



PIONEER

Pioneer Energy Services

DUAL COMP POROSITY LOG

Company **COBALT ENERGY, LLC**
Well **WETZEL UNIT A #1-14**
Field **NA**
County **FORD** State **KANSAS**

Location: API #: 15-057-21009-00-00

Other Services

NE NE NW SW
2389' FSL & 1268' FWL
SEC 14 TWP 26S RGE 21W

DIL/MEL

Permanent Datum **GROUND LEVEL** Elevation **2275'**
Log Measured From **KELLY BUSHING**
Drilling Measured From **KELLY BUSHING**

K.B. **2282'**
D.F. **N/A**
G.L. **2275'**

Date **5/26/2019**

Run Number **ONE**

Type Log **CNL/CDL**

Depth Driller **4895'**

Depth Logger **4898'**

Bottom Logged Interval **4877'**

Top Logged Interval **3800'**

Type Fluid In Hole **CHEMICAL**

Salinity, PPM CL **5500**

Density **9.4**

Level **FULL**

Max. Rec. Temp. F **125**

Operating Rig Time **3 HOURS**

Equipment -- Location **P-24 HAYS**

Recorded By **D. SCHMIDT**

Witnessed By **LARRY NICHOLSON**

Borehole Record

Casing Record

Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	12.25"	0'	371'	8.625"	23#	0'	371'
TWO	7.875"	371'	TD				

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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.

OFFERLE,
EAST TO 20 AVE, SOUTH TO THE T, 1/2 EAST,
SOUTH TO V RD, WEST TO 340 RD, 1/4 NORTH,
EAST INTO

Log Measured From: **KELLY BUSHING** 7 Ft. Above Permanent Datum

THANK YOU FOR USING PIONEER ENERGY SERVICES
www.pioneerenergy.com 785-625-3858

Your Pioneer Energy Services Crew

Engineer: **D. SCHMIDT**
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: **LARRY NICHOLSON**
Secondary Witness:
Secondary Witness:
Secondary Witness:

Log Variables

DatabaseC:\ProgramData\Warrior\Data\cobalt_wetzel unit a 1-14.db
Dataset field/well/STACK/pass3.3/_vars_

Top - Bottom

A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in	degF	in	in	g/cc	2	g/cc
	7.875	125	5.5	0	1		2.71
NPORSEL	PERFS	SNDERR	SNDERRM	SPSHIFT	SRFTEMP	SZCOR	TDEPTH
Limestone	0	mmho/m	mmho/m	mV	degF	Off	ft
		0	0	630	60		4897



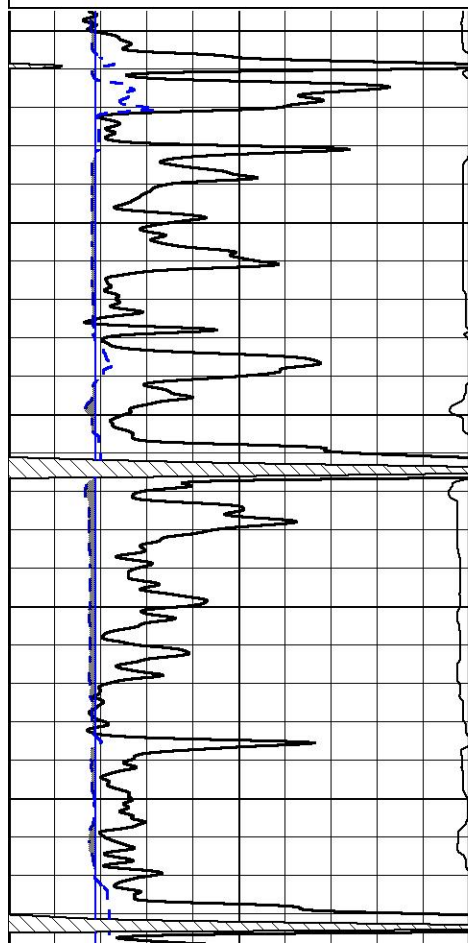
MAIN PASS

Database File cobalt_wetzel unit a 1-14.db
Dataset Pathname STACK/pass3.1
Presentation Format _cdl
Dataset Creation Sun May 26 02:49:33 2019
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



