



PIONEER

Pioneer Energy Services

DUAL COMP POROSITY LOG

Company **ELK ENERGY HOLDINGS, LLC**
Well **LIPPELMANN NO 1-14**
Field **WILDCAT**
County **THOMAS** State **KANSAS**

Location: API #: 15-193-20998-00-00

Other Services

SEC 14 TWP 10S RGE 33W
2305' FNL & 2110' FWL

DIL
MEL

Permanent Datum **GROUND LEVEL** Elevation **3139'**
Log Measured From **KELLY BUSHING**
Drilling Measured From **KELLY BUSHING**

Elevation
K.B. 3144'
D.F. N/A
G.L. 3139'

Date **9/7/2017**

Run Number **ONE**

Type Log **CNL/CDL**

Depth Driller **4720'**

Depth Logger **4718'**

Bottom Logged Interval **4689'**

Top Logged Interval **3800'**

Type Fluid In Hole **CHEMICAL**

Salinity, PPM CL **3,500**

Density **9.4**

Level **FULL**

Max. Rec. Temp. F **123 DEG/F**

Operating Rig Time **3 HOURS**

Equipment -- Location **108 HAYS**

Recorded By **J. HENRICKSON**

Witnessed By **SEAN DEENIHAN**

Borehole Record

Casing Record

Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	12.25"	0	347'	8.625"	23#	0	347'
TWO	7.875"	347'	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.

OAKLEY WEST EXIT

1 NORTH TO F RD, 6 WEST TO RD 23, 3/4 SOUTH, EAST INTO

Log Measured From: **KELLY BUSHING** 5 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: **SEAN DEENIHAN**
Secondary Witness:
Secondary Witness:
Secondary Witness:

DatabaseC:\ProgramData\Warrior\Data\elk_energy_lippelmann_1_14.db
Dataset field/well/stackml/pass3.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	125	5.5	0	1	2	2.71
NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	0	0	0	-260	76	Off	4718

Sensor	Offset (ft)	Schematic		Description	Length (ft)	O.D. (in)	Weight (lb)		
GR	40.58			GR-M&W (89-M&W)	3.00	3.50	50.00		
CNLSC	37.48			CNT-M&W (tk10-MW)	5.50	3.50	100.00		
CNSSC	36.73								
LSD	28.43			CDL-M&W (168-986)	8.50	4.00	250.00		
								DCAL	28.42
								SSD	27.93
ML-PSI STKBL ML (PSI-02) Stackable Microlog Tools					7.58	4.00	65.00		
MCAL	19.83								
MI	19.83								
MN	19.83								
RLL3	15.80								
RLL3F	15.79								
CILD	8.00			DIL-M&W (1987)	18.50	3.50	220.00		

CILM

4.70

SP

0.20

Dataset: elk_energy_lippelmann_1_14.db: field/well/stackml/pass3.1
Total length: 43.08 ft
Total weight: 685.00 lb
O.D.: 4.00 in

