



PIONEER
Pioneer Energy Services

DUAL COMP POROSITY LOG

Company COBALT ENERGY, LLC
Well HOYT 'A' NO. 1-36
Field N/A
County CHEYENNE
State KANSAS

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Location: API #: 15-023-21490-00-00

454' FSL & 348' FWL

SEC 36 TWP 5S RGE 37W

Permanent Datum GROUND LEVEL Elevation 3418'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Elevation
K.B. 3423'
D.F. N/A
G.L. 3418'

DIL
MEL/BHCS

Date 8/1/2018

Run Number ONE

Type Log CNL/CDL

Depth Driller 5060'

Depth Logger 5059'

Bottom Logged Interval 5038'

Top Logged Interval 3800'

Type Fluid In Hole CHEMICAL

Salinity, PPM CL 3500

Density 9.1

Level FULL

Max. Rec. Temp. F 127 DEG/F

Operating Rig Time 4 HOURS

Equipment -- Location 108 HAYS

Recorded By J. HENRICKSON

Witnessed By TIM LAUER

Borehole Record

Casing Record

Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	12.25"	0	386'	8.625"	23#	0	386'
TWO	7.875"	386'	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.
BREWSTER KANSAS
NORTH TO 80 ROAD, WEST TO ROAD 34, NORTH INTO

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: TIM LAUER
Secondary Witness:
Secondary Witness:
Secondary Witness:

Top - Bottom

A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in 7.875	degF 127	in 5.5	in 0	g/cc 1	2	g/cc 2.71
NPORSEL	PERFS	SNDERR	SNDERRM	SPSHIFT	SRFTEMP	SZCOR	TDEPTH
Limestone	0	mmho/m 0	mmho/m -5	mV -250	degF 98	Off	ft 5059

Sensor	Offset (ft)	Schematic		Description	Length (ft)	O.D. (in)	Weight (lb)
GR	33.00			GR-M&W (89-M&W)	3.00	3.50	50.00
CNLSC CNSSC	29.90			CNT-M&W (tk10-MW)	5.50	3.50	100.00
	29.15						
LSD DCAL SSD	20.85			CDL-M&W (168-130)	8.50	4.00	250.00
	20.83						
	20.35						
RLL3 RLL3F	15.80 15.79			DIL-M&W (1987)	18.50	3.50	220.00
CILD	8.00						

CILM 4.70

SP 0.20

Dataset: cobalt_hoyt_a_1_36.db: field/well/stack/pass3.1
Total length: 35.50 ft
Total weight: 620.00 lb
O.D.: 4.00 in

