



# MICRORESISTIVITY LOG

**Company** MIKE KELSO OIL, INC.  
**Well** HONAS A NO.2  
**Field** WILDCAT  
**County** TREGO **State** KANSAS

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**Location:** API #: 15-195-23028-00-00  
 1330' FNL & 700' FEL  
 SEC 21 TWP 14S RGE 22W  
**Permanent Datum** GROUND LEVEL Elevation 2221'  
**Log Measured From** KELLY BUSHING  
**Drilling Measured From** KELLY BUSHING  
**Other Services** CNL/CDL DIL  
**Elevation** K.B. 2228'  
**D.F.** N/A  
**G.L.** 2221'

Date	8/27/2017
Run Number	ONE
Depth Driller	4225'
Depth Logger	4220'
Bottom Logged Interval	4219'
Top Log Interval	3300'
Casing Driller	8.625" @ 250'
Casing Logger	248'
Bit Size	7.875"
Type Fluid in Hole	CHEMICAL
Salinity, ppm CL	10,500
Density / Viscosity	9.7 56
pH / Fluid Loss	9.0 8.8
Source of Sample	FLOWLINE
Rm @ Meas. Temp	.35 @ 62
Rmt @ Meas. Temp	.26 @ 62
Rmc @ Meas. Temp	.47 @ 62
Source of Rmf / Rmc	CHARTS
Rm @ BHT	.18 @ 118
Operating Rig Time	2 1/2 HOURS
Max Rec. Temp. F	118 DEGF
Equipment Number	108
Location	HAYS
Recorded By	J. HENRICKSON
Witnessed By	PAT DEENIHAN

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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.  
 OGALLAH EXIT I 70  
 SOUTH TO CURVE, 3 SOUTH, 1 WEST, SOUTH INTO  
 (ROAD TO COVE 1 AT CEDAR BLUFF)

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

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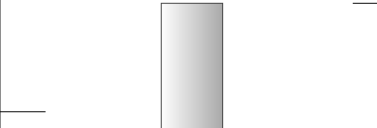
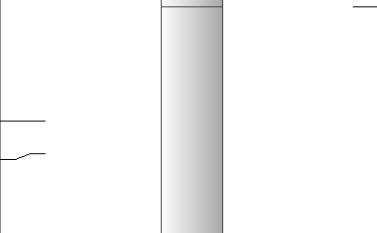
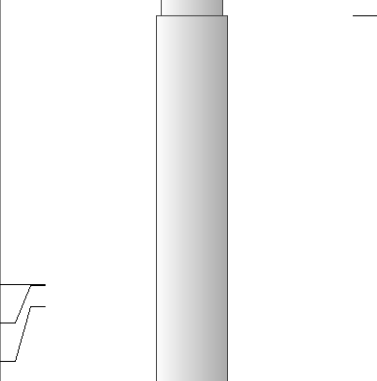
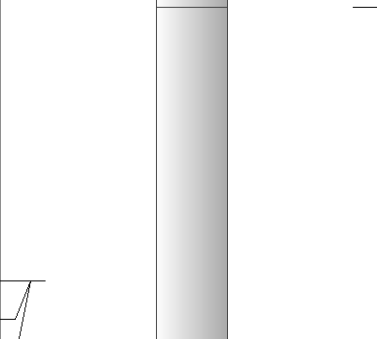
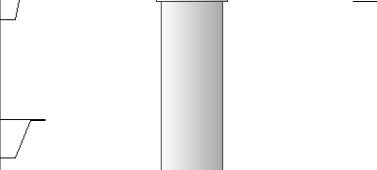
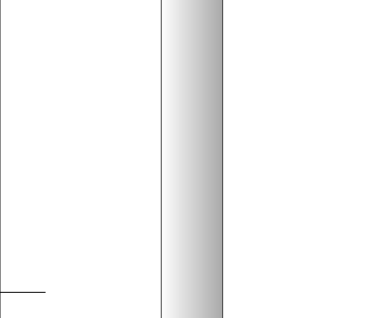
<b>Your Pioneer Energy Services Crew</b> Engineer: J. HENRICKSON Operator: Operator: Operator:	<b>This Log Record Was Witnessed By</b> Primary Witness: PAT DEENIHAN Secondary Witness: MIKE KELSO Secondary Witness: Secondary Witness:
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# Log Variables

DatabaseC:\ProgramData\Warrior\Data\kelso\_honas\_a\_2.db  
Dataset field/well/stackml/pass3.1/\_vars\_

## Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	118	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	-90	61	Off	4220

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58		GR-M&W (89-M&W)	3.00	3.50	50.00
CNLSC CNSSC	37.48 36.73		CNT-M&W (tk10-MW)	5.50	3.50	100.00
LSD DCAL SSD	28.43 28.42 27.93		CDL-M&W (168-986)	8.50	4.00	250.00
MCAL MI MN	19.83 19.83 19.83		ML-PSI STKBL ML (PSI-02) Stackable Microlog Tools	7.58	4.00	65.00
RLL3 RLL3F	15.80 15.79					
CILD	8.00		DIL-M&W (1987)	18.50	3.50	220.00