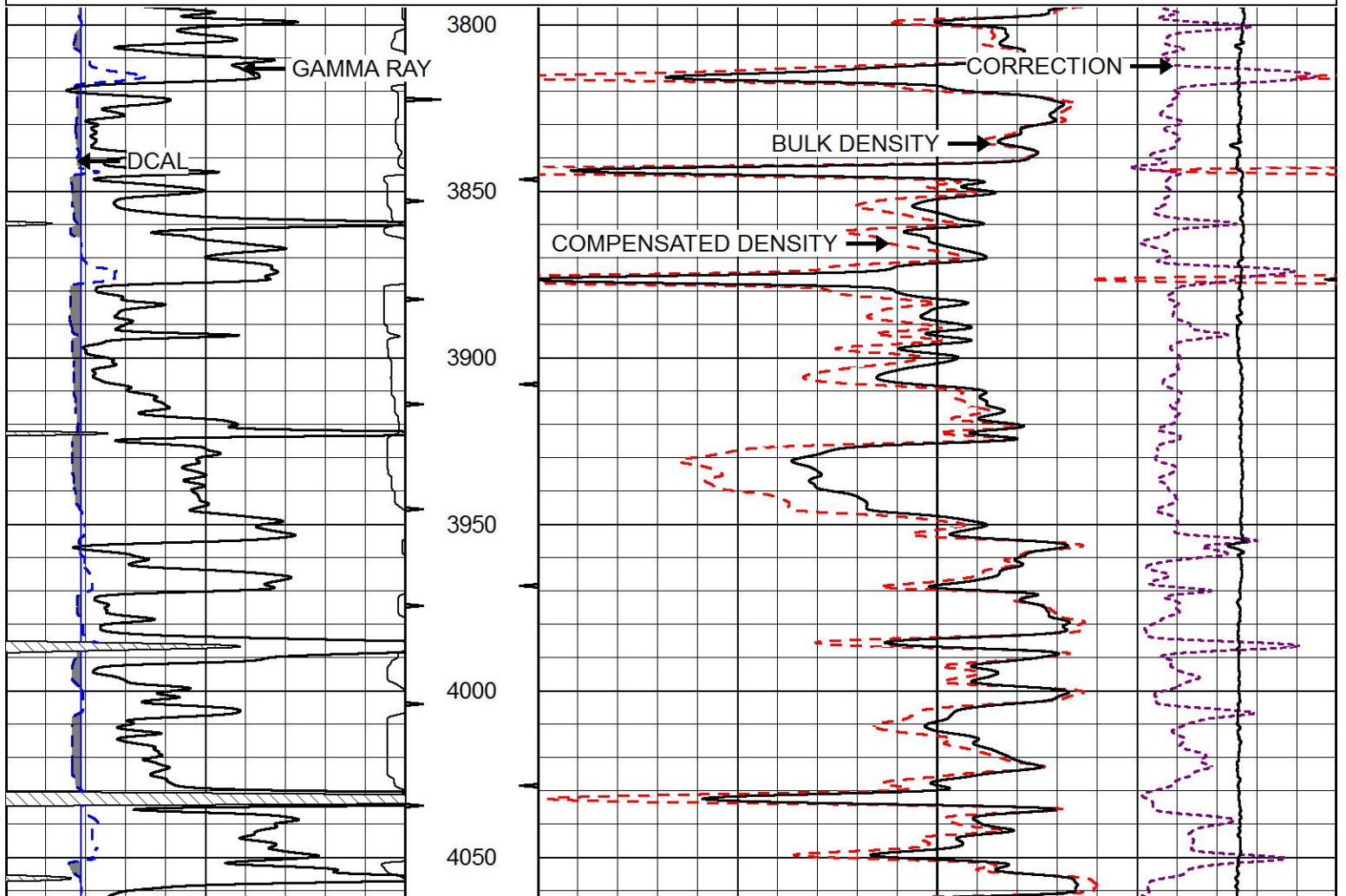


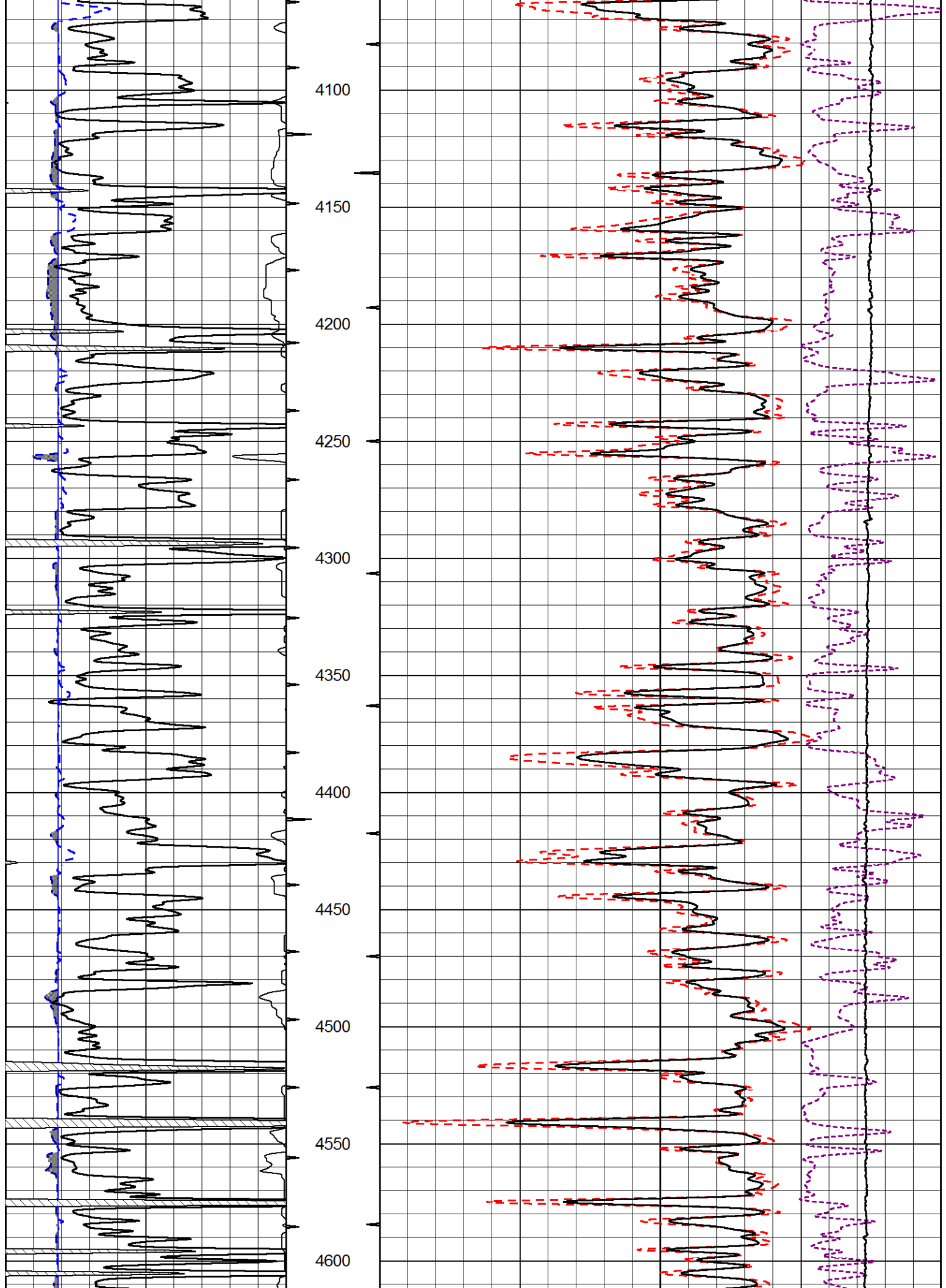
MAIN PASS

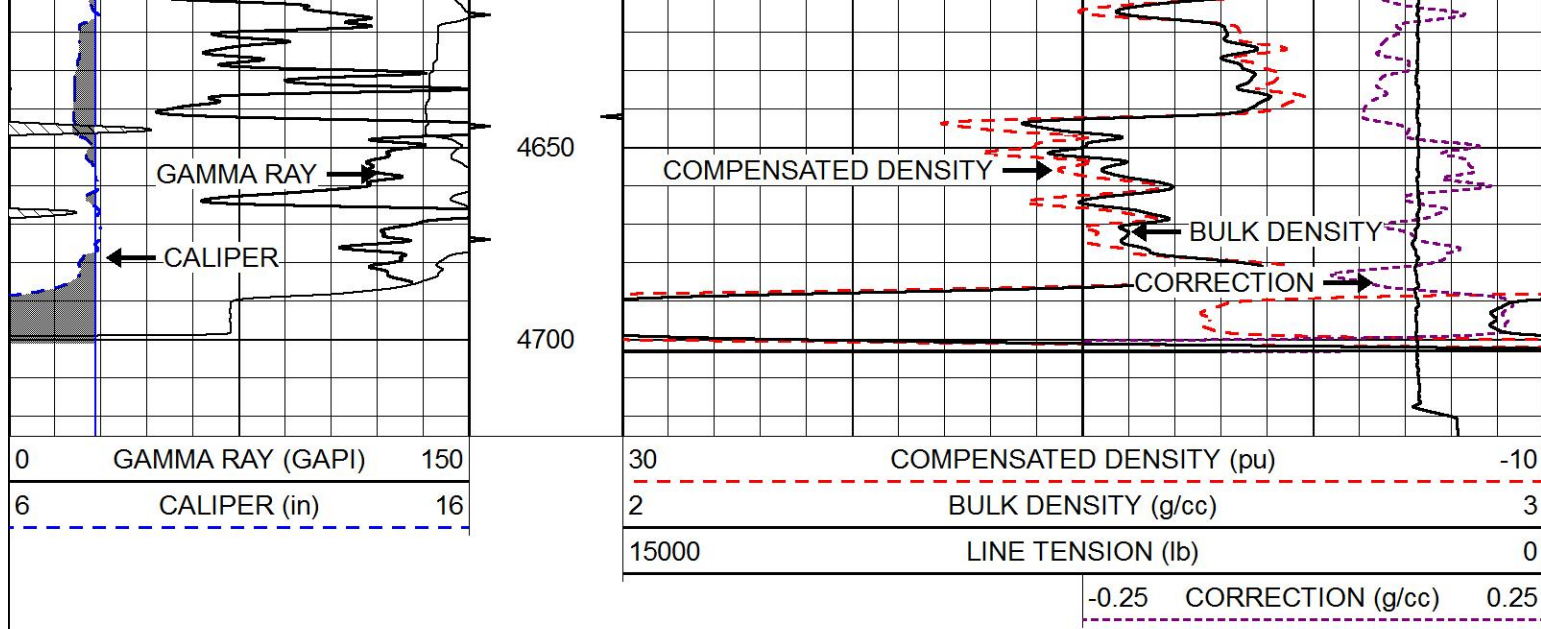
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Dataset Pathname stackml/pass3.1
Presentation Format cdl
Dataset Creation Thu Sep 07 14:06:47 2017
Charted by Depth in Feet scaled 1:600

