



PIONEER

Pioneer Energy Services

DUAL COMP POROSITY LOG

Company **AMERICAN WARRIOR, INC.**

Well **GLUNT #2-23**

Field **WILDCAT**

County **HODGEMAN** State **KANSAS**

Location: API #: 15-083-21972-00-00

Other Services

1072' FSL & 582' FWL

SEC 23 TWP 22S RGE 24W

Permanent Datum GROUND LEVEL Elevation 2395'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Elevation
K.B. 2403'
D.F. N/A
G.L. 2395'

Company **AMERICAN WARRIOR, INC.**
Well **GLUNT #2-23**
Field **WILDCAT**
County **HODGEMAN**
State **KANSAS**

Date 10/12/2019

Run Number ONE

Type Log CNL/CDL

Depth Driller 4630'

Depth Logger 4636'

Bottom Logged Interval 4607'

Top Logged Interval 3750'

Type Fluid In Hole CHEMICAL

Salinity, PPM CL 5600

Density 9.4

Level FULL

Max. Rec. Temp. F 122

Operating Rig Time 3 HOURS

Equipment -- Location P-24 HAYS

Recorded By IAN MABB

Witnessed By JASON T. ALM

Borehole Record

Casing Record

Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	12.25"	0'	223'	8.625"	23#	0'	223'
TWO	7.875"	223'	TD				

<<< Fold Here >>>

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.

JETMORE, KS.
NORTH 2 MILES TO RD O,
WEST 1 3/4 MILES, & NORTH 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: JASON T. ALM
Secondary Witness:
Secondary Witness:
Secondary Witness:

Top - Bottom

A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in 7.875	degF 122	in 5.5	in 0	g/cc 1	2	g/cc 2.71
NPORSEL	PERFS	SNDERR	SNDERRM	SPSHIFT	SRFTEMP	SZCOR	TDEPTH
Limestone	0	mmho/m 3	mmho/m 1	mV -17	degF 0	Off	ft 4636

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 (96-916)	8.50	4.00	250.00
	DCAL	28.42					
	SSD	27.93					
MCAL	19.83			ML-PSIML (PSI-01)	7.58	4.00	65.00
	MI	19.83		GO Micro log tools converted to Simplec electronics			
	MN	19.83					
RLL3F	15.80						
RLL3	15.80						
CILD	8.00			DIL-PSI HIGH TEMP (952-828)	18.50	3.50	220.00

CILM

4.70

SP

0.20

Dataset: american_warrior_glunt_2_23.db: field/well/stackmel/pass5.1
Total length: 43.08 ft
Total weight: 685.00 lb
O.D.: 4.00 in

PIONEER

Pioneer Energy Services

MAIN PASS

Database File american_warrior_glunt_2_23.db
Dataset Pathname stackmel/pass5.1
Presentation Format _cdl
Dataset Creation Sat Oct 12 22:15:55 2019
Charted by Depth in Feet scaled 1:600

0	GAMMA RAY (GAPI)	150
6	DCAL (in)	16

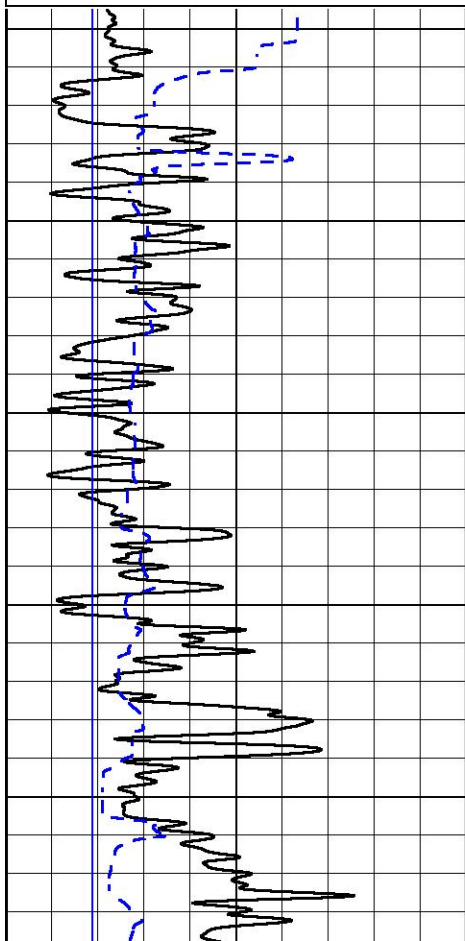
COMPENSATED DENSITY
(2.71 MA)

