



PIONEER

Pioneer Energy Services

DUAL COMP POROSITY LOG

Company MURFIN DRILLING COMPANY, INC.

Well HENDERSON G #7
Field BEMIS SHUTTS
County ELLIS
State KANSAS

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Location: API #: 15-051-26971-00-00

Other Services

S2 NE SW NW
1905' FNL & 990' FWL
SEC 27 TWP 11S RGE 18W

DIL
MEL/BHCS

Permanent Datum GROUND LEVEL Elevation 2087'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Elevation
K.B. 2092'
D.F. N/A
G.L. 2087'

Date 9/25/2019

Run Number ONE

Type Log CNL/CDL

Depth Driller 3711'

Depth Logger 3710'

Bottom Logged Interval 3689'

Top Logged Interval 3000'

Type Fluid In Hole CHEMICAL

Salinity, PPM CL 3200

Density 9.2

Level FULL

Max. Rec. Temp. F 113 DEG F

Operating Rig Time 4 HOURS

Equipment -- Location P-108 HAYS

Recorded By J. HENRICKSON

Witnessed By ROBERT HENDRIX

Borehole Record

Casing Record

Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	12.25"	00'	302'	8.625"	23#	00'	302'
TWO	7.875"	302'	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.

HAYS, N TO HOMESTEAD RD, 1.5 N, E INTO, S & E UP HILL TO LOCATION

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: ROBERT HENDRIX
Secondary Witness:
Secondary Witness:
Secondary Witness:

Log Variables

DatabaseC:\ProgramData\Warrior\Data\murfin_henderson g #7.db
Dataset field/well/stack/pass3.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	113	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	70	70	Off	3710



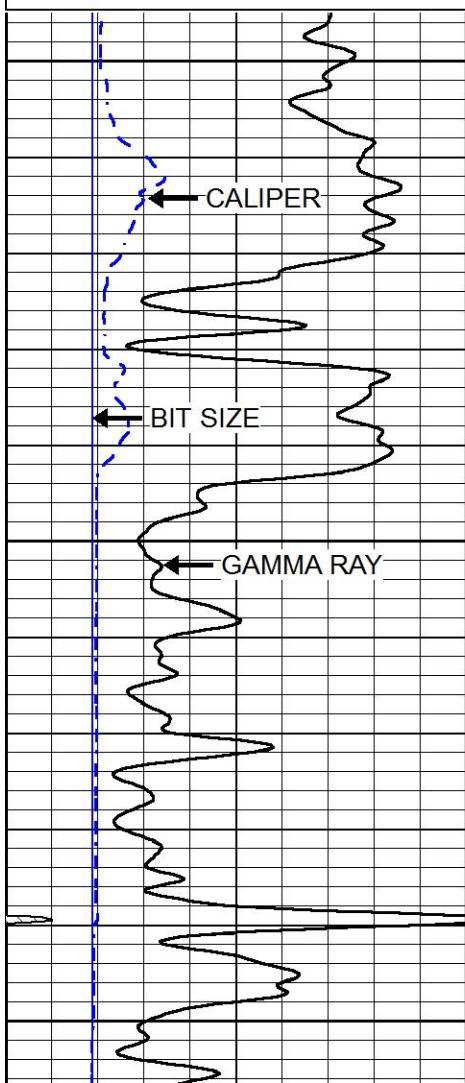
2" SCALE BULK DENSITY

MAIN PASS

Database File murfin_henderson g #7.db
Dataset Pathname stack/pass3.3
Presentation Format cdl
Dataset Creation Wed Sep 25 05:47:22 2019
Charted by Depth in Feet scaled 1:240

