



PIONEER

Pioneer Energy Services

DUAL COMP POROSITY LOG

Company **AMERICAN WARRIOR, INC.**

Well **CRIST #2-28**

Field **UNKNOWN**

County **FINNEY** State **KANSAS**

Location: API #: 15-055-22485-00-00

1550' FSL & 2150' FWL

Other Services

SEC 28 TWP 21S RGE 34W

DIL/MEL

Permanent Datum GROUND LEVEL Elevation 2970'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Elevation
K.B. 2981'
D.F. N/A
G.L. 2970'

Company **AMERICAN WARRIOR, INC.**
Well **CRIST #2-28**
Field **UNKNOWN**
County **FINNEY**
State **KANSAS**

Date **4/23/2018**

Run Number **ONE**

Type Log **CNL/CDL**

Depth Driller **5000'**

Depth Logger **4996'**

Bottom Logged Interval **4967'**

Top Logged Interval **3700'**

Type Fluid In Hole **CHEMICAL**

Salinity, PPM CL **2300**

Density **9.4**

Level **FULL**

Max. Rec. Temp. F **126**

Operating Rig Time **3 HOURS**

Equipment -- Location **91 HAYS**

Recorded By **D. SCHMIDT**

Witnessed By **LUKE THOMPSON**

Borehole Record

Casing Record

Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	12.25"	0'	1743'	8.625"	23#	0'	1743'
TWO	7.875"	1743'	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.

GARDEN CITY,
SOUTH TO GANO RD, 10 WEST,
NORTH AND EAST INTO

Log Measured From: KELLY BUSHING 11 Ft. Above Permanent Datum

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

Your Pioneer Energy Services Crew

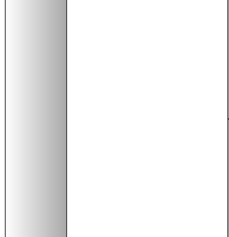
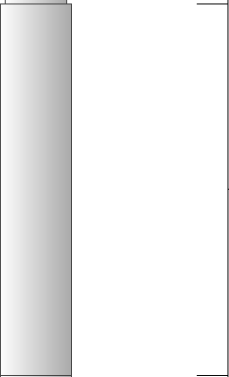
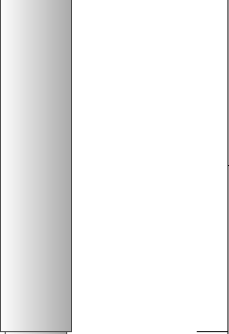
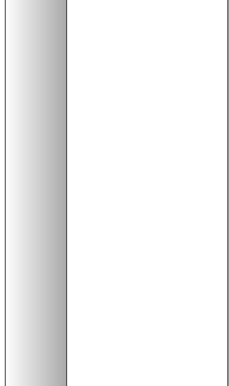
Engineer: D. SCHMIDT
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

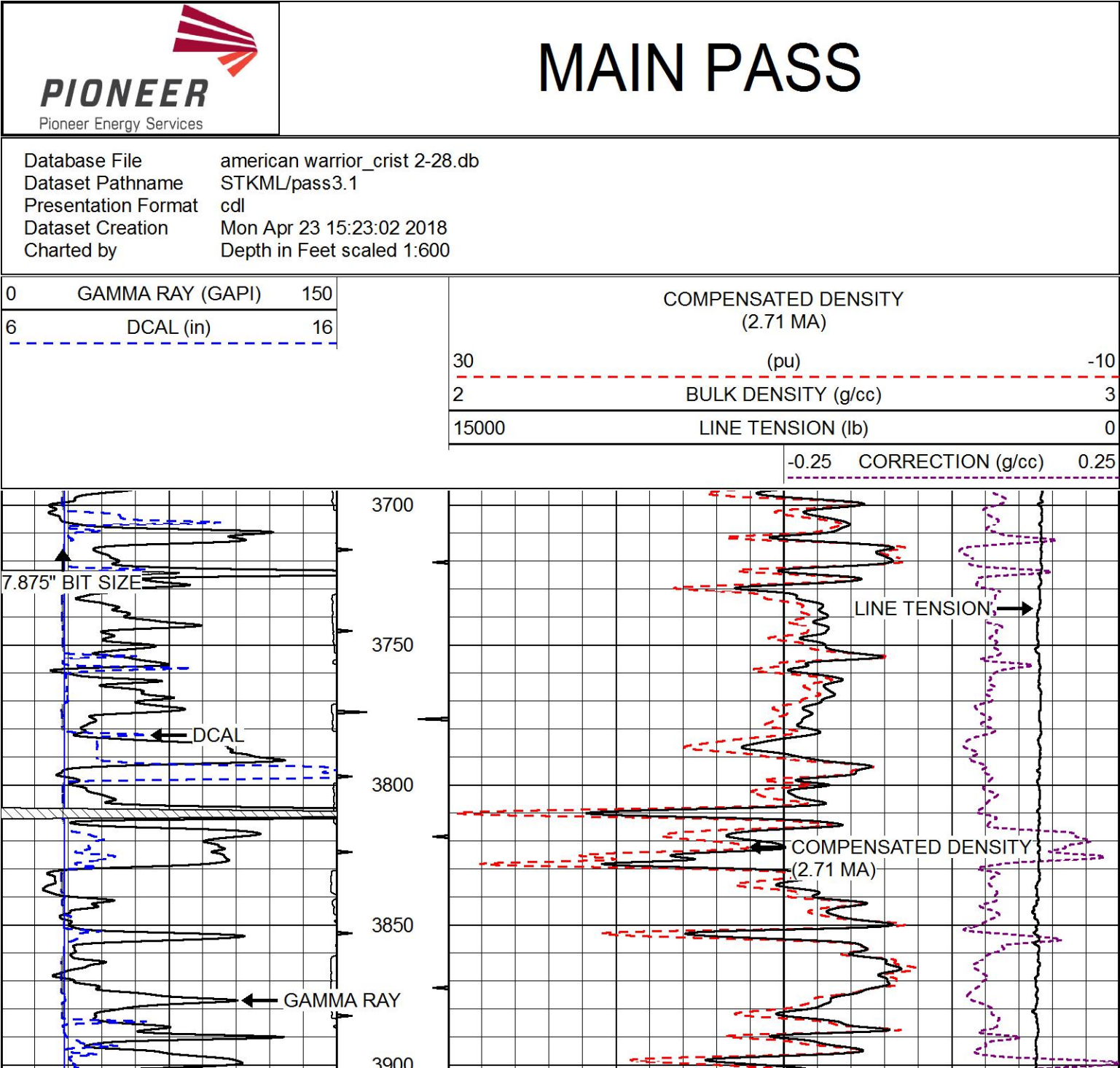
Primary Witness: LUKE THOMPSON
Secondary Witness:
Secondary Witness:
Secondary Witness:

