



MIDWEST WIRELINE

DUAL COMP POROSITY LOG

Company Cholla Production, LLC
 Well Zimmerman-Elmore Unit #1-3
 Field District 30
 County Rush
 State Kansas

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 Well Zimmerman-Elmore Unit #1-3
 Field District 30
 County Rush State Kansas

Location: API #: 15-165-22173-00-00
 95' FNL & 1300' FWL
 SEC 3 TWP 16S RGE 20W
 Permanent Datum Ground Level Elevation 2157'
 Log Measured From Kelly Bushing
 Drilling Measured From Kelly Bushing
 Other Services
 DIL/MEL
 K.B. 2165'
 D.F. N/A
 G.L. 2157'

Date	9/4/2020						
Run Number	One						
Type Log	CNL/CDL						
Depth Driller	3839'						
Depth Logger	3836'						
Bottom Logged Interval	3807'						
Top Logged Interval	2950'						
Type Fluid In Hole	Chemical						
Salinity, PPM CL	7900						
Density	9.3						
Level	Full						
Max. Rec. Temp. F	114						
Operating Rig Time	3 Hours						
Equipment -- Location	P-24 HAYS						
Recorded By	D. Schmidt						
Witnessed By	Charles Sturdavant						
Borehole Record							
Run No.	Bit	From	To	Size	Wgt.	From	To
One	12.25"	0'	1391'	8.625"	23#	0'	1391'
Two	7.875"	1391'		TD			
Casing Record							

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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.

Schoenchen,
 11 West, 1 South, 1/2 West,
 South into

Log Measured From: Kelly Bushing 8 Ft. Above Permanent Datum

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

Your Midwest Wireline Crew

Engineer: D. Schmidt
 Operator:
 Operator:
 Operator:

This Log Record Was Witnessed By

Primary Witness: Charles Sturdavant
 Secondary Witness:
 Secondary Witness:
 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: cholla_zimmerman elmore unit_1-3.db: field/well/STKML/pass3.1
 Total length: 43.08 ft
 Total weight: 685.00 lb
 O.D.: 4.00 in

Log Variables

DatabaseC:\ProgramData\Warrior\Data\cholla_zimmerman elmore unit_1-3.db
 Dataset field/well/STKML/pass3.1/_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	197	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

