



PIONEER

Pioneer Energy Services

DUAL COMP POROSITY LOG

Company **AMERICAN WARRIOR, INC.**

Well **O'BRATE-BEACH #1-22**

Field **WILDCAT**

County **FINNEY** State **KANSAS**

Location: API #: 15-055-22433-00-00

Location:

975' FSL & 1801' FWL

SEC 22 TWP 25S RGE 31W

DIL/MEL

Permanent Datum GROUND LEVEL Elevation 2797'

Log Measured From KELLY BUSHING

Drilling Measured From KELLY BUSHING

Elevation
K.B. 2809'
D.F. N/A
G.L. 2797'

Date 9/8/2016

Run Number ONE

Type Log CNL/CDL

Depth Driller 5050'

Depth Logger 5052'

Bottom Logged Interval 5023'

Top Logged Interval 3800'

Type Fluid In Hole CHEMICAL

Salinity, PPM CL 2800

Density 9.55

Level FULL

Max. Rec. Temp. F 127

Operating Rig Time 3 HOURS

Equipment -- Location 91 COLBY

Recorded By D. SCHMIDT

Witnessed By KEVIN TIMSON

Borehole Record

Casing Record

Run No.	Bit	From	To	Size	Wgt.	From	To
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ONE	12.25"	0'	1700'	8.625"	23#	0'	1700'
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TWO	7.875"	1700'	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.

PIERCEVILLE,
1 SOUTH, 2 WEST & SOUTH INTO

Log Measured From: KELLY BUSHING 12 Ft. Above Permanent Datum

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

Your Pioneer Energy Services Crew

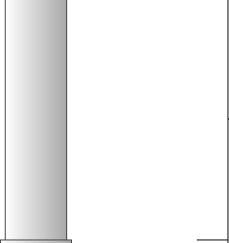
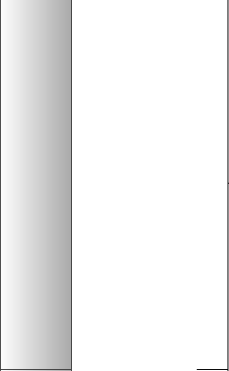
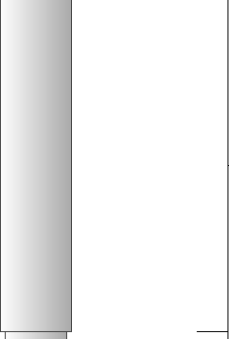
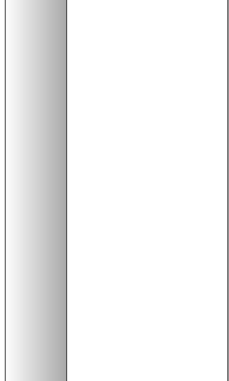
Engineer: D. SCHMIDT
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: KEVIN TIMSON
Secondary Witness:
Secondary Witness:
Secondary Witness:

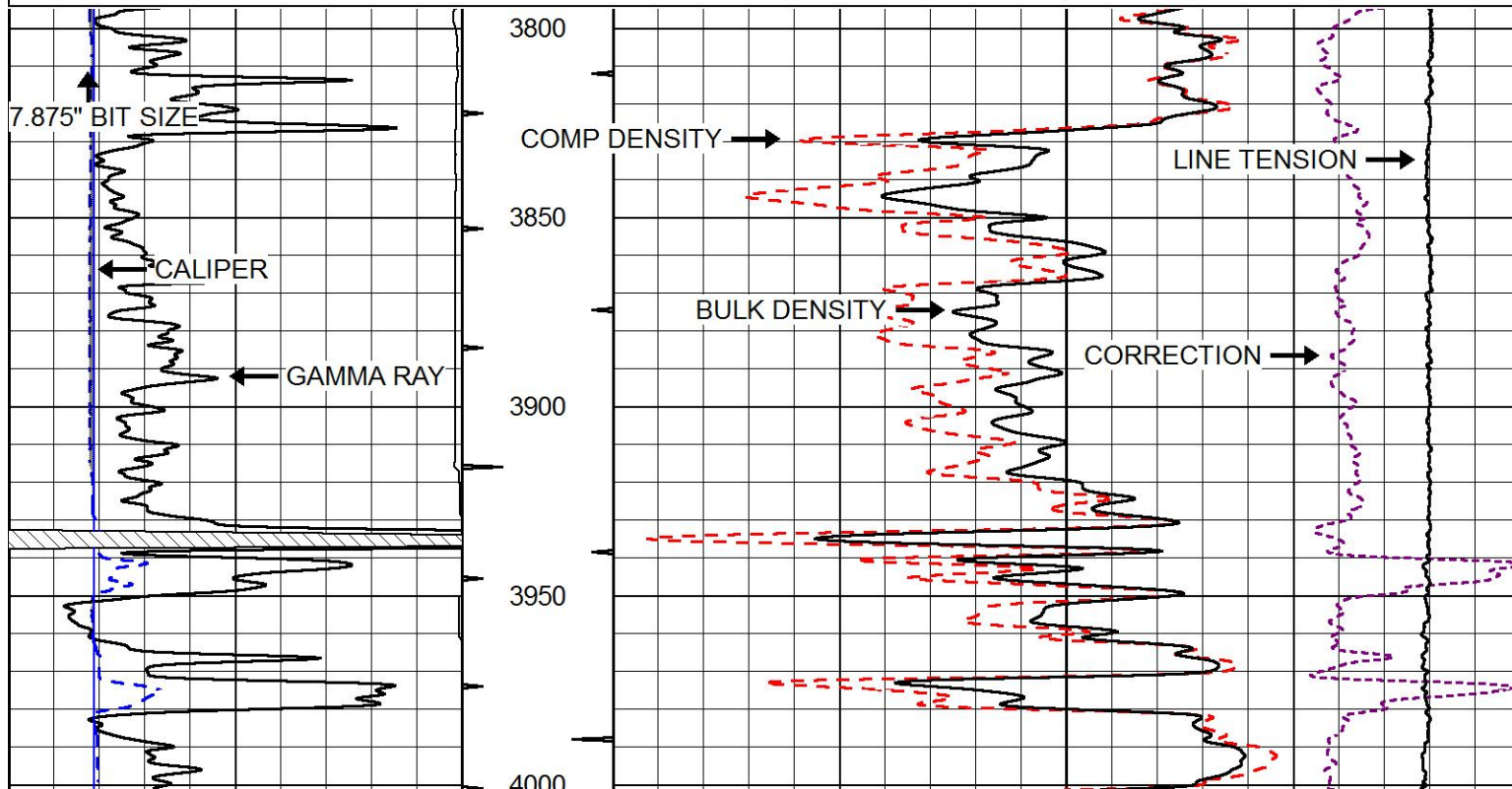
Top - Bottom

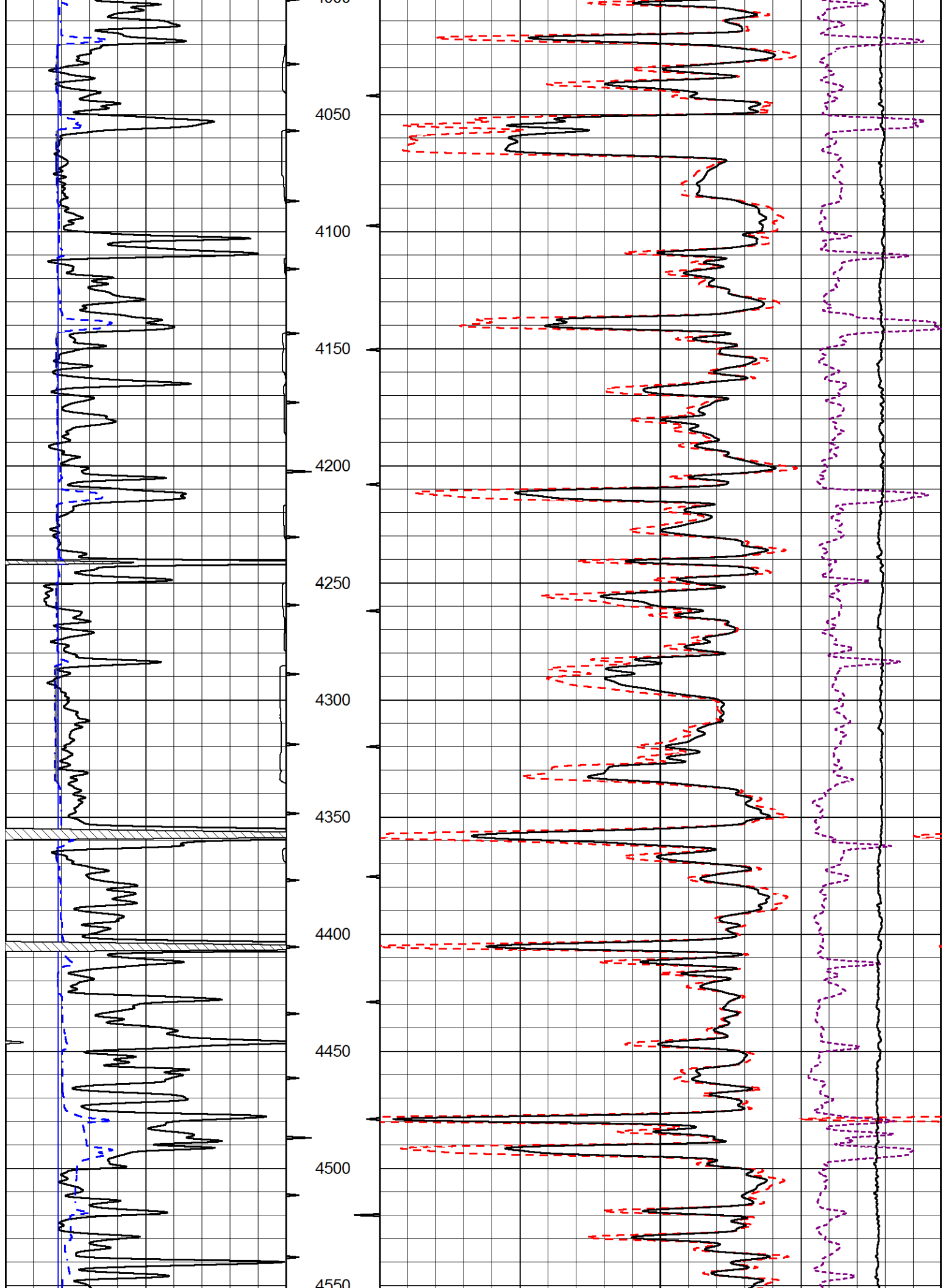
M	A	SZCOR	NPORSEL	FLUIDDEN g/cc	MATRXDEN g/cc	SPSHIFT mV	SNDERRM mmho/m
2	1	Off	Limestone	1	2.71	-217	0
SNDERR mmho/m	SRFTEMP degF	CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in
0	82	0	5.5	0	5052	127	7.875