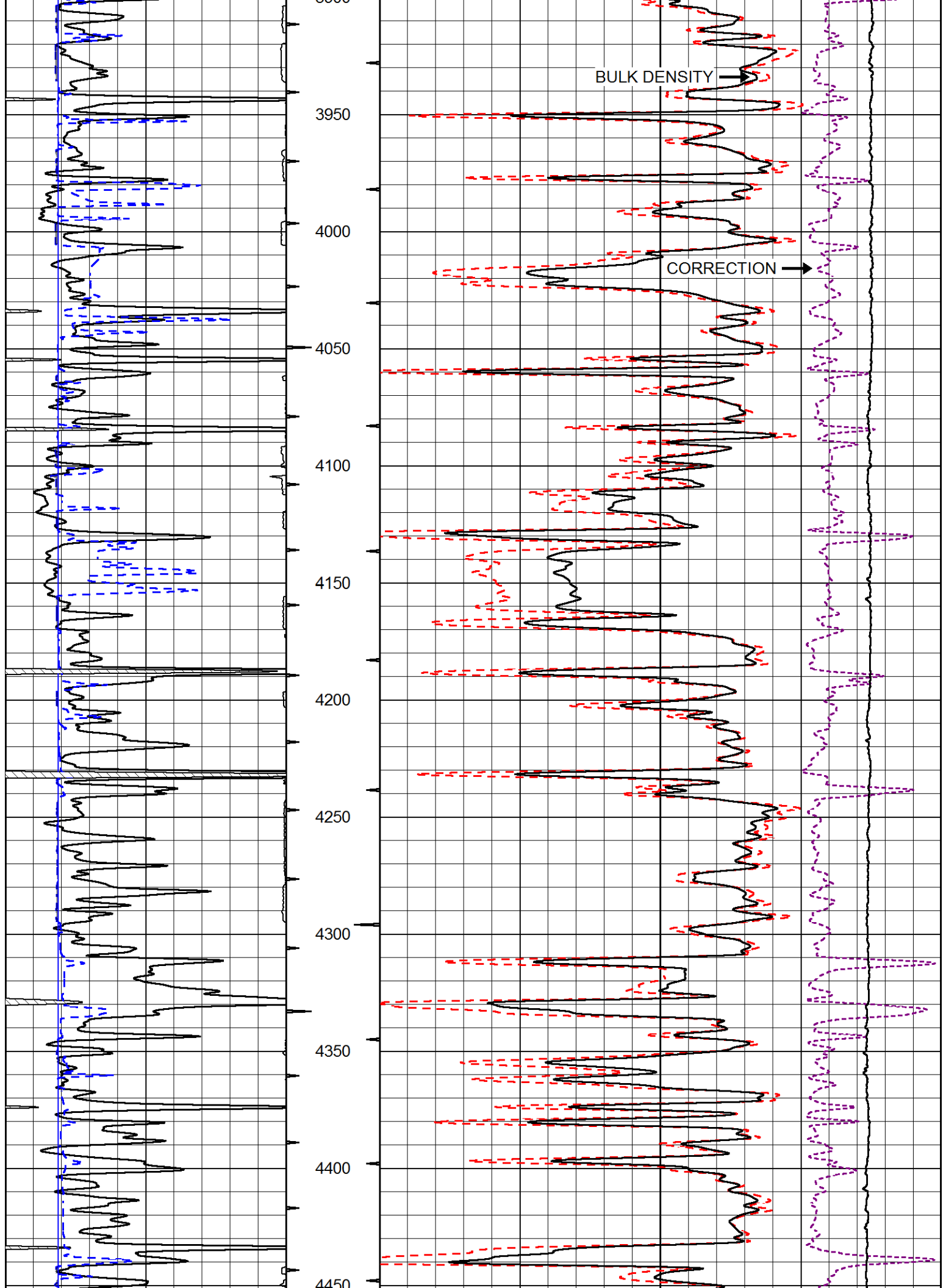
Top - Bottom

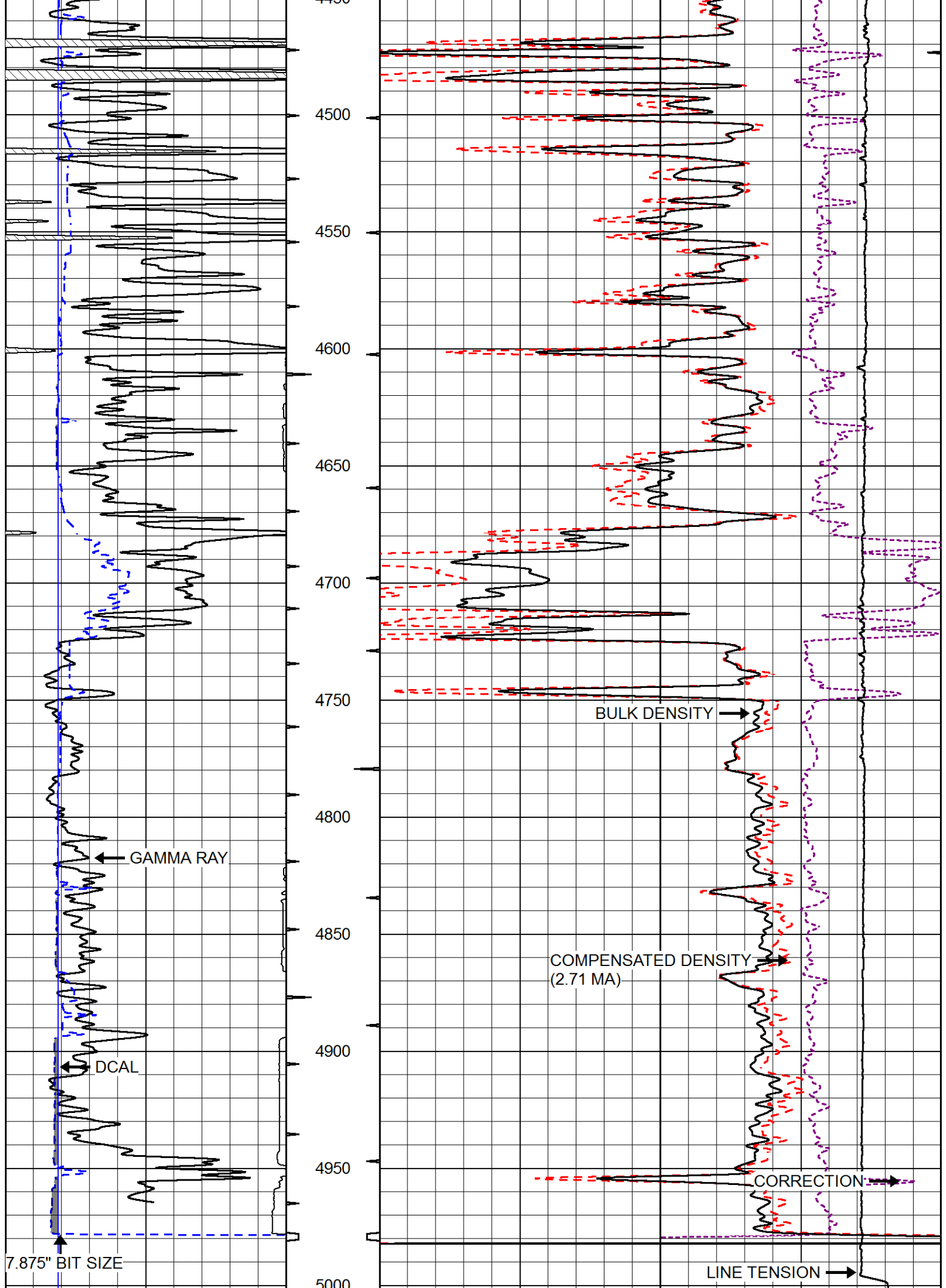
M	A	SZCOR	NPORSEL	FLUIDDEN g/cc	MATRXDEN g/cc	SPSHIFT mV	SNDERRM mmho/m
2	1	Off	Limestone	1	2.71	-110	0
SNDERR mmho/m 0	SRFTEMP degF 68	CASETHCK in 0	CASEOD in 5.5	PERFS 0	TDEPTH ft 4996	BOTTEMP degF 126	BOREID in 7.875