CILM 4.70

SP 0.20

Dataset: kelso\_honas\_a\_2.db: field/well/stackml/pass3.1  
 Total length: 43.08 ft  
 Total weight: 685.00 lb  
 O.D.: 4.00 in

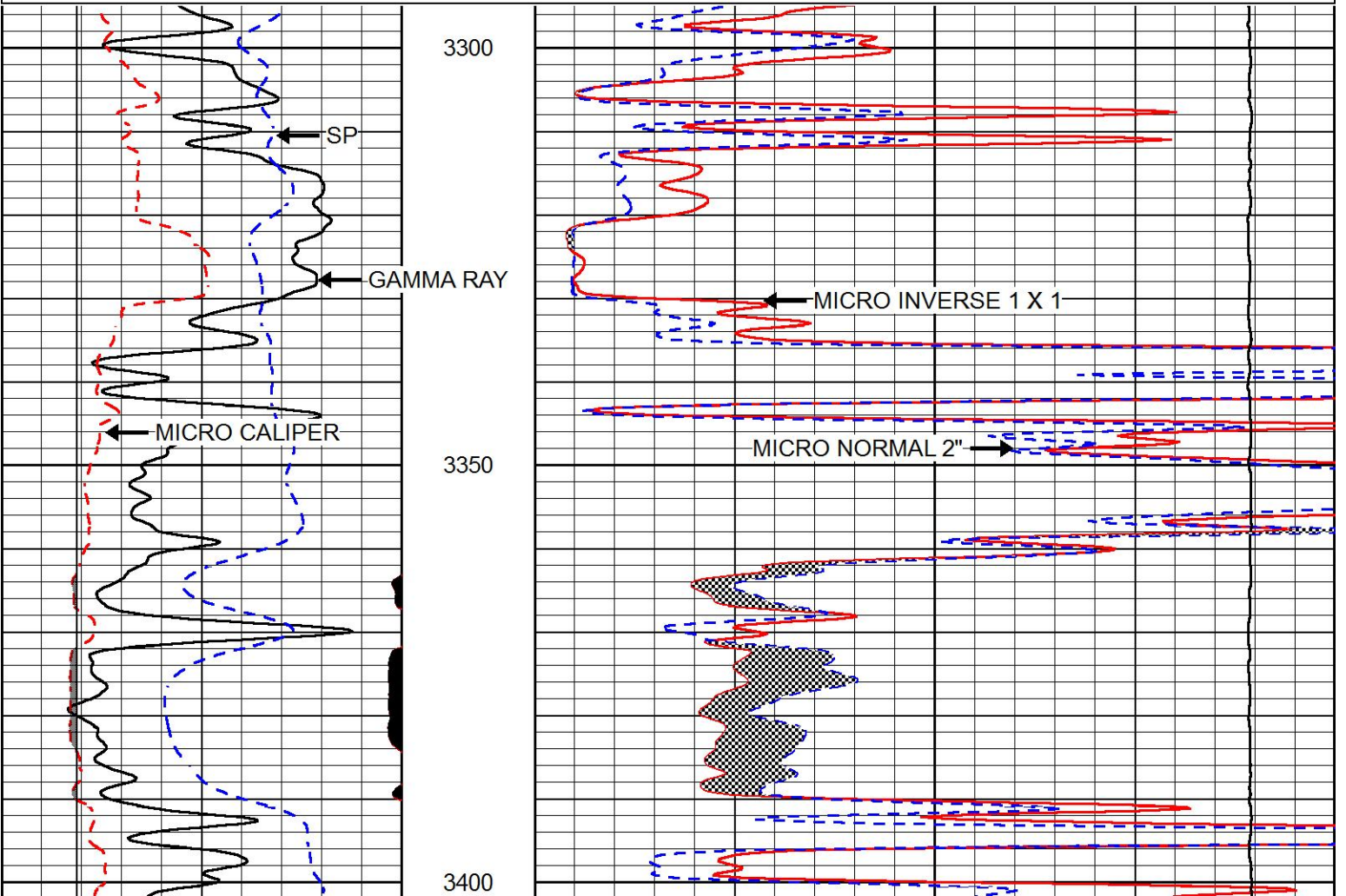


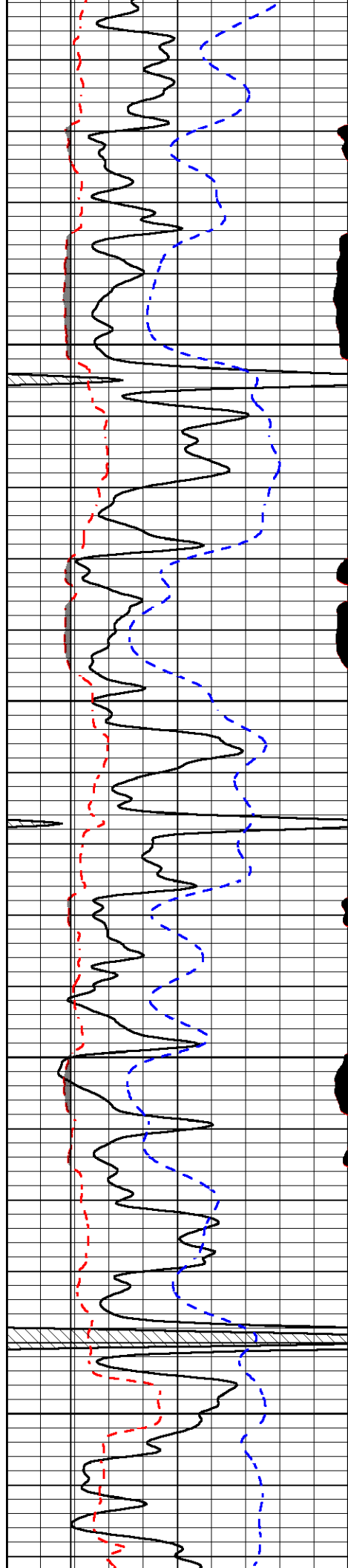
# MAIN PASS

Database File: kelso\_honas\_a\_2.db  
 Dataset Pathname: stackml/pass3.1  
 Presentation Format: micro  
 Dataset Creation: Sun Aug 27 05:56:23 2017  
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
6	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0

