



DUAL COMP POROSITY LOG

Company AMERICAN WARRIOR, INC.
 Well DIRKS #1-22
 Field WILDCAT
 County LOGAN
 State KANSAS

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Location: API #: 15-109-21526-00-00
 949' FSL & 1004' FWL
 SEC 22 TWP 14S RGE 35W
 Permanent Datum GROUND LEVEL Elevation 3121'
 Log Measured From KELLY BUSHING
 Drilling Measured From KELLY BUSHING

Other Services
 DIL/MEL
 BHCS
 Elevation
 K.B. 3129'
 D.F. N/A
 G.L. 3121'

Date	10/20/2017						
Run Number	ONE						
Type Log	CNL/CDL						
Depth Driller	4790'						
Depth Logger	4789'						
Bottom Logged Interval	4760'						
Top Logged Interval	3600'						
Type Fluid In Hole	CHEMICAL						
Salinity, PPM CL	8200						
Density	9.4						
Level	FULL						
Max. Rec. Temp. F	124						
Operating Rig Time	5 HOURS						
Equipment -- Location	91 HAYS						
Recorded By	D. SCHMIDT						
Witnessed By	LUKE THOMPSON						
Borehole Record							
Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	12.25"	0'	211'	8.625"	23#	0'	TD
TWO	7.875"	211'	TD				
Casing Record							

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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.

RUSSELL SPRINGS,
 SOUTH ON HWY 25 TO CURVE,
 2 WEST TO 240 RD, 5 SOUTH TO JAYHAWK RD,
 1/2 EAST, 1/2 SOUTH,
 EAST 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		This Log Record Was Witnessed By	
Engineer: D. SCHMIDT	Operator:	Primary Witness: LUKE THOMPSON	Secondary Witness:
Operator:	Operator:	Secondary Witness:	Secondary Witness:
Operator:		Secondary Witness:	

Top - Bottom

M	A	SZCOR	NPORSEL	FLUIDDEN g/cc	MATRXDEN g/cc	SPSHIFT mV	SNDERRM mmho/m
2	1	Off	Limestone	1	2.71	300	0
SNDERR mmho/m	SRFTEMP degF	CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in
0	80	0	5.5	0	4789	124	7.875

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58		GR-M&W (89)	3.00	3.50	50.00
CNLSC CNSSC	37.48 36.73		CNT-M&W (207-MW)	5.50	3.50	100.00
LSD DCAL SSD	28.43 28.42 27.93		CDL-M&W (90-1031)	8.50	4.00	250.00
MCAL MI MN	19.83 19.83 19.83		ML-PSIML (PSI-01) GO Micro log tools converted to Simplec electronics	7.58	4.00	65.00
RLL3F RLL3	15.80 15.80					

CILD 8.00

CILM 4.70

SP 0.20

DIL-M&W (PSI 91)

18.50

3.50

220.00

Dataset: american_warrior_dirks 1-22.db: field/well/STKML/pass5.1
 Total length: 43.08 ft
 Total weight: 685.00 lb
 O.D.: 4.00 in



MAIN PASS

Database File: american_warrior_dirks 1-22.db
 Dataset Pathname: STKML/pass5.1
 Presentation Format: cdl
 Dataset Creation: Fri Oct 20 19:20:36 2017
 Charted by: Depth in Feet scaled 1:600

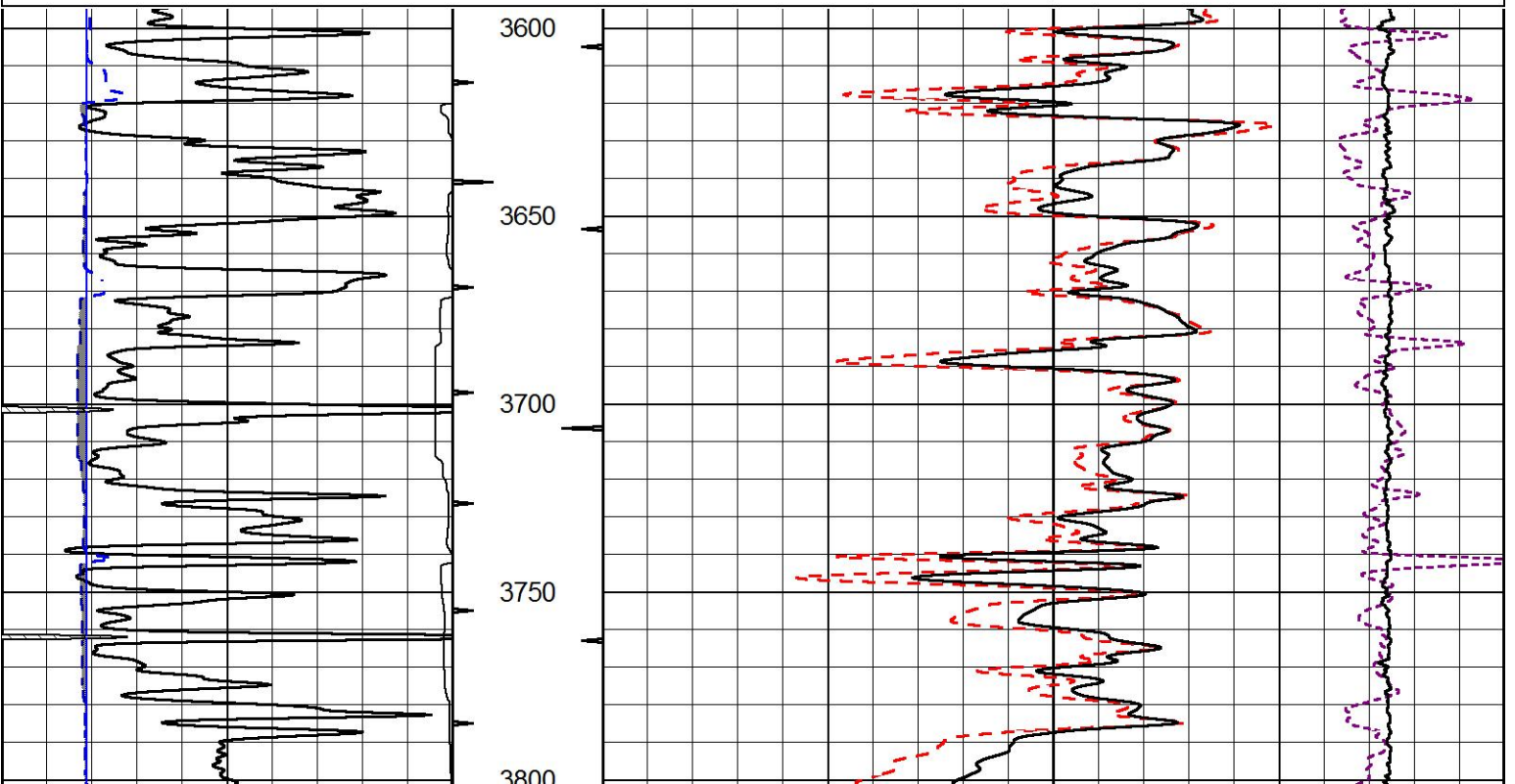
0	Gamma Ray (GAPI)	150
6	Caliper (in)	16