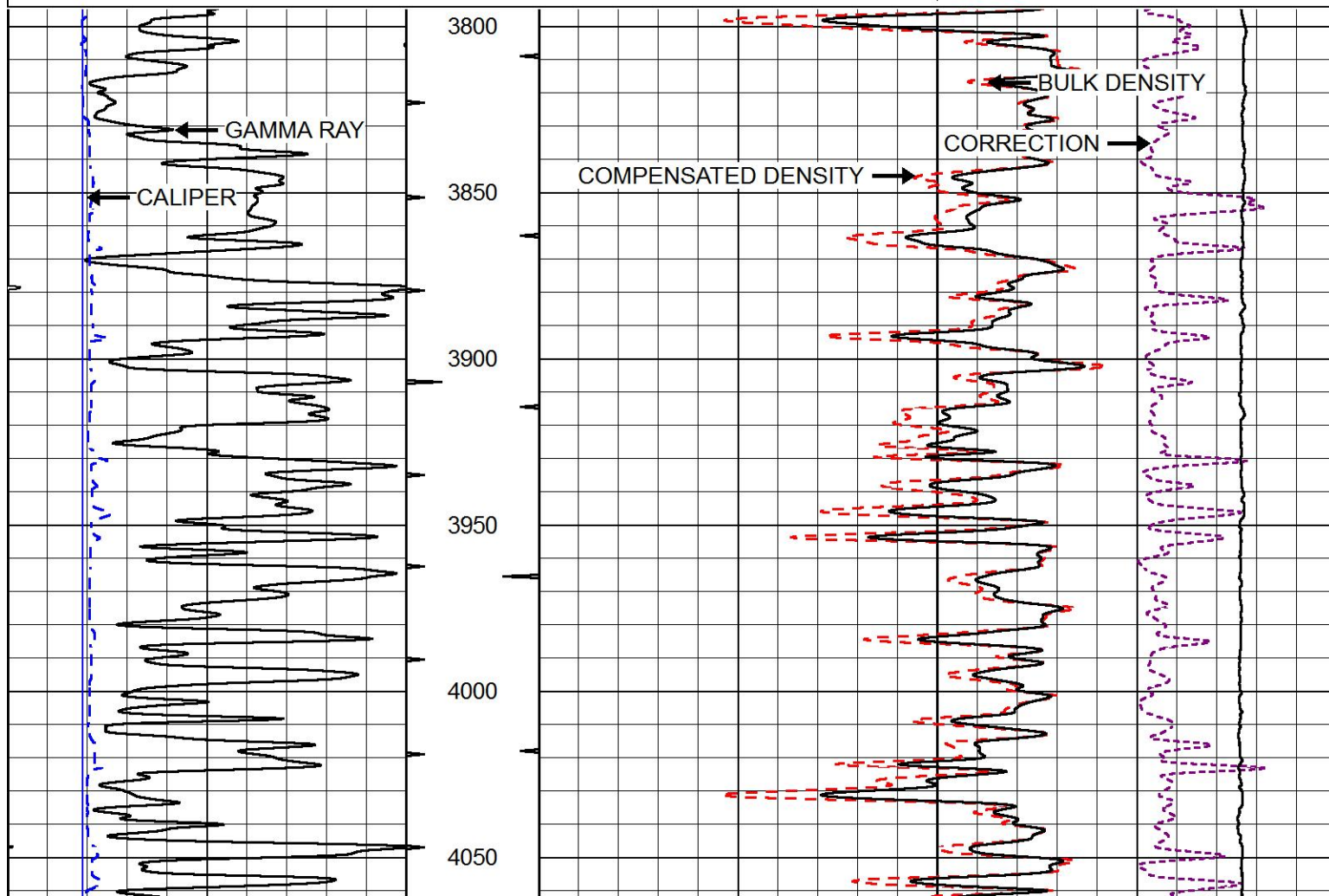


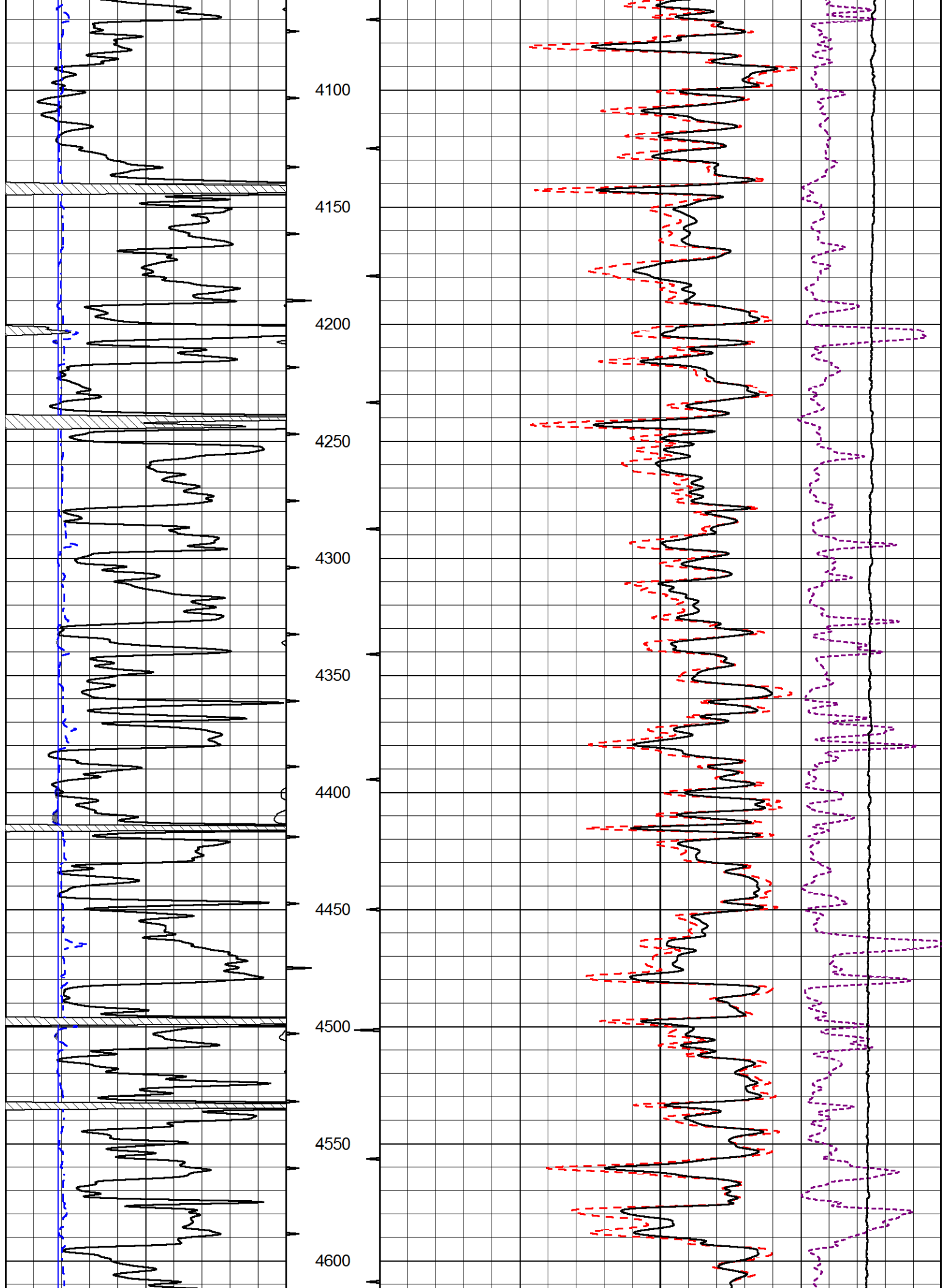
MAIN PASS

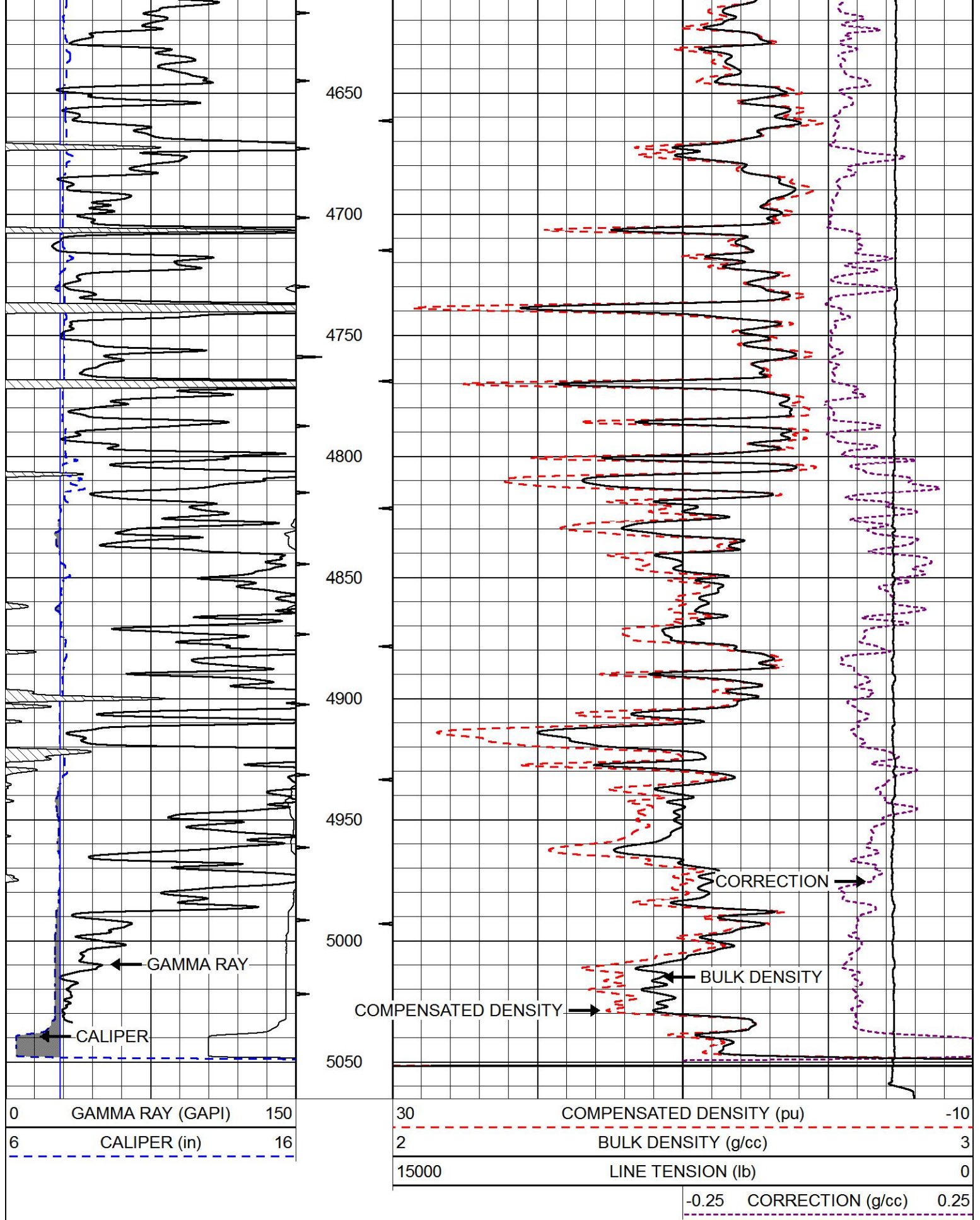
Database File cobalt_hoyt_a_1_36.db
Dataset Pathname stack/pass3.1
Presentation Format cdl
Dataset Creation Wed Aug 01 15:46:19 2018
Charted by Depth in Feet scaled 1:600

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
-0.25 CORRECTION (g/cc) 0.25