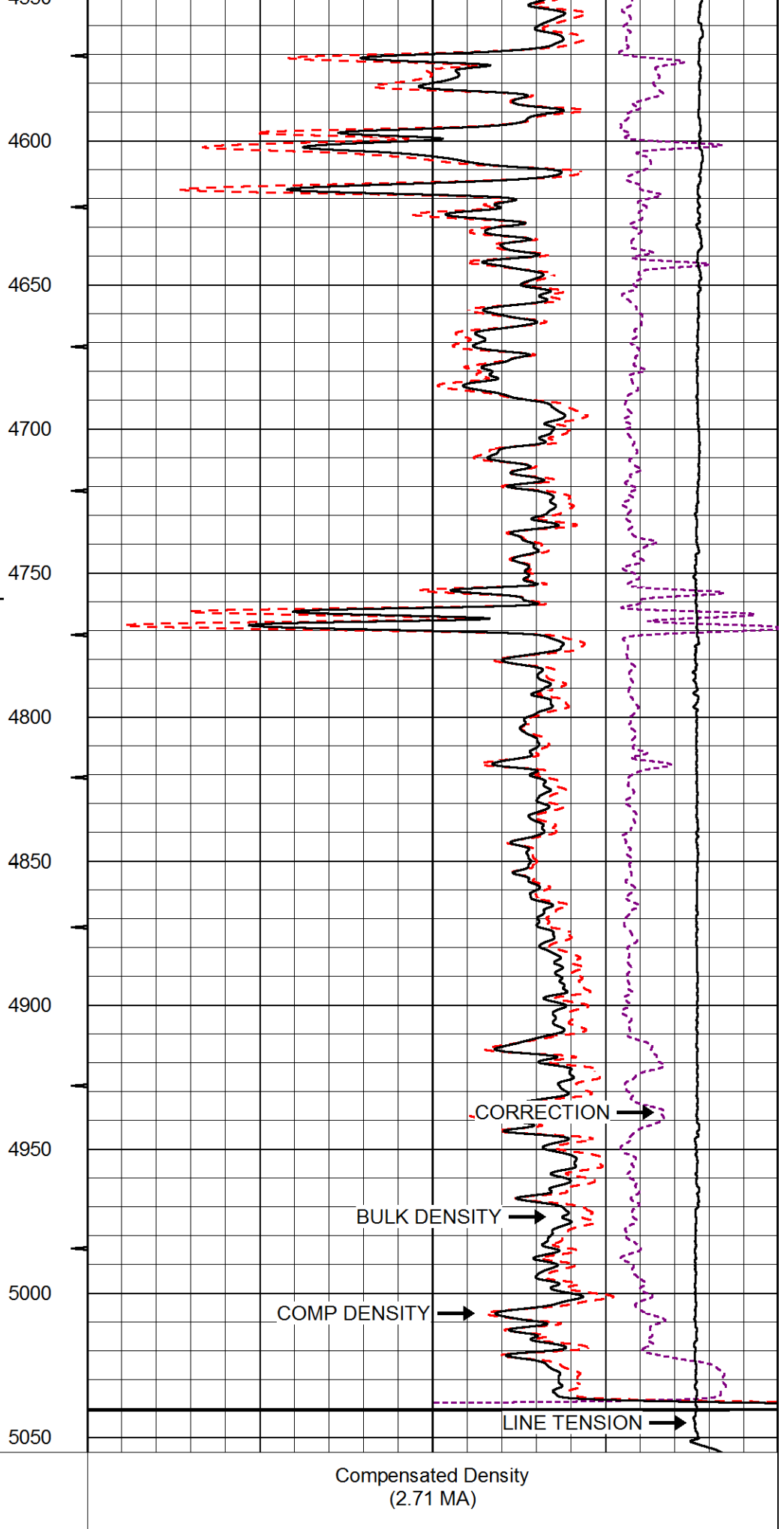
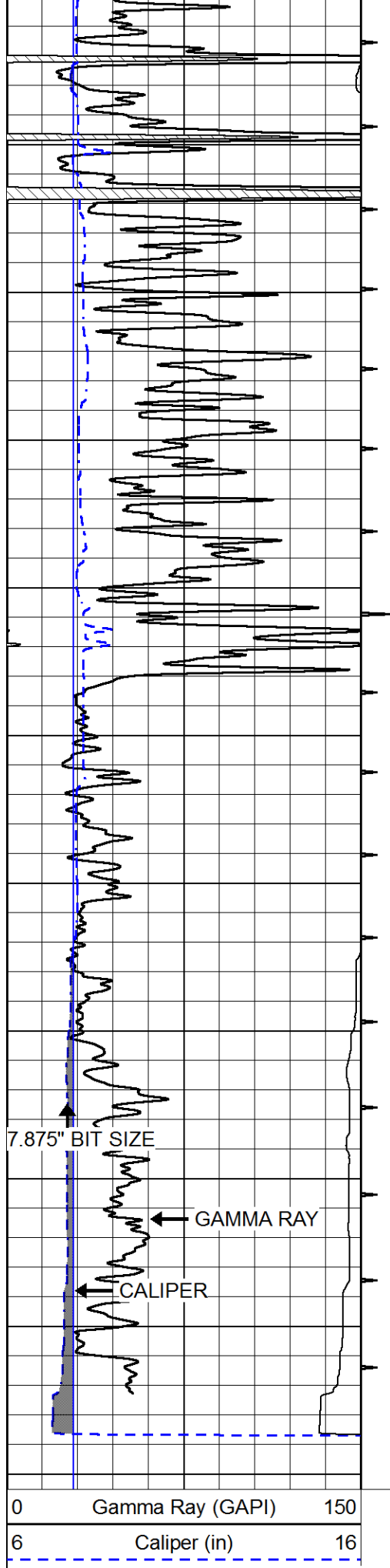
Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58		GR-M&W (89)	3.00	3.50	50.00
CNLSC CNSSC	37.48 36.73		CNT-M&W (207-MW)	5.50	3.50	100.00
LSD DCAL SSD	28.43 28.42 27.93		CDL-M&W (90-1031)	8.50	4.00	250.00
MCAL MI MN	19.83 19.83 19.83		ML-PSIML (PSI-01) GO Micro log tools converted to Simplec electronics	7.58	4.00	65.00
RLL3F RLL3	15.80 15.80					

		DIL-PSI HIGH TEMP (PSI 216 HT)		18.50	3.50	220.00
CILD	8.00					
CILM	4.70					
SP	0.20					
Dataset: american warrior_obrate-beach_1-22.db: field/well/STKML/pass3.4 Total length: 43.08 ft Total weight: 685.00 lb O.D.: 4.00 in						

 PIONEER Pioneer Energy Services			MAIN PASS		
Database File		american warrior_obrate-beach_1-22.db			
Dataset Pathname		STKML/pass3.4			
Presentation Format		cdl			
Dataset Creation		Thu Sep 08 14:16:33 2016			
Charted by		Depth in Feet scaled 1:600			
0	Gamma Ray (GAPI)	150	Compensated Density (2.71 MA) (pu) 30 2 15000 Correction (g/cc) -0.25 0.25		
6	Caliper (in)	16			







0 Gamma Ray (GAPI) 150
6 Caliper (in) 16

30 (pu) -10
2 Bulk Density (g/cc) 3

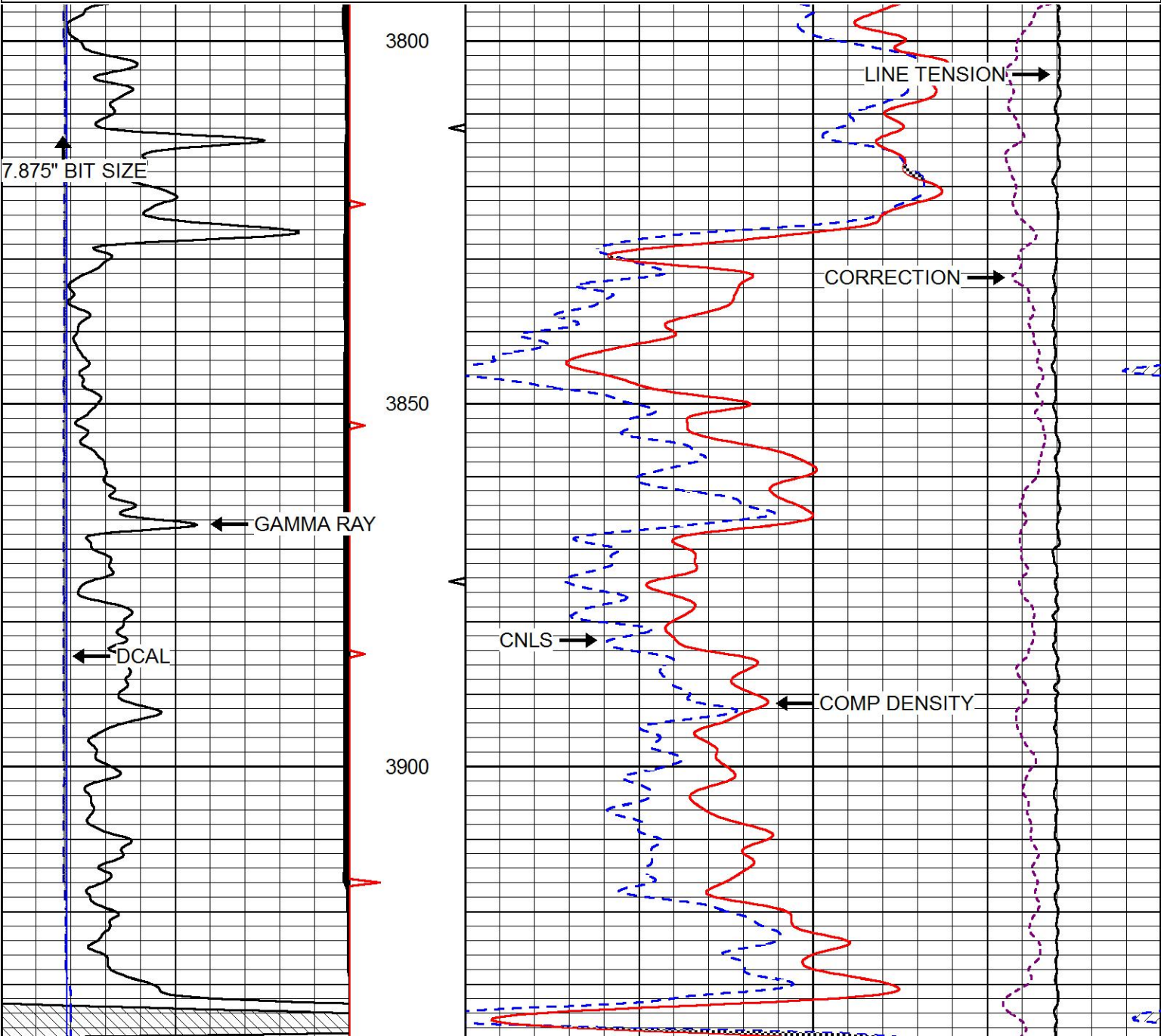
15000	Line Tension (lb)		0
	-0.25	Correction (g/cc)	0.25