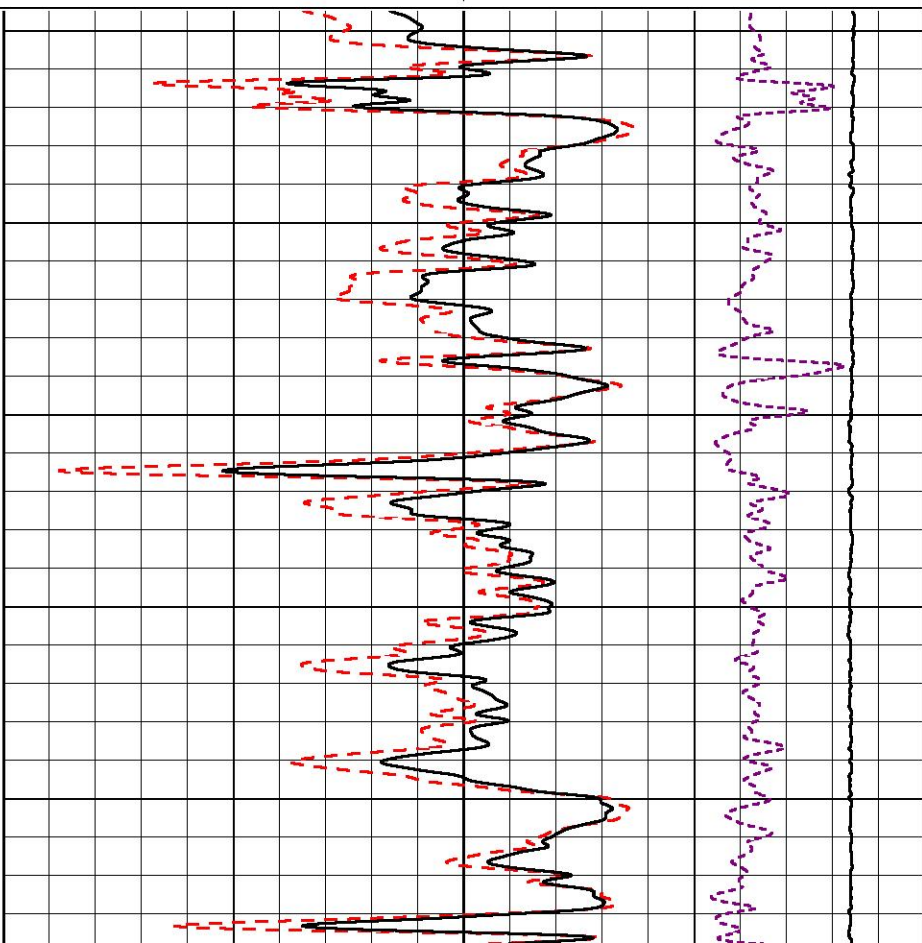
3800

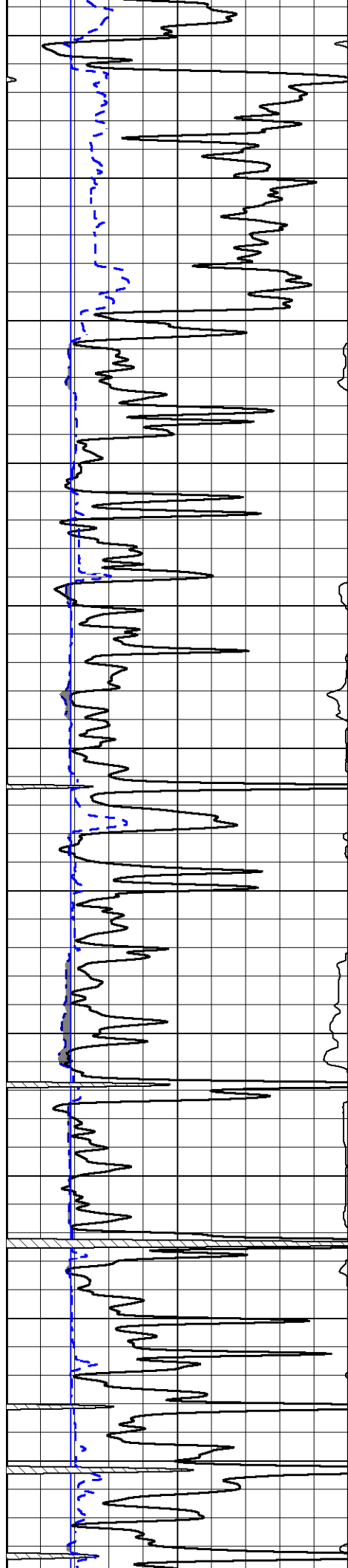
3850

3900

3950

4000





4050

4100

4150

4200

4250

4300

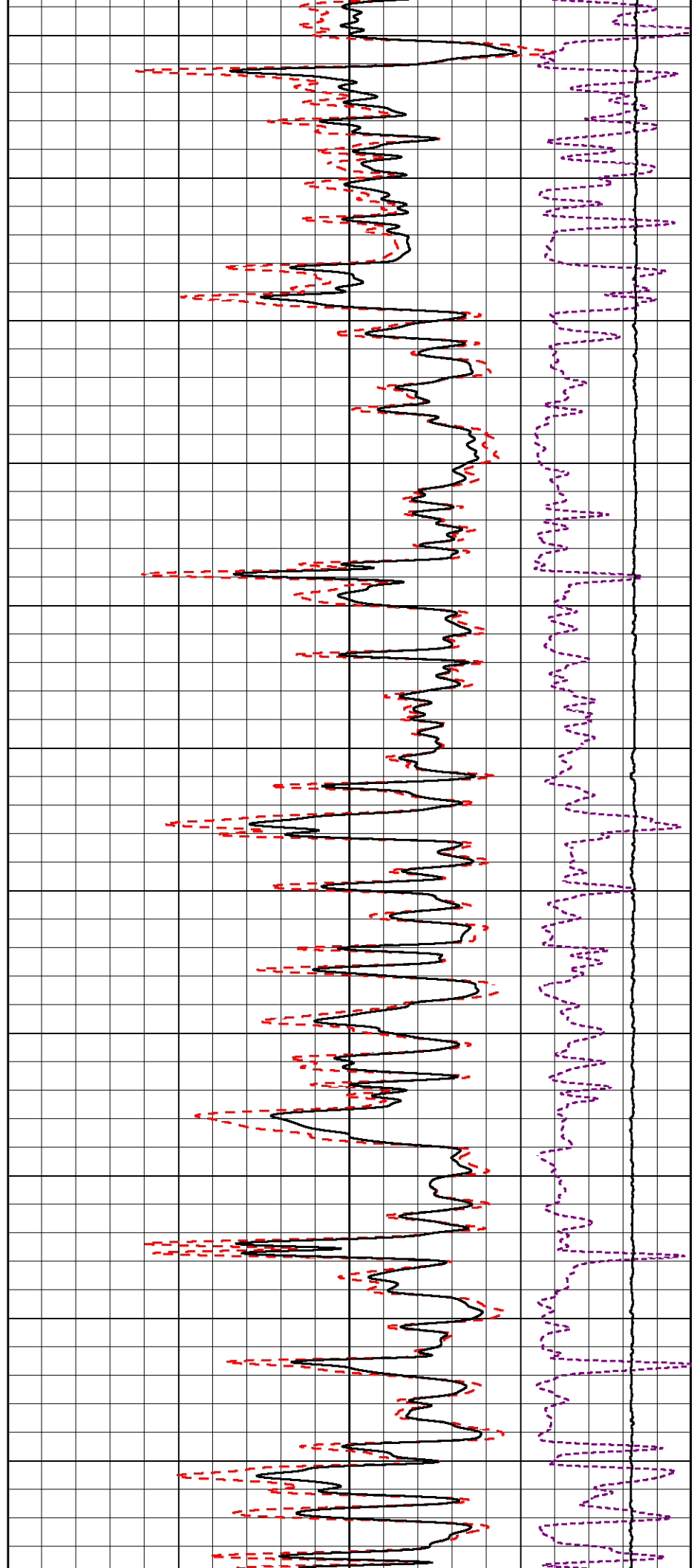
