



**PIONEER**  
Pioneer Energy Services

## DUAL COMP POROSITY LOG

Company AMERICAN WARRIOR, INC.  
Well BLAESI NO. 10-6  
Field UNKNOWN  
County WALLACE  
State KANSAS

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Field UNKNOWN  
County WALLACE State KANSAS

Location: API #: 15-199-20445-00-00

Other Services

SEC 6 TWP 15S RGE 41W  
335' FSL & 335' FEL

DIL  
MEL

Permanent Datum GROUND LEVEL Elevation 3761'  
Log Measured From KELLY BUSHING  
Drilling Measured From KELLY BUSHING

Elevation  
K.B. 3769'  
D.F. N/A  
G.L. 3761'

Date 8/24/2017

Run Number ONE

Type Log CNL/CDL

Depth Driller 5200'

Depth Logger 5200'

Bottom Logged Interval 5179'

Top Logged Interval 4000'

Type Fluid In Hole CHEMICAL

Salinity, PPM CL 3,500

Density 9.3

Level FULL

Max. Rec. Temp. F 128 DEG/F

Operating Rig Time 3 HOURS

Equipment -- Location 108 HAYS

Recorded By J. HENRICKSON

Witnessed By LUKE THOMPSON

### Borehole Record

### Casing Record

| Run No. | Bit    | From | To   | Size   | Wgt. | From | To   |
|---------|--------|------|------|--------|------|------|------|
| ONE     | 12.25" | 0    | 371' | 8.625" | 23#  | 0    | 371' |
| TWO     | 7.875" | 371' | TD   |        |      |      |      |
|         |        |      |      |        |      |      |      |
|         |        |      |      |        |      |      |      |
|         |        |      |      |        |      |      |      |
|         |        |      |      |        |      |      |      |
|         |        |      |      |        |      |      |      |
|         |        |      |      |        |      |      |      |
|         |        |      |      |        |      |      |      |
|         |        |      |      |        |      |      |      |

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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.

SHARON SPRINGS

WEST TO S-9 ROAD, SOUTH TO FIELD ROAD, 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: J. HENRICKSON  
Operator:  
Operator:  
Operator:

### This Log Record Was Witnessed By

Primary Witness: LUKE THOMPSON  
Secondary Witness:  
Secondary Witness:  
Secondary Witness:

Top - Bottom

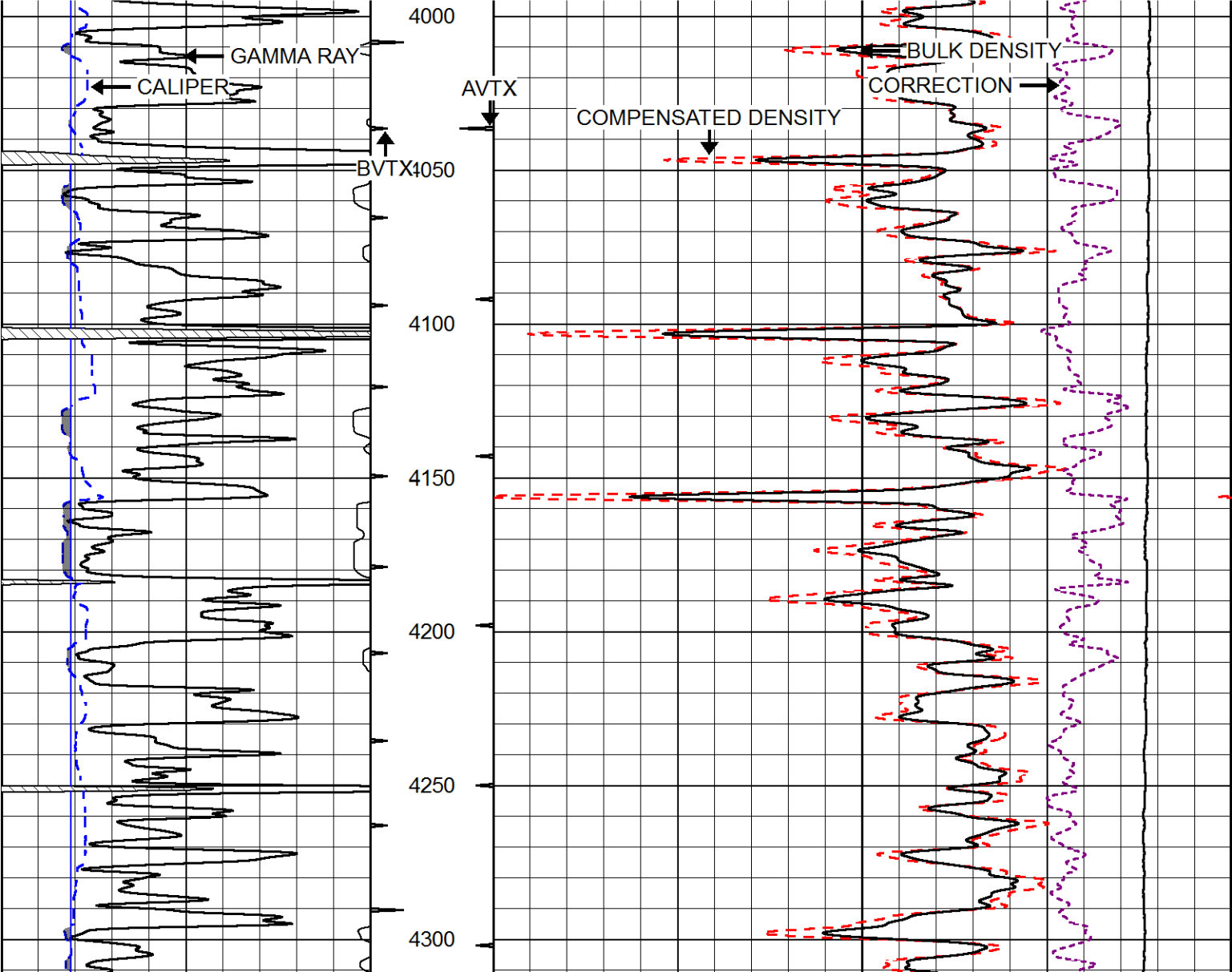
|           |             |             |             |           |            |       |              |
|-----------|-------------|-------------|-------------|-----------|------------|-------|--------------|
| A         | BOREID      | BOTTEMP     | CASEOD      | CASETHCK  | FLUIDDEN   | M     | MATRXDEN     |
| 1         | in<br>7.875 | degF<br>128 | in<br>5.5   | in<br>0   | g/cc<br>1  | 2     | g/cc<br>2.71 |
| NPORSEL   | PERFS       | SNDERR      | SNDERRM     | SPSHIFT   | SRFTEMP    | SZCOR | TDEPTH       |
| Limestone | 0           | mmho/m<br>0 | mmho/m<br>0 | mV<br>175 | degF<br>61 | Off   | ft<br>5196   |