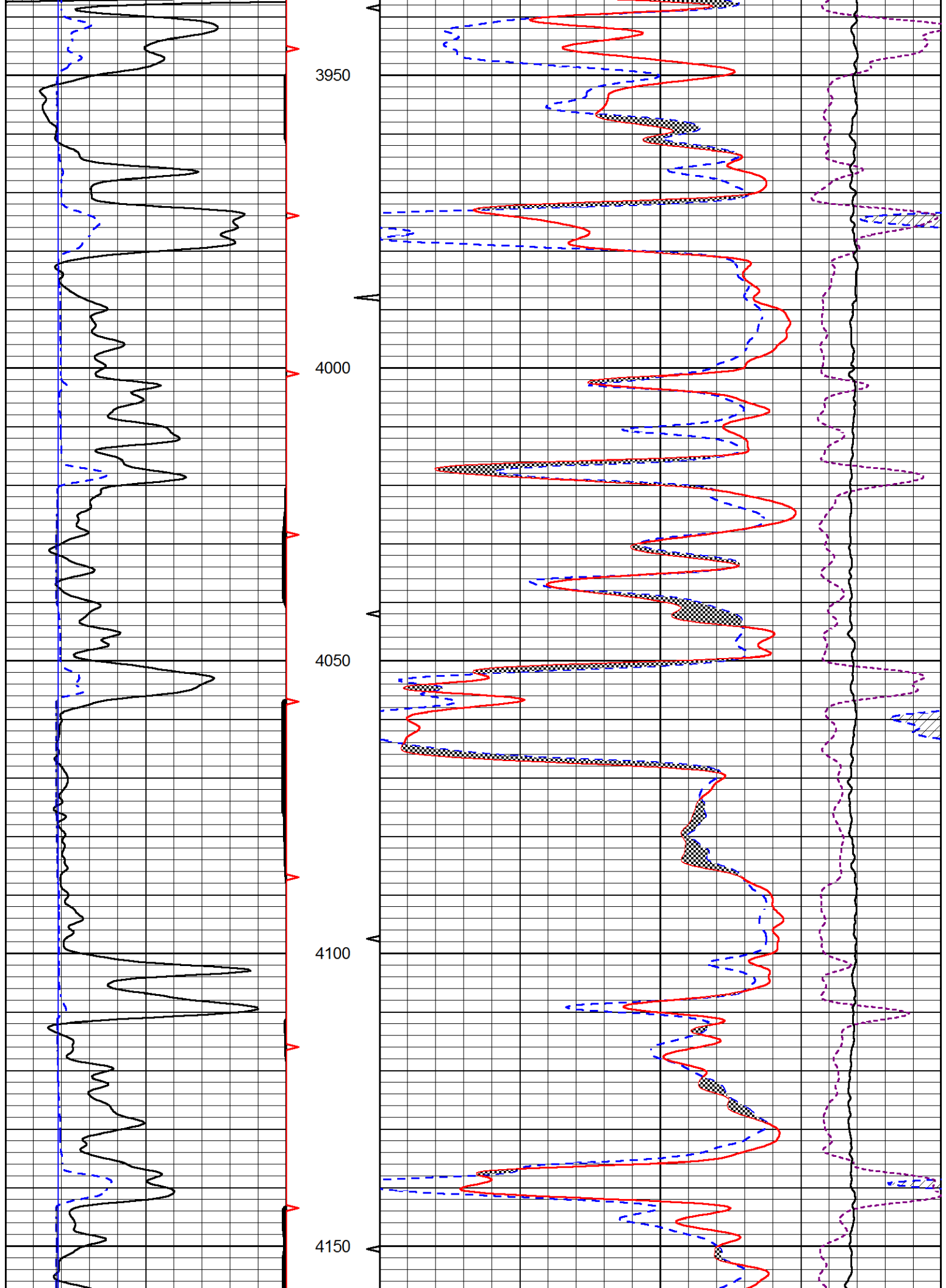


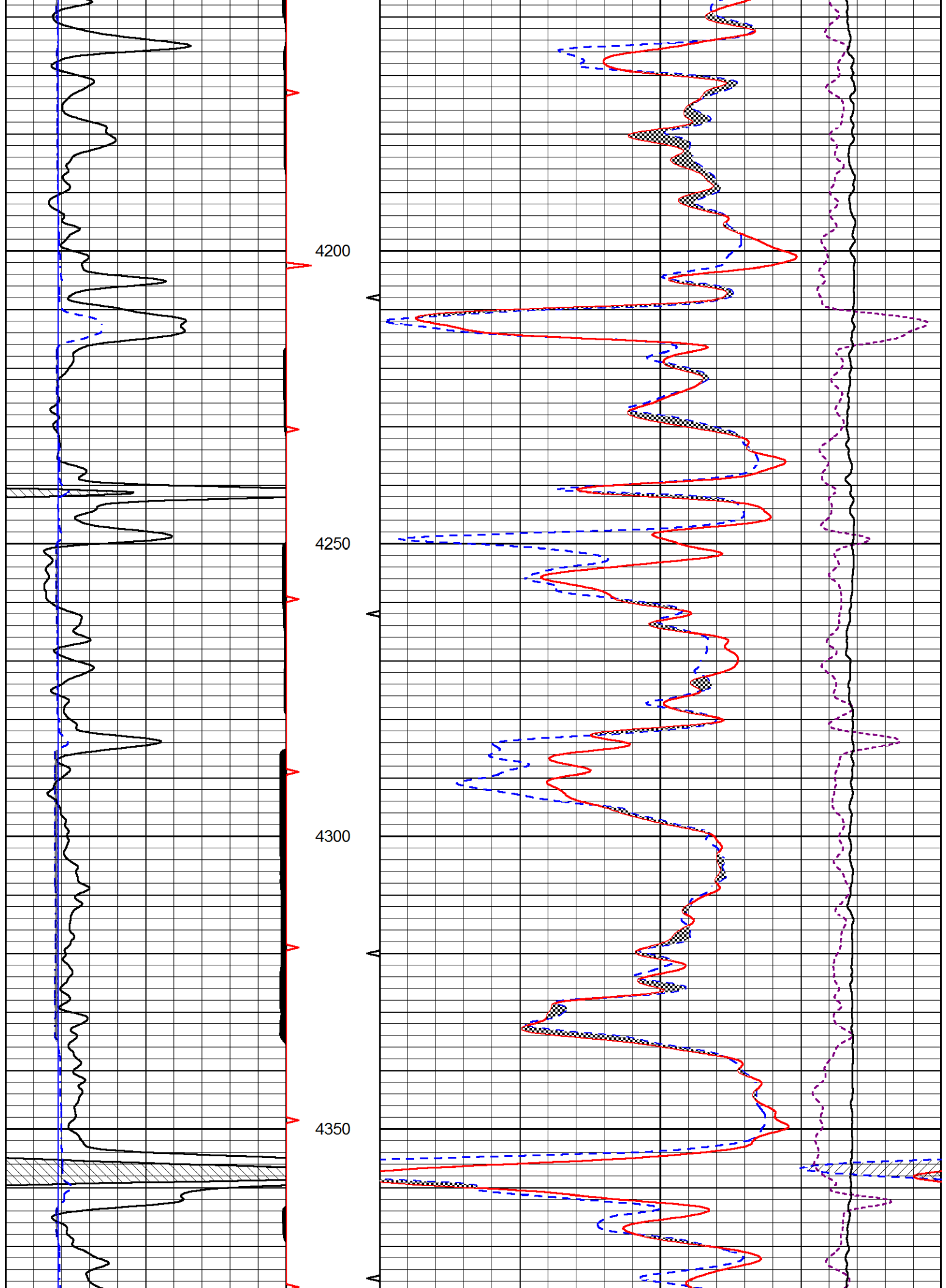
MAIN PASS

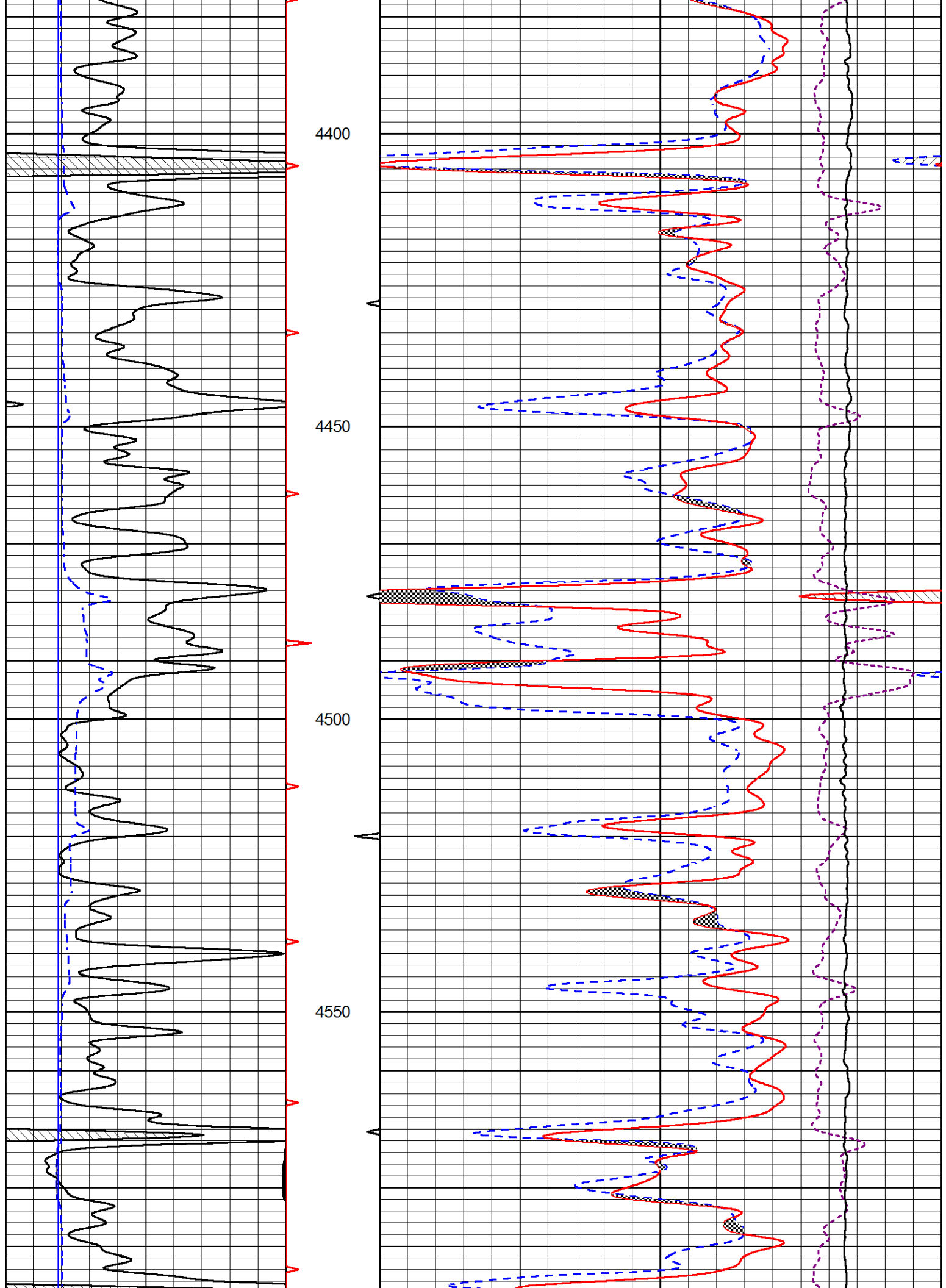
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Dataset Pathname	STKML/pass3.4
Presentation Format	cndlspec
Dataset Creation	Thu Sep 08 14:16:33 2016
Charted by	Depth in Feet scaled 1:240