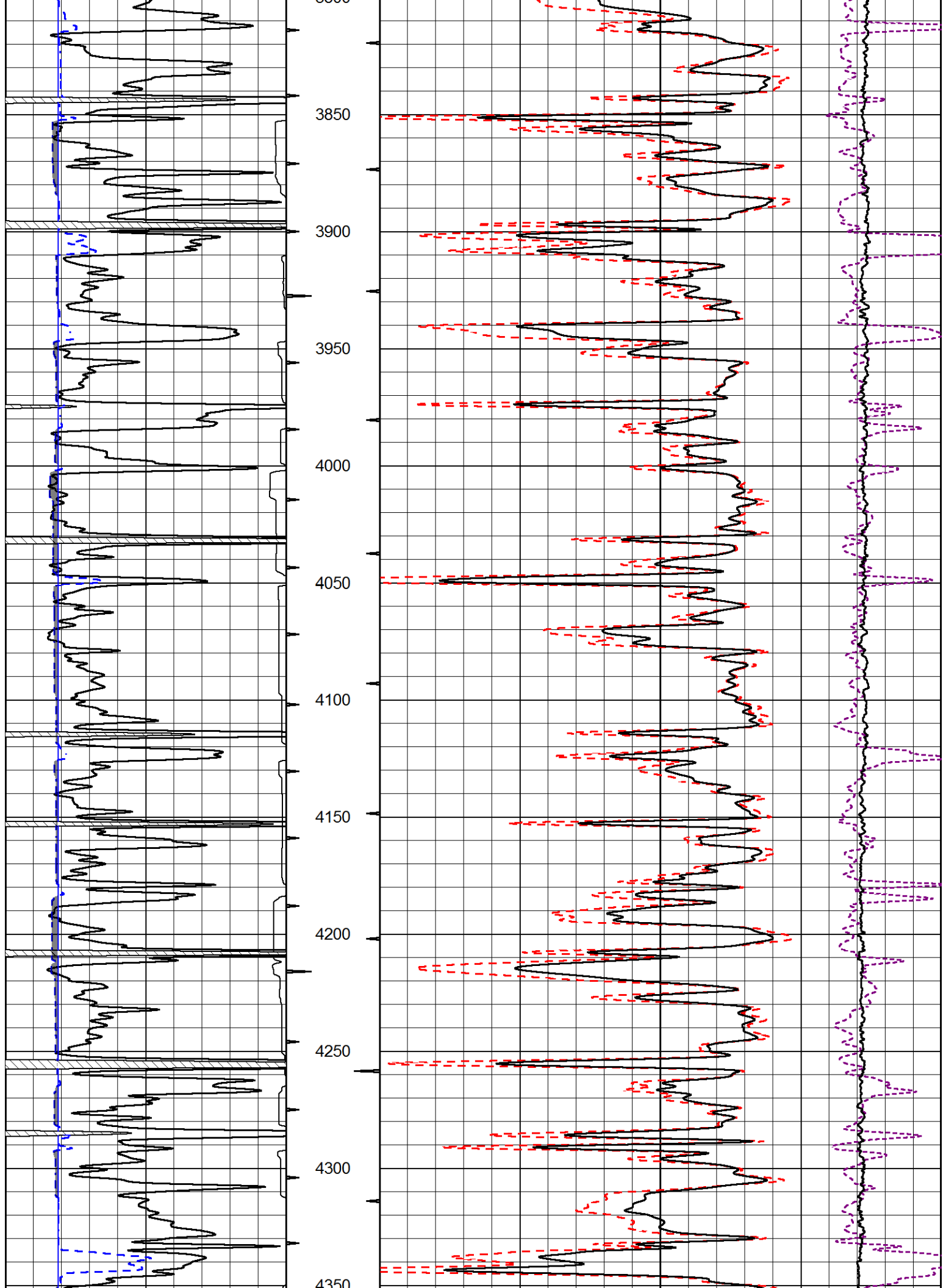
Compensated Density (2.71 MA)	
30	(pu) -10

