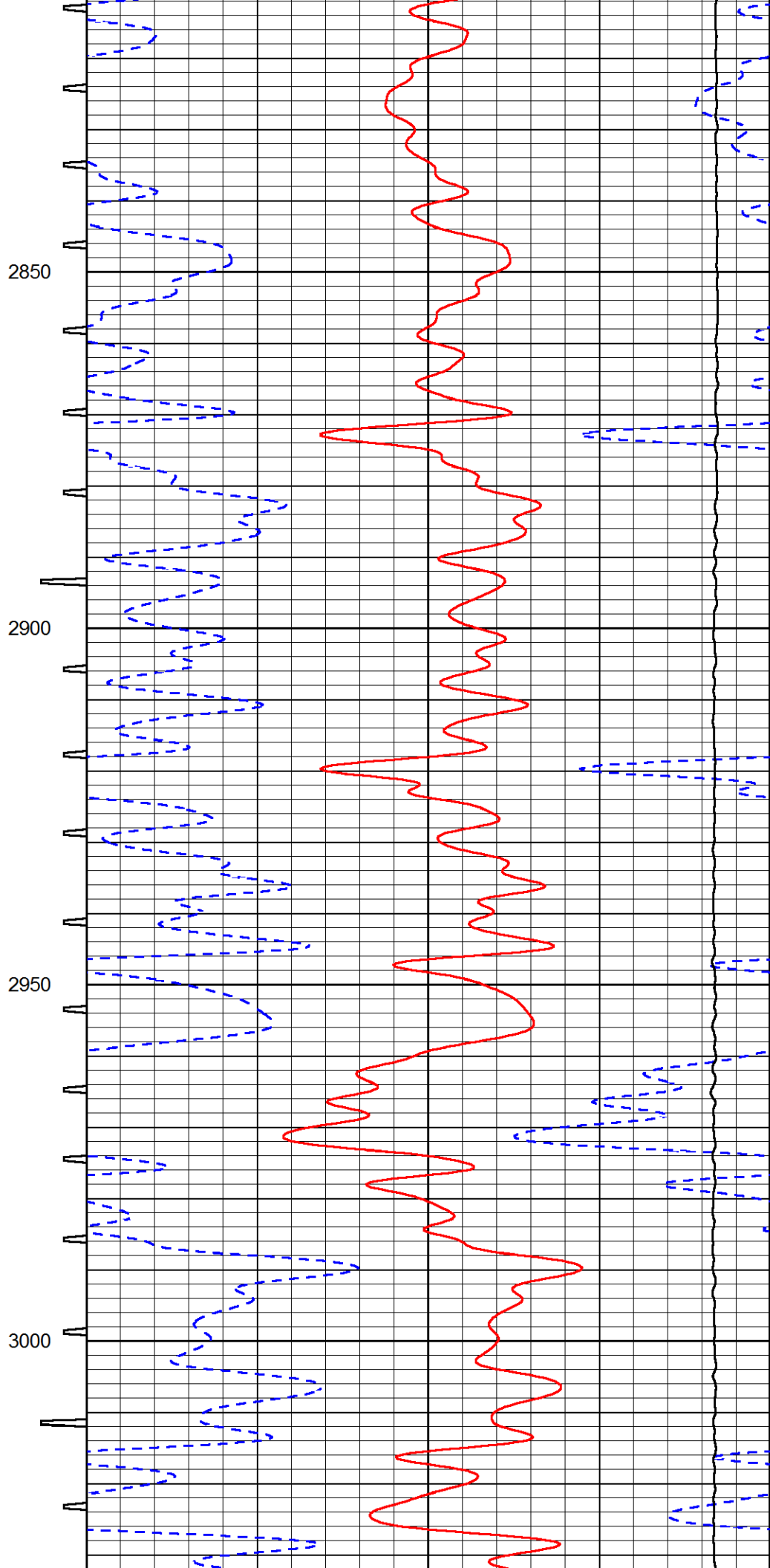
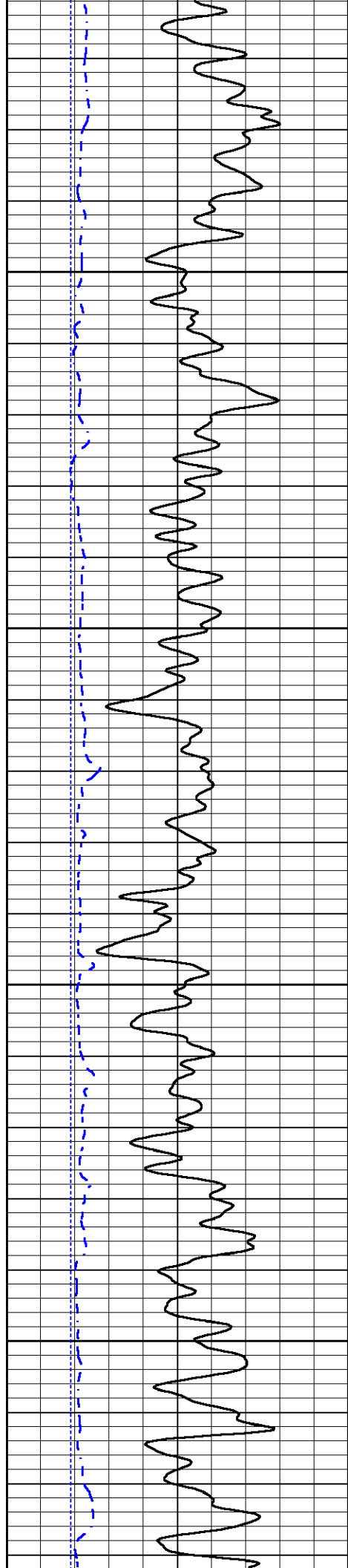


