



PIONEER
Pioneer Energy Services

MICRORESISTIVITY LOG

Company AMERICAN WARRIOR, INC.
Well O'BRATE-BEACH #1-22
Field WILDCAT
County FINNEY
State KANSAS

Company AMERICAN WARRIOR, INC.
Well O'BRATE-BEACH #1-22
Field WILDCAT
County FINNEY
State KANSAS

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

975' FSL & 1801' FWL

SEC 22 TWP 25S RGE 31W

Permanent Datum GROUND LEVEL Elevation 2797'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Other Services
CNL/CDL
DIL
Elevation
K.B. 2809'
D.F. N/A
G.L. 2797'

Date	9/8/2016		
Run Number	ONE		
Depth Driller	5050'		
Depth Logger	5052'		
Bottom Logged Interval	5051'		
Top Log Interval	3800'		
Casing Driller	8.625" @ 1700'		
Casing Logger	1701'		
Bit Size	7.875"		
Type Fluid in Hole	CHEMICAL		
Salinity, ppm CL	2800		
Density / Viscosity	9.55 50		
pH / Fluid Loss	10.5 8.8		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	0.70 @ 82		
Rmt @ Meas. Temp	0.53 @ 82		
Rmc @ Meas. Temp	0.95 @ 82		
Source of Rmt / Rmc	CHARTS		
Rm @ BHT	0.45 @ 127		
Operating Rig Time	3 HOURS		
Max Rec. Temp. F	127		
Equipment Number	91		
Location	COLBY		
Recorded By	D. SCHMIDT		
Witnessed By	KEVIN TIMSON		

<<< 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.

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

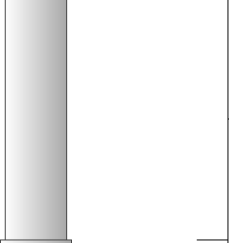
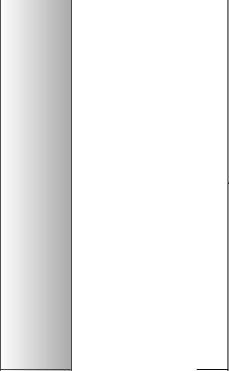
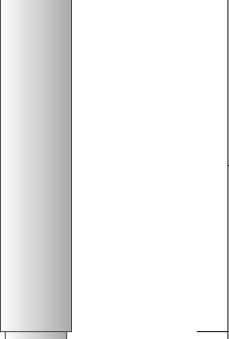
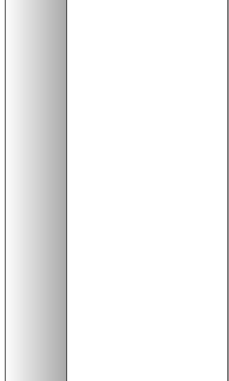
Engineer: D. SCHMIDT
Operator:
Operator:
Operator:

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					

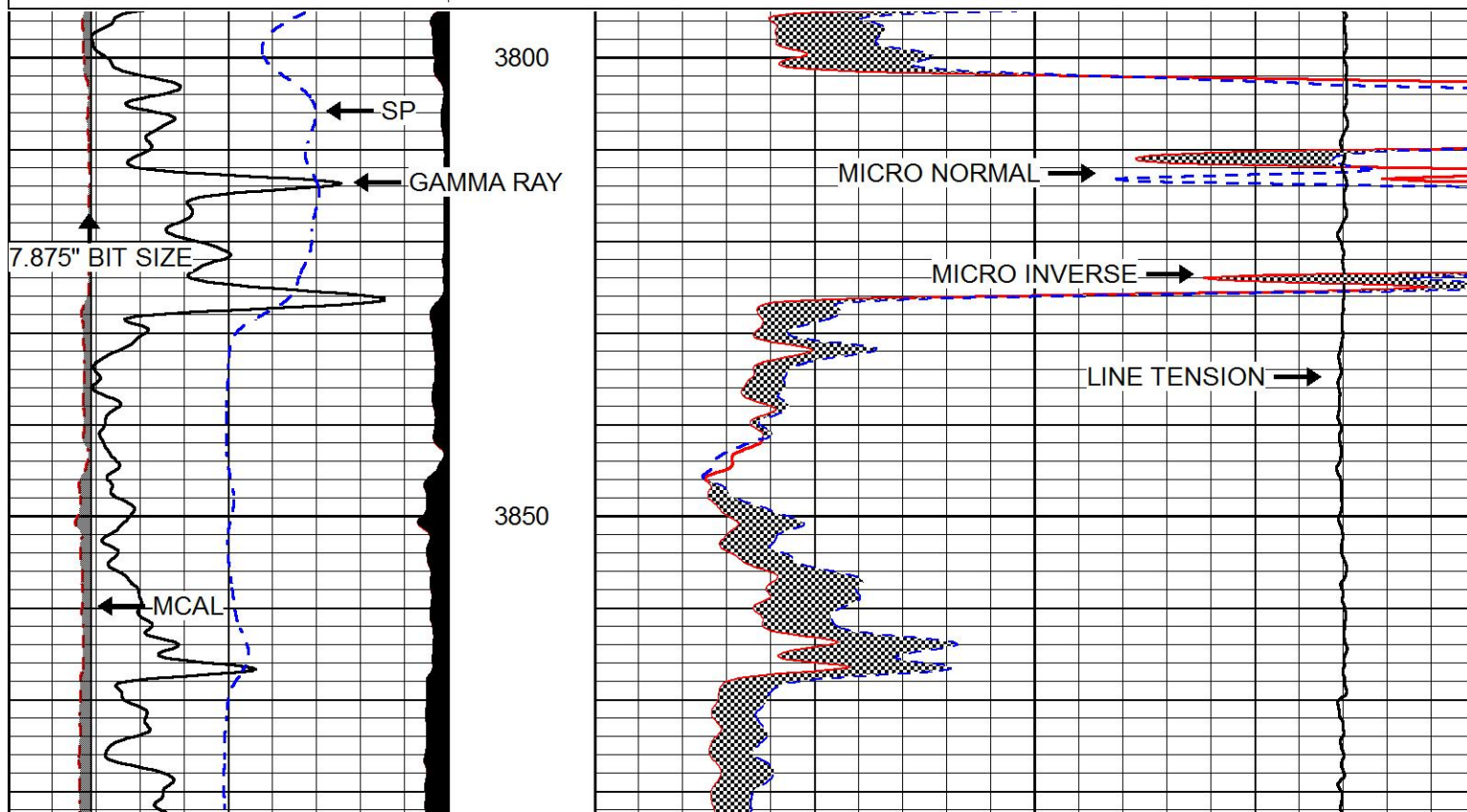
			DIL-PSI HIGH TEMP (PSI 216 HT)	18.50	3.50	220.00
CILD	8.00					
CILM	4.70					
SP	0.20					
Dataset: american warrior_obrate-beach_1-22.db: field/well/STKML/pass3.4 Total length: 43.08 ft Total weight: 685.00 lb O.D.: 4.00 in						

