



MIDWEST WIRELINE

DUAL COMP POROSITY LOG

Company: Darrah Oil Company, LLC
 Well: Knop #1-4
 Field: Chase-Silica
 County: Rice
 State: Kansas

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 Well: Knop #1-4
 Field: Chase-Silica
 County: Rice
 State: Kansas

Location: 1240' FNL & 1315' FWL
 SEC 4 TWP 20S RGE 10W
 Location: API #: 15-159-22871-00-00
 Log Measured From: Kelly Bushing
 Drilling Measured From: Kelly Bushing
 Permanent Datum: Ground Level
 Elevation: 1794'
 Other Services: DIL/MEL
 K.B. 1804'
 D.F. N/A
 G.L. 1794'

Date	8/25/2020
Run Number	One
Type Log	CNL/CDL
Depth Driller	3330'
Depth Logger	3326'
Bottom Logged Interval	3297'
Top Logged Interval	2500'
Type Fluid In Hole	Chemical
Salinity, PPM CL	N/A
Density	N/A
Level	Full
Max. Rec. Temp. F	109
Operating Rig Time	3 Hours
Equipment -- Location	P-24 HAYS
Recorded By	D. Schmidt
Witnessed By	Samman Sharifaie

Borehole Record		Casing Record					
Run No.	Bit	From	To	Size	Wgt.	From	To
One	12.25"	0'	296'	8.625"	23#	0'	296'
Two	7.875"	296'	TD				

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All interpretations are opinions based on inferences from electrical or other measurements and Midwest Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Midwest 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.

Ellinwood,
 East to 4th Rd, 1/2 South,
 East into

Log Measured From: Kelly Bushing 10 Ft. Above Permanent Datum

THANK YOU FOR USING MIDWEST WIRELINE LLC
 785-625-3858

Your Midwest Wireline Crew		This Log Record Was Witnessed By	
Engineer: D. Schmidt	Operator:	Primary Witness: Samman Sharifaie	Secondary Witness:
Operator:	Operator:	Secondary Witness:	Secondary Witness:
Operator:		Secondary Witness:	

Operator	Offset (ft)	Schematic	Description	Length (ft)	C.D. (in)	Weight (lb)
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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: darrah_knop 1-4.db: field/well/stkml/pass4.1
 Total length: 43.08 ft
 Total weight: 685.00 lb
 O.D.: 4.00 in

Log Variables

DatabaseC:\ProgramData\Warrior\Data\darrah_knop 1-4.db
 Dataset field/well/stkml/pass4.1/_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	476	0	Off	0

Variable Description

A : Cement Factor (a)
 BOREID : Borehole I.D.
 BOTTEMP : Bottom Hole Temperature
 CASEOD : Casing O.D.
 CASETHCK : Casing Thickness
 FLUIDDEN : Fluid Density
 M : Cement Exp (m)
 MATRXDEN : Matrix Density

NPORSEL : Neutron Porosity Curve Select
 PERFS : Perforation Flag
 SNDERR : Deep Sonde Error Correction
 SNDERRM : Medium Sonde Error Correction
 SPSHIFT : S.P. Baseline Offset
 SRFTEMP : Surface Temperature
 SZCOR : CN Size Cor. ?
 TDEPTH : Total Depth