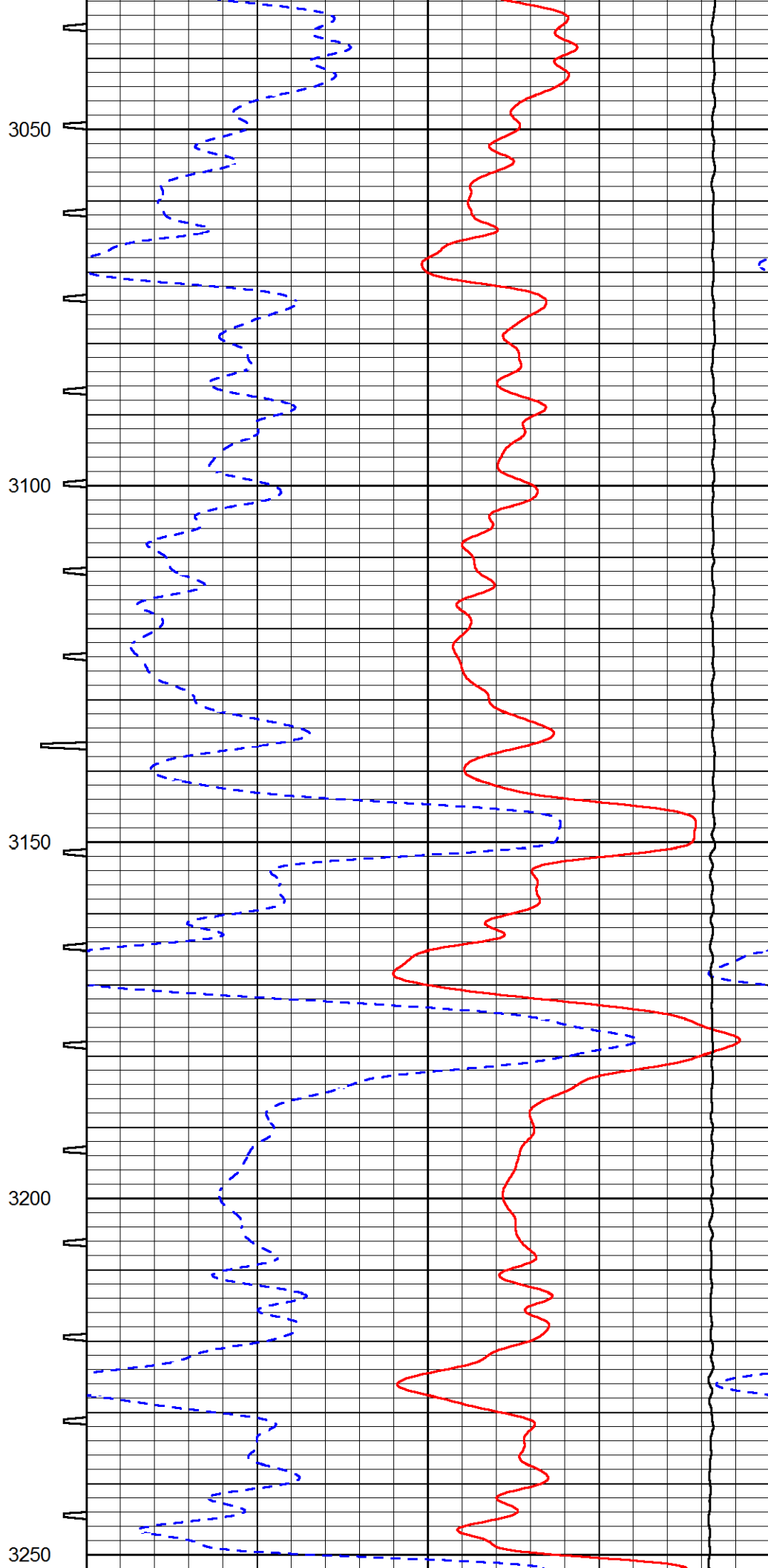
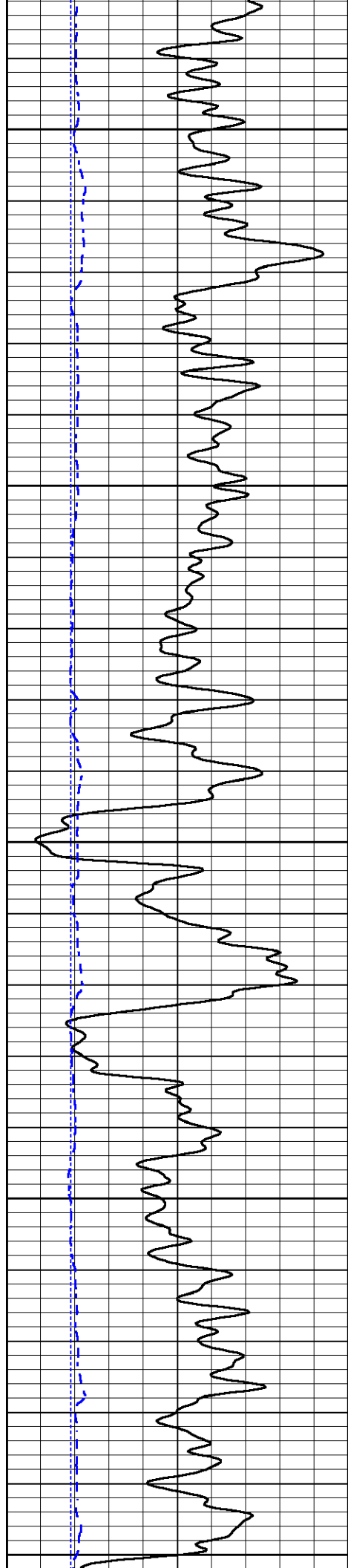


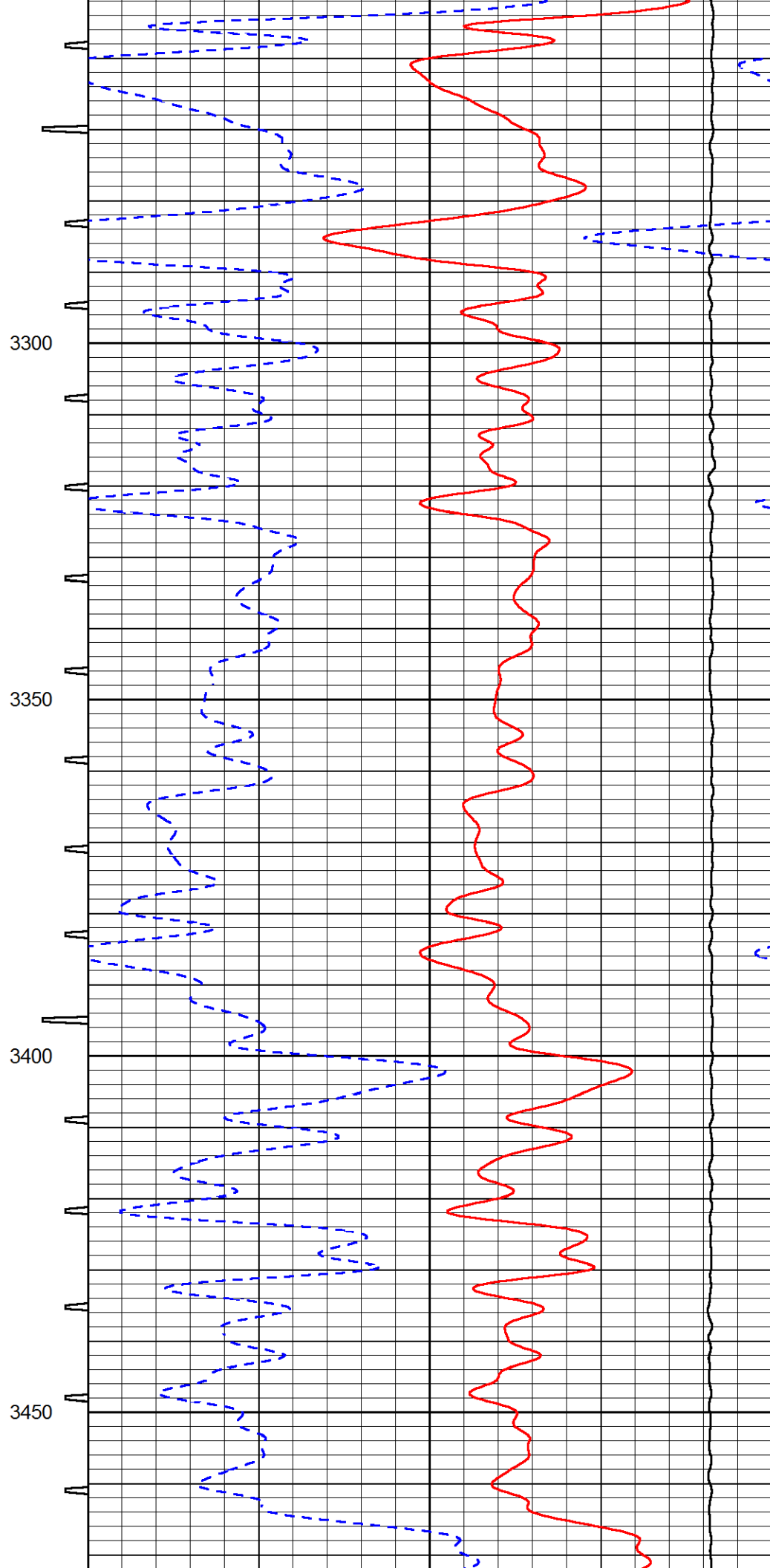
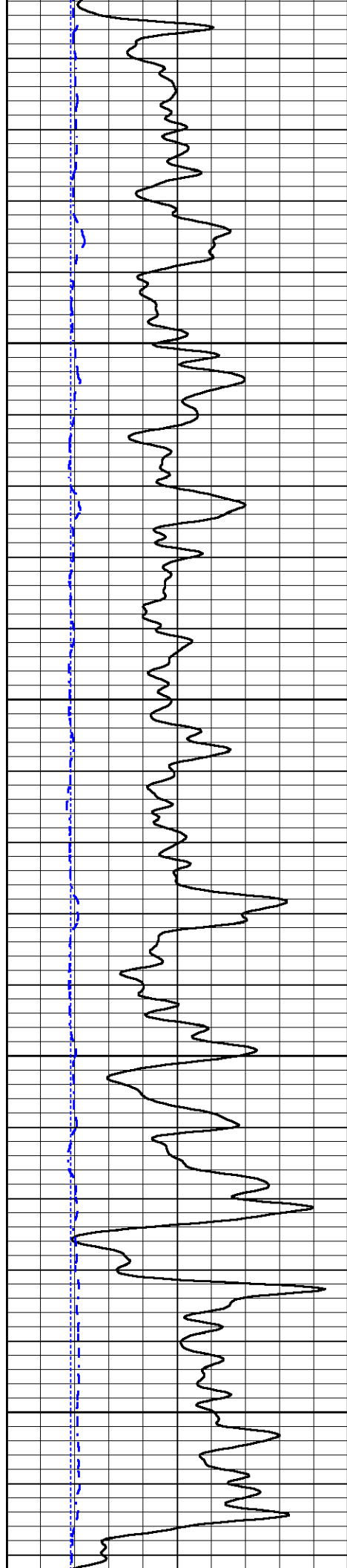