30 (pu) -10

2 BULK DENSITY (g/cc) 3

15000 LINE TENSION (lb) 0

-0.25 CORRECTION (g/cc) 0.25



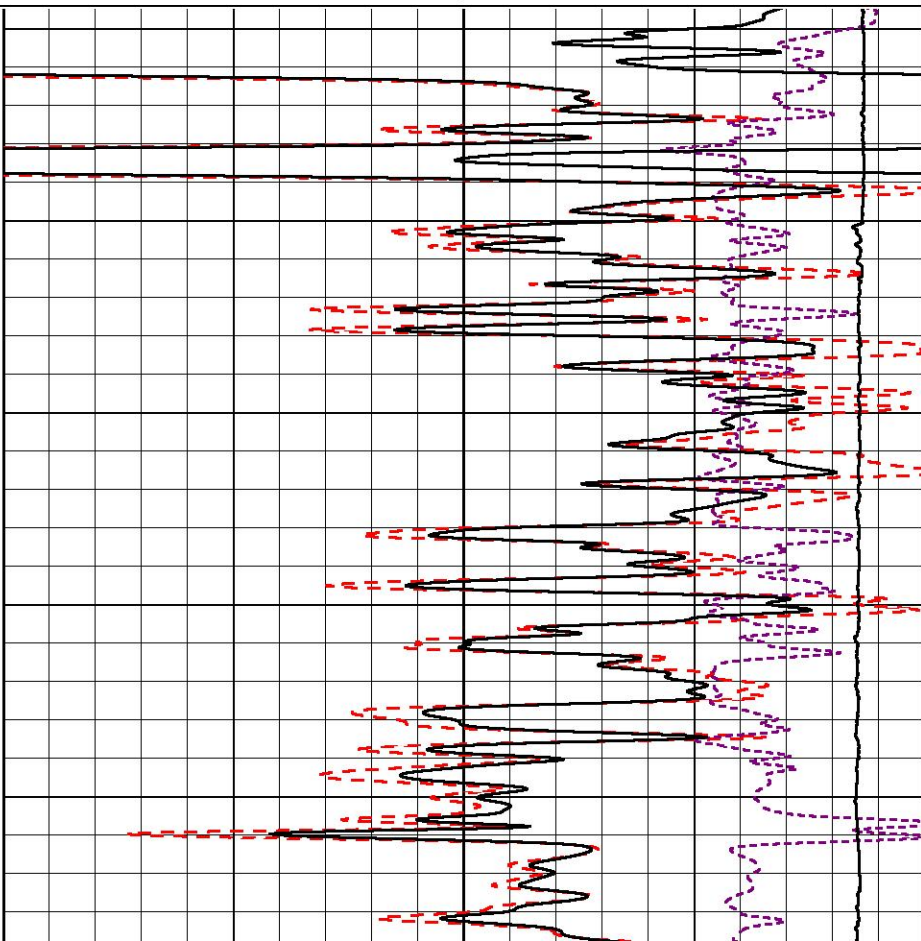
2300

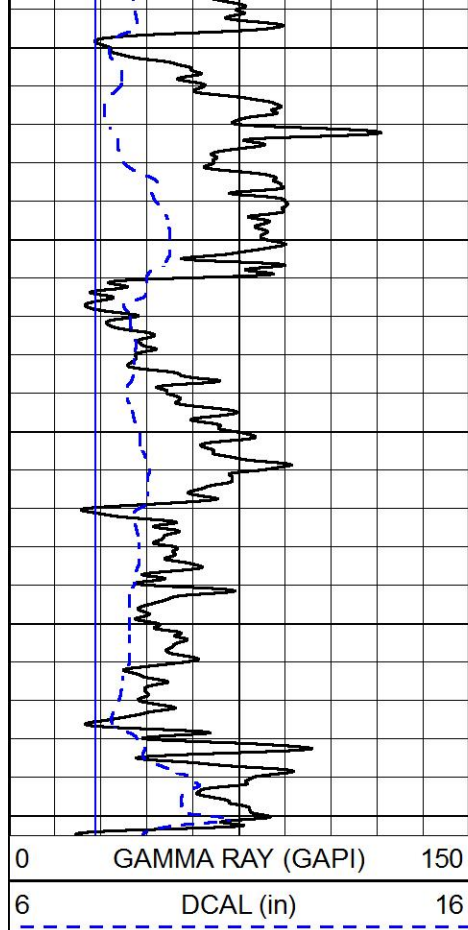
2350

2400

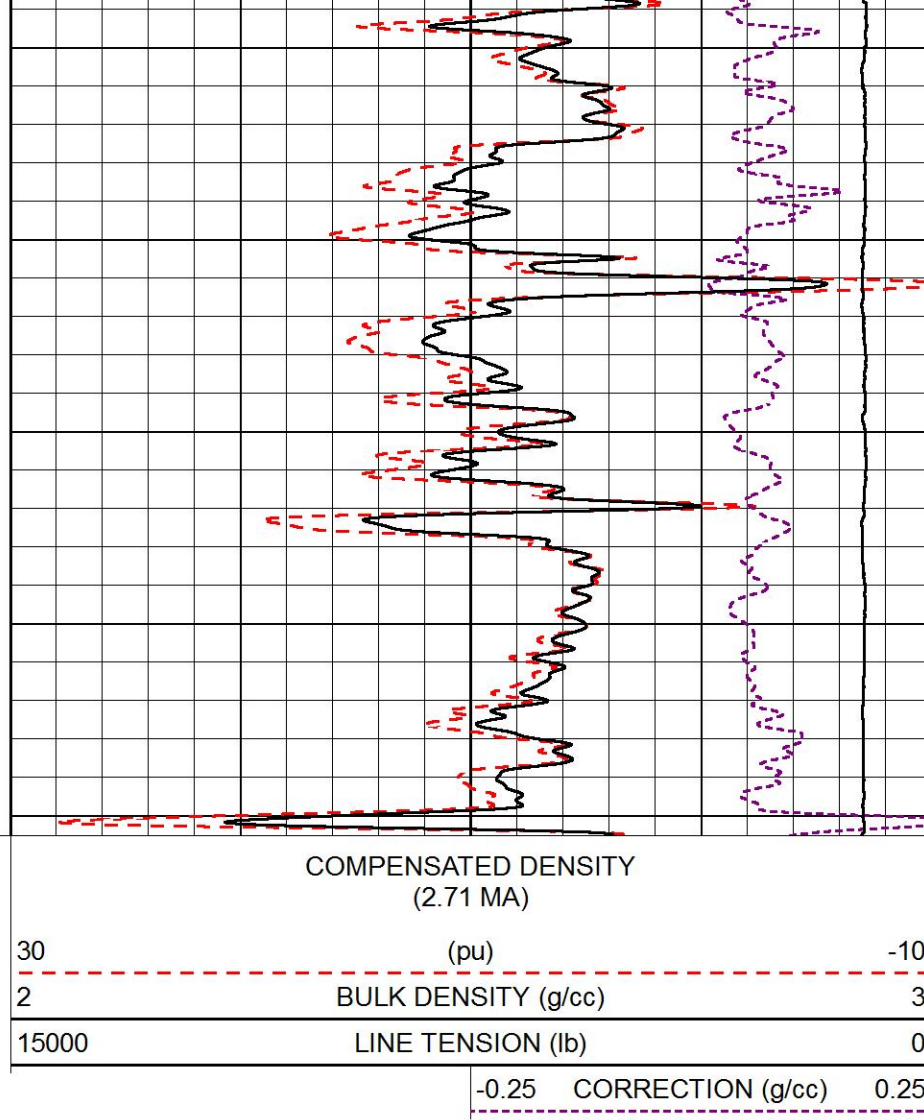
2450

2500



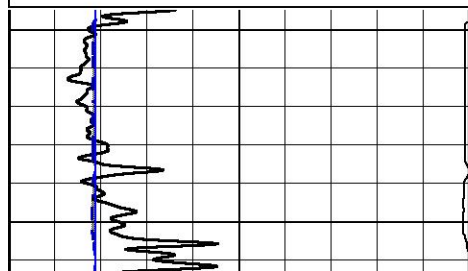
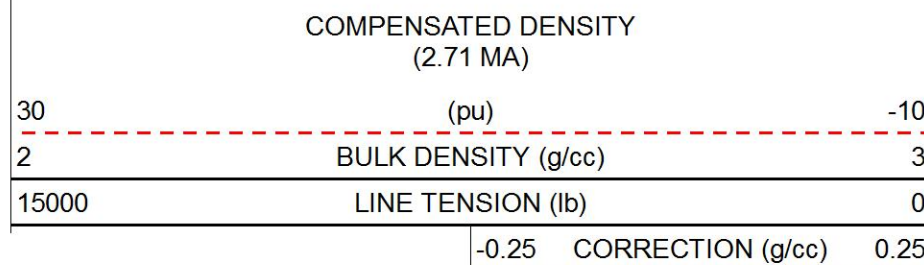
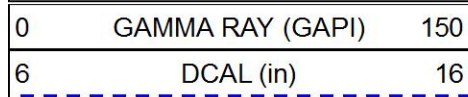


2550
2600
2650
2700
2750

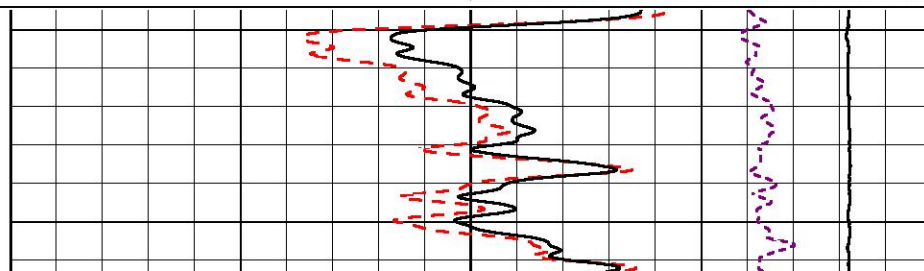


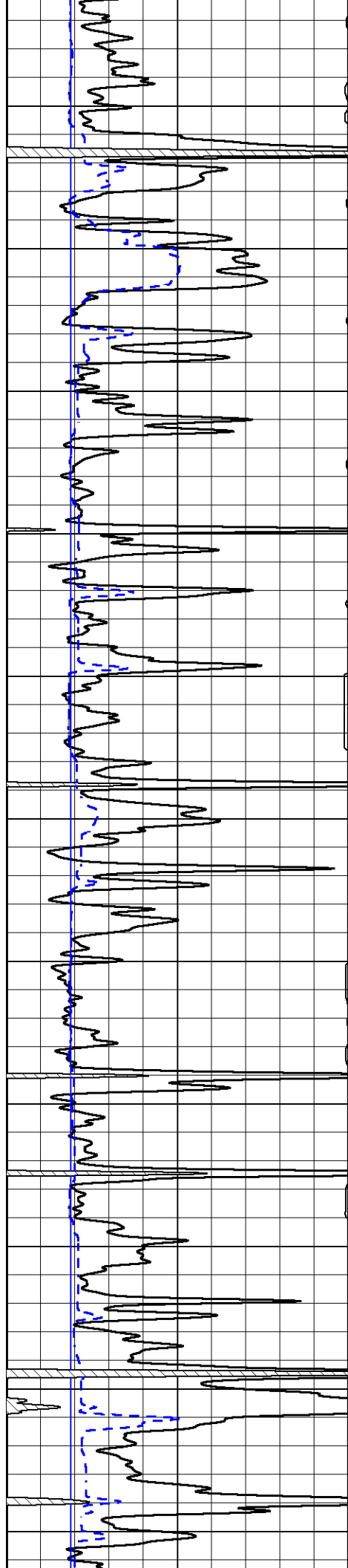
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3750
3800