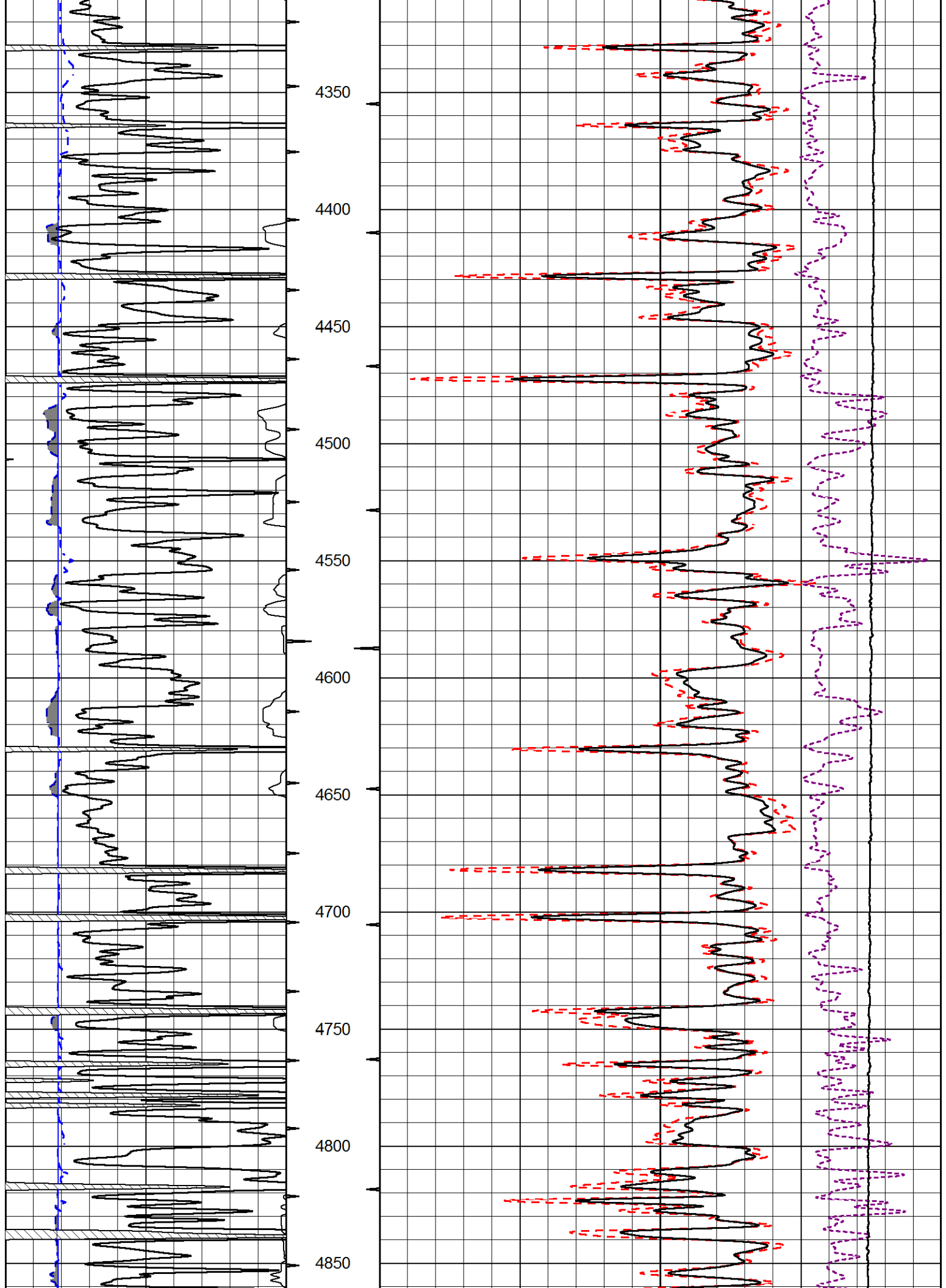
| Sensor | Offset (ft) | Schematic                                                                           |                                                                                     | Description                    | Length (ft) | O.D. (in) | Weight (lb) |
|--------|-------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------|-------------|-----------|-------------|
| GR     | 33.00       |    |    | GR-M&W (89-M&W)                | 3.00        | 3.50      | 50.00       |
|        |             |                                                                                     |                                                                                     |                                |             |           |             |
| CNLSC  | 29.90       |    |    | CNT-M&W (tk10-MW)              | 5.50        | 3.50      | 100.00      |
| CNSSC  | 29.15       |    |    |                                |             |           |             |
| LSD    | 20.85       |  |  | CDL-M&W (168-986)              | 8.50        | 4.00      | 250.00      |
|        | DCAL        |                                                                                     |                                                                                     |                                |             |           |             |
|        | SSD         |                                                                                     |                                                                                     |                                |             |           |             |
| RLL3F  | 15.80       |  |  |                                |             |           |             |
| RLL3   | 15.80       |                                                                                     |                                                                                     |                                |             |           |             |
| CILD   | 8.00        |  |  | DIL-PSI HIGH TEMP (PSI 216 HT) | 18.50       | 3.50      | 220.00      |
|        |             |                                                                                     |                                                                                     |                                |             |           |             |

