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Pioneer Energy Services

DUAL COMP POROSITY LOG

Company **AMERICAN WARRIOR, INC.**
Well **WHISLER NO. 1-20**
Field **STOLTENBERG**
County **ELLSWORTH** State **KANSAS**

Location: API #: 15-053-21361-00-00

Other Services

SEC 20 TWP 16S RGE 10W
1874' FNL & 1134' FWL

DIL
MEL/BHCS

Permanent Datum **GROUND LEVEL** Elevation **1875'**
Log Measured From **KELLY BUSHING**
Drilling Measured From **KELLY BUSHING**

Elevation
K.B. 1883'
D.F. N/A
G.L. 1875'

Date **5/6/2018**

Run Number **ONE**

Type Log **CNL/CDL**

Depth Driller **3474'**

Depth Logger **3472'**

Bottom Logged Interval **3451'**

Top Logged Interval **2550'**

Type Fluid In Hole **CHEMICAL**

Salinity, PPM CL **9600**

Density **9.1**

Level **FULL**

Max. Rec. Temp. F **111 DEG/F**

Operating Rig Time **4 HOURS**

Equipment -- Location **108 HAYS**

Recorded By **J. HENRICKSON**

Witnessed By **JASON ALM**

Borehole Record

Casing Record

Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	12.25"	0	432'	8.625"	23#	0	432'
TWO	7.875"	432'	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.
WILSON KANSAS
SOUTH TO P ROAD, 1 EAST, 1/4 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

Engineer: **J. HENRICKSON**
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: **JASON ALM**
Secondary Witness:
Secondary Witness:
Secondary Witness:

Top - Bottom

A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in 7.875	degF 111	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 0	mmho/m 4	mV -113	degF 53	Off	ft 3472

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 CNSSC	29.90			CNT-M&W (tk10-MW)	5.50	3.50	100.00
	29.15						
LSD DCAL SSD	20.85			CDL-M&W (168-986)	8.50	4.00	250.00
	20.83						
	20.35						
RLL3 RLL3F	15.80 15.79			DIL-M&W (PSI 978)	18.50	3.50	220.00
CILD	8.00						

CILM 4.70

SP 0.20

Dataset: american_warrior_whisler_1_20.db: field/well/stack/pass3.1
Total length: 35.50 ft
Total weight: 620.00 lb
O.D.: 4.00 in