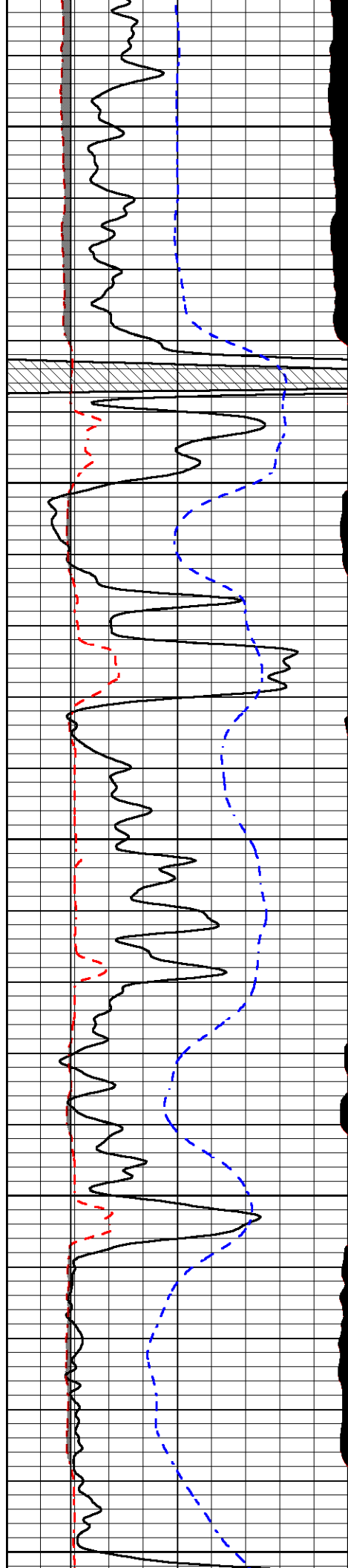


MAIN PASS

Database File	american warrior_obrate-beach_1-22.db
Dataset Pathname	STKML/pass3.4
Presentation Format	micro
Dataset Creation	Thu Sep 08 14:16:33 2016
Charted by	Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150	0	Micro Inverse 1 X 1 (Ohm-m)	40
6	MCAL (in)	16	0	Micro Normal 2" (Ohm-m)	40
2.875	mcals (in)	7.875	10000	Line Weight (lb)	0
6	Bit Size (in)	16			
-200	SP (mV)	0			