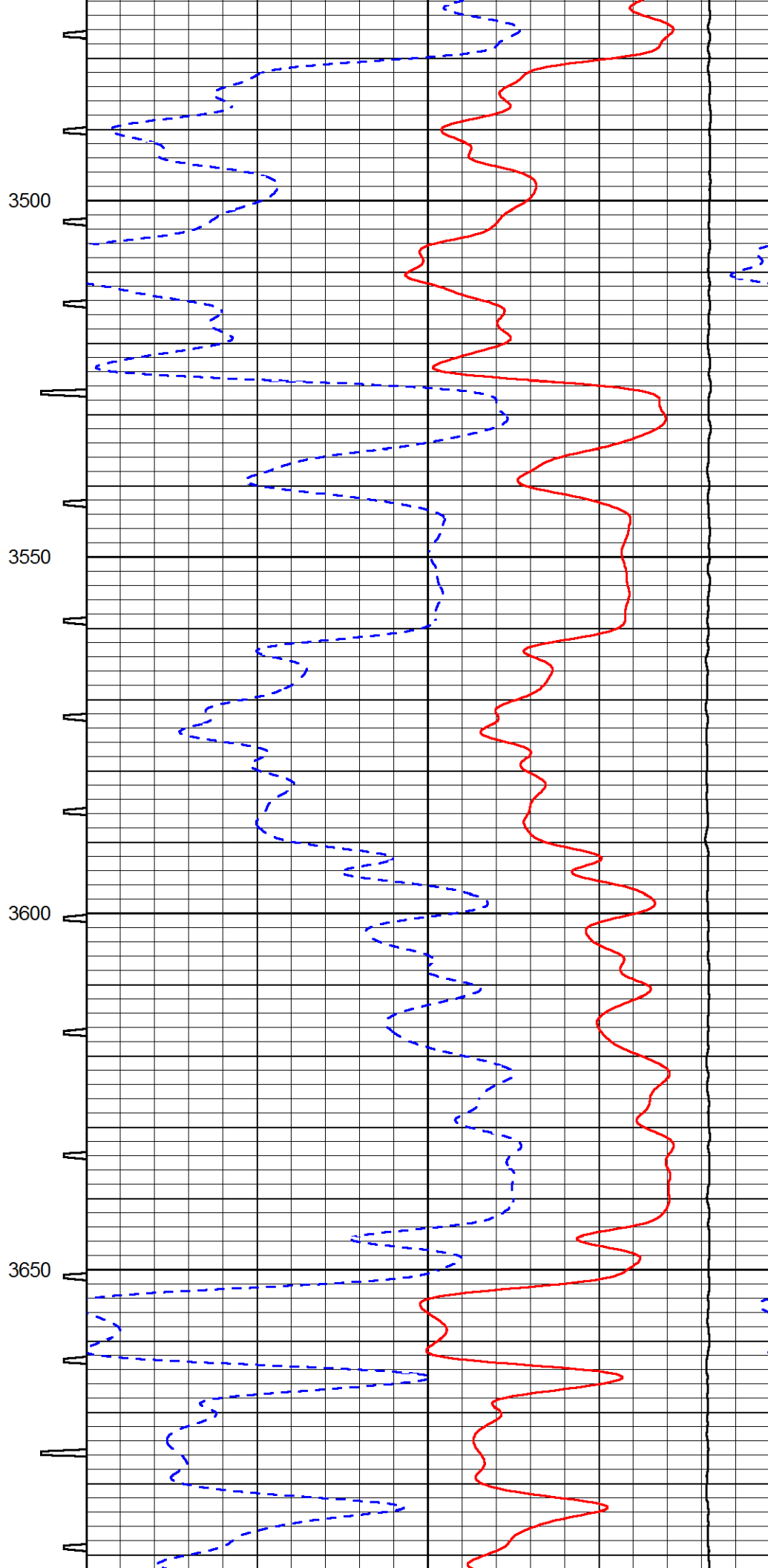
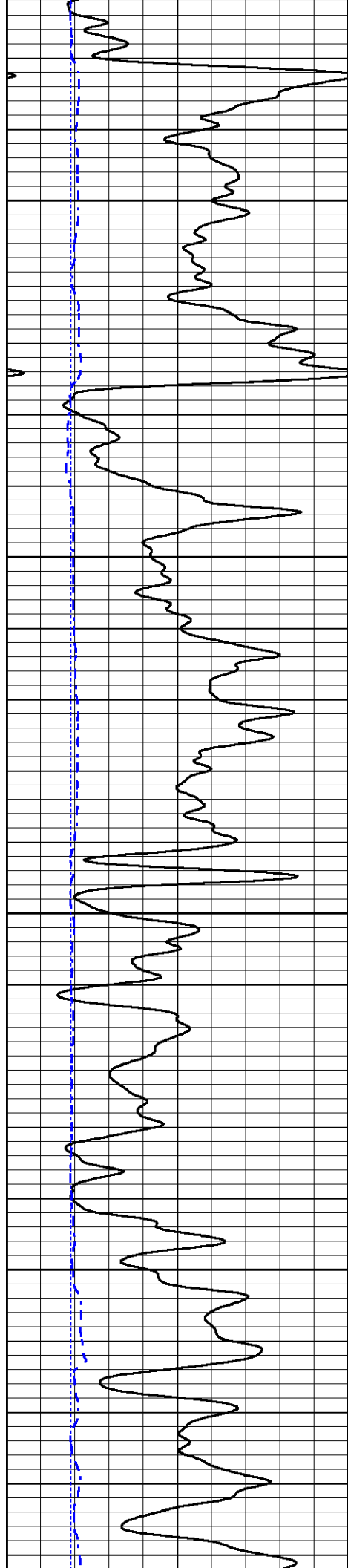