0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
15000	LINE TENSION (lb)	0



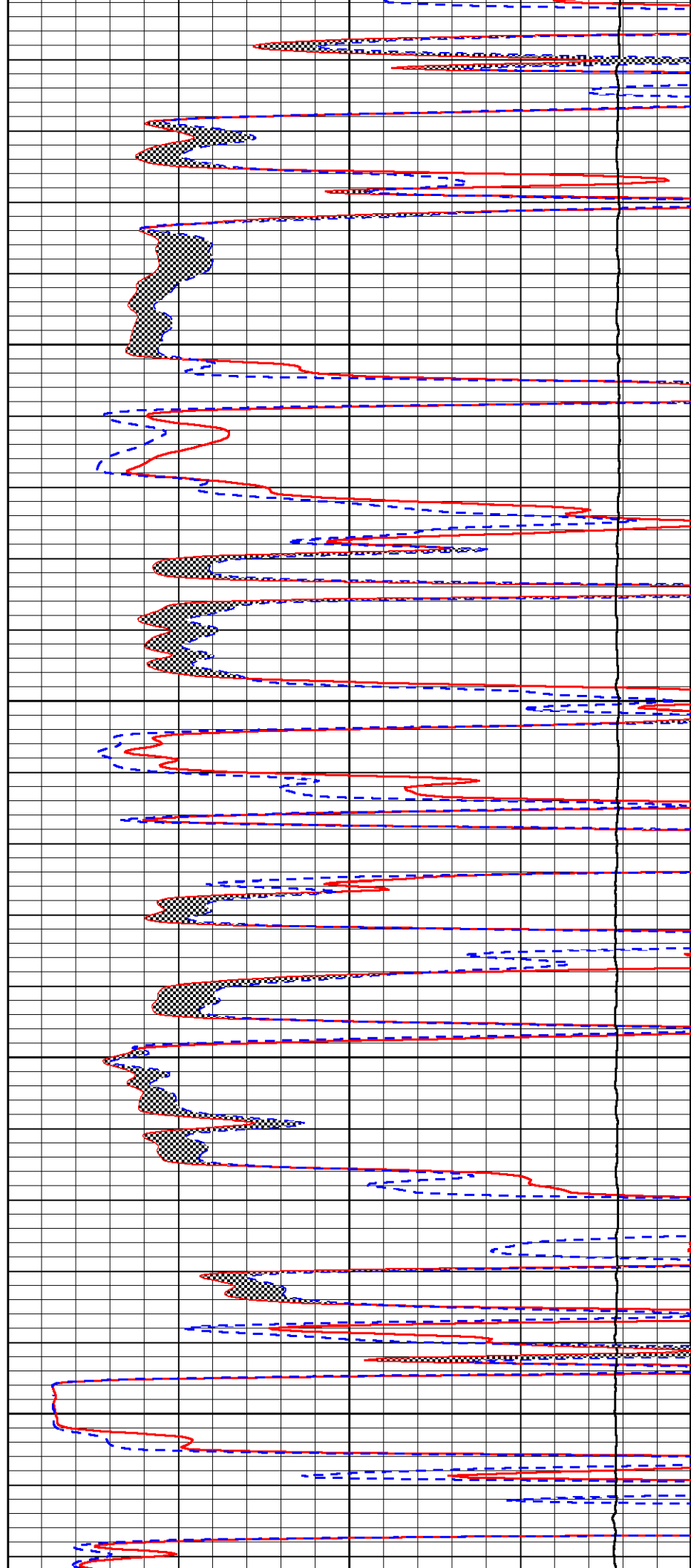


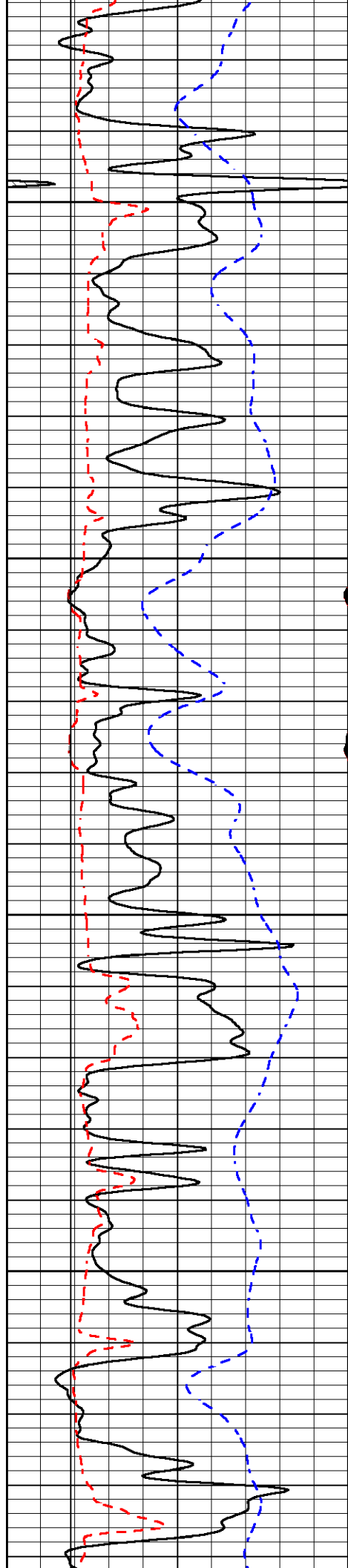