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

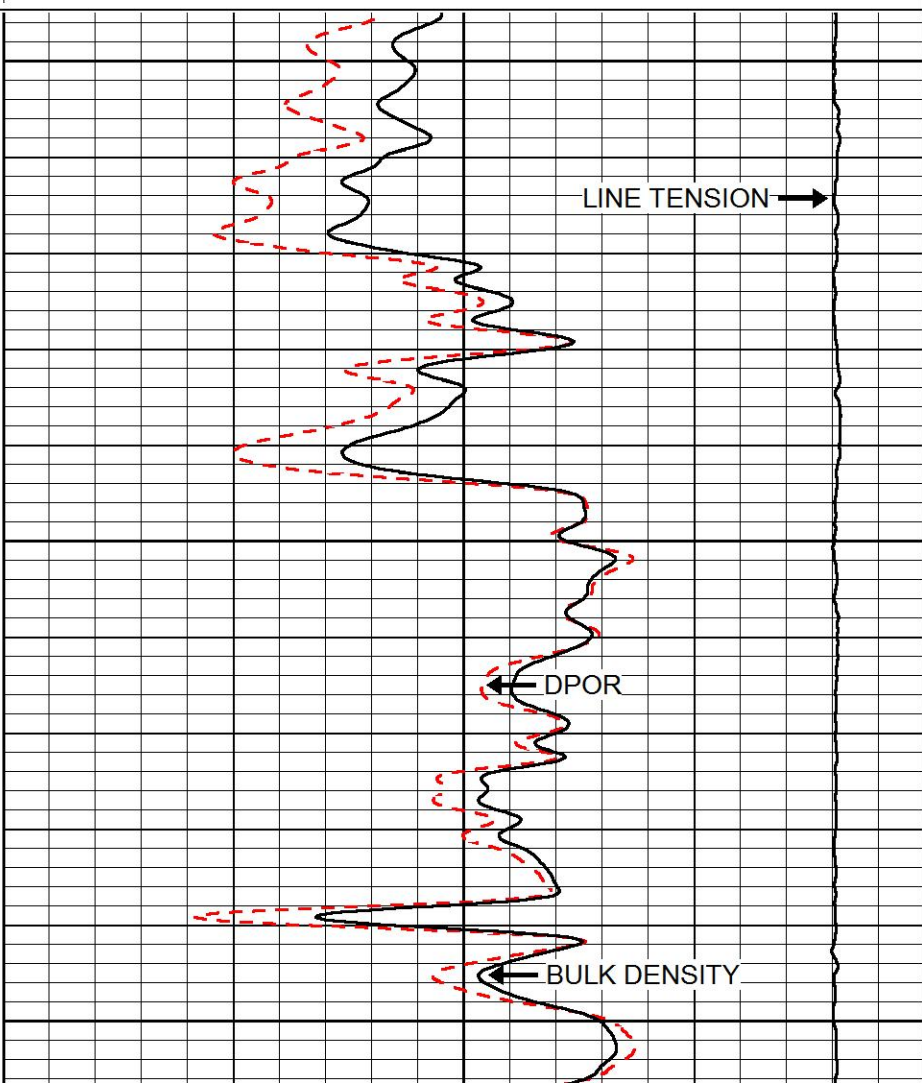
30	COMPENSATED DENSITY (pu)	-10
2	BULK DENSITY (g/cc)	3
15000	LINE TENSION (lb)	0