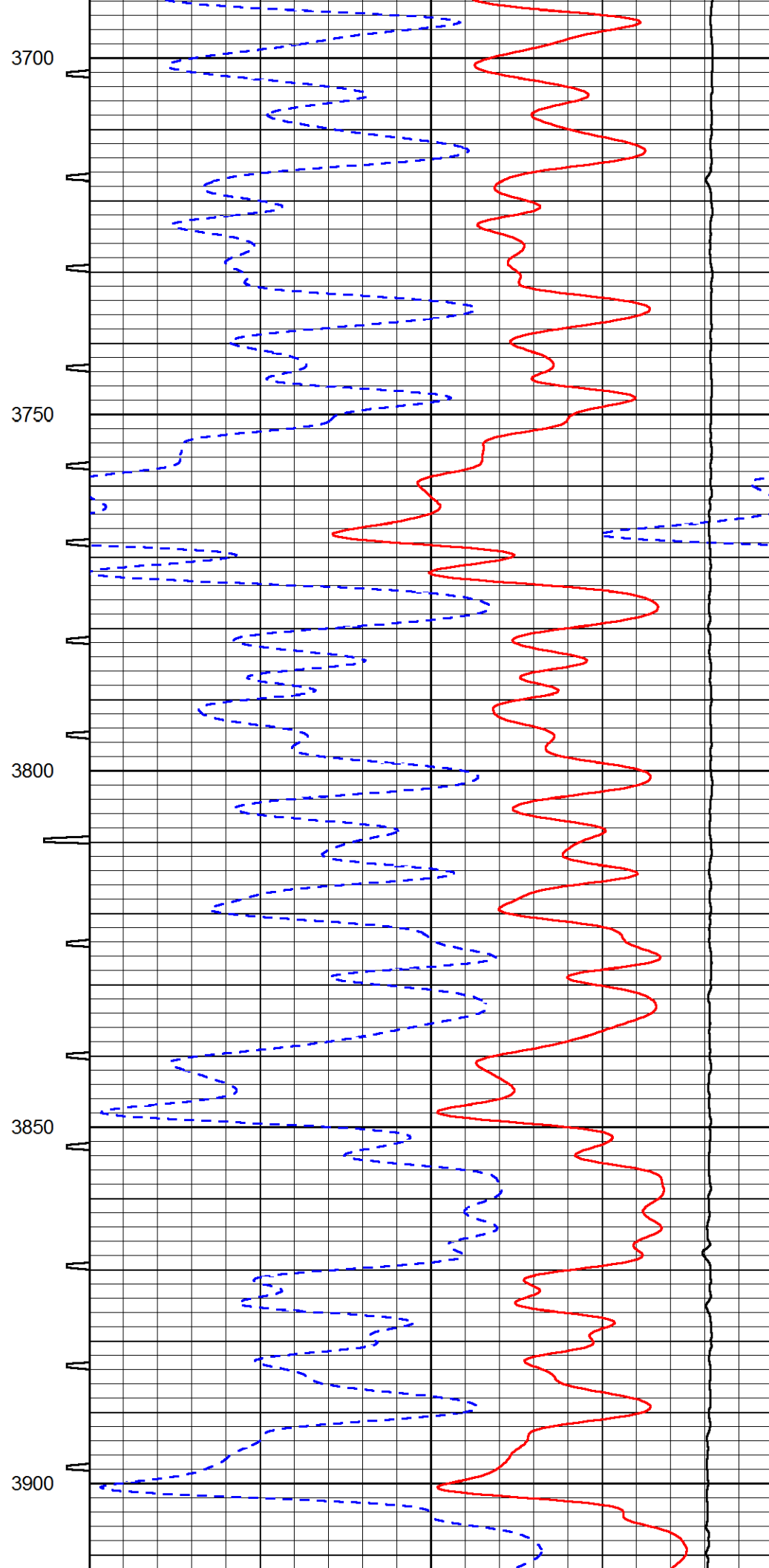
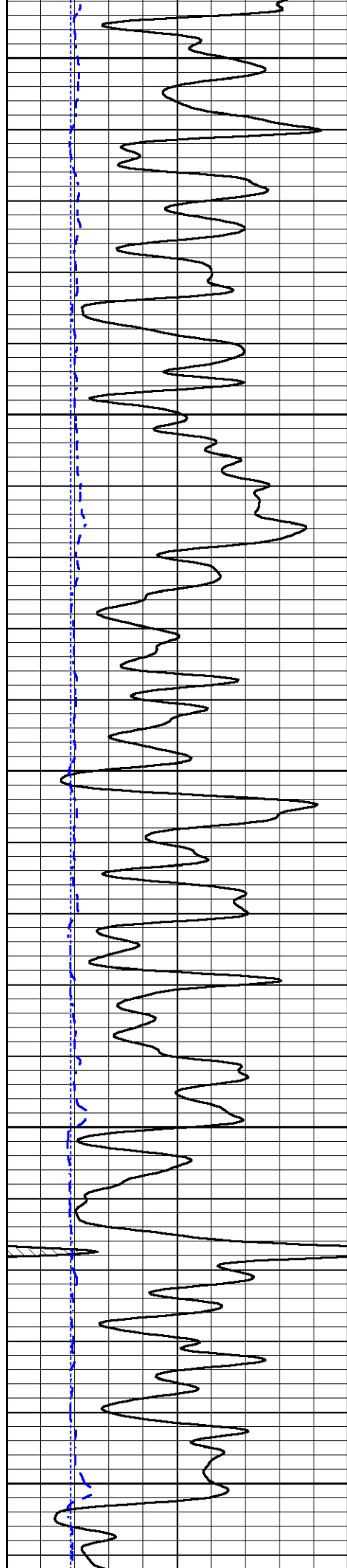