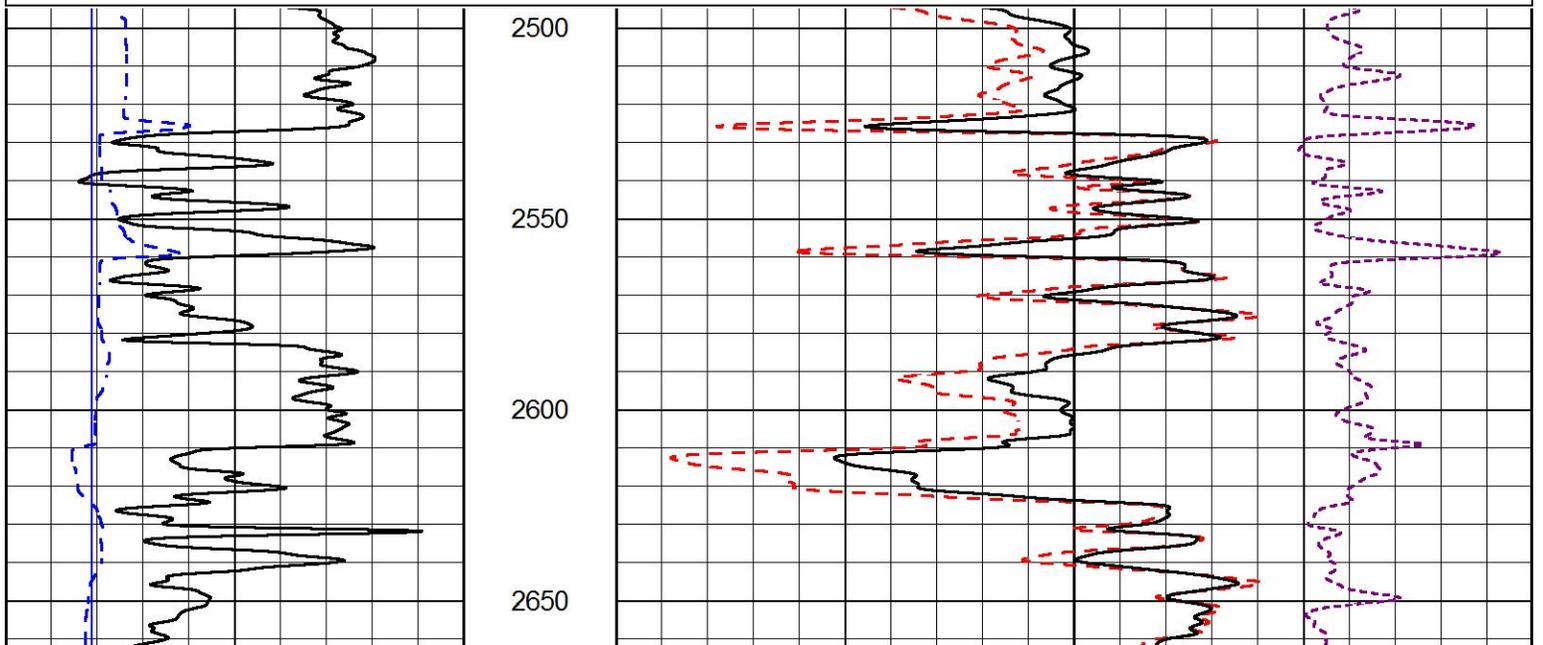


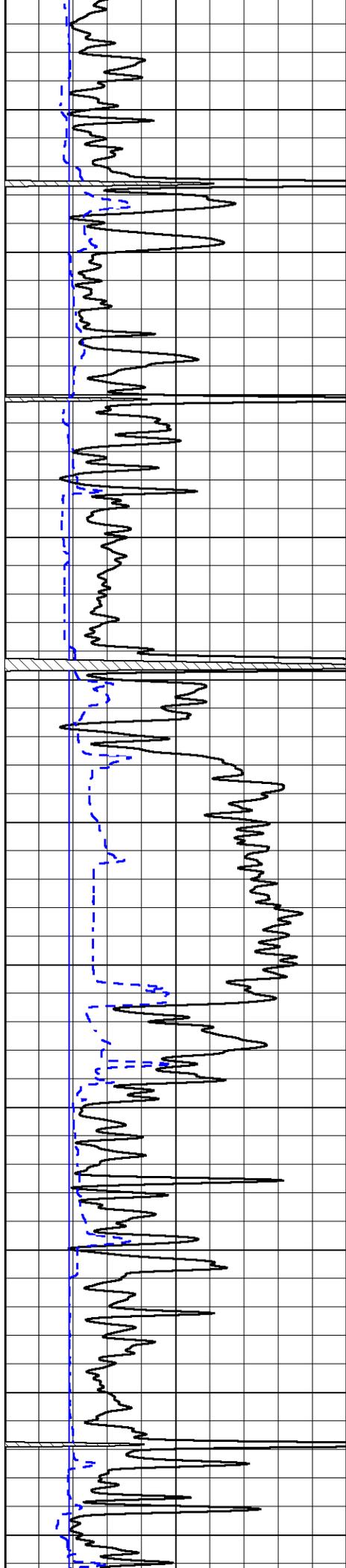
MAIN PASS

Database File darrah_knop 1-4.db
 Dataset Pathname stkml/pass4.1
 Presentation Format _cdl
 Dataset Creation Tue Aug 25 12:10:26 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
BULK DENSITY (g/cc)		3
-0.25	CORRECTION (g/cc)	0.25