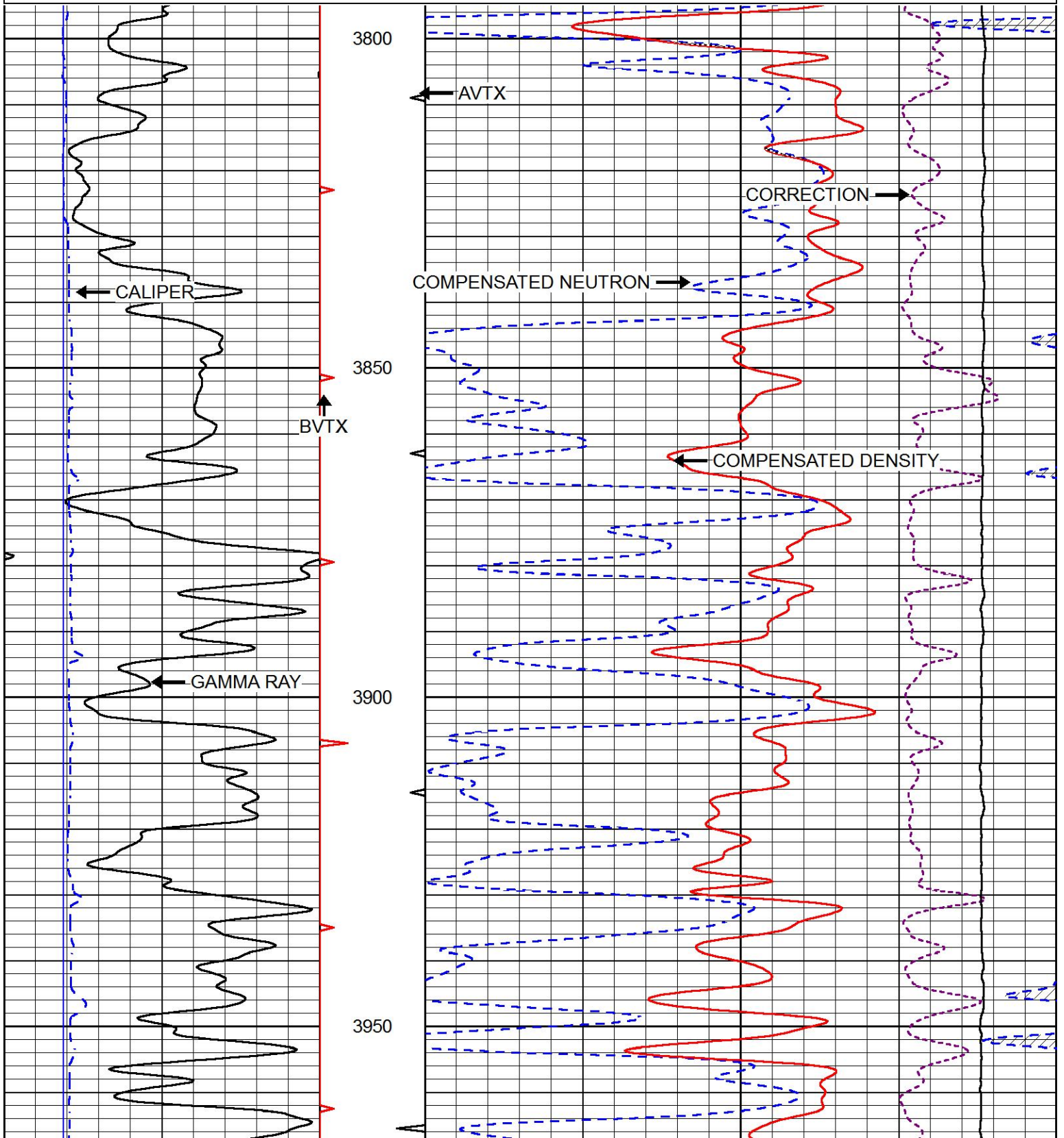


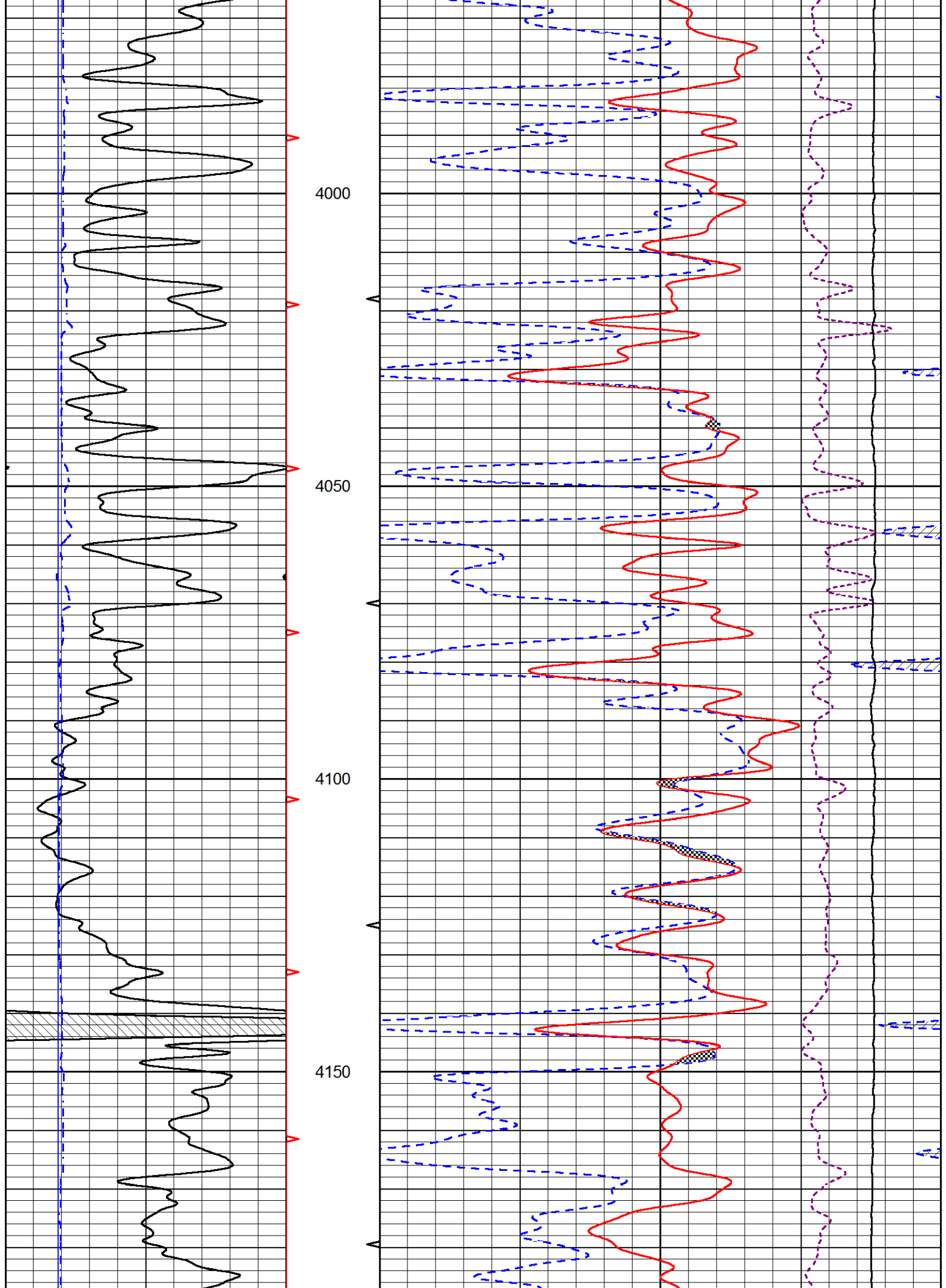


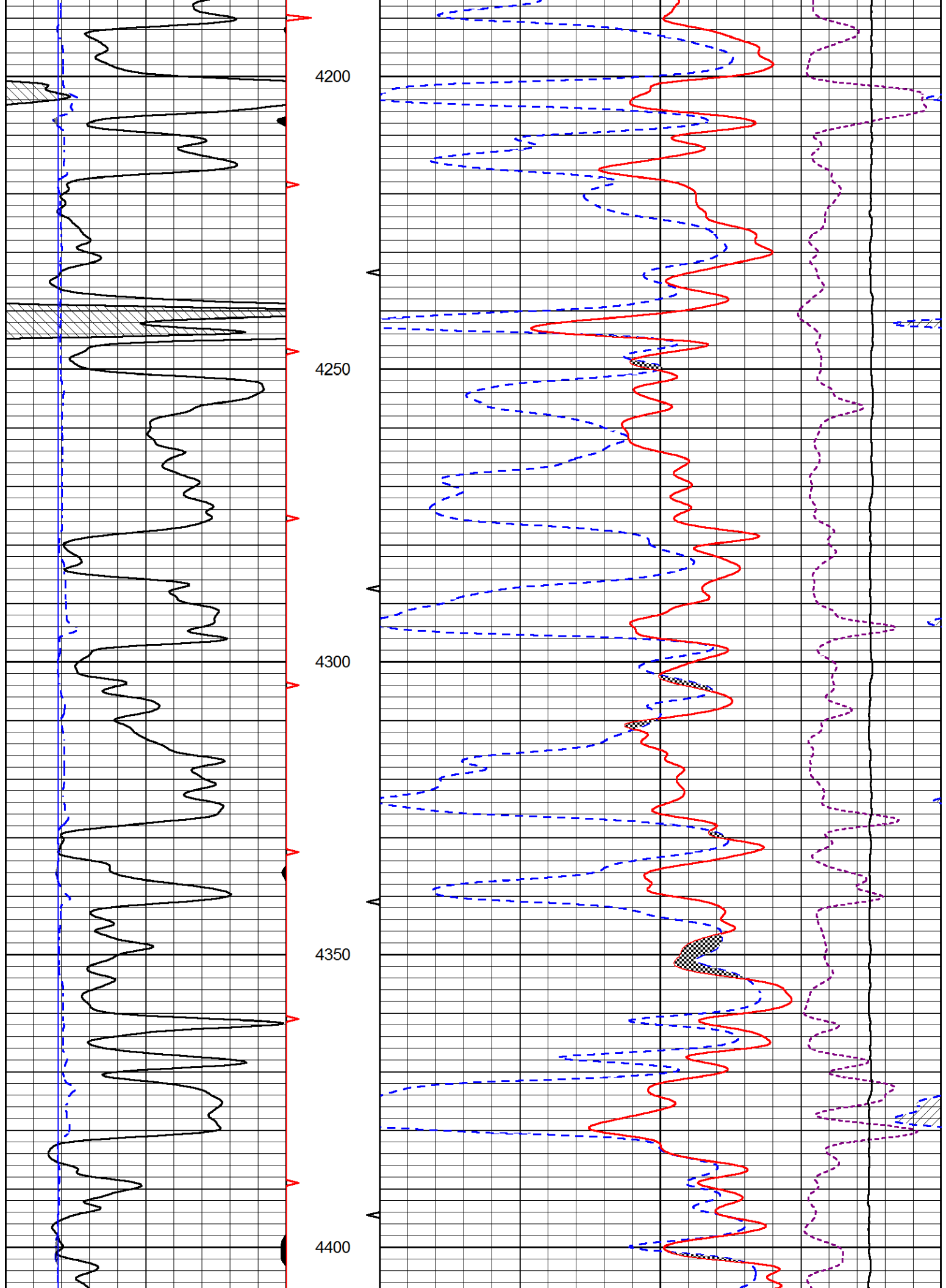
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Dataset Pathname stack/pass3.1