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





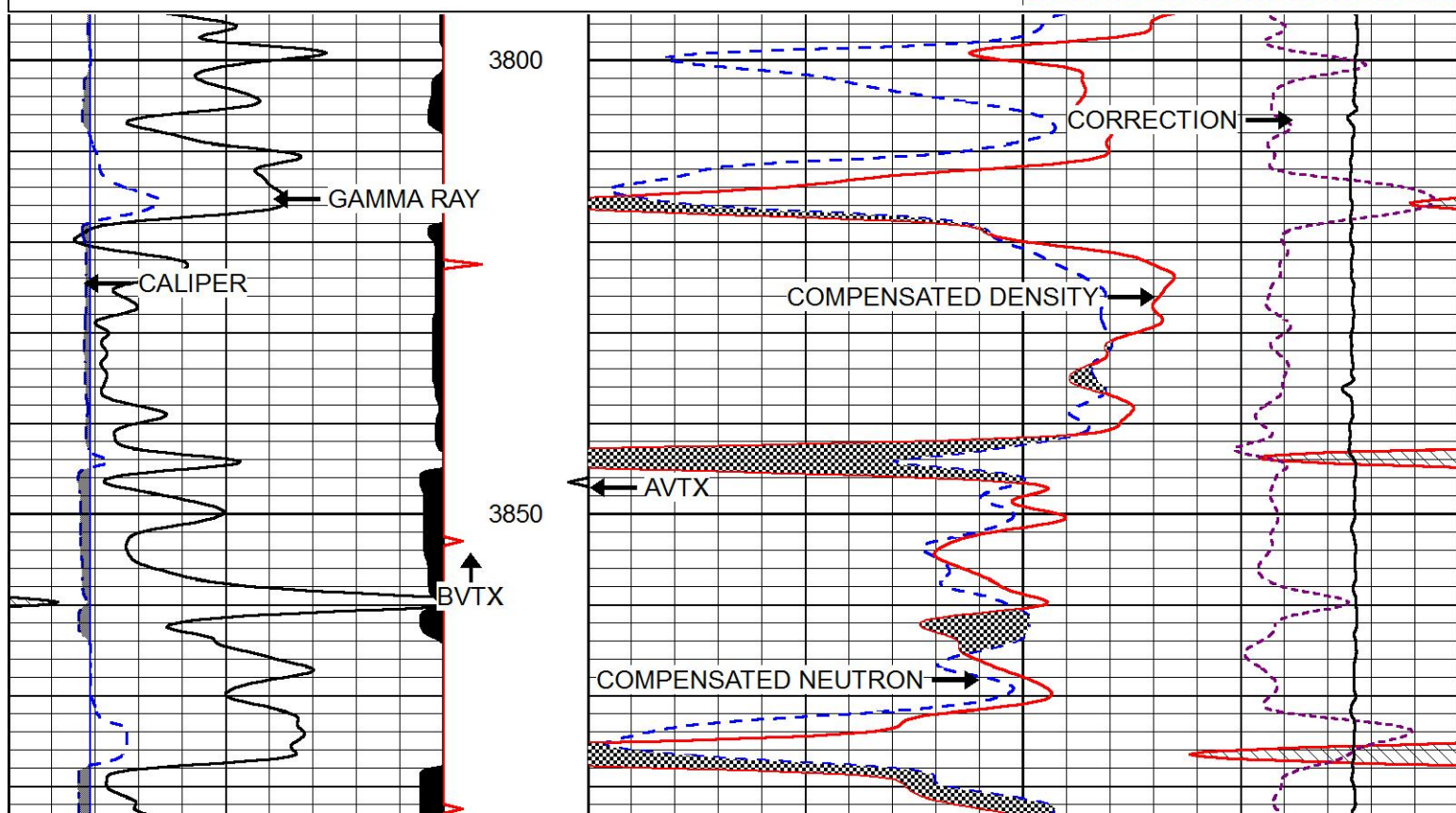
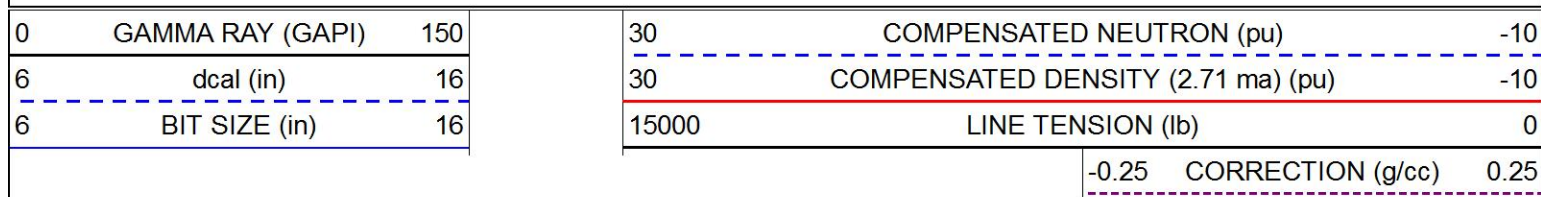