3850

3900

3950

4000

4050

4100

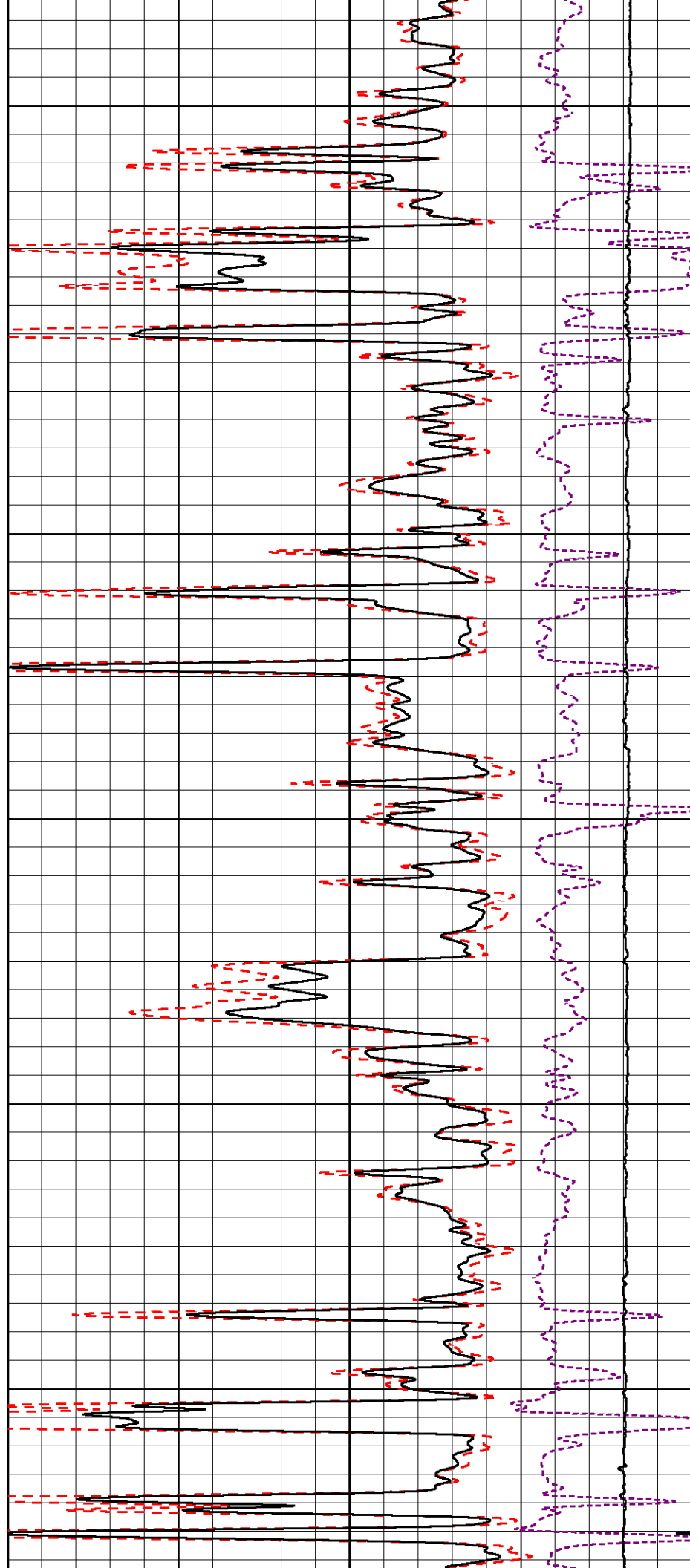
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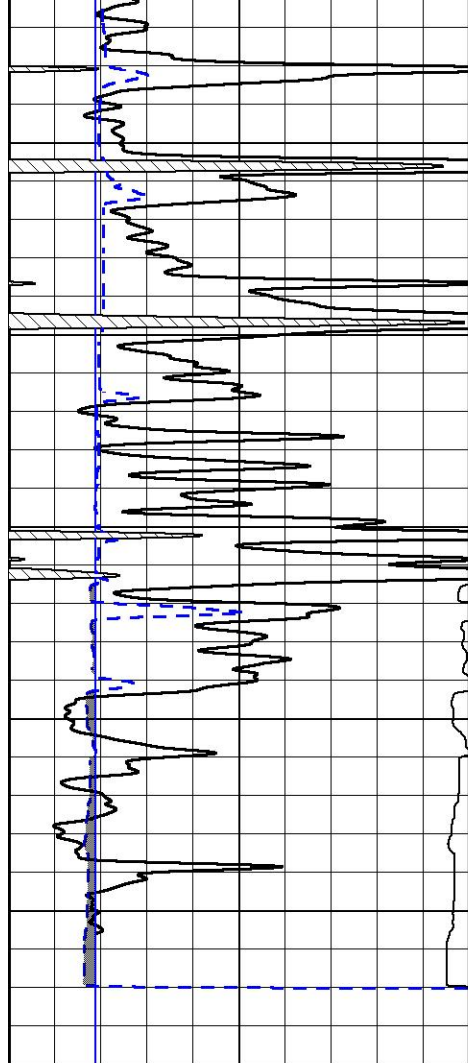
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4250

4300

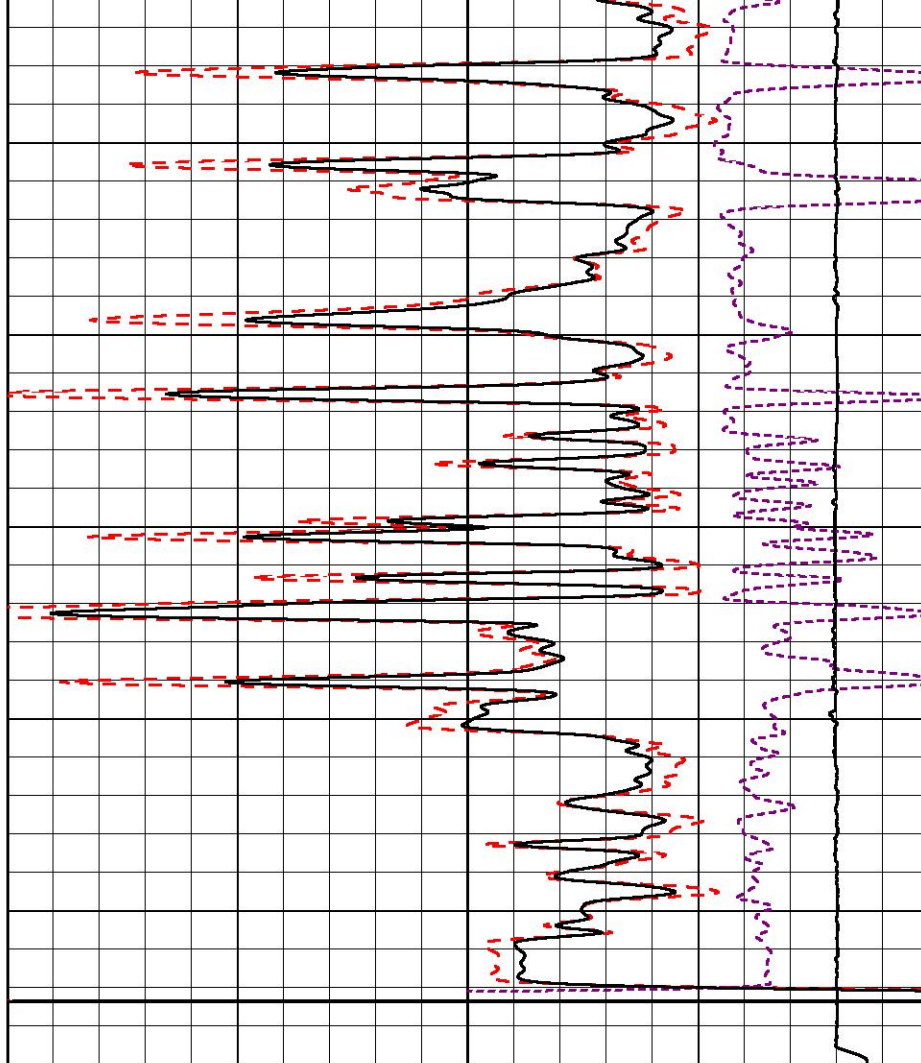
4350





0 GAMMA RAY (GAPI) 150
6 DCAL (in) 16

4400
4450
4500
4550
4600



COMPENSATED DENSITY
(2.71 MA)