3000

3050

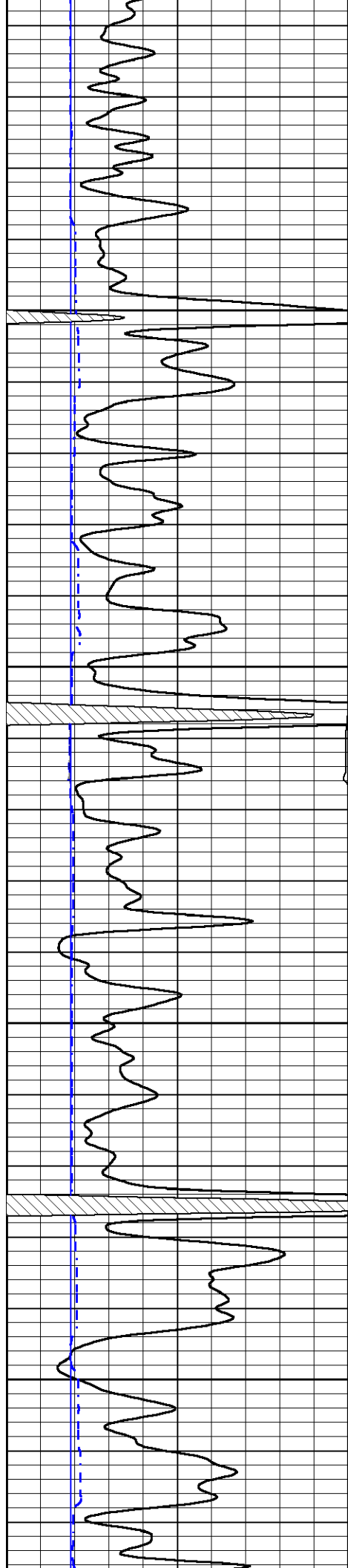
3100



LINE TENSION

DPOR

BULK DENSITY

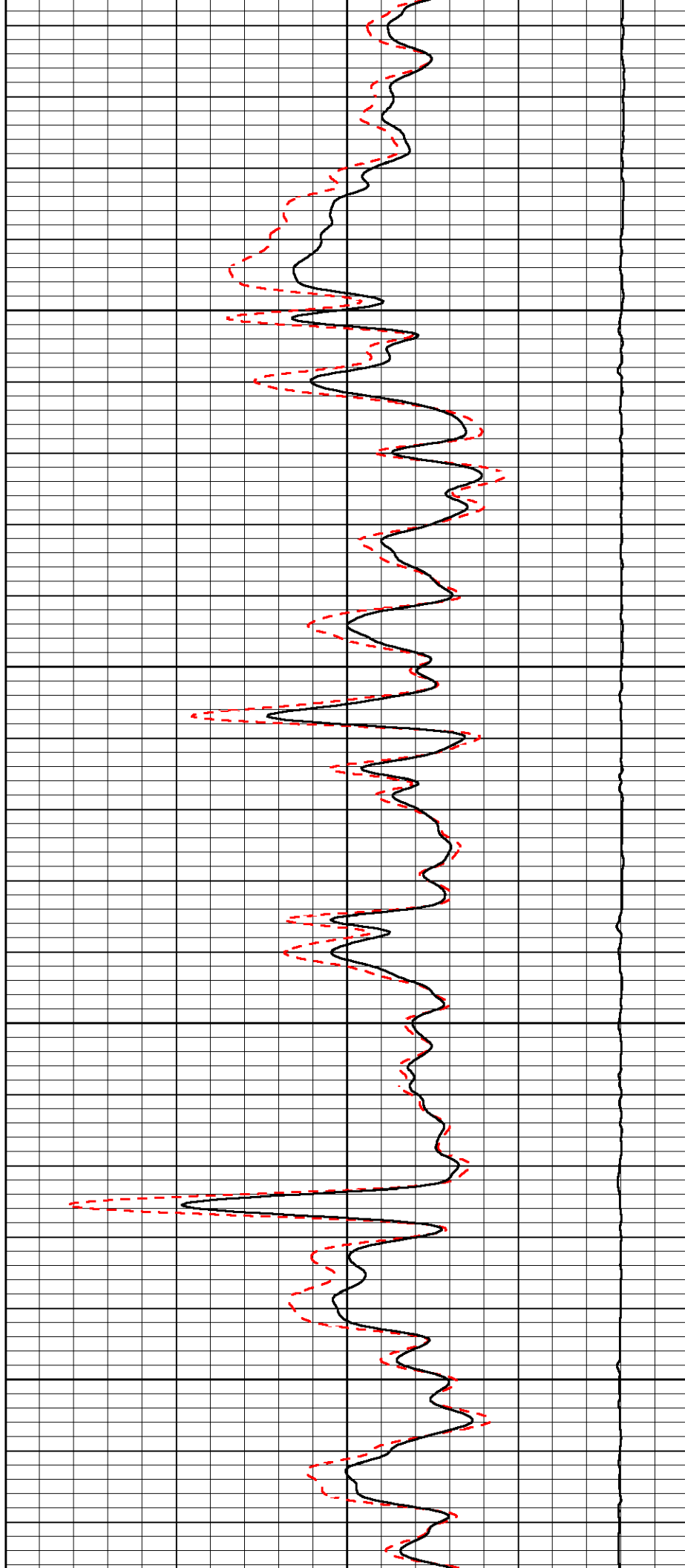