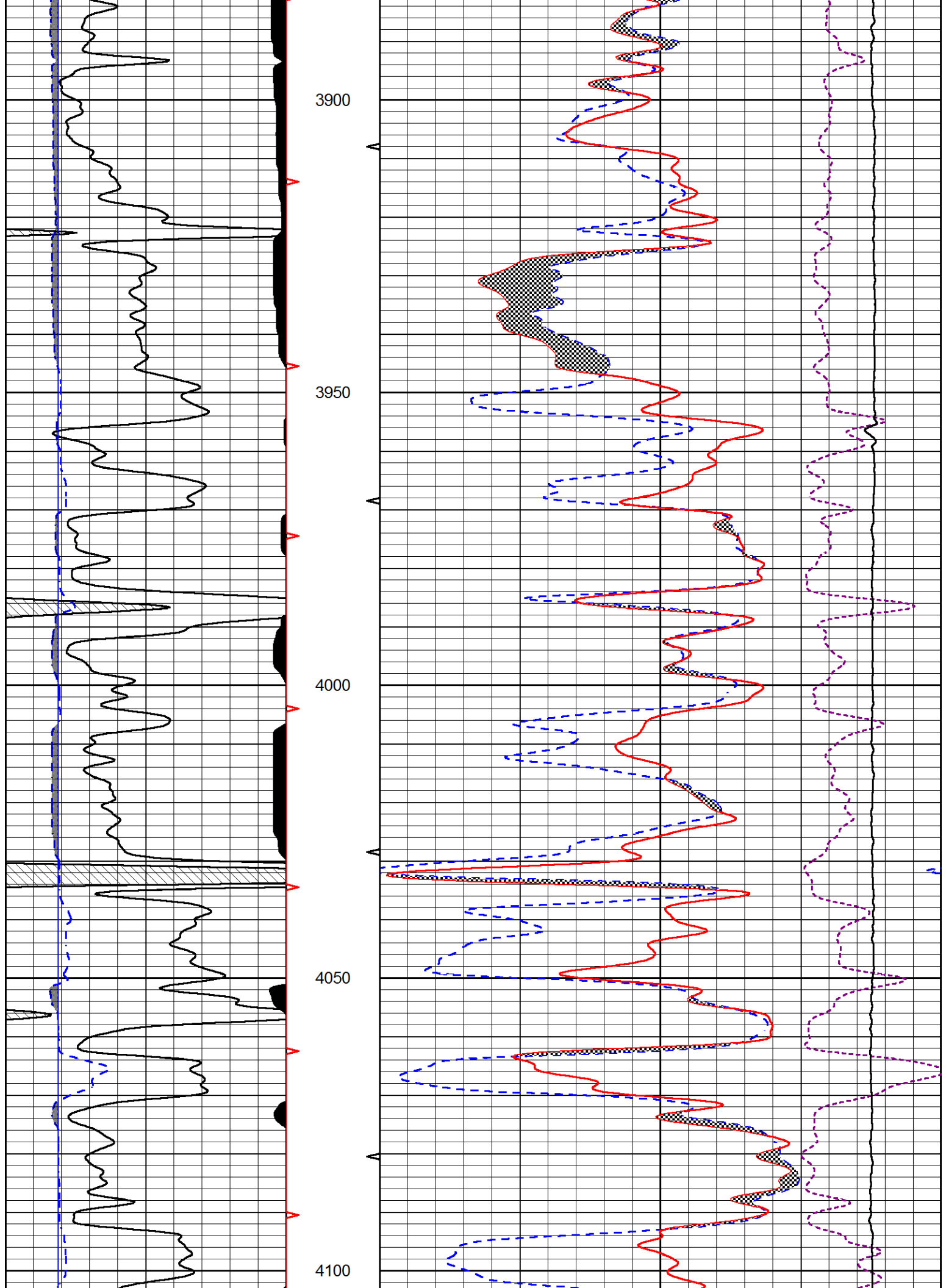


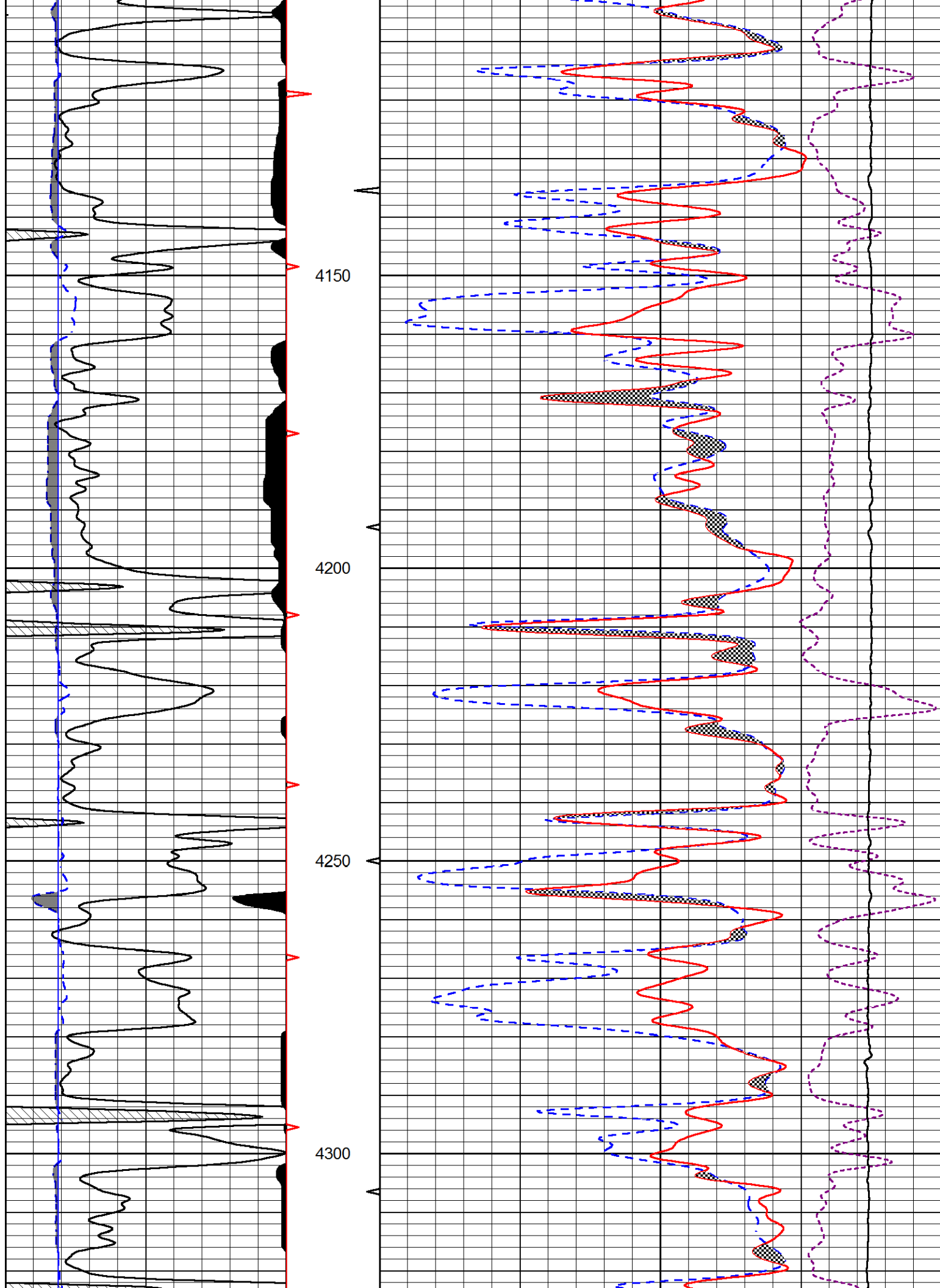
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