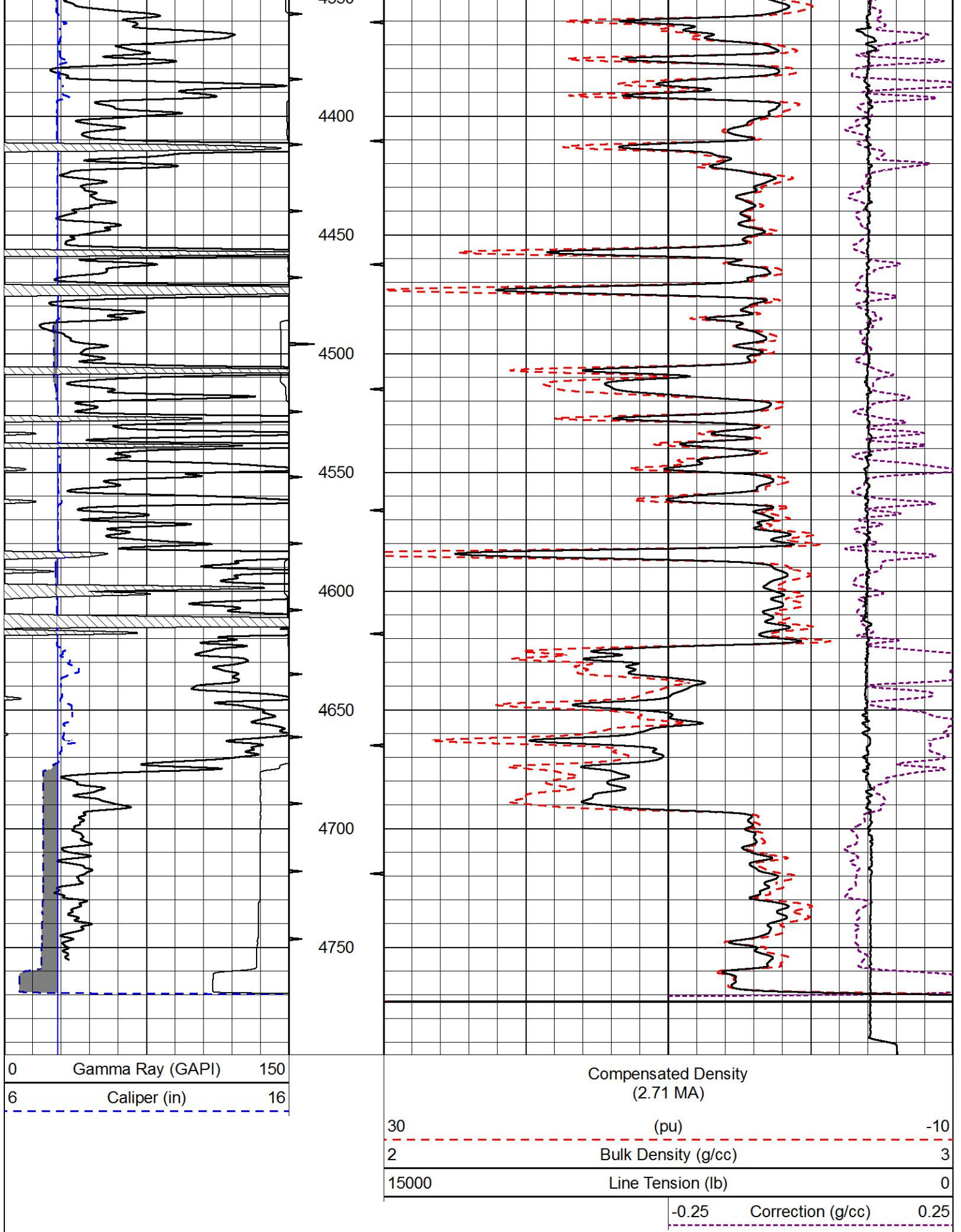
2	Bulk Density (g/cc) 3

15000	Line Tension (lb) 0

-0.25	Correction (g/cc) 0.25



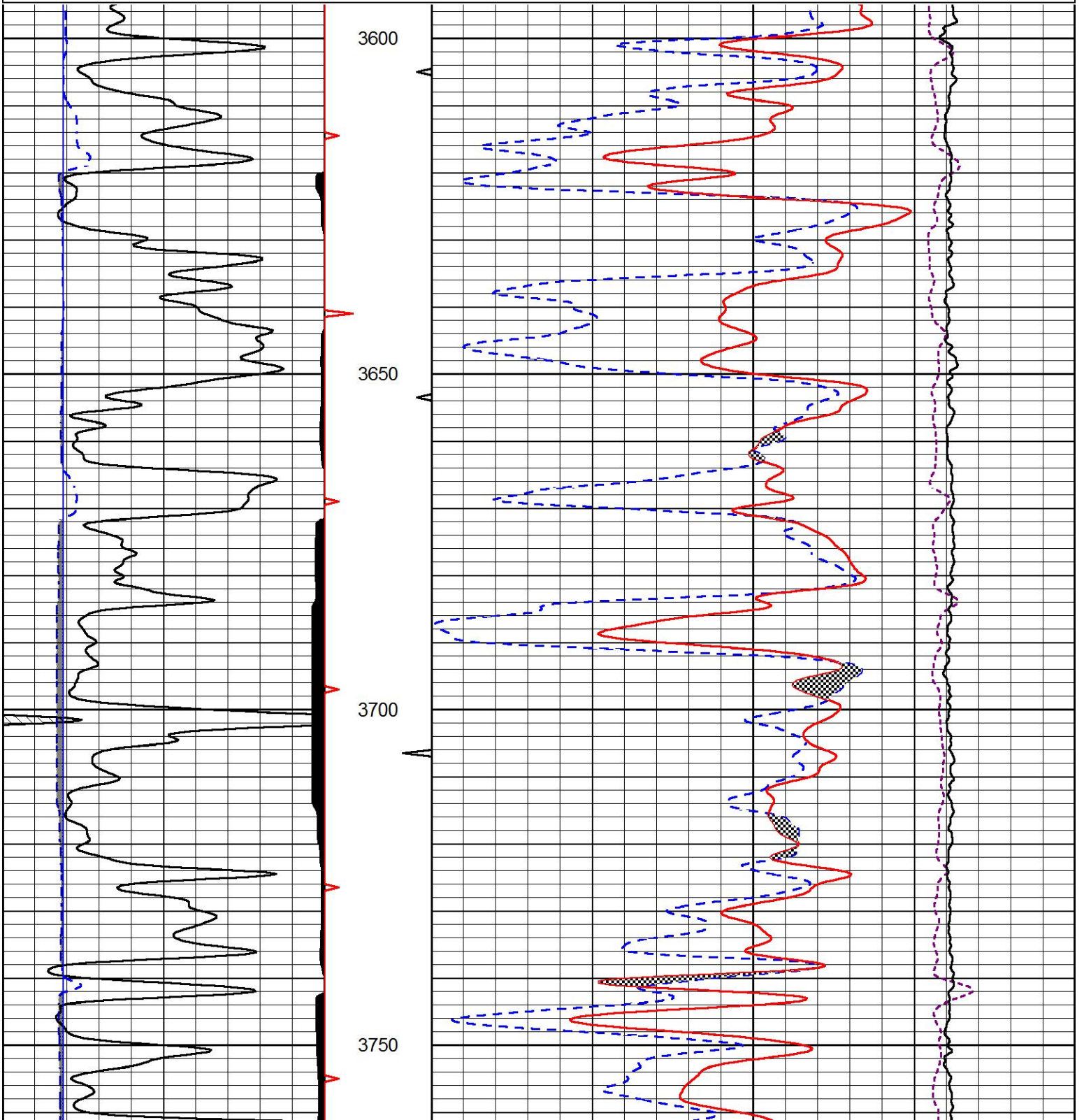