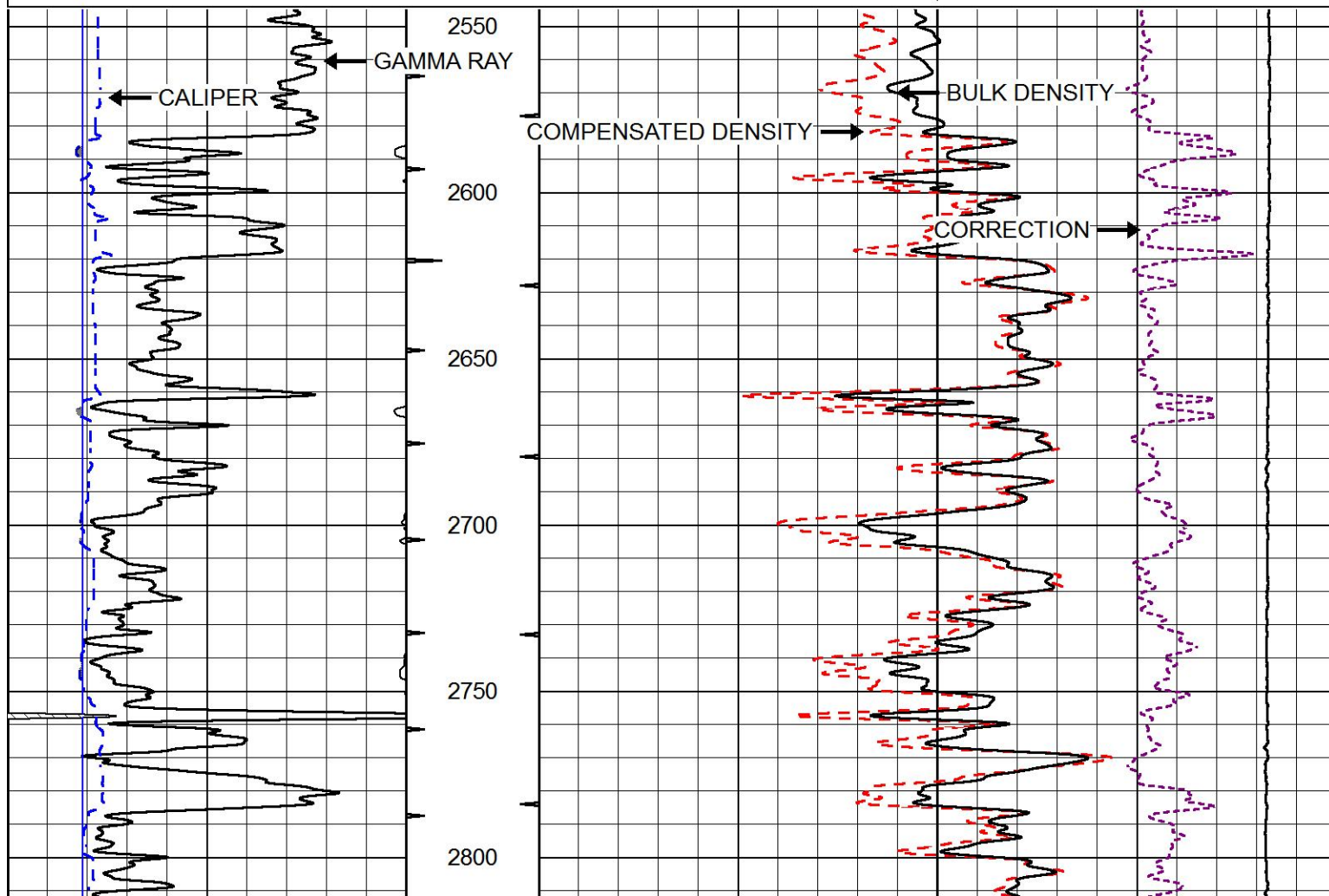


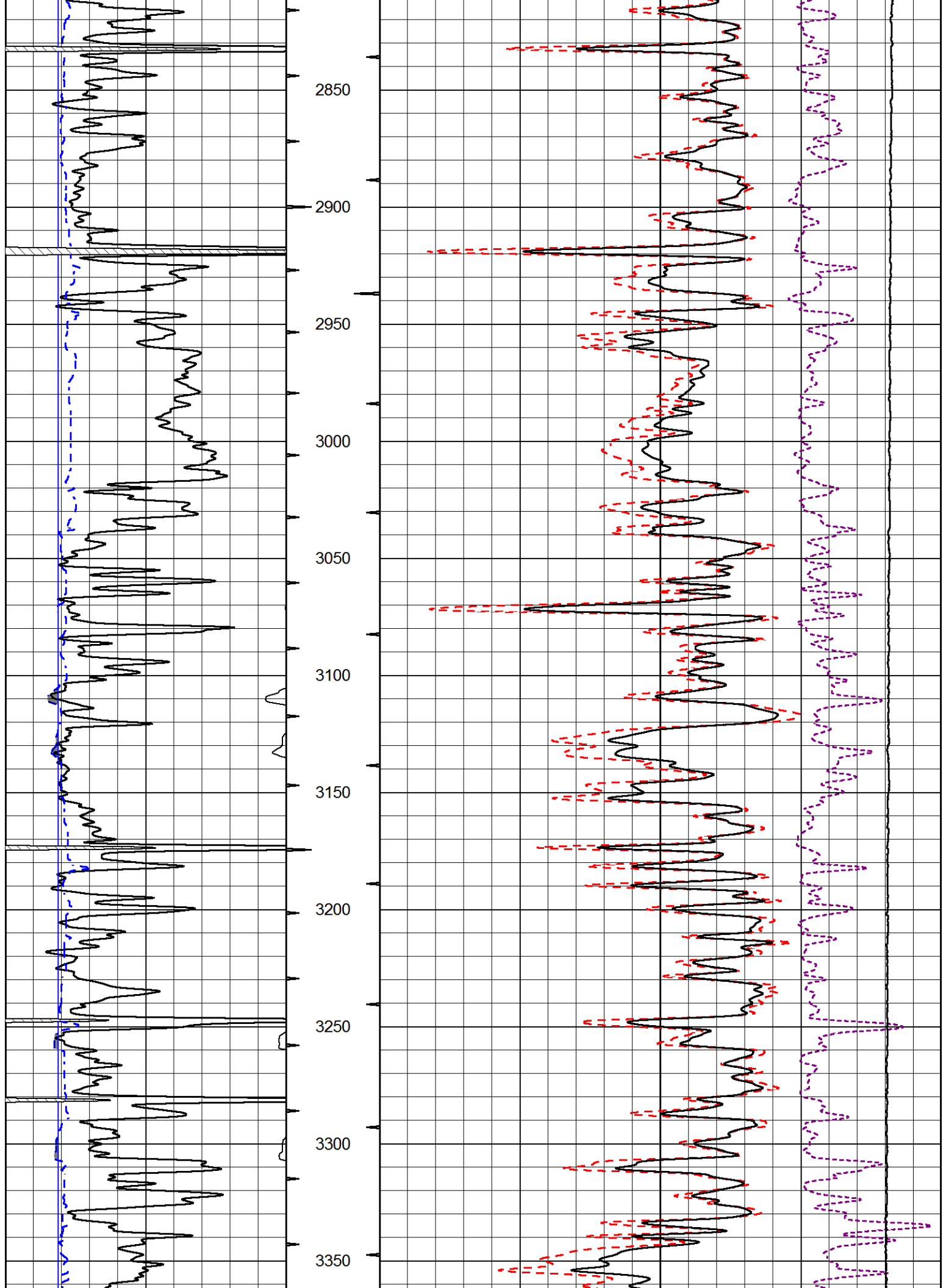
MAIN PASS

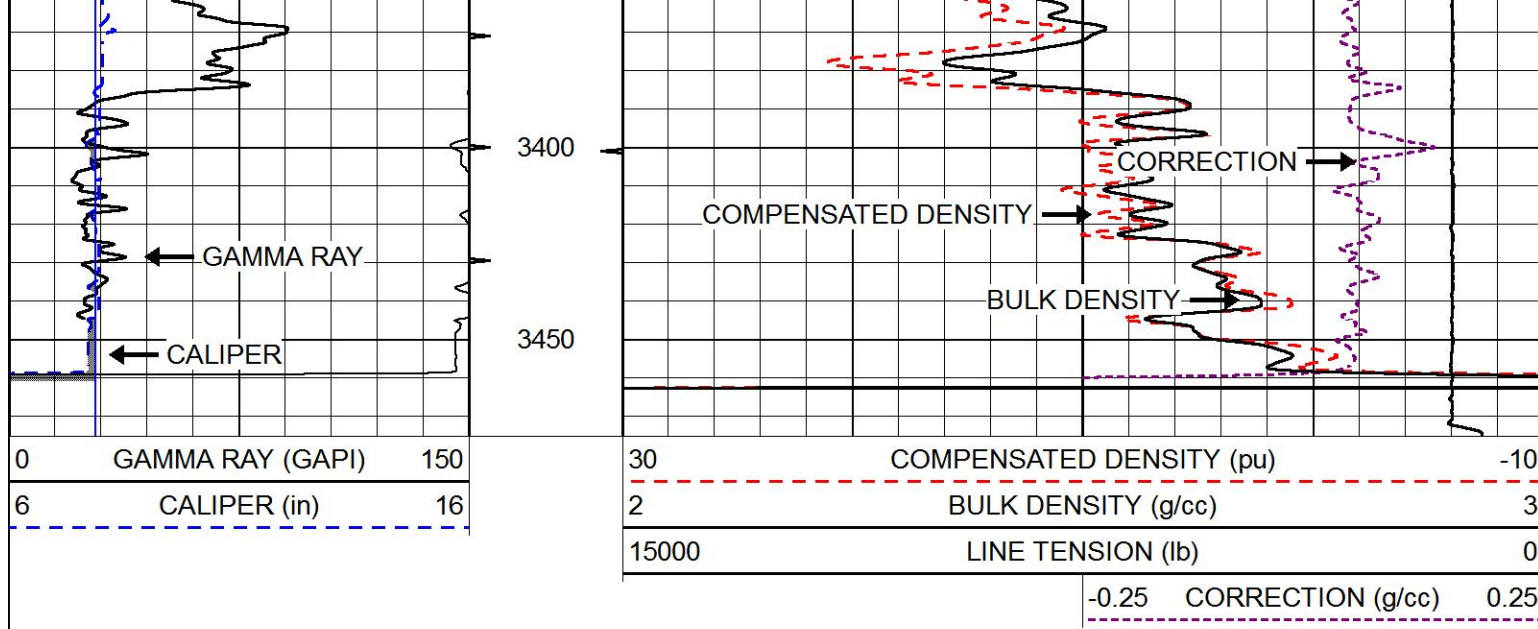
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Dataset