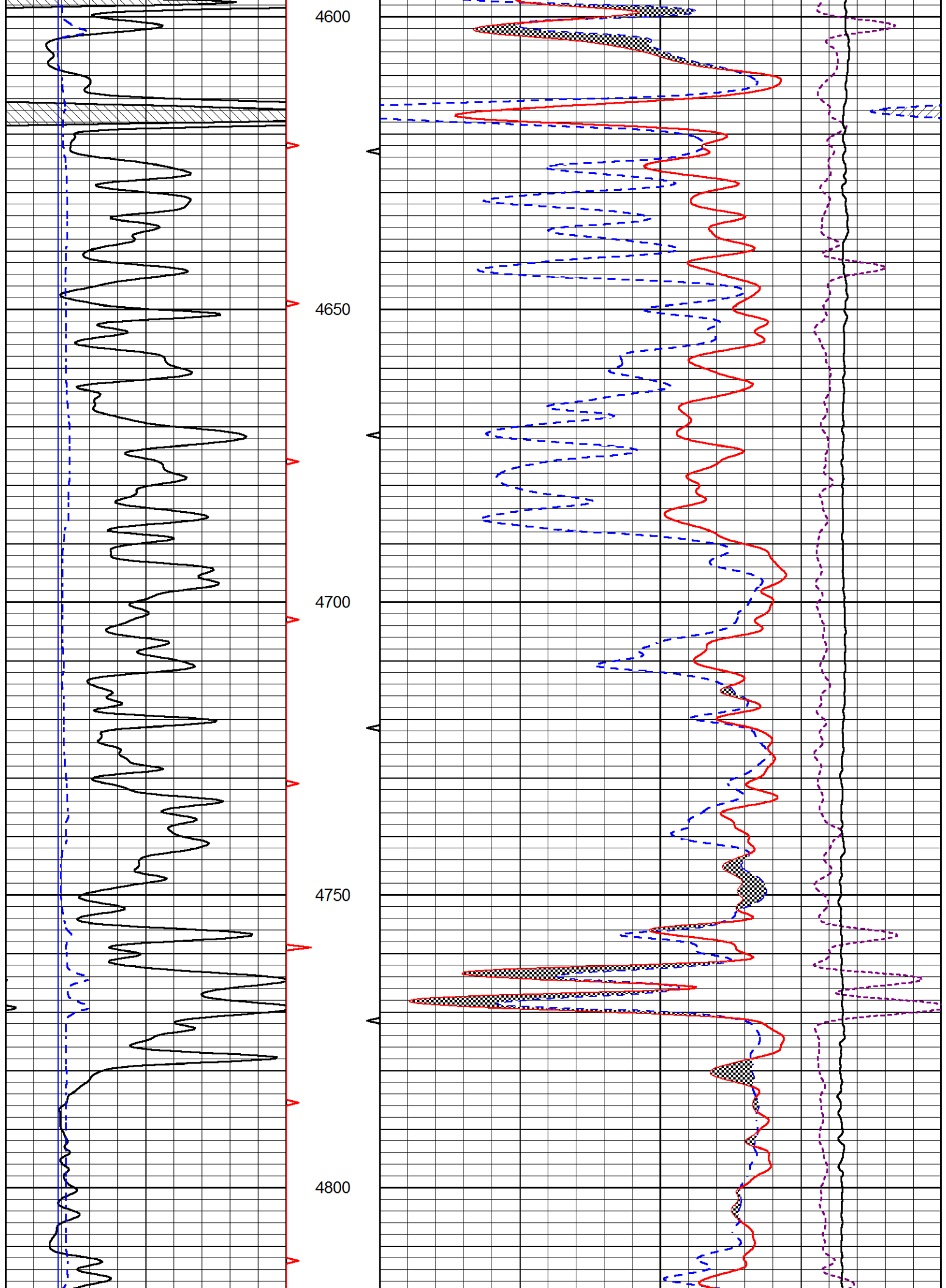
0	Gamma Ray (GAPI)	150	30	CNLS (pu)	-10
6	DCAL (in)	16	30	Compensated Density 2.71 g/cc (pu)	-10
			10000	Line Tension (lb)	0
				-0.25	Correction (g/cc)
					0.25

