



**PIONEER**  
Pioneer Energy Services

**DUAL COMP POROSITY  
LOG**

Company RAMA OPERATING COMPANY, INC.  
Well HILLARD #5-1  
Field ROLLINGSON  
County PRATT  
State KANSAS

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County PRATT State KANSAS

Location: API #: 15--151-22513-00-00  
SW SE NW NE  
1050' FNL & 1900' FEL  
SEC 1 TWP 28S RGE 13W  
Permanent Datum GROUND LEVEL Elevation 1841'  
Log Measured From KELLY BUSHING  
Drilling Measured From KELLY BUSHING  
Other Services  
DIL/MEL  
Elevation  
K.B. 1857'  
D.F. N/A  
G.L. 1841'

Date	5/15/2020						
Run Number	ONE						
Type Log	CNL/CDL						
Depth Driller	4425'						
Depth Logger	4423'						
Bottom Logged Interval	4394'						
Top Logged Interval	3400'						
Type Fluid In Hole	CHEMICAL						
Salinity, PPM CL	4500						
Density	9.1						
Level	FULL						
Max. Rec. Temp. F	120						
Operating Rig Time	3 HOURS						
Equipment -- Location	P-24 HAYS						
Recorded By	D. SCHMIDT						
Witnessed By	JOSH AUSTIN						
Borehole Record							
Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	N/A	0'	20'	20"	N/A	0'	20'
TWO	17.5"	20'	307'	13.375"	N/A	0'	307'
THREE	12.25"	307'	1110'	8.625"	23#	0'	1110'
FOUR	7.875"	1110'		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.  
PRATT,  
1 1/2 EAST, SOUTH INTO

Log Measured From: KELLY BUSHING 16 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: JOSH AUSTIN	Secondary Witness:
Operator:	Operator:	Secondary Witness:	Secondary Witness:
Operator:		Secondary Witness:	

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58		GR-M&W (233-M&W)	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 (817-947)	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		DIL-PSI HIGH TEMP (952-828)	18.50	3.50	220.00
CILM	4.70					
SP	0.20					

Dataset: rama\_hillard 5-1.db: field/well/STKML/pass2.4  
 Total length: 43.08 ft  
 Total weight: 685.00 lb  
 O.D.: 4.00 in

# Log Variables

DatabaseC:\ProgramData\Warrior\Data\rama\_hillard 5-1.db  
 Dataset field/well/STKML/pass2.4/\_vars\_

## Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	100	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	220	0	Off	0