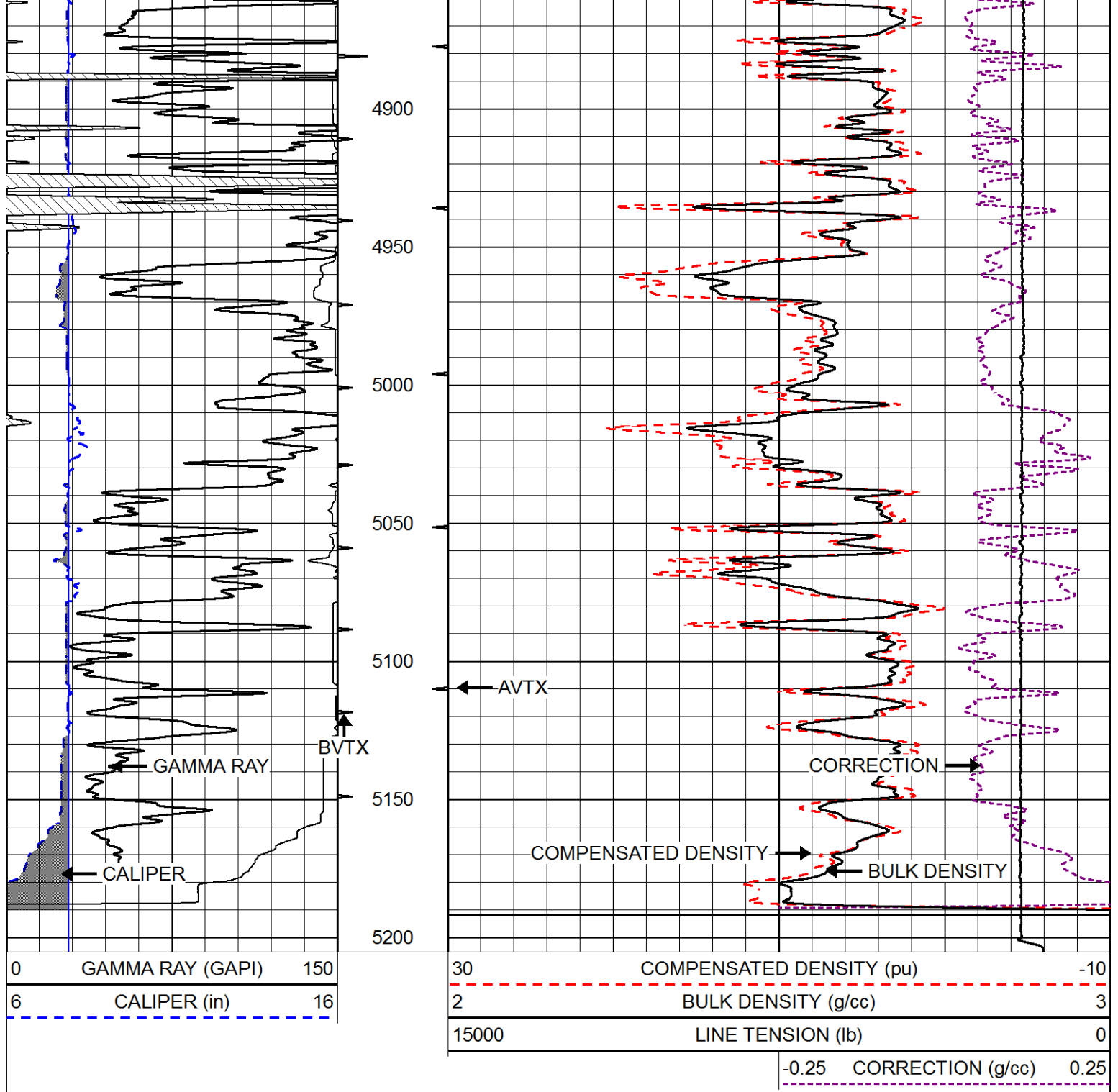
|                                                                                                                                          |      |  |  |  |  |  |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------|------|--|--|--|--|--|--|--|--|
| CILM                                                                                                                                     | 4.70 |  |  |  |  |  |  |  |  |
| SP                                                                                                                                       | 0.20 |  |  |  |  |  |  |  |  |
| Dataset: american_warrior_blaesi_10_6.db: field/well/stack/pass3.1<br>Total length: 35.50 ft<br>Total weight: 620.00 lb<br>O.D.: 4.00 in |      |  |  |  |  |  |  |  |  |

|                     |                                 |
|---------------------|---------------------------------|
| Database File       | american_warrior_blaesi_10_6.db |
| Dataset Pathname    | stack/pass3.1                   |
| Presentation Format | cdl                             |
| Dataset Creation    | Thu Aug 24 07:16:37 2017        |
| Charted by          | Depth in Feet scaled 1:600      |

|   |                  |     |       |                          |                   |      |
|---|------------------|-----|-------|--------------------------|-------------------|------|
| 0 | GAMMA RAY (GAPI) | 150 | 30    | COMPENSATED DENSITY (pu) |                   | -10  |
| 6 | CALIPER (in)     | 16  | 2     | BULK DENSITY (g/cc)      |                   | 3    |
|   |                  |     | 15000 | LINE TENSION (lb)        |                   | 0    |
|   |                  |     |       | -0.25                    | CORRECTION (g/cc) | 0.25 |