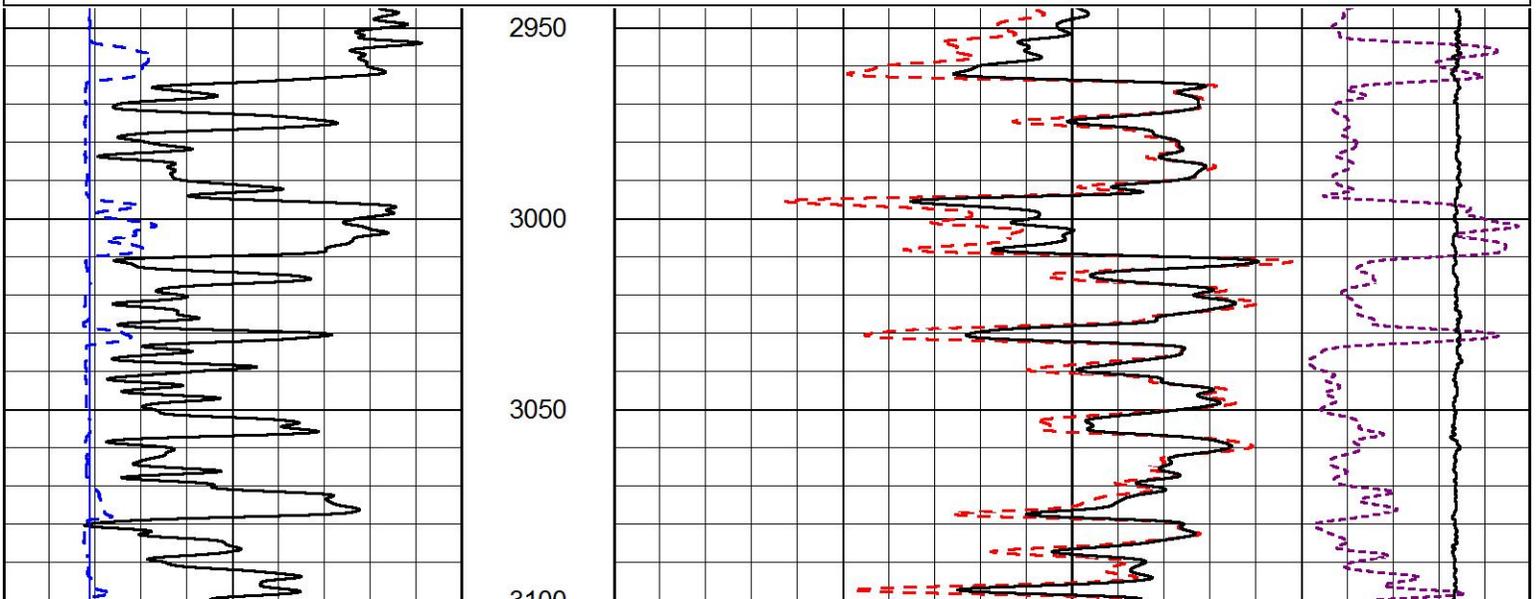


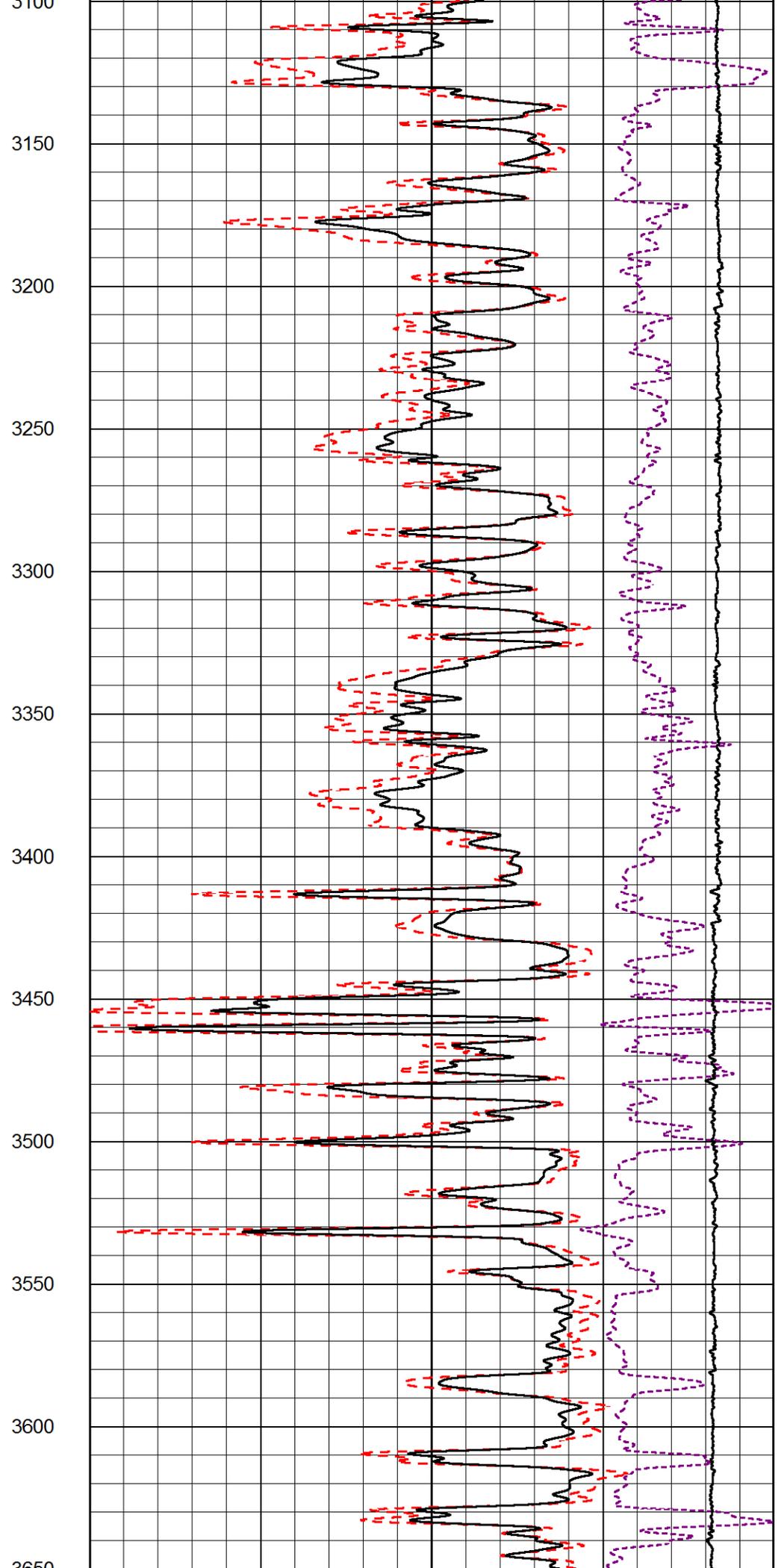
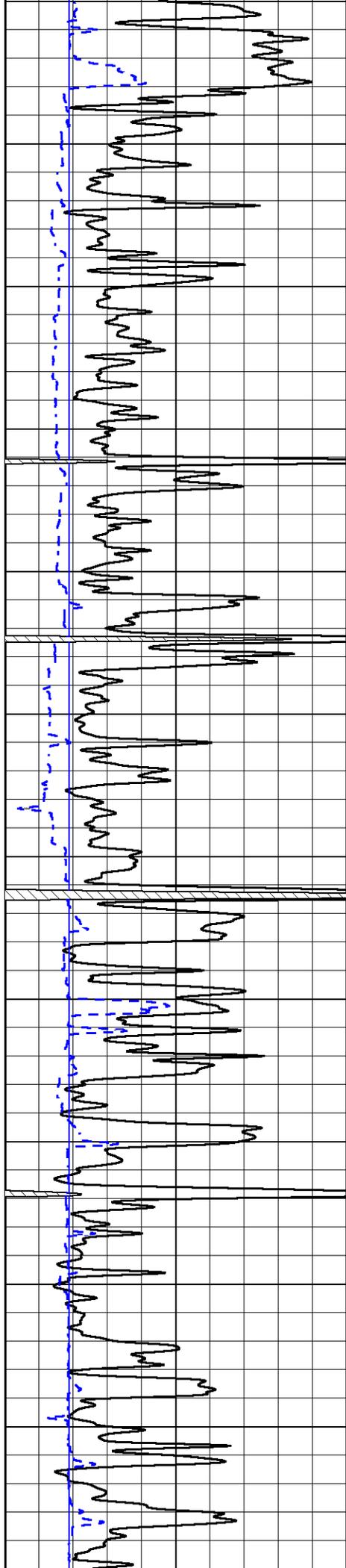
MAIN PASS