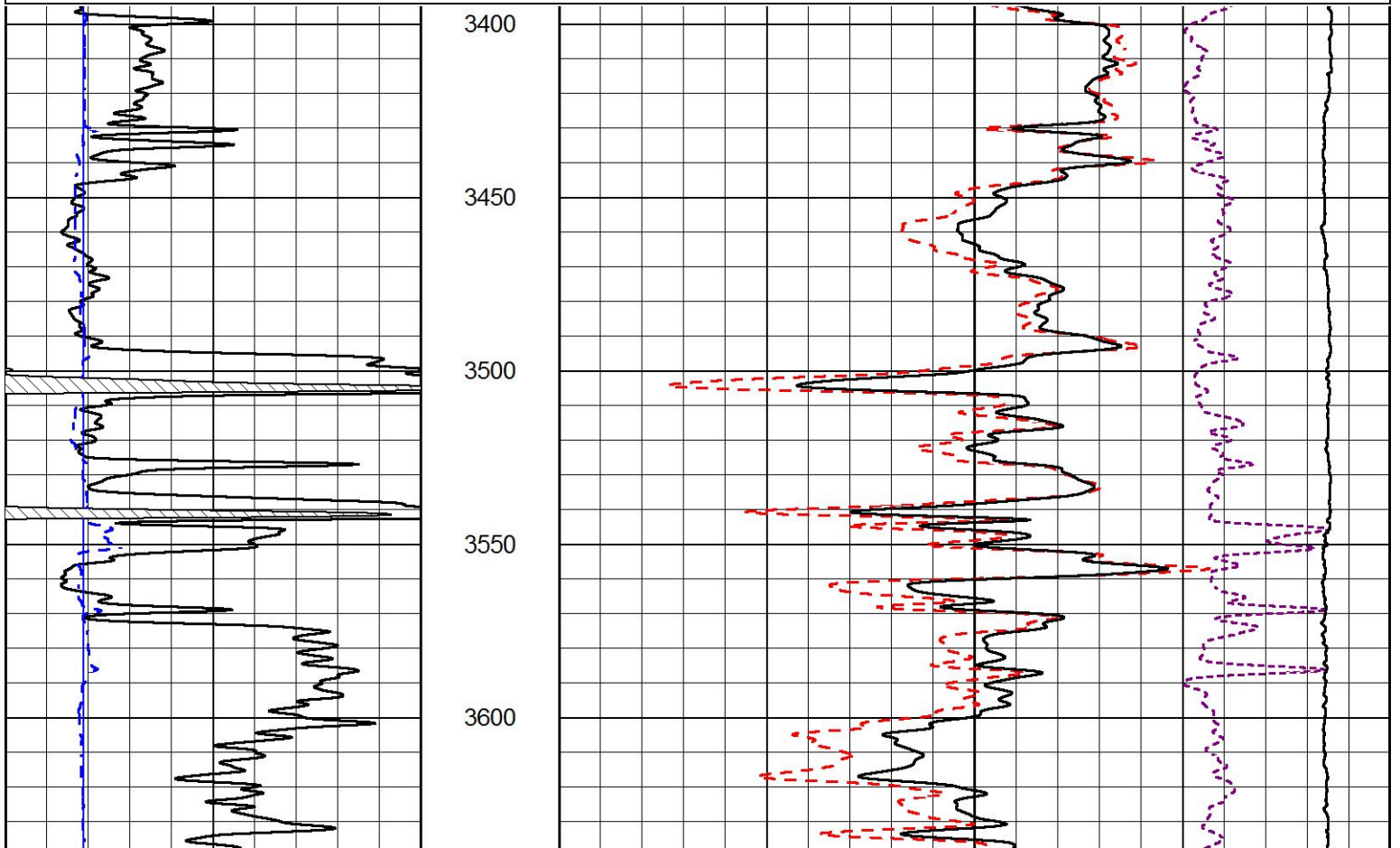


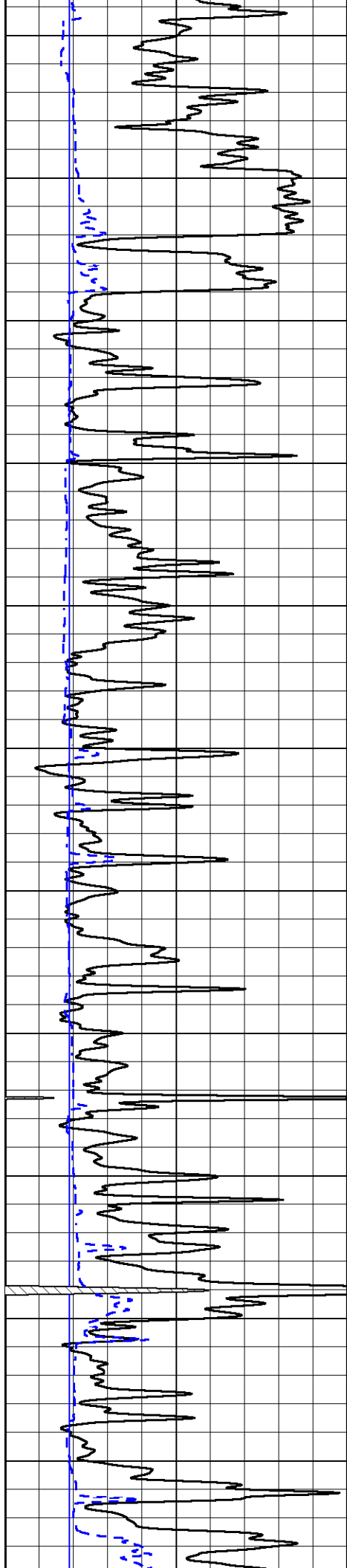
# MAIN PASS

Database File rama\_hillard 5-1.db  
 Dataset Pathname STKML/pass2.5  
 Presentation Format \_cdl  
 Dataset Creation Fri May 15 14:35:36 2020  
 Charted by Depth in Feet scaled 1:600