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 (182-152)	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					

		DIL-PSI HIGH TEMP (933 (HT))		18.50	3.50	220.00
CILD	8.00					
CILM	4.70					
SP	0.20					
Dataset: american warrior_crist 2-28.db: field/well/STKML/pass3.1 Total length: 43.08 ft Total weight: 685.00 lb O.D.: 4.00 in						







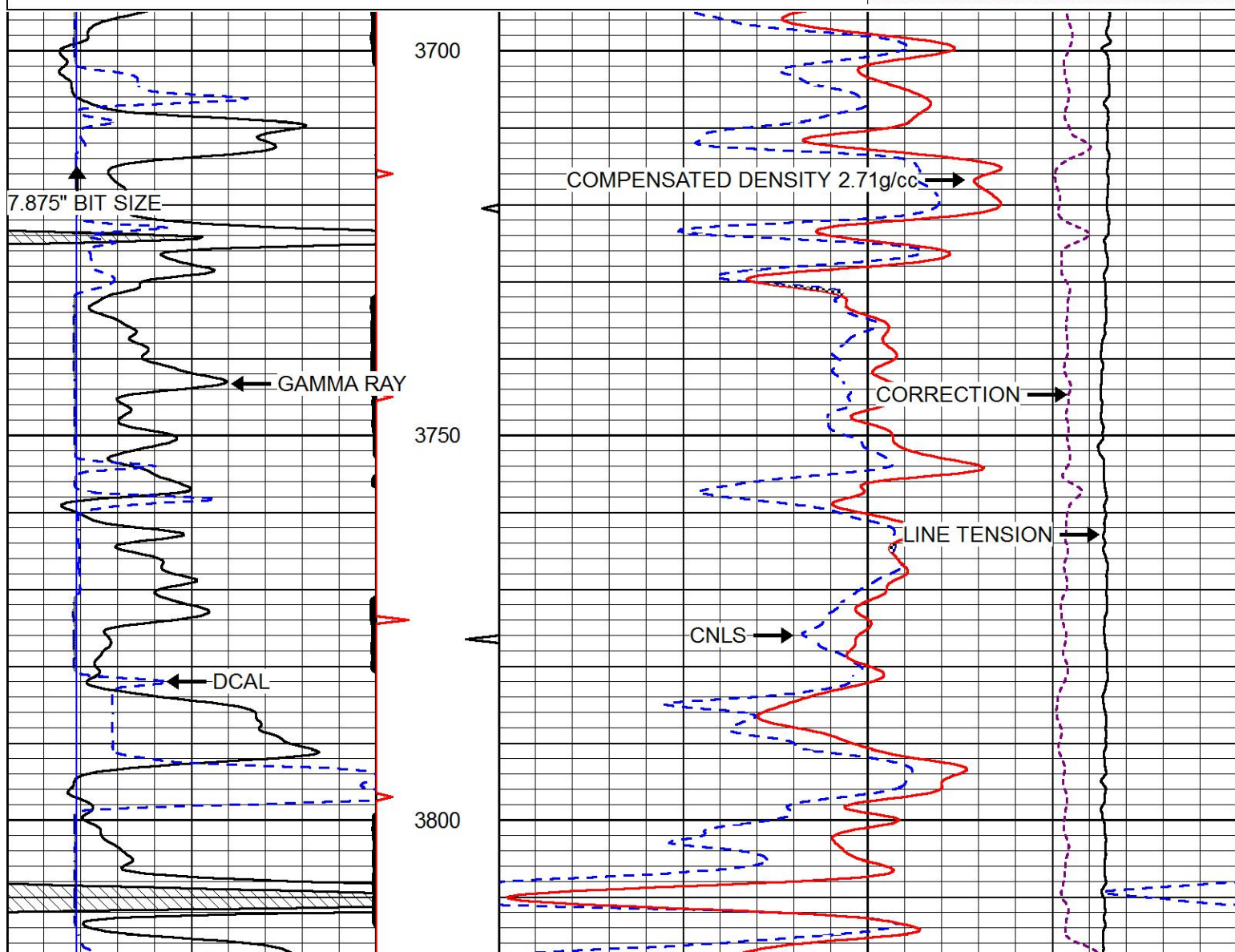
0	GAMMA RAY (GAPI)	150	COMPENSATED DENSITY (2.71 MA)	
6	DCAL (in)	16	30	(pu) -10
			2	BULK DENSITY (g/cc) 3
			15000	LINE TENSION (lb) 0
			-0.25	CORRECTION (g/cc) 0.25

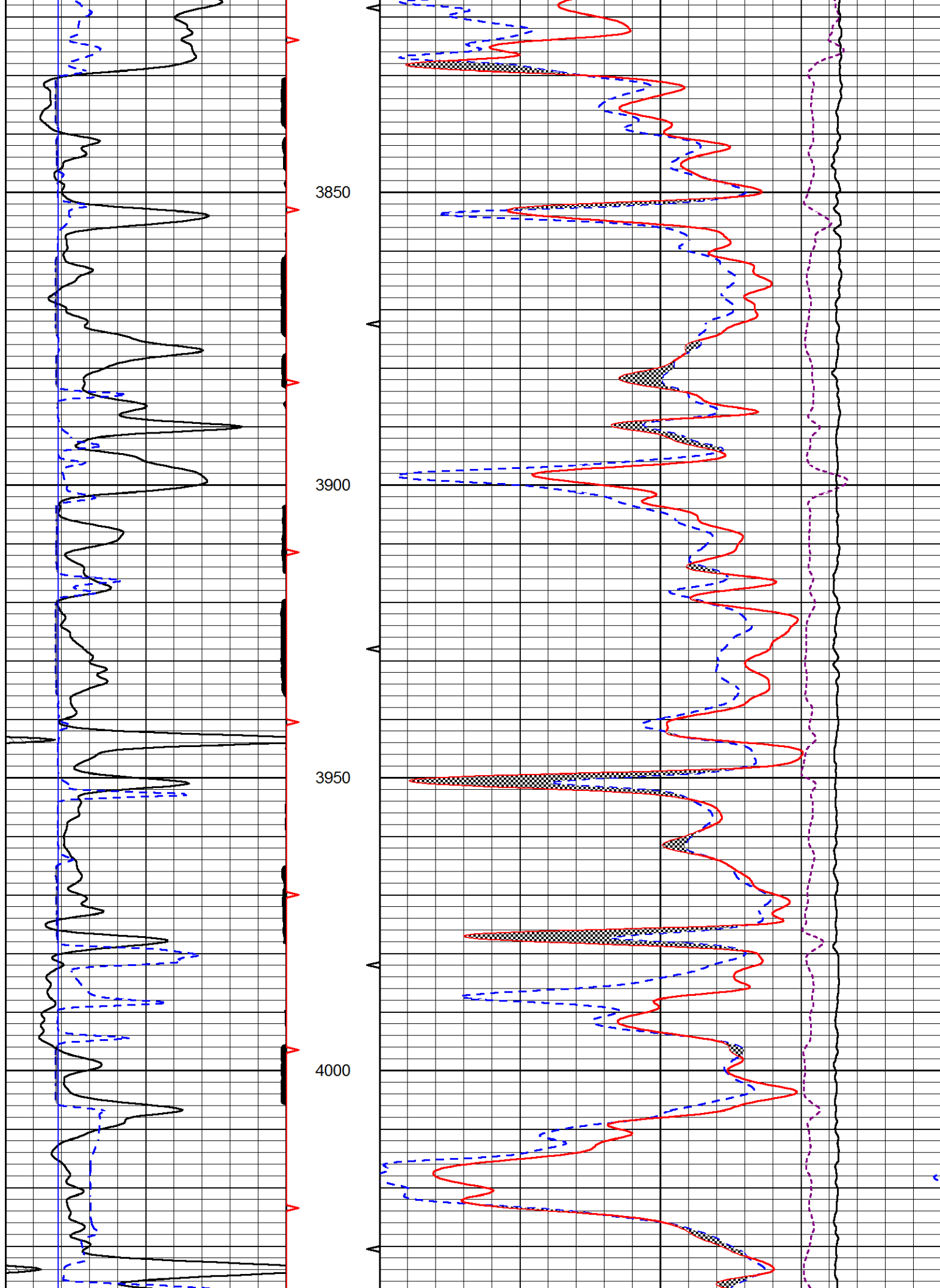


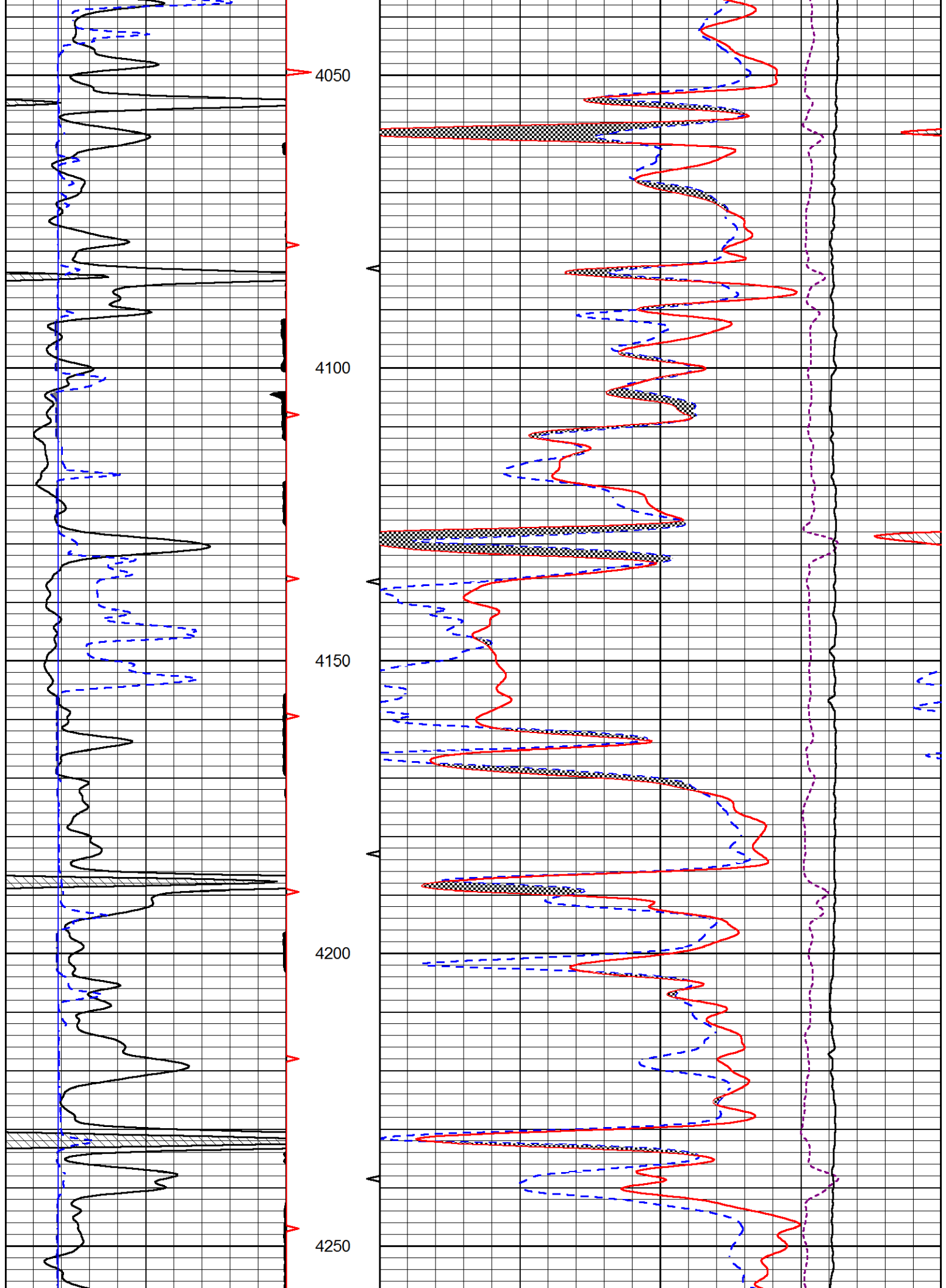
MAIN PASS

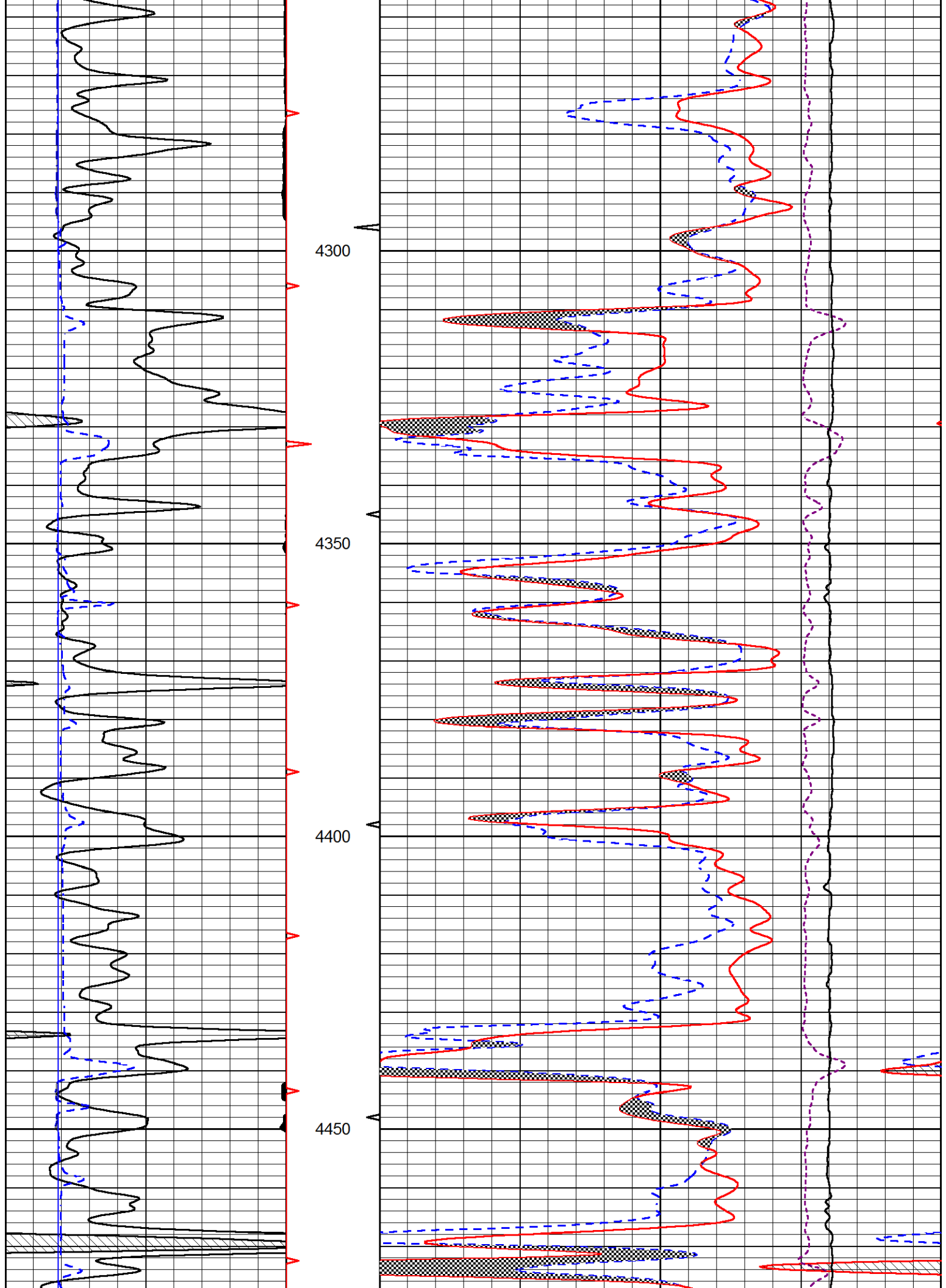
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Dataset Pathname STKML/pass3.1
Presentation Format cndlspec
Dataset Creation Mon Apr 23 15:23:02 2018
Charted by Depth in Feet scaled 1:240

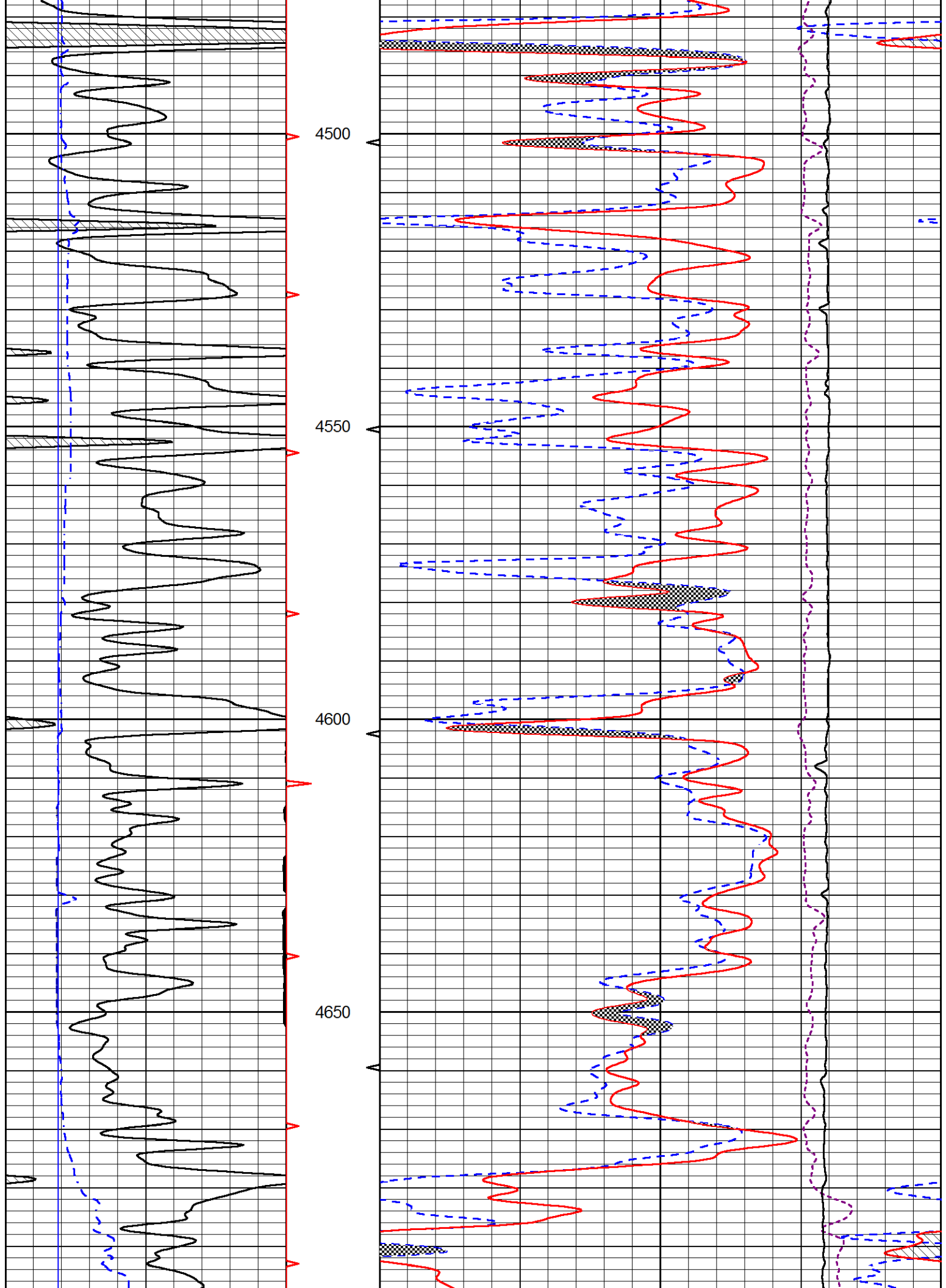
0	GAMMA RAY (GAPI)	150	30	CNLS (pu)	-10
6	DCAL (in)	16	30	COMPENSATED DENSITY 2.71g/cc (pu)	-10
			10000	LINE TENSION (lb)	0
			-0.75	CORRECTION (g/cc)	0.75

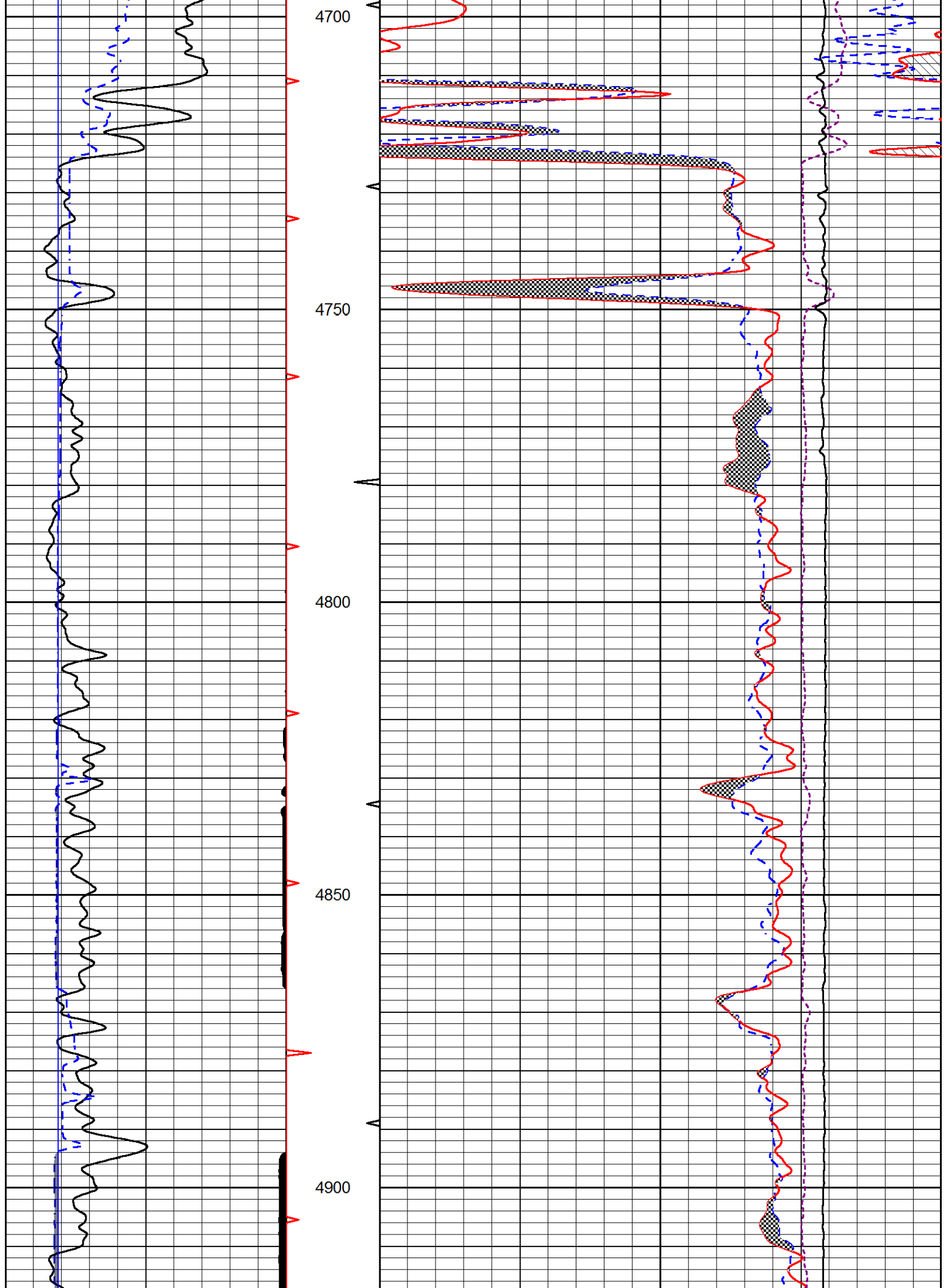


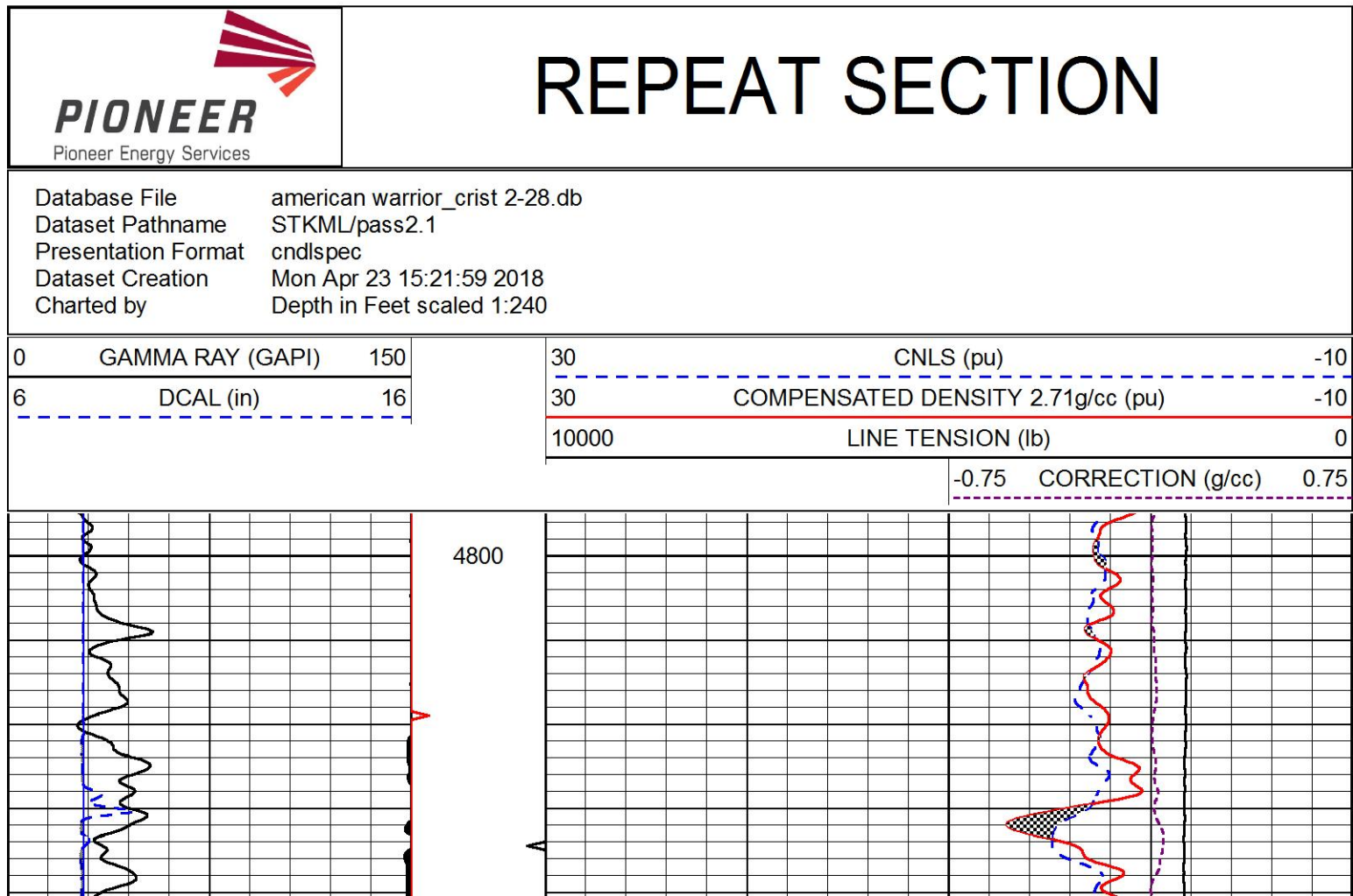
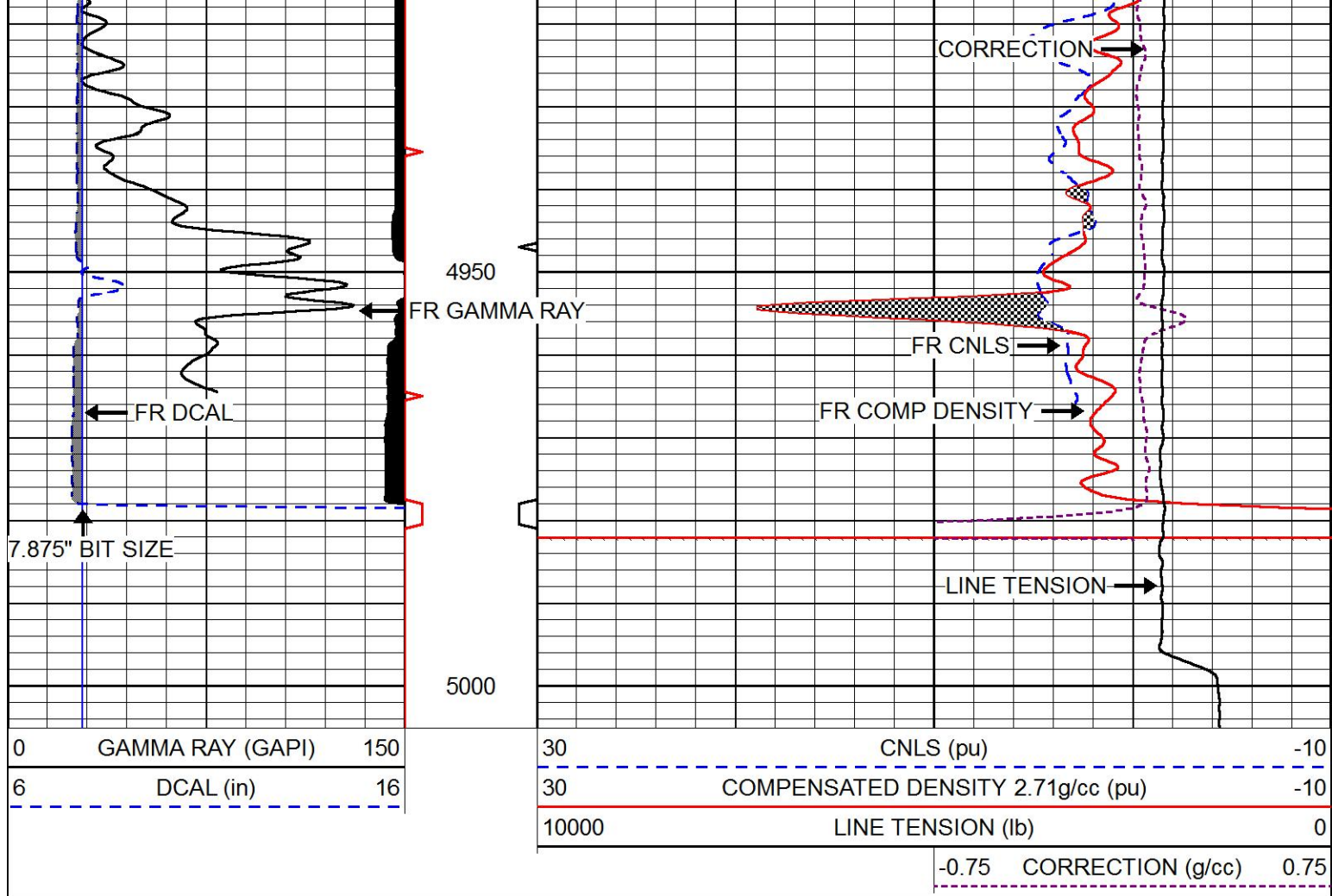


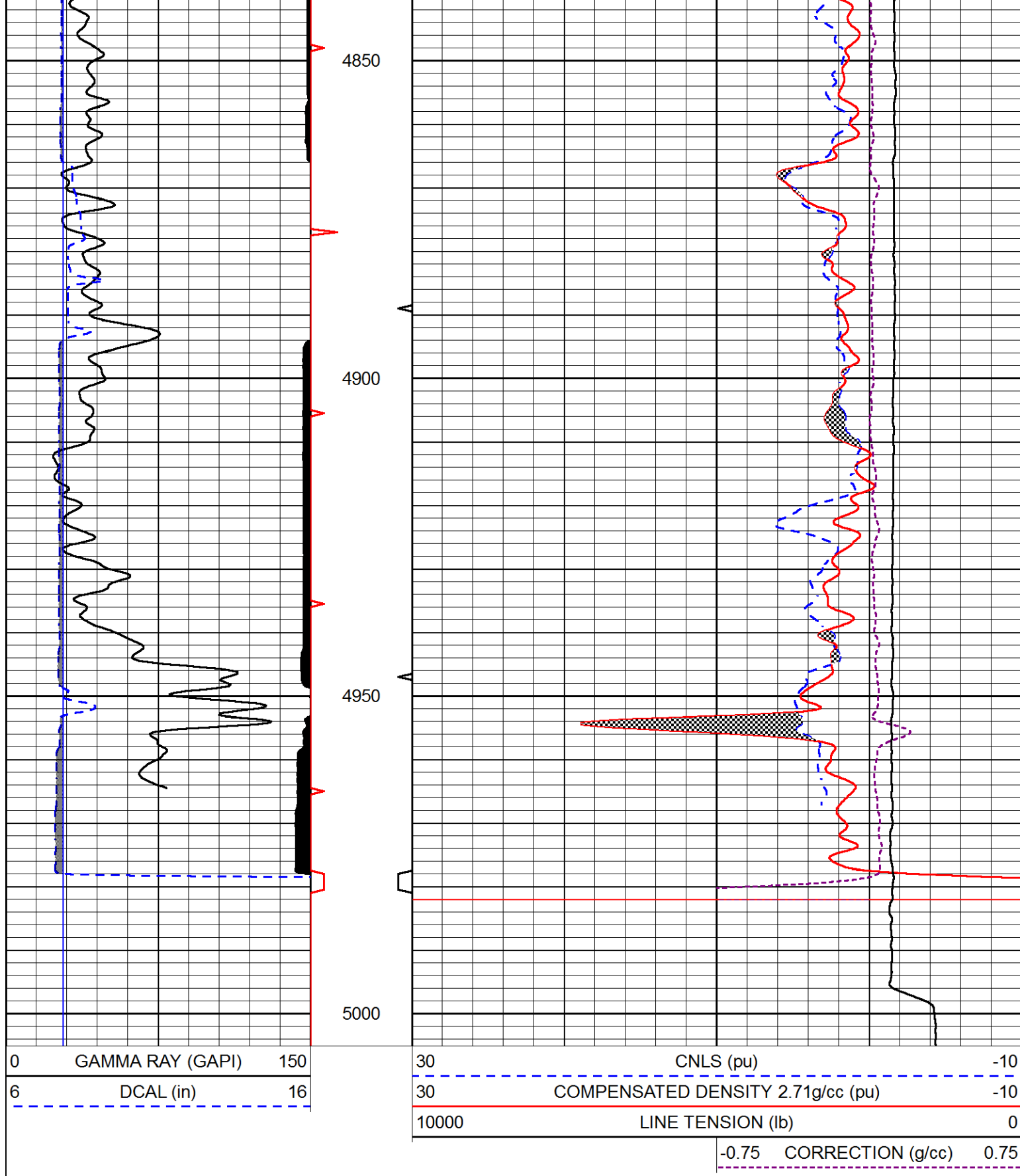












Calibration Report

Database File american_warrior_crist 2-28.db
Dataset Pathname STKML/pass3.1
Dataset Creation Mon Apr 23 15:23:02 2018

Dual Induction Calibration Report

Serial-Model: 933 (HT)-PSI HIGH TEMP
Calibration Performed: Mon Apr 23 14:01:41 2018

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	167.000	835.000	0.000	255.000	mmho/m	0.700	-16.500
Medium	142.000	1349.000	0.000	255.000	mmho/m	0.565	-63.000

Microlog Calibration Report

Serial-Model:
Performed:

PSI-01-PSIML
Mon Apr 16 11:11:21 2018

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	19000.0000	-0.7000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	24000.0000	-0.6000
Caliper	1.0001	1.1397	6.5000	18.5000	in	70.0000	-65.9250

Compensated Density Calibration Report

Serial-Model:
Source / Verifier:
Master Calibration Performed:

182-152-M&W
16955B / 2ci
Mon Apr 23 14:01:33 2018

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4992.81	6098.44	cps
Aluminum	2.650	g/cc	945.67	3945.60	cps
Spine Angle = 75.33			Density/Spine Ratio = 0.520		
	Size		Reading		
Small Ring	4.50	in	1.09		
Large Ring	15.00	in	1.03		

Compensated Neutron Calibration Report

Serial Number: 207-MW
Tool Model: M&W
Calibration Performed: MON APR 16 10:30:30 2018

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: Mon Jan 15 11:20:44 2018

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps

Calibrator Reading:	1.0	cps
Sensitivity:	0.6000	GAPI/cps



Company	AMERICAN WARRIOR, INC.
Well	CRIST #2-28
Field	UNKNOWN
County	FINNEY
State	KANSAS