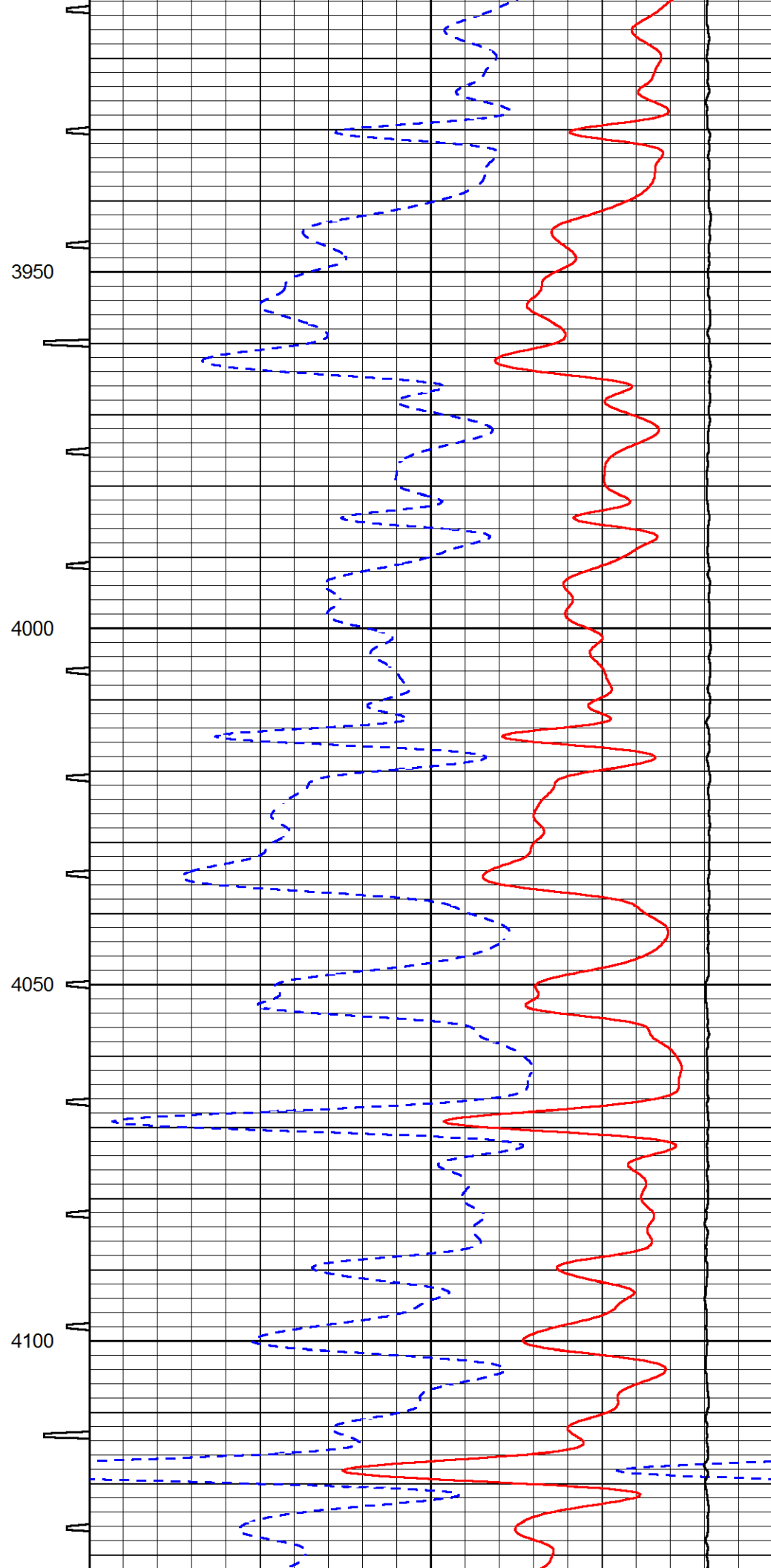
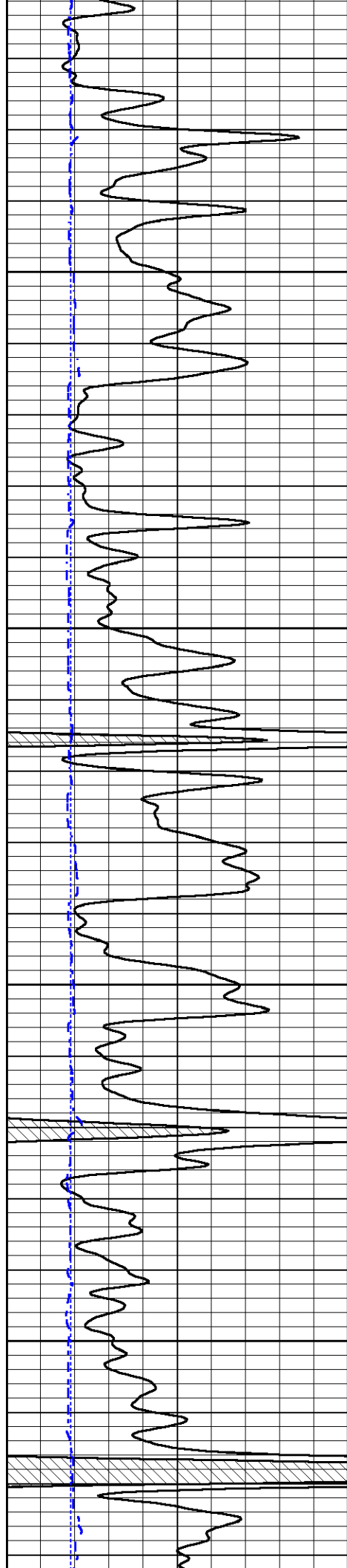


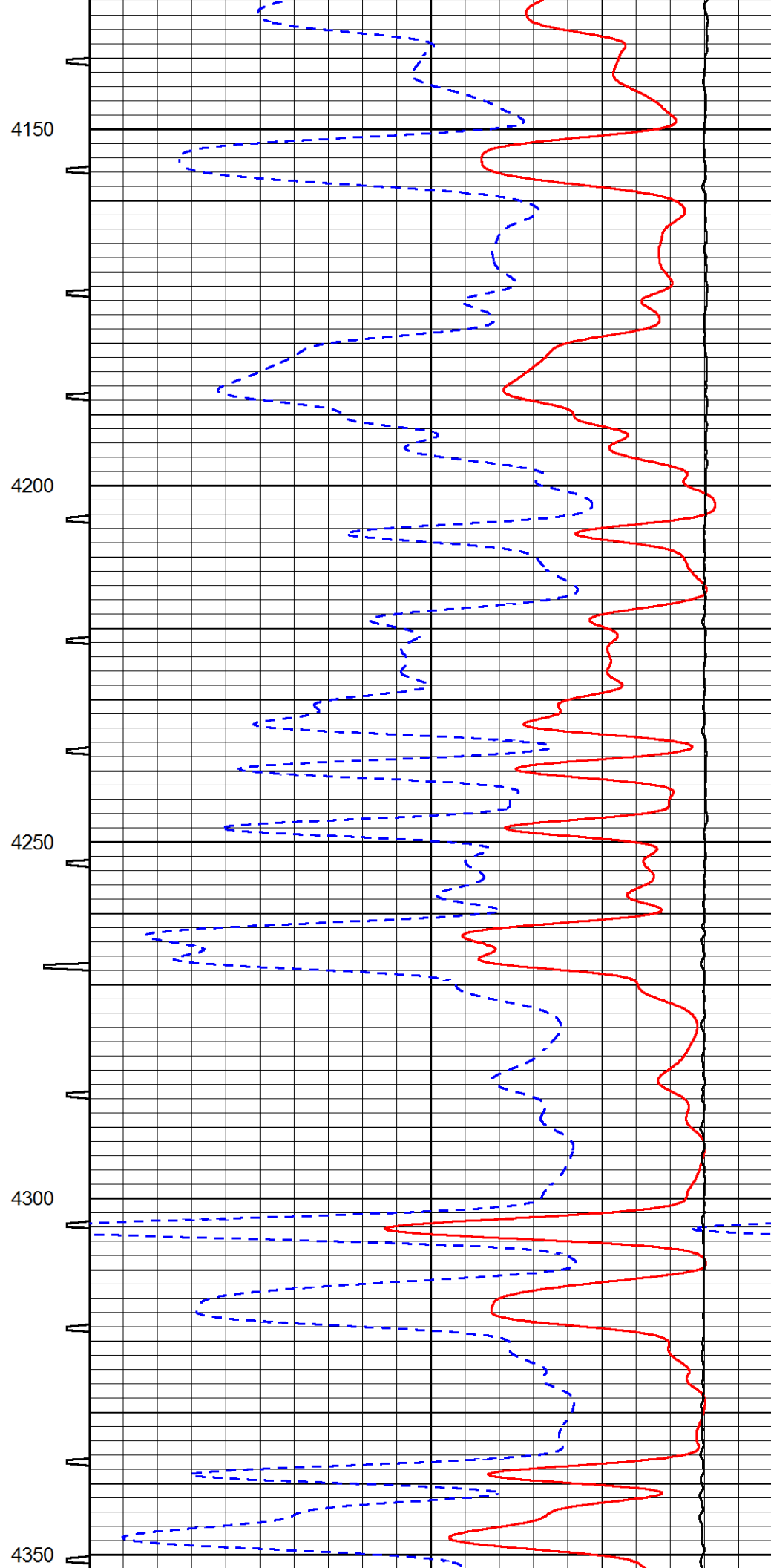
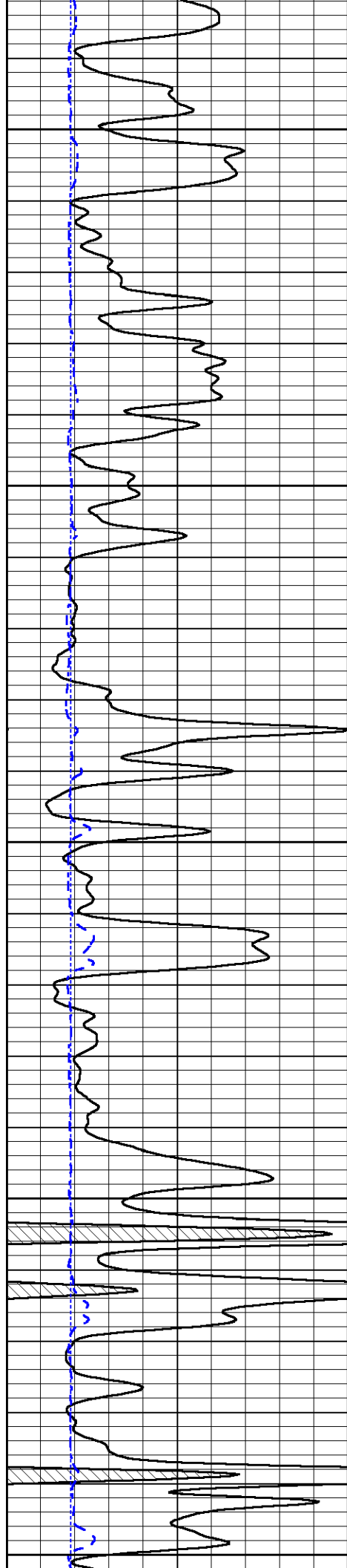