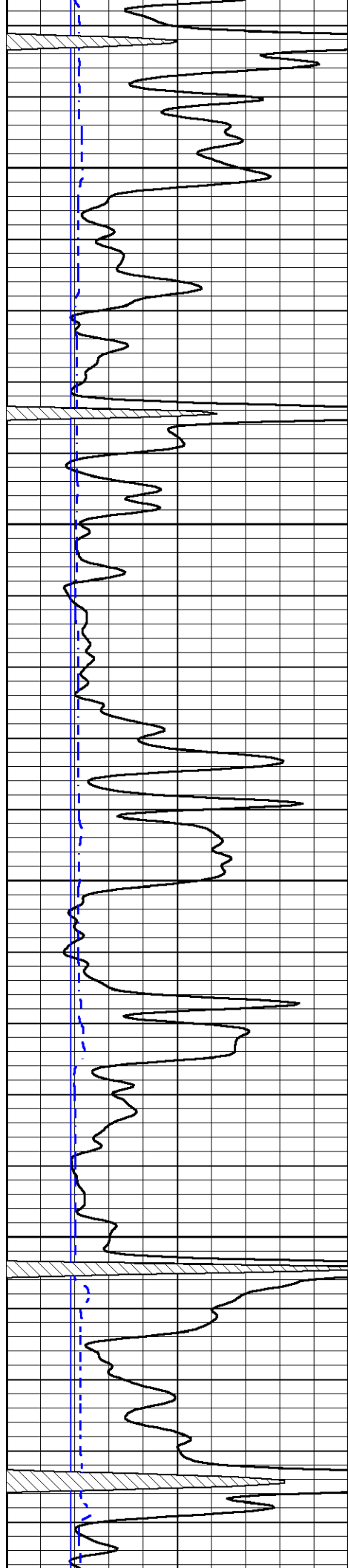
3150

3200

3250

3300



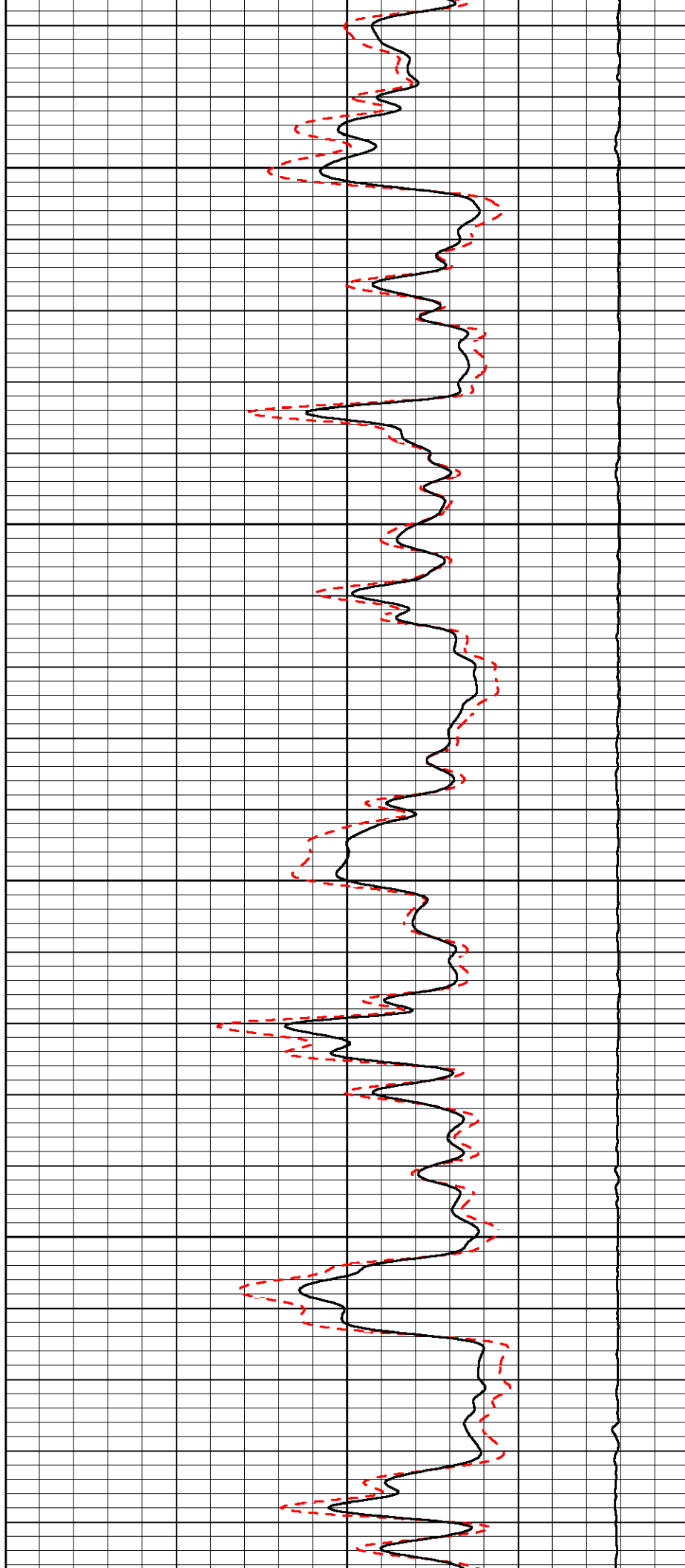