3450

3500

3550

3600



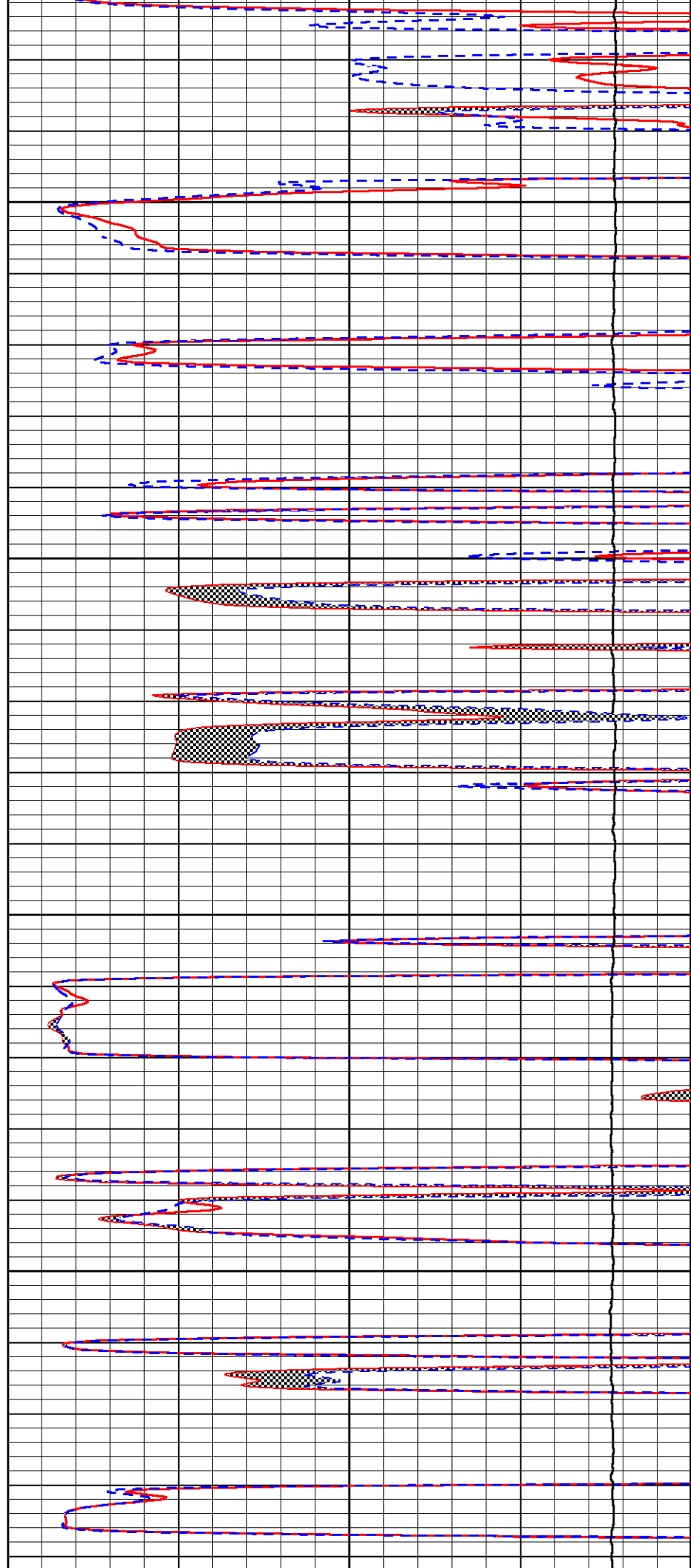


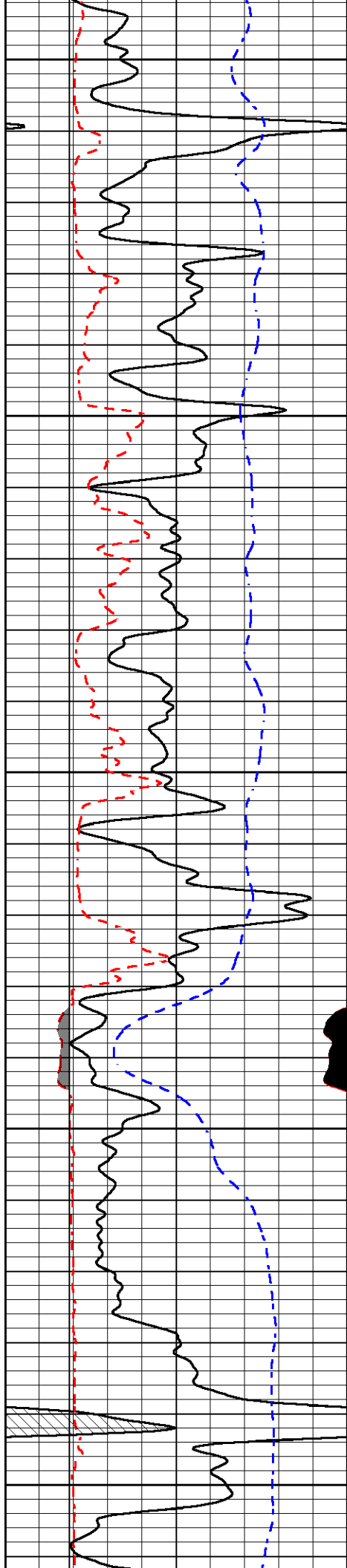
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3700