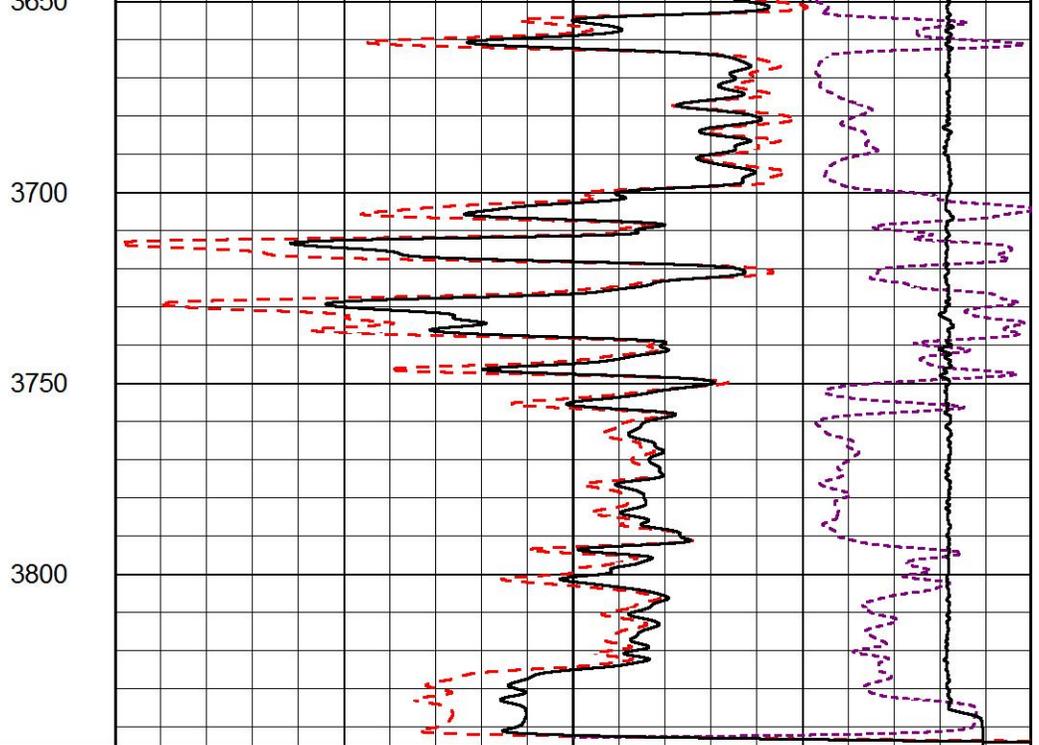
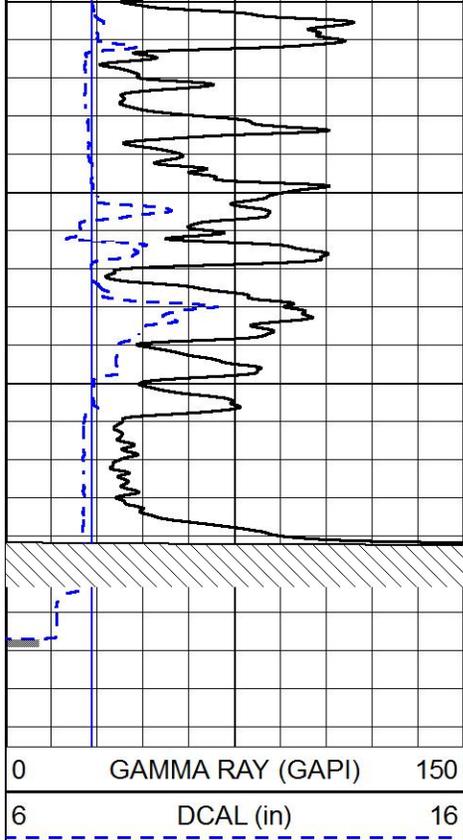
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 Dataset Pathname STKML/pass4.1
 Presentation Format _cdl
 Dataset Creation Fri Sep 04 19:12:50 2020
 Charted by Depth in Feet scaled 1:600