0	GAMMA RAY (GAPI)	150
6	DCAL (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





3650

3700

3750

3800

3850

3900

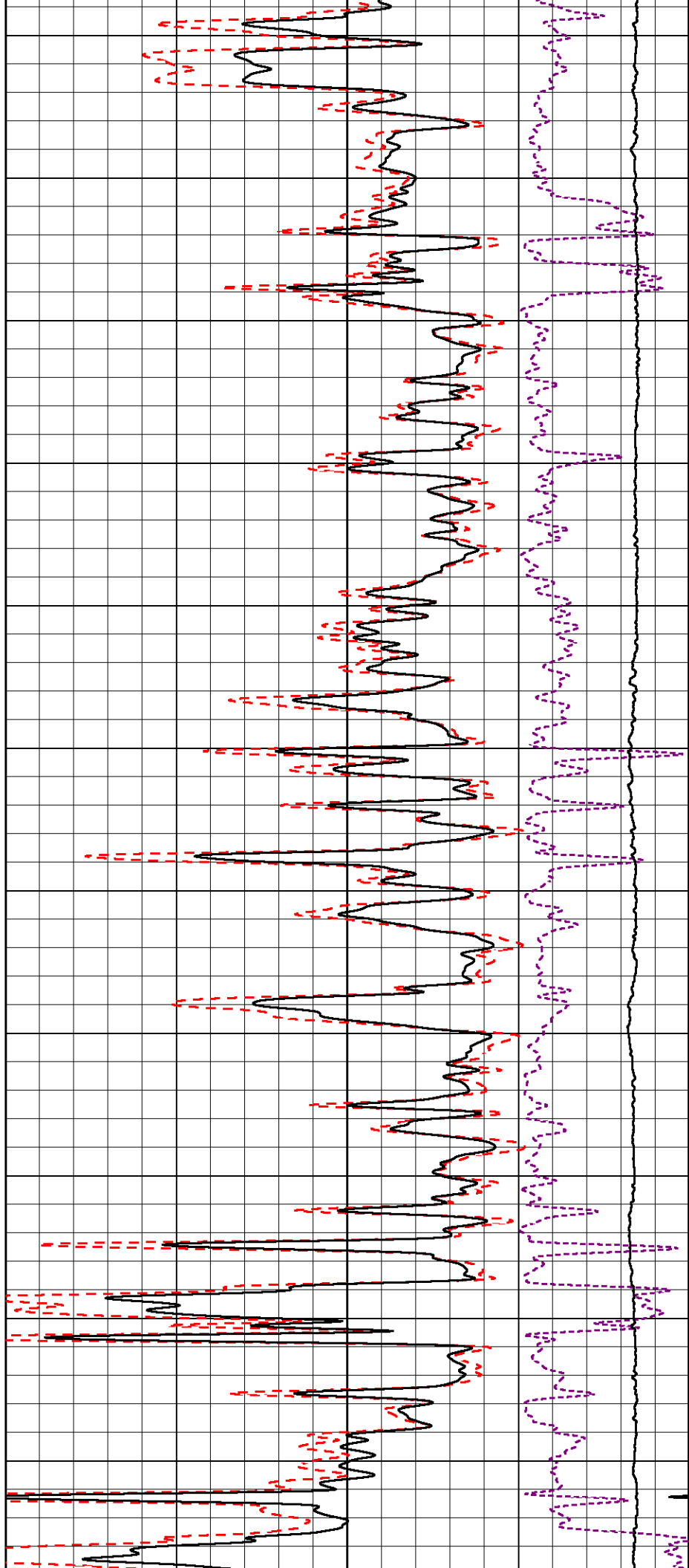
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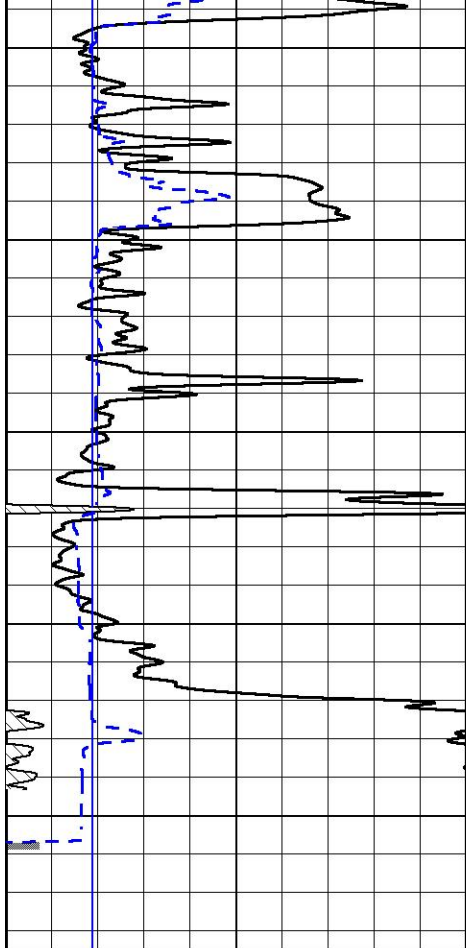
4000