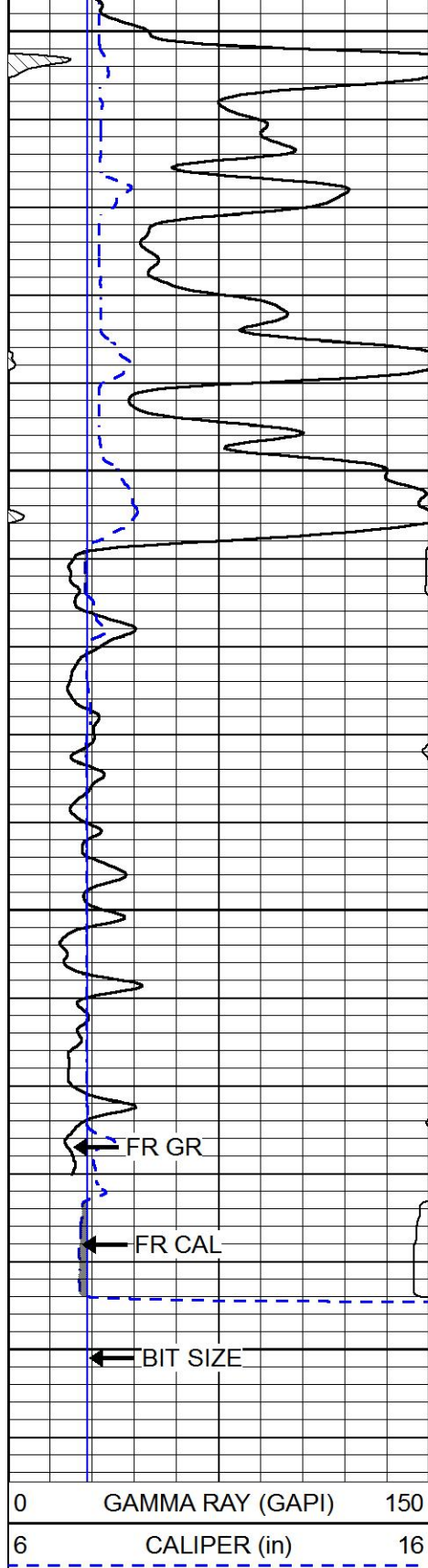
3350

3400

3450

3500



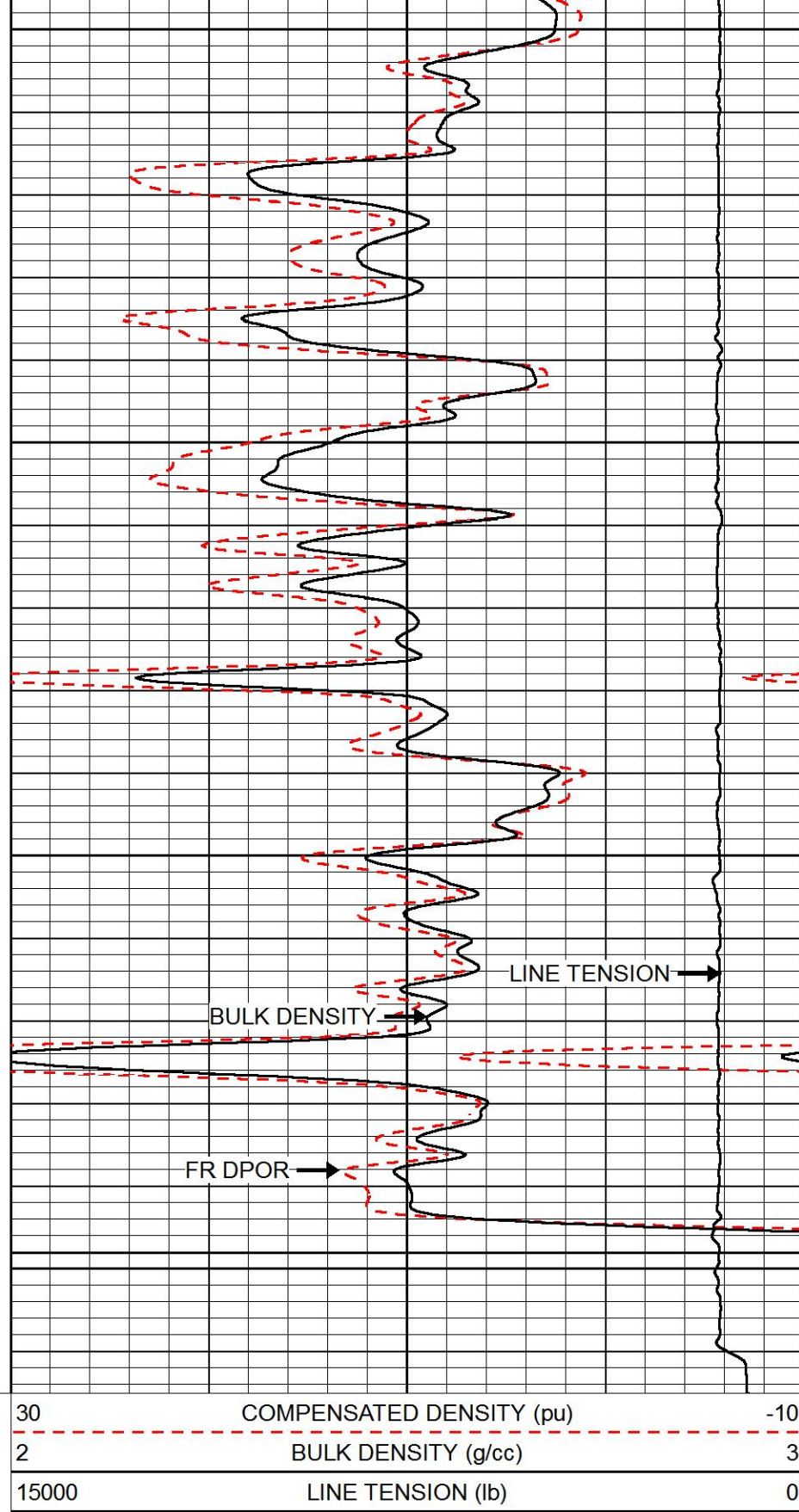


3550

3600