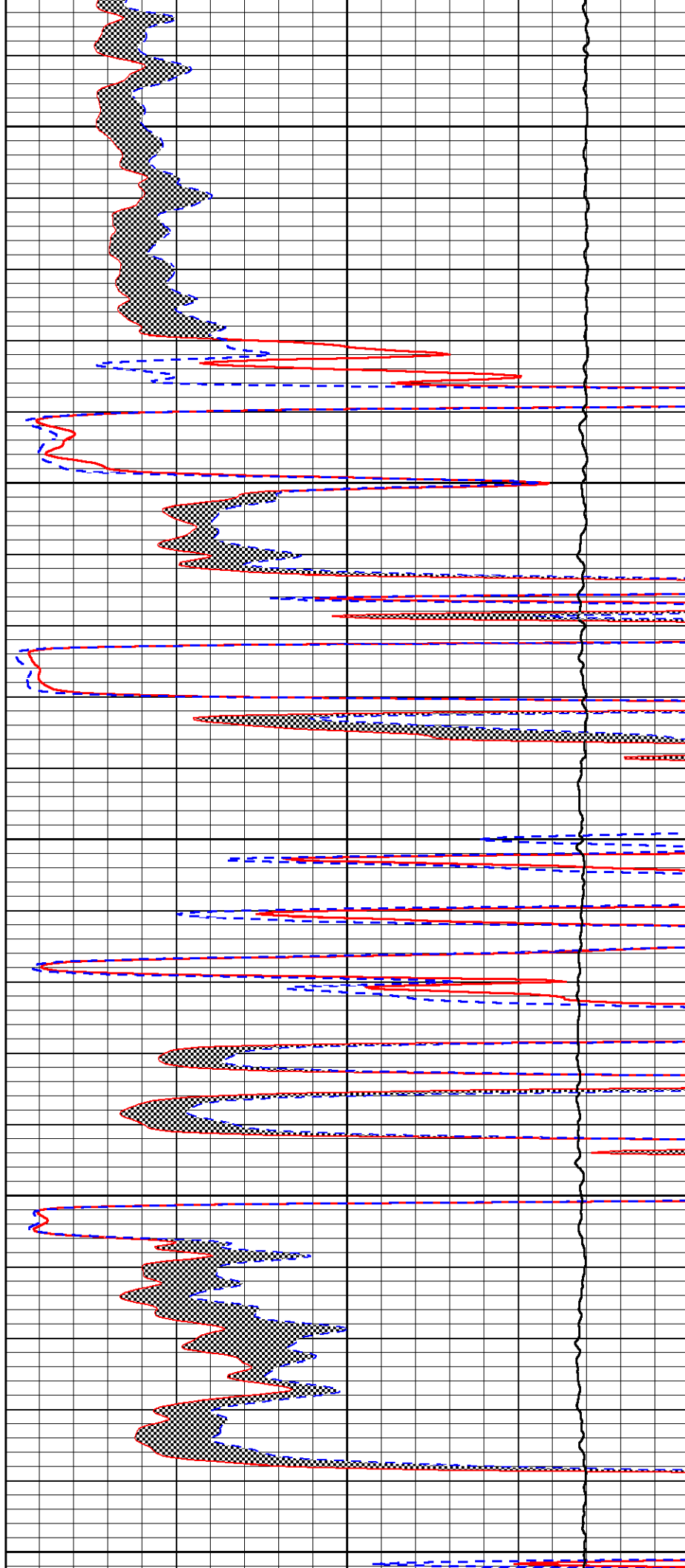
3900

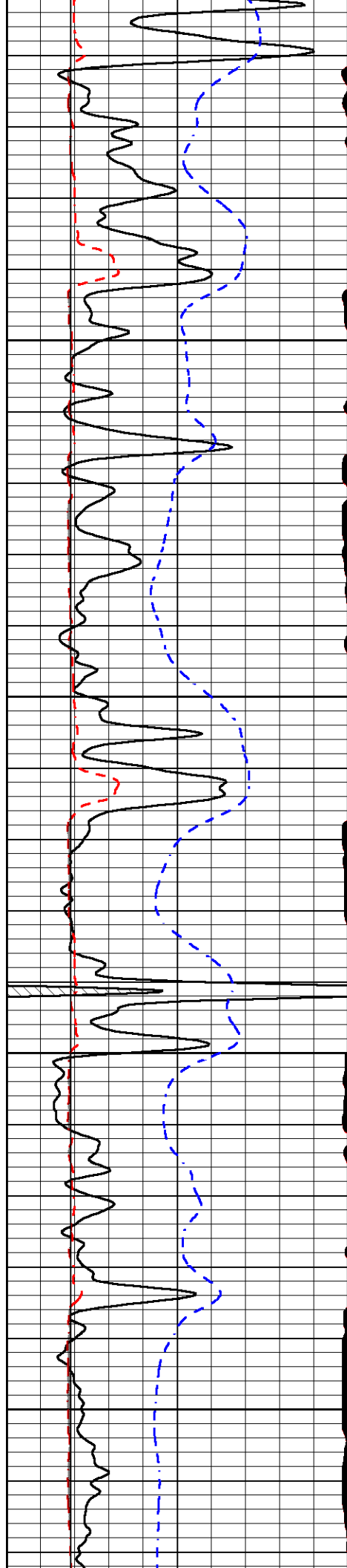
3950

4000

4050

4100