4050

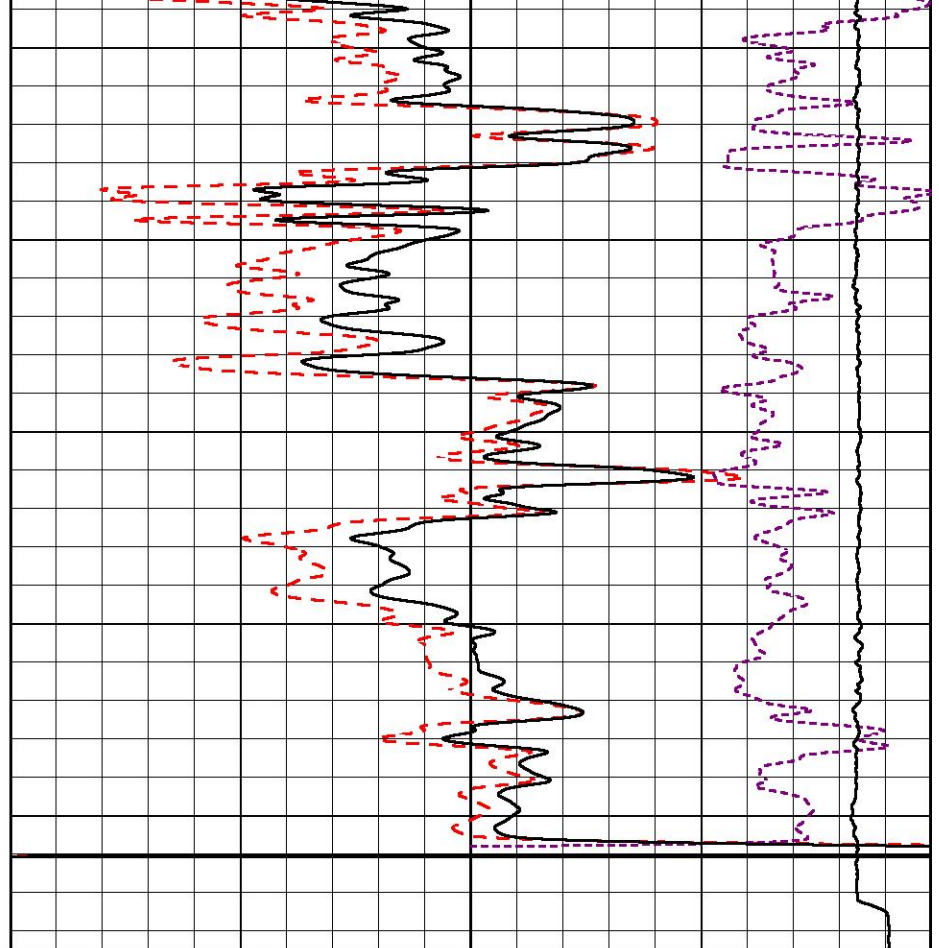
4100

4150





4200  
4250  
4300  
4350  
4400



0 GAMMA RAY (GAPI) 150  
6 DCAL (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



# MAIN PASS

Database File rama\_hillard 5-1.db  
Dataset Pathname STKML/pass2.5  
Presentation Format \_cndlspec  
Dataset Creation Fri May 15 14:35:36 2020  
Charted by Depth in Feet scaled 1:240