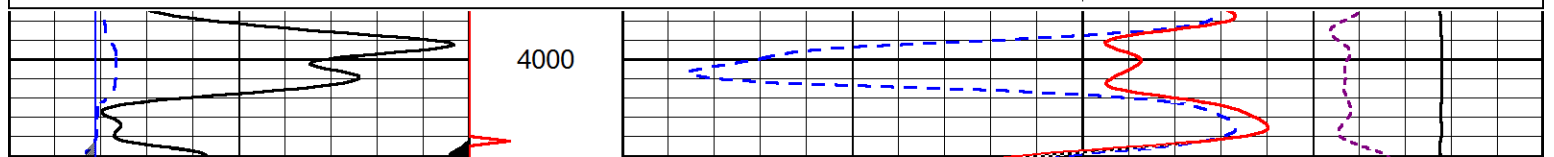


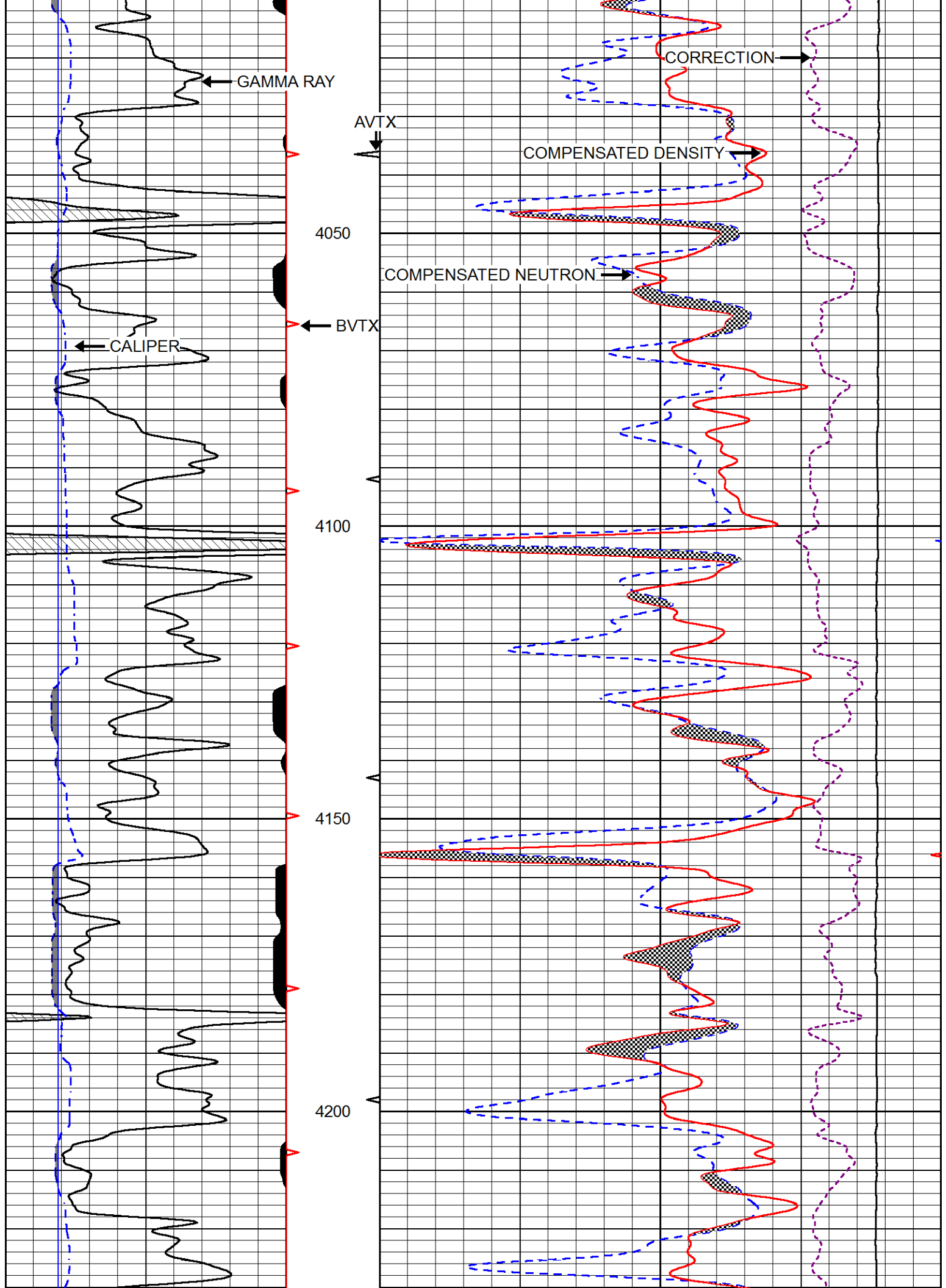


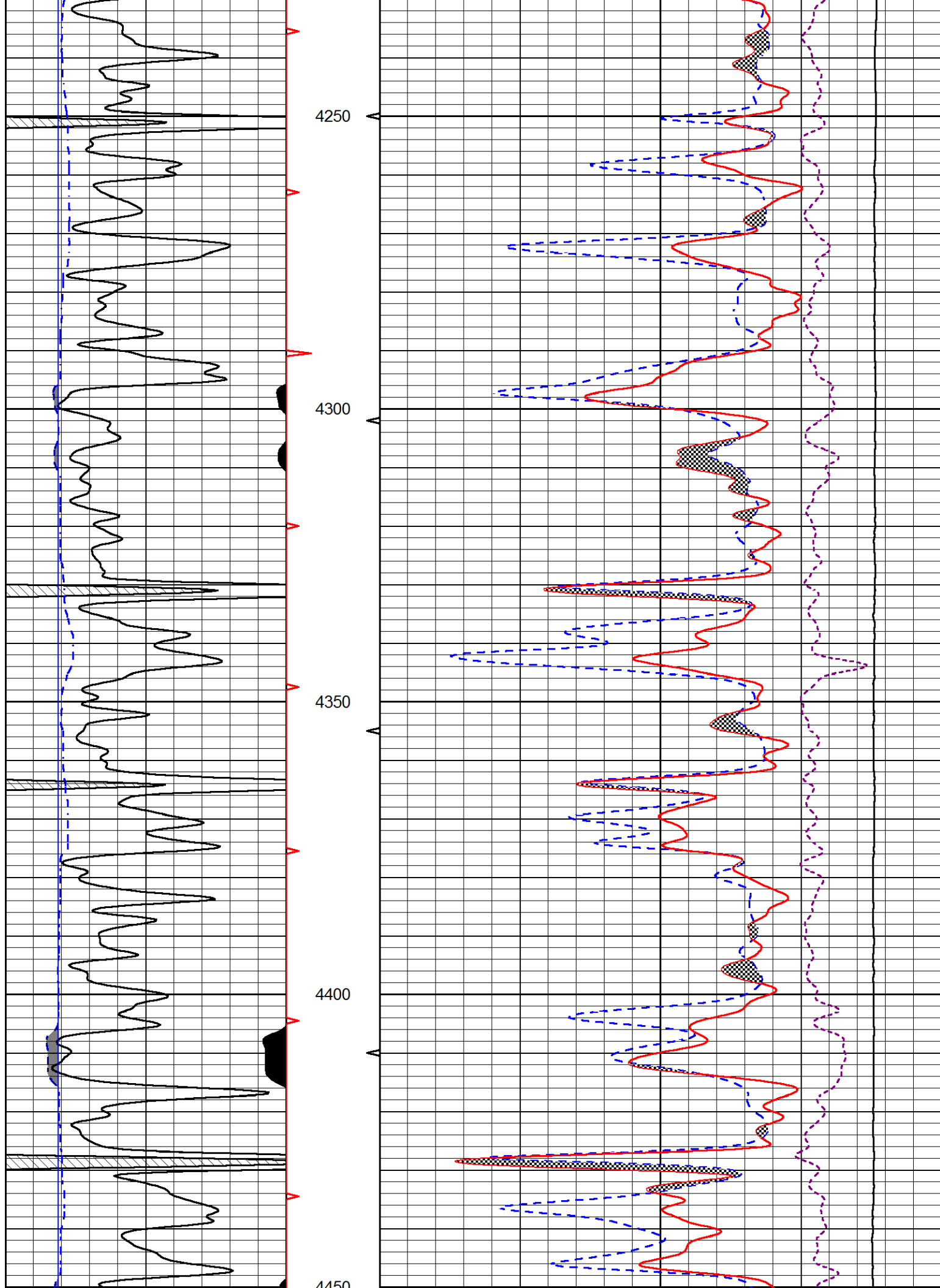
|                     |                                 |
|---------------------|---------------------------------|
| Database File       | american_warrior_blaesi_10_6.db |
| Dataset Pathname    | stack/pass3.1                   |
| Presentation Format | cndlspec                        |
| Dataset Creation    | Thu Aug 24 07:16:37 2017        |
| Charted by          | Depth in Feet scaled 1:240      |