2700

2750

2800

2850

2900

2950

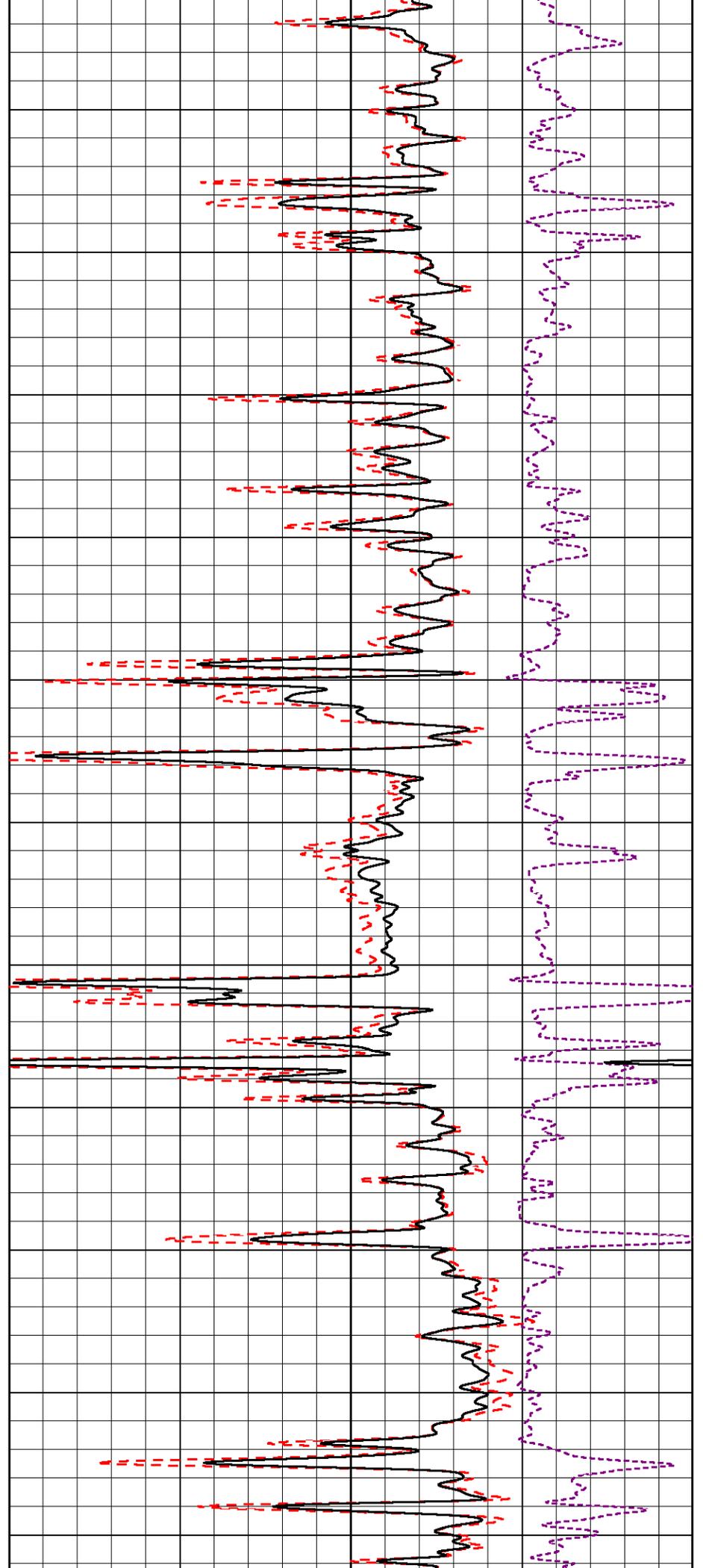
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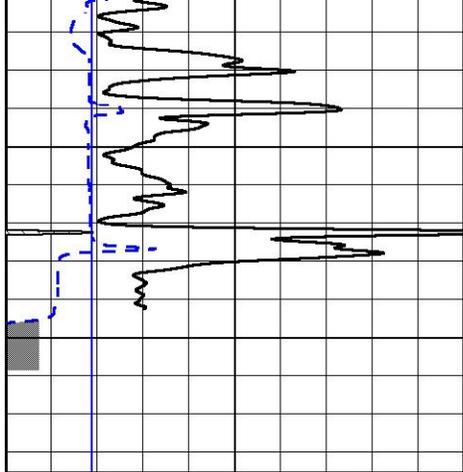
3050

3100

3150

3200



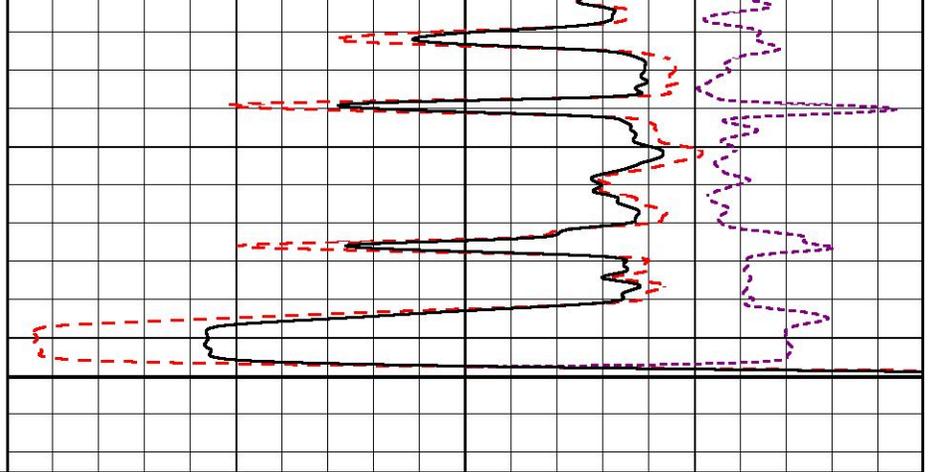


3250

3300

0 GAMMA RAY (GAPI) 150

6 DCAL (in) 16



COMPENSATED DENSITY
(2.71 MA)

30 (pu) -10

2 BULK DENSITY (g/cc) 3

-0.25 CORRECTION (g/cc) 0.25



MIDWEST WIRELINE

MAIN PASS

Database File darrah_knop 1-4.db
 Dataset Pathname stkml/pass4.1
 Presentation Format _CNDLS~1
 Dataset Creation Tue Aug 25 12:10:26 2020
 Charted by Depth in Feet scaled 1:240