Pathname stack/pass3.1
Presentation Format cdl
Dataset Creation Sun May 06 09:08:18 2018
Charted by Depth in Feet scaled 1:600

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

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





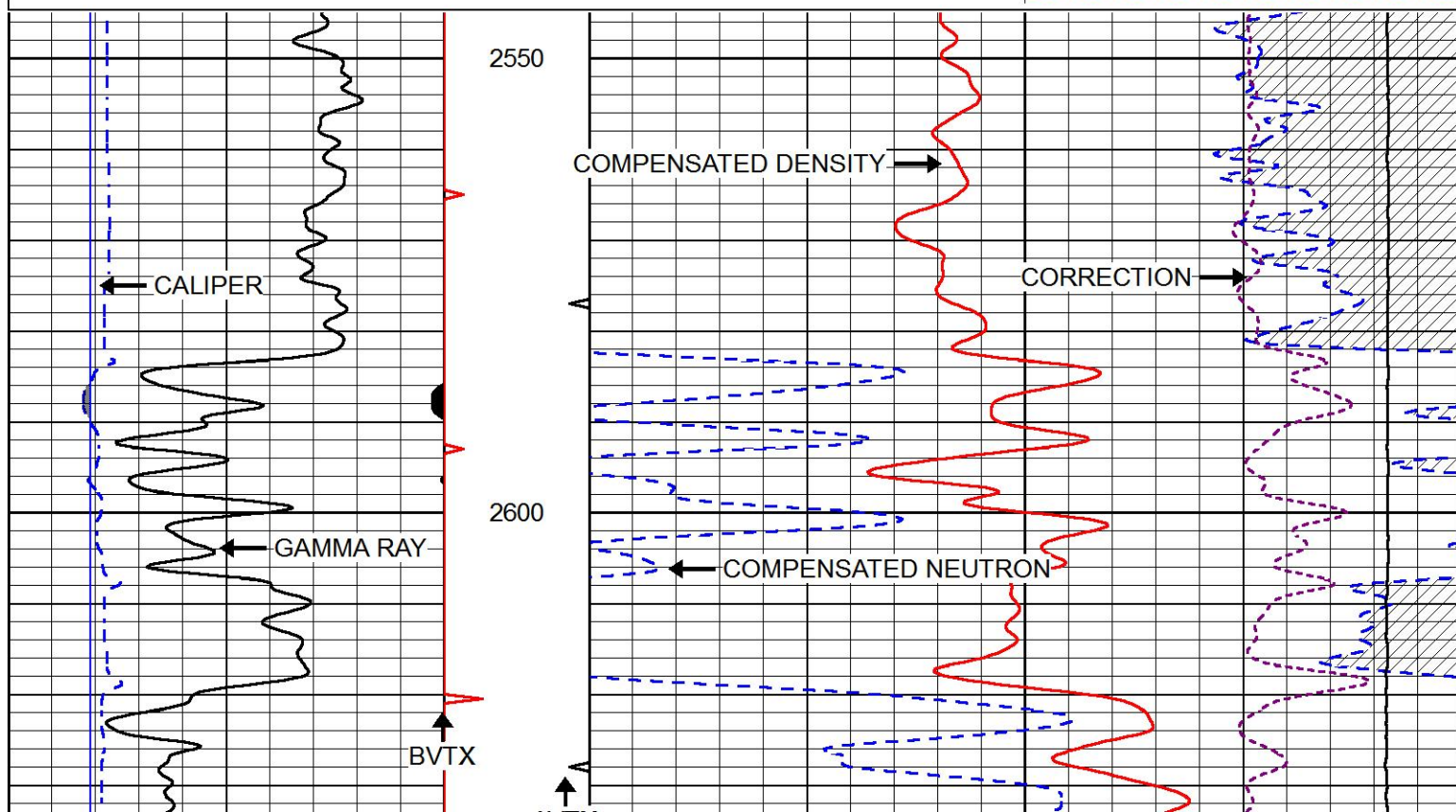
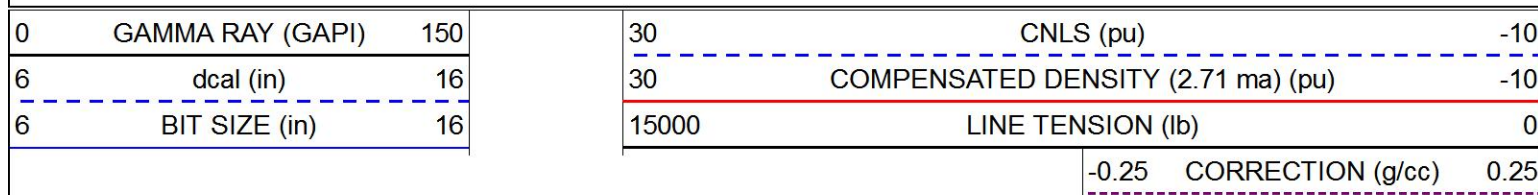