30 (pu) -10
2 BULK DENSITY (g/cc) 3
15000 LINE TENSION (lb) 0
-0.25 CORRECTION (g/cc) 0.25

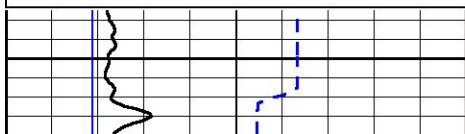


MAIN PASS

Database File american_warrior_glunt_2_23.db
Dataset Pathname stackmel/pass5.1
Presentation Format _CNDLS~1
Dataset Creation Sat Oct 12 22:15:55 2019
Charted by Depth in Feet scaled 1:240

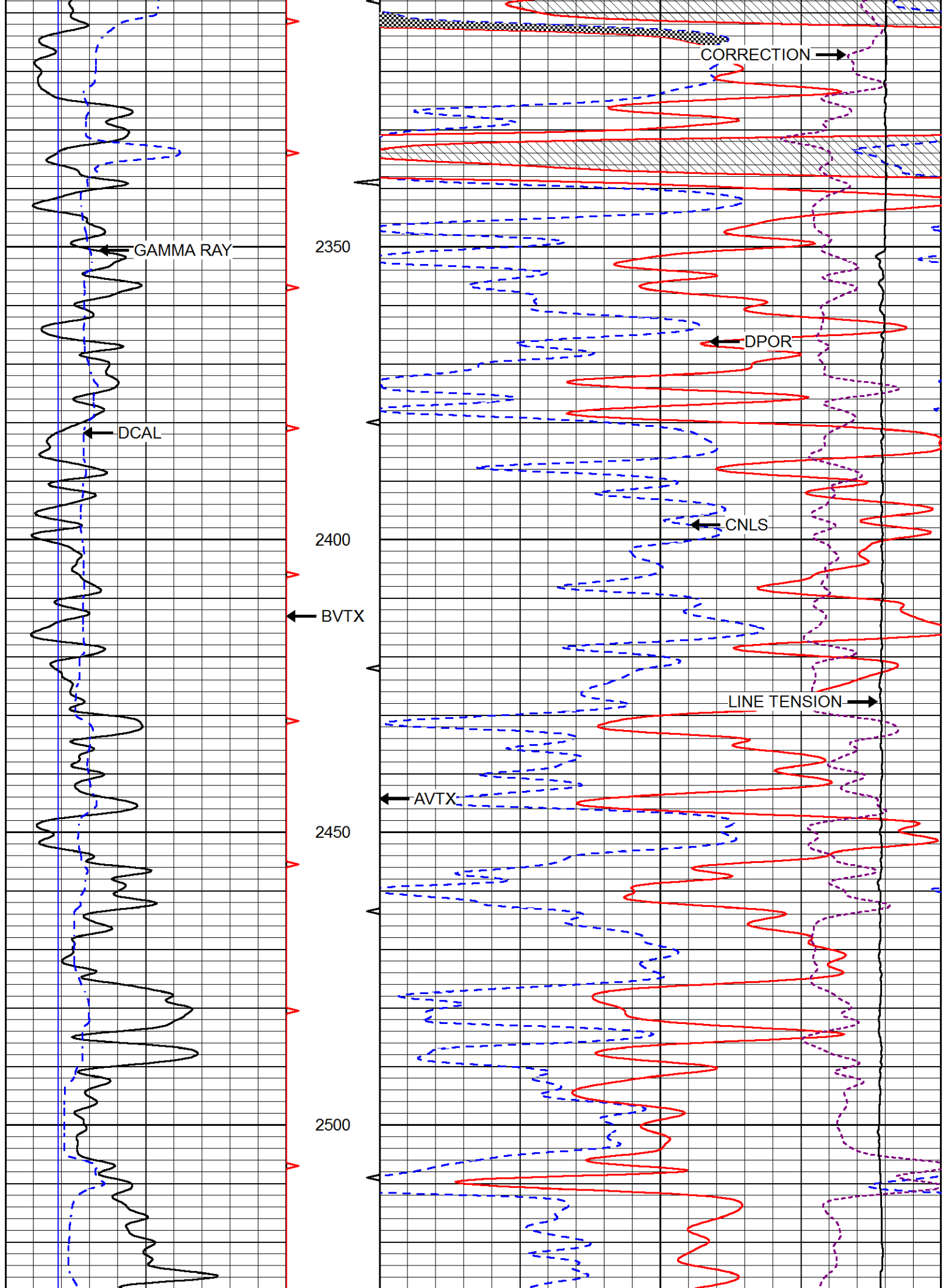
0 GAMMA RAY (GAPI) 150
6 DCAL (in) 16

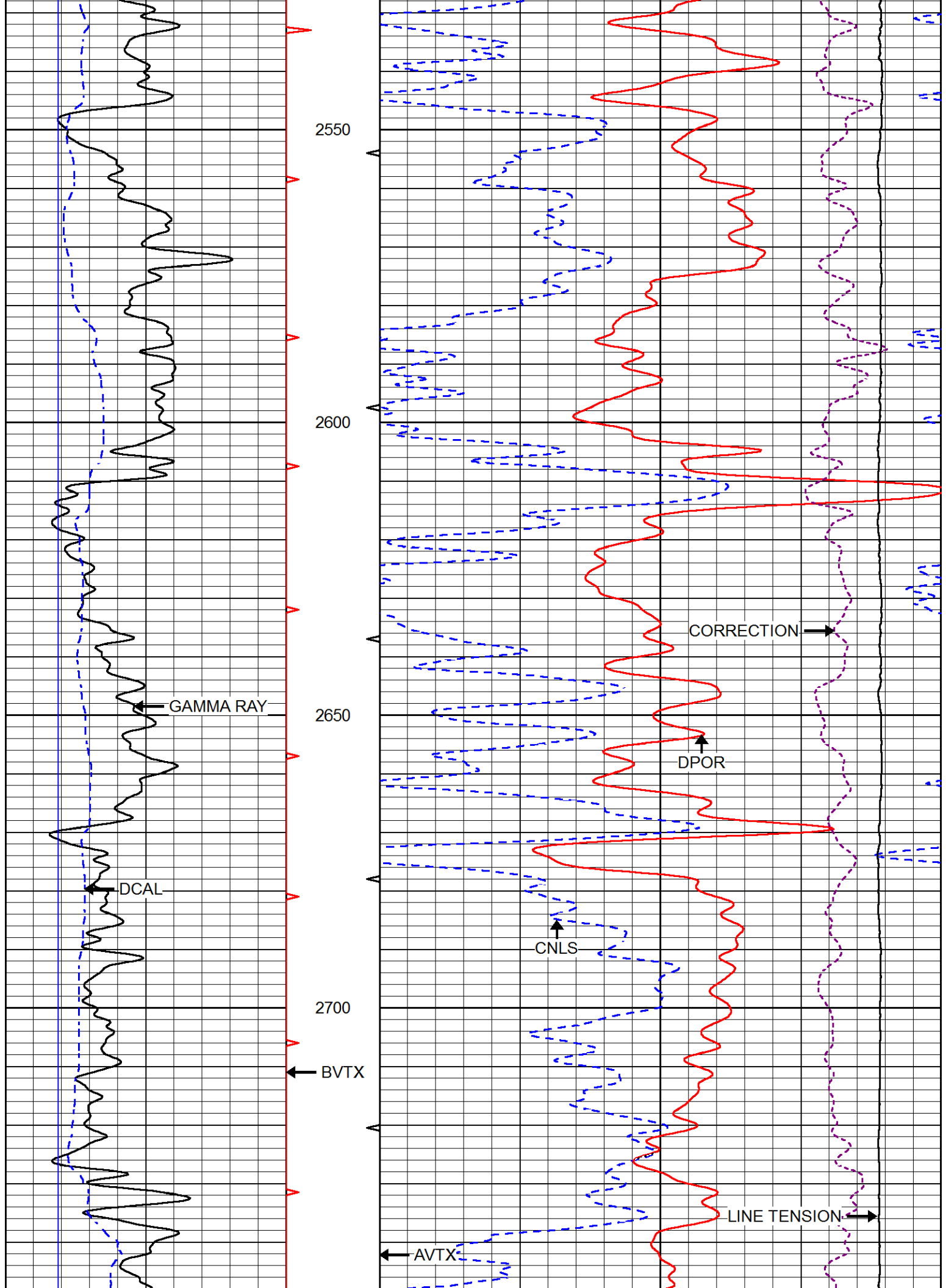
30 CNLS (pu) -10
30 DPOR (pu) -10
10000 LINE TENSION (lb) 0
-0.25 CORRECTION (g/cc) 0.25