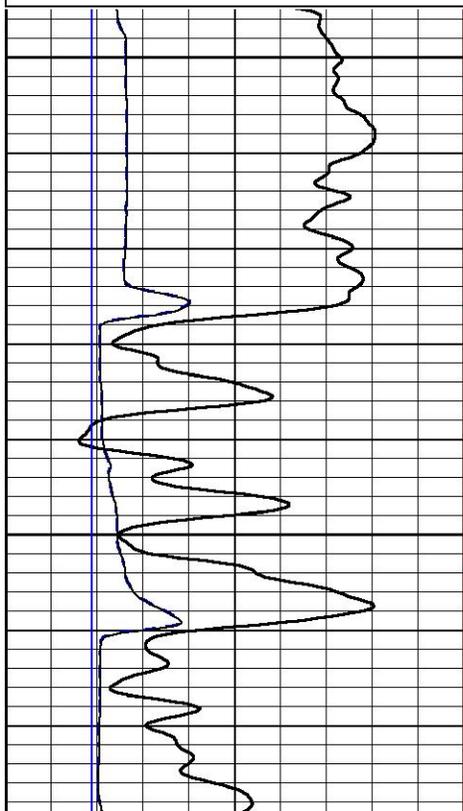
0 GAMMA RAY (GAPI) 150

6 DCAL (in) 16

30 CNLS (pu) -10

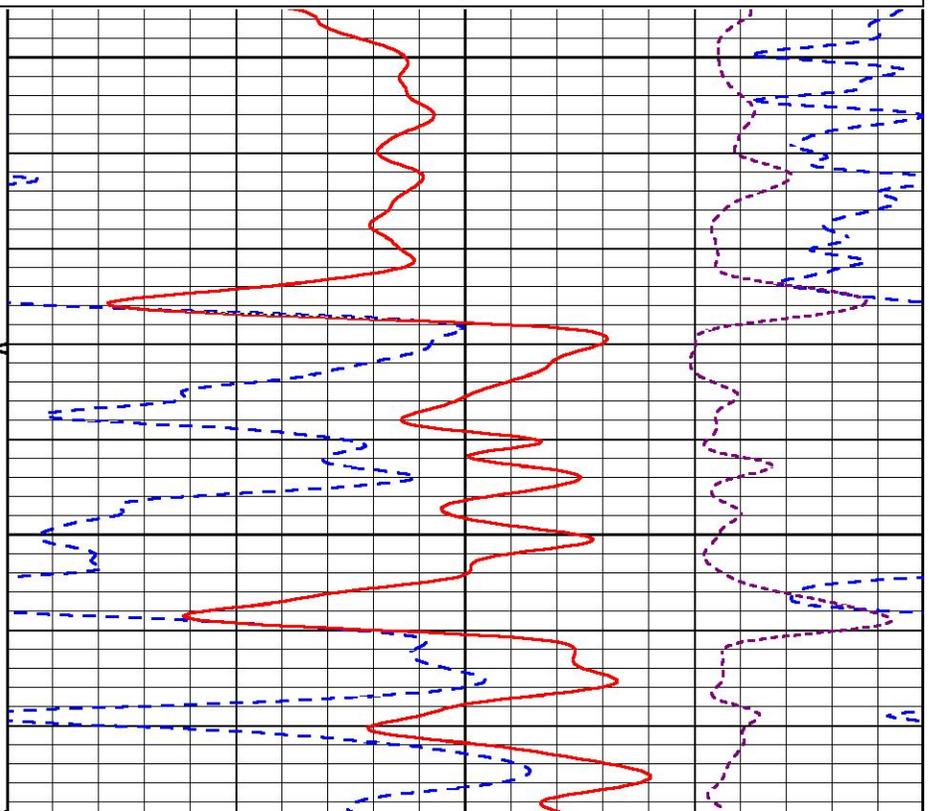
