



DUAL COMP POROSITY LOG

Company AMERICAN WARRIOR, INC.
 Well LN #2-18
 Field DEWALD
 County NESS
 State KANSAS

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Location: API #: 15-135-25968-00-00
 2140' FNL & 2305' FEL
 SEC 18 TWP 19S RGE 21W
 Permanent Datum GROUND LEVEL Elevation 2263'
 Log Measured From KELLY BUSHING
 Drilling Measured From KELLY BUSHING
 Other Services DIL
 Elevation
 K.B. 2271'
 D.F. N/A
 G.L. 2263'

Date	9/13/2017						
Run Number	ONE						
Type Log	CNL/CDL						
Depth Driller	4392'						
Depth Logger	4393'						
Bottom Logged Interval	4372'						
Top Logged Interval	3700'						
Type Fluid In Hole	CHEMICAL						
Salinity, PPM CL	6200						
Density	9.4						
Level	FULL						
Max. Rec. Temp. F	120						
Operating Rig Time	2 1/2 HOURS						
Equipment -- Location	91 HAYS						
Recorded By	D. SCHMIDT						
Witnessed By	JASON ALM						
Borehole Record							
Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	12.25"	0'	220'	8.625"	23#	0'	220'
TWO	7.875"	220'	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.

BAZINE,
 3 SOUTH ON AUSTIN RD, 1/2 EAST,
 SOUTH 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	Primary Witness: JASON ALM
Operator:	Secondary Witness:
Operator:	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	243	0
SNDERR mmho/m	SRFTEMP degF	CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in
0	80	0	5.5	0	4393	120	7.875

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	33.00		GR-M&W (89)	3.00	3.50	50.00
CNLSC CNSSC	29.90 29.15		CNT-M&W (207-MW)	5.50	3.50	100.00
LSD DCAL SSD	20.85 20.83 20.35		CDL-M&W (90-1031)	8.50	4.00	250.00
RLL3F RLL3	15.80 15.80					
CILD	8.00		DIL-M&W (PSI 91)	18.50	3.50	220.00

CILM 4.70

SP 0.20

Dataset: american_warrior_In_2-18.db: field/well/STACK/pass2.2
Total length: 35.50 ft
Total weight: 620.00 lb
O.D.: 4.00 in