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







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

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

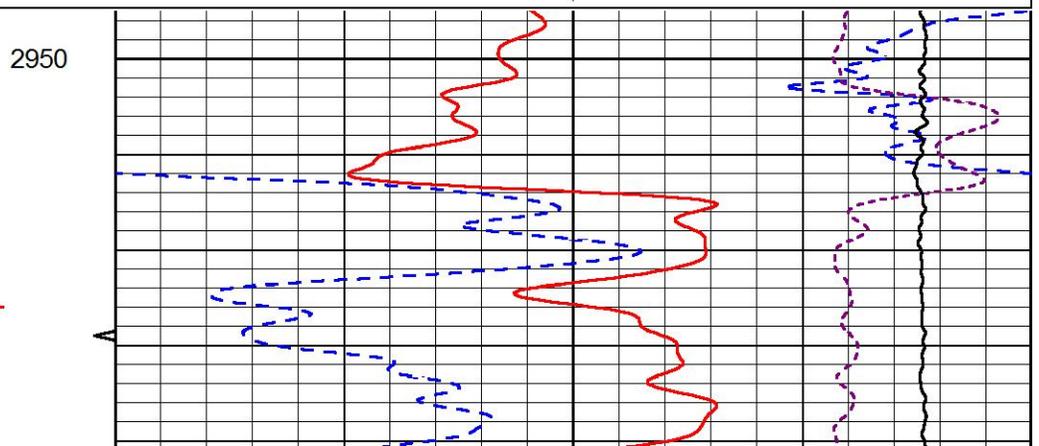
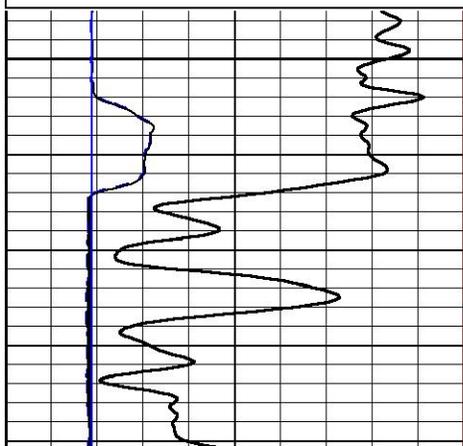