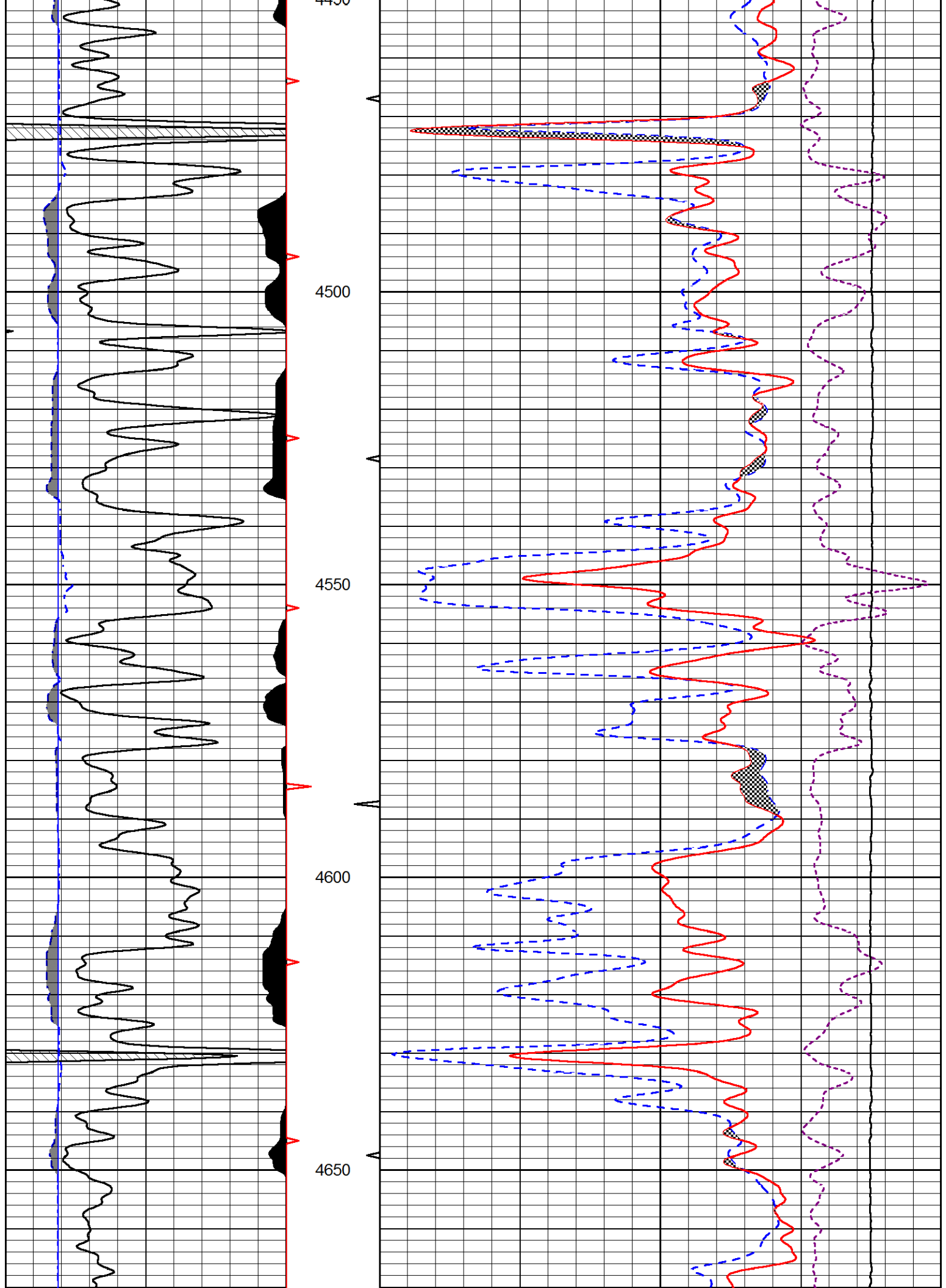
|   |                  |     |
|---|------------------|-----|
| 0 | GAMMA RAY (GAPI) | 150 |
| 6 | dcal (in)        | 16  |
| 6 | BIT SIZE (in)    | 16  |