3750

3800





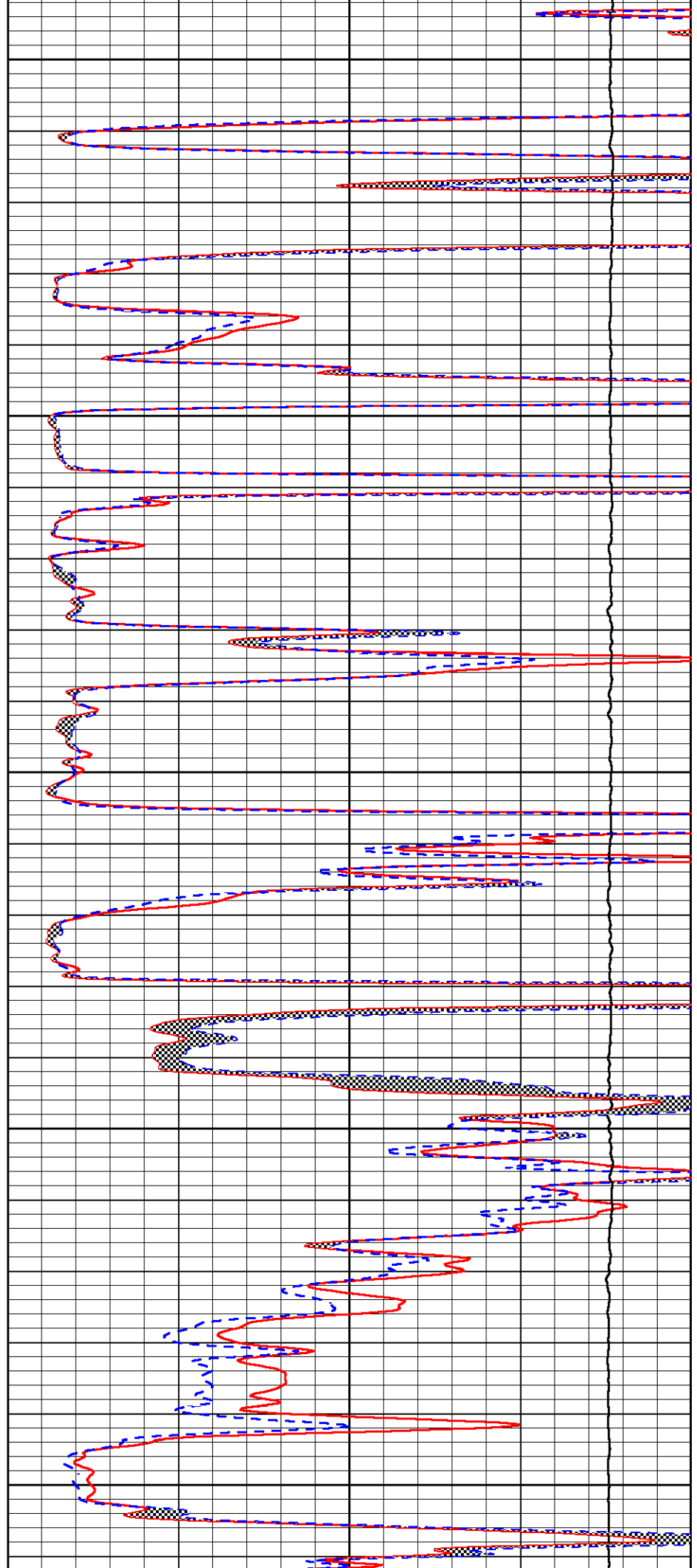
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