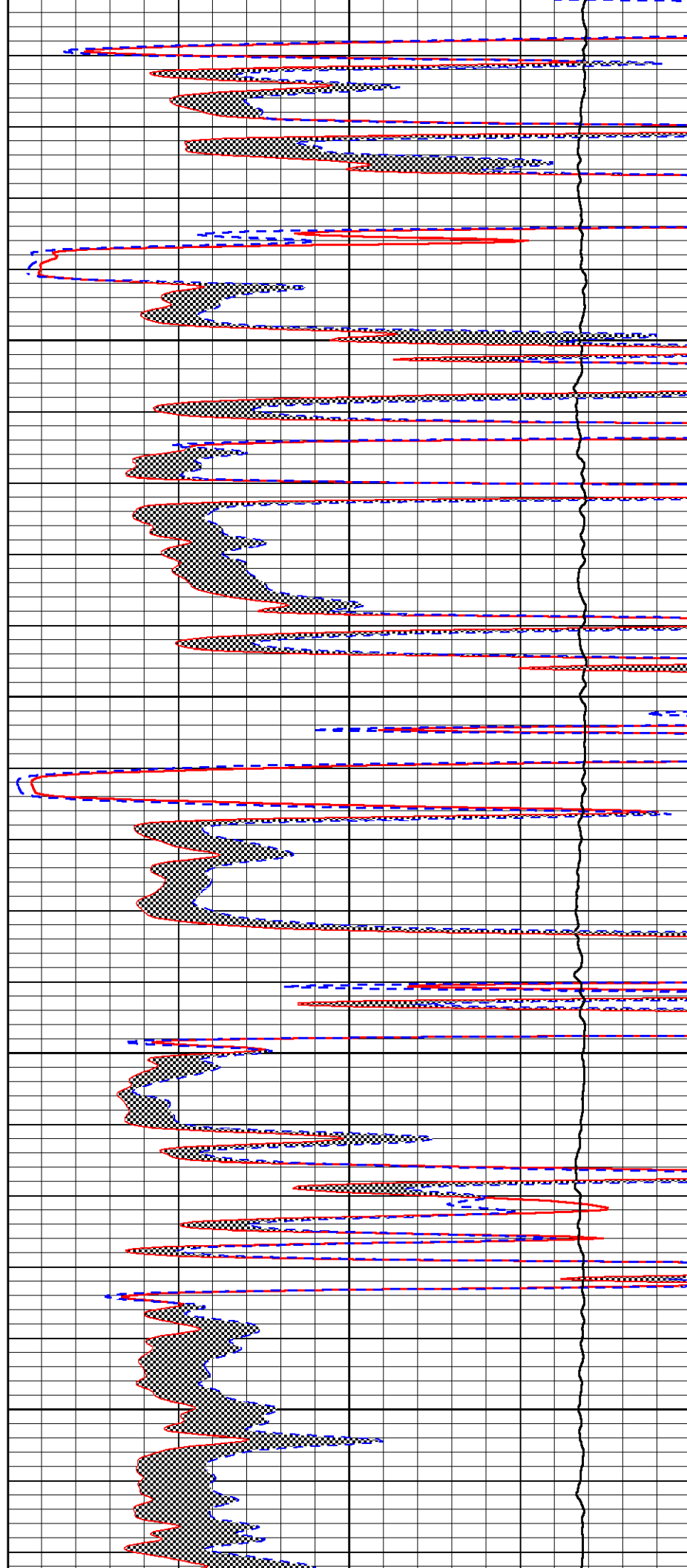


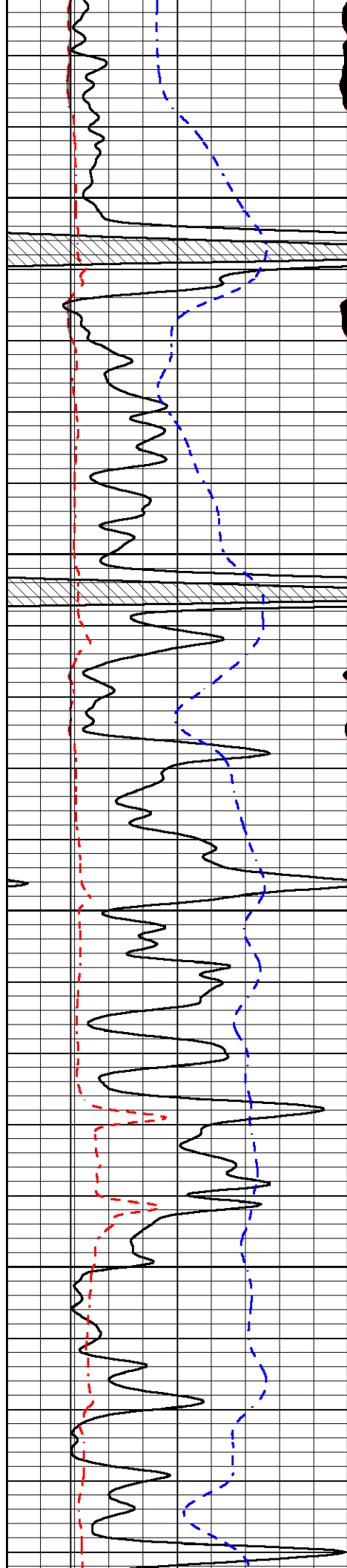
4150

4200

4250

4300



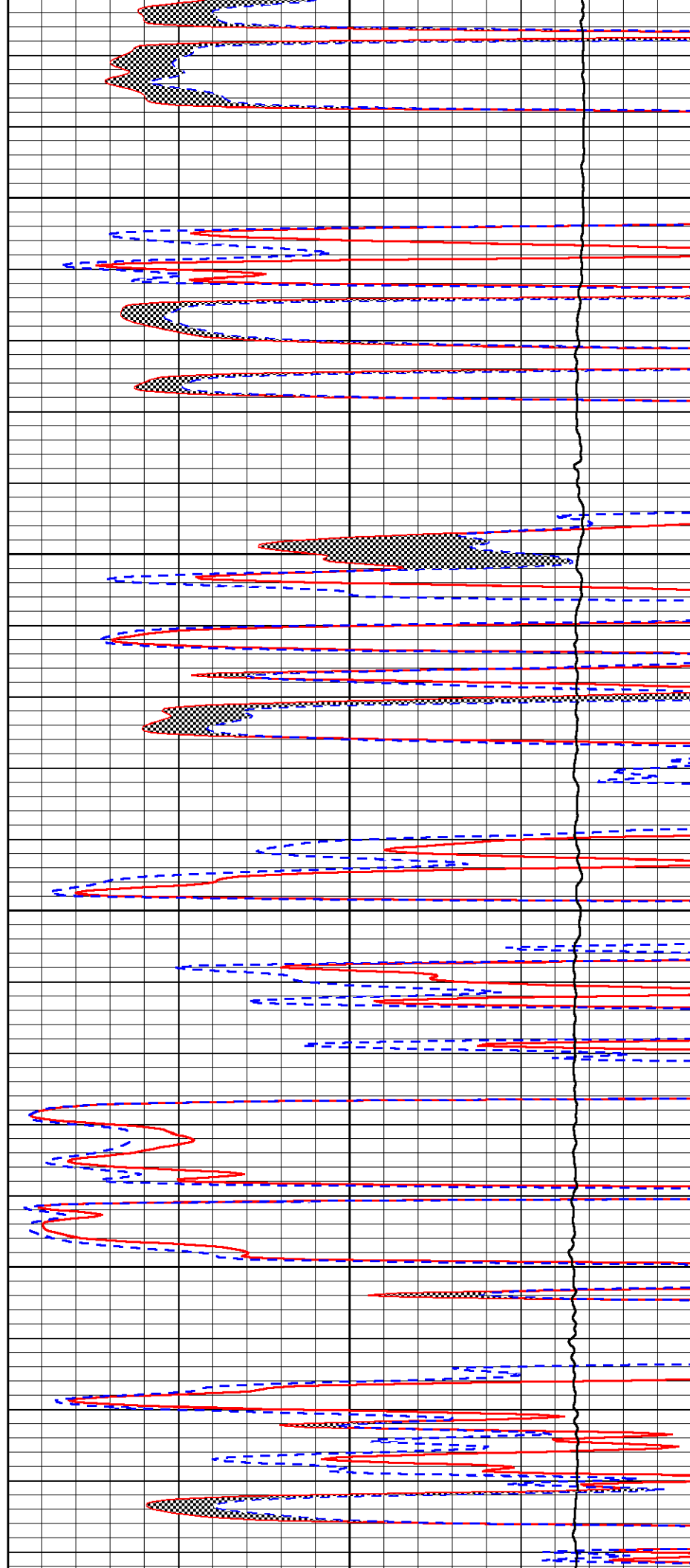