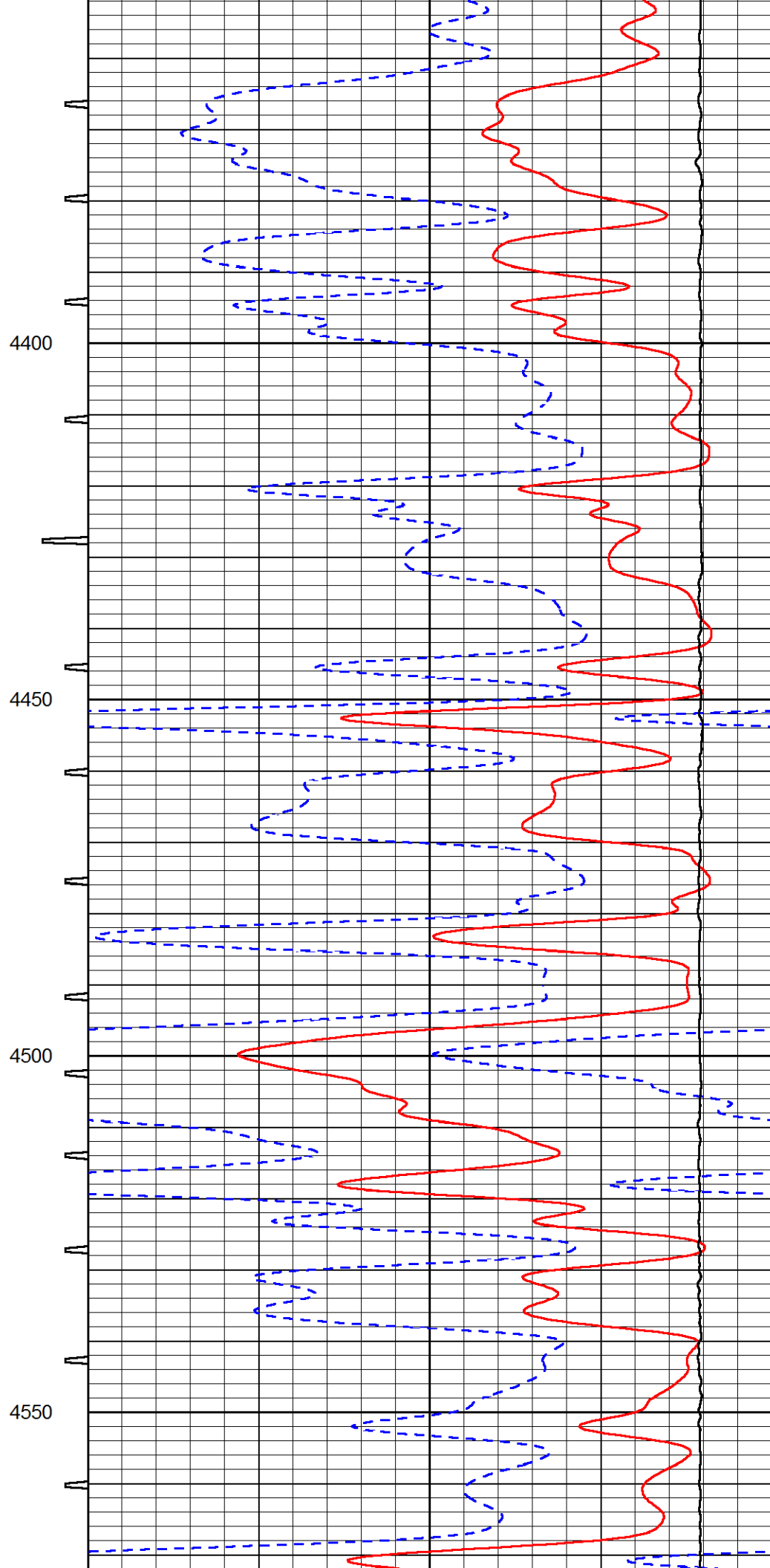
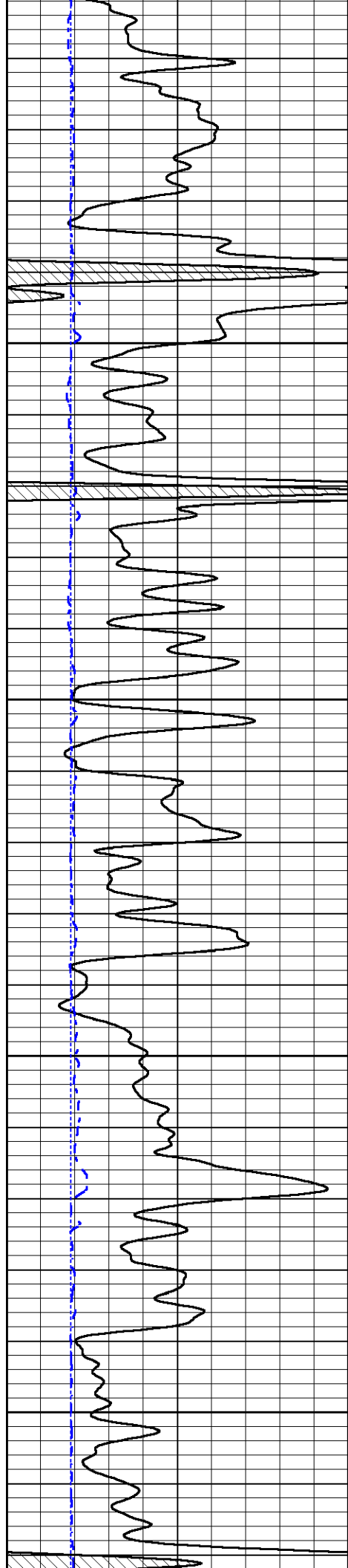