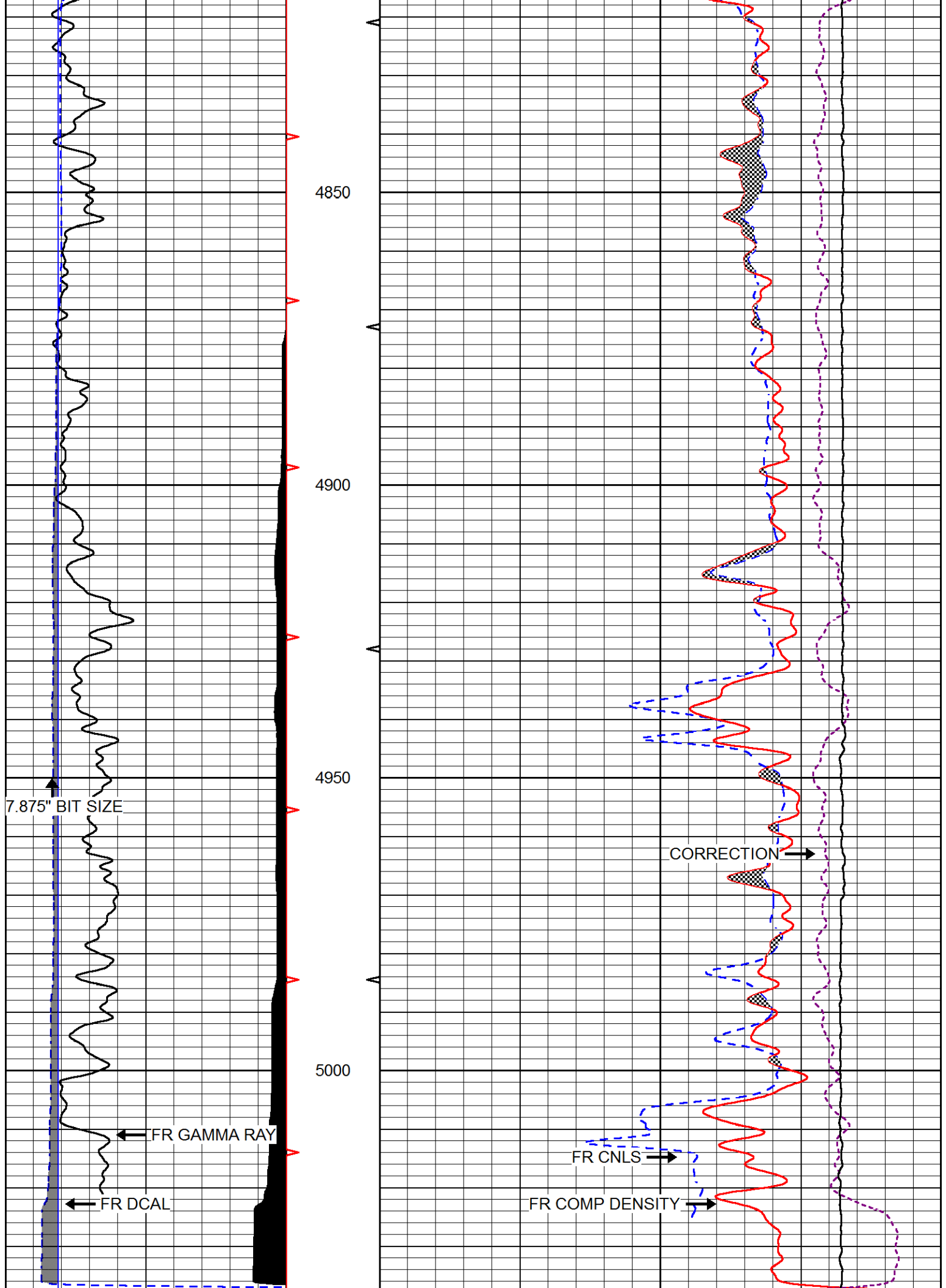


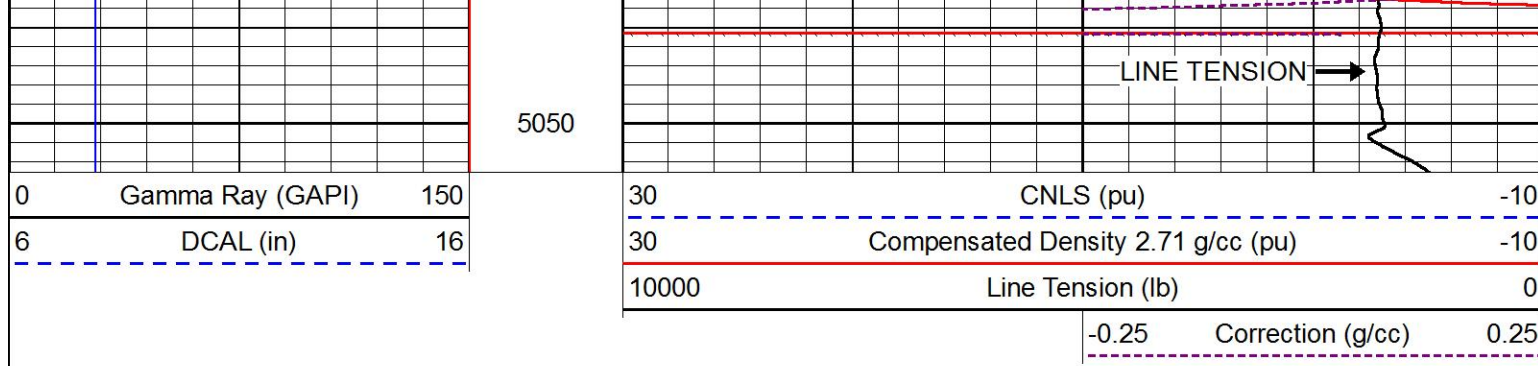






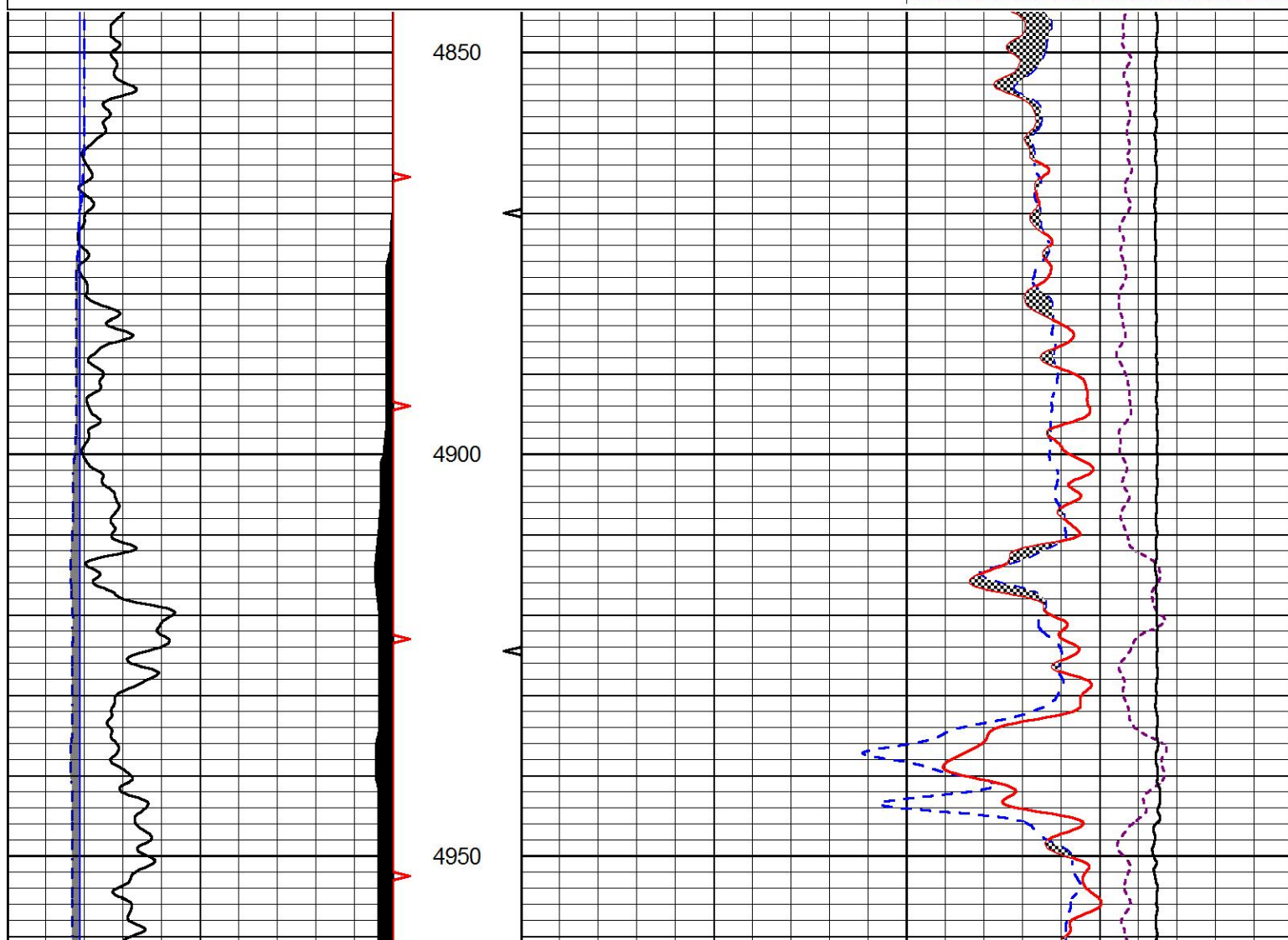
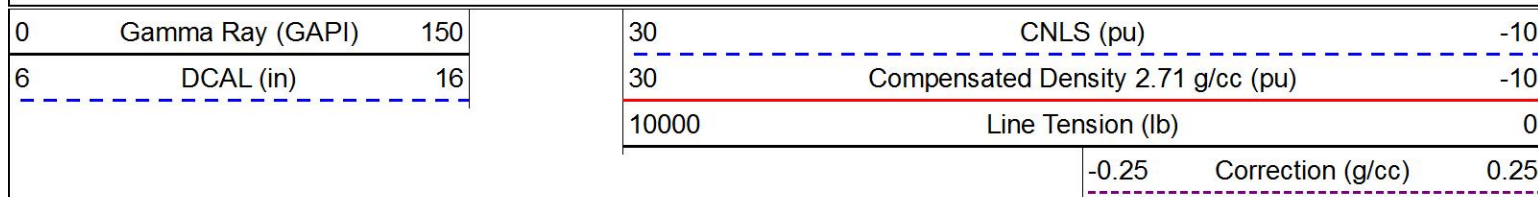