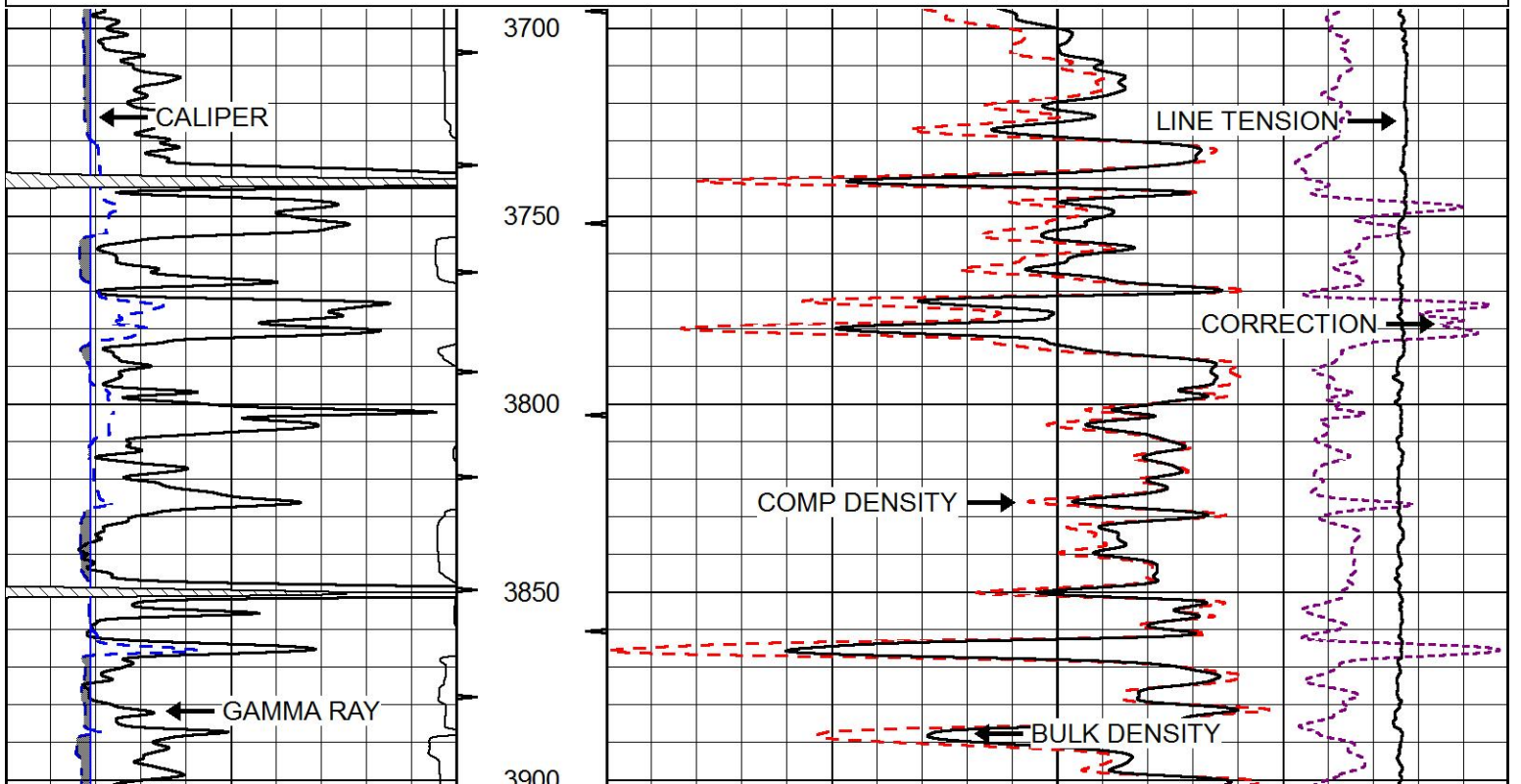


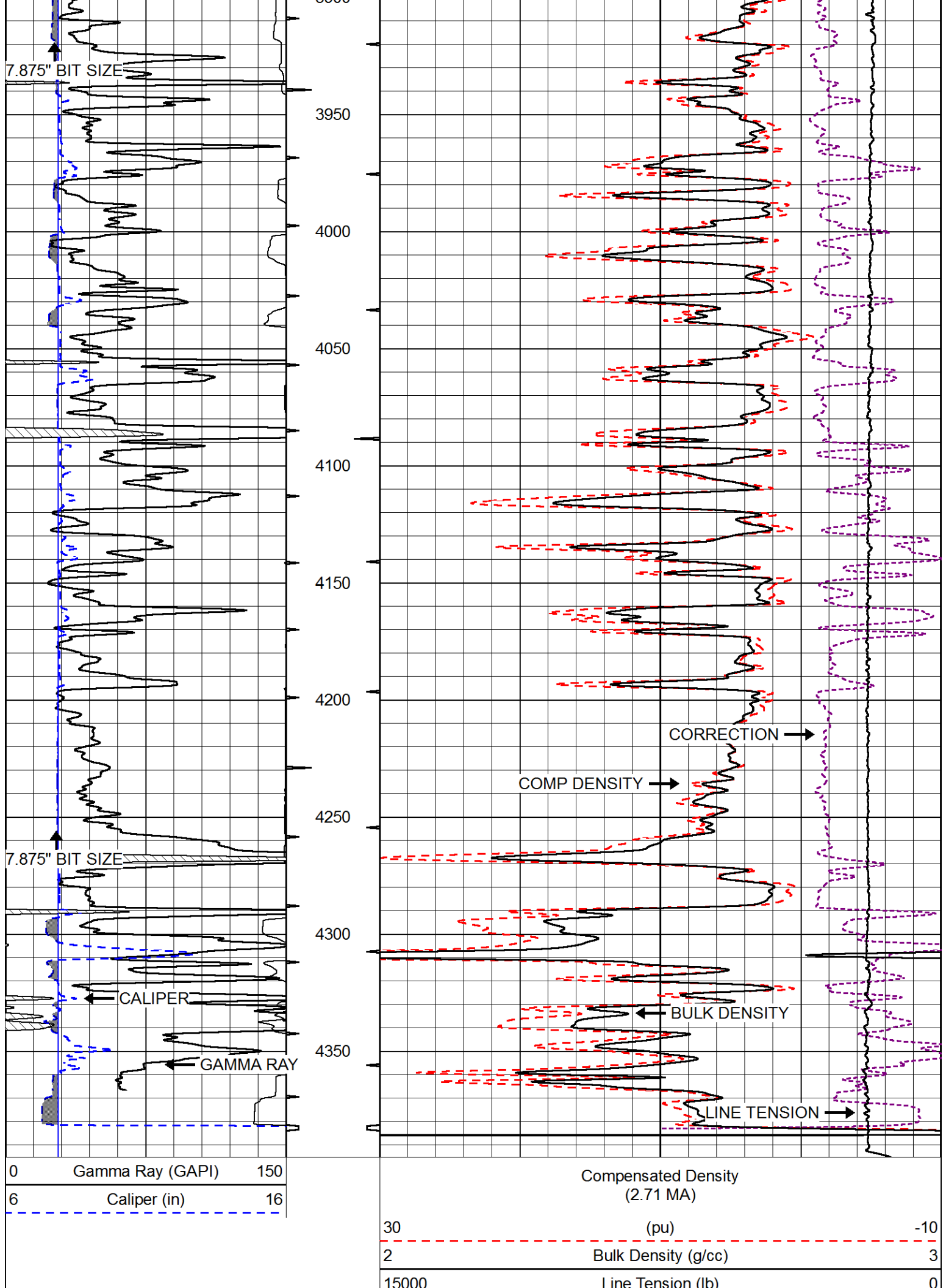
MAIN PASS

Database File american_warrior_In_2-18.db
Dataset Pathname STACK/pass3.1
Presentation Format cdl
Dataset Creation Wed Sep 13 08:10:37 2017
Charted by Depth in Feet scaled 1:600