3650

3700

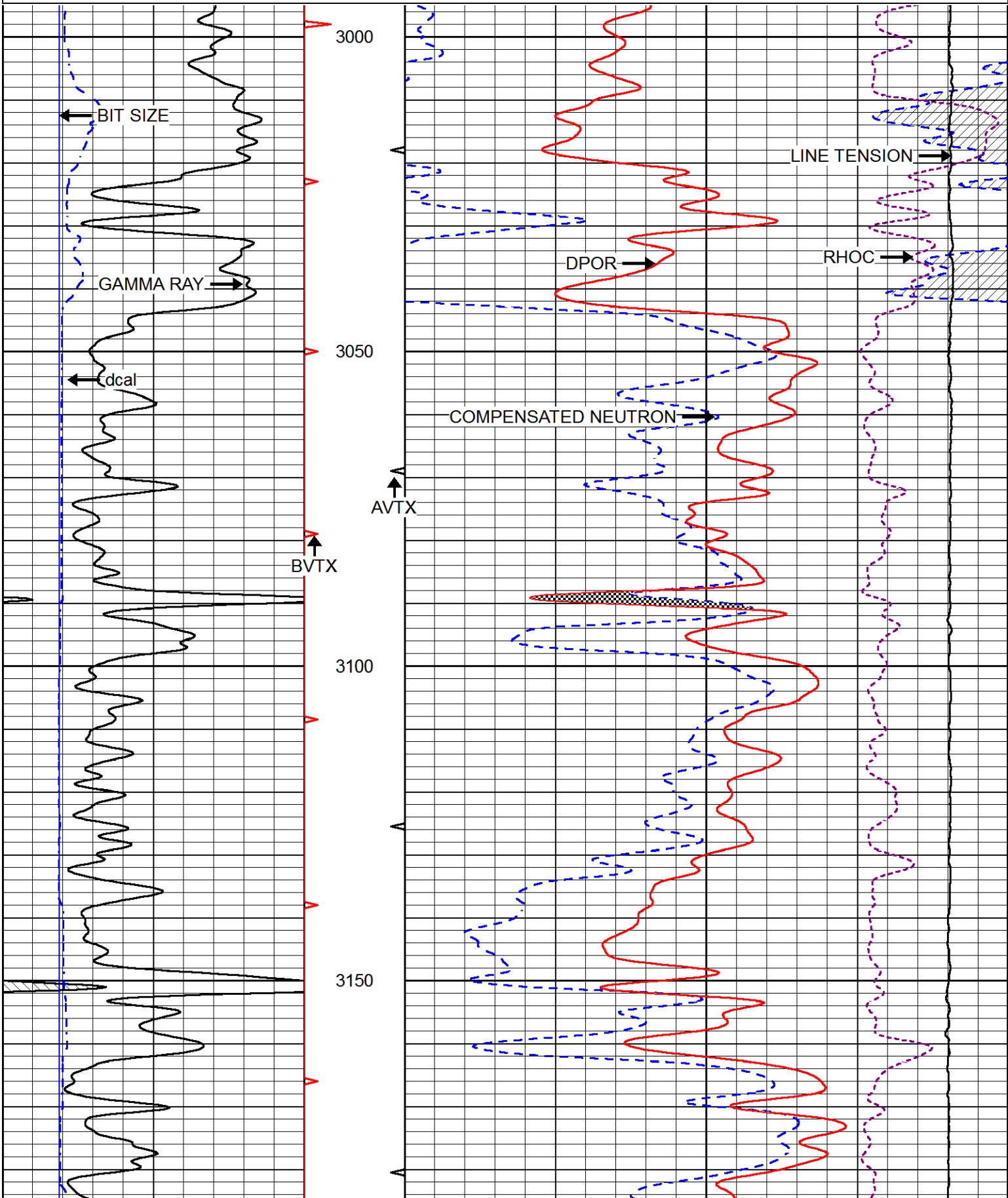


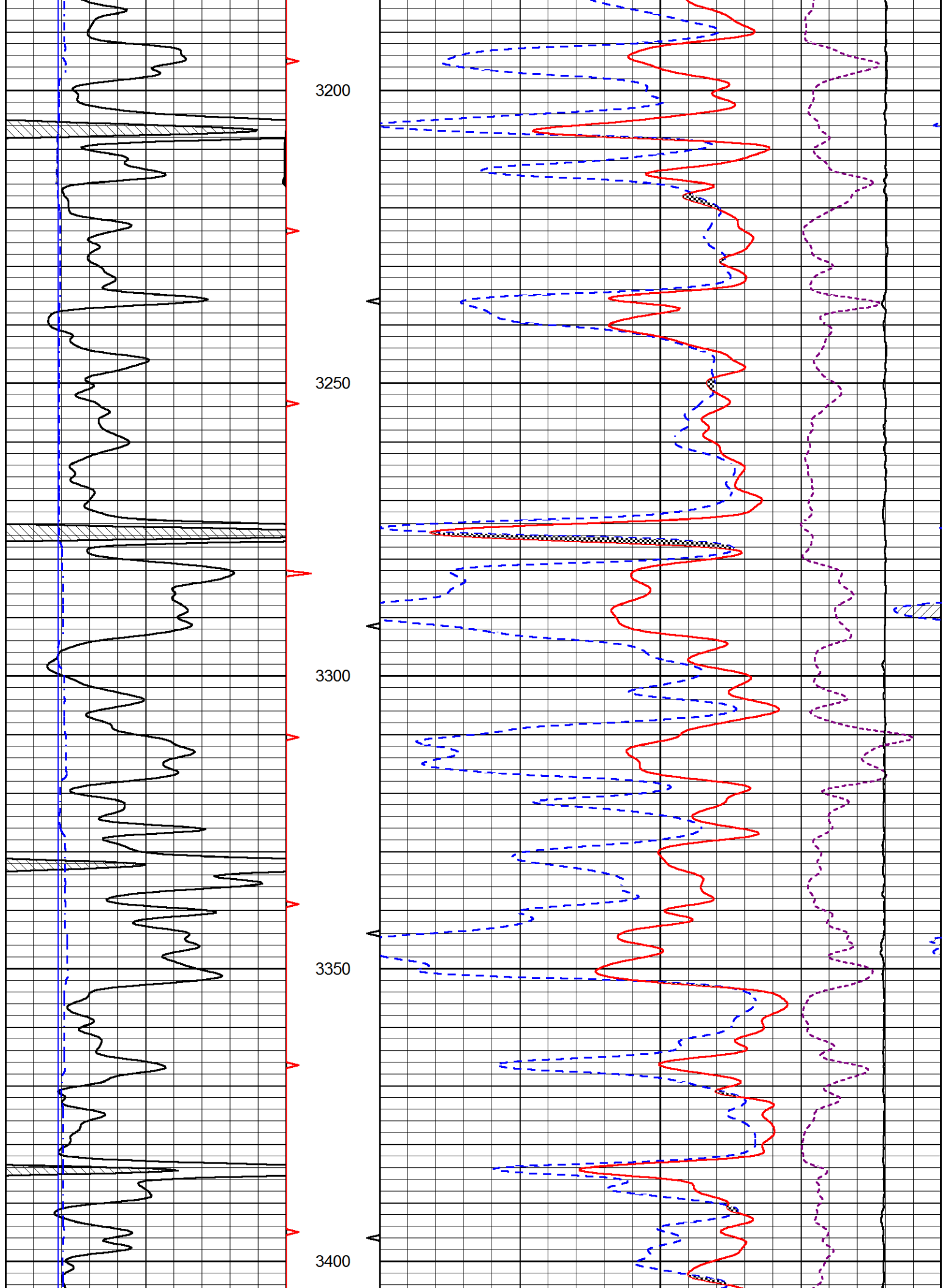
MAIN PASS