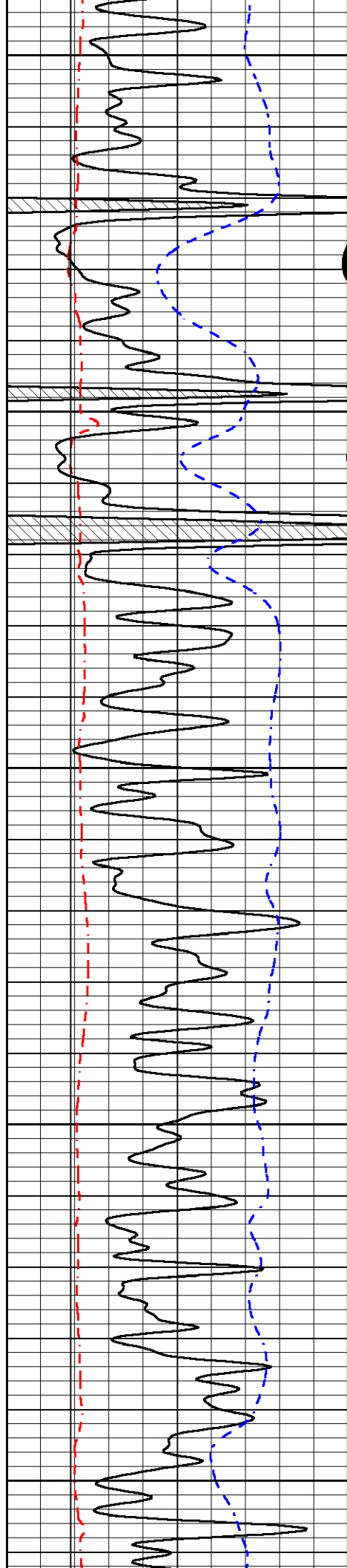
4350

4400

4450

4500





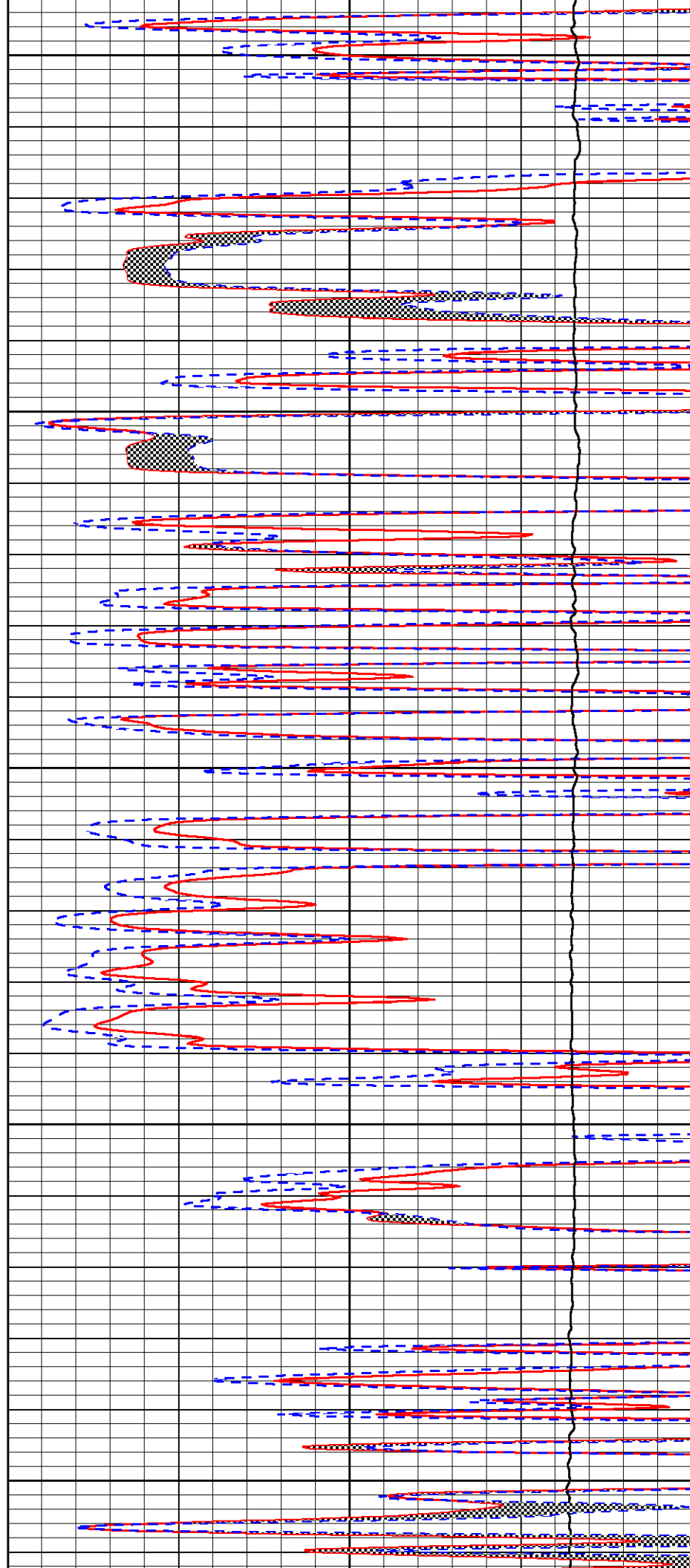
4550