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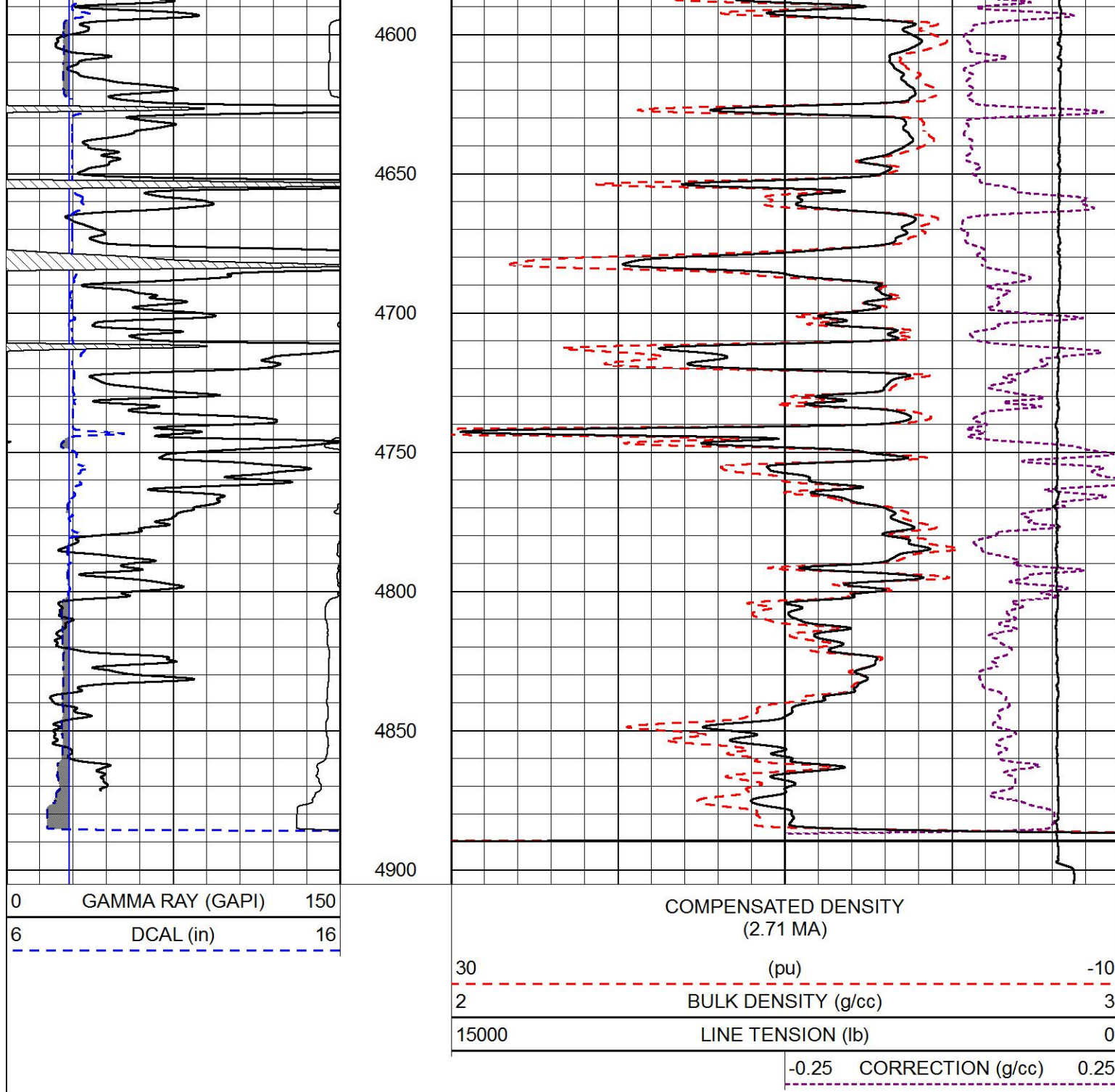
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4450