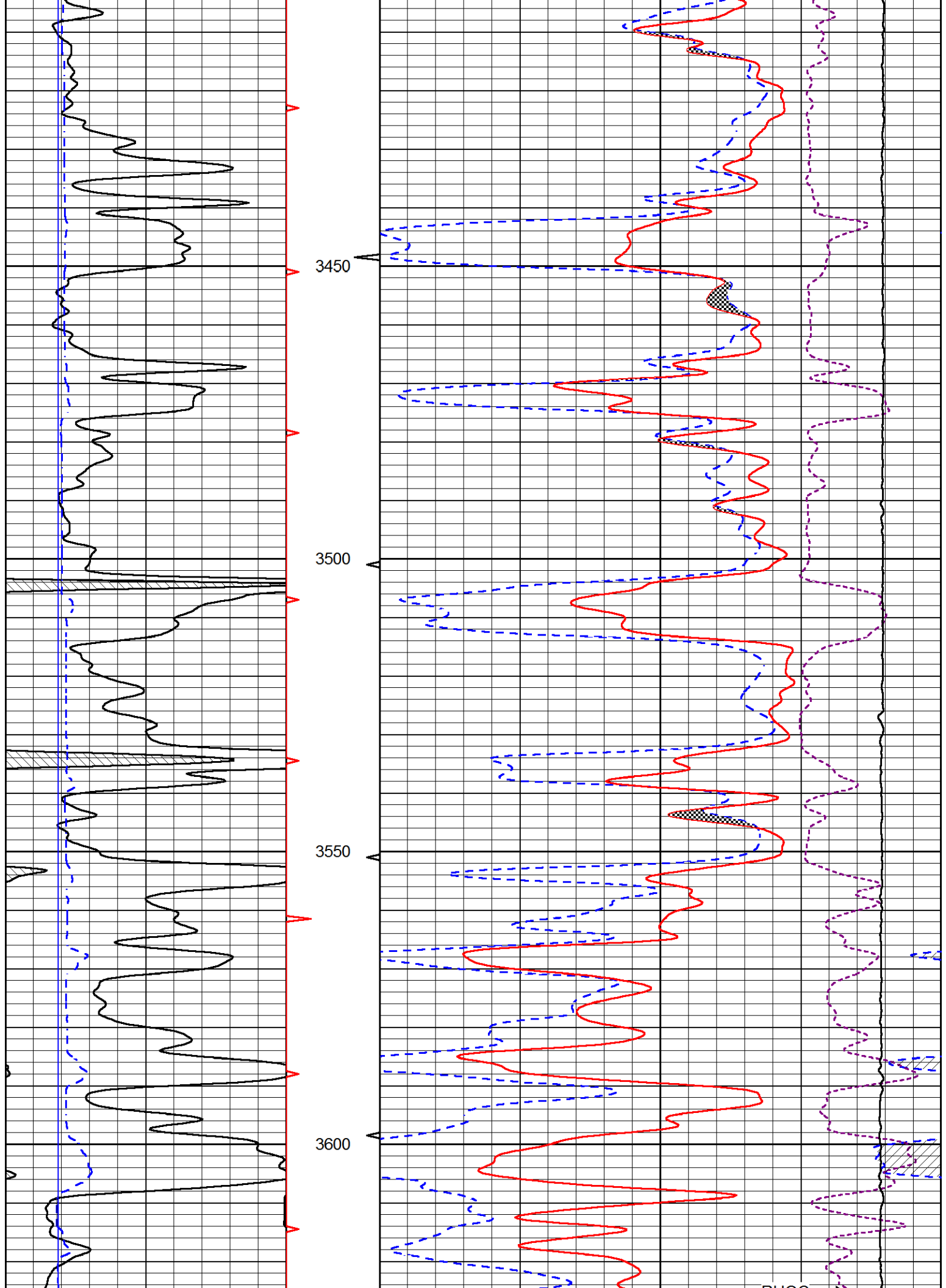
Database File murfin_henderson g #7.db
Dataset Pathname stack/pass3.1
Presentation Format cndlspec