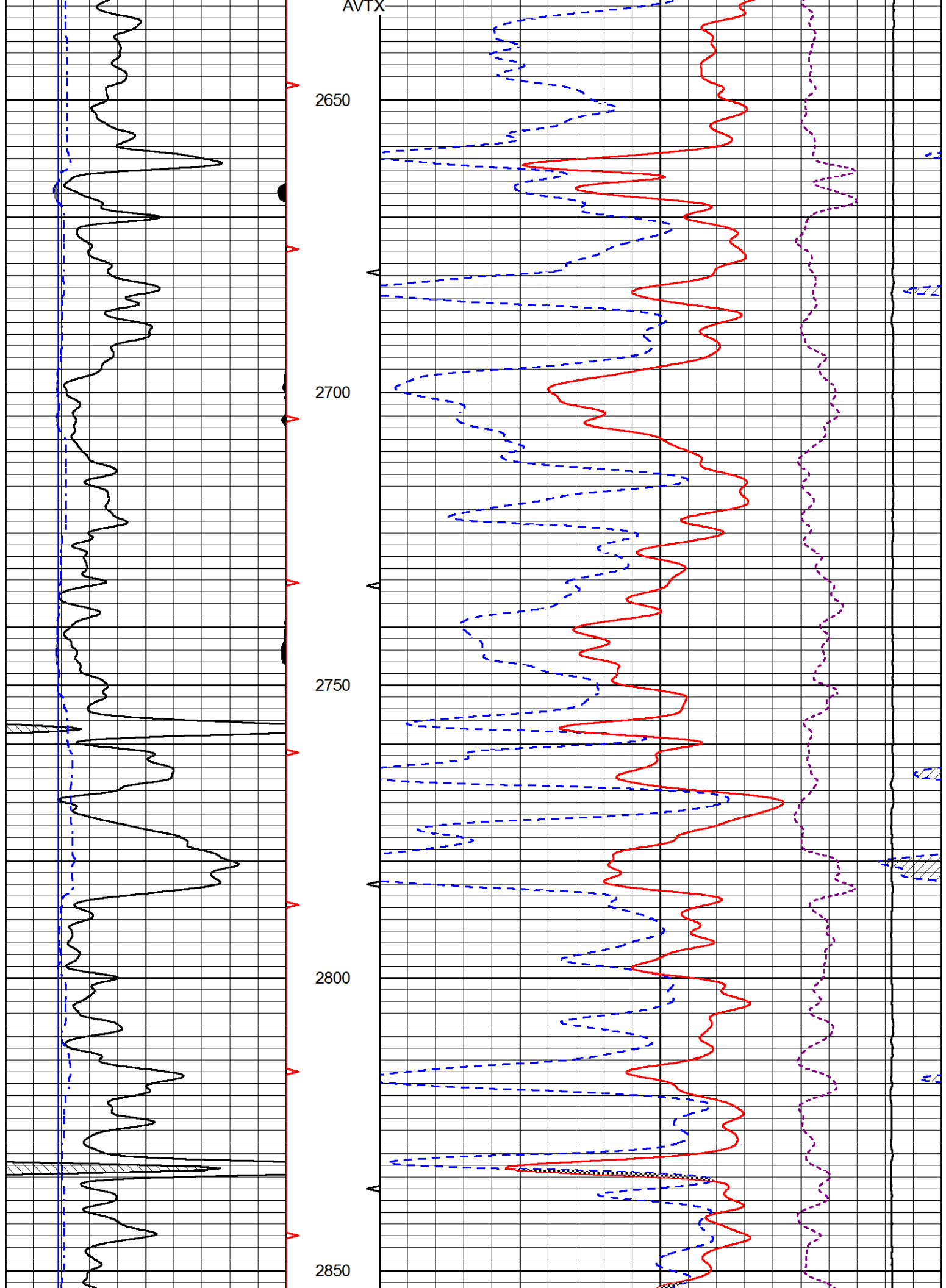


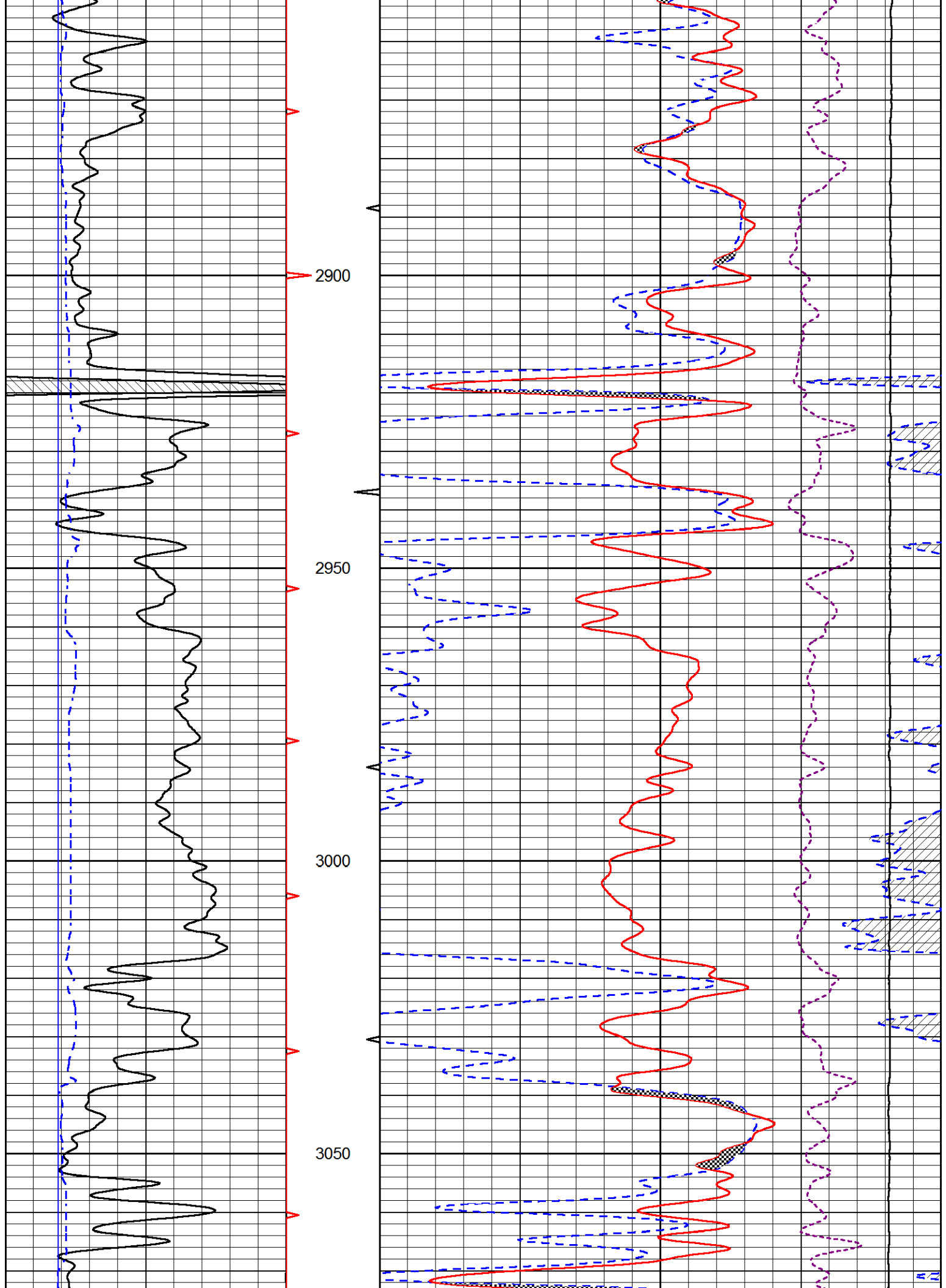
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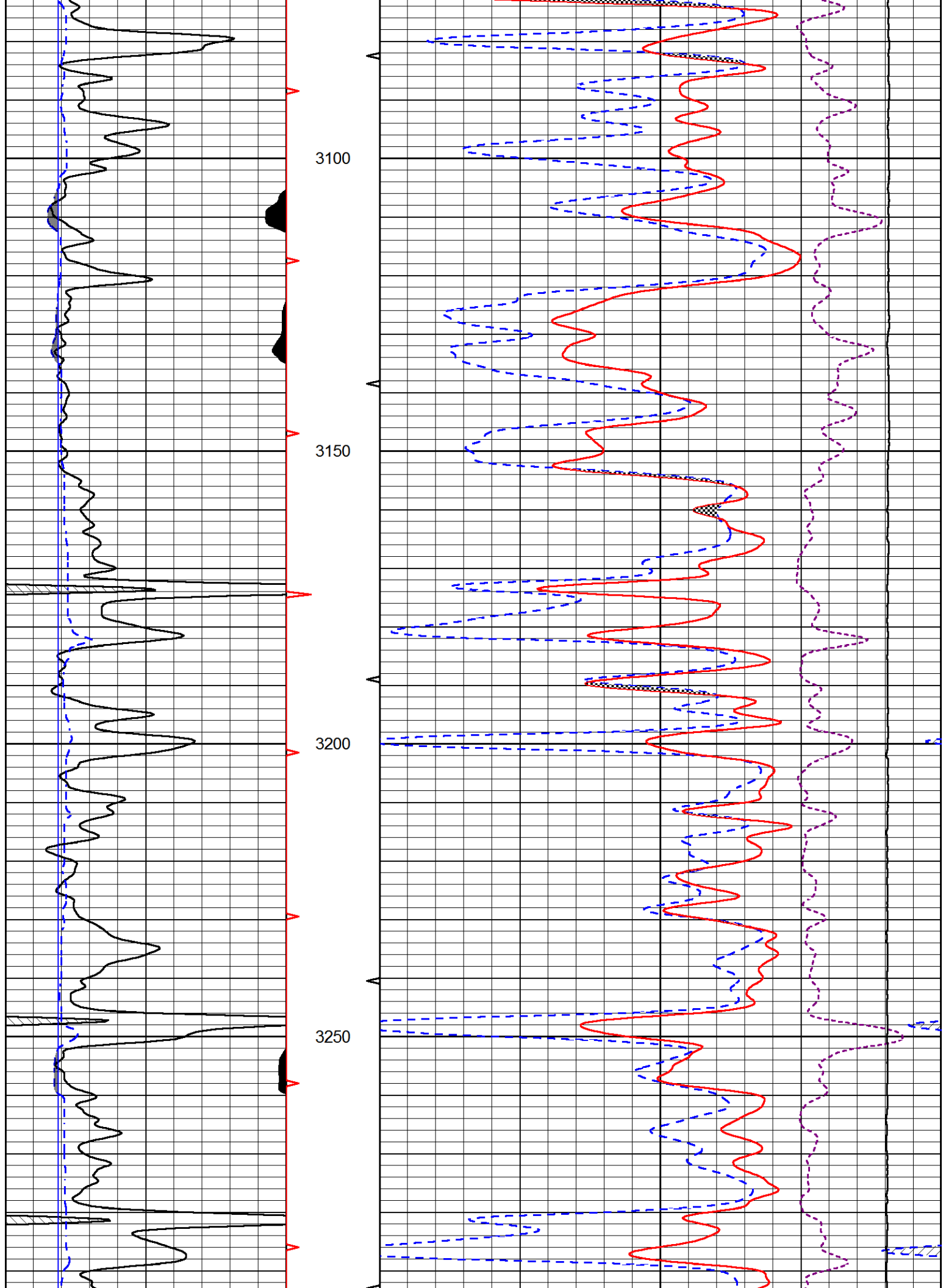