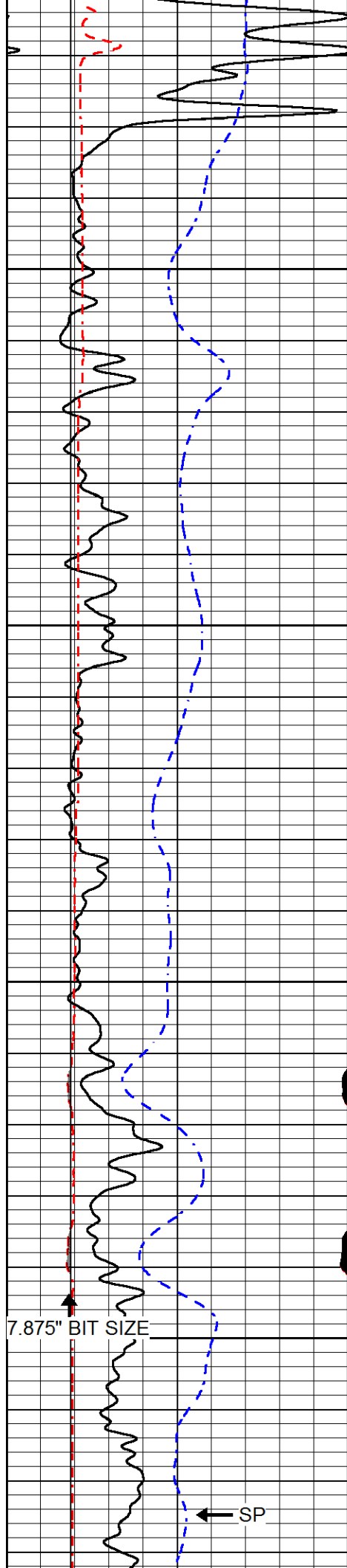
4600

4650

4700

4750



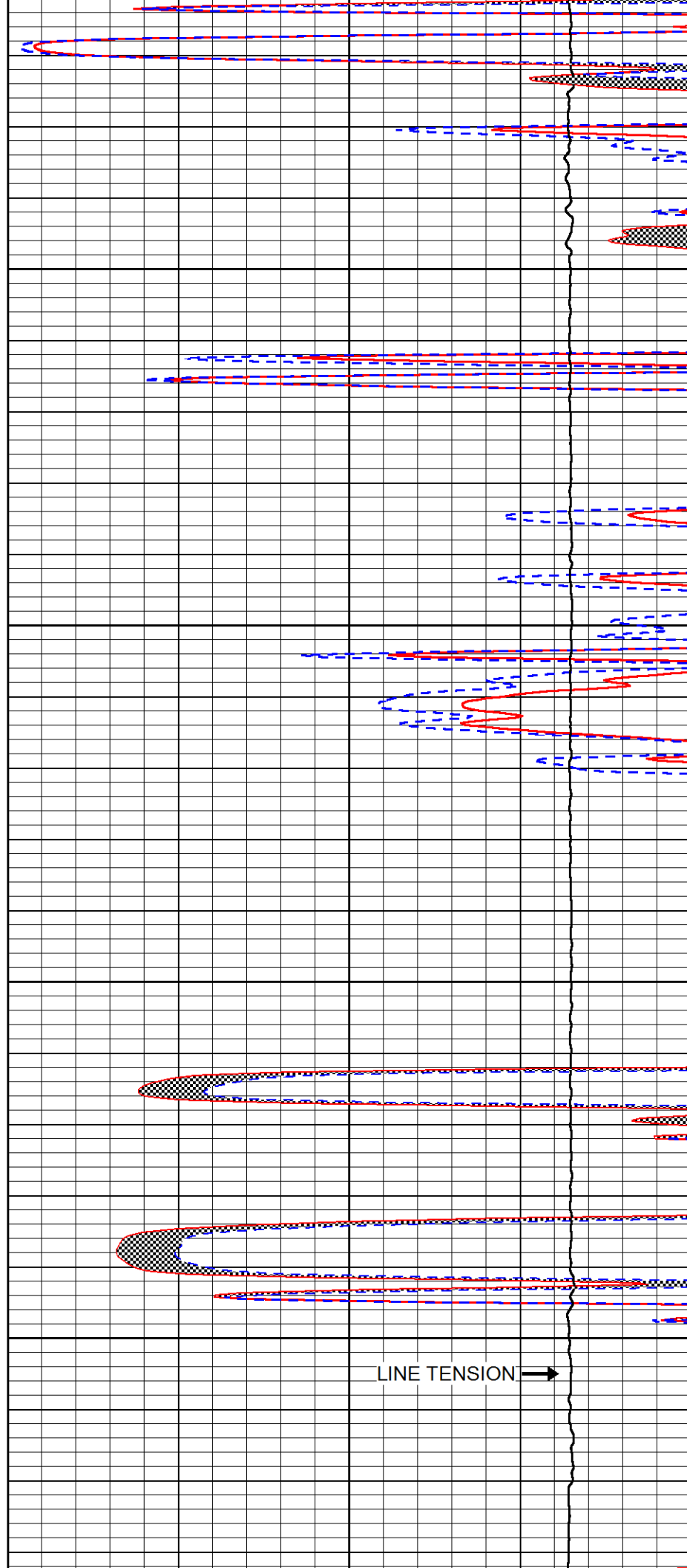