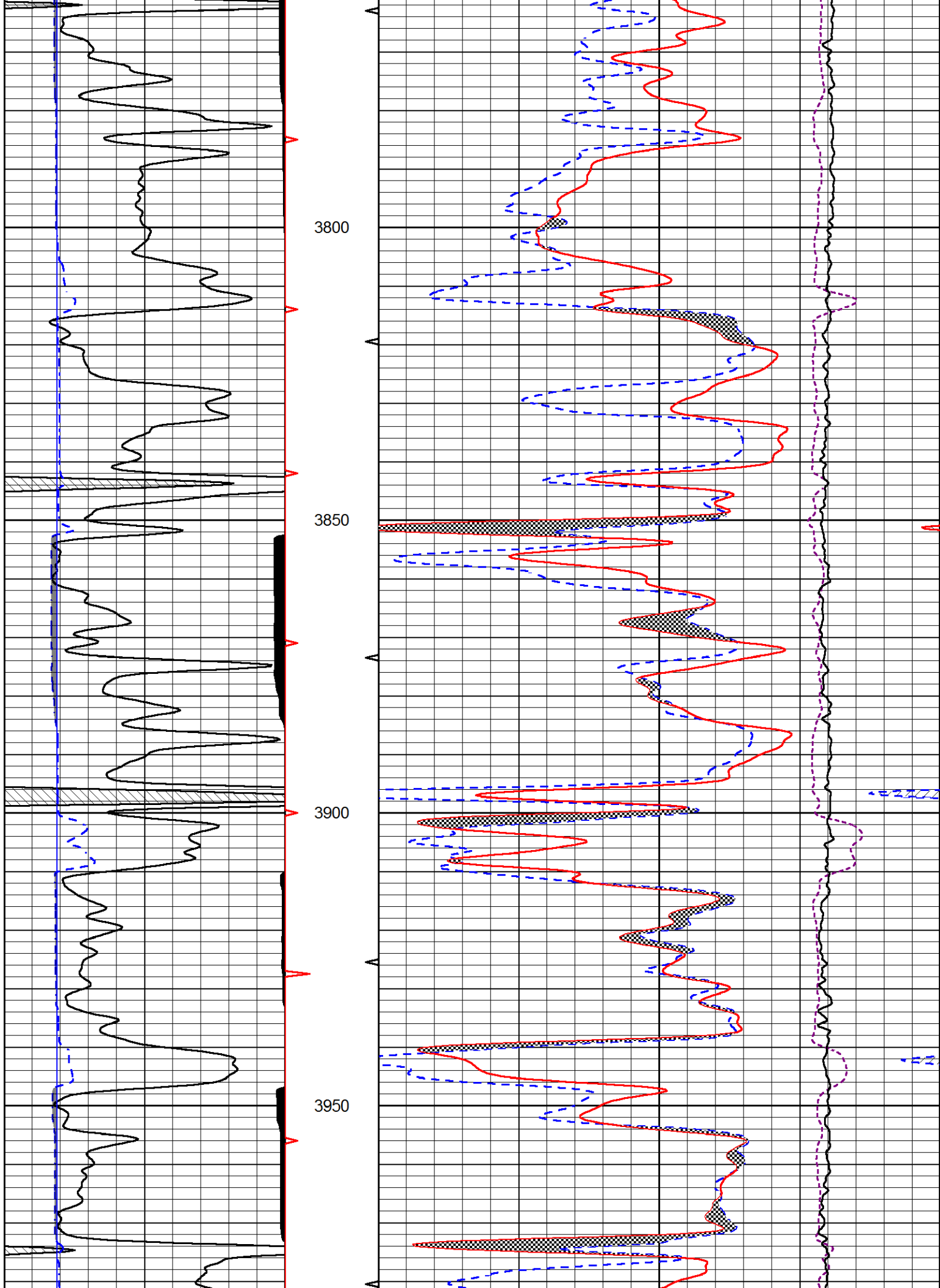


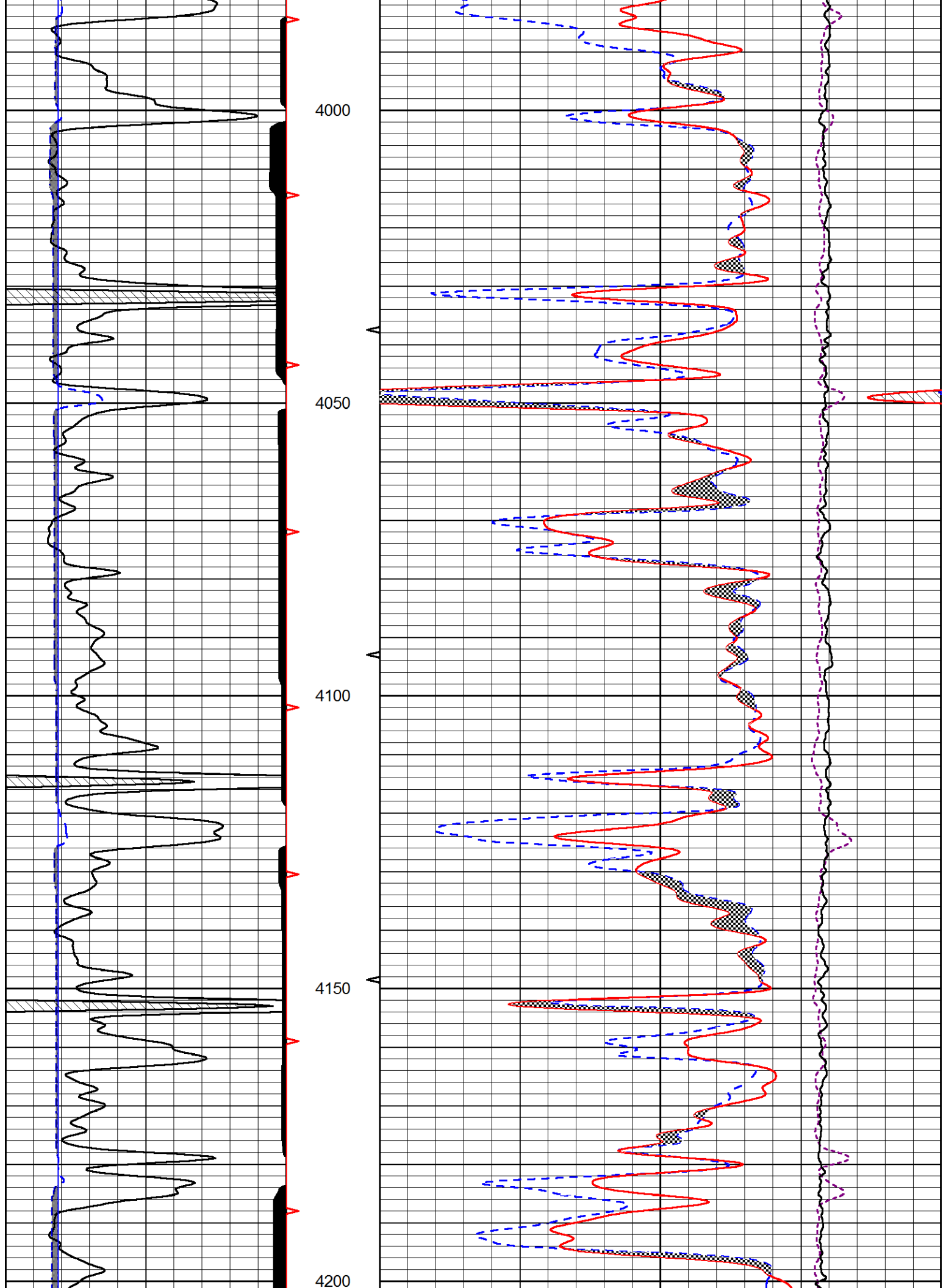
Database File american_warrior_dirks_1-22.db
 Dataset Pathname STKML/pass5.1
 Presentation Format cndlspec
 Dataset Creation Fri Oct 20 19:20:36 2017
 Charted by Depth in Feet scaled 1:240