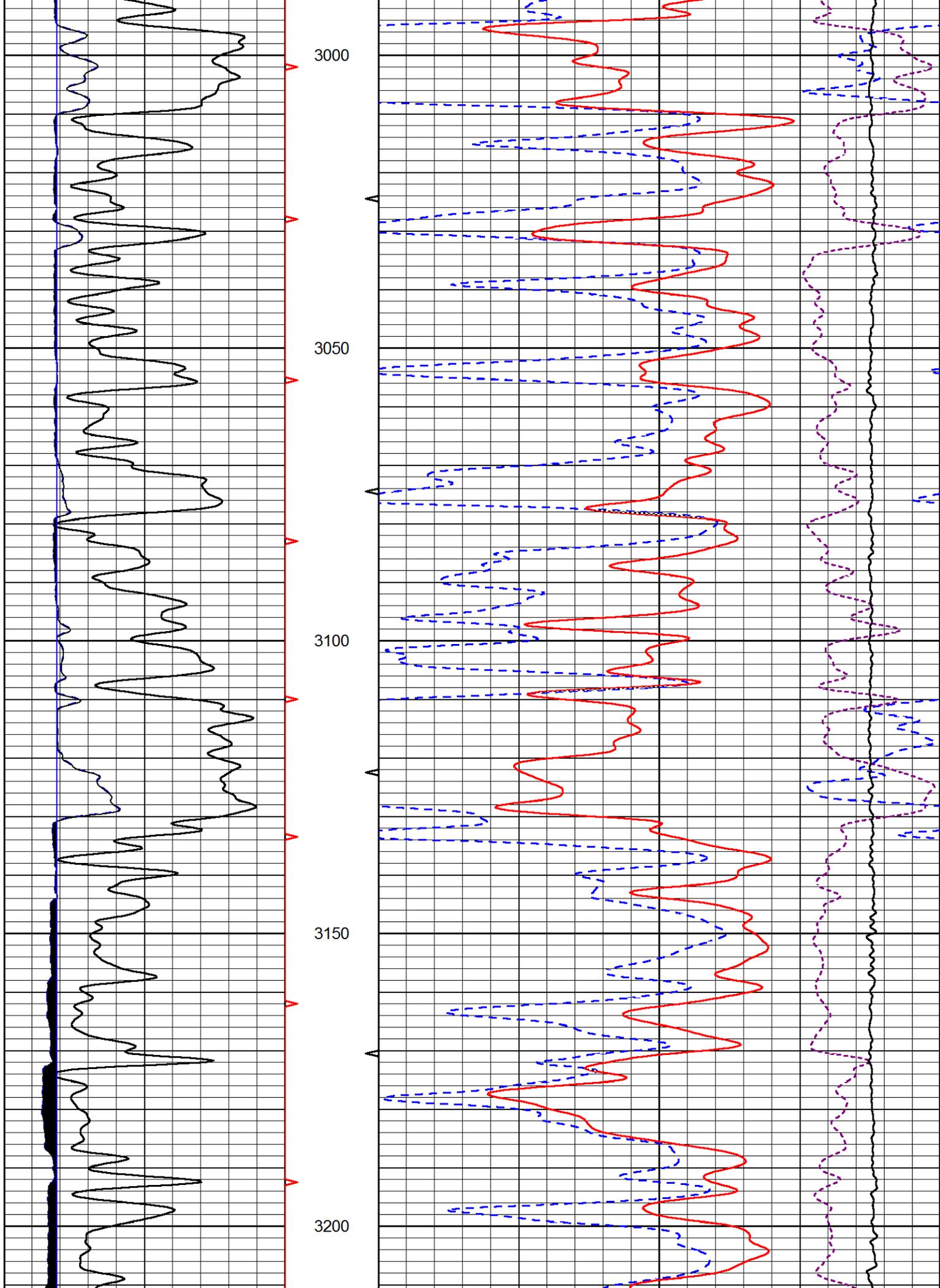
MAIN PASS

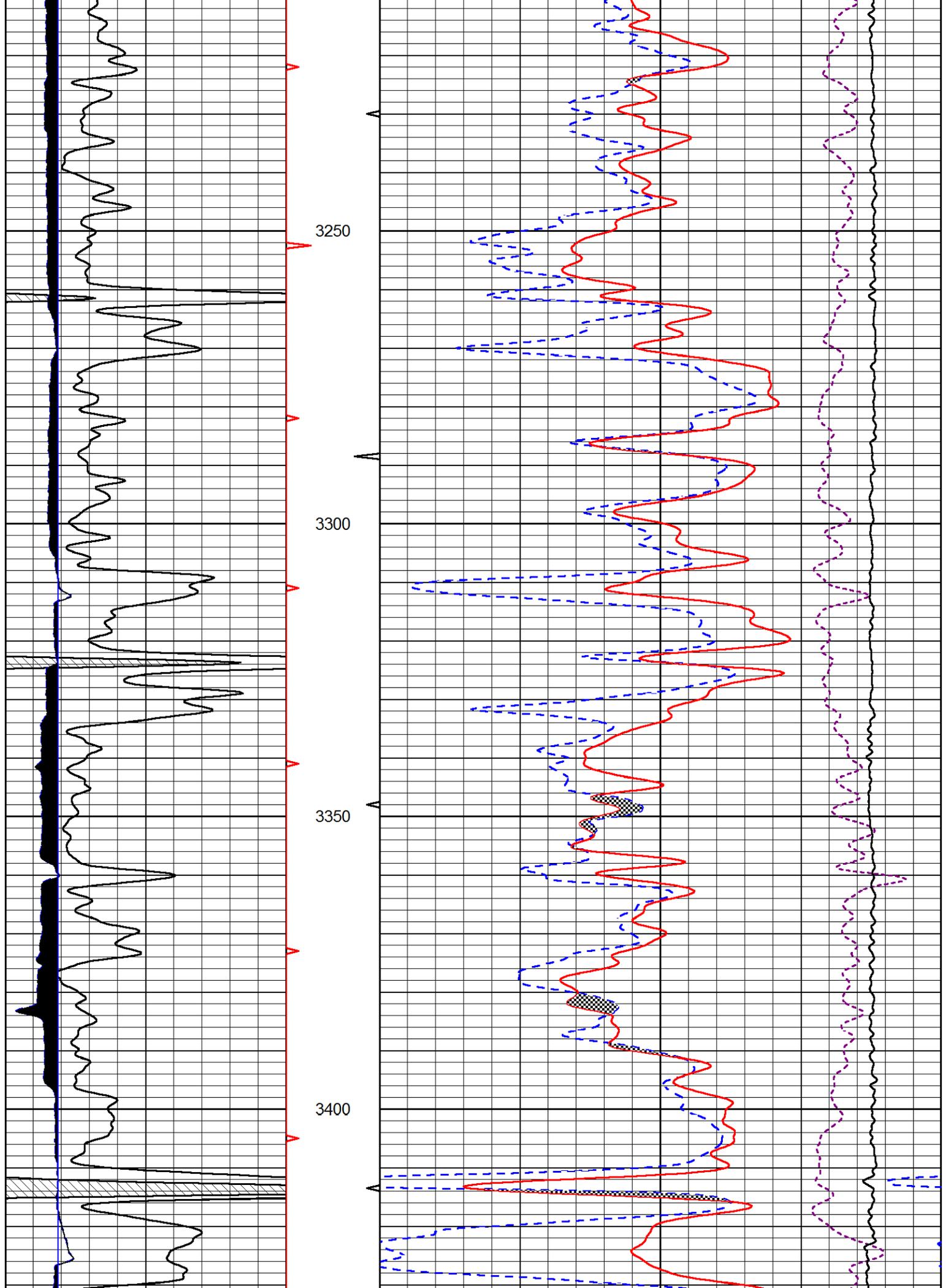
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 Dataset Creation: Fri Sep 04 19:12:50 2020
 Charted by: Depth in Feet scaled 1:240