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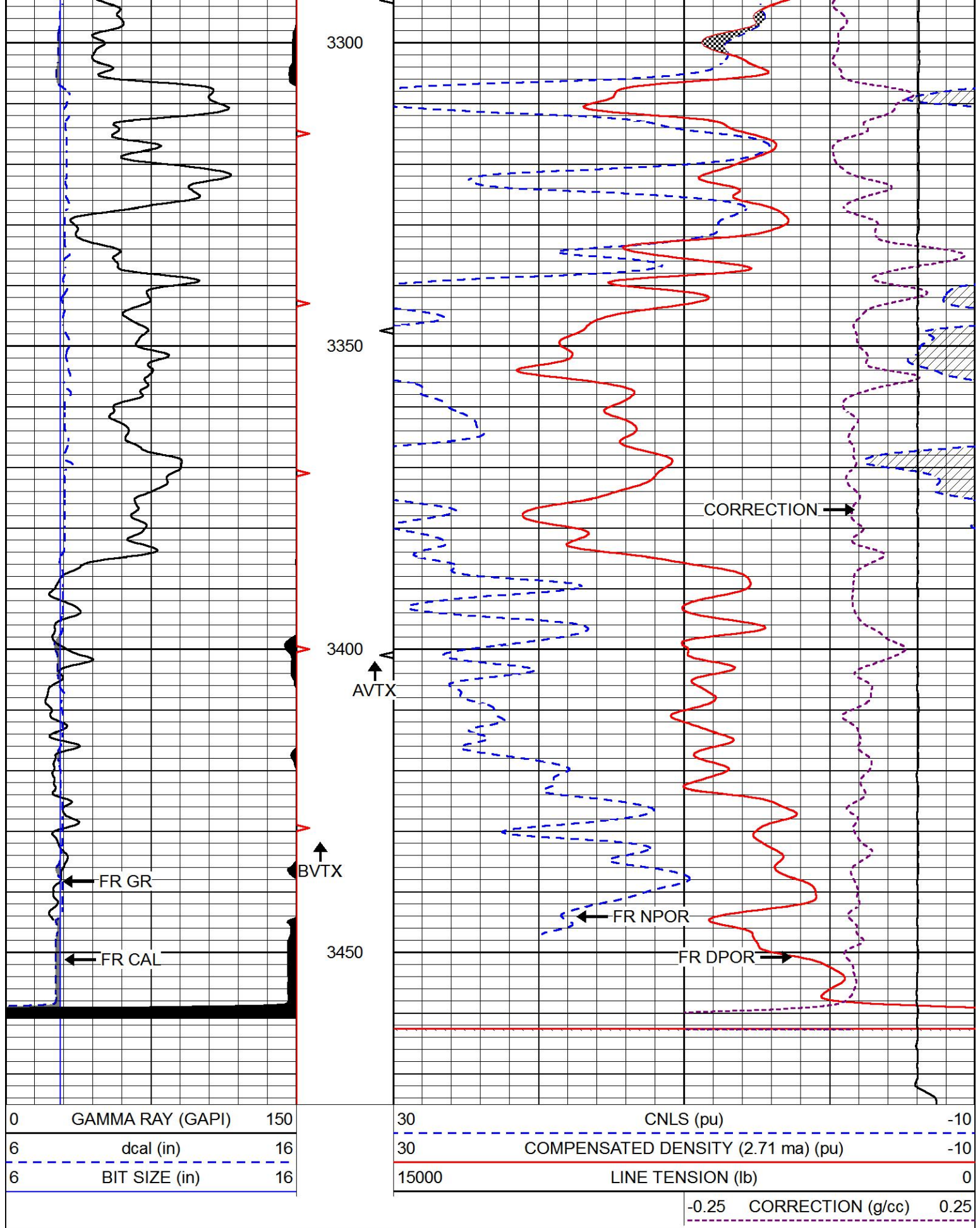
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 Dataset Pathname: stack/pass3.1
 Presentation Format: cndlspec
 Dataset Creation: Sun May 06 09:08:18 2018
 Charted by: Depth in Feet scaled 1:240