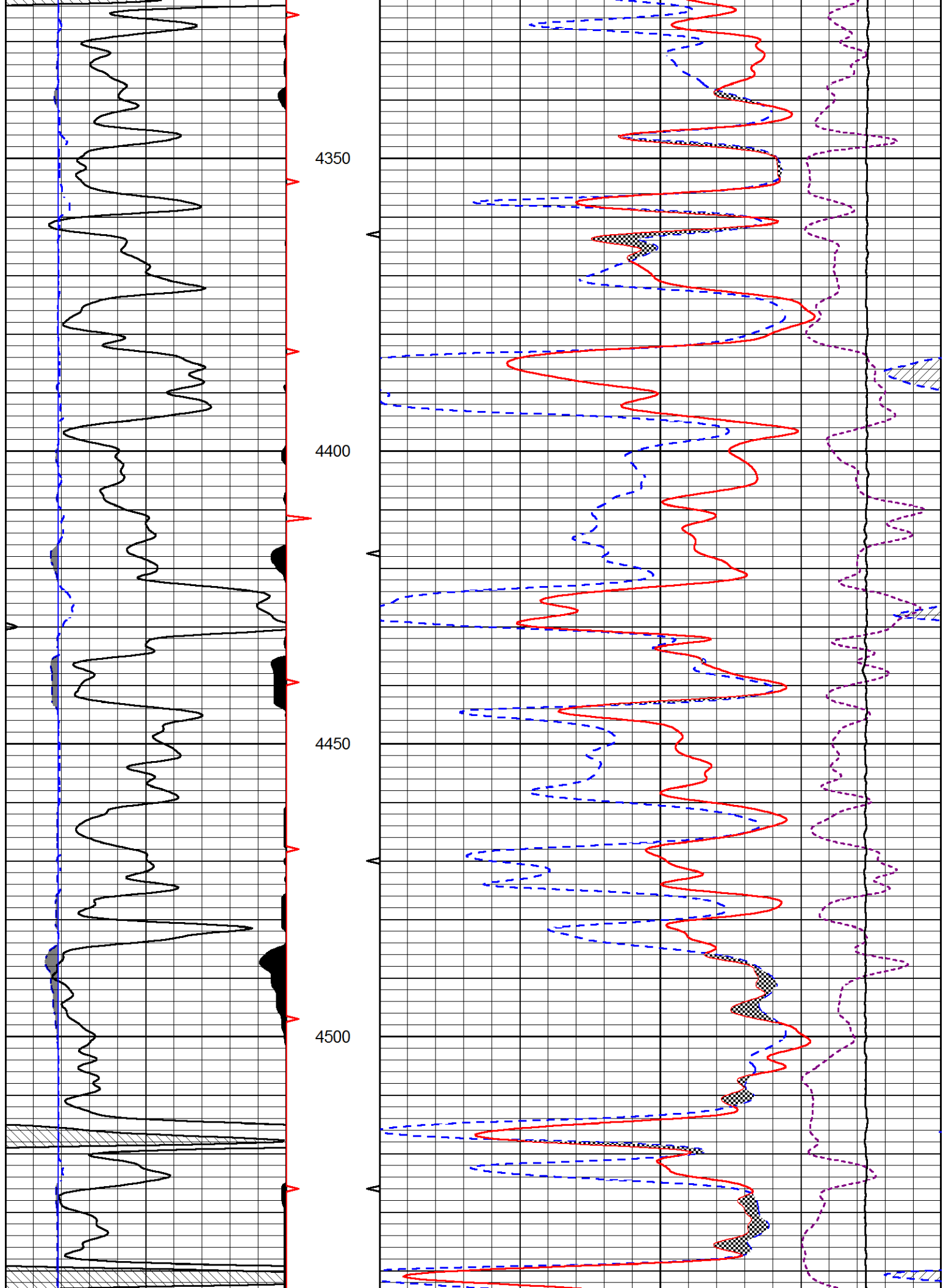
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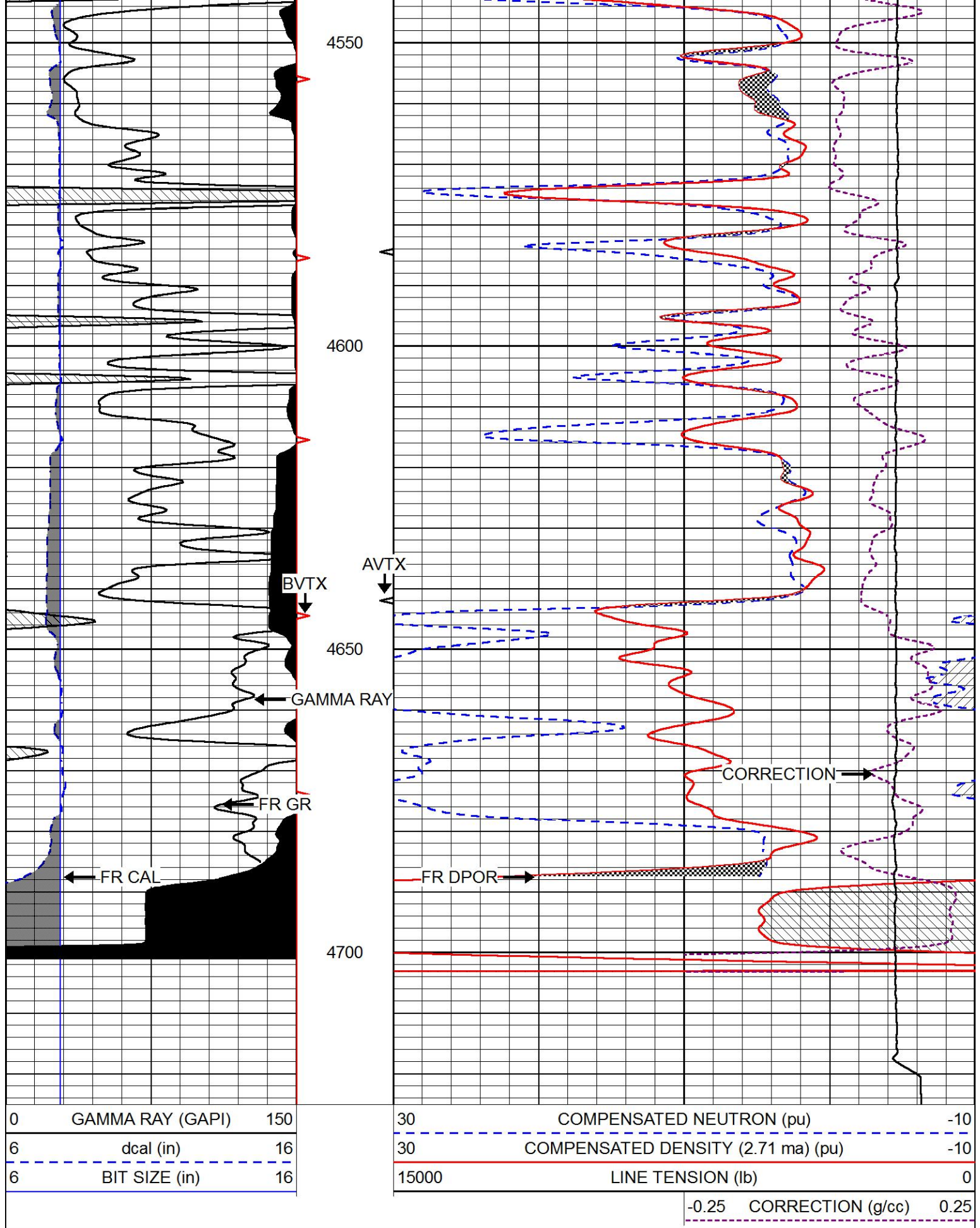
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 Presentation Format: cndlspec
 Dataset Creation: Thu Sep 07 14:06:47 2017
 Charted by: Depth in Feet scaled 1:240