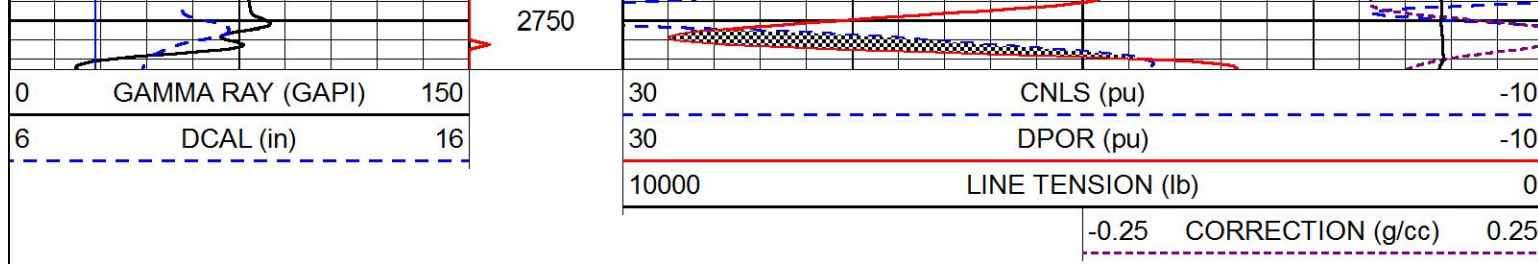


2300



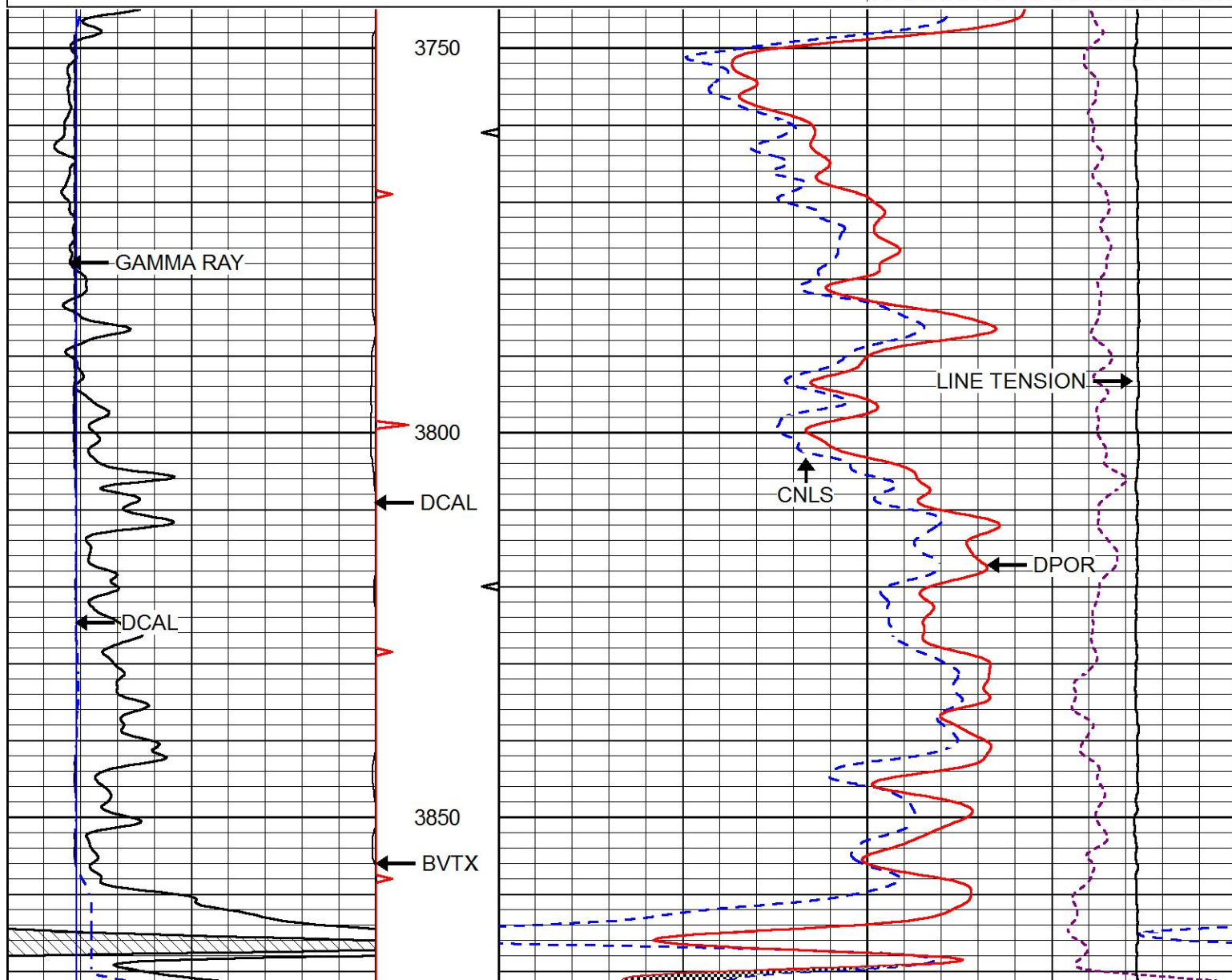
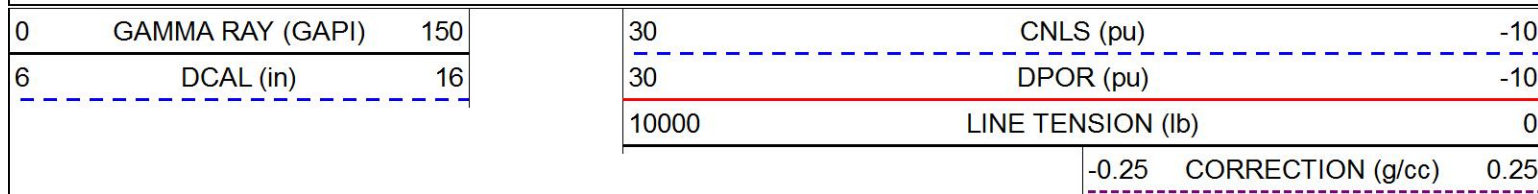