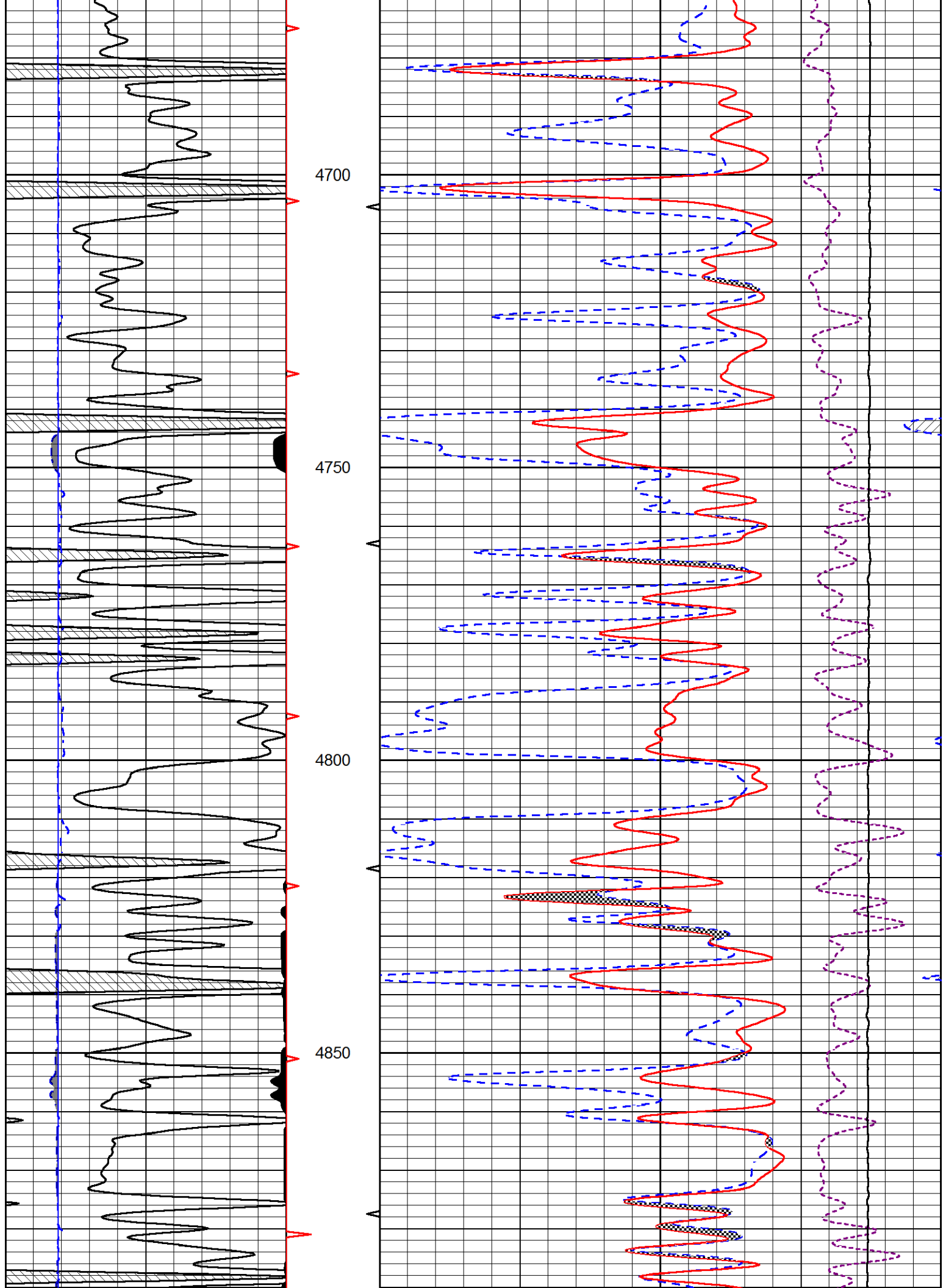
|       |                                    |      |
|-------|------------------------------------|------|
| 30    | COMPENSATED NEUTRON (pu)           | -10  |
| 30    | COMPENSATED DENSITY (2.71 ma) (pu) | -10  |
| 15000 | LINE TENSION (lb)                  | 0    |
| -0.25 | CORRECTION (g/cc)                  | 0.25 |