4500

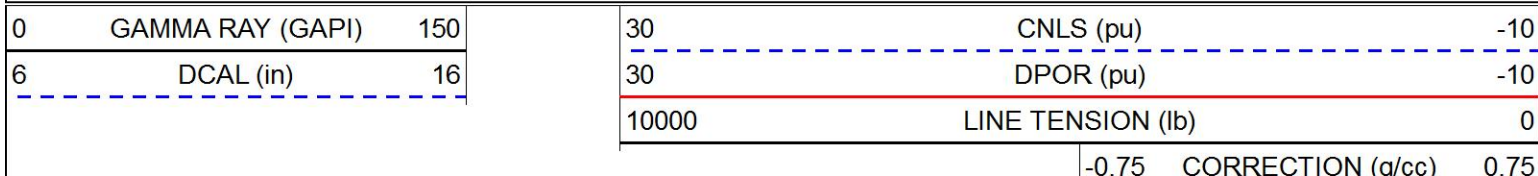
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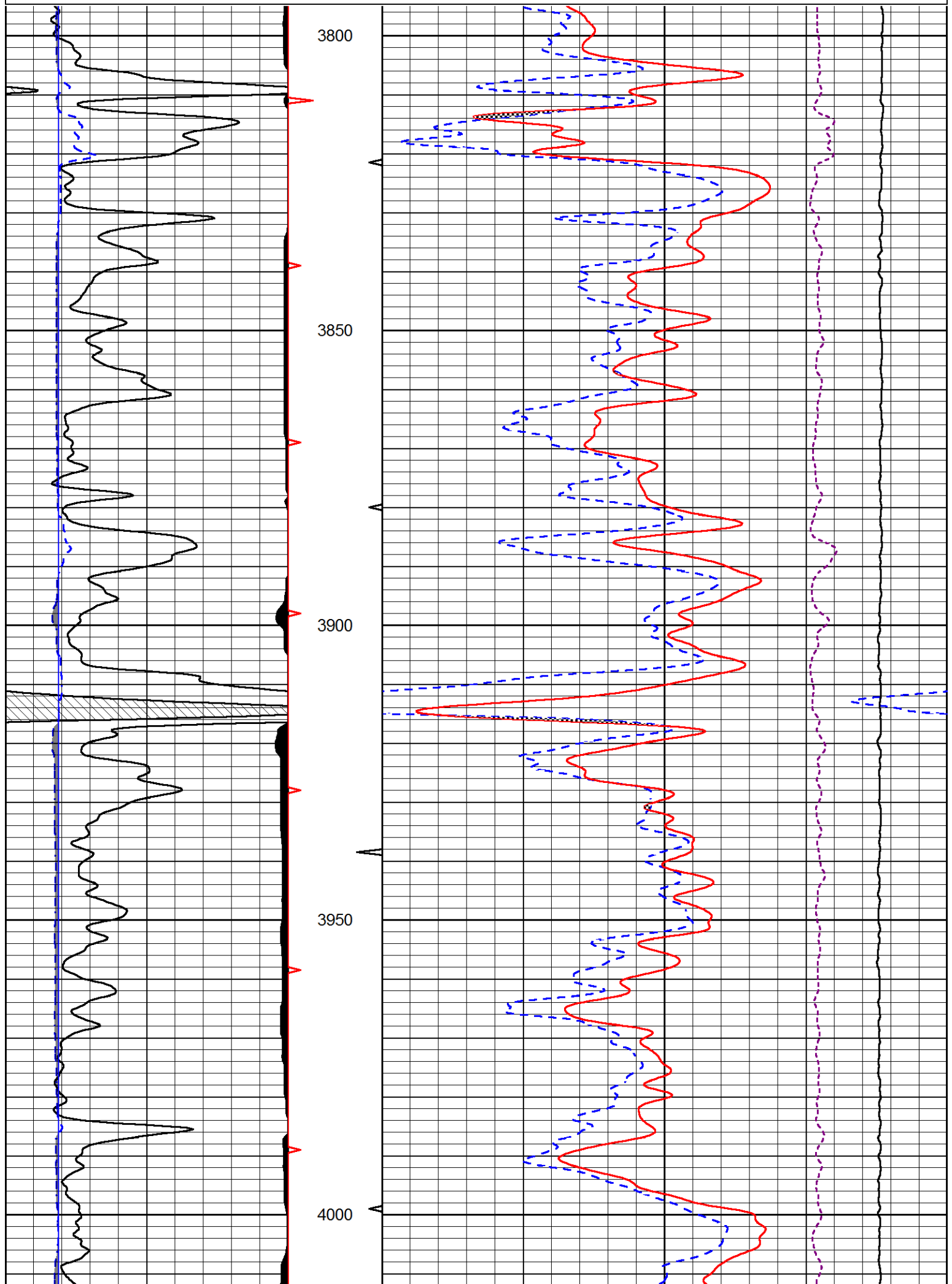