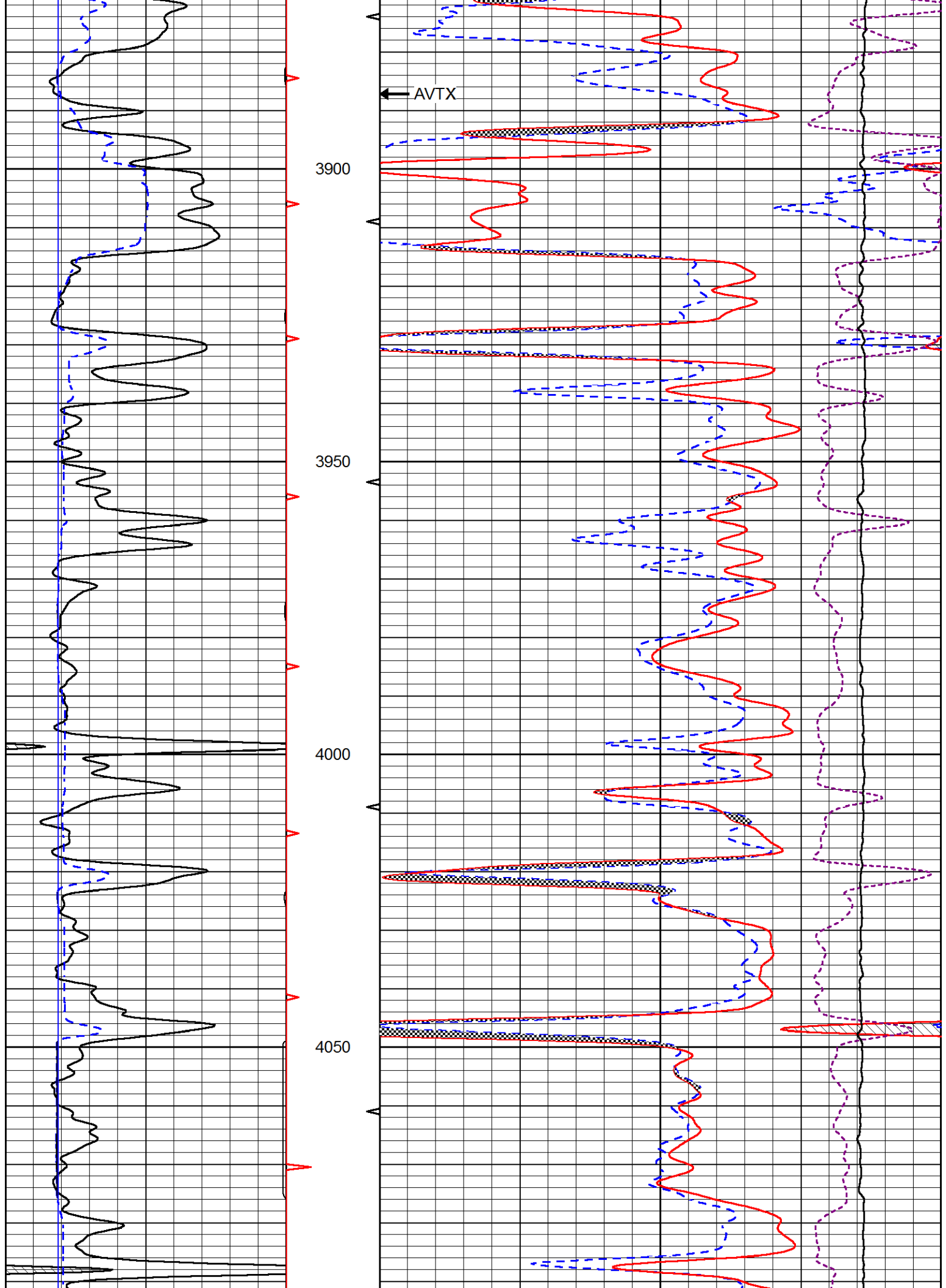


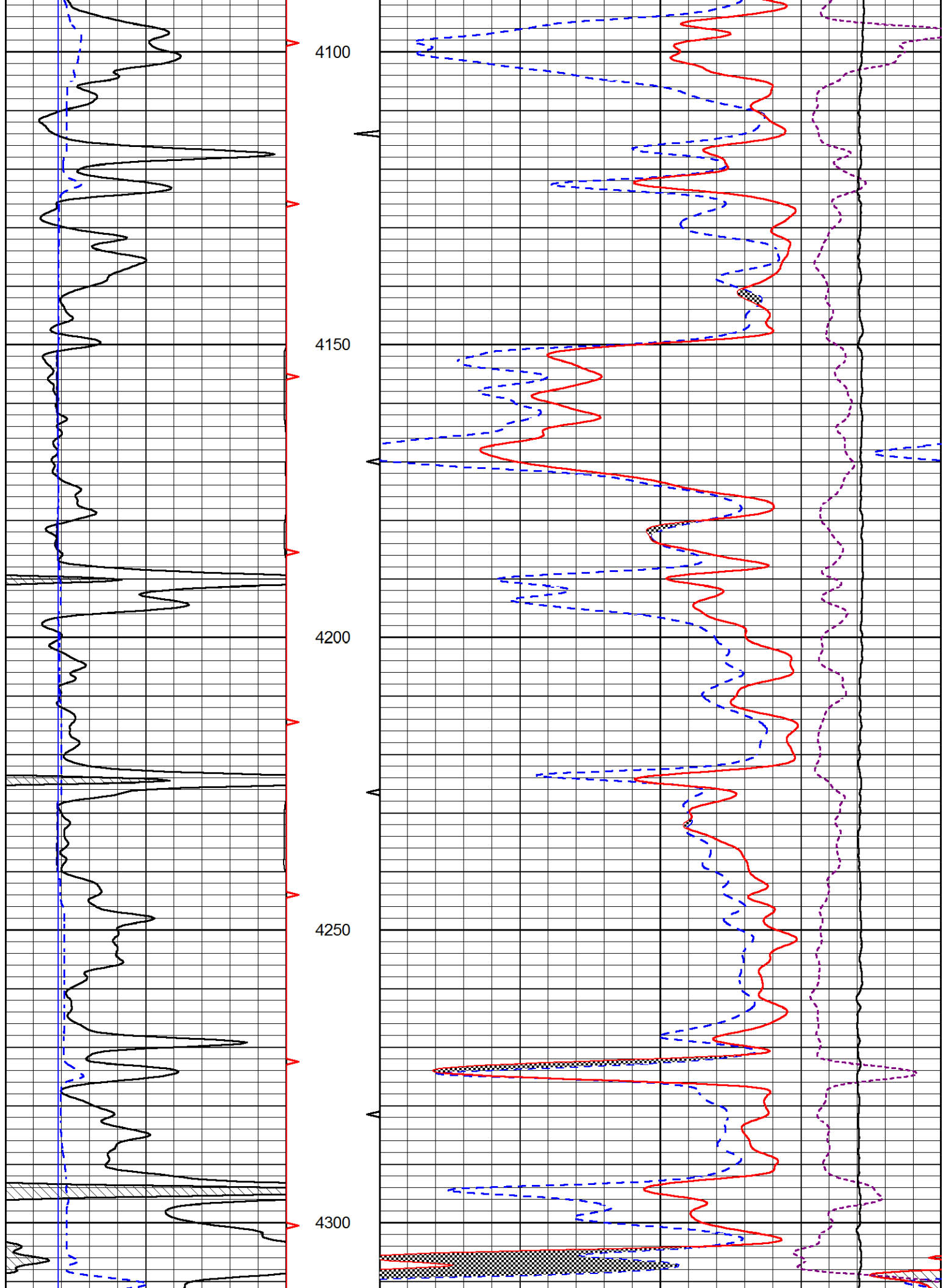


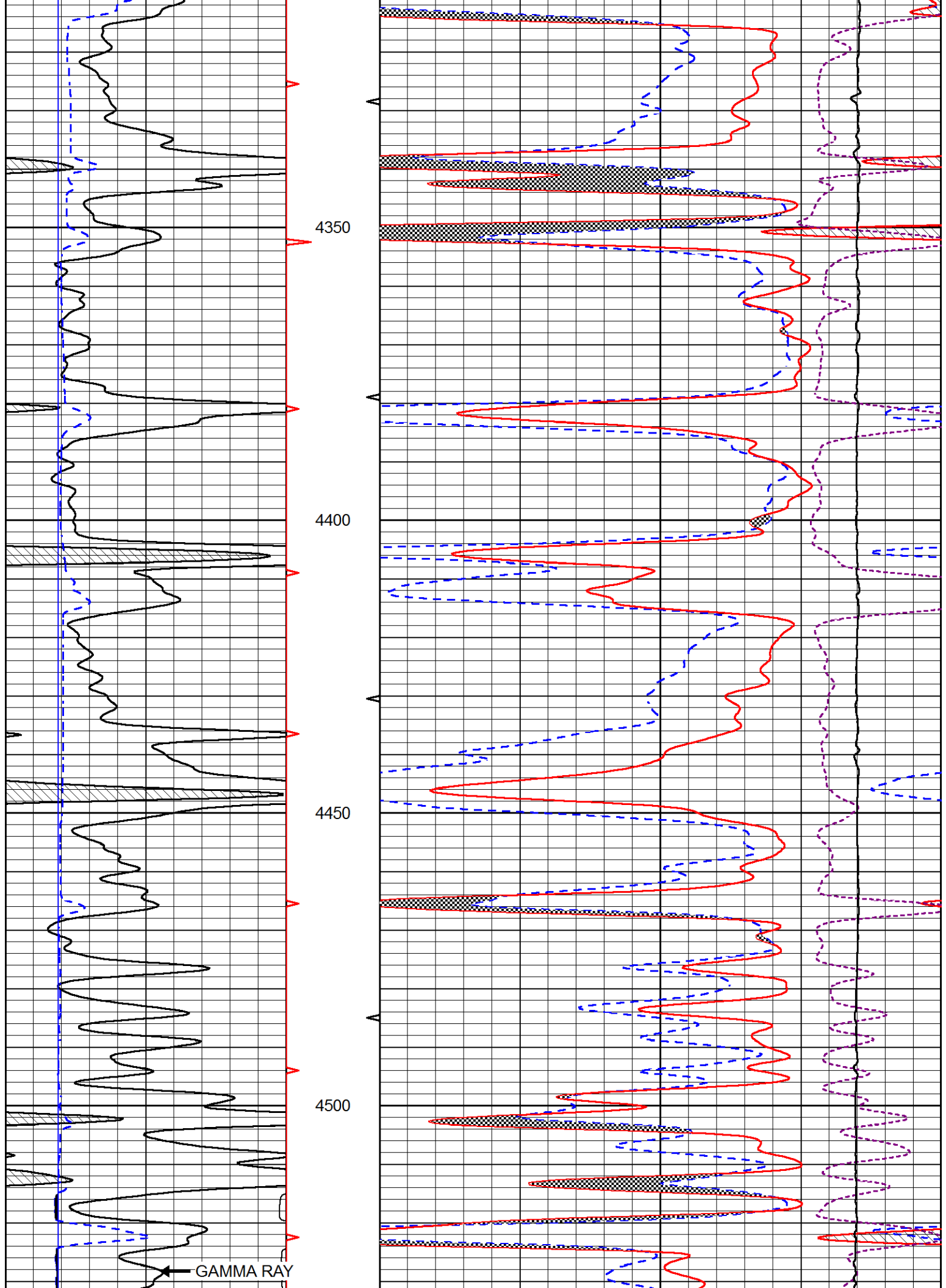
MAIN PASS

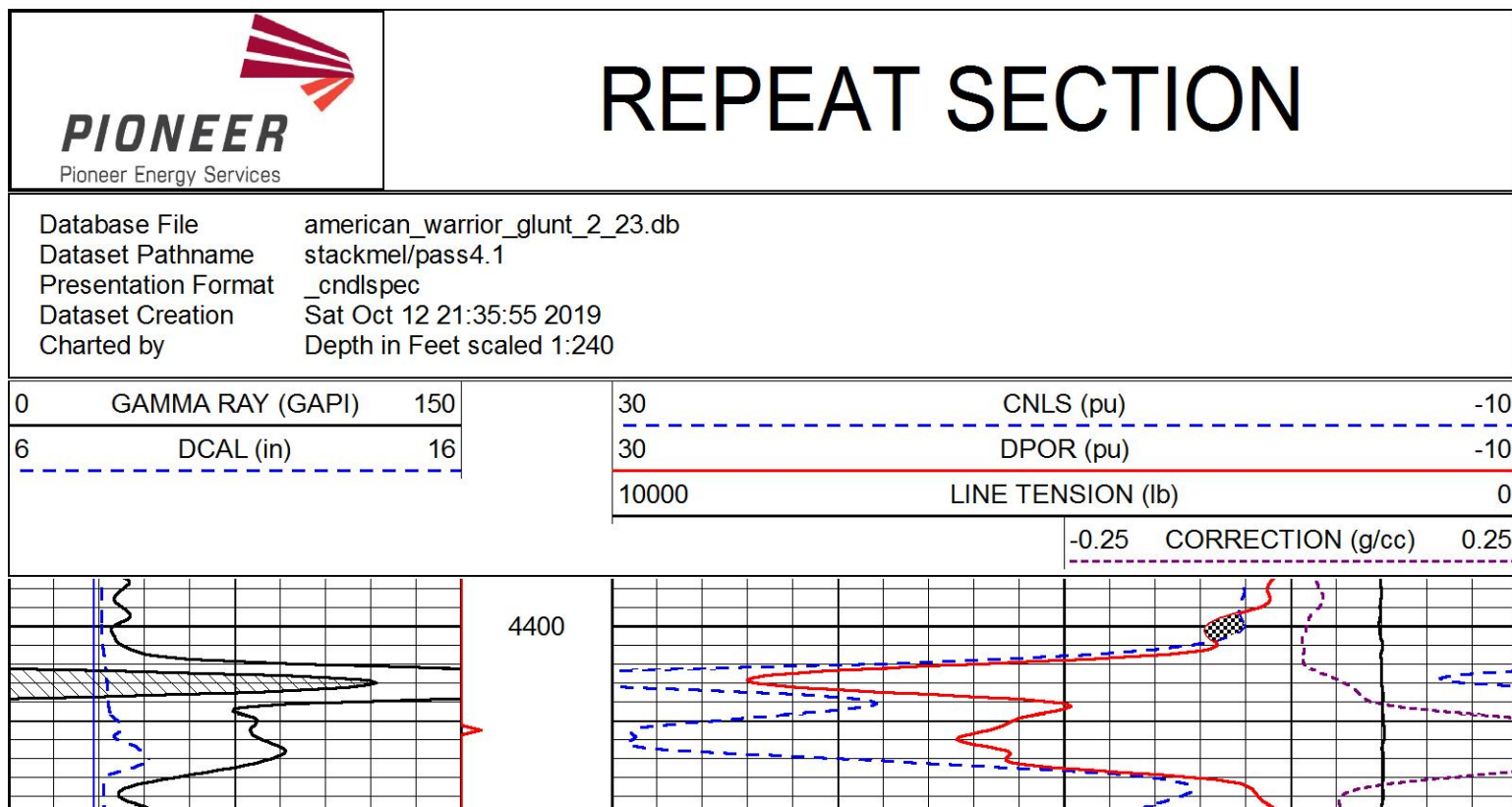
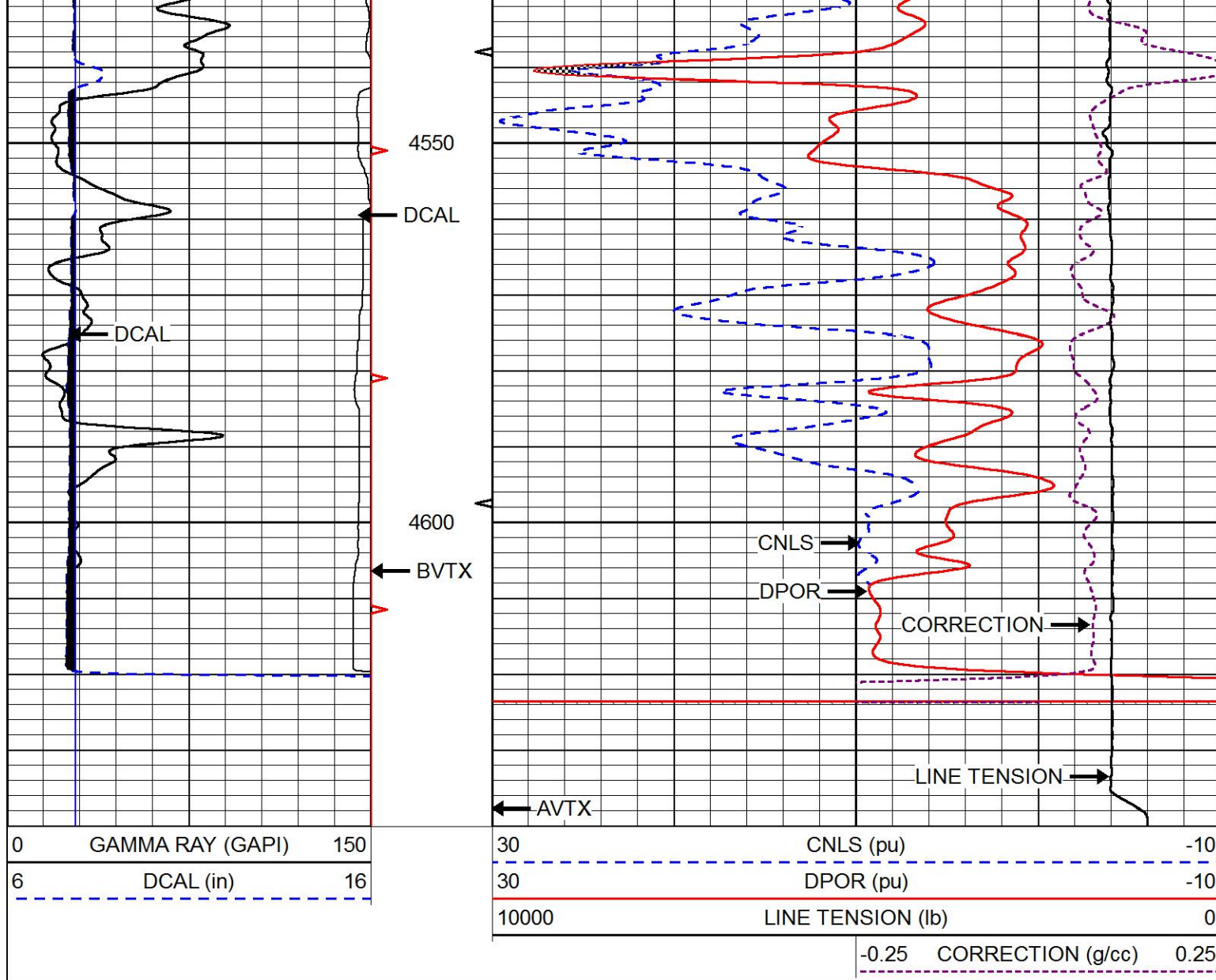
Database File american_warrior_glunt_2_23.db
 Dataset Pathname stackmel/pass5.1
 Presentation Format _CNDLS~1
 Dataset Creation Sat Oct 12 22:15:55 2019
 Charted by Depth in Feet scaled 1:240