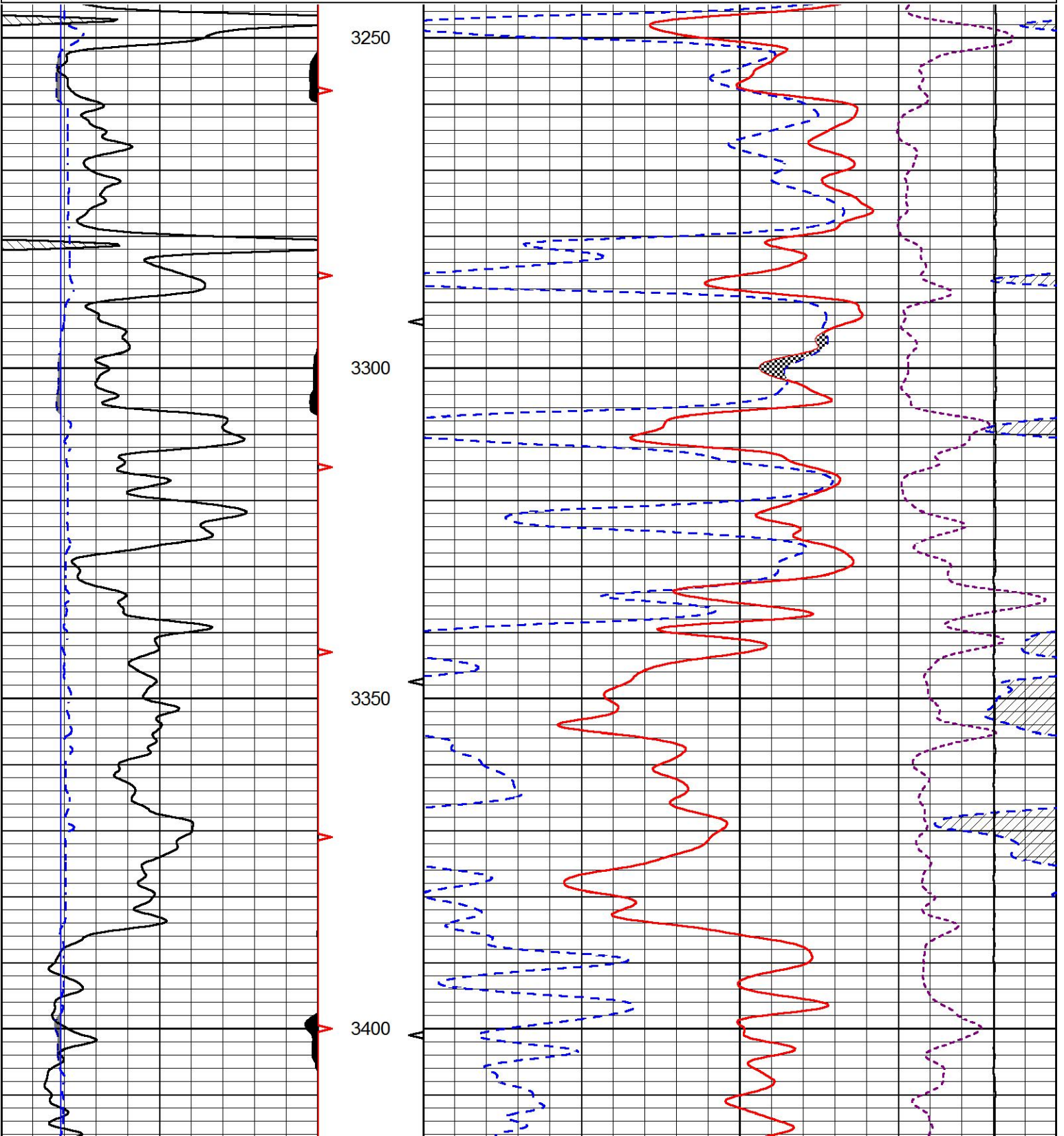


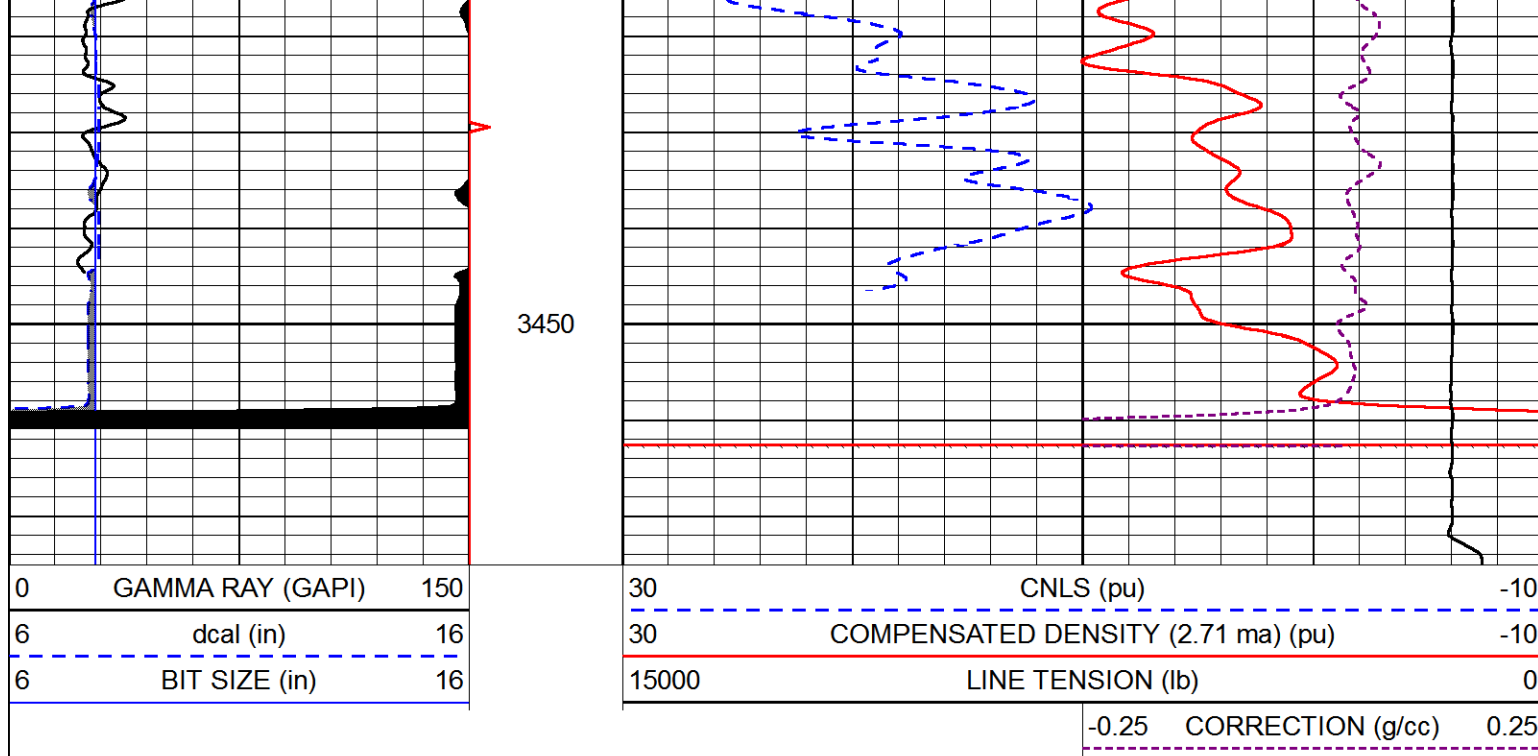
REPEAT SECTION

Database File american_warrior_whisler_1_20.db
Dataset Pathname stack/pass2.1
Presentation Format cndlspec
Dataset Creation Sun May 06 09:08:28 2018
Charted by Depth in Feet scaled 1:240

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

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





Calibration Report		
Database File	american_warrior_whisler_1_20.db	
Dataset Pathname	stack/pass3.1	
Dataset Creation	Sun May 06 09:08:18 2018	

Dual Induction Calibration Report

Serial-Model:	PSI 978-M&W
Calibration Performed:	Sun Feb 04 11:50:02 2018

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.570	-40.500
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.400	-37.000

Compensated Density Calibration Report

Serial-Model:	168-986-M&W
Source / Verifier:	/
Master Calibration Performed:	Tue Apr 11 17:07:47 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	1.00			
Large Ring	16.00	in	1.22			

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 17:08:01 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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