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

30	Compensated Density (2.71 MA) (pu)	-10
2	Bulk Density (g/cc)	3
15000	Line Tension (lb)	0
-0.25	Correction (g/cc)	0.25





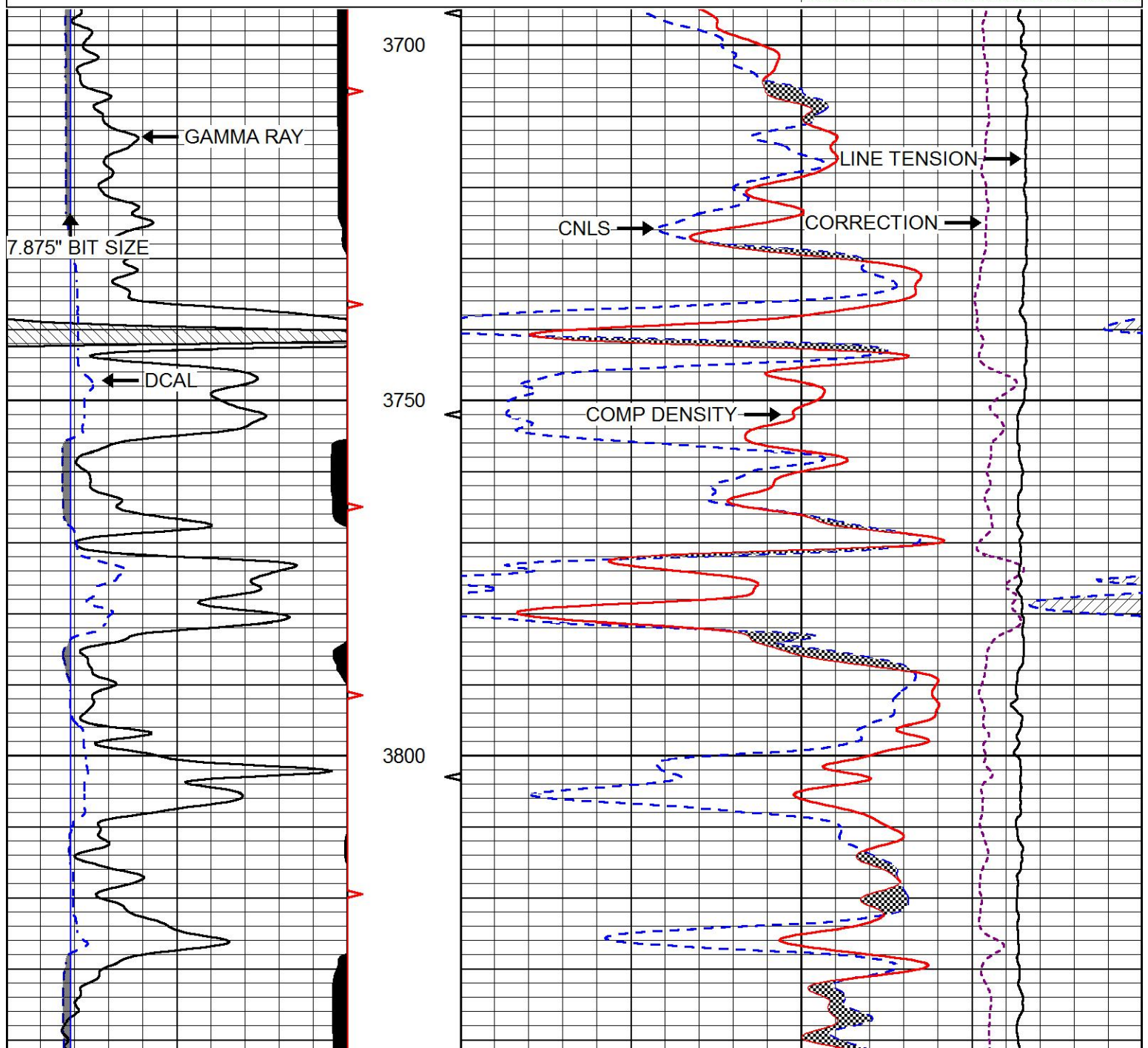


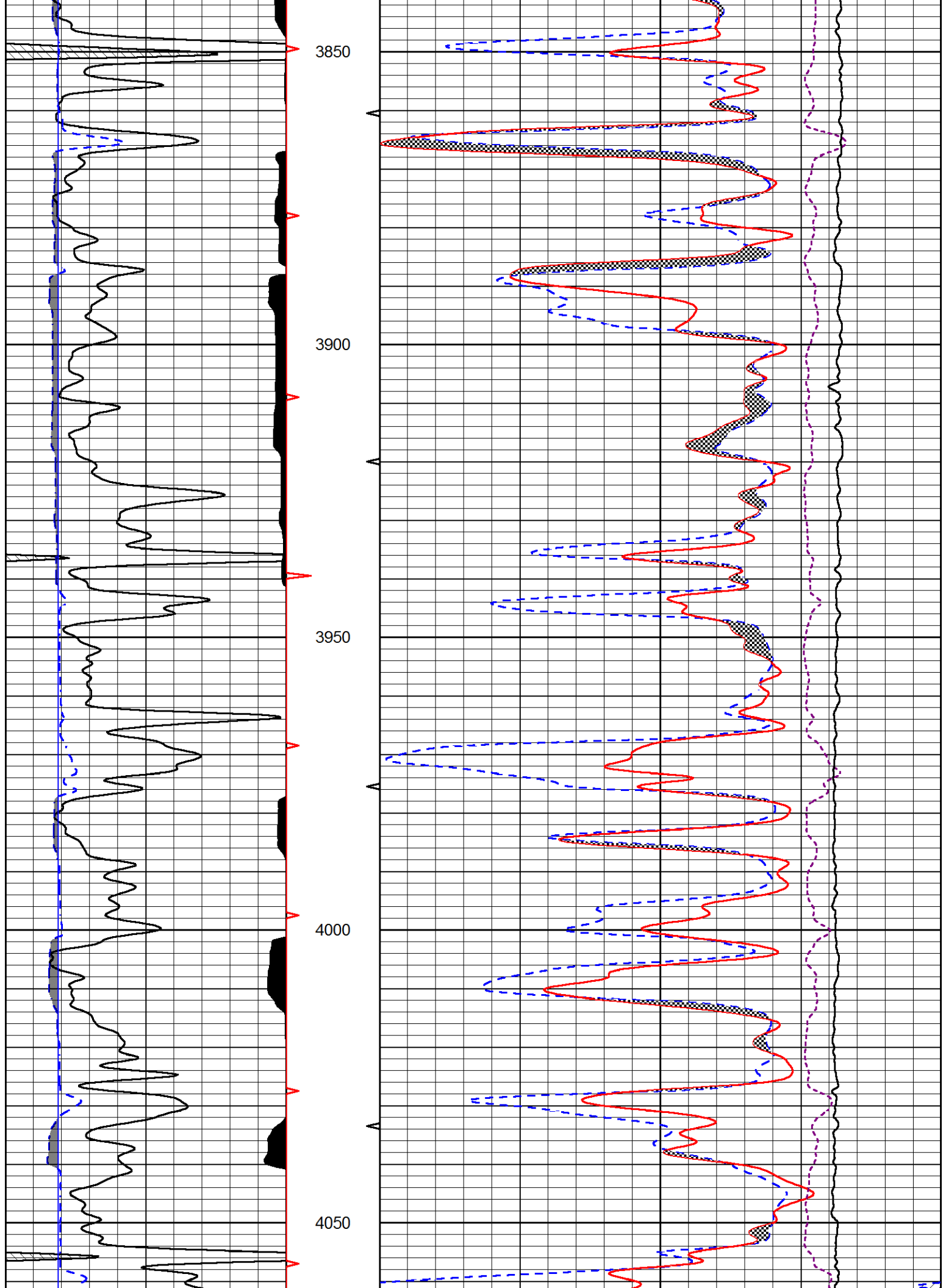
MAIN PASS

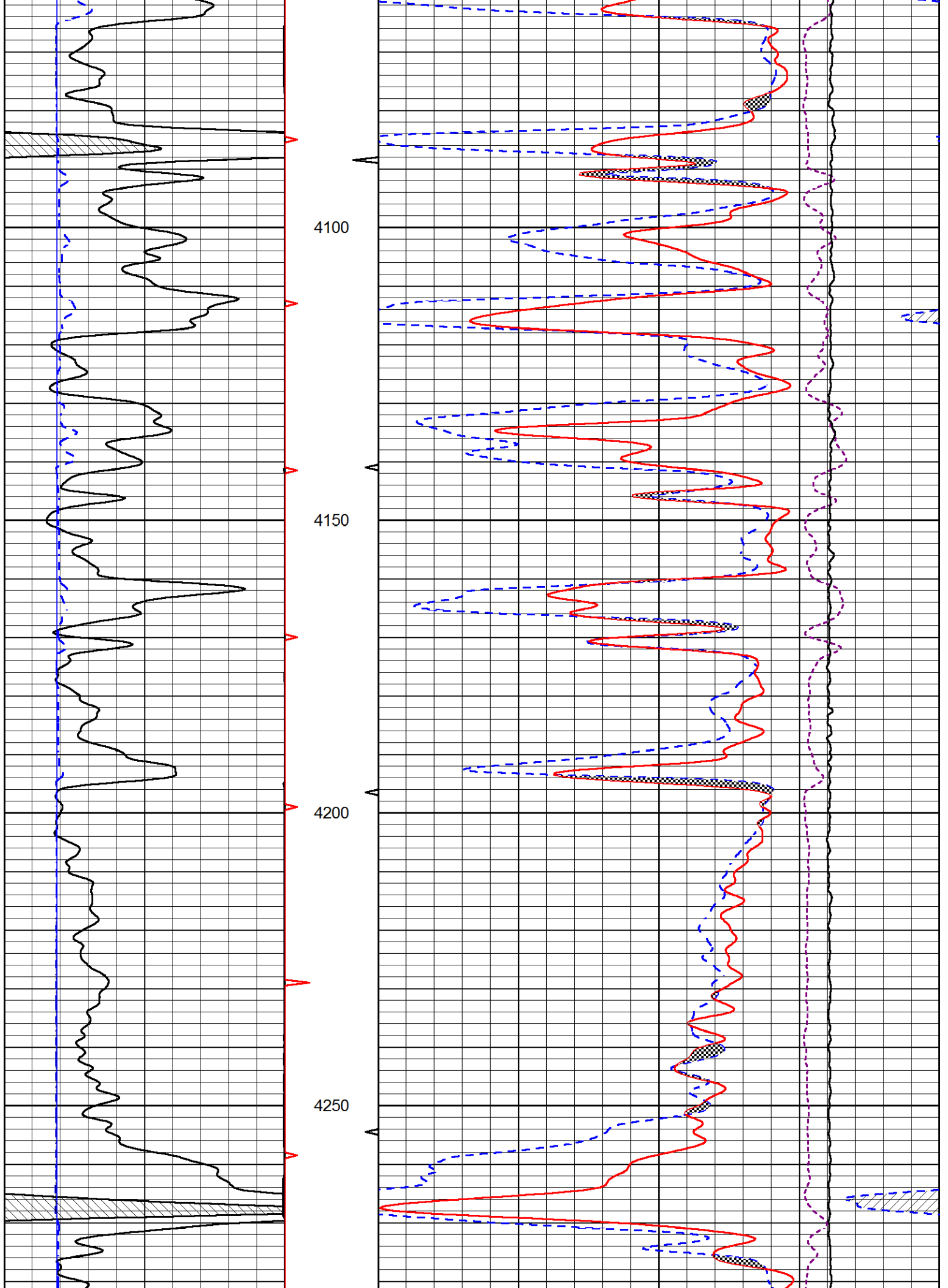
Database File american_warrior_In_2-18.db
 Dataset Pathname STACK/pass3.1
 Presentation Format cndlspec
 Dataset Creation Wed Sep 13 08:10:37 2017
 Charted by Depth in Feet scaled 1:240