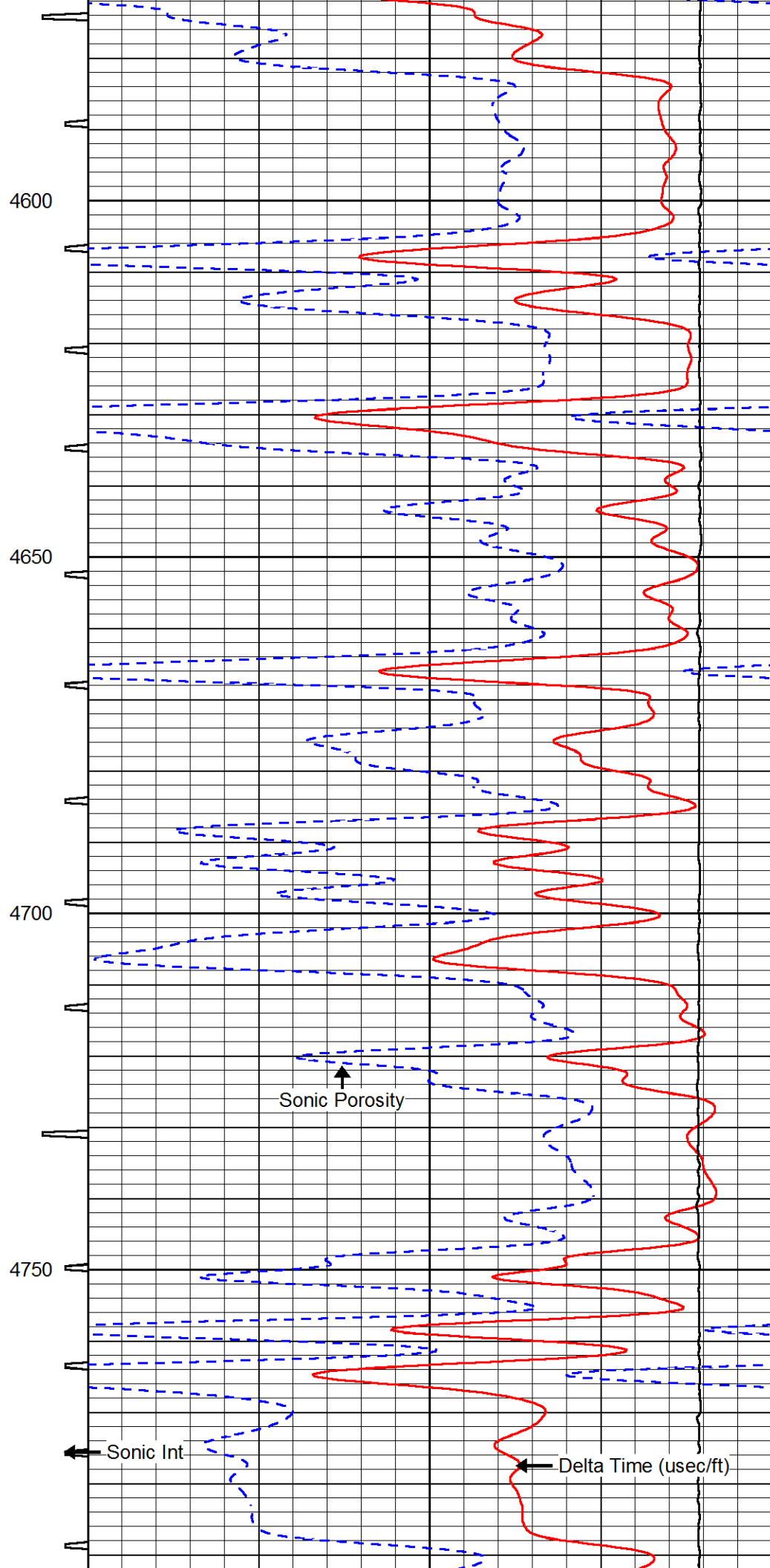
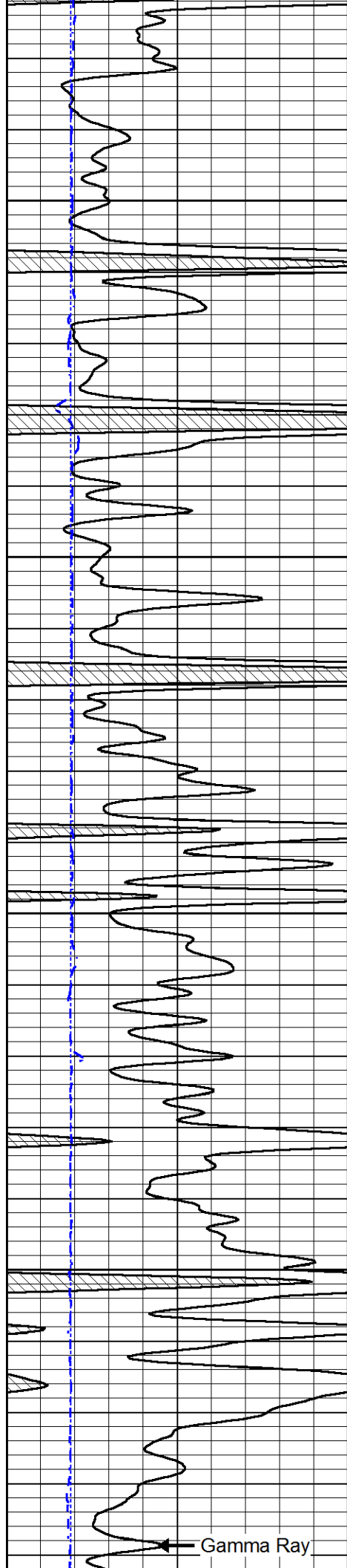