Presentation Format cndlspec
Dataset Creation Wed Aug 01 15:46:19 2018
Charted by Depth in Feet scaled 1:240

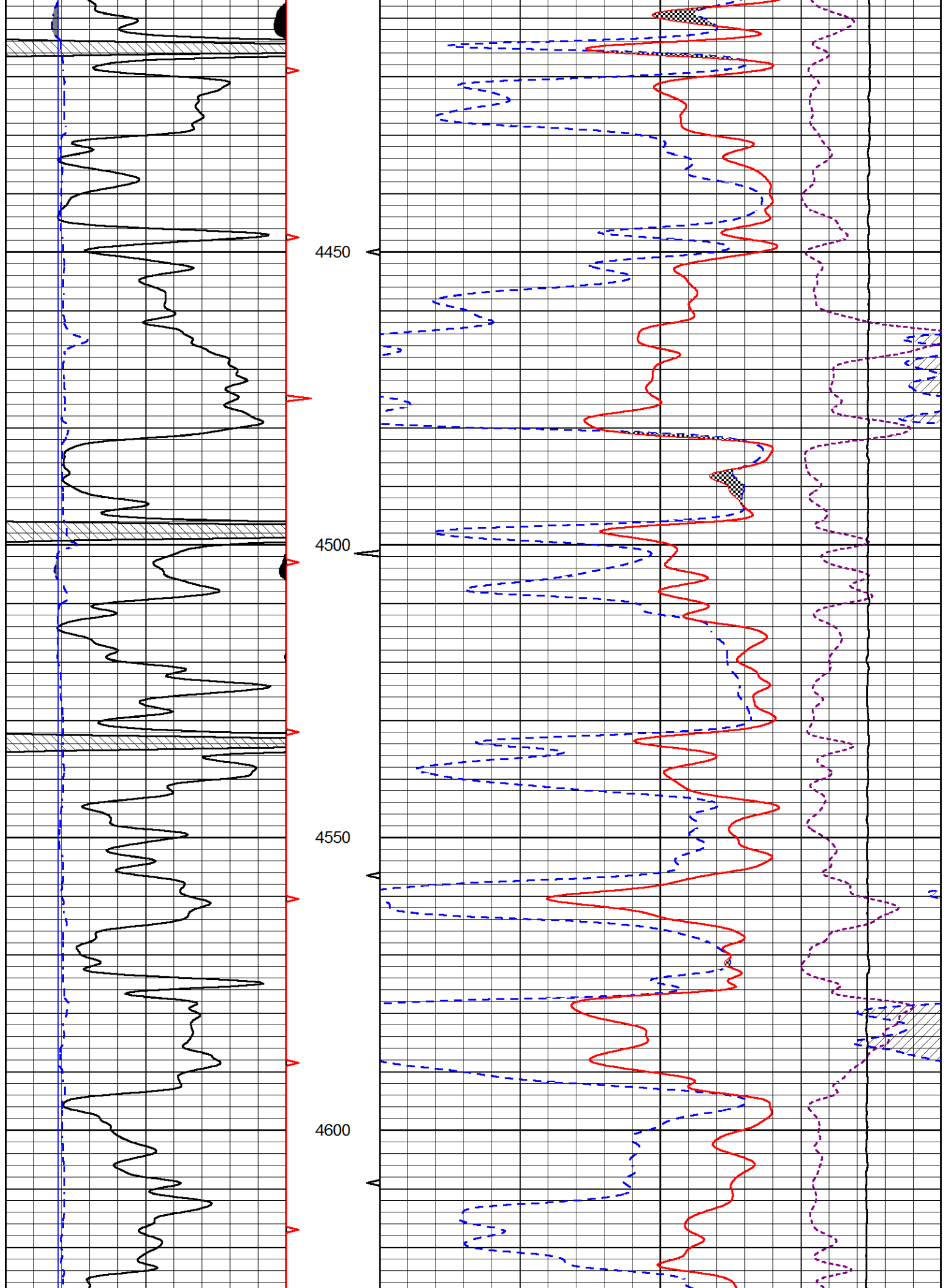
0	GAMMA RAY (GAPI)	150
6	dcal (in)	16
6	BIT SIZE (in)	16