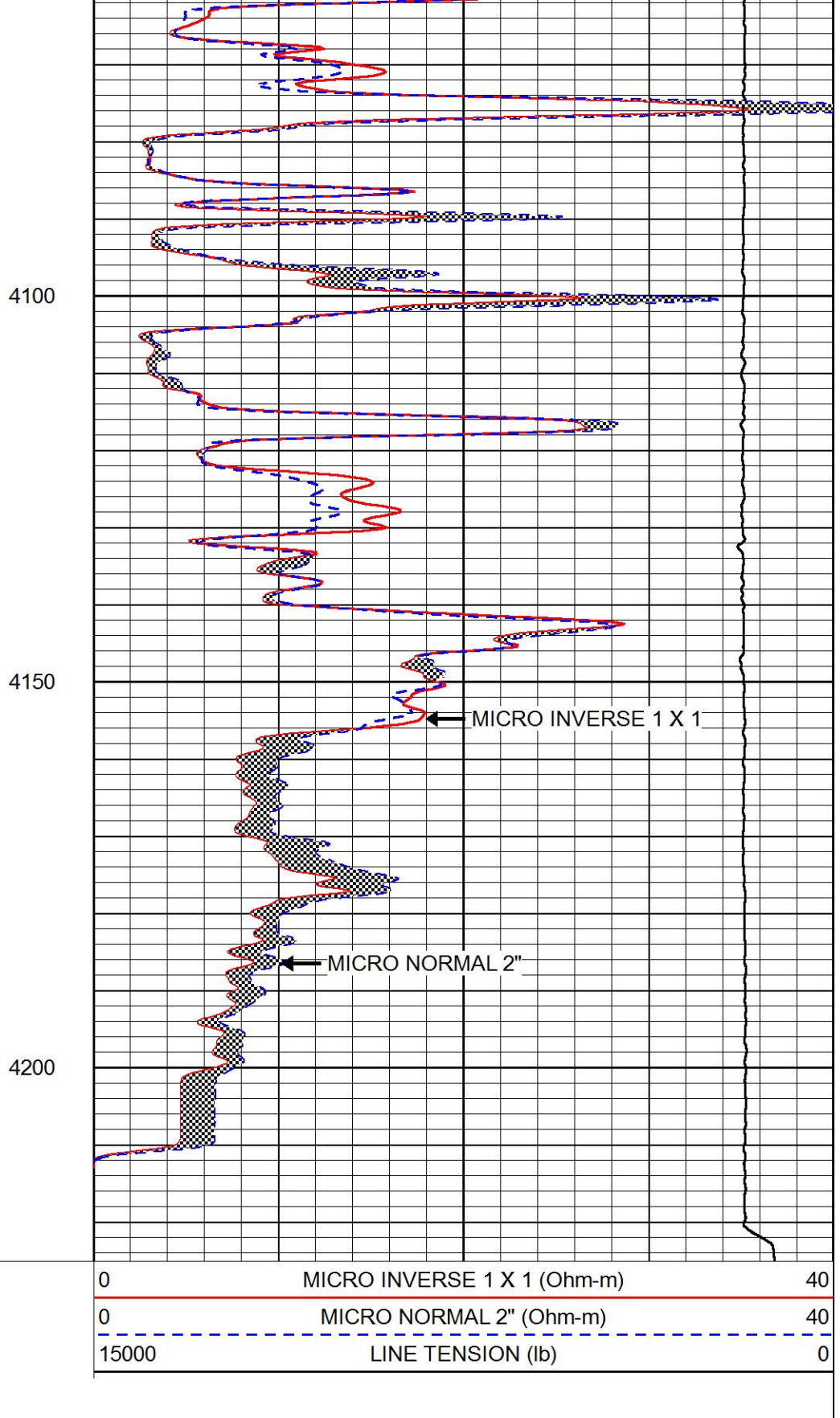
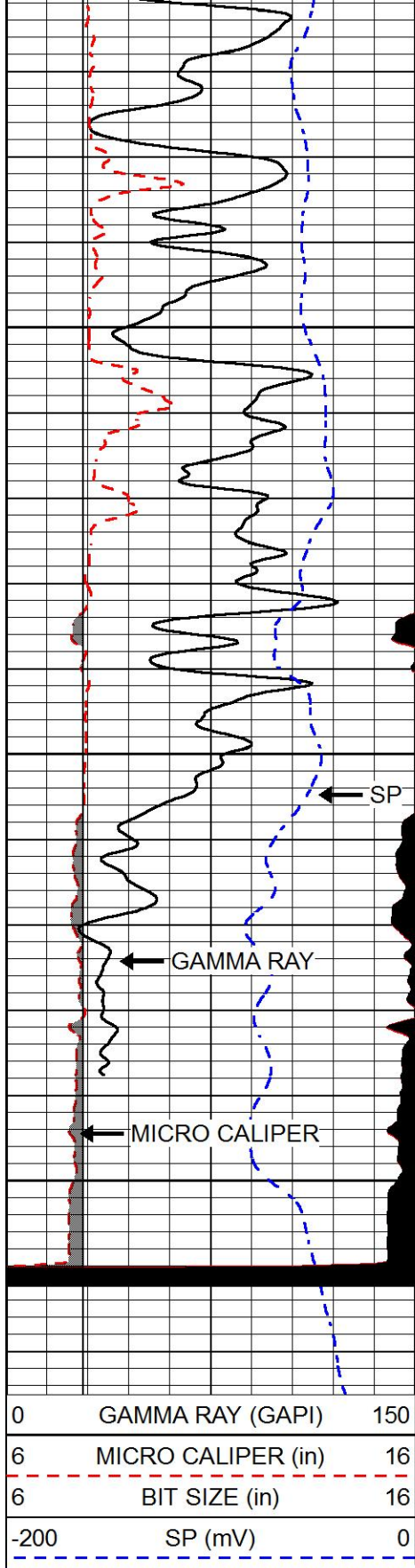
3900