30 DPOR (pu) -10

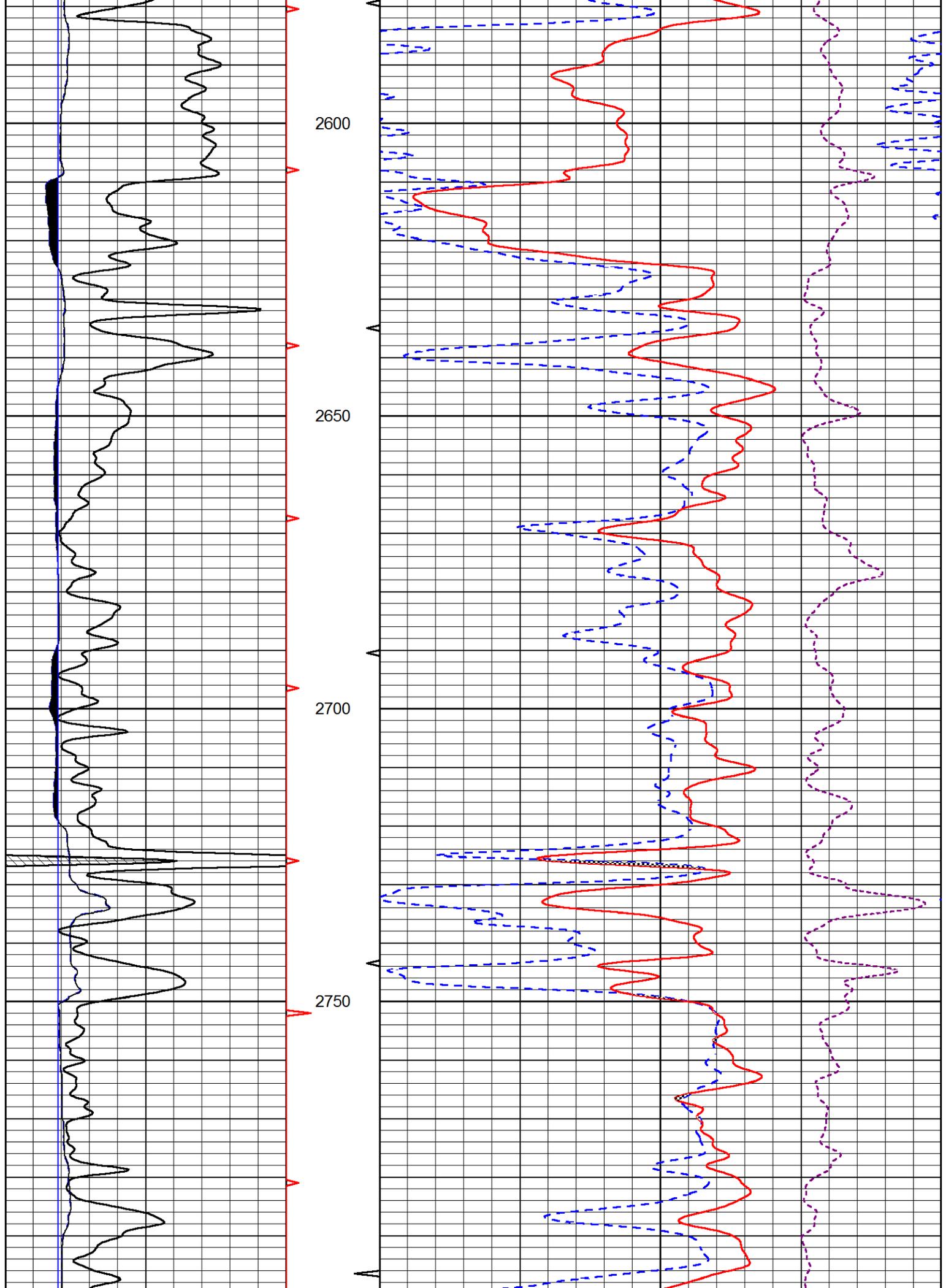
-0.25 CORRECTION (g/cc) 0.25

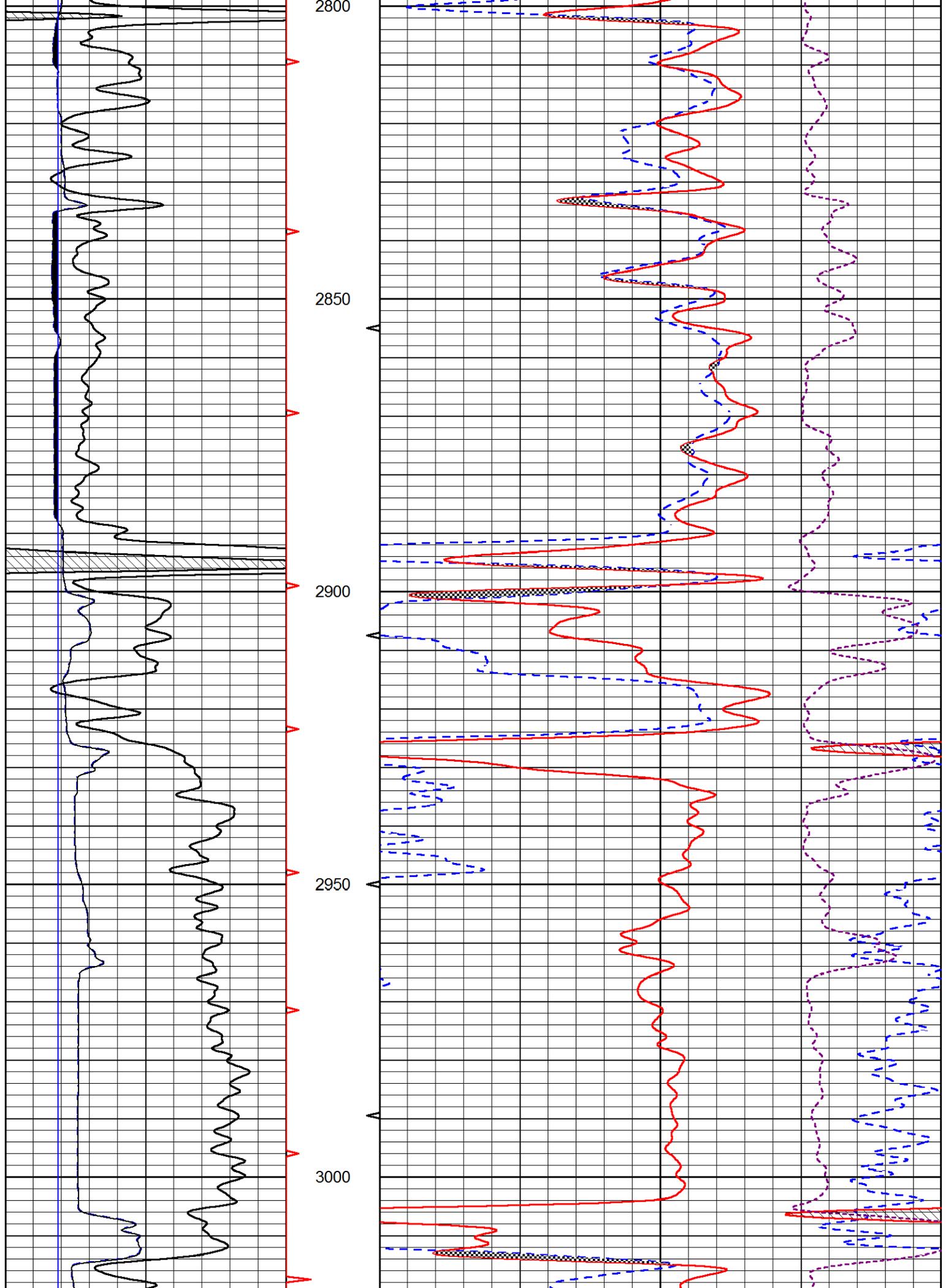