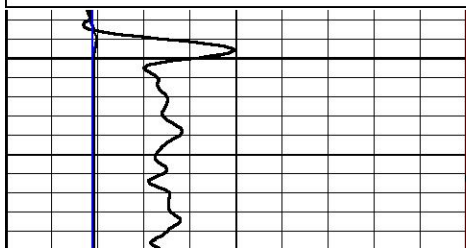
0 GAMMA RAY (GAPI) 150  
6 DCAL (in) 16

30 CNLS (pu) -10

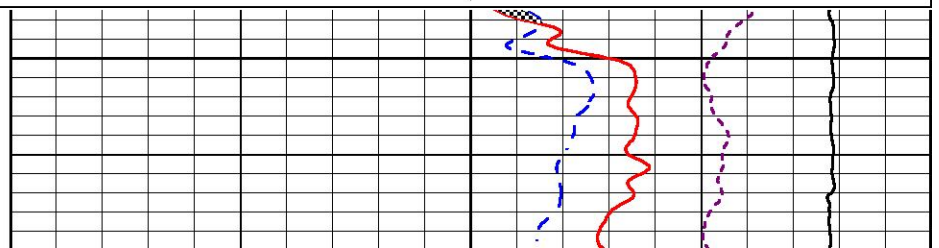
30 DPOR (pu) -10