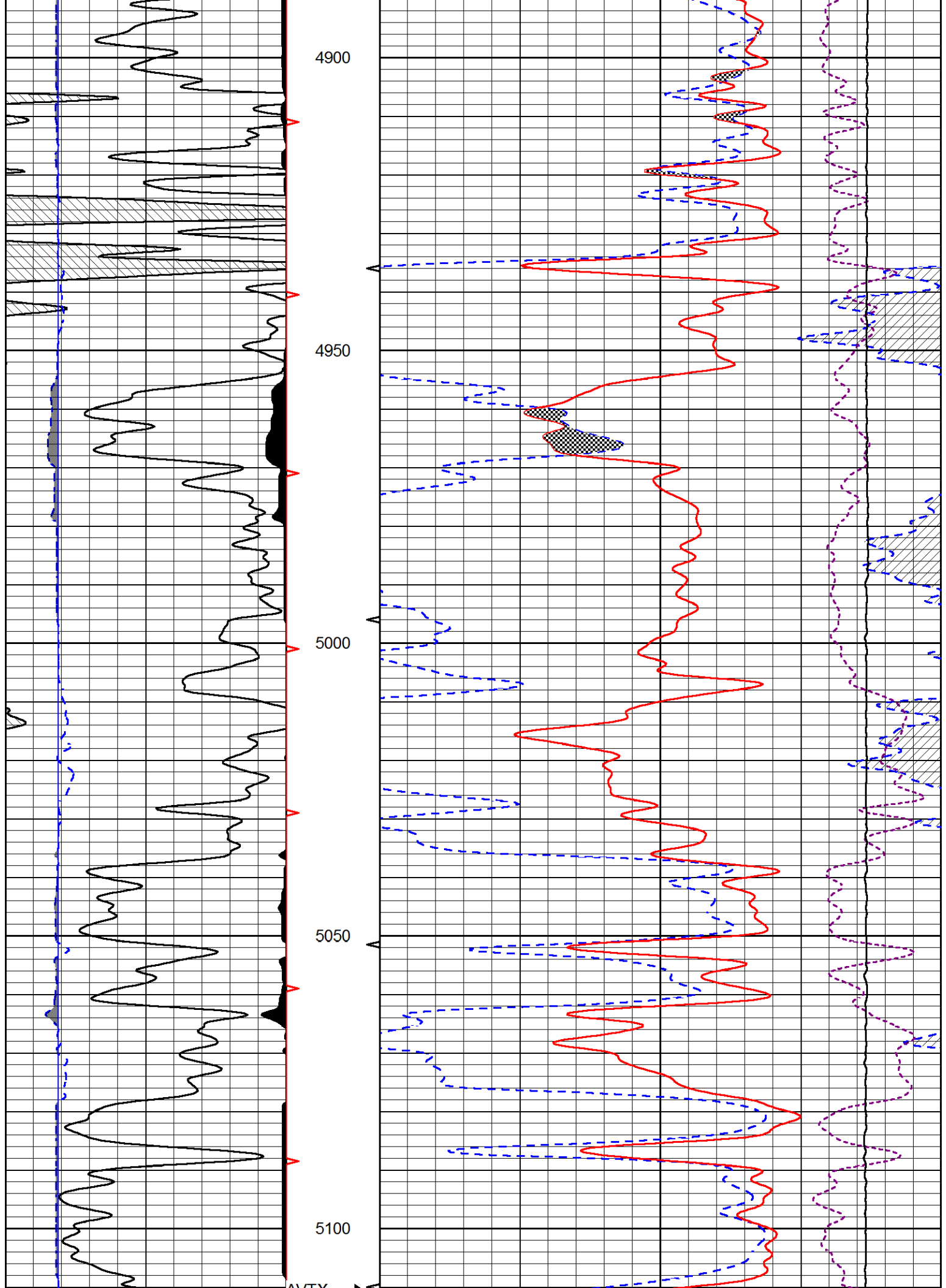


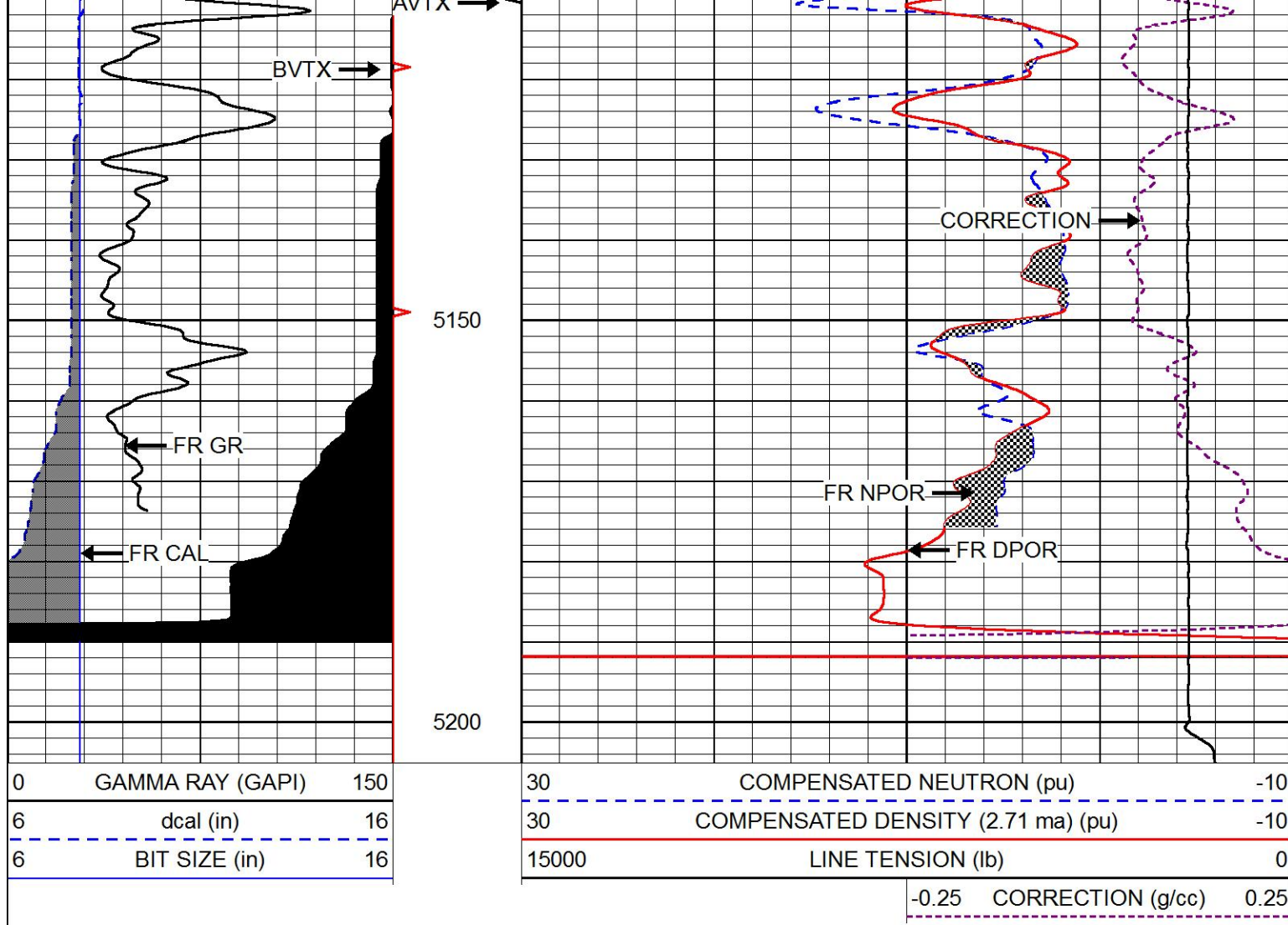








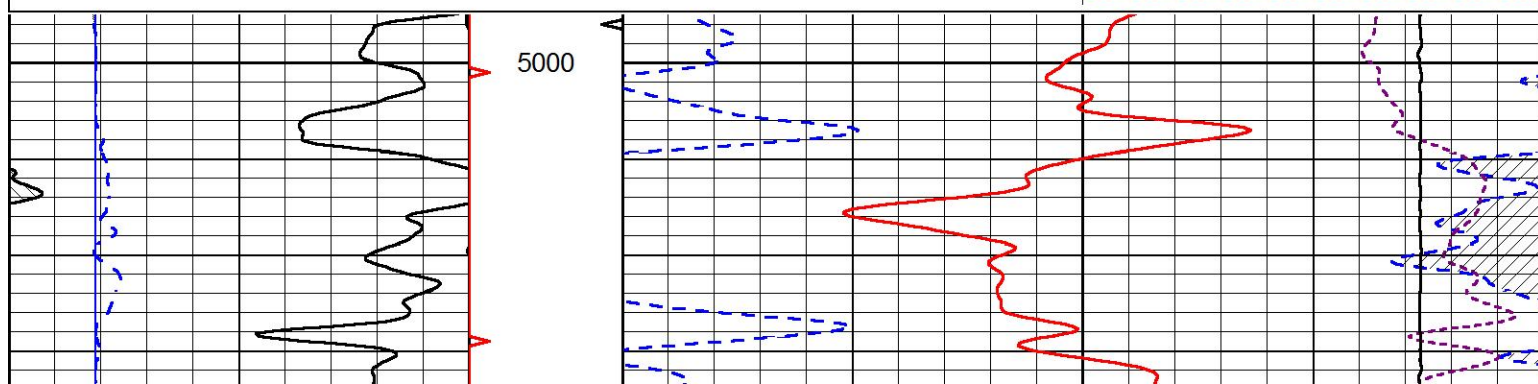
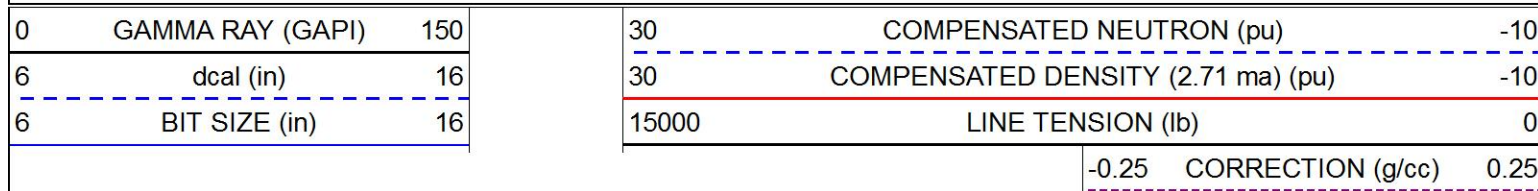