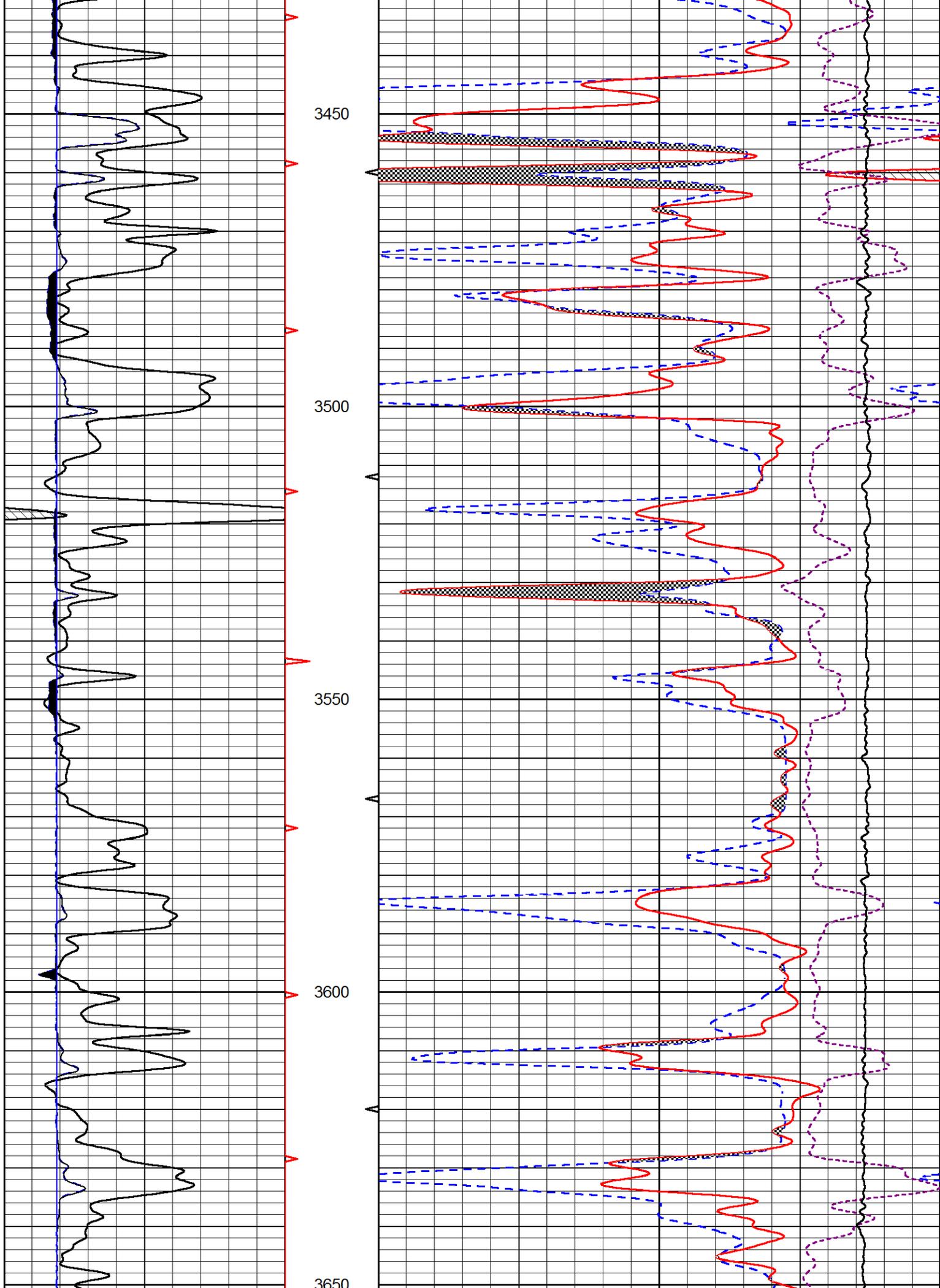
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6	DCAL (in)	16