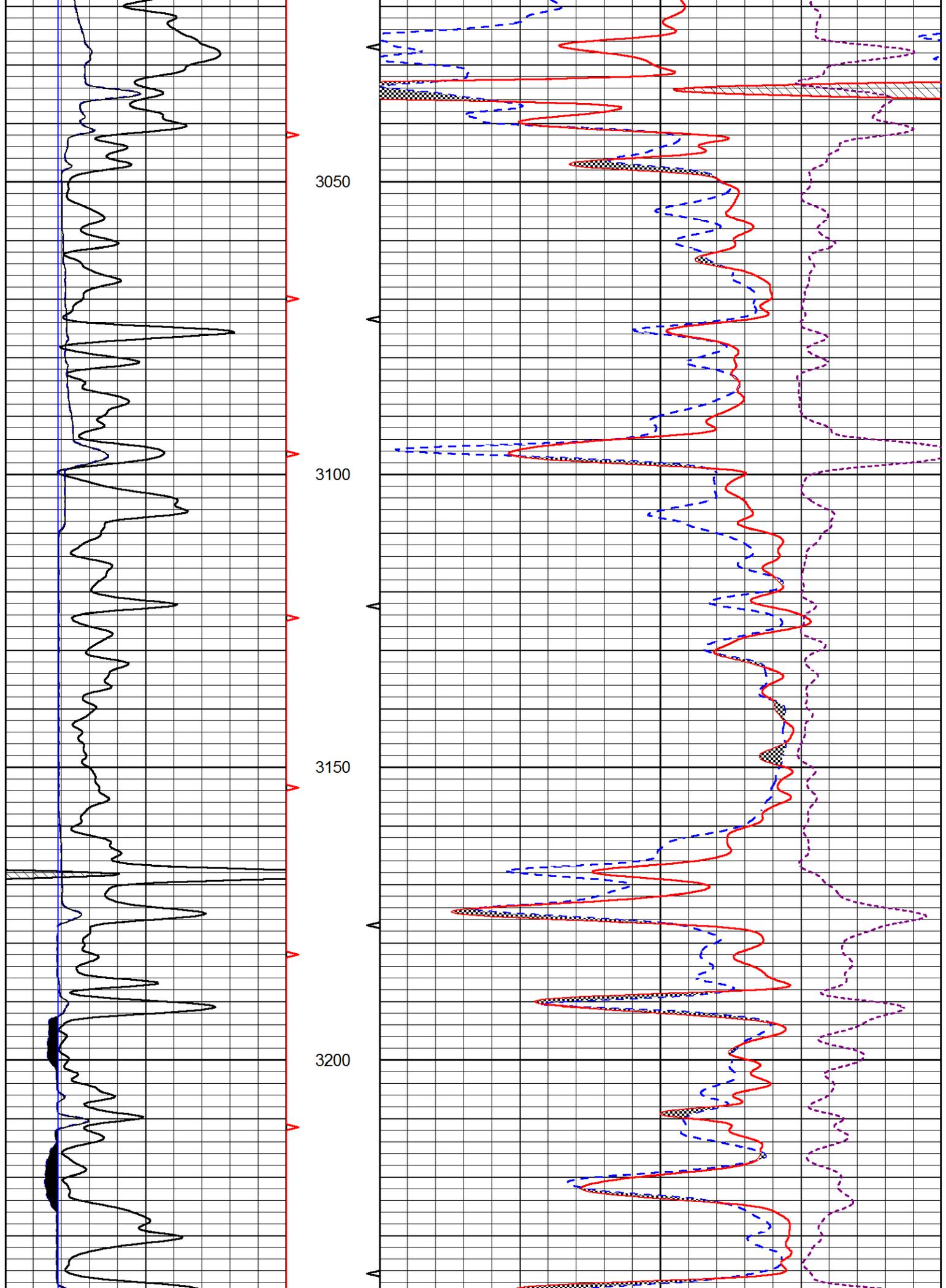
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