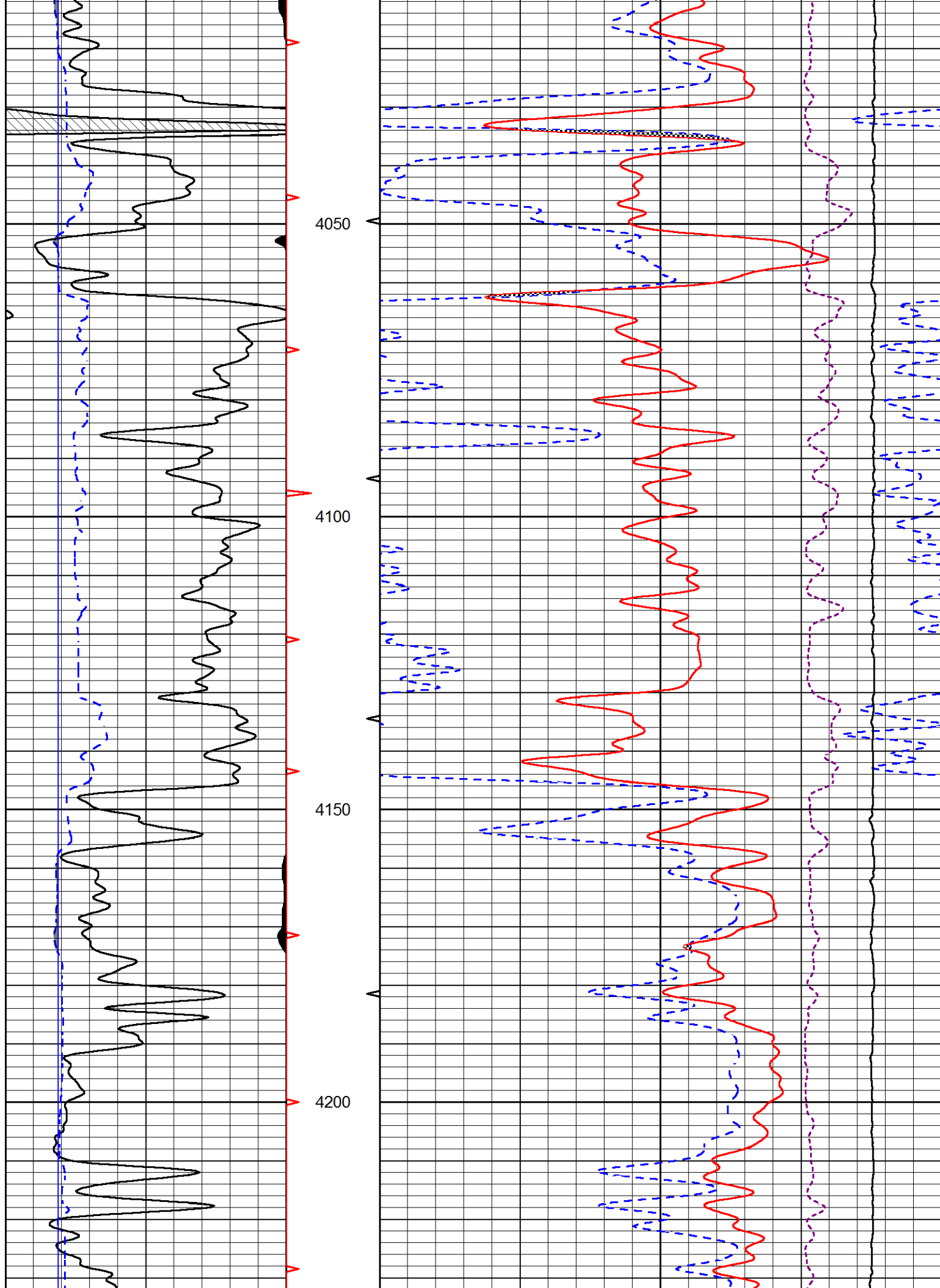


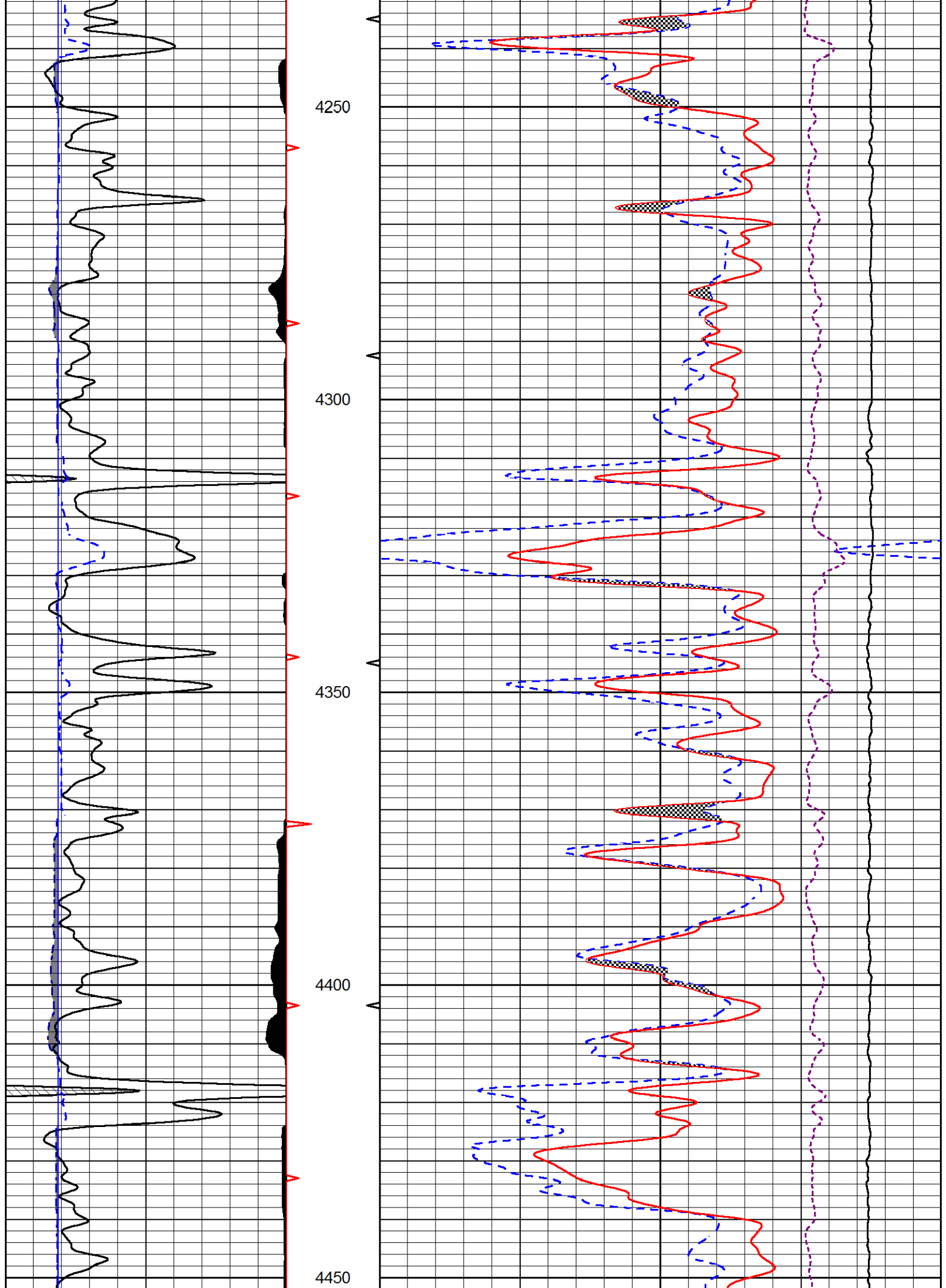
MAIN PASS

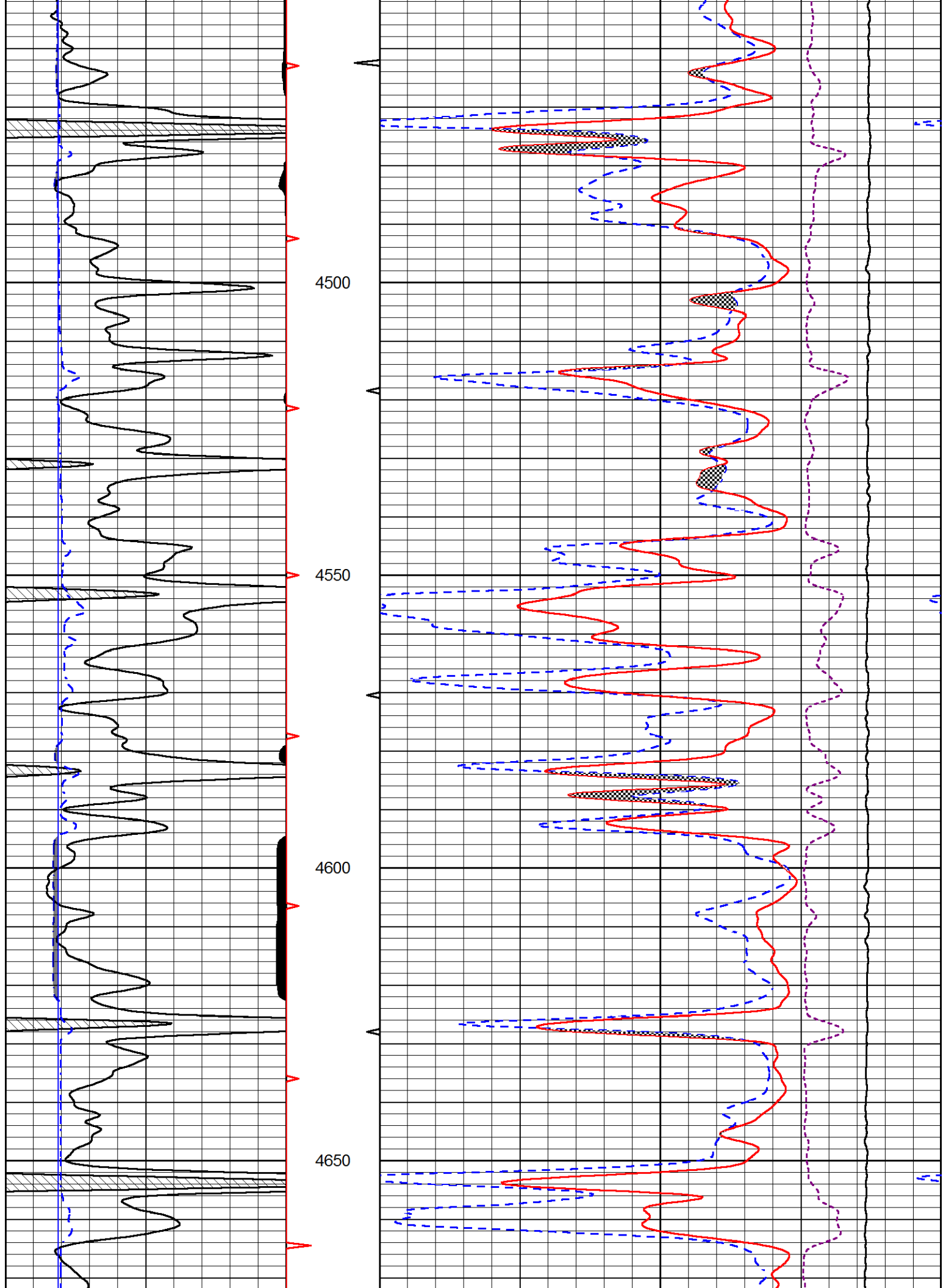
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Dataset Pathname STACK/pass3.1
Presentation Format _CNDLS~1
Dataset Creation Sun May 26 02:49:33 2019
Charted by Depth in Feet scaled 1:240