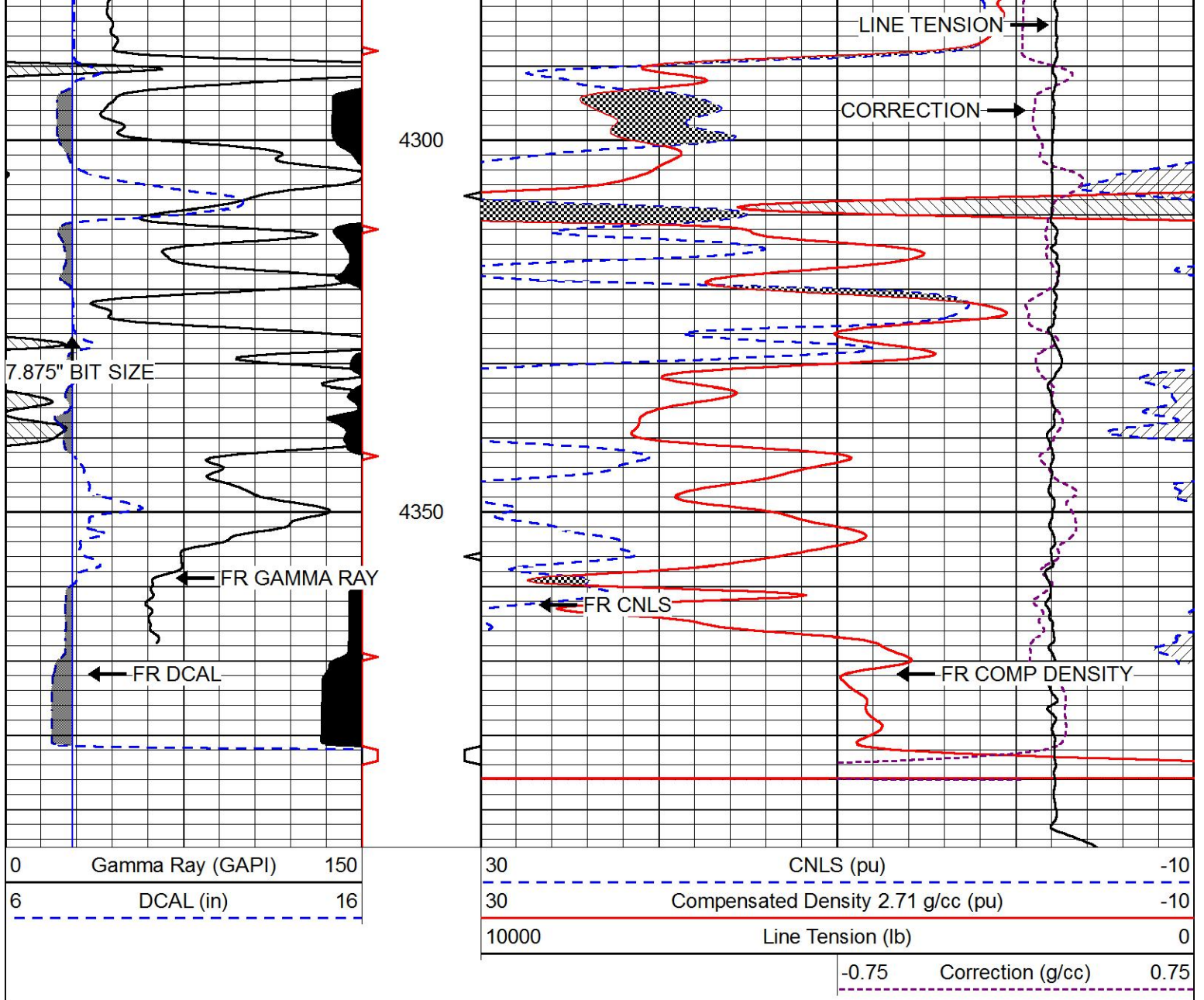
0	Gamma Ray (GAPI)	150
6	DCAL (in)	16

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



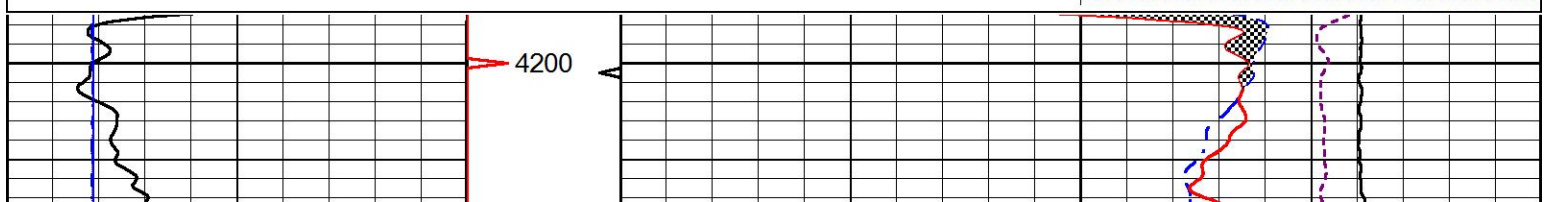
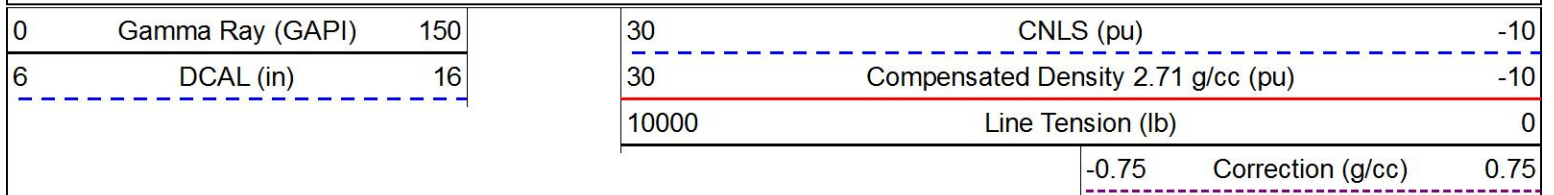