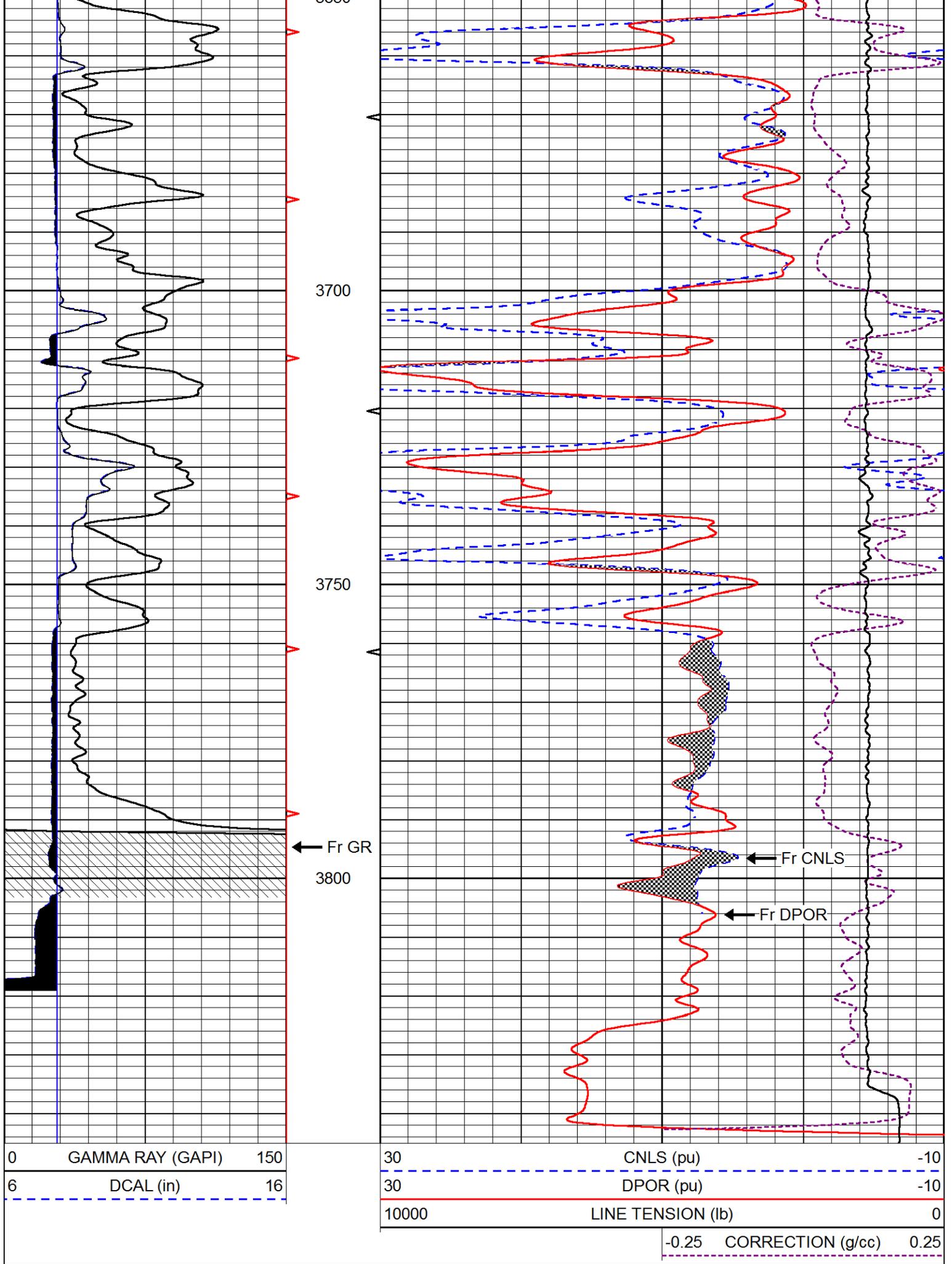
30	CNLS (pu)	-10
30	DPOR (pu)	-10
10000	LINE TENSION (lb)	0
-0.25	CORRECTION (g/cc)	0.25