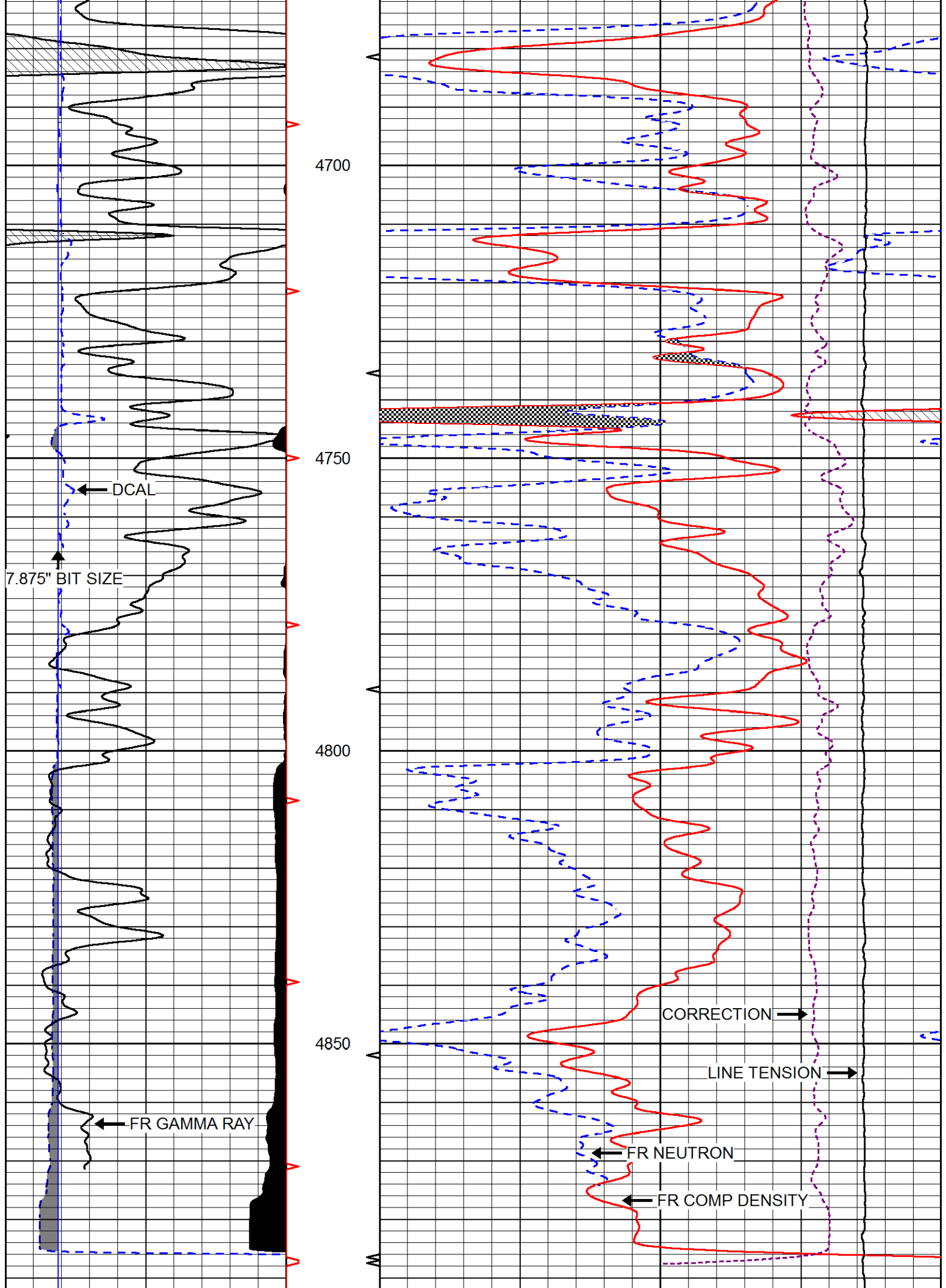


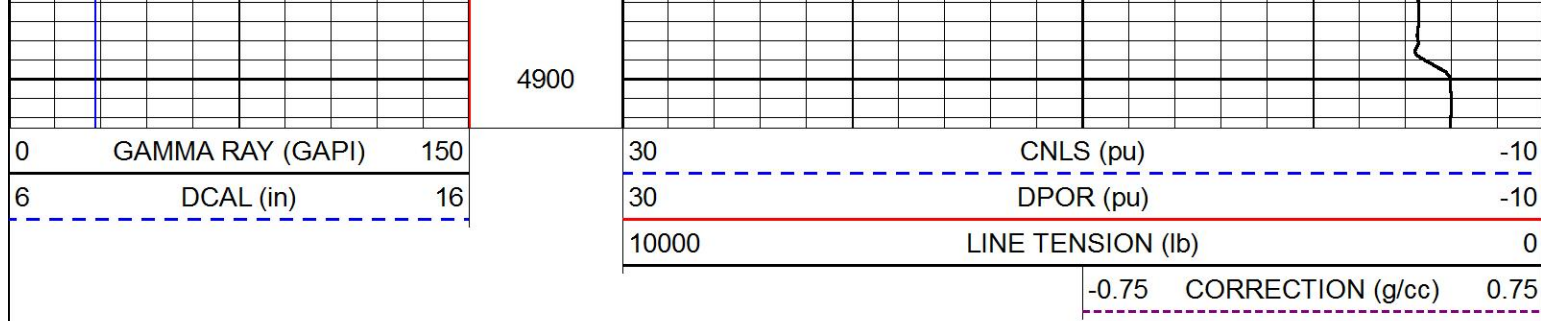






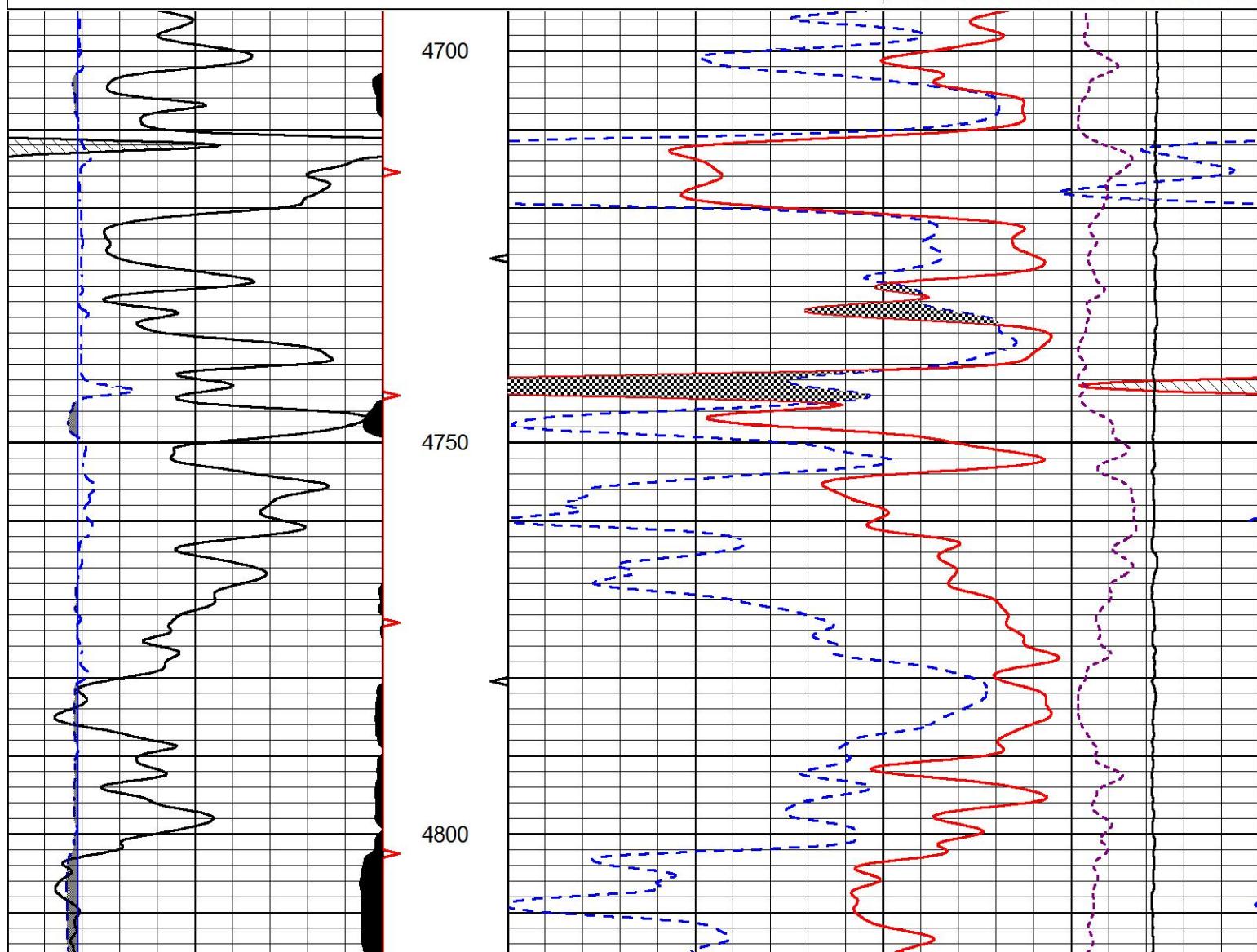
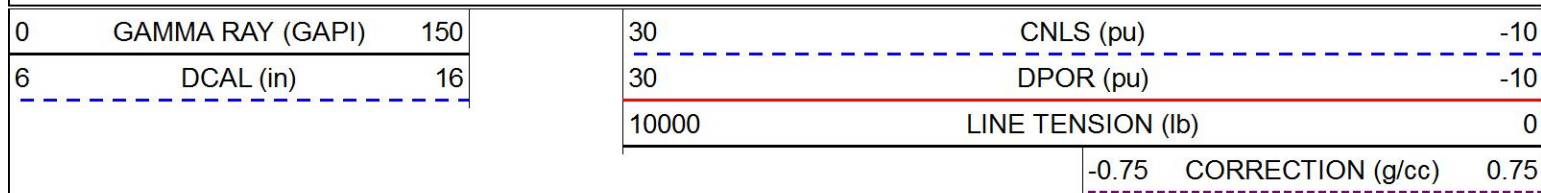