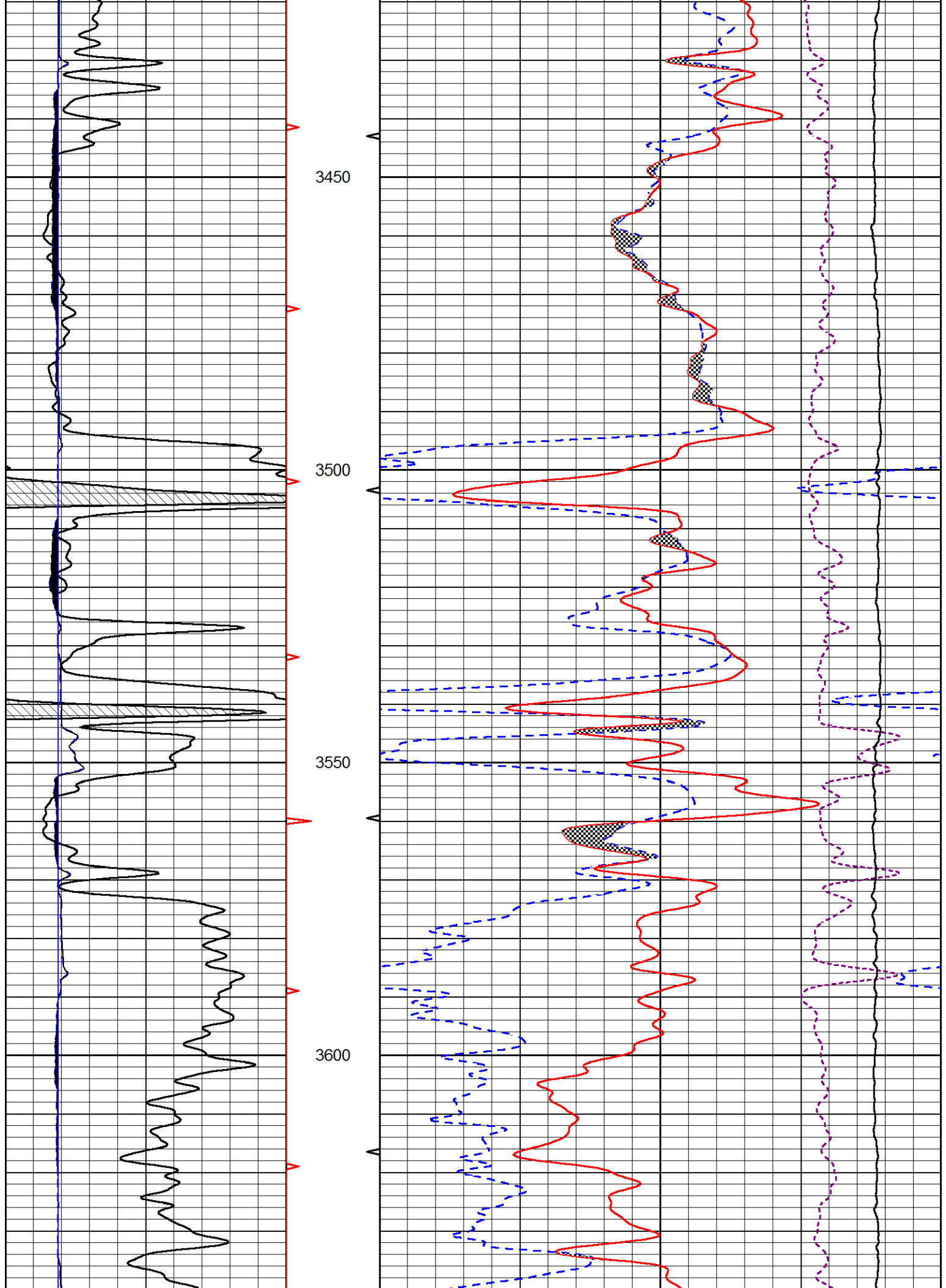
10000 LINE TENSION (lb) 0

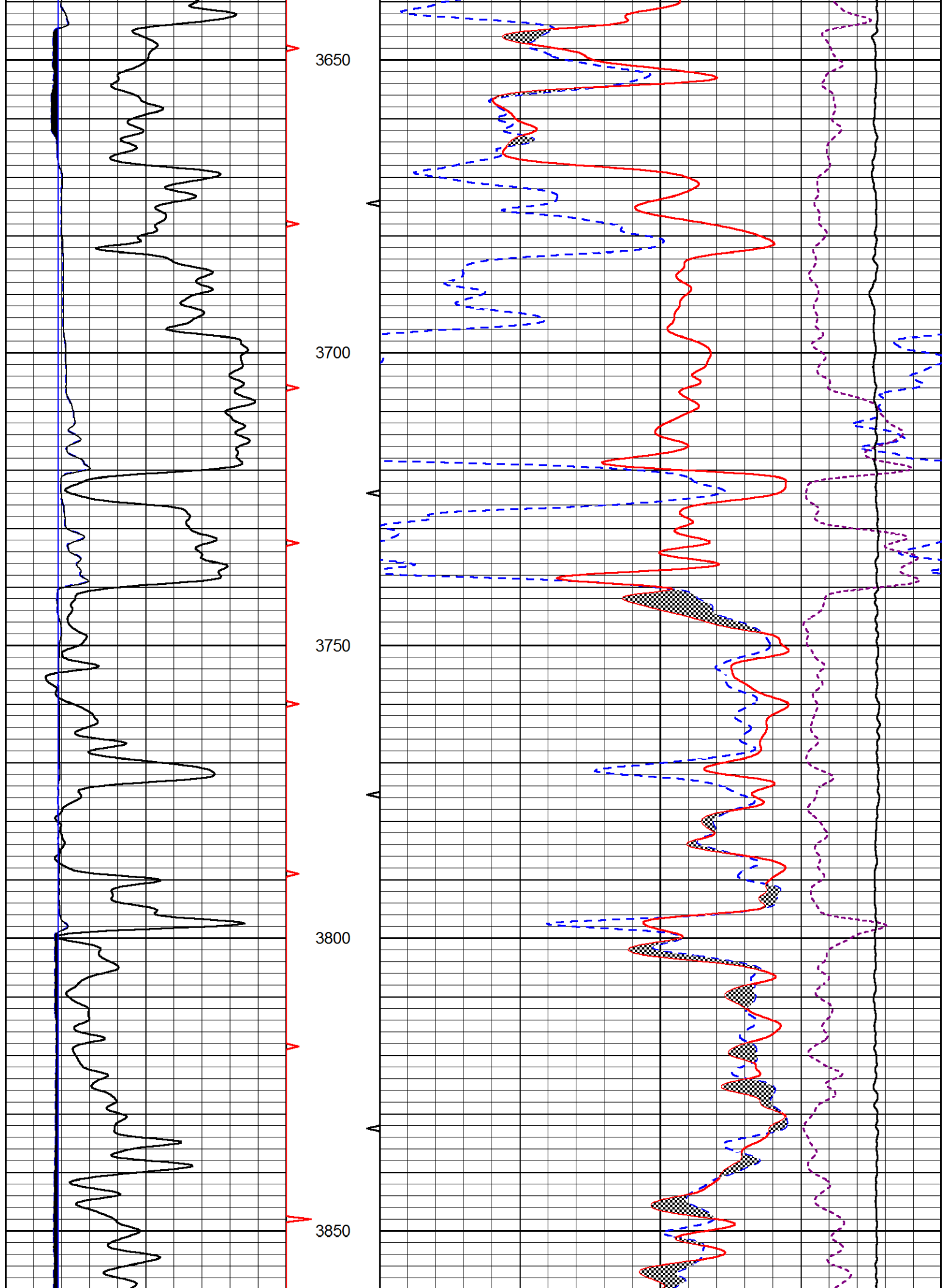
-0.25 CORRECTION (g/cc) 0.25

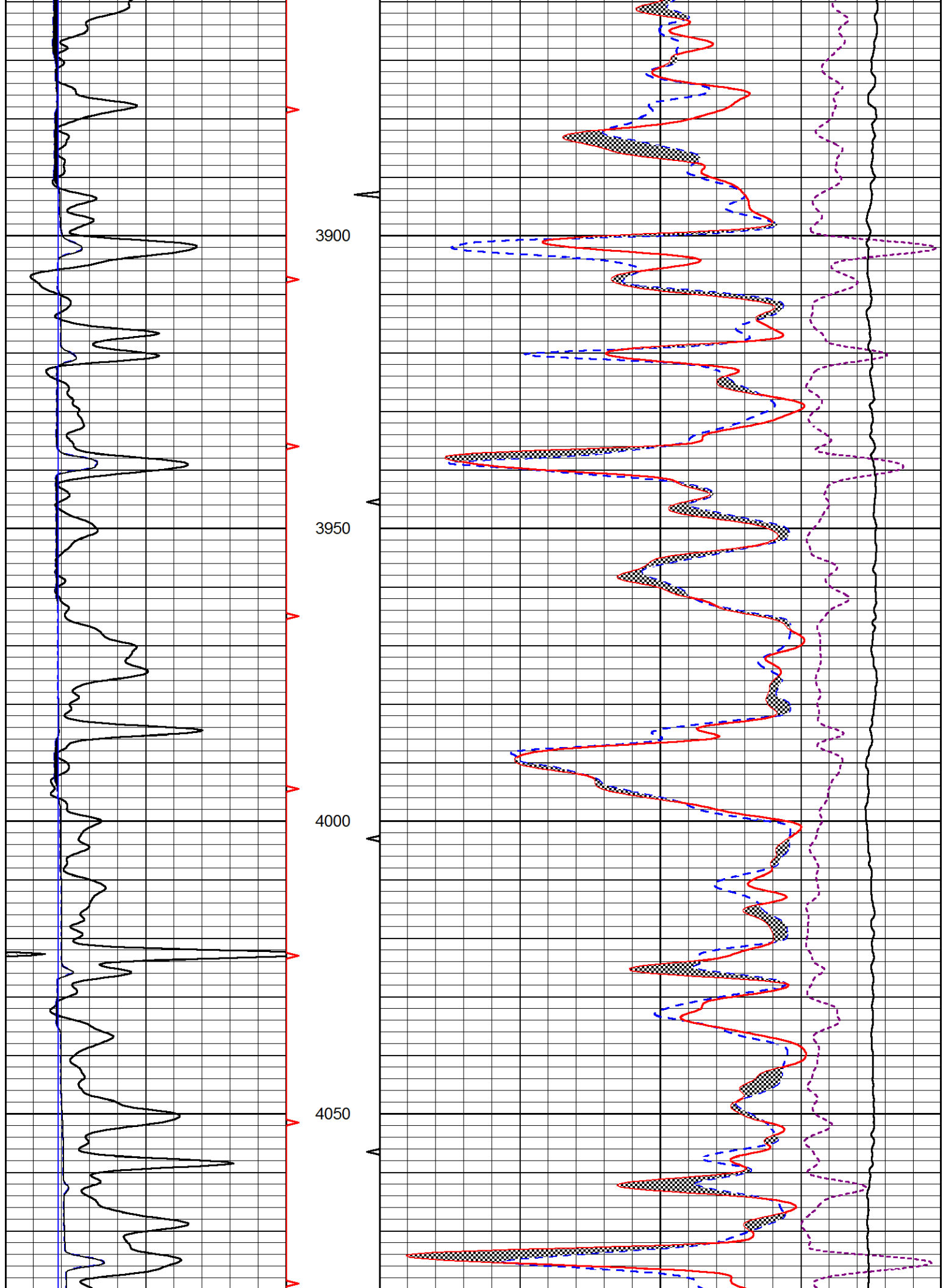