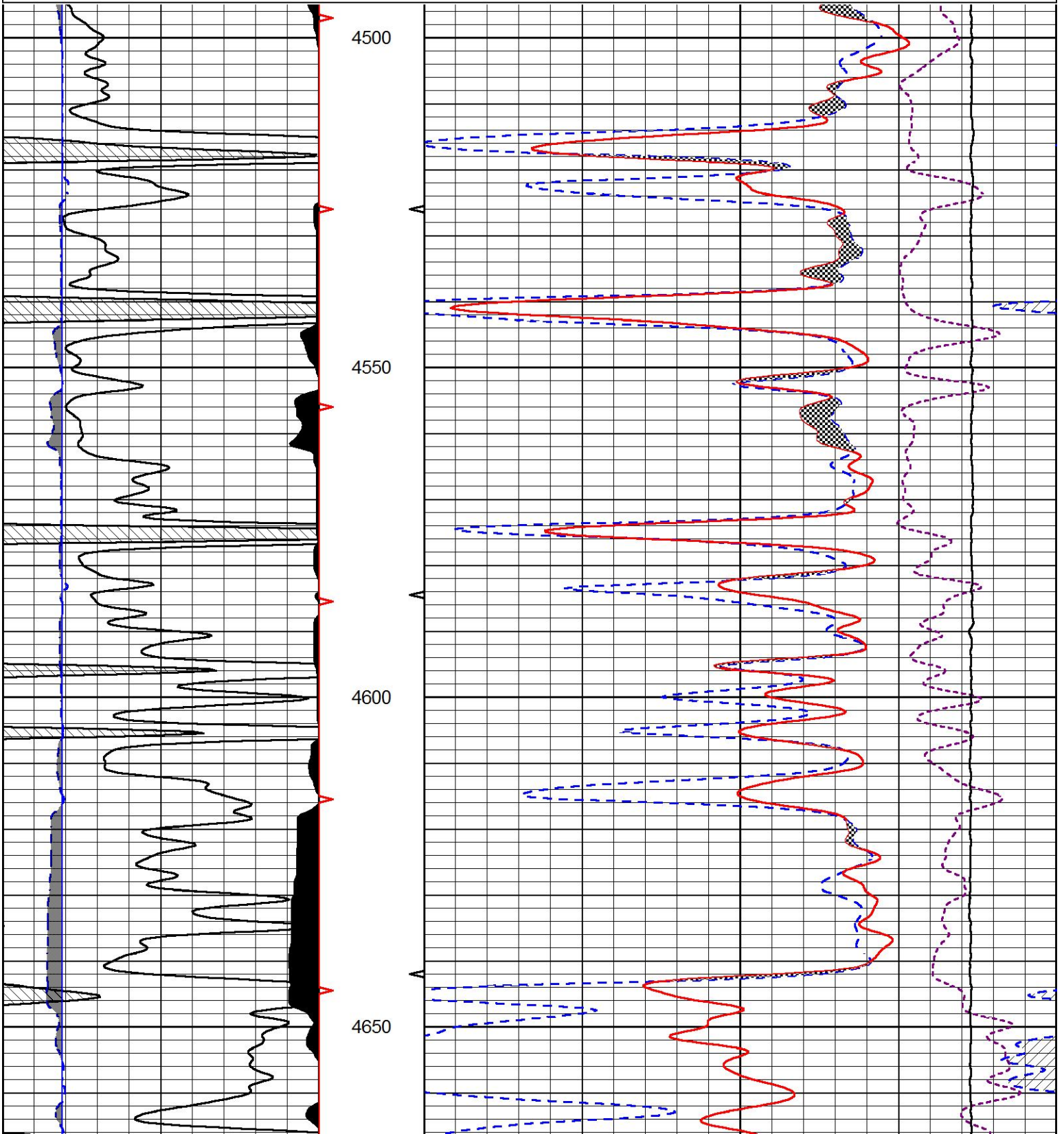


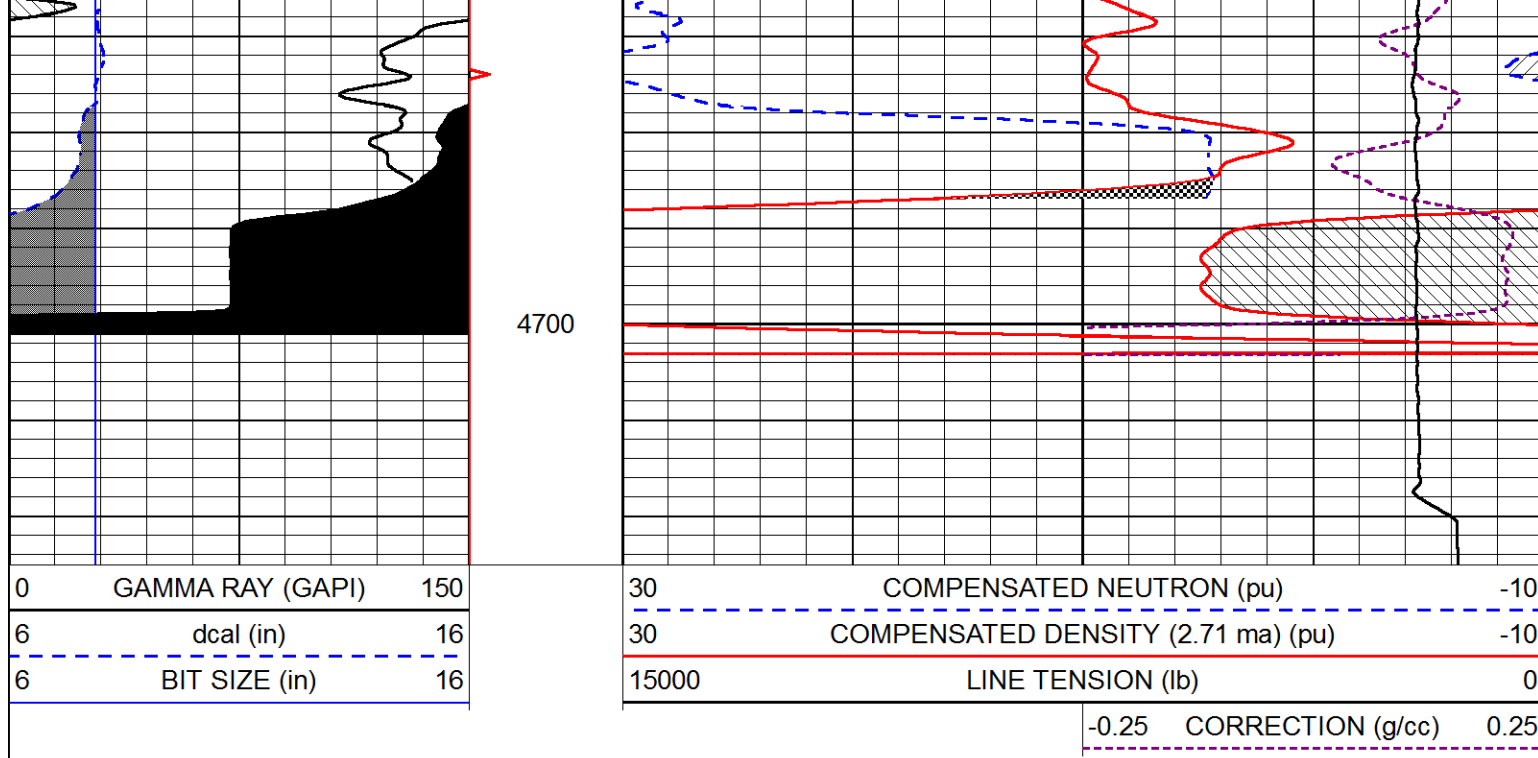
REPEAT SECTION

Database File elk_energy_lippelmann_1_14.db
Dataset Pathname stackml/pass2.1
Presentation Format cndlspec
Dataset Creation Thu Sep 07 13:12:05 2017
Charted by Depth in Feet scaled 1:240

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

30	COMPENSATED NEUTRON (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 elk_energy_lippelmann_1_14.db
 Dataset Pathname stackml/pass3.1
 Dataset Creation Thu Sep 07 14:06:47 2017

Dual Induction Calibration Report

Serial-Model: 1987-M&W
 Calibration Performed: Tue Apr 11 16:07:38 2017

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.530	-36.500
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.440	-110.500

Microlog Calibration Report

Serial-Model: PSI-02-PSI STKBL ML
 Performed: Fri Jun 23 00:25:19 2017

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0031	0.0043	0.0000	10.0000	Ohm-m	16000.0000	0.0000
Inverse	0.0000	0.0013	0.0000	10.0000	Ohm-m	18000.0000	0.0000
Caliper	1.0020	1.0834	5.5000	16.5000	in	135.1560	-131.4000

Compensated Density Calibration Report

Serial-Model: 168-986-M&W
 Source / Verifier: /
 Master Calibration Performed: Tue Apr 11 16:07:47 2017

	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	1.03		
Large Ring	14.00	in	1.23		

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 16:08:01 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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