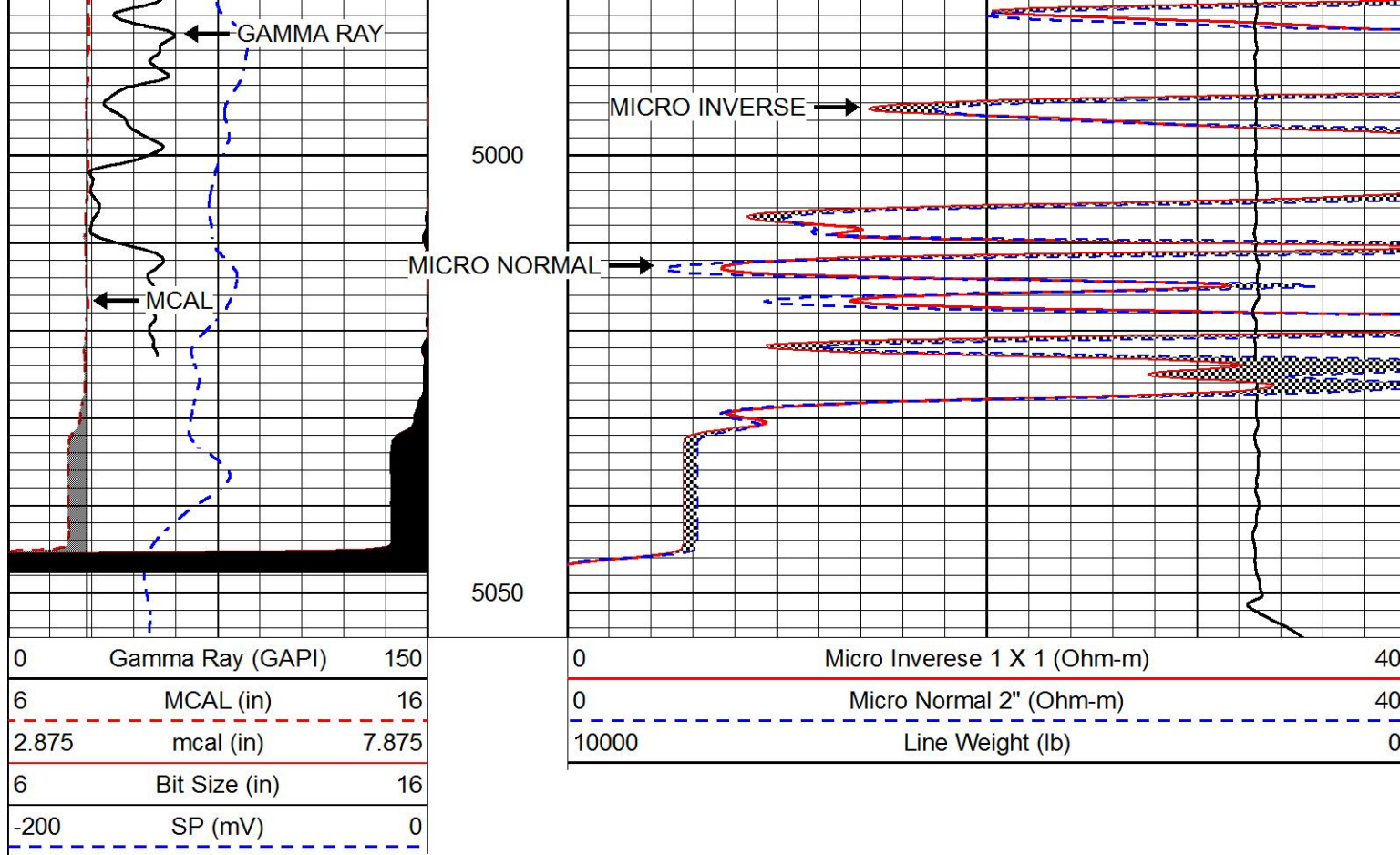
4800

4850

4900

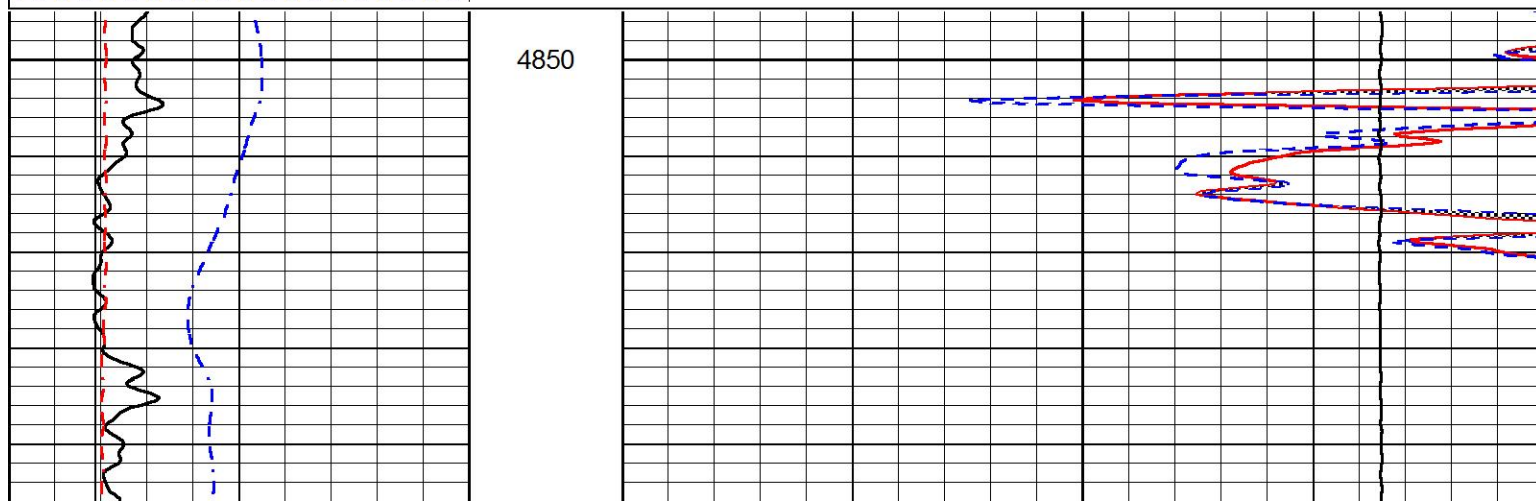
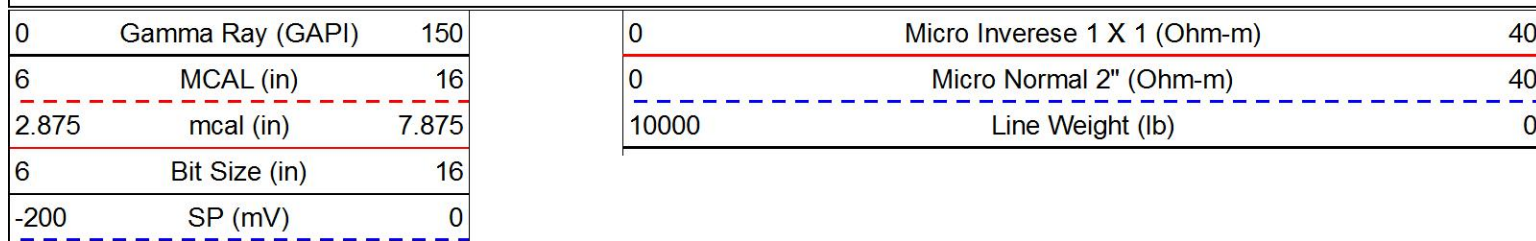
4950