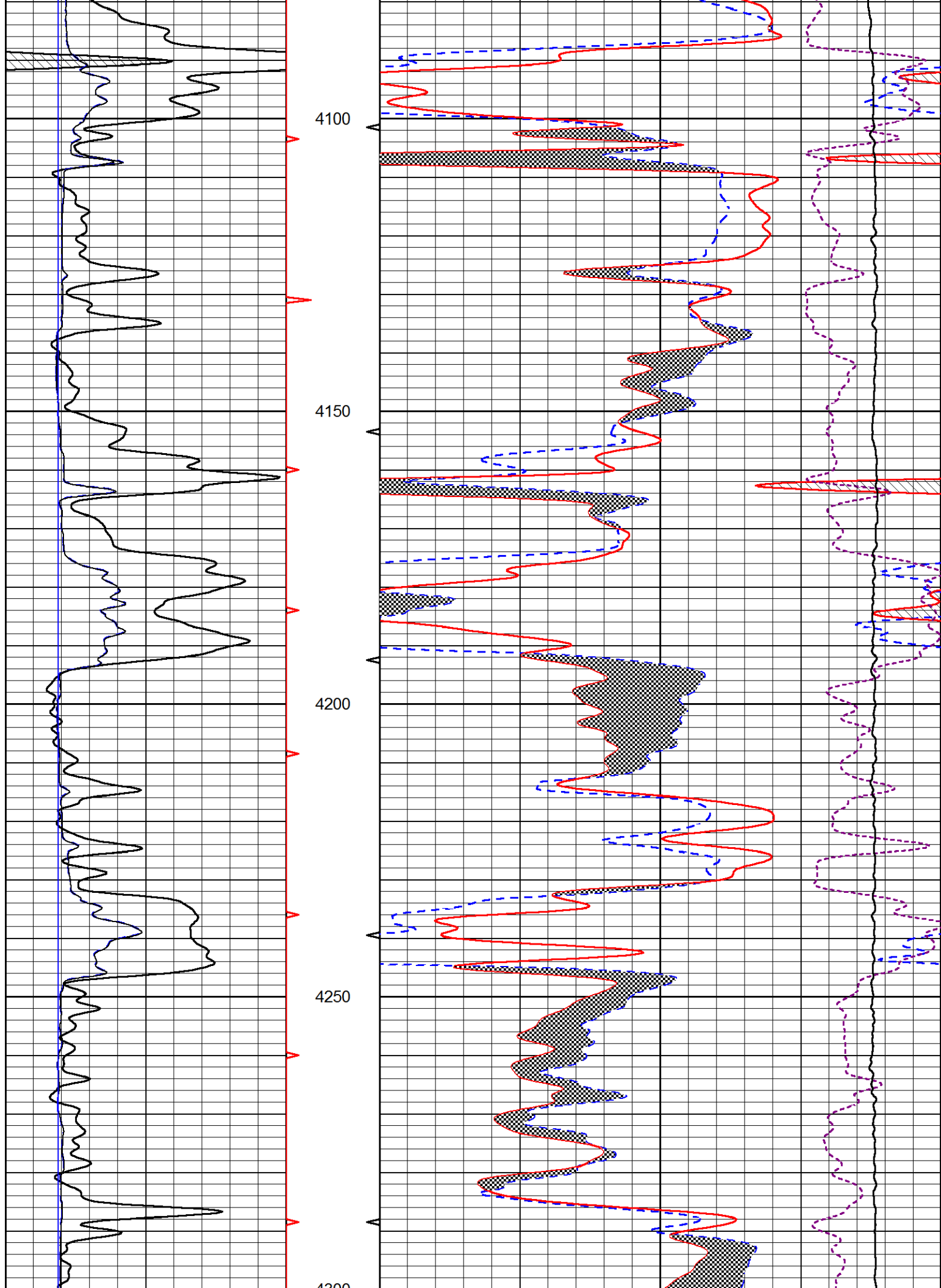
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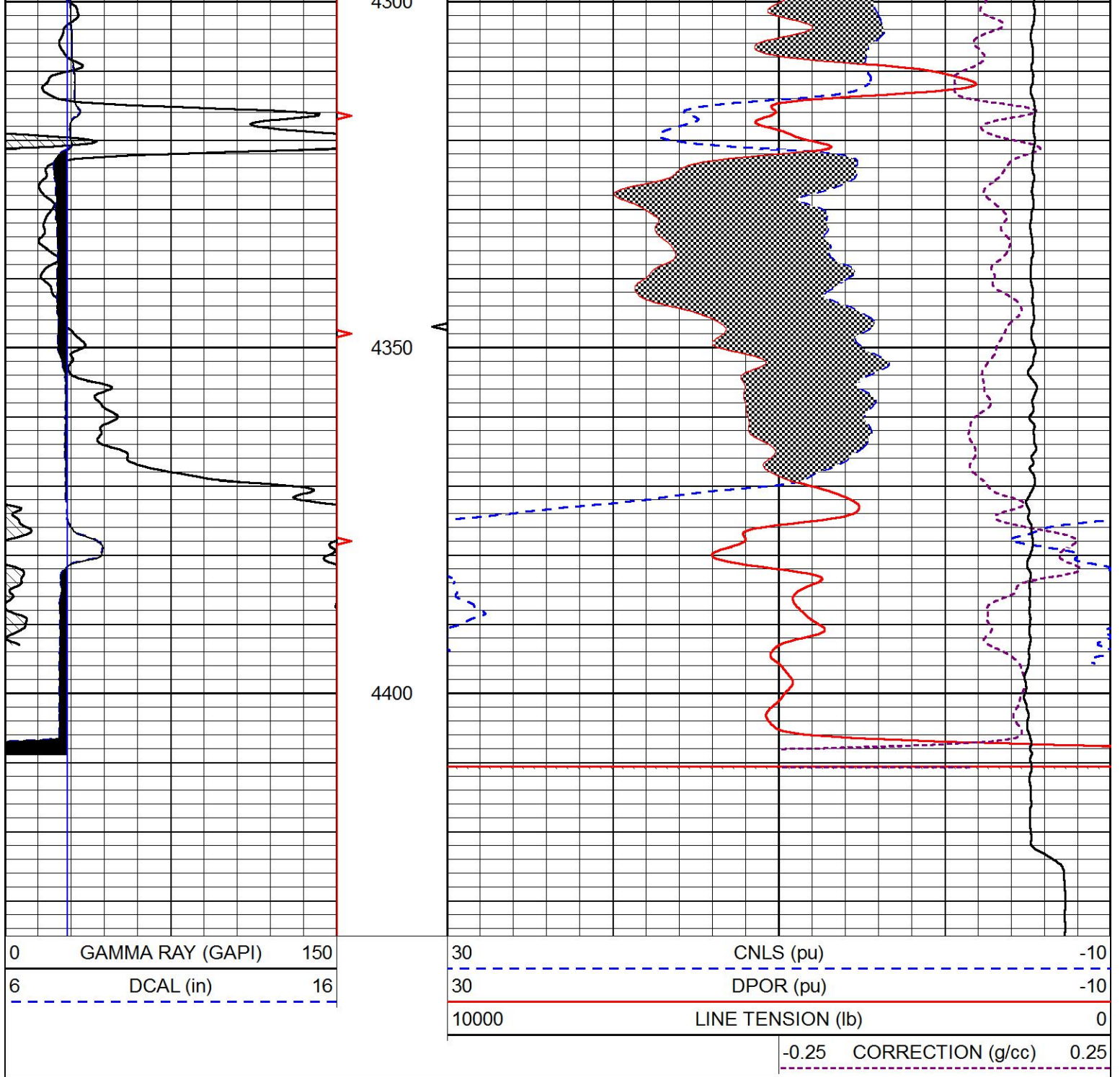