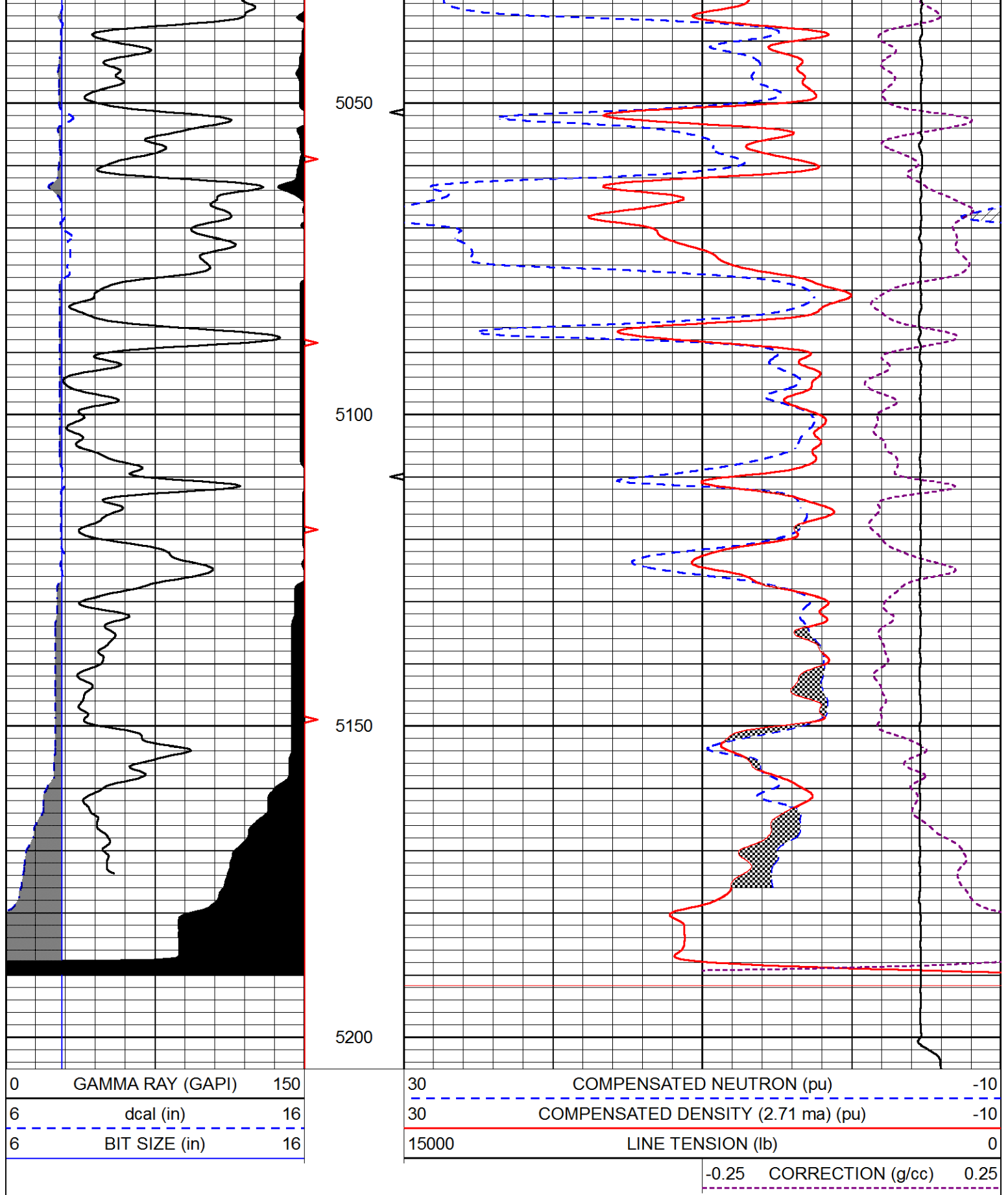


# REPEAT SECTION

PIONEER  
Pioneer Energy Services

Database File american\_warrior\_blaesi\_10\_6.db  
 Dataset Pathname stack/pass2.1  
 Presentation Format cndlspec  
 Dataset Creation Thu Aug 24 07:16:49 2017  
 Charted by Depth in Feet scaled 1:240





### Calibration Report

Database File american\_warrior\_blaesi\_10\_6.db  
Dataset Pathname stack/pass3.1  
Dataset Creation Thu Aug 24 07:16:37 2017

Serial-Model:  
Calibration Performed:

PSI 216 HT-PSI HIGH TEMP  
Thu Aug 24 03:44:32 2017

| Readings |        |         | References |         |        | Results |         |
|----------|--------|---------|------------|---------|--------|---------|---------|
| Loop:    | Air    | Loop    | Air        | Loop    |        | Gain    | Offset  |
| Deep     | 75.411 | 495.929 | 4.000      | 250.000 | mmho/m | 0.750   | -40.115 |
| Medium   | 75.269 | 470.661 | 10.000     | 100.000 | mmho/m | 0.628   | -22.133 |

#### Compensated Density Calibration Report

Serial-Model: 168-986-M&W  
Source / Verifier: /  
Master Calibration Performed: Tue Apr 11 16:07:47 2017

#### Master Calibration

|                     | Density |      | Far Detector                | Near Detector |     |
|---------------------|---------|------|-----------------------------|---------------|-----|
|                     |         |      |                             |               |     |
| Magnesium           | 1.755   | g/cc | 4691.86                     | 4818.19       | cps |
| Aluminum            | 2.675   | g/cc | 859.57                      | 3020.22       | cps |
| Spine Angle = 74.61 |         |      | Density/Spine Ratio = 0.523 |               |     |
|                     | Size    |      | Reading                     |               |     |
|                     |         |      |                             |               |     |
| Small Ring          | 4.00    | in   | 1.03                        |               |     |
| Large Ring          | 14.00   | in   | 1.23                        |               |     |

#### Compensated Neutron Calibration Report

Serial Number: tk10-MW  
Tool Model: M&W  
Calibration Performed: Wed Nov 16 11:21:36 2016

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

#### Gamma Ray Calibration Report

Serial Number: 89-M&W  
Tool Model: M&W  
Calibration Performed: Tue Apr 11 16:08:01 2017

Calibrator Value: 1000.0 GAPI

Background Reading: 0.0 cps  
Calibrator Reading: 6.2 cps

Sensitivity: 0.5200 GAPI/cps



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Well BLAESI NO. 10-6  
Field UNKNOWN  
County WALLACE

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County

State

KANSAS