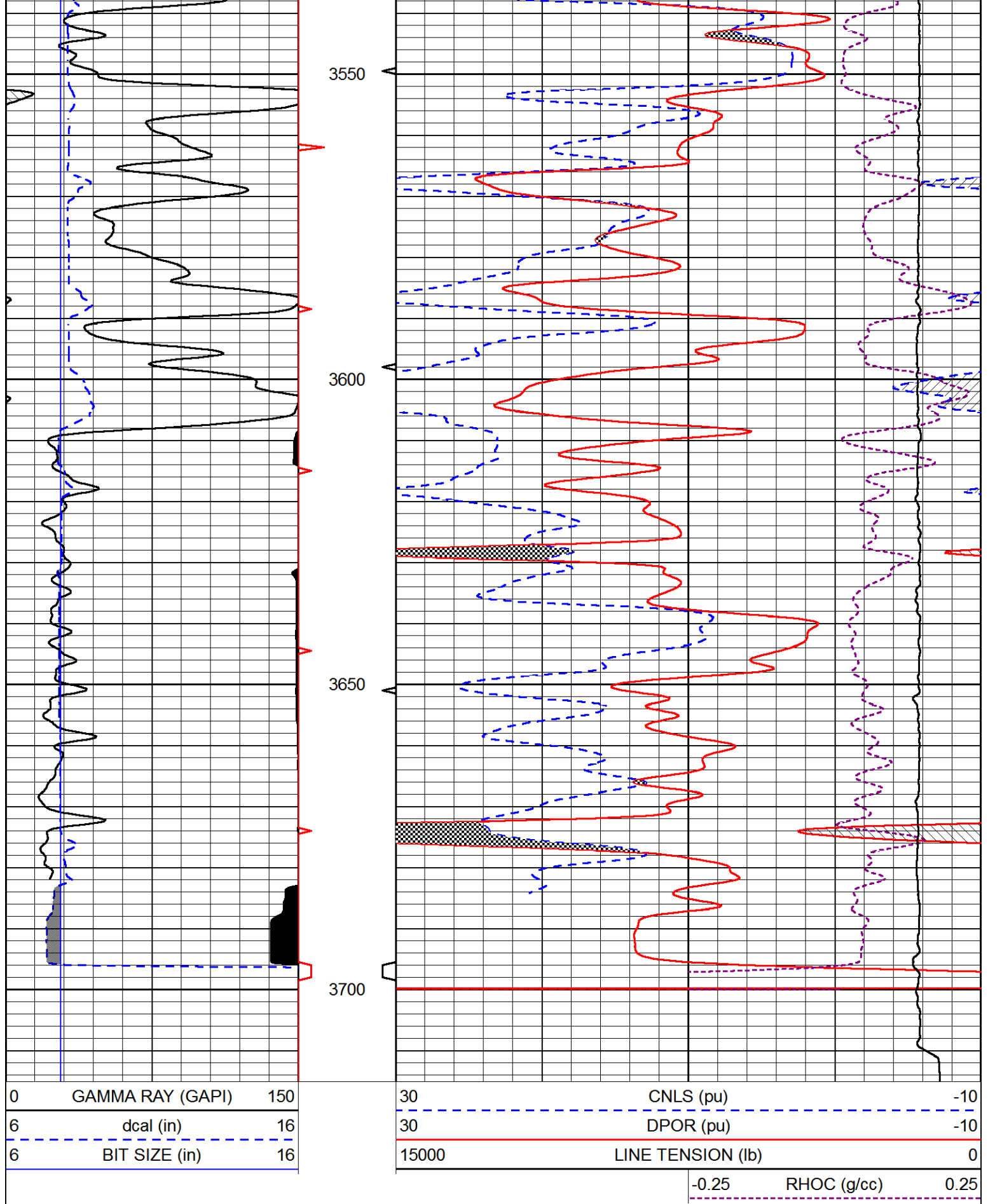
0	GAMMA RAY (GAPI)	150
6	dcal (in)	16
6	BIT SIZE (in)	16

30	CNLS (pu)	-10
30	DPOR (pu)	-10
15000	LINE TENSION (lb)	0
	RHOC (g/cc)	0.25









Calibration Report

Database File murfin_henderson g #7.db
Dataset Pathname stack/pass3.1
Dataset Creation Wed Sep 25 06:29:42 2019

Dual Induction Calibration Report

Serial-Model:
Calibration Performed:

PSI 988-M&W
Tue Nov 20 10:50:19 2018

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.525	-45.000
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.380	-18.500

Compensated Density Calibration Report

Serial-Model:
Source / Verifier:
Master Calibration Performed:

979-229-M&W
21170B /
Tue Jul 23 10:17:03 2019

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	7680.82	9959.08	cps
Aluminum	2.690	g/cc	1424.07	6427.19	cps
Spine Angle = 75.43			Density/Spine Ratio = 0.537		
	Size		Reading		
Small Ring	4.00	in	1.15		
Large Ring	14.00	in	1.02		

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



Company MURFIN DRILLING COMPANY, INC.
Well HENDERSON G #7
Field REMIS SHUTTS

PIONEER

Pioneer Energy Services

Field

DEMOCENTRO

County

ELLIS

State

KANSAS