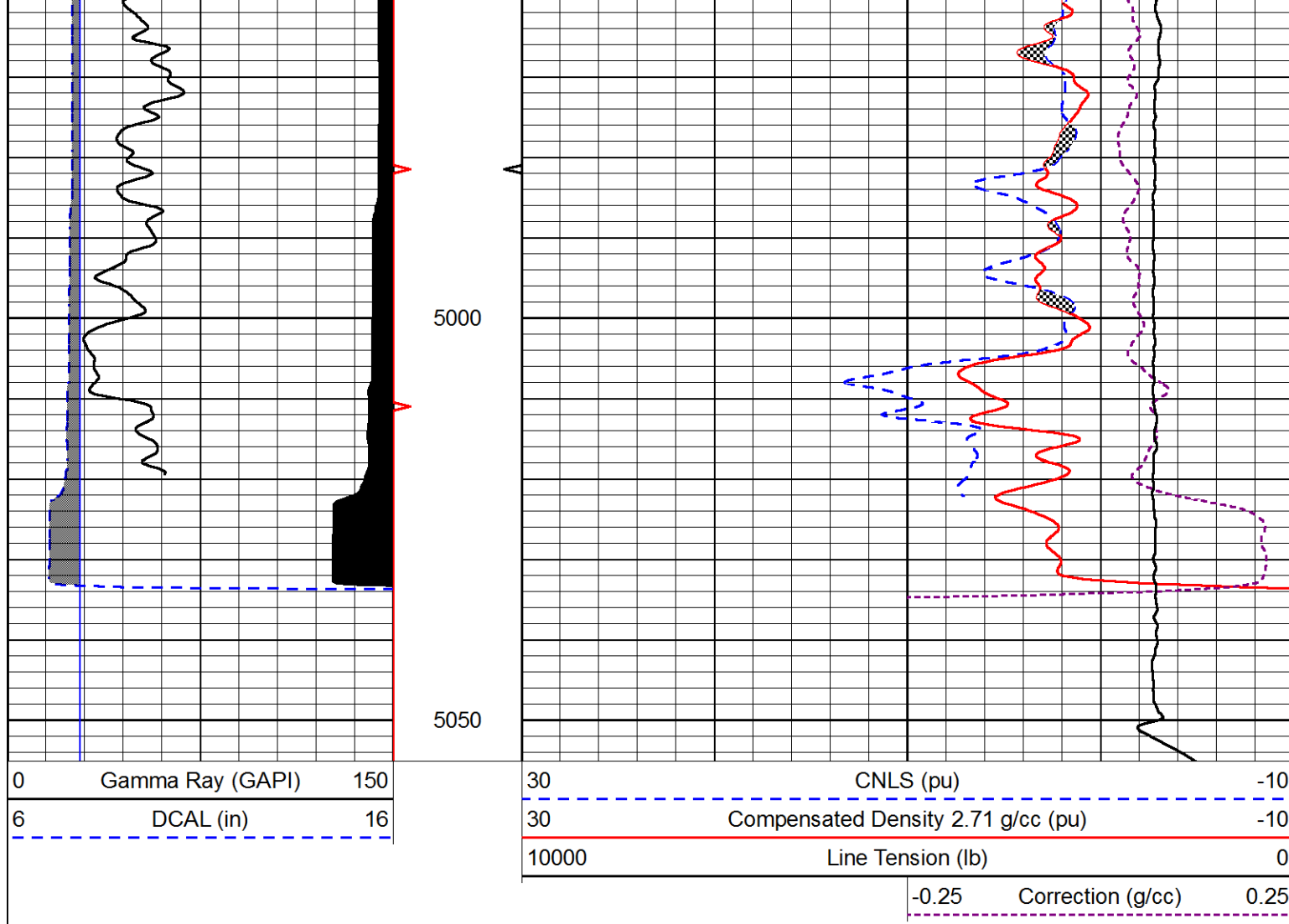




REPEAT SECTION

Database File	american warrior_brate-beach_1-22.db
Dataset Pathname	STKML/pass2.2
Presentation Format	cnldspec
Dataset Creation	Thu Sep 08 14:13:24 2016
Charted by	Depth in Feet scaled 1:240





Calibration Report	
Database File	american warrior_obrate-beach_1-22.db
Dataset Pathname	STKML/pass3.4
Dataset Creation	Thu Sep 08 14:16:33 2016

Dual Induction Calibration Report

Serial-Model:	PSI 216 HT-PSI HIGH TEMP
Calibration Performed:	Wed Aug 31 19:08:33 2016

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	75.411	495.929	4.000	250.000	mmho/m	0.580	-38.000
Medium	75.269	470.661	0.000	250.000	mmho/m	0.520	-36.000

Microlog Calibration Report

Serial-Model:	PSI-01-PSIML
Performed:	Thu Sep 08 13:30:14 2016

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	24000.0000	-1.6000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	24500.0000	-0.5000
Gain	1.0000	1.0000	0.5000	10.5000		70.0000	05.7050

Caliper 1.0001 1.1397 6.5000 18.5000 in 70.0000 -65.7250

Compensated Density Calibration Report

Serial-Model: 90-1031-M&W
Source / Verifier: 16955B / 2ci
Master Calibration Performed: Wed Aug 24 22:26:37 2016

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	5174.18	6425.27	cps
Aluminum	2.665	g/cc	963.17	4037.42	cps
Spine Angle = 74.55			Density/Spine Ratio = 0.522		
	Size		Reading		
Small Ring	6.00	in	1.83		
Large Ring	16.00	in	1.48		

Compensated Neutron Calibration Report

Serial Number: 207-MW
Tool Model: M&W
Calibration Performed: Wed Aug 31 10:30:30 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
Tool Model: M&W
Calibration Performed: Wed Aug 24 22:26:53 2016

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.6000 GAPI/cps



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Well O'BRATE-BEACH #1-22
Field WILDCAT
County FINNEY
State KANSAS