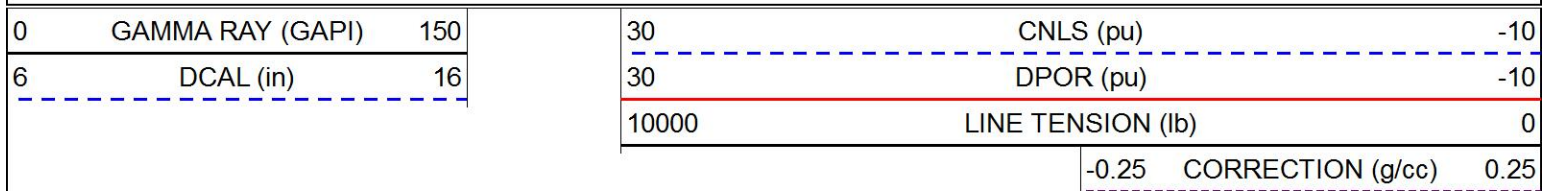


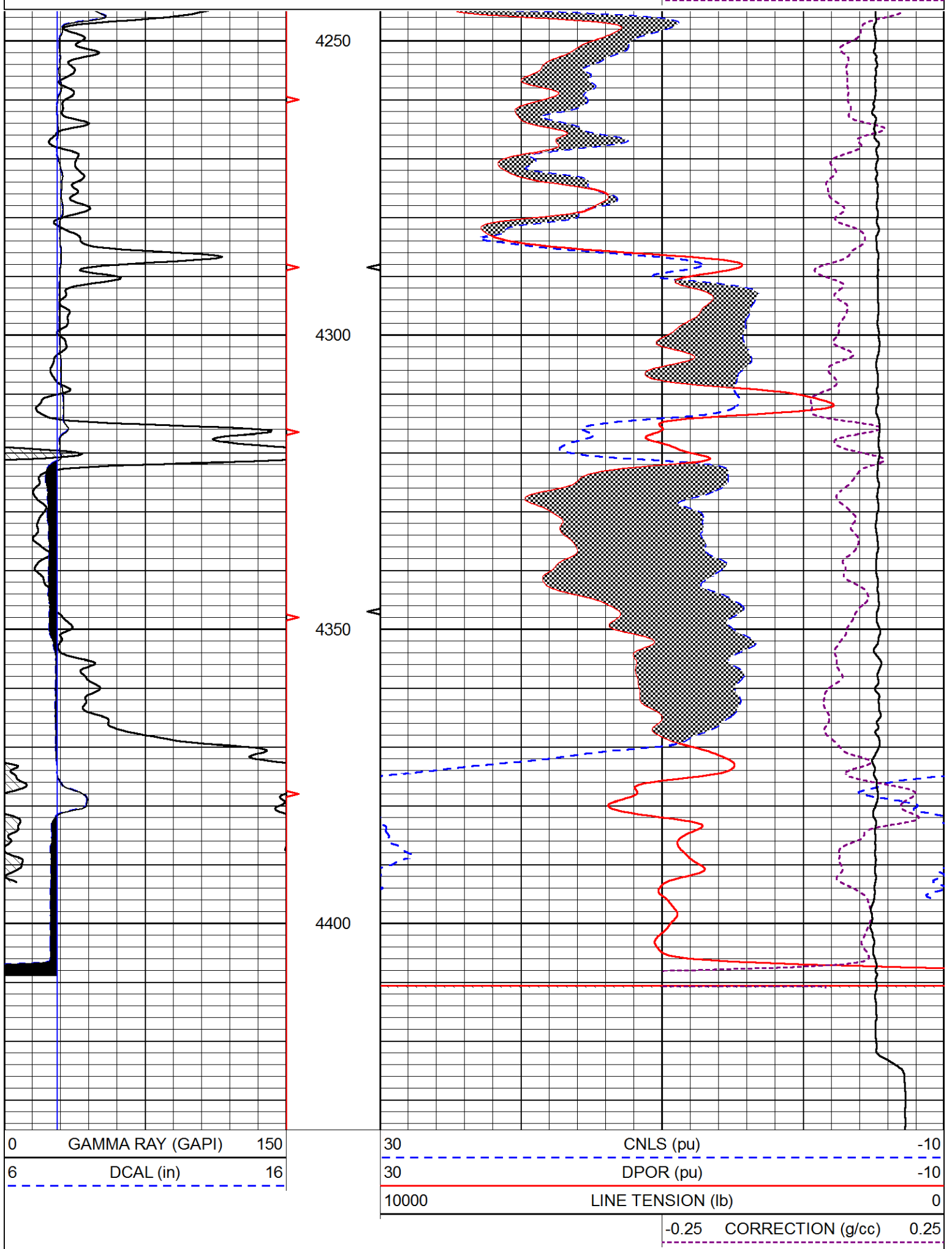




# REPEAT SECTION

Database File rama\_hillard 5-1.db  
 Dataset Pathname STKML/pass1.3  
 Presentation Format \_CNDLS~1  
 Dataset Creation Fri May 15 14:30:51 2020  
 Charted by Depth in Feet scaled 1:240





Calibration Report

Database File rama\_hillard 5-1.db  
 Dataset Pathname STKML/pass2.4  
 Dataset Creation Fri May 15 14:28:23 2020

Dual Induction Calibration Report

Serial-Model: 952-828-PSI HIGH TEMP  
 Calibration Performed: Sun Mar 01 09:43:59 2020

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	167.000	835.000	0.000	255.000	mmho/m	0.500	-33.500
Medium	0.000	1348.000	142.000	255.000	mmho/m	0.350	-30.000

Microlog Calibration Report

Serial-Model: PSI-01-PSIML  
 Performed: Sun Mar 01 09:45:03 2020

	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	20000.0000	-0.5000
Caliper	1.0033	1.0841	5.0000	16.5000	in	142.3500	-138.3500

Compensated Density Calibration Report

Serial-Model: 817-947-M&W  
 Source / Verifier: 16955B / 2ci  
 Master Calibration Performed: Tue Sep 24 21:18:50 2019

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	6127.15	5922.31	cps
Aluminum	2.675	g/cc	1141.85	3762.09	cps
Spine Angle = 74.89			Density/Spine Ratio = 0.529		
	Size		Reading		
Small Ring	4.50	in	1.02		
Large Ring	14.50	in	1.23		

Compensated Neutron Calibration Report

Serial Number: 207-MW  
 Tool Model: M&W  
 Calibration Performed: WED FEB 13 10:30:30 2019

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:	233-M&W	
Tool Model:	M&W	
Calibration Performed:	Fri Feb 07 01:42:40 2014	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.5500	GAPI/cps



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