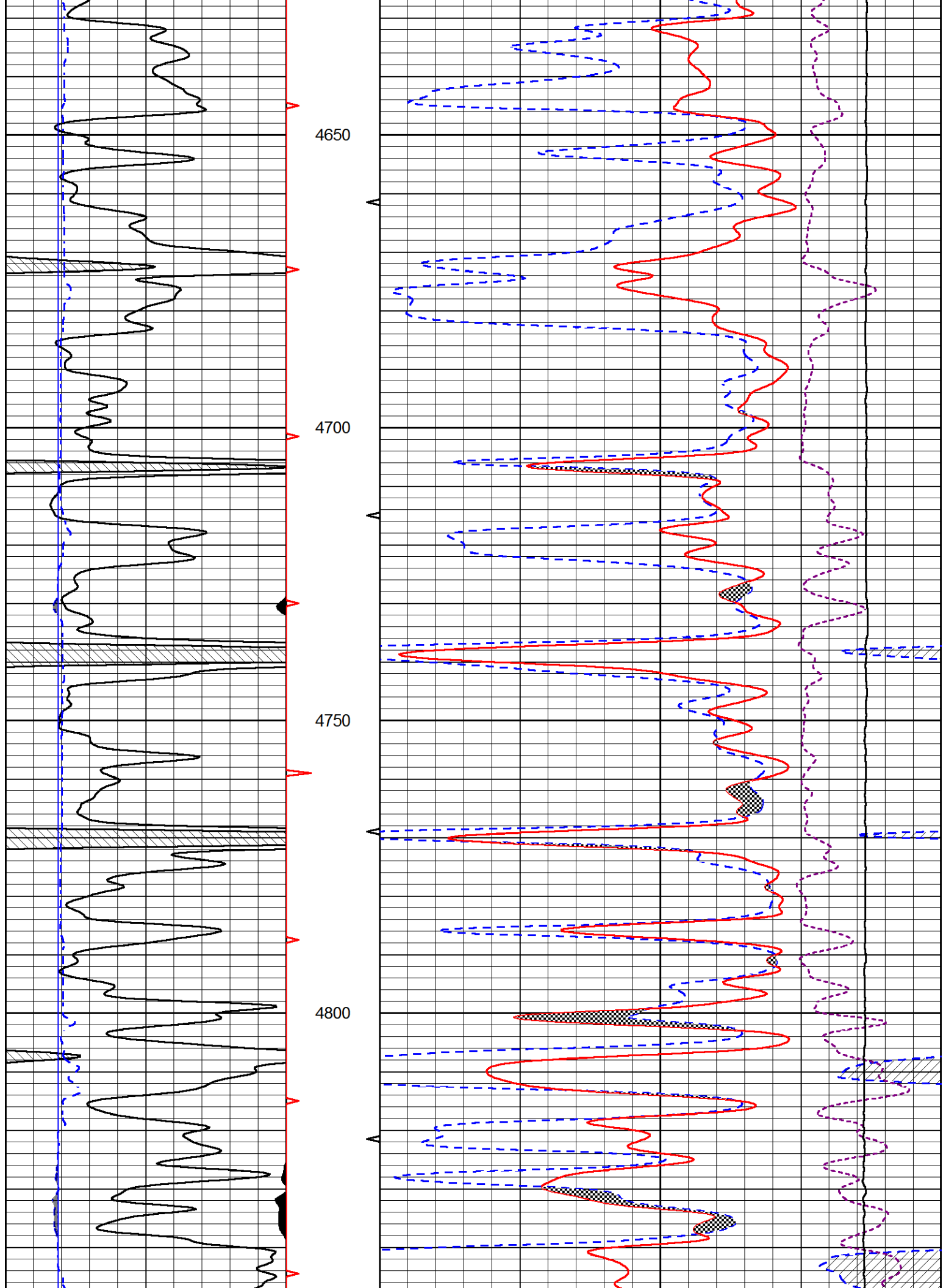
30	CNLS (pu)	-10
30	DPOR (pu)	-10
15000	LINE TENSION (lb)	0
	RHOC (g/cc)	-0.25 0.25