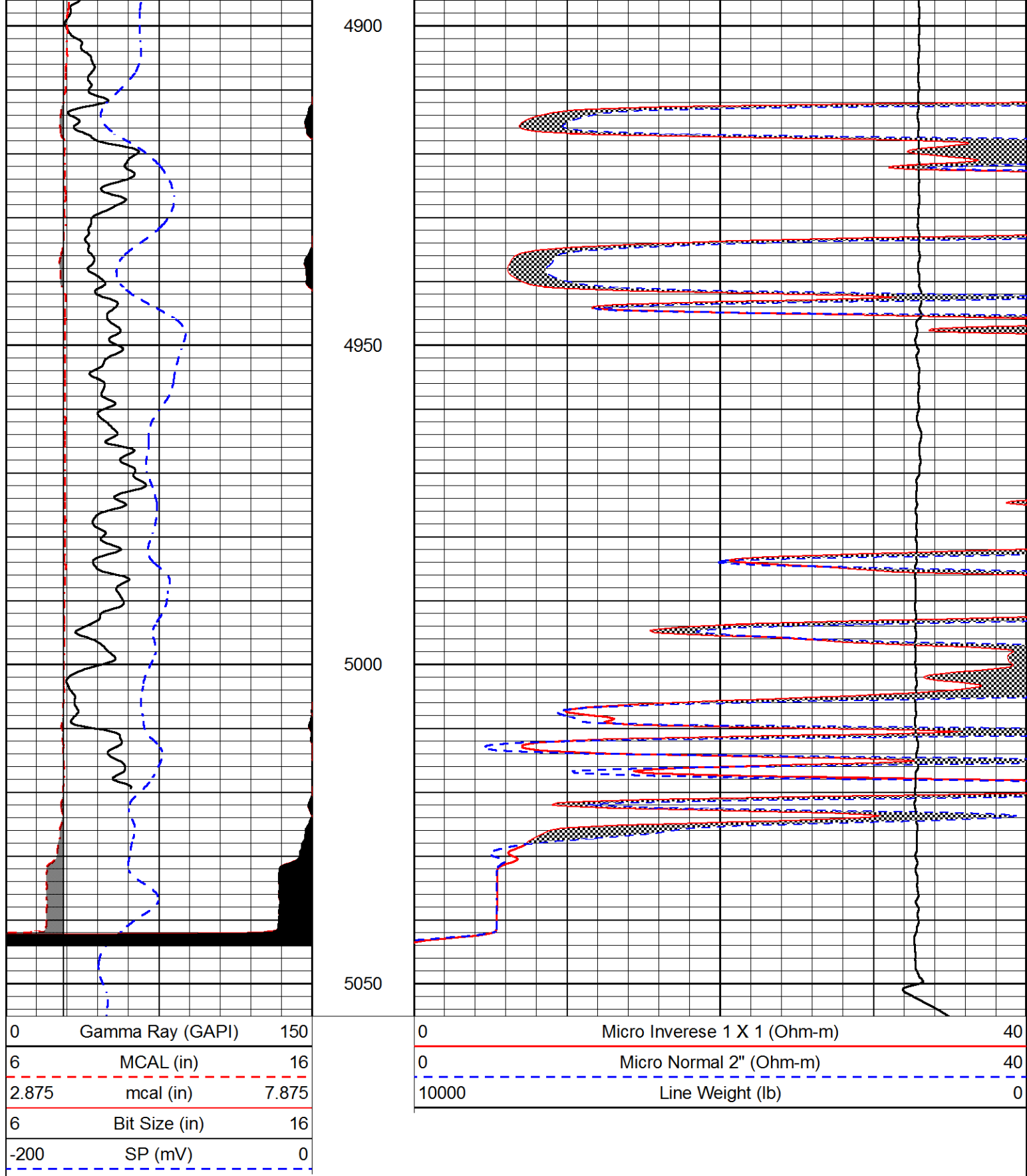




REPEAT SECTION

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





Calibration Report

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

Dual Induction Calibration Report

Serial-Model:
Calibration Performed:

PSI 216 HT-PSI HIGH TEMP
Wed Aug 31 19:08:33 2016

Microlog Calibration Report							
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: Performed:				PSI-01-PSIML 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
Caliper	1.0001	1.1397	6.5000	18.5000	in	70.0000	-65.7250

Compensated Density Calibration Report							
Serial-Model: Source / Verifier: Master Calibration Performed:				90-1031-M&W 16955B / 2ci 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: Tool Model: Calibration Performed:				207-MW M&W 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



Company	AMERICAN WARRIOR, INC.
Well	O'BRATE-BEACH #1-22
Field	WILDCAT
County	FINNEY
State	KANSAS