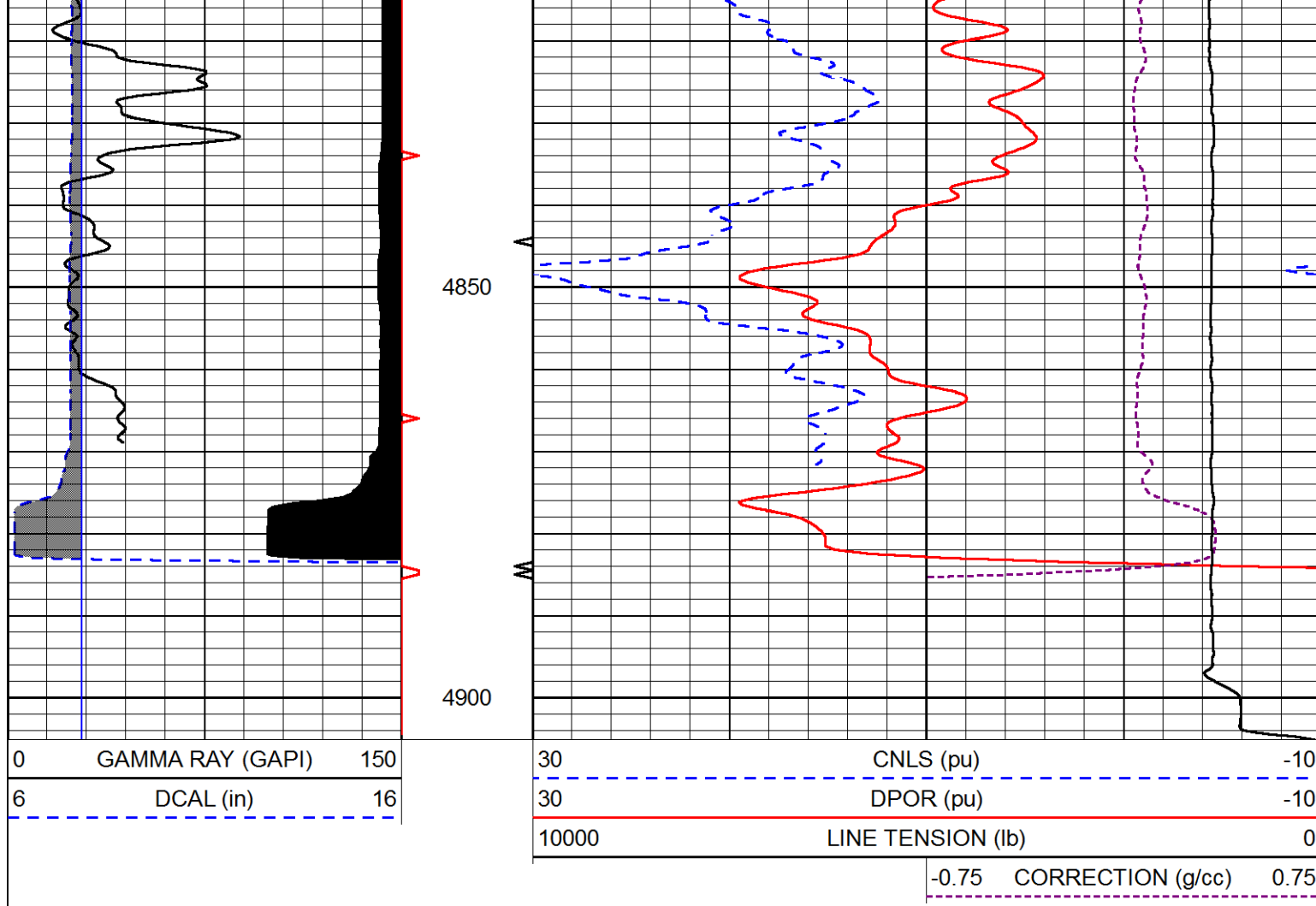




REPEAT SECTION

Database File cobalt_wetzel unit a 1-14.db
 Dataset Pathname STACK/pass2.1
 Presentation Format _CNDLS~1
 Dataset Creation Sun May 26 03:00:07 2019
 Charted by Depth in Feet scaled 1:240





Calibration Report

Database File cobalt_wetzel unit a 1-14.db
 Dataset Pathname STACK/pass3.3
 Dataset Creation Sun May 26 02:27:45 2019

Dual Induction Calibration Report

Serial-Model: 967 (HT)-PSI HIGH TEMP
 Calibration Performed: Fri Apr 12 09:37:07 2019

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	167.000	835.000	0.000	255.800	mmho/m	0.565	-17.500
Medium	0.000	1348.000	142.000	255.800	mmho/m	0.390	-40.000

Compensated Density Calibration Report

Serial-Model: 96-916-M&W
 Source / Verifier: 16955B / 2ci
 Master Calibration Performed: Wed Mar 27 11:00:53 2019

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	8943.64	10054.60	cps

Aluminum 2.655 g/cc 1595.61 6242.82 cps

Spine Angle = 74.54

Density/Spine Ratio = 0.503

	Size		Reading
Small Ring	6.00	in	1.75
Large Ring	16.00	in	1.46

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: 89
Tool Model: M&W
Calibration Performed: Fri Aug 24 11:16:10 2018

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.6000 GAPI/cps



Company COBALT ENERGY, LLC
Well WETZEL UNIT A #1-14
Field NA
County FORD
State KANSAS