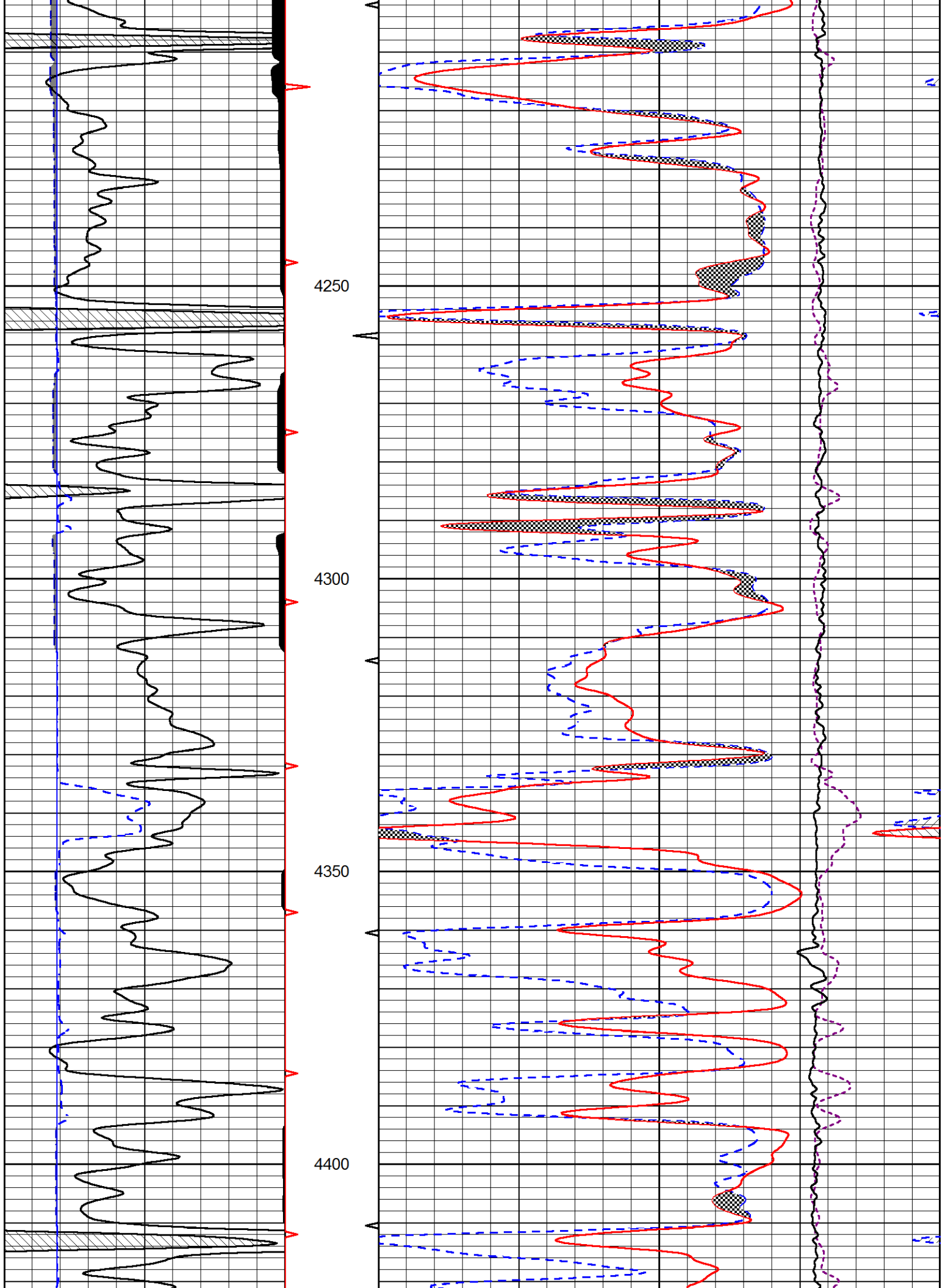
0	Gamma Ray (GAPI)	150
6	DCAL (in)	16

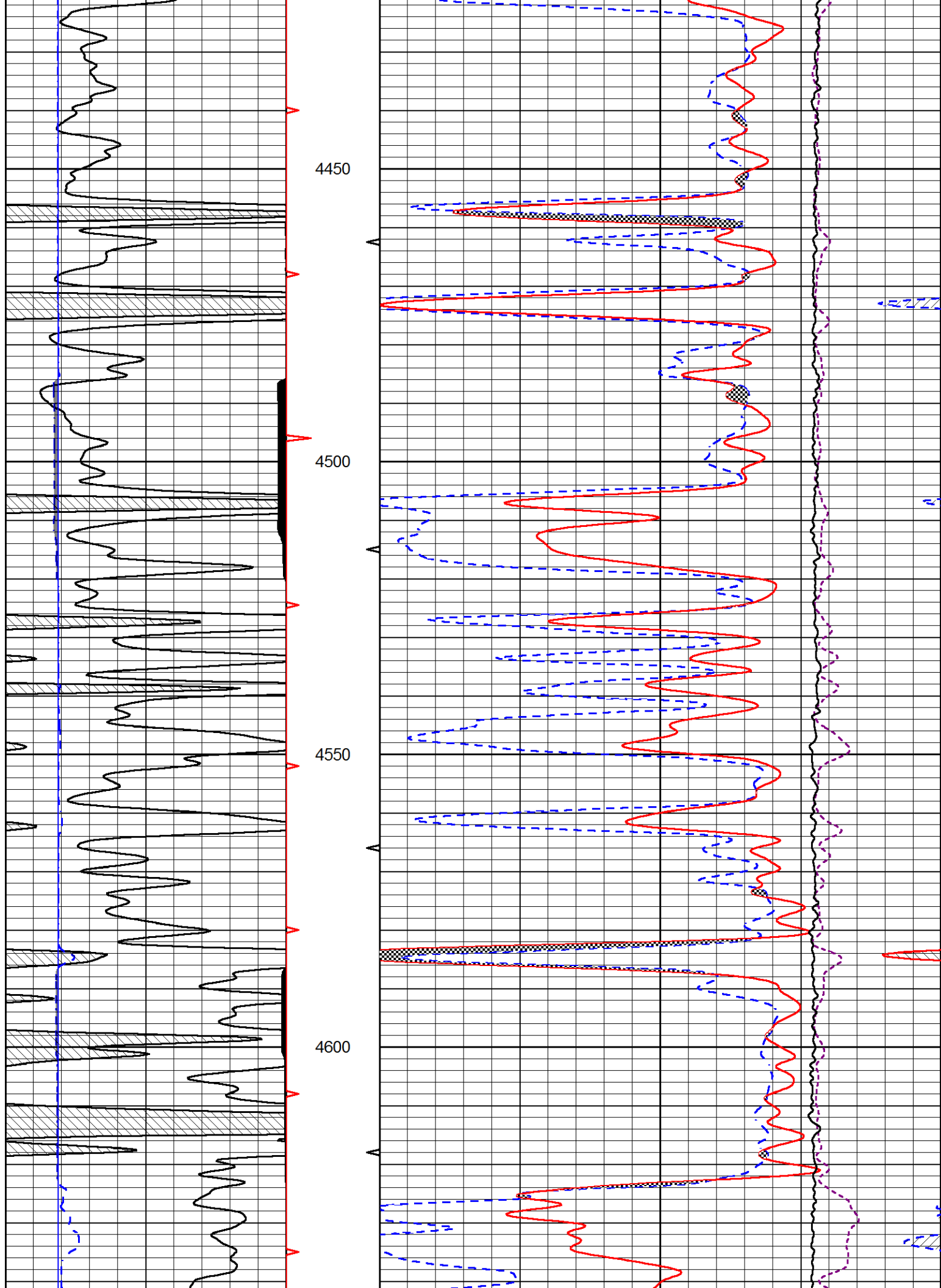
30	CNLS (pu)	-10
30	Compensated Density 2.71 g/cc (pu)	-10
10000	Line Tension (lb)	0
-0.75	Correction (g/cc)	0.75