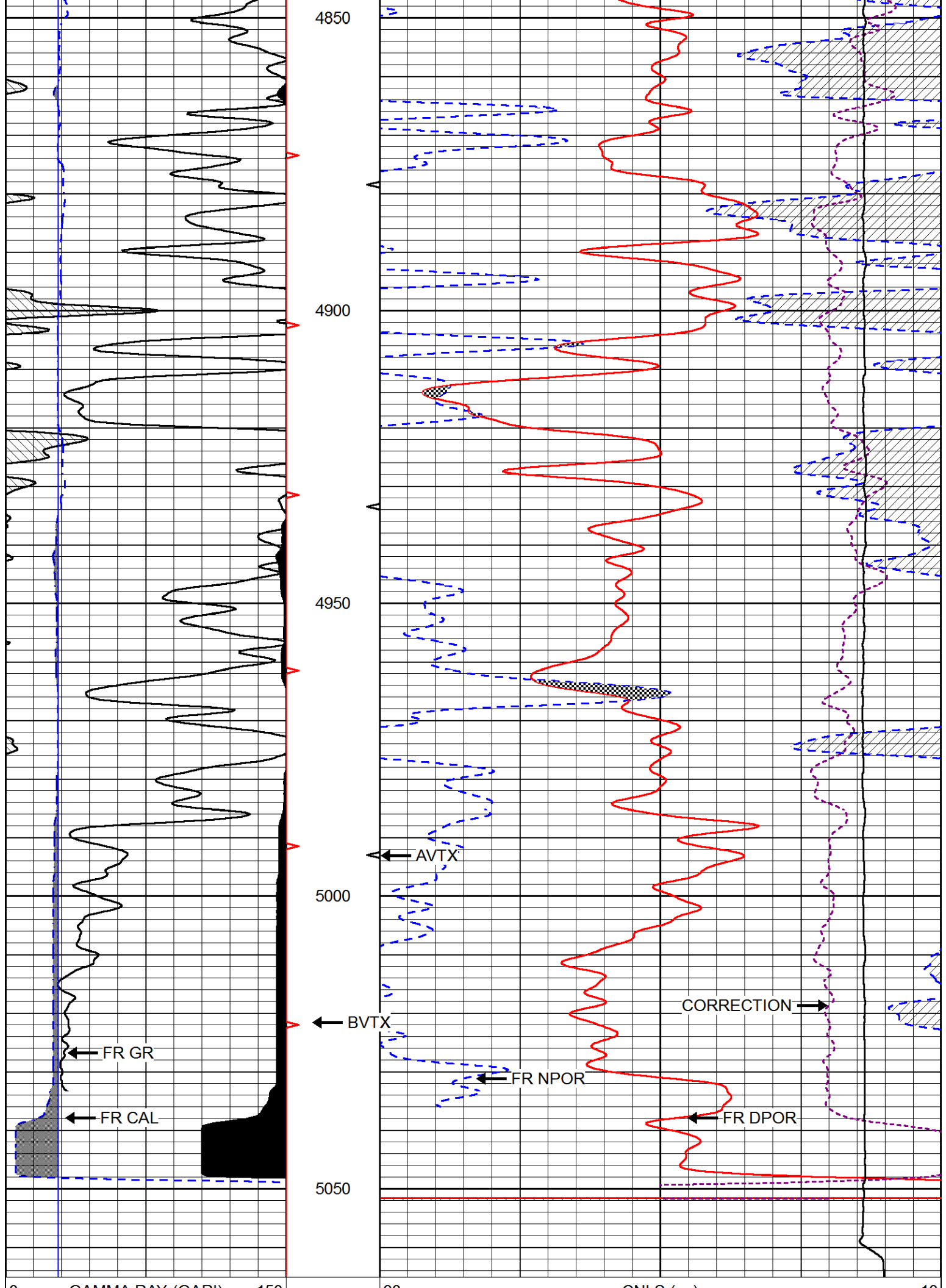












0	GAMMA RAY (GAPI)	150
6	dcal (in)	16
6	BIT SIZE (in)	16

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

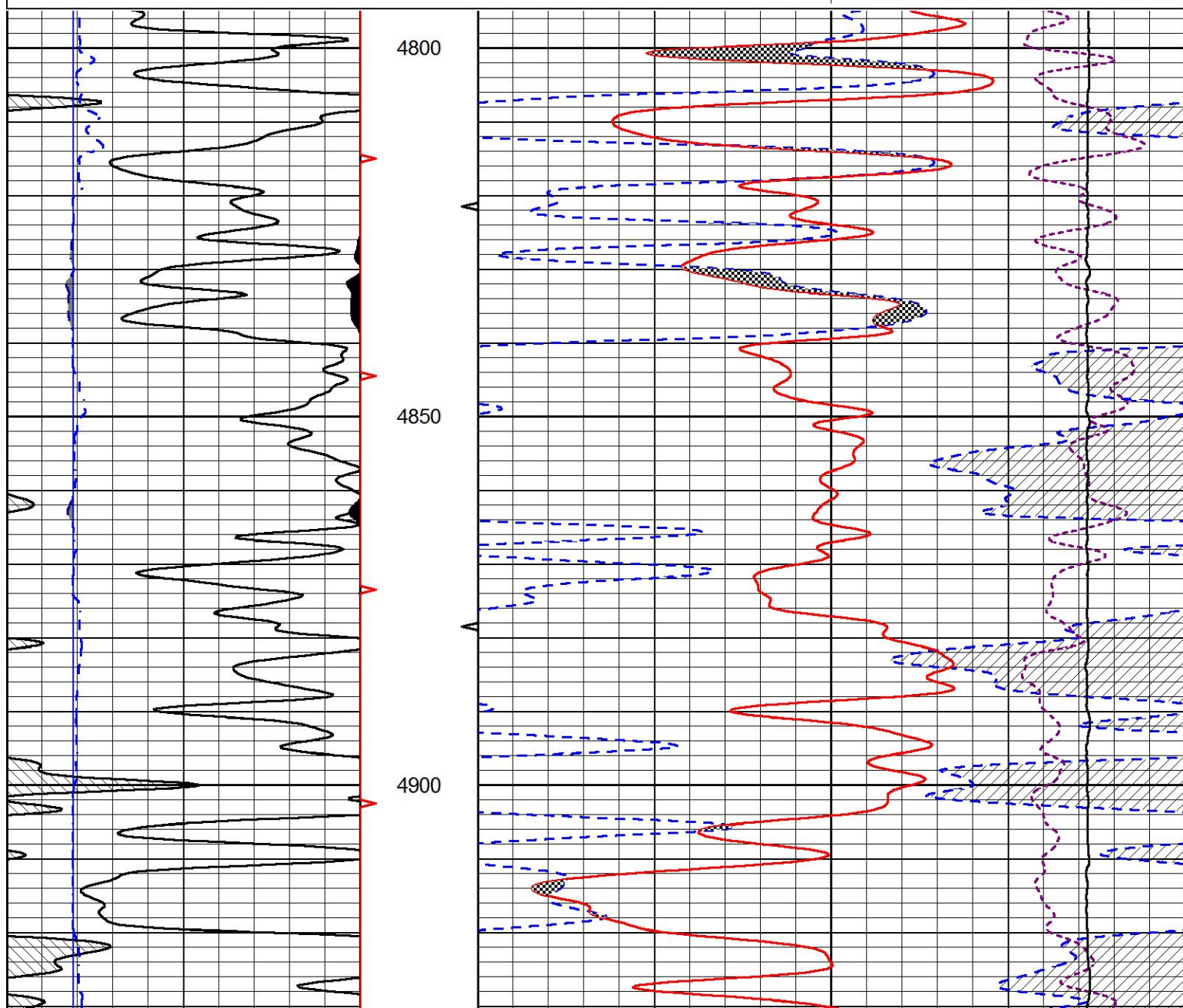


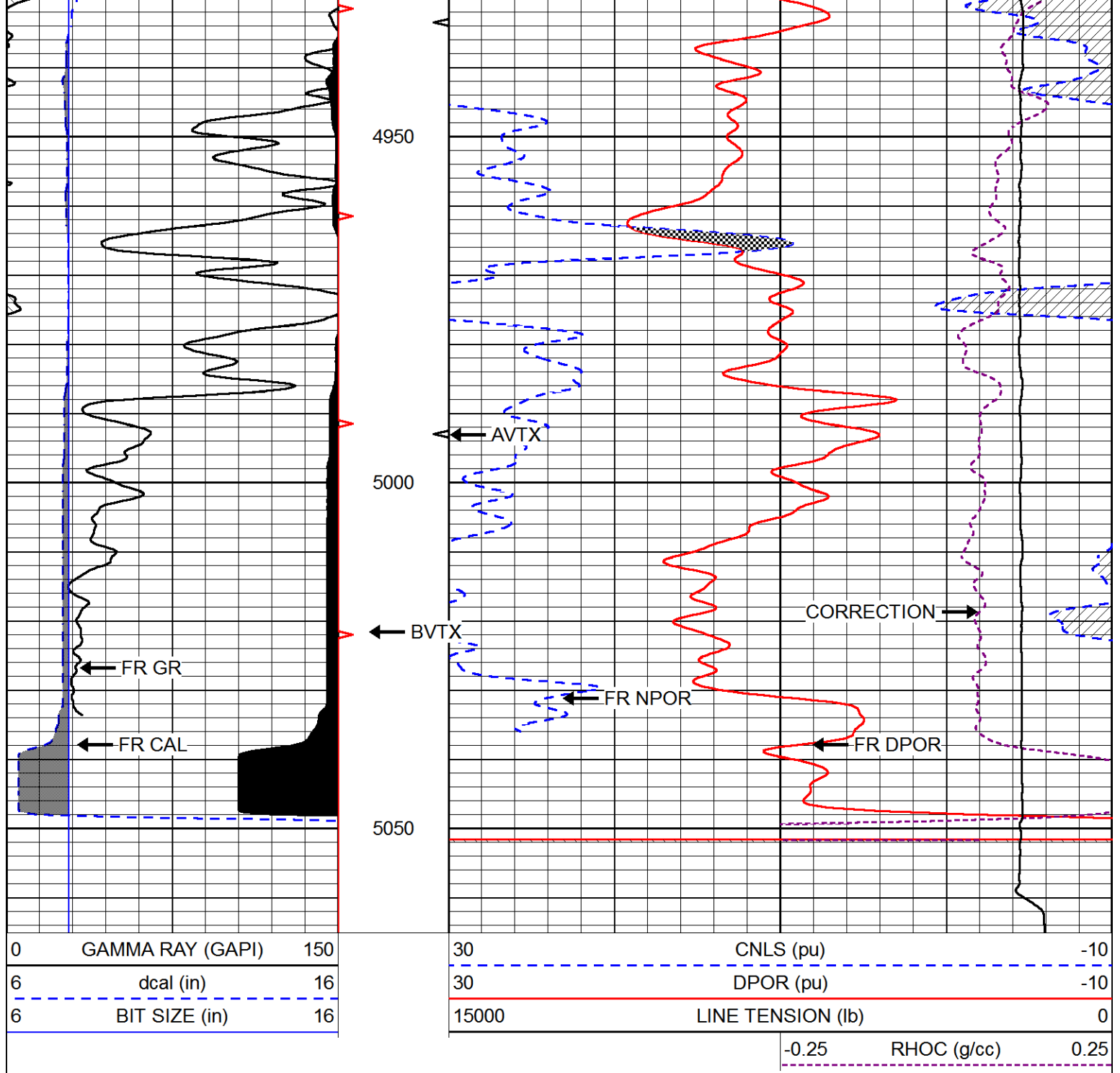
MAIN PASS

Database File cobalt_hoyt_a_1_36.db
Dataset Pathname stack/pass2.1
Presentation Format cndlspec
Dataset Creation Wed Aug 01 15:44:55 2018
Charted by Depth in Feet scaled 1:240

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
	-0.25 RHOC (g/cc)	0.25





Calibration Report

Database File cobalt_hoyt_a_1_36.db
 Dataset Pathname stack/pass3.1
 Dataset Creation Wed Aug 01 15:46:19 2018

Dual Induction Calibration Report

Serial-Model: 1987-M&W
 Calibration Performed: Tue Apr 11 17:07:38 2017

Loop:	Readings		References		Results	
	Air	Loop	Air	Loop	Gain	Offset
Deep	178.615	710.235	0.000	255.800 mmho/m	0.530	-36.500
Medium	161.982	1441.110	0.000	255.800 mmho/m	0.440	-110.500

Compensated Density Calibration Report

Serial-Model: 168-130-M&W
 Source / Verifier: /
 Master Calibration Performed: Sun Nov 17 12:46:06 2013

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4659.47	5064.14	cps
Aluminum	2.680	g/cc	853.93	3180.74	cps
Spine Angle = 74.67			Density/Spine Ratio = 0.526		
	Size		Reading		
Small Ring	4.00	in	0.87		
Large Ring	16.00	in	0.22		

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



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