MIDWEST WIRELINE

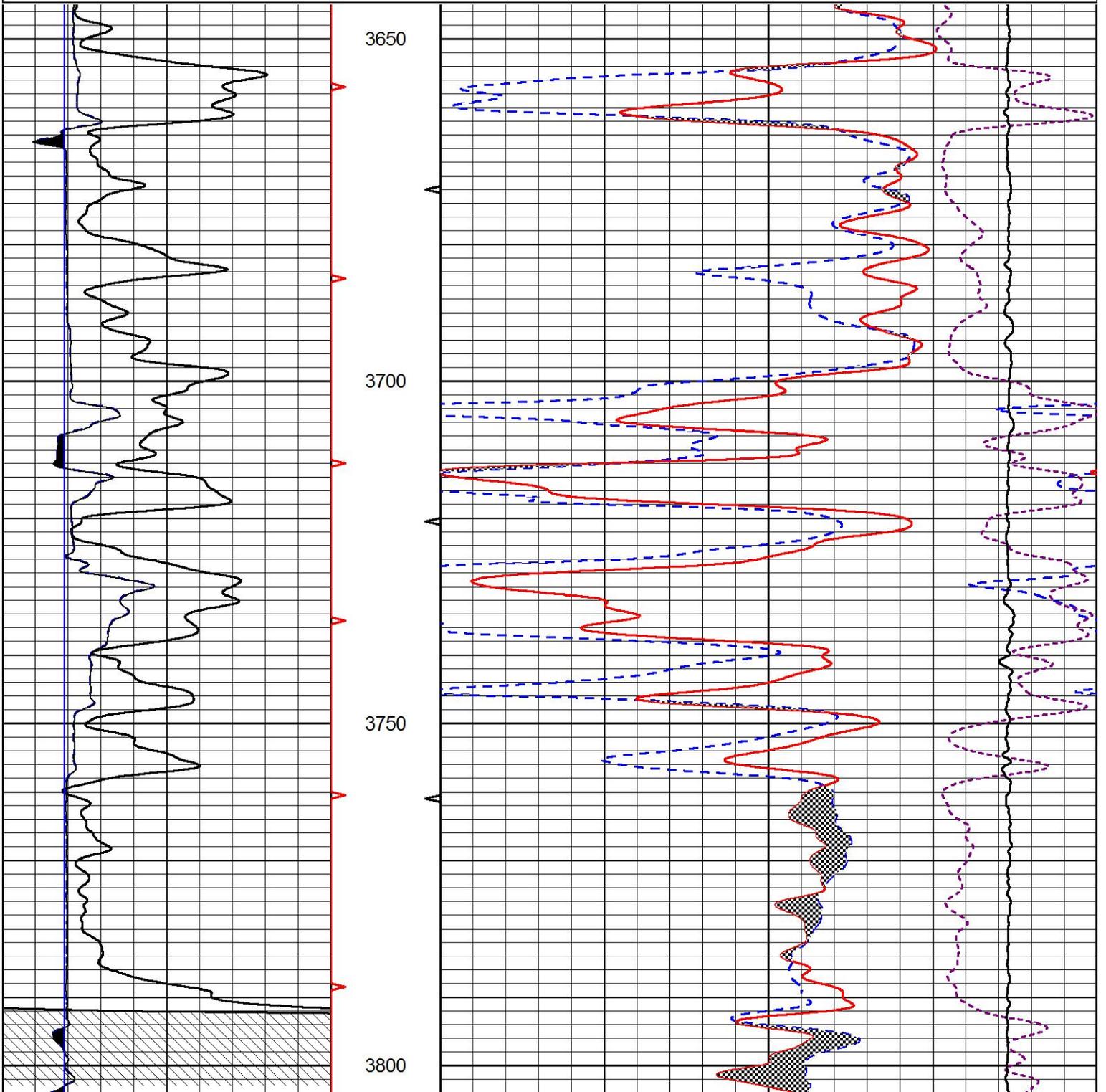
REPEAT SECTION

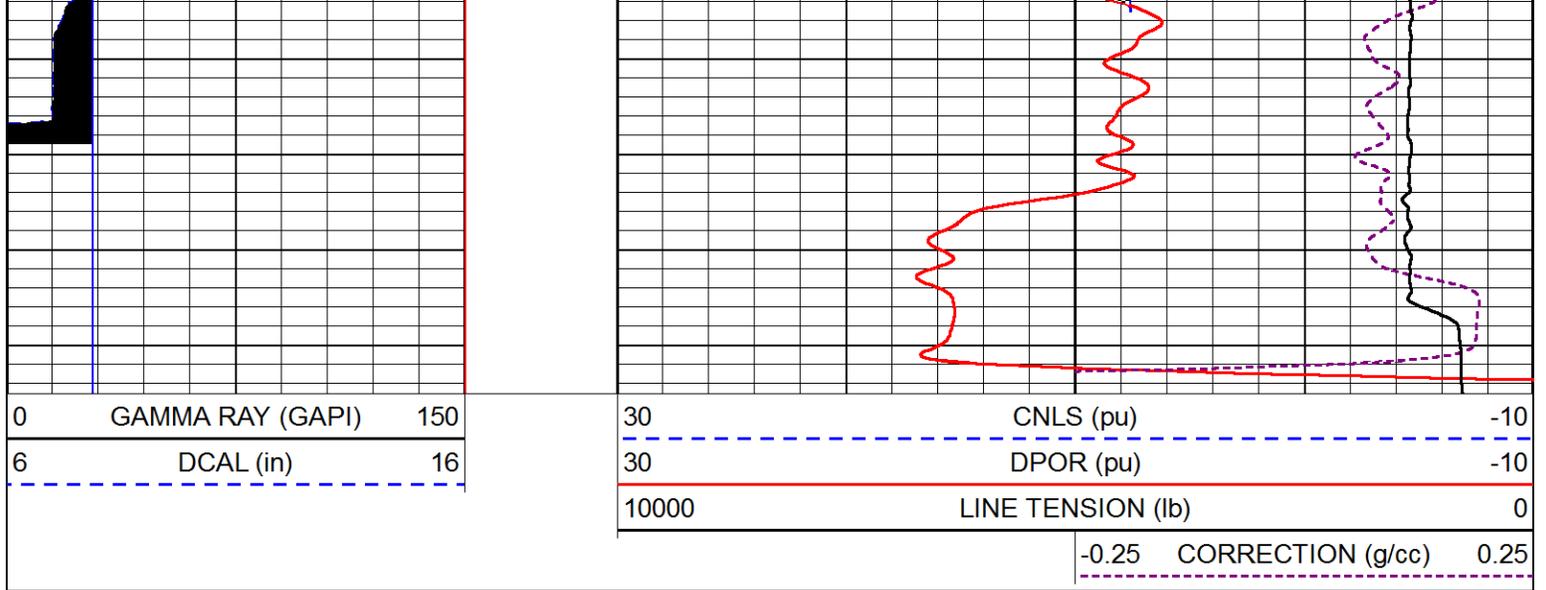
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 Presentation Format _CNDLS~1
 Dataset Creation Fri Sep 04 18:09:57 2020
 Charted by Depth in Feet scaled 1:240

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





Calibration Report

Database File cholla_zimmerman elmore unit_1-3.db
 Dataset Pathname STKML/pass3.1
 Dataset Creation Fri Sep 04 18:22:33 2020

Dual Induction Calibration Report

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

Loop:	Readings		References		Results		
	Air	Loop	Air	Loop	Gain	Offset	
Deep	167.000	835.000	0.000	255.000	mmho/m	0.455	-32.000
Medium	0.000	1348.000	142.000	255.000	mmho/m	0.325	-28.000

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	14000.0000	-1.8500
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	15000.0000	-1.3000
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	2.680	g/cc	1141.85	3762.09	cps

Spine Angle = 74.89

Density/Spine Ratio = 0.532

	<u>Size</u>		<u>Reading</u>
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