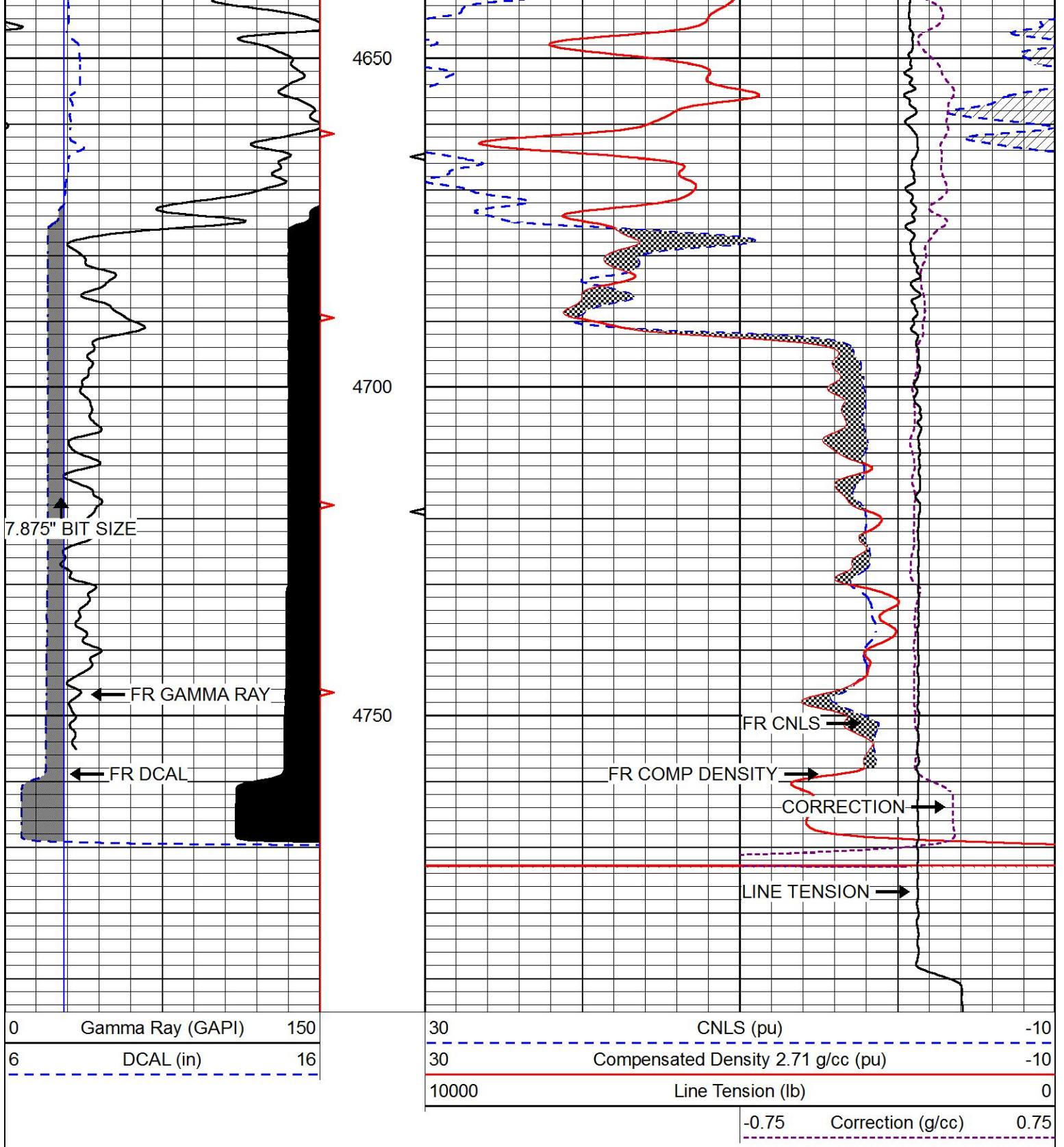












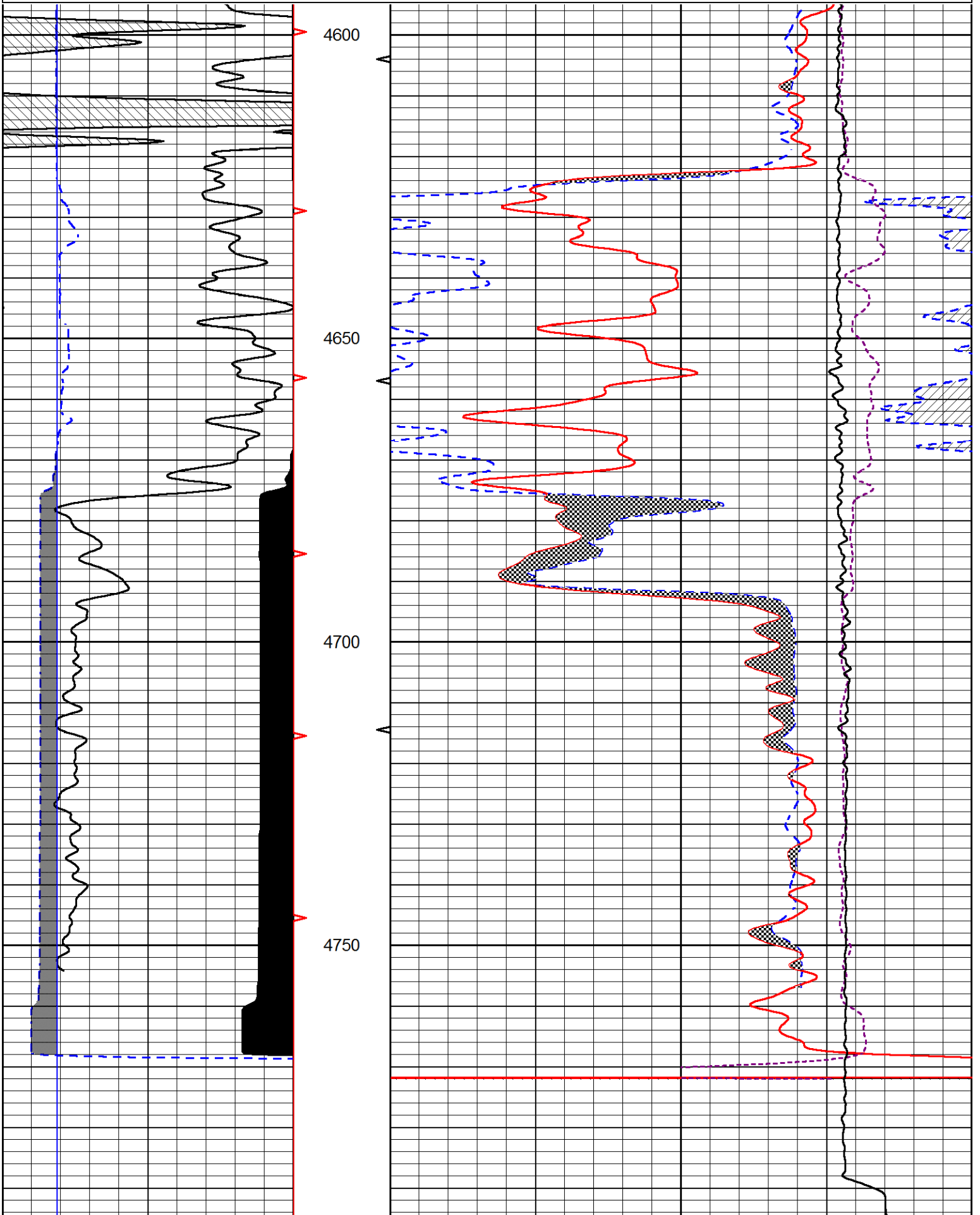
REPEAT SECTION

Database File american_warrior_dirks 1-22.db
 Dataset Pathname STKML/pass3.1
 Presentation Format cndlspec
 Dataset Creation Fri Oct 20 19:56:14 2017
 Charted by Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
6	DCAL (in)	16

30	CNLS (pu)	-10
30	Compensated Density 2.71 g/cc (pu)	-10
10000	Line Tension (lb)	0

-0.75 Correction (g/cc) 0.75



0	Gamma Ray (GAPI)	150	30	CNLS (pu)	-10
6	DCAL (in)	16	30	Compensated Density 2.71 g/cc (pu)	-10
			10000	Line Tension (lb)	0
				-0.75 Correction (g/cc)	0.75

Calibration Report

Database File american warrior_dirks 1-22.db
 Dataset Pathname STKML/pass5.1
 Dataset Creation Fri Oct 20 19:20:36 2017

Dual Induction Calibration Report

Serial-Model: PSI 91-M&W
 Calibration Performed: Wed Sep 13 22:23:16 2017

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	166.796	835.089	0.000	255.800	mmho/m	0.520	-10.000
Medium	142.009	1348.560	0.000	255.800	mmho/m	0.360	-32.250

Microlog Calibration Report

Serial-Model: PSI-01-PSIML
 Performed: Wed Sep 06 19:50:56 2017

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	71000.0000	-2.7000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	104000.0000	-3.1000
Caliper	1.0001	1.1397	6.5000	18.5000	in	100.0000	-97.1250

Compensated Density Calibration Report

Serial-Model: 90-1031-M&W
 Source / Verifier: 16955B / 2ci
 Master Calibration Performed: Wed Sep 06 19:51:03 2017

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4903.44	6153.79	cps
Aluminum	2.640	g/cc	934.50	4021.31	cps
Spine Angle = 75.61			Density/Spine Ratio = 0.517		
	Size		Reading		
Small Ring	8.00	in	1.84		
Large Ring	22.00	in	1.46		

Compensated Neutron Calibration Report

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

Tool Model: M&W
Calibration Performed: WED SEP 6 10:30:30 2017

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	
Tool Model:	M&W	
Calibration Performed:	Wed Sep 06 19:51:14 2017	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.6000	GAPI/cps



PIONEER
Pioneer Energy Services

Company	AMERICAN WARRIOR, INC.
Well	DIRKS #1-22
Field	WILDCAT
County	LOGAN
State	KANSAS