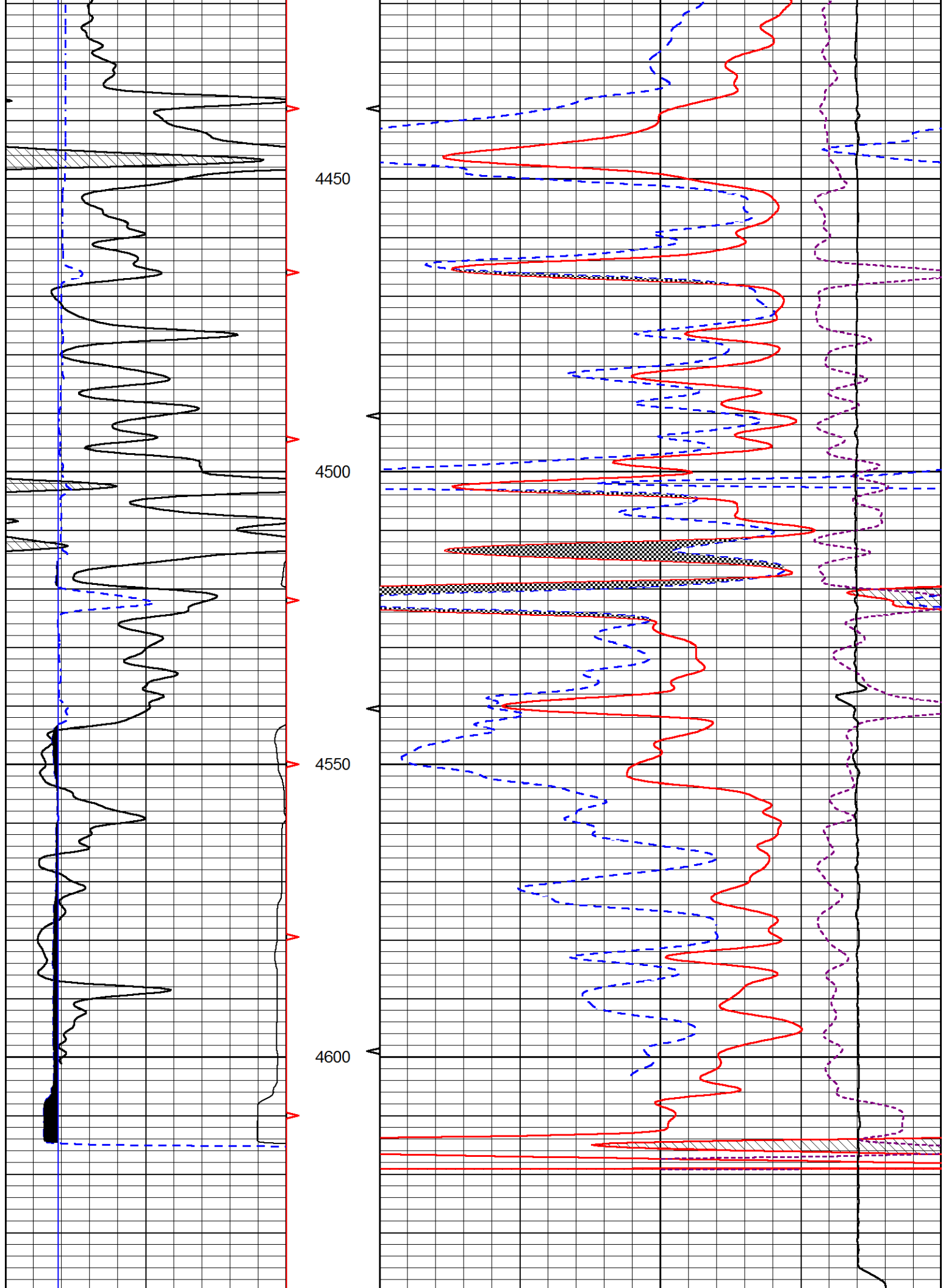












0	GAMMA RAY (GAPI)	150	30	CNLS (pu)	-10
6	DCAL (in)	16	30	DPOR (pu)	-10
			10000	LINE TENSION (lb)	0
				-0.25 CORRECTION (g/cc)	0.25

Calibration Report									
Database File		american_warrior_glunt_2_23.db							
Dataset Pathname		stackmel/pass5.1							
Dataset Creation		Sat Oct 12 22:15:55 2019							
Dual Induction Calibration Report									
Serial-Model:				952-828-PSI HIGH TEMP					
Calibration Performed:				Wed Oct 09 13:38:53 2019					
		Readings		References			Results		
Loop:	Air	Loop		Air	Loop		Gain	Offset	
Deep	167.000	835.000		0.000	255.000	mmho/m	0.470	-41.000	
Medium	0.000	1348.000		142.000	255.000	mmho/m	0.360	-15.000	
Microlog Calibration Report									
Serial-Model:				PSI-01-PSIML					
Performed:				Thu Aug 01 07:57:13 2019					
		Readings		References			Results		
	Zero	Cal		Zero	Cal		m	b	
Normal	0.0000	1.0000		0.0000	1.0000	Ohm-m	17000.0000	-0.7000	
Inverse	0.0000	1.0000		0.0000	1.0000	Ohm-m	21000.0000	-0.8000	
Caliper	1.0001	1.1397		6.5000	18.5000	in	70.0000	-64.4500	
Compensated Density Calibration Report									
Serial-Model:				96-916-M&W					
Source / Verifier:				16955B / 2ci					
Master Calibration Performed:				Sat Oct 12 17:38:31 2019					
Master Calibration									
		Density		Far Detector		Near Detector			
Magnesium	1.755	g/cc		8943.64		10054.60	cps		
Aluminum	2.660	g/cc		1595.61		6242.82	cps		
Spine Angle = 74.54				Density/Spine Ratio = 0.506					
		Size		Reading					
Small Ring	6.00	in		1.75					
Large Ring	15.00	in		1.40					
Compensated Neutron Calibration Report									

Tool Model: M&W
Calibration Performed: WED FEB 13 10:30:30 2019

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:	233-M&W
Tool Model:	M&W
Calibration Performed:	Fri Feb 07 01:42:40 2014
Calibrator Value:	1.0 GAPI
Background Reading:	0.0 cps
Calibrator Reading:	1.0 cps
Sensitivity:	0.5500 GAPI/cps



Company	AMERICAN WARRIOR, INC.
Well	GLUNT #2-23
Field	WILDCAT
County	HODGEMAN
State	KANSAS