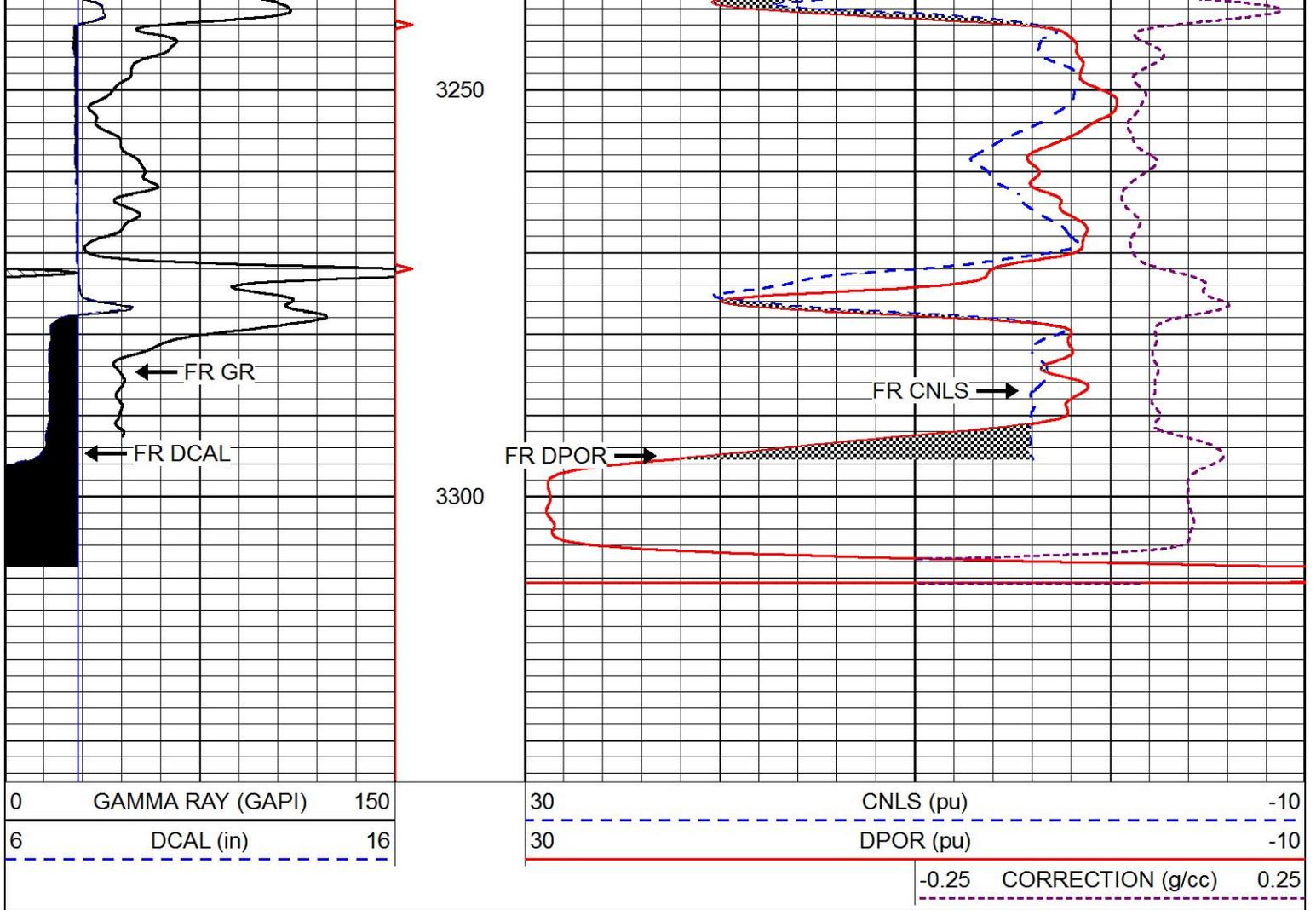
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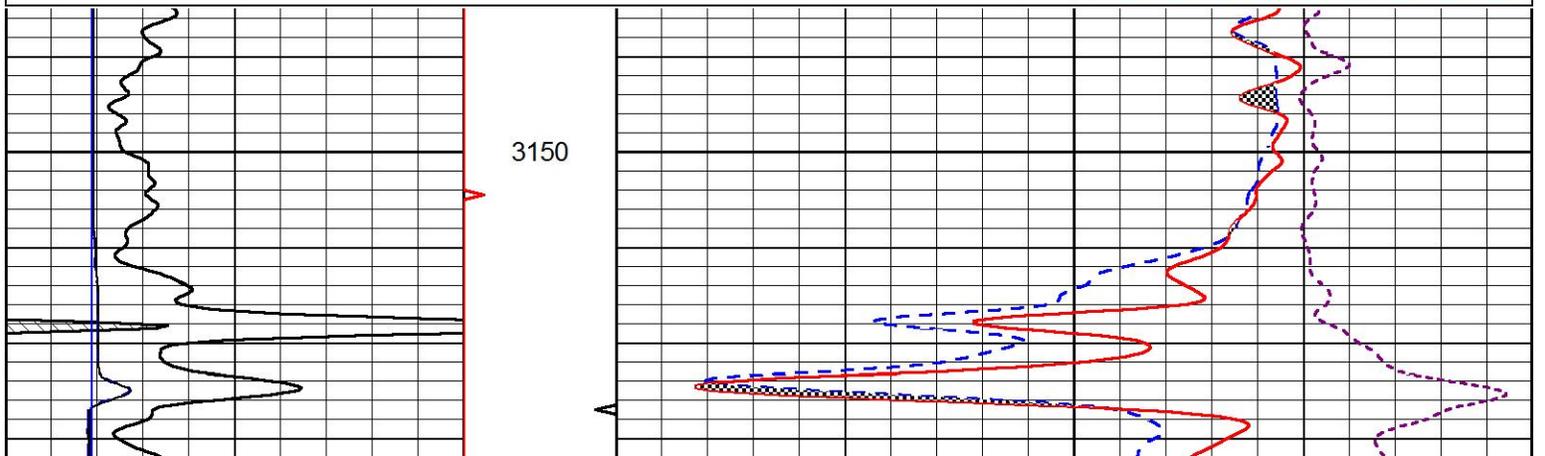