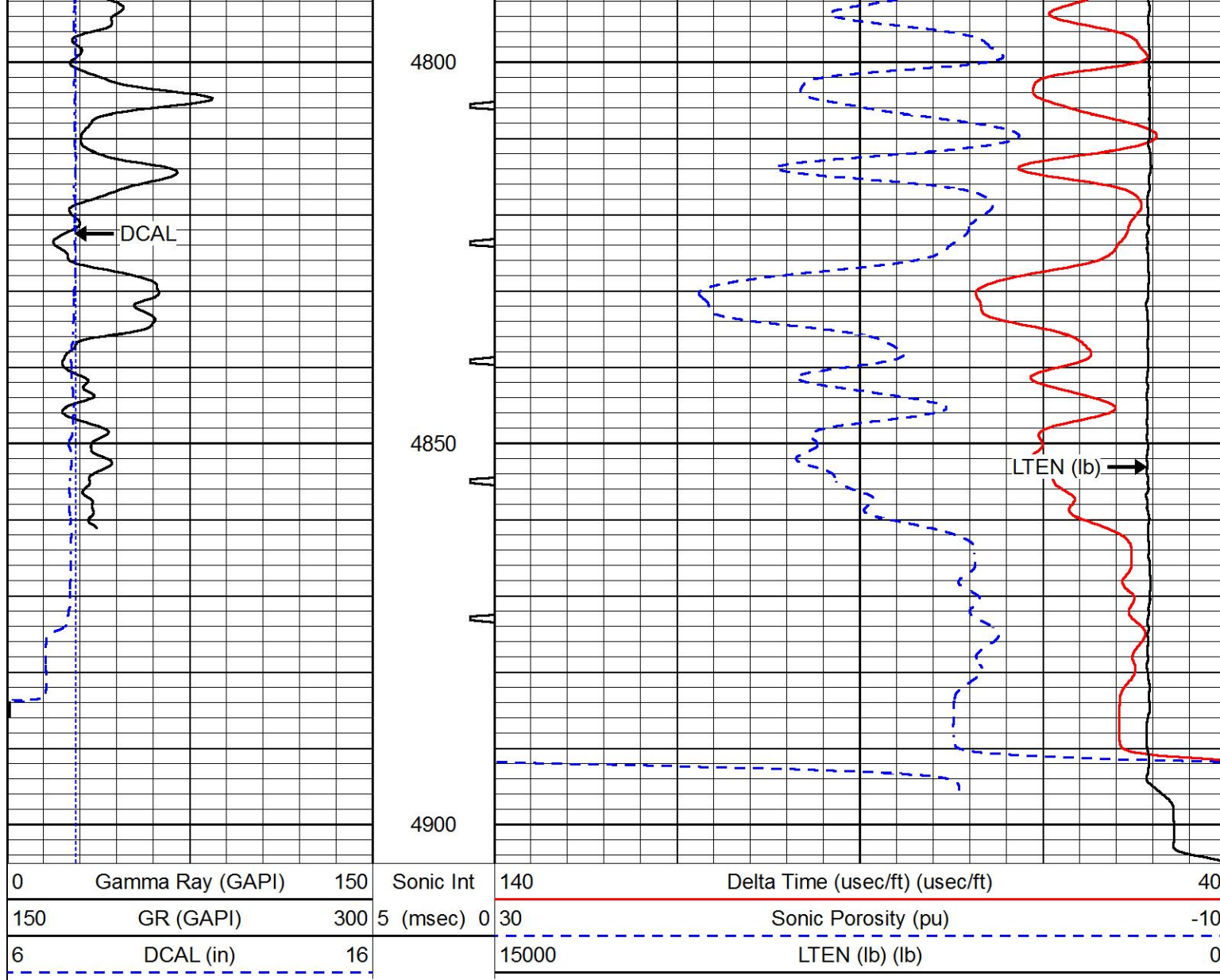














**PIONEER**  
Pioneer Energy Services

# REPEAT SECTION

Database File: murfin\_soucie\_kriss\_unit\_1\_14.db

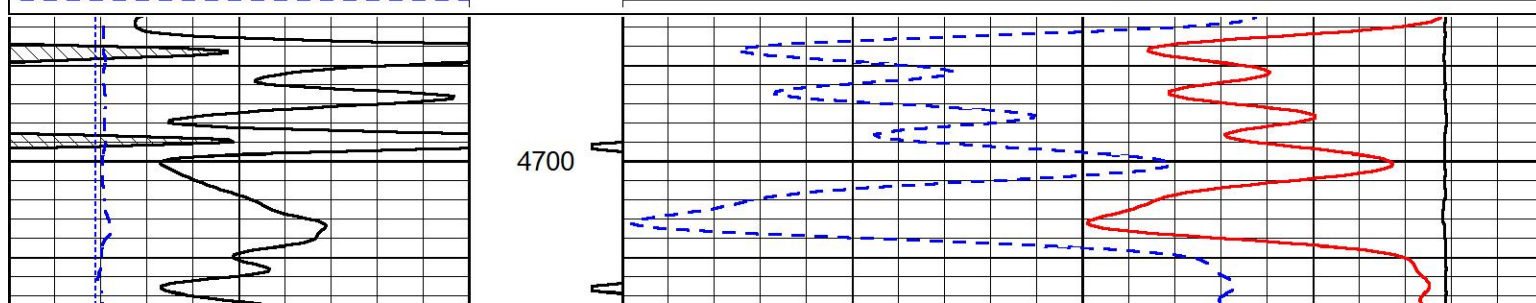
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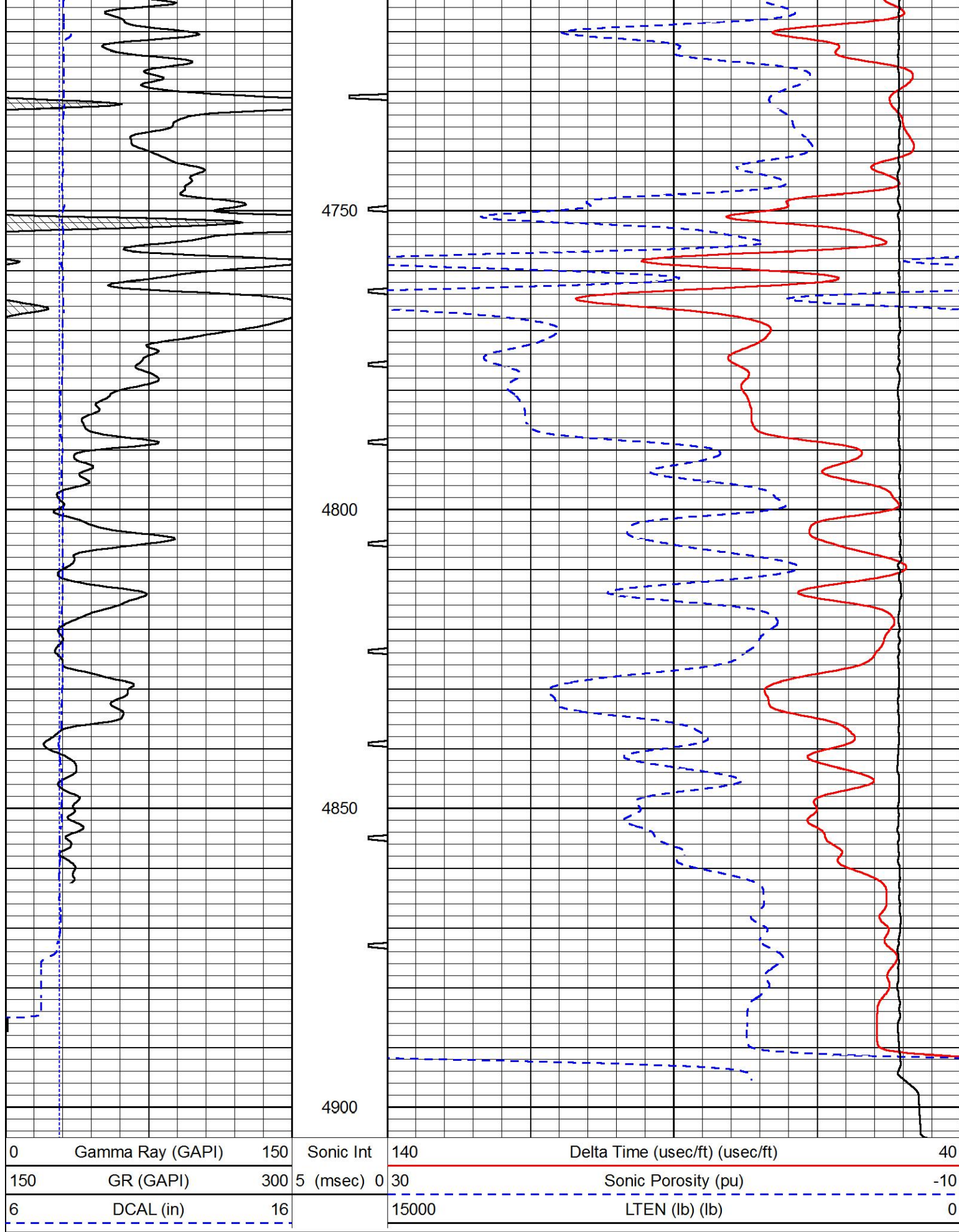
Presentation Format: \_sonic

Dataset Creation: Wed Aug 28 13:24:16 2019

Charted by: Depth in Feet scaled 1:240

|     |                  |     |            |       |                                |     |
|-----|------------------|-----|------------|-------|--------------------------------|-----|
| 0   | Gamma Ray (GAPI) | 150 | Sonic Int  | 140   | Delta Time (usec/ft) (usec/ft) | 40  |
| 150 | GR (GAPI)        | 300 | 5 (msec) 0 | 30    | Sonic Porosity (pu)            | -10 |
| 6   | DCAL (in)        | 16  |            | 15000 | LTEN (lb) (lb)                 | 0   |







**PIONEER**

Pioneer Energy Services

Well

SOUICIE KRISS UNIT #1-14

Field

JIMMY NORTHEAST

County

THOMAS

State

KANSAS