3950

4000

4050



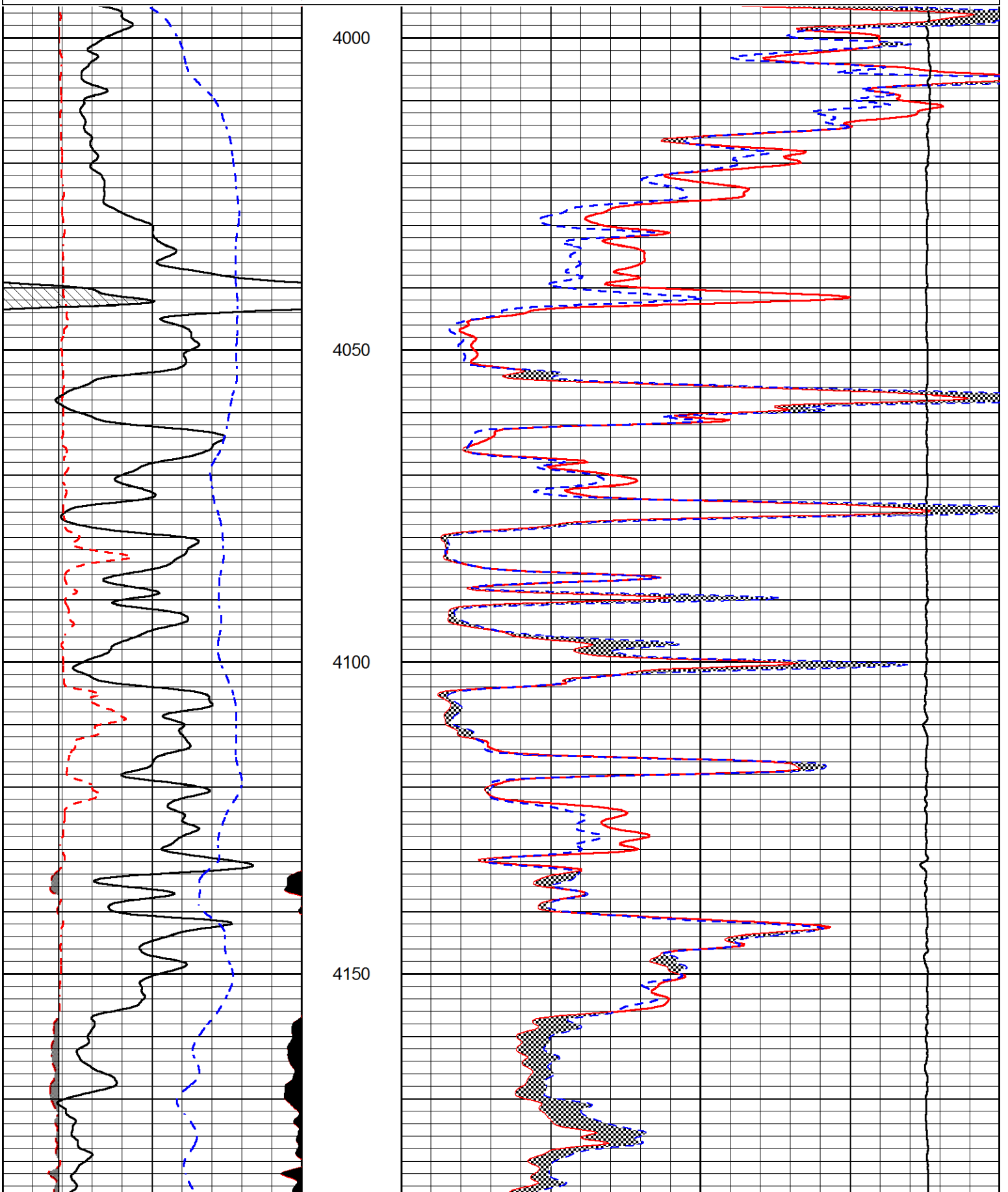


# REPEAT SECTION

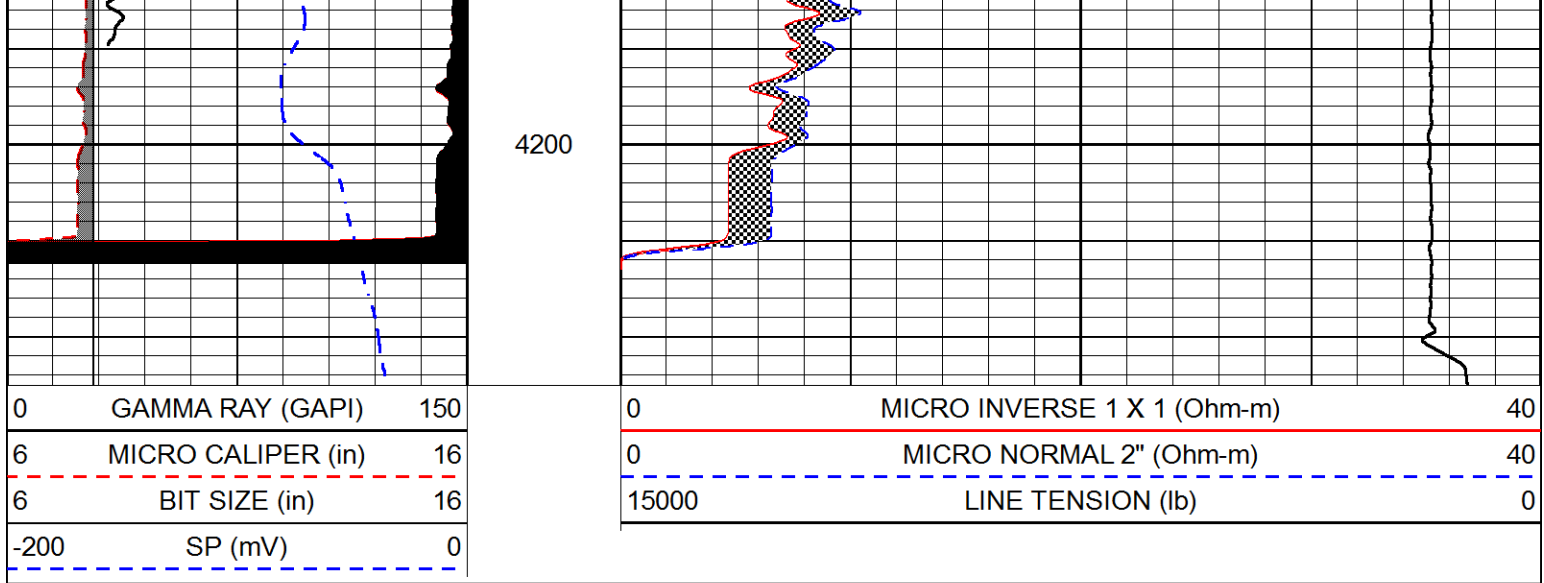
Database File      kelso\_honas\_a\_2.db  
 Dataset Pathname    stackml/pass2.1  
 Presentation Format    micro

0	GAMMA RAY (GAPI)	150
6	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0

0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
15000	LINE TENSION (lb)	0







### Calibration Report

Database File kelso\_honas\_a\_2.db  
 Dataset Pathname stackml/pass3.1  
 Dataset Creation Sun Aug 27 05:56:23 2017

### Dual Induction Calibration Report

Serial-Model: 1987-M&W  
 Calibration Performed: Tue Apr 11 16:07:38 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

### Microlog Calibration Report

Serial-Model: PSI-02-PSI STKBL ML  
 Performed: Fri Jun 23 00:25:19 2017

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0031	0.0043	0.0000	10.0000	Ohm-m	18000.0000	0.0000
Inverse	0.0000	0.0013	0.0000	10.0000	Ohm-m	20000.0000	0.0000
Caliper	1.0020	1.0834	5.5000	16.5000	in	135.1560	-131.4500

### Compensated Density Calibration Report

Serial-Model: 168-986-M&W  
 Source / Verifier: /  
 Master Calibration Performed: Tue Apr 11 16:07:47 2017

### Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4691.86	4818.19	cps
Aluminum	2.675	g/cc	859.57	3020.22	cps

Spine Angle = 74.61

Density/Spine Ratio = 0.523

	Size		Reading
Small Ring	4.00	in	1.03
Large Ring	14.00	in	1.23

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 16:08:01 2017

Calibrator Value: 1000.0 GAPI

Background Reading: 0.0 cps  
 Calibrator Reading: 6.2 cps

Sensitivity: 0.5200 GAPI/cps



**PIONEER**  
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