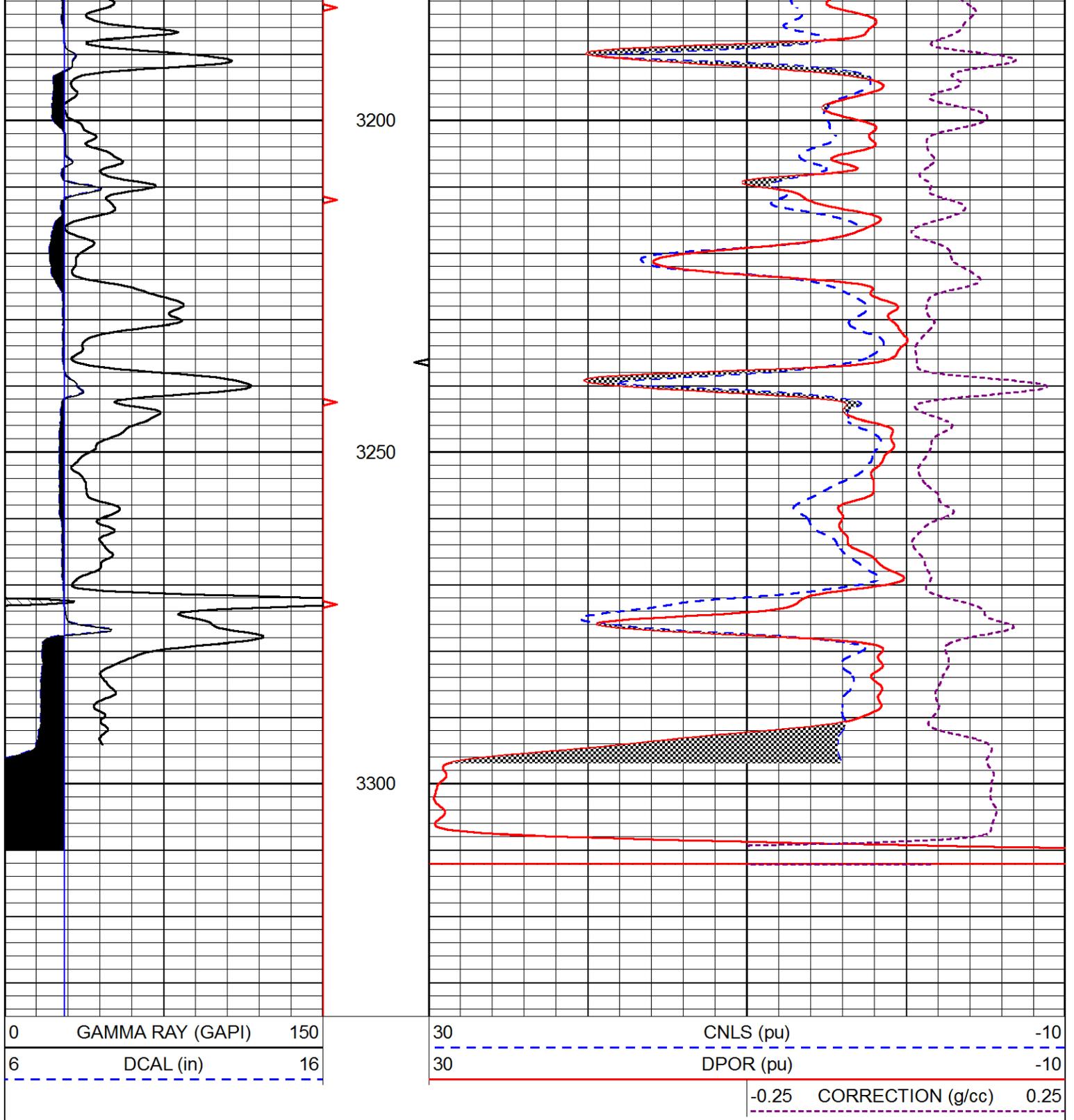




REPEAT SECTION

Database File darrah_knop 1-4.db
 Dataset Pathname stkml/pass2.1
 Presentation Format _CNDLS~1
 Dataset Creation Tue Aug 25 12:10:51 2020
 Charted by Depth in Feet scaled 1:240





Calibration Report

Database File darrah_knop 1-4.db
 Dataset Pathname stkml/pass4.1
 Dataset Creation Tue Aug 25 12:10:26 2020

Dual Induction Calibration Report

Serial-Model: 952-828-PSI HIGH TEMP
 Calibration Performed: Sun Jun 28 08:39:24 2020

Readings			References			Results	
Loop:	Air	Loop	Air	Loop	Gain	Offset	

Loop:	Zero	Loop	Zero	Loop	Gain	Offset	
Deep	167.000	835.000	0.000	255.000	mmho/m	0.455	-26.000
Medium	0.000	1348.000	142.000	255.000	mmho/m	0.325	-25.000

Microlog Calibration Report

Serial-Model: PSI-01-PSIML
 Performed: Tue Jun 16 01:32:04 2020

	Readings		References		Results		
	Zero	Cal	Zero	Cal	m	b	
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	21000.0000	-1.5000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	21000.0000	-0.9000
Caliper	1.0033	1.0841	5.0000	16.5000	in	142.3500	-138.6500

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