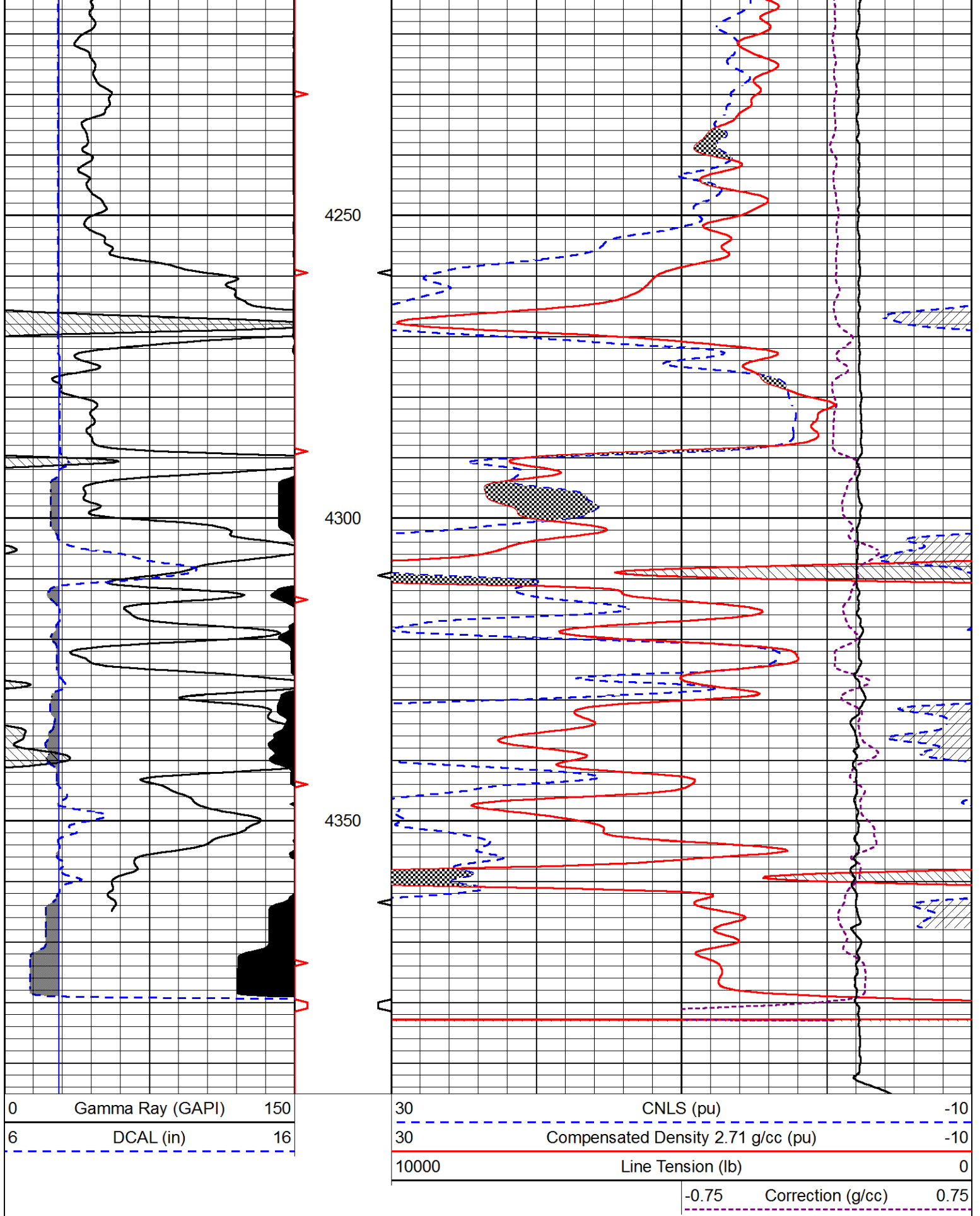




REPEAT SECTION

Database File american_warrior_In_2-18.db
 Dataset Pathname STACK/pass2.1
 Presentation Format cndlspec
 Dataset Creation Wed Sep 13 08:01:23 2017
 Charted by Depth in Feet scaled 1:240





Calibration Report

Database File american warrior_In_2-18.db
 Dataset Pathname STACK/pass3.1
 Dataset Creation Wed Sep 13 08:10:37 2017

Dual Induction Calibration Report

Serial-Model: PSI 91-M&W
 Calibration Performed: Wed Sep 06 19:50:36 2017

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	166.796	835.089	0.000	255.800	mmho/m	0.430	-33.500
Medium	142.009	1348.560	0.000	255.800	mmho/m	0.360	-31.000

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	2.685	g/cc	934.50	4021.31	cps
Spine Angle = 75.61			Density/Spine Ratio = 0.543		
	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
 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

Field